THE MEASURE OF POVERTY

Technical Paper III

A Review of the Definition and Measurement of Poverty

Volume I: Summary Review Paper

By: Urban Systems Research & Engineering, Inc.

U.S. Department of Health, Education, and Welfare

EXECUTIVE SUMMARY

1. Introduction and Study Objectives

The objective of this study was to review the existing literature on a series of issues associated with the definition and measurement of poverty, and to prepare an annotated bibliography and summary report covering this research. This report forms a part of a larger study of poverty measurement which has been prepared by a Poverty Studies Task Force within the Department of Health, Education, and Welfare.

Poverty definitions serve two functions in the public policy area. First, such definitions allow policy makers to identify the poor: to determine, for example, the appropriate allocation of anti-poverty funds across regions or individuals. While there is some consensus that poverty definitions when used in this way as identifying devices should be based on objective economic status, a number of technical issues associated with the appropriate measurement of this economic status remain unresolved. Thus, it is unclear whether income, wealth or consumption expenditures serve as the "best" measure of status. The nature of the adjustments which should be made for differences in the needs of families of differing sizes and compositions, as well as differences across regions in both needs and price levels are also problematic. Chapters 3 through 8, and Chapter 12 of the report summarize the major issues in these areas, and review current administrative definitions of poverty.

There is, however, a second function served by poverty definitions which this study was also designed to address. In particular, poverty definitions help policy makers design and evaluate programs to help the poor. For this function, policy definitions which are somewhat broader and more sociological become relevant. Particular issues and difficulties associated with these broader definitions are summarized in Chapters 2, and 9 through 11 of the report.

Eleven specific issues were identified and reviewed in this study. As indicated, these issues span the range from historical definitions of poverty through more specific technical and conceptual problems encountered in implementing alternative poverty definitions. The issues covered, while not exhaustive, nevertheless provide a sense of the breadth and nature of the research in this area, and will hopefully help to resolve some of the current debate on the appropriate measure and definition of poverty.

2. Methodology

In developing the annotated bibliography and summary report for this project, an exhaustive literature search was conducted. A full catalogue of the existing bibliographies and journals consulted in this search is contained in Appendix A of the report. The literature

itself is primarily drawn from the disciplines of Economics, Sociology, and Political Science. Unpublished working papers and doctoral dissertations from several major universities were also reviewed, as were a number of relevant government documents.

The search plan used in uncovering relevant materials was straightforward. In the first stage, references were taken from the existing major bibliographies. Current journals as well as available unpublished work in the three disciplines were also investigated in this first stage to uncover relevant material too recent to be covered in existing bibliographies. In the second stage of the review, any additional research mentioned in the bibliographies of material covered in stage 1 was covered. Additional help in identifying important omitted references was provided by reviewers at the Department of Health, Education, and Welfare and the Institute of Poverty Studies at the University of Wisconsin. Over 1,000 articles, books and reports were reviewed and annotated in this project.

Time as well as budget limitations prevented a complete review of all research ever conducted on poverty. With the exception of material reviewed for Chapter II of the report (Historical Definitions of Poverty) we concentrated on research done after 1950. For the most part, only particularly important or path-breaking research done pre-1950 was reviewed.

The methodology outlined above was used for ten of the eleven topic areas reviewed in this report. For the eleventh, poverty definitions currently used by states in administering their poverty programs, a literature review was, unfortunately, inadequate: very little research has been done in this area. Instead, we gathered the relevant information by conducting telephone interviews with state welfare officials in each of the fifty states. Questions focused on the AFDC program since the adult assistance programs have been federalized. The results of these interviews are provided in Appendix D of the report and will be briefly summarized in Section III of this summary.

3. Summary of Major Findings

As indicated earlier, the report was organized around eleven specific issues involved in the definition and measurement of poverty. The particular issues themselves were identified for us by the Department of Health, Education and Welfare, and were selected to both reinforce and complement other efforts associated with the larger report being prepared by the agency. In this section, the major findings in each of the topic areas are summarized. Summaries are cross-referenced to appropriate page numbers of the main report.

3.1 Historical Definitions of Poverty (Vol. 1, pp. 3-17)

For heuristic purposes at least, it is possible to categorize historical definitions of poverty as either economic or socio-cultural. Economic definitions focus on the objective attributes of an individual's

economic status, and are typically justified by the argument that economic status is highly correlated with other, less easily quantified concomitants of poverty. Thus, economic status is viewed as a reasonable proxy for the full set of poverty attributes.

As an alternative, or an adjunct to economic definitions, a number of people have suggested that poverty be defined in socio-cultural terms. In particular, it is argued that economic attributes do not always correlate well with socio-cultural poverty traits (viz. dependence, pessimism and so on), and, moreover, that complete reliance on economic measures biases the choice of government programs.

Early, pre-20th century poverty definitions were, for the most part, economic. Moreover, early definitions were "absolute": poverty was typically defined as the lack of resources (i.e., income or assets) necessary to acquire subsistence levels of food, shelter and clothing.

Poverty definitions evolved in two significant respects over the twentieth century. First, the definition of the minimum "needs" of the population used to determine poverty levels has been broadened. This broadening reflects an implicit belief that poverty is at least in part a relative phenomenon, an economic status which changes as the overall level of affluence in society changes. Thus, in the period 1935-1960 as the overall living standard increased, the poverty line as defined by the Social Security Administration (currently the major federal poverty criteria) rose in real terms by 40-75%. More recently, beginning in the late 1960's, some researchers have suggested that poverty definitions be made explicitly relative. The most widely regarded technique for formally implementing a relative definition of poverty is due to Watts (1967), who suggested that anyone with less than 50% of the median income of the population be defined as "poor."

The second significant change in poverty definitions, particularly in the last decade, has been the increase in the extent to which socio-cultural attributes are viewed as important and necessary components of a poverty definition. This movement away from strict economic conceptions of poverty has been most apparent in the construction of poverty programs, and has not as yet infiltrated the administrative definitions.

3.2 Index Numbers (pp. 18-22)

Price differentials among areas of the country, as well as price changes over time affect our estimates of the dollar value of needs used to construct poverty thresholds. Index numbers have for some time been used to try to capture the effects of such price changes.

Unfortunately, index numbers suffer from a number of shortcomings. The basic federal index of price changes (the Consumer Price Index) is representative and can be used as a model to illustrate these short-

comings. First, the consumption bundle (or market basket) of a typical consumer in a base year, say 1961, is identified. The cost of this bundle is then calculated both for 1961 and for the current year. The cost ratio constitutes our price index.

The procedure outlined above has the advantage of being relatively simple. Unfortunately, much is lost in the simplifications. In particular, no allowance is made for the possibility of changes over time in consumption patterns, either in response to changes in relative prices or taste changes. Similarly, inasmuch as the index is geared to the typical consumer, no account is taken of differences in the tastes or prices charged different people. In the case of the poor, this latter point is particularly significant: evidence suggests that the poor pay differentially higher prices for goods than the average consumer, and consume significantly different market baskets. This latter point by the way has been used to suggest that low income people are differentially burdened by inflation.

In short, index numbers, while a useful heuristic tool, are quite problematic when applied to the problem of adjusting poverty thresholds.

3.3 Adjustments for Family Size and Composition (pp. 23-32)

The needs of a family clearly depend upon the size and structure of that family. The empirical evidence for the most part suggests that needs increase with the size of the family, but at a decreasing rate: thus a family of four needs more income than a family of two to sustain a given standard of living, but less than twice as much. There is also some evidence that the aged require less income than the middle-aged.

Estimating the magnitude of differences in the income needs of different family types, however, is no easy matter. The procedure used by the Bureau of Labor Statistics in identifying appropriate adjustments is illustrative of the general methodology used in this area. The first, critical assumption made is that families which spend equal percentages of their income on food are equally well-off. Suppose for example that an average family of four with an income of $10,000 spends 25% of its income on food, and that an average family of five with an income of $11,000 spends an equivalent 25%. The two families are counted equivalent; the addition of a fifth member in the case above adds $1,000 to family needs. Several other, somewhat more ad hoc assumptions are then used to transform food needs into total needs and to further distinguish among family types.

Adjustments for family size and composition, such as the B.L.S. procedure described above, have a number of implications for our measurement of poverty. The major results of such adjustments include: a decrease in the number of elderly people included in the poverty population, an increase in the number of large families, and an increase in the number of children considered poor.

3.4 Regional Cost-of-Living Differences as a Function of Public Sector Differences (pp. 33-57)

Differences across regions and between rural and urban areas in the availability of free or subsidized government services clearly affect estimates of the spatial distribution of the poor. Clearly two families earning the same income are not equally well-off if one receives free medical assistance while the other does not.

In general, rural areas are the most seriously disadvantaged in terms of availability, quality, and access to government services. Although there are some differences among public services, the South appears on average to be more seriously disadvantaged than other regions of the country.

While the literature clearly indicates that there is a good deal of regional variation in public services, unfortunately little work has been done to try to formally account for these differences in cost-of-living indices. David (1975) recently suggested using a survey technique to determine the effect of public service differences on the well-being of individuals and thus to construct a more comprehensive index. At the present time, however, little practical work has been done in this area.

3.5 Regional Cost-of-Living Differences as a Function of Private Sector Differences (pp. 58-68)

There are relatively large differences across regions and between rural and urban areas in the income levels of the resident populations. The rural South in particular has a disproportionate concentration of the poor, while the Northeast and West are relatively well-off. These income differences have been attributed to the underlying socio-economic attributes of the population (viz. less educated, more aged population in the rural South) as well as to differences in the economic development of the various regions of the country.

Observed income variations across regions and between rural and urban areas are difficult to interpret. In particular, these income differentials reflect real differences in levels of well-being only to the extent that they are not offset by cost-of-living differences. Unfortunately, the evidence on this issue is inconclusive: price levels are indeed lower in low income areas, but it is difficult to determine whether these price differences completely offset income differences.

3.6 Wealth/Assets and Consumption as Measures of Poverty (pp. 69-78)

Reliance on current income alone as a measure of poverty is problematic inasmuch as it does not allow us to distinguish between those people who are only temporarily poor (perhaps as a result of short-run bad luck) and the long-term, chronic poor. Both wealth and consumption expenditures have been suggested as alternatives which would more accurately distinguish between these two groups.

What effect will the use of these measures have on the identification and measurement of poverty? Epstein (1969) found that replacing income with consumption expenditures had little effect on the total size of the poverty population; the number of young people (who are frequently suffering only temporary poverty) included in the count of the poor would, however, be reduced. Other researchers (Reid, 1964) suggest that replacing income with consumption may have more drastic effects. Using wealth or assets as an adjunct to income in measuring poverty has a significant effect only on our estimates of the number of aged who are poor: the rest of the poverty population typically has few assets. Moreover, the major asset of the aged poor is owned homes, which are difficult to convert to cash.

3.7 Is Leisure a Resource? (pp. 78-80)

Suppose we have two people, Smith and Jones, each earning a poverty income of $2,500 per year. Smith works full-time 52 weeks per year for his income. Jones, on the other hand, works only sporadically. Are Smith and Jones equally well-off, or is Jones somehow better off as a result of his additional leisure.

The resolution of the above issue resides in our interpretation of Jones' behavior: in particular, is Jones enjoying leisure, or suffering involuntary unemployment? Only in the former case is adjustment appropriate.

On the practical level, little work has been done in this area, and it is not at this point possible to make a subtle distinction of this type in implementing policy.

3.8 The Turn-over Rates of Poor Families (pp. 81-86)

Empirical evidence indicates that there has been some reduction over time in the size of the poverty population. If we use the Social Security Administration's poverty line, the size of the poverty population decreased from 40 million in 1960 to 25 million in 1967. More relativistic definitions of poverty, as for example the number of families earning income less than 50% of the median family income in the U.S., yield smaller estimates of the reduction, but show a decrease nevertheless.

Scattered research suggests that at least some people "escape" from poverty over time. Public policy might be made more effective if likely escapees could be identified. Unfortunately, the research in this area is scanty. Economic prosperity appears to decrease the over-all poverty population, but has a disproportionately small effect on minorities, the aged, and women. Education appears to increase one's chances of escaping poverty somewhat, although here, too, minorities and women appear to benefit less.

3.9 Social and Economic Proxies for Poverty (pp. 87-95)

Sub-employment and unemployment have on occasion been used to identify the poor. Typically, these proxies are used either as adjuncts to income, or in lieu of income when income data is unavailable.

For most purposes, sub-employment indices are superior to unemployment as a poverty proxy. Unemployment measures do not include discouraged workers who drop out of the labor force; yet research indicates that such discouragement is a frequent characteristic of the poor. Ferguson (1971) estimated that 40% of the jobless poor are excluded in this fashion from unemployment statistics.

Sub-employment measures include discouraged workers in their count, as well as the working-poor, and thus serve as a better proxy for poverty than unemployment. There are, however, problems with the sub-employment indices, particularly when used as poverty proxies. Indeed, in some respects, these indices are a rather curious amalgam of poverty and joblessness measures. The income test applied to workers is the poverty threshold. The unemployed, however, are subject to a much less stringent inclusion criterion: family income less than the median. The rationale for this distinction is unclear: to the extent that any distinction at all is legitimate, one might argue that it should go in the opposite direction. Employed people, by and large, have larger needs (due to the conditions of their employment) than do the unemployed; one might reasonably argue, therefore, that the income test applied to workers should be less stringent than that applied to non-workers.

In sum, the legitimacy of using these alternative variables as proxies for poverty varies. In situations in which income data is unreliable or inaccessible, alternative proxies may serve. It is not recommended that these measures be used to identify the poor for the purposes of administering relief, unless no other options are available. To the extent that proxies capture important causes of poverty, however, they may well be useful in directing the design of poverty programs.

3.10 Social Indicators (pp. 96-104)

Given the widespread development and utilization of economic data in the formulation of public policies in the 1960s, many social scientists have pressed for the parallel development and utilization of non-economic "social" indicators of national well being.

The literature in this field can generally be divided into two major areas: (a) discussions of the concepts underlying social indicators of national well-being, along with specific definitional issues, and (b) discussions of specific social problems--such as health, education, nutrition, and so forth--whose incidence and severity can be measured through the use of social indicators.

The former category includes a number of noteworthy discussions of the difficulties inherent in the development of a meaningful social indicator data set, and the analytic difficulties which would ensue even if such data were collectable (and collected). The latter category encompasses a broad range of discussions of individual social problems and their inter-relationship with each other and with socio-economic factors.

Review of the social indicators literature indicates that currently completed research has by no means approached the vast potential in this area. There is a growing consensus concerning the methodological weaknesses of much of the social indicators literature. But the contributions and potential contributions of the social indicator "movement" are equally evident. Most importantly, they provide a useful corrective to over-emphasis on purely economic measures of poverty and well-being. The mere effort to employ social indicators (regardless of their preciseness) can help to avoid policy pitfalls which arise from equating the "poverty problem" to the simple absence of control over monetary resources.

Given the current state of the art, the use of social indicators as an alternative to income/wealth in defining or measuring poverty would seem premature. But by providing increased visibility to social issues and by providing awareness of progress (or lack of progress) in specific areas, social indicators can play an important role in shaping the future direction of American domestic social policy.

3.11 State Administrative Definitions of Poverty (pp. 105-111)

Implicitly, all state welfare agencies define the poor as those families whose incomes and resources are insufficient to provide them with a minimum decent standard of living. States, however, use quite different criteria and methodologies to determine people's basic needs, and thus arrive at quite different standards of decency.

Most states define their need requirements in terms of the quantity, type, and cost of specific consumption units. Sixty percent of the states use flat grants for AFDC assistance payments; another thirty percent use a semi-flat grant, while the five remaining states use an itemized budget plan. The majority of states recognize special needs of families in particular circumstances as well. Such special needs might include, for example, emergency food or home repairs. The items covered under the special needs category vary widely among states.

For the most part, states determined the composition of the needed market basket of the poor with surveys conducted 10-20 years ago. Costs of budget items are typically updated using BLS, USDA or Census regional and national surveys.

All states adjust needs in one way or another to account for family size: techniques used for this adjustment vary widely. Twelve percent of the states make further adjustments for family age distribution.

Thus, at least some of the problems associated with measuring poverty covered in earlier sections of this summary have been recognized administratively by the states. The large variance among states in the formal techniques used to make the necessary adjustments, however, indicates the need for additional federal guidelines in this area.

I. Introduction

The object of this study was to review the existing literature and to prepare an annotated bibliography and summary paper on a series of issues associated with the definition and measurement of poverty. This report forms a part of a larger study of poverty measurement which has been prepared by a Poverty Studies Task Force within the Department of Health, Education, and Welfare.

Poverty definitions serve two functions for public policy purposes. First, such definitions allow policy makers to identify the poor: to determine, for example, which individuals or families require help of one sort or another. Upon reflection, it is fairly clear that for use as identifying devices poverty definitions must be keyed to measurable objective attributes--income, wealth, consumption levels. Attempting, for example, to identify or select welfare recipients on the basis of attitudes would be administratively absurd, as well as normatively suspect. Thus, the fundamental issues which should be addressed in choosing a poverty definition for identifying purposes involve the choice of the "right" objective attribute, and the adjustments which should be made to these attributes.

There is, however, a second policy function served by a poverty definition which this study was also designed to address. In particular, poverty definitions help policy makers design and evaluate programs to help the poor. For this objective, poverty definitions which are somewhat broader and more sociological become relevant. For example, suppose we were to define the poor as those people who are "present-oriented." This definition would in all likelihood not help us to select a target population for a social welfare program, but it may well indicate something about the kind of program needed, and may serve as a way to test the efficacy of such programs.

In this study, we were concerned with issues which arise in both social and economic definitions of poverty. Eleven relatively broad dimensions of the poverty measurement problem were addressed; these span the range from historical definitions through specific technical and philosophical problems encountered in operationalizing particular poverty definitions. The list of issues discussed here, while by no means exhaustive, should provide some sense of the breadth of the current and previous research in this area.

Appendix A provides a list of the bibliographies and abstracts used for the literature search in this study. For the most part, although not exclusively, we focussed on American research. This reflects our view that poverty is essentially a relative concept, and that wide variance across countries on the consensus view of what poverty consists of would attenuate the relevance of this international literature.

Appendix B deals with useful measures and trends in income inequality. Appendix C is a mathematical treatment of the index number problem provided for those interested in pursuing this issue further. Finally, Appendix D contains the summaries of telephone interviews with state welfare agencies that were used to determine how states establish their needs standards for welfare recipients. These summaries provided the basis for Chapter XII, State Administrative Definitions of Poverty.

II. Historical Definitions of Poverty: An Overview

> "When I use a word it means just what I choose it to mean, no more and no less."
>
> Humpty-Dumpty in Lewis Carroll's Alice Through the Looking Glass.

When we use the term poverty, we generally have in mind a large and complex set of economic, social and psychological conditions. Defining poverty involves taking from this mosaic those characteristics which most succinctly capture the essence of what it means to be poor. In tracing the historical evolution of poverty definitions, then, changes are revealed not only in the technical expertise of the "definers," but in the underlying values and concerns of society. Moreover, inasmuch as all definitions of poverty necessarily involve abstractions and simplifications, they can all be faulted; the critical issue is not whether simplifications have been rendered, but whether or not the essence of poverty has been vitiated by the simplifications.

For heuristic purposes at least, it is possible to categorize historical definitions of poverty as either economic or socio-cultural. In this section, the historical literature in each of these two traditions is reviewed; sub-classes of definitions within each tradition are discussed and an attempt to reconcile these two perspectives is made. A more technical, formal analysis of salient difficulties encountered in formulating and using either economic or social definitions of poverty follows in Chapters III through XII of this paper.

II.1 Economic Definitions of Poverty

Poverty is frequently characterized as an inadequate command over resources relative to needs (David, 1959; Morgan, 1962; Levine, 1969; Rosenthal, 1968; Tabbarah, 1972; Watts, 1968);* we have termed this class of definitions economic inasmuch as they focus on the objective attributes of an individual's economic status. Such definitions are justified by the argument that the lack of resources is highly correlated with other, less easily quantified, concomitants of poverty; thus resource inadequacy is viewed as a reasonable proxy for the full set of poverty attributes. Indeed, it is often argued that the bulk of the deviant/unique socio-cultural traits observed in the poor are consequences of the resource lack. (Pigou, 1920: "in the long run, differences in temperament and taste between rich and poor are overcome by the very fact of a shifting on income between them.")

*This formulation is explicit in the work mentioned and underlies much of the other work in this area as well.

Even within this particular tradition, there is a wide divergence in the final specific poverty definitions constructed. Major differences occur both in the way in which "needs" are defined, and in the way in which resources are measured. Technical aspects of these issues are covered in Chapters III through VIII of this paper; the emphasis here is on broad historical changes.

Until recently, most of the poverty literature defined command over resources in terms of income; wealth and assets in particular were ignored. Current research which argues for the inclusion of assets in determining poverty status will be discussed in Chapter VII. It is worth noting, at this point, though, that Marx considered property ownership, and not income, to be the vital factor in distinguishing status (Daly, 1971). A loose interpretation of Marx's somewhat scant writings on poverty suggests this broader view of the problem. In particular, the "poverty of labor" is distinguished from want: it consists of being deprived of a share in the productive forces. In selling his labor and assuming a property-less position, "the worker cannot enrich himself... since (like Esau who exchanged his birthright for a mess of pottage) he gives up his creative power for the ability to work.... Rather he is forced to become impoverished." (Marx, The Grundrisse). This broad-based view of poverty, however, was not characteristic of the period.

Until the end of the 19th century, "needs" were defined at least for public policy purposes almost exclusively in terms of subsistence:* that is, the minimum resources required for food, clothing, and shelter (Friedman, 1965; Handlin, 1966; Lamale, 1958). Two alternative techniques were used in these early studies to calculate resources needed to achieve subsistence: surveys of actual expenditures of the poor, and the "pricing out" of a hypothetical market basket. As we will see, both techniques have survived to some extent in the current administrative determination of the poverty line. The former approach--extrapolating from observed expenditures--was first used in the U.S. by More and Chapin (1907) to devise a subsistence poverty line (Brady, 1948; Zimbalist, 1964). Booth and Rowntree, in the late nineteenth century, were the first to apply a hypothetical market basket approach in determining a poverty threshold (Rowntree and Lavers, 1951; Townsend, 1954; Zimbalist, 1964). Nutritional requirements developed in a study

---

* It should be noted that not all pre-20th century writers construed needs so narrowly. Adam Smith, for example, writing in the 18th century suggested: "By necessaries I understand not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the century renders it indecent for creditable people, even of the lowest order, to be without." (Wealth of Nations, Book 5, Chapter 2, Part 1, 1776)

by Atwater of the minimum needed to sustain the life of convicts* were used by Booth and Rowntree to construct these thresholds. Both techniques have drawbacks. In particular by basing the poverty line on observed expenditures, there is an implicit assumption that what "is" is equivalent to what "should be" (Rein, 1965). Determining a poverty line via the hypothetical approach, on the other hand, abstracts from individual differences in tastes, habits and skill in purchasing, producing, or consuming goods (Kershaw, 1970; Macarov, 1970). Indeed, Booth and Rowntree are explicit in disallowing any margin for "waste" in their poverty budget (Zimbalist, 1964).

Despite differences which exist in the way in which the early studies measured needs, they were united in one respect: needs were defined in terms of strict subsistence (Lamale, 1958). This is not surprising, and indeed reflects the economic and philosophical state of the nineteenth century. For the most part, nineteenth century governments were too poor to define poverty--at least in determining relief--in any but subsistence terms; indeed, the persistence of subsistence definitions of poverty in underdeveloped countries is evidence of this economic imperative. Moreover, the characterization of poverty as "sinful sloth," coupled with the pervasive Social Darwinism**of the period militated against anything but a subsistence definition of poverty--particularly since such definitions were used for determining relief (Bremner, 1956; Klebaner, 1964; Straus, 1969).

By the early twentieth century, overall increases in the affluence of the U.S., coupled with changes in society's characterization of the causes of poverty, produced some significant changes in the definition of needs of the poor. The budgets prepared by the Bureau of Labor in 1907 mark a distinct turning point in the concept of poverty: budgets were devised to meet "minimum standards" (i.e., subsistence) as well as a "fair standard"--to include goods needed for the "development and satisfaction of human attributes" (Brady, 1948). Budgets prepared by a Philadelphia relief organization in 1924 for purposes of determining relief moved further in this direction by including expenditures needed to provide an average-sized family with a decent standard of living: recreation, for example, was permitted, as well as expenditures for insurance (Rubinow, 1924).

---

*Attempts to price out a market basket for the poor predate the Booth & Rowntree study. Gregory King, for example, estimated the weekly expenditures needed to sustain an average family (3½ people) in 1688. The Booth & Rowntree study, however, is the first formal, systematic such attempt.

**It is interesting to note that in 1852, of 132 Connecticut towns surveyed only 1 cited "want of employment" as a cause of poverty; the rest attributed it to intemperance and immigration (Klebaner, 1964). This could, of course, be a reflection of the full-employment of the period.

Other poverty lines drawn in the early twentieth century are similarly generous relative to earlier definitions (Chapin, 1909; Streightoff, 1911; Douglas, 1923).

The broadening of the definition of needs used to compute poverty thresholds received an additional impetus from the 1930's Depression. The massive unemployment and distress of the period further advanced the notion that poverty was exogenous to the individual, a result of the vagaries of the business cycle rather than personal sloth. F.D. Roosevelt's Second Inaugural Speech (1937), characterizes poverty far differently from the early Rowntree study: here basic needs include the opportunity to bette one's life, as well as the more usual resources for food, housing and shelter (Roosevelt, 1937).

The increased concern with poverty precipitated in 1941 the first formal Recommended Dietary Allowances (R.D.A.'s) by the Food and Nutrition Board of the National Research Council of daily nutrient intakes needed for good nutrition in the U.S. This study and subsequent revisions provided a firm basis, at least in the area of food, for minimizing the circularity implicit in calculating needs on the basis of actual consumption.*

The USDA adopted the National Research Council's R.D.A.'s as a basis for nutritional goals for its food plans at different cost levels which were first developed in the 1930's. In 1961, the USDA Economy Plan was developed and the three more costly plans--low-cost, moderate-cost, and liberal--were revised using the R.D.A.'s as revised in 1958 and the data from the USDA's household consumption survey, Spring 1955 (Family Food Plans and Food Costs, USDA, HERR-20, November 1962).

In the 1960's, President Johnson's war on poverty produced a r surgence of interest in developing a systematic and administrativel viable poverty threshold. In 1963, Mollie Orshansky, while working for the Social Security Administration, developed a technique for transforming the U.S. Department of Agriculture (USDA) food plans into a comprehensive poverty budget, a new dollar figure representi the needs of the poor (Orshansky, 1965). Data was available throug the USDA on the dollar cost of a minimum food basket. Similar data however, did not exist on other components of the requisite poverty basket. Orshansky developed a viable technique for extrapolating from food needs to full needs by use of the "Engel's coefficient." The procedure is straightforward:

1) food costs were taken from the USDA economy food plan developed in 1961;
2) the percentage of budgets spent on food was obtained by averaging the fractions spent on food in 1955 by families over a broad range of incomes (131% for incomes less than $1,000; 60% for $1,000-$2,000; 38% for $2,000-$3,000; and 21% for $8,000+).

---

*Since the market basket is priced using prices generated by current consumption patterns, some circularity in the basket unfortunately still exists.

The averaging process produces an average proportion of budgets on food (the Engel's coefficient) of 33%;

3) food costs were inflated by the inverse of the Engel's coefficient (here 3).

The Council of Economic Advisors, in their 1964 report to the President, estimated their $3,000 threshold by considering the average family: no alternative thresholds were provided for families of differing sizes, by region, farm/non-farm and so on (Council of Economic Advisors, 1964). The estimate was a rough and ready one, and the accompanying report replete with caveats (often ignored by the Council itself) on limitations on the usefulness of the poverty line.

At the same time (1964), the Social Security Administration (SSA) published a more refined poverty line using the Orshansky method. The fine tuning included: 124 cells were constructed, in which families were stratified by size (by number of children under 18), composition (age and sex of head) and farm versus non-farm* (Orshansky, 1965; Orshansky, 1969). Estimates of needs of the poor and near-poor were provided, derived from USDA's economy versus low-cost plan. The Office of Economic Opportunity as well as the Council of Economic Advisors soon adopted the SSA thresholds (Orshansky, 1965).

Changes in prices and needs over time, however, created a need for some changes in the poverty line. Between 1964 and 1969, the SSA line was adjusted upward to reflect USDA's estimates of changes in costs for the economy plan. In 1969 the precedures were changed, and price adjustments have been made by using the Consumer Price Index.

The market basket, used to derive the poverty line, has not changed since 1955-56, and indeed this stability in the components of the SSA market basket is a major criticism of the index (MacNamee, 1969; Townsend, 1974). In particular, it is argued that changes in needs since 1955 have made the original basket obsolete; indeed, Miller suggests that "if this definition remains in use long enough, poverty will be eliminated statistically but few people will believe it"(Miller, 1971).

Additional criticisms of the SSA index include the argument that the cells are mislabeled--rural versus non-rural should replace farm/non-farm (Kershaw, 1970); regional differences in prices should be considered (Miller, 1971); that the use of an Engel's coefficient of 3 overstates the poverty line (Friedman, 1965)**or understates it

---

* Between 1964 and 1969, farm needs were calculated at 75% of non-farm; at present, the differential is set at 85%.

** Friedman argues that the multiplier should be less than 3 because the poor spend a larger fraction of their income on food; in other words, the multiplier should be taken from budget studies of

(footnote continued)

(Miller, 1971); that the USDA food budget which underlies the SSA index is at best a measure of temporary/emergency food needs, and thus not appropriate as a long-run market basket (Haber, 1966; Townsend, 1974); and finally that it assumes excessively expert buying habits on the part of the poor (Kershaw, 1970; Macarov, 1970).

On a more fundamental level, all the poverty measures which define poverty by recourse to a minimum market basket of needs have been faulted for misconceiving the fundamental "relativity" of poverty (Bertrand, 1967); the major literature in this "poverty is relative" tradition is considered below.

Poverty Defined as Relative Deprivation

The poverty definitions discussed above which set a poverty level by constructing a market basket of needs are frequently characterized as absolute definitions. The label, however, is not entirely appropriate, for at least the current market-basket definitions identify the needs from which critical poverty levels are constructed by referring to the existing standards of society. Indeed, the moving market baskets used by Smolensky and Mack are distinctly relativistic definitions. Thus, as society's affluence increases, so does the breadth of the goods included in the poverty basket. Indeed, it has been estimated that between 1935 and 1960, the poverty line--as defined by market basket methods--has risen in real terms by 40-75%* (Gordon, 1965). Thus, in a real sense, obstensibly need-oriented poverty definitions can well be relative.

There have been, however, three main classes of economic definitions which have attempted to capture the relative nature of poverty more directly: poverty defined strictly as the lowest X% of the income distribution (here termed the purely relative definition) (Birch and Saenger, 1970; Miller, 1963); poverty defined as income less than X% of the median income (here termed quasi-relative) (Atkinson, 1974; Fuchs, 1967; Miller 1971); and poverty defined as the income level which the average person considers unacceptable (Kilpatrick, 1973). These definitions arose largely in response

---

the poor only, not across the income distribution as it is now done. While this is a narrowly correct point, in some sense it misses the underlying rationale for the SSA procedure: it seems clear that the large portion spend on food by the poor is a mere expedient of their poverty. Indeed, using a low-income fraction might only serve to incorporate destitution into a minimum subsistence definition.

*This trend towards expansion of the articles included in the list of minimum needs, it should be noted, has not continued--in particular, the SSA index has not changed its list of goods since 1955. This has, as noted earlier, been one of the major criticisms leveled at the index.

to difficulties inherent in trying to use market-basket changes to reflect growing affluence; these definitions, however, do retain some problems. It should be noted here that most advocates of the relative or quasi-relative approach to defining poverty would themselves argue that such definitions are appropriate only in certain cases.

Three major problems exist in using the purely relative definition of poverty. First, intertemporal or cross-area comparisons of the extent of poverty are impossible. For all times and in all places, one will be able to find the same lowest X% of the income distribution; this X% may occur at an income of $3,000 in 1962, or $18,000 (1962 dollars) in the year 2000, but it will always exist. In short, using a purely relative definition of poverty removes any global or historical perspective from the term poverty (Miller, 1971).

A second, more fundamental problem exists with the purely relative definition as it does to some extent with all poverty lines: how do we determine the X%? Are the poor defined as the bottom 10% of income earners? The bottom 50%? As a matter of fact, one senses that the 20% most writers settle on in defining poverty is validated solely in terms of the income level it captures (the Council of Economic Advisors report in 1964 arrives at the same 20% figure by starting with a market basket approach).

Finally, this definition, despite its "relative" nature, is invariant with respect to changes in the income distribution. Thus, it is incapable of distinguishing among absolute levels of living of the poor, as well as between alternative shapes of the underlying income distribution.

This is not to say that the purely relative definition of poverty is completely irrelevant/useless. Indeed, it is best suited for precisely that purpose for which it has been most used: studies of the relative effect of government programs on different income groups (incidence). Thus, studies which examine the allocation of expenditures on education consider the amount of benefits received by the top versus bottom 20% of the income distribution. Since only relative effects are being considered, the use of a purely relative definition of economic status is appropriate.

Sensitivity to the drawbacks associated with the purely relative definition of poverty coupled with a belief in the philosophical import of infusing administrative definitions of poverty with additional relativity led Fuchs in 1967 to propose a quasi-relative poverty definition (Fuchs, 1967). Any family with an income less than 50% of the median family income was defined as poor. This definition couples the poverty level to overall growth in the standard of living; moreover, it is sensitive to changes in the income distribution, and unlike the pure relative definition, allows for the possibility of zero poverty.

The fraction-of-the-median standard has faced criticisms as well. Once again, this definition while it does permit comparisons over time and across countries does alter the perspective one might give to comparisons. More significantly, the fraction-of-the-median definition leaves the underlying problem of definitions unresolved: one must still select the fraction of the median to be used as a poverty cut-off. Fuchs uses 50%, but the choice is arbitrary and one again suspects that it resulted from an "eye-balling" of income distribution data from the perspective of some more "absolute" notion of poverty.

The alternative quasi-relative definition of poverty used by Kilpatrick is somewhat better in this respect. In particular, Kilpatrick uses survey responses on Gallup poll questions on the minimum income needed to "get along" in the respondent's community as a basis for devising a poverty line (Kilpatrick, 1973). This explicitly uses social preferences as a basis for calculating poverty.

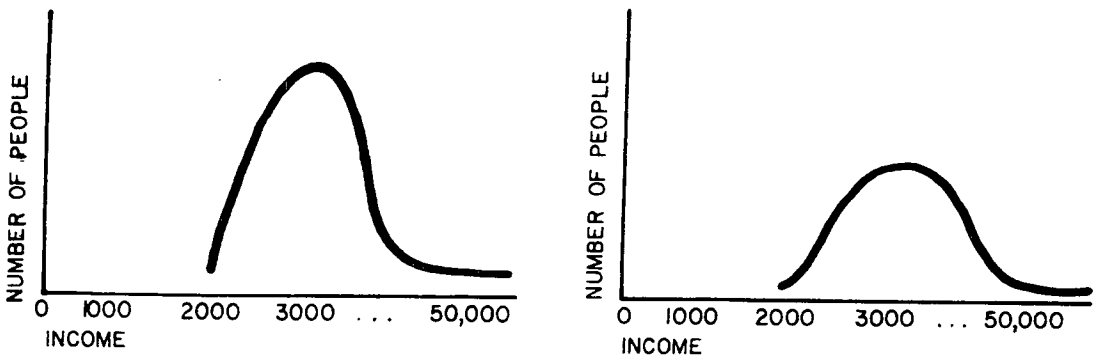
Underlying all of the poverty definitions thus described is some notion of the ideal (or at least the acceptable) shape of the income distribution. Literature directly pertinent to this issue is reviewed below.

The Optimal Level of Inequality

Perhaps the first formal expression of the optimal level of inequality came from Plato who suggested that in an ideal society no man should be more than four times richer than any other (The Laws). More recently, the literature has focused on trying to identify some formal criteria for judging the appropriateness of particular configurations of income. Two such criteria have been identified: society's normative ethical preferences and efficiency. As it turns out, these two criteria are often conflicting.

In order to determine society's preferences concerning equality and inequality, a survey can be used. In Gallup polls, for example, a sample of people are asked to given an appraisal of the minimum amount of money needed by a family in their community. Gans (1974) used these responses to derive at least a partial picture of society's optimal income distribution, a significant feature of which is that no person should have less than 60-70% of society's median income. Kilpatrick (1973) used similar data to trace changes in the society's views over time. It should be noted that in these studies, the full optimal income distribution is not derived. Questions instead concentrate on picking a cut-off point which can be applied to the lower tail. Thus, Gallup poll responses cannot be used to choose between the two distributions sketched in Exhibit I.

Exhibit 1



Rawls (1971) advocates a similar, albeit more hypothetical, technique for determining the optimal income distribution. In his view, justice would be served by an income distribution chosen by the population if they were unaware of the position in that distribution that they were to occupy.

Typically when people respond to survey questions on the appropriate level of inequality, they consider primarily ethical considerations. Redistribution, however, may have effects on efficiency as well as on equity. Arthur Okun posed the trade-off between these two goals in an interesting question several years ago. Suppose you wanted to redistribute money from the richest to the poorest classes in the population. Suppose further that you were to carry the money between the groups in a leaky bucket. How much of a leak (if any) would you agree to before redistribution became undesirable? The leak in the bucket is a metaphor for the efficiency losses from redistribution. These losses include administrative costs, as well as any losses incurred as the result of changing people's work incentives by providing income guarantees.

Some attempt has been made by economists in particular to formalize this trade-off. A "Social Welfare Function" is first constructed, which is intended to embody society's ethical preferences about equality. As it is usually constructed, this Social Welfare Function depends on the "utilities" or happiness of members of society. In a perfectly egalitarian society, everyone's happiness might count equally. In a dictatorship, only the happiness of the ruler might enter the Social Welfare Function. Happiness or utility is, in turn, assumed to depend on income (Aigner & Heins, 1967; Baker, 1974; Hochman & Rodgers, 1969). In some versions, everyone derives equal happiness from a given income (Fair, 1971; Cooter & Helpman, 1974); in others, the possibility that people differ in tastes or temperament and thus derive different levels of enjoyment from a given income is allowed (Samuelson, 1947).

In order to formalize the leaky bucket metaphor, several additional equations are usually introduced. Generally some equation is provided which relates the income of an individual to ability and to work effort. Ability is assumed to be normally distributed, while work effort depends on wages, income guarantees and so on (Fair, 1971; Cooter & Helpman, 1974; Olsen, 1969). Using the set of equations in conjunction with some other assumptions allows us to determine the optimal redistribution.

The approach sketched above, while the most popular in welfare economics, has received some criticism. Thurow (1973) in particular argues that in a world without innate preferences and without the possibility of interpersonal comparisons, the utility function approach is misconceived. He prefers instead that an explicit "act of social judgement" be made in specifying the trade-off between equity and efficiency. Thurow suggests, for example, that the present distribution of earned income among adult white males might give a first approximation to a fair, overall distribution. Replicating this distribution to the total income distribution, it should be noted, would reduce inequality by 40% (Thurow, 1973).

In determining the optimal shape of the income distribution, then, a trade-off is typically made between equity and efficiency. The efficiency argument requires some elaboration.

The most frequently cited function of inequality is to provide incentives for both workers and employers as well as to encourage effective sorting of individuals among jobs. Sociologists such as Parsons have termed this the "functional theory of stratification" (Parsons, 1970); economists instead speak of efficiency and incentives.

Traditionally, in debating redistribution, economists and policy makers have expressed concern over the possible efficiency losses from such redistribution. In simple terms, it is argued that taking money from the rich and giving it to the poor discourages the work effort of both. The rich, insofar as taxes are geared to income, have a smaller incentive to work. The poor, inasmuch as a subsistence income is provided without work, also have a lesser incentive to work.* Thus, in rearranging the slices of the pie, it is feared that the pie itself will shrink. The general literature on this problem is quite extensive, and in this paper we will focus on only one side of the issue: the effect of income guarantees on work effort of the poor.

---

*This argument focusses solely on what is known as the "price effect" of taxation. There is, in the case of both the rich and the poor, an offsetting "income effect" - in particular, as the rich are taxed more heavily they are forced to work more to maintain living standards.

The possibility that income guarantees of one sort or another might affect the work effort of recipients has been recognized for several hundred years. Recently, the emphasis has shifted to trying to quantify these effects, in short, to estimate the size of one of the holes in the metaphorical Okun bucket.

Rea (1974), using data from the 1967 Current Population Survey, simulated the effect of a negative income tax on work effort. He estimated that an income guarantee of $2400 decreased work hours by 12%, a relatively large effect.

Quite recently, Peckman and Timpane (1975) published a collection of papers on the negative income tax experiment which are quite relevant to this issue. In this experiment, 1300 families in New Jersey were subjected to a negative income tax. The program combined income guarantees of 50-125% of the poverty level income with tax rates of 30-70% of family income. Eight combinations of guarantees and tax rates were used to determine the sensitivity of work efforts to modest program changes. Preliminary results showed a small (5-6%) decrease in average hours worked for white men; for black men, the results were somewhat anomolous - income guarantees increased work effort (Rees and Watts, 1975).

A number of criticisms have been made of these results. Aaron (1975) suggested that concurrent changes in the New Jersey welfare system may have distorted the results. Others have expressed concern that the time period of the experiment, as well as the necessarily experimental nature of the program, biased results. Hall (1975), however, in reviewing these criticisms, found them unconvincing.

The relatively small effect which income guarantees seem to have on work effort is buttressed, at least indirectly, by the work of Morgan et al. In a study of five thousand families, Morgan found that the work hours flexibility assumed by the usual model of work choice was largely inappropriate. In particular, less than 13% of all employed men in the Morgan survey had any power to vary number of hours worked (except, of course, to quit). The work-leisure choice, then, becomes not a continuum on which one trades one hour of work for one hour of leisure, but an all-or-nothing decision. In this context, income guarantees would be expected to have less influence on altering work hours.

Finally, Conlisk (1968) has argued that prior models of income guarantees and work effort, by ignoring the dynamics of the work choice process, have overstated the disincentive effects of income guarantees. Conlisk first specifies a relatively standard work supply equation in which hours worked depend on income guarantees (a negative effect), motivation (positive), and wages (indeterminate). Motivation is in turn related (positively) to past income. Conlisk argues here that high past incomes accustom people to affluence and thus motivate them to work harder in the future. Now, since increases in income guarantees

increase overall income, they also increase motivation. Depending on the specification of the model, an increase in income guarantees may increase motivation sufficiently to swamp the negative work effort as a result of income guarantee increases.

Conlisk's results, it should be noted, are very sensitive to the model specification. Fishelson (1971), for example, respecified the motivation equation to depend on future expected income, rather than past income. With this specification, the more conventional results emerged: income guarantees for all except perhaps the very young reduced work effort.

The policy implications of these results are unclear. The 5% decrease in work effort found in the New Jersey experiment might be considered too large by some; for others, Rea's 12% effects might be comfortingly small. An act of social judgement is clearly required to define acceptable limits for work effort effect.*

It should be noted that not all economists/sociologists would defend the functional theory of inequality. Recently, sociologists in particular, have suggested that inequality might be replaced by a "transformation" of consciousness to motivate workers; and that wage differentials could be replaced by planning to sort workers (Schwartz, 1955). Somewhat earlier, Marx, too, took issue with the conventional argument that labor and capital each received its just due:"They (the economists) point out that, contrary to the capitalist, the worker benefits from a certain stability of income, which is more or less independent of the great adventures of capital. In just the same way, Don Quixote consoled Sancho Panza: certainly he had to take all the blows, but he had no need to be courageous." (Marx, The Grundrisse). Marx certainly does not see inequality as a consequence of efficiency; rather, he maintains that "with the division of labor in which all these contradictions are implicit... is given simultaneously the distribution, and indeed the unequal distribution (both quantitative and qualitative) of labors and its product, hence property." (Engels and Marx, German Ideology).

It should be noted that the functional argument cuts both ways. Severe inequality associated with a rigid class structure impedes society's ability to effectively use all of its resources. Bellers, writing in the 17th century, makes the point eloquently: "the poor without Employment are like rough diamonds, their worth is unknown."

---

*John Stuart Mill, in a discussion of poverty programs of his time, argued,

> "Since no one is responsible for having been born, no pecuniary sacrifice is too great to be made by those who have more than enough, for the purpose of securing enough to all persons already in existence."
> (Principles of Political Economy, Vol. 1, Book 2, Ch. 12)

(Bellers, Proposal for Raising a College of Industry, 1665).*

In any case, no consensus has been reached at this point on the optimal shape of the income distribution - or even the appropriate criteria on which to judge optimality. This, of course, makes defining poverty more difficult.

II.2 SOCIO-CULTURAL DEFINITIONS OF POVERTY

In an oft-quoted exchange, F. Scott Fitzgerald is reported to have said, "the rich are somehow different." To which, Hemingway replied, "Yes, they have more money." The exchange serves as a metaphor for the argument between sociologists and economists, with Hemingway cast in the unlikely role of an economist. Economists, on the one hand, argue that income (or wealth, or consumption) is a reasonable proxy for poverty. Culture-of-poverty theorists, on the other hand, maintain that economic attributes do not always correlate well with socio-cultural poverty traits, and, moreover, that complete reliance on economic measures biases choice of government programs designed to reduce poverty (Caudill, 1963; Haagstrom, 1964; Marmor, 1972; Miller, 1965). Harrington, for example, argues that:

> Poverty should be defined in terms of those who are denied the minimal levels of health, housing, food, and education that our present stage of scientific knowledge specifies as necessary for life as it is now lived in the United States... Poverty should be defined psychologically in terms of those whose place in the society is such that they are internal exiles who, almost inevitably, develop attitudes of defeat and pessimism and who are therefore excluded from taking advantage of new opportunities.
>
> (Harrington, The Other America, 1962)

*A different view is offerred by Mandeville in his oft-criticized Fable of the Bees: "The Welfare and Felicity...therefore required that the knowledge of the Working Poor should be confined within the Verge of their occupations...every hour poor people spend at their Book is so much time lost to the Society... Men who are to remain and end their Days in a Laborious, Tiresome and Painful Station of Life, the sooner they are put upon it at first, the more patiently they'll submit to it for ever after." (Mandeville, 1705)

This broad approach to the problem of defining poverty has been termed, by some sociologists, "stratificational analysis." Opportunities for social mobility, self-respect, and access to political power are merged with the more conventional economic attributes to form a poverty definition (Miller and Roby, 1970; Elesh, 1973; Miller, 1965; Miller and Bloomberg, 1968). The underlying element here is that the rich are different socially and psychologically from the poor in some systematic fashion, and moreover that these differences are at least to some extent independent of income differences. (Blum and Rossi, 1968; Coser, 1965; Herzog, 1967; Miller and Roby, 1970). This position is, in turn, justified by reference to the "culture of poverty."

Oscar Lewis is the first and certainly most well known of the "culture of poverty" theorists. Lewis argued that poverty was in fact a culture--a way of life which gives social and psychological support to the individual, while at the same time perpetuating itself by reinforcing the poor in their poverty. Moreover, these cultural traits, while they may have been initially produced by economic deprivation, acquire a life of their own, are "stable and persistent, passed along from generation to generation along family lines." (Lewis, 1961). Thus, poverty is no longer definable strictly in terms of economic attributes any more than it is remediable strictly in those terms.

What are these socio-cultural traits? Lewis emphasized family-life characteristics: common-law marriages, authoritarianism, matrifocality. At the present time, the emphasis has shifted somewhat from family life to role in society. Lack of opportunities for social mobility, inadequate political access and low self-respect are the major poverty attributes offered as supplements to a definition of poverty (Miller and Riessman, 1968; Miller and Roby, 1970; Haagstrom, 1964).

The culture of poverty thesis assumes at least some homogeneity in socio-psychological attributes across ethnic groups; in particular that poverty transcends ethnicity in determining certain configurations of attitudes and life-styles (Gans, 1968). Indeed, if this assumption does not hold, then the use of these traits to define poverty is inappropriate. Empirical tests on this issue are conflicting. Ireland, Moles, and O'Shea (1969), in a study of California welfare recipients, found significant variation across ethnic groups in 8 attitudinal areas normally associated with the culture-of-poverty. Unfortunately they did not test the critical question posed by the culture of poverty literature - that is, the differences within ethnic groups between poor and rich. Similar lack of support for the homogeneity assumption was found by Straus (1962). Rainwater (1968) on the other hand finds some support for this assumption.

Techniques which might be used to incorporate socio-psychological attributes into an administratively viable poverty definition have not been suggested in the literature. Indeed, for the most part, culture-of-poverty theorists acknowledge the impossibility of

using these characteristics to identify the poor for the purposes of administering relief. Poverty definitions, however, serve a second role--helping policy makers design and evaluate programs to help the poor. For this function, at least, poverty definitions which include socio-psychological traits may well be useful. For example, in the 1960's, culture-of-poverty theorists suggested that powerlessness in politics was an important feature of poverty. At least to some extent this extension of the definition of poverty led to an extension in the War on Poverty program: "community action agencies." Thus poverty definitions in clarifying the poverty problem help to condition public response.

Thus, definitions of poverty have changed significantly over time both in the elements which have been incorporated in those definitions and the liberality with which those elements have been interpreted. Despite advances, however, significant problems exist in designing an optimal poverty definition. In the remaining chapters of this paper specific problems in applying economic and socio-cultural definitions of poverty as well as currently used administrative definitions are reviewed.

III. Index Numbers*

"The theory of consumer behavior...is a thing of great aesthetic beauty, a jewel set in a glass case."**

Price differences across both time and space clearly affect the monetary value of needs. This difficulty has been recognized for some time, and index numbers are widely used to adjust for the effects of price differences. In particular, index numbers are used in the measurement of poverty, and form the basis of numerous anti-poverty programs. The first part of this chapter will describe the construction and use of price indices. The second part will present some empirical evidence on the effect of price changes on the distribution of income. In the last section, some of the limitations of the index number approach will be discussed.

Price Indices

The basic postulate of consumer or welfare economics is that individuals purchase goods in order to maximize their utilities (satisfaction) subject to the constraints imposed by their incomes and the existing price levels. Price increases typically reduce an individual's welfare (or satisfaction) inasmuch as such increases reduce the range and quantity of goods available at a given income level.

The extent to which any given price change will affect an individual's welfare depends on his tastes, or more formally, on his utility function. Suppose, for example, that you liked apples and pears equally well. Suppose further that in 1967 apples were cheaper than pears. In all likelihood then, you would have purchased apples and not pears. In 1975, the price of pears falls and apple prices rise. Given your indifference between apples and pears it is unlikely that you will suffer significantly from the price rise in apples--you will simply consume fewer apples and more pears. If, on the other hand, you were a devoted apple-eater and disliked pears your welfare might be quite reduced as a result of the price change. Thus, the welfare effects of price changes depend both on the size of the price change and on consumers' preferences.

Unfortunately, the relevant preferences cannot be easily discovered. Instead, we typically make some assumption about these preferences. Since the assumptions made are necessarily tenuous, the index numbers which result are also limited.

---

*A more mathematical treatment of index numbers can be found in Appendix C of this report.

**Kevin J. Lancaster, "A New Approach to Consumer Theory." Journal of Political Economy 74 (April 1966).

The most widely used index number is the "fixed-weight" index used by the Department of Labor. This index (the Consumer Price Index) which is used to measure changes in the prices of goods and services, "...is a yardstick for revising wages, salaries and other income payments to keep in step with rising prices; and it is an indicator of the rate of inflation in the economy" (Shiskin, 1974).

The Consumer Price Index (CPI) is based upon the assumption that people will consume the same goods in the current year that the consumed in the base year; hence the name "fixed-weights" index. As demonstrated in the apple/pear example above, this assumption is not necessarily correct. It does, however, have the advantage of operational simplicity. The index then represents a measure of the additional money needed today, in order to purchase the earlier period's market basket. Formally, the index is computed by mechanically transforming the average 1961 market basket into a 1967 basket, then dividing the current price of this basket by the earlier price and multiplying times 100.

In order to construct its index, the Bureau of Labor Statistics conducts periodic surveys to determine the consumer expenditure behavior of the population. These surveys are conducted at approximately ten year intervals. The composition and pricing of the market basket is done by using samples representative of urban wage earners and clerical workers. The primary purpose of the surveys is to revise the "market basket" and the expenditure weights used to determine the Consumer Price Index. In general, the market basket weights of commodities are not revised between surveys.

In practice, the CPI affects the economic welfare of a sizeable proportion of the U.S. population. According to Shiskin (1974) the incomes of nearly one half of the population are or soon will be pegged to the CPI. In addition, the school lunch program, the poverty threshold , criteria for the distribution of manpower revenue-sharing funds, and many rental, royalty and child support agreements are now linked to the CPI. Shiskin estimates that a 1% rise in the index would cause at least a $1 billion increase in incomes under automatic escalators.

Indexing--the linking of returns (wages, pensions, etc.) to an index such as the CPI--has recently received an increasing amount of attention, due to the accelerating inflation of the early seventies. Fane (1974), arguing that inflation affects both the total product of an economy and the distribution of income, favors indexing as a means of reducing risk, and attendant costs. Whitley (1974) advocates linking for mortgages, in order to eliminate the distortions caused by price changes in the mortgage market. Nesbitt (1975) points out that indexing will increase the power of large corporations and conglomerations, whose pricing power will be reinforced through linking. He also notes that in some cases--such as Brazil during the last decade--linking has weakened the relative position of labor. Sage and Trollope (1974) examined index linking in 21 counties. They also concluded that indexing improved the return to capital relative to the return to labor. The distributive impacts of indexing depend on the extent of indexing as well as on its form. Extensive index linking increases the impor-

tance of the base index--such as the CPI. In short, index numbers, despite their problems, are an important policy tool in the U.S. and are likely to become even more important in the future.

Some Empirical Evidence on the Distribution Impacts of Price Changes

Typically, price changes affect different income groups differently. An increase in the price of food, for example, is felt strongly by the poor, while a price increase in 20-year old wine affects primarily upper income groups. The index numbers described above abstract from this distributional problem by concentrating on price changes in some average consumer's market basket. Yet from the perspective of this study, distributional effects are critical.

As observed price changes have been mostly price increases, much of the relevant literature describes the distributive impact of inflation. Hollister and Palmer (1967) examined the distributive impacts of inflation in the United States. They discussed these impacts in three categories: (i) the expenditure effect based upon the differing expenditure patterns of income groups, (ii) the income effect, based on the different source structure of income of particular groups, and (iii) wealth effects, based on the amounts of wealth and assets held by particular income groups. The total effect of inflation is the sum of these three effects. Considering the time period between 1947 and 1967, they found that the expenditure effect was lower for the poor than for the wealthy: the most substantial price increases during the period occurred in goods consumed primarily by upper income groups. The negative wealth effects were negligible for the poor. Finally, since inflation is usually accompanied by tight labor markets (appropriate for the period considered, but not the present), they found that the poor benefited from increased wages and salaries. Thus, on balance, Hollister and Palmer found inflation to be beneficial for the poor.

Conflicting results were found at least for the expenditure effect by several British economists. Tipping (1970) examined British data for the decade between 1956 and 1966. He found that the poor lost more purchasing power through inflation than the rich because of their differing expenditure patterns. Muellbauer (1974) also concluded (on the basis of British data for the preceeding twenty years) that inflation had an inequalitarian bias. Again, differences in consumption patterns were blamed.

The British conclusion that inflation differentially hurts the poor was also confirmed by a recent study on the U.S. by Palmer, Barth, et al. (1974). Expenditure effects were substantial: the price increases faced by the poor were estimated at 20% higher than those of the middle income groups. The wealth and income effects were estimated to be less important for the poor, because the poor hold few assets, and because transfer incomes kept pace with the rate of inflation--at least for the time period considered (1967-1973).

Budd and Seiders modeled the distributive impacts of rising prices--abstracting from employment changes. They have estimated the pure price, or expenditure effects of inflation to be detrimental to the poor and the rich, and favorable for the middle income groups. The overall magnitude of the distributive impact was estimated to be rather limited, however, only low--creeping--inflation rates were considered.

In another study, Salem and Mount (1974) also found that inflation increased the inequality in the distribution of income.

The conclusion drawn from all of these studies appears to be that, at least in terms of the recent inflation, the poor are differentially impacted by price increases. The loss which the poor suffer in inflationary periods, therefore, will in general be understated by the C.P.I.

Some Shortcomings of the Index Number Approach

Index numbers suffer from a number of serious limitations, some of which have already been alluded to. A brief discussion of these limitations is useful.

Possibly the most important limitation of the index number approach comes from what is termed the "aggregation problem." Index numbers begin by observing goods consumed by different individuals, and use this to construct a "typical" consumer, or a "typical" market basket. Differences across individuals, to the extent that they are significant, reduce the viability of aggregate indices. Along these lines, Orshansky (1952) argues, for example, that farm and city families use different kinds of goods and services, and "...that a comparison can best be made in terms of two sets of items or budgets which, though different in content, are equivalent in satisfaction." This suggests one might use several price indices, appropriate for particular subgroups of society.

A related aggregation problem arises from discriminatory price differentials faced by the poor. Caplovitz (1967) found evidence of such discrimination in the credit transactions of the poor in New York City. Sturdivant and Cocanougher (1974) also found evidence that the urban poor in ghetto areas frequently pay prices well above the market rate. Thus, both the market baskets and the relevant prices may vary across individuals.

At the present time, there is some attempt to account for these differences across consumers. Rather than one "typical" market basket, a series of hypothetical baskets have been constructed corresponding to different administratively-defined levels of living. In addition, beginning in 1977, the BLS will publish two CPI's: "an updated version of the current Consumer Price Index for Urban Wage Earners and Clerical Workers, and a broader Consumer Price Index for All Urban Households." (Shiskin, 1974). Thus, at least some headway has been made in overcoming this deficiency of indices.

In addition to assuming constant tastes across individuals, index number construction also usually assumes that tastes are constant over time and unresponsive to price changes--the same market basket is consumed in the two periods. Clearly this assumption is not true, particularly for the long time periods (ten or more years) used in the C.P.I. Although Fisher and Shell (1971) have recently demonstrated that changes in tastes can be included in a rigorous reformulation of cost-of-living indices, this is quite difficult and not yet current practice.

A further problem in the use of index numbers stems from the restriction of the market basket to private goods and services. Although welfare is certainly affected by the goods and services that may be purchased by consumers, public sector goods and services also affect their welfare. These goods are excluded, typically because they do not have market prices (Hicks, 1940). According to Kuznets (1948), however, they could be valued at cost to the government. Indeed, the valuation of public goods at cost to the government is a standard public finance technique. Thus, two indices might be used for measuring welfare changes: one measuring private consumption and savings, using a market price index as a deflator, and second comprising public goods, using an index of costs as a deflator.

There are further problems with limiting price indices to consumption goods and services: other components of the real income or welfare stream are left out. Index numbers do not measure the contribution of leisure and certainty to welfare. The exclusion of non-cash receipts represents a similar limitation.

A related problem is created by changes in the quality of goods over time. Is a 1975 automobile equivalent to a 1960 automobile? Price indices, as commonly used, do not take quality changes into account: the two automobiles are considered equivalent goods. To overcome this limitation, hedonic price indices were developed first by Lancaster (1966) with subsequent contributions from Griliches (1971), Triplett (1971), Cagan (1971), Sherwin & Rosen (1974); and Muellbauer (1974). In the formulation of the hedonic price indices, goods are considered as composite bundles of qualities, with the qualities being measured along vectors. Thus, an automobile is not just an automobile but horsepower number, a size, and so on. The implicit price of each quality (vector) is then estimated through regression techniques. This technique has been widely applied to housing quality--and the measurement of substandard housing, a topic particularly relevant for poverty (Straszheim, 1974; Kain and Quigley, 1972). The housing quality vectors are normally divided into internal and external characteristics, with the former describing variables such as house and room space, number of bathrooms, and so on and the external variables including neighborhood characteristics, police and fire protection, and so on. Triplett (1971) criticizes the BLS price indices for inaccurate quality adjustments, and concludes that as a result, the BLS, CPI index sometimes understates and sometimes overstates inflation. To remedy this, he advocates the use of the hedonic price index approach.

The CPI, as calculated by the BLS, shares many of the general index number problems discussed above. The index does not allow for shifting budgets, keeping expenditure weights constant despite changes in prices. Quantity weights are revised infrequently, with the last revision being over 10 years old. Thus, the weights used are obsolete. Finally, the expenditure patterns of wage earners and clerical workers of selected urban centers represent the basis for calculating the CPI. Inasmuch as this group is not representative of the poor, it could be argued that the CPI is not a relevant measure of change in the price levels for the poor.

In sum, the use of index numbers to adjust poverty thresholds in response to price changes is of limited legitimacy.

IV. Adjustments for Family Size and Composition

"with every pair of hands, God provided
a mouth"

(Franklin, 1969)

The needs of individuals and/or families clearly depend upon their circumstances, as well as on the ethical or normative principles of the society in general. In this section, one aspect of the circumstances of an individual likely to impinge on his needs is summarized: the size and structure of his family unit. In particular, this paper is organized around three issues: To what extent should the state adjust either its poverty or tax codes to accomodate need differences generated by differences in family structures? To the extent that such adjustment is judged appropriate, how does one go about quantifying differences in needs across families? Finally, what difference does adjusting for family size and composition make in our estimates of the count or composition of the poor?

The Normative Issues

Recently, there has been some question of whether it is appropriate for the state to design tax and poverty programs which accommodate the need differences of particular family groups. The argument against such adjustments has taken two forms. First, there has been increasing concern that coupling poverty payments and/or tax deductions to family size biases family incentives , in particular that it encourages the creation of larger families. Empirical evidence on this issue has been mixed (Honig, 1974; Winegarden, 1973; Baumol, 1974; Chilman 1966), and no definitive resolution is possible at present.

The second argument against making such adjustments is somewhat more subtle and derives from some comparatively new work going on in economics, particularly at the University of Chicago, in the area of "human capital". In particular, it is argued that, to a large extent, family configurations can be viewed as the result of a rational, deliberate choice process, a choice process in which the costs and benefits of family membership are weighed, and optimal familial relations decided. Although this faith in the rationality of choice in the area of interpersonal relationships has not been applied across the board (in particular, it has never been argued that children "decide" to be born on the basis of any calculus of choice process), the literature argues that decisions to form marriages, as well as the decision to have children result to a significant degree from the utility maximizing process conventionally used to explain a consumer's choice between apples and oranges (Becker, 1974; Michael and Lazear, 1971).

The relationship between this model of household behavior and the appropriateness of adjusting poverty budgets for family size and composition is important. To the extent that one believes that the decision to marry or to have children is the result of deliberate choice, the argument that the government should compensate for additional expenditures associated with this choice is somewhat attenuated. An analogy with the more usual consumer choice process may be useful: If we have two individuals with equal incomes, and one decides to spend his or her income on a television set, and the other decides to use his or her income for food, the government by and large feels itself under no constraint to provide additional funds to the former individual to compensate for deficiencies in his or her food budget. The government feels no such obligation because it views the television set purchase as a choice of the individual. In a similar way, one might argue that the government is not responsible for compensating a poor couple who decide to have children rather than to eat (Becker, 1960).* In short, adjustments in poverty allowances or tax bills for family size and composition are considered inappropriate; the extension is a plausible, though as we will see, not a necessary corollary to the household choice model.

The somewhat "hard-line" position summarized above has been attacked on two basic grounds. First, the strong assumption of rationality in decisions of marriage and children has been challenged. This opposition has appeared for the most part in the form of parody (Blinder, 1974); but there have been some substantive pieces as well, particularly challenges to the view that procreation results from rational choice (Chilman, 1966; Campbell, 1968). Ethical, or humanistic, objections to extensions of the rational choice model have also appeared. To some extent at least, poverty budgets which ignore family size on the basis of a rational choice model sanction a visit of the sins on the father of the child;** the consequences of bad decisions made by parents are experienced by the children, who, after all, were not party to any rational deliberation which might

---

*There are some economists who would argue that the government should make some accomodation for the differences in individual tastes caricatured by the children versus food example given above. Samuelson, for example, in a discussion of optimal redistribution, argues that "equality of money income where there is diversity of tastes involves the equality of nothing important." (Samuelson, Foundations). This issue is discussed further under Chapter II.

**The persuasiveness of this argument depends, at least to some extent, on the degree to which poverty aid actually benefits children.

have originally occurred (Burns, 1968; Moynihan testimony ("Case for a Family Allowance"), 1967; Tobin, 1967; Bressler, 1974). This latter, ethical position dominates the poverty literature at the present time; although for pragmatic reasons administrative poverty definitions have not always made family size or type adjustments (Council of Economic Advisors, 1964).

Determining Appropriate Adjustments

The consensus view is, therefore, that poverty budgets should be keyed, at least to some extent, to family size and composition. Determining the nature and size of needed adjustments, however, is no easy matter. First, the particular attributes of family structure which create need differences must be identified. Family size is the first and most obvious candidate attribute: everyone would agree that needs increase with family size. Indeed, all of the state welfare departments, as well as the federal income tax system, allow adjustments for family size. Age, both of children and of the head of the household, also appears to be an important determinant of need, although this distinction is recognized only within very broad terms by both the federal tax system and state welfare agencies. Other family characteristics which emerge as potential candidates for tax or poverty line adjustors include employment status of the head of household, mother's employment status (child care needed), residence, and so on (David, 1959; Morgan and Smith, 1970; Jerome, 1964).

Once the relevant attributes have been identified, it remains to determine the size of the adjustment which should be made for particular attributes. The basic problem here, and one that has occupied economists and policy-makers since Engel's seminal work in the nineteenth century, is to quantify equivalent living scales for families of different types.

The simplest technique available to adjust budget requirements for differences in family sizes is simple linear expansion: each individual is assumed to have equal "needs" -- needs which are independent of either his own characteristics or the characteristics of the family unit to which he belongs. Thus, a four-person family is assumed to "need" twice the income of a two-person family. Standard deductions per dependent used in the federal income tax schedules are an application of this linear expansion technique. Similarly, children's allowances used in many non-U.S. industrialized nations provide fixed-sum payments per child--regardless of age, size, or prior family composition* (Burns, 1968; Madison, 1964; Vadakin, 1968).

*In Canada, allowances are payable for every child under the age of 16 who is a resident of Canada, registers for payments, and is a dependent. Virtually all children are covered (Madison, 1968).

The linear expansion technique, as embodied in the tax code and most children's allowance programs, assumes that needs are constant across individuals; only the number of people and not the type of people is relevant to budget requirements. Empirically, however, it has been determined that needs do vary with individual characteristics, particularly with age and sex (U.S.D.A., 1955; Stotz, 1960; Murray, 1960). For example, Prais and Houthakker estimated that, if one assumes an adult male requires an expenditure of one unit on meat, then an adult female incurs an expenditure of .7 units, a teenage male .55 units, and a child (age 5-9 years) .35 units (Prais and Houthakker, 1971). Older people, and particularly retired workers, appear to have smaller needs than the middle aged.

Prais, in the early 1950's, proposed a scaling technique which would account for both the variability of needs by person-type, and the variability of consumption patterns across income groups. Separate consumption functions* were estimated for eight age-sex individual types and seven categories of foodstuffs, using data from a 1937-38 British working-class survey. Thus, scaling factors were produced for different individual types, and could be used to calculate the effect of adding an additional person with given characteristics to a household (Prais, 1953). A similar technique was used by Prais and Houthakker in 1971. Prais' results, it should be noted, are similar to the calorie requirements developed by the National Research Council (Morgan and Smith, 1970).

Two criticisms can be made of the Prais technique: first, since it is based entirely on actual expenditure date, it is not clear that the consumption figures generated reflect need (Rein, 1965). Moreover the Prais technique may not adequately take account of economies to scale;** and, while the old adage that "two can live cheaper than one" is no doubt an expression of romantic optimism, the empirical evidence does indicate real savings from shared expenses. In short, some economies of scale do seem to exist in consumption.

The Orshansky formula,*** currently used by the federal government, attempts to deal with both of these factors. Food needs used to determine poverty thresholds were derived by "costing-out" nutritional requirements suggested by the National Research Council: differences in needs by age and sex, therefore, reflected at least to some extent real differences in needs. The economies to scale issue were also addressed, albeit more indirectly. Three times the food

---

*A consumption function is simply an equation which relates dollars spent on consumption to income (other variables such as wealth are also included at times).

**By economies of scale is meant the decrease in average expenditures necessary to maintain a given standard of living as family size increases. Typically, we expect such economies since some consumption goods are shared without additional costs across family members (i.e., television sets, automobiles).

***Discussed at more length in Chapter II.

requirement was used as a total needs estimate, except in the case of families with one or two persons; here a larger multiple was used. The implicit assumption in this formula is that economies to scale disappear with the addition of a fourth family member. Exhibit 2 presents the low income criteria for families of different sizes and types used by the federal government. These income standards were derived on the bases of the equivalency matrix in Exhibit 3 in which a non-farm family of four is treated as the base or "typical case."

There have been a number of papers, particularly in the last twenty years, which advocate a somewhat more systematic, rigorous treatment of the "economies to scale" problem. Perhaps the most significant paper written on this issue was that of Friedman (1952). A "standard" family was first identified, and the relationship between consumption and income for this particular family type was estimated. Data on the consumption and income of families with different attributes were then compared to the standard family; equivalency values were determined by allowing the consumption-income ratio found in the standard family to prevail in the alternate family types.

Family adjustment techniques currently used by the Bureau of Labor Statistics, as well as the Iso-Prop Index proposed by Watts (1967), are similar to the Friedman method. A brief discussion of the mechanics of the procedure used by Bureau of Labor Statistics may help to clarify at least the broad outlines of this approach.

Exhibit 2

Weighted average of poverty and low-income criteria[1] for families of different composition by household size, sex of head, and farm or nonfarm residence, March 1967

Number of family members	Weighted average if incomes at poverty level						Weighted average of incomes at low-income level					
	Nonfarm			Farm			Nonfarm			Farm		
	Total	Male head	Female head	Total	Male head	Female head	Total	Male head	Female head	Total	Male head	
...mber	$1,635	$1,710	$1,595	$1,145	$1,180	$1,110	$1,985	$2,080	$1,930	$1,390	$1,440	$1,340
...ead under age 65	1,685	1,760	1,625	1,195	1,230	1,140	2,045	2,140	1,975	1,450	1,495	1,380
...ead aged 65 or over .	1,565	1,580	1,560	1,095	1,105	1,090	1,890	1,925	1,880	1,330	1,350	1,315
...bers	2,115	2,130	2,055	1,475	1,480	1,400	2,855	2,875	2,735	1,990	2,000	1,870
...ead under age 65	2,185	2,200	2,105	1,535	1,540	1,465	2,945	2,970	2,790	2,075	2,080	1,945
...ead aged 65 or over .	1,970	1,975	1,955	1,380	1,380	1,370	2,665	2,675	2,615	1,870	1,875	1,835
...bers	2,600	2,610	2,515	1,815	1,820	1,725	3,425	3,440	3,330	2,400	2,400	2,325
...bers	3,335	3,335	3,320	2,345	2,345	2,320	4,345	4,355	4,255	3,060	3,060	3,000
...bers	3,930	3,930	3,895	2,755	2,755	2,775	5,080	5,085	4,970	3,565	3,565	3,560
...bers	4,410	4,410	4,395	3,090	3,090	3,075	5,700	5,710	5,600	3,995	4,000	3,920
...r more members	5,430	5,440	5,310	3,790	3,795	3,760	6,945	6,960	6,780	4,850	4,850	4,815

...quired income in 1969 according to Social Security Administration ...verty or low-income index for a family of a given size and composition. ...ily income criteria weighted together in accordance with percentage ...tribution of total units by number of related children and sex of head, ...s of Current Population Survey, March, 1967

For detailed description of the Social Security Administration measures of poverty and low income and their rationale, see the 'Social security Bulletin' for January 1965 (pages 5-11) and July 1965 (pages 3-10).

Exhibit 3

CURRENT POVERTY MEASURE EQUIVALENCY MATRIX

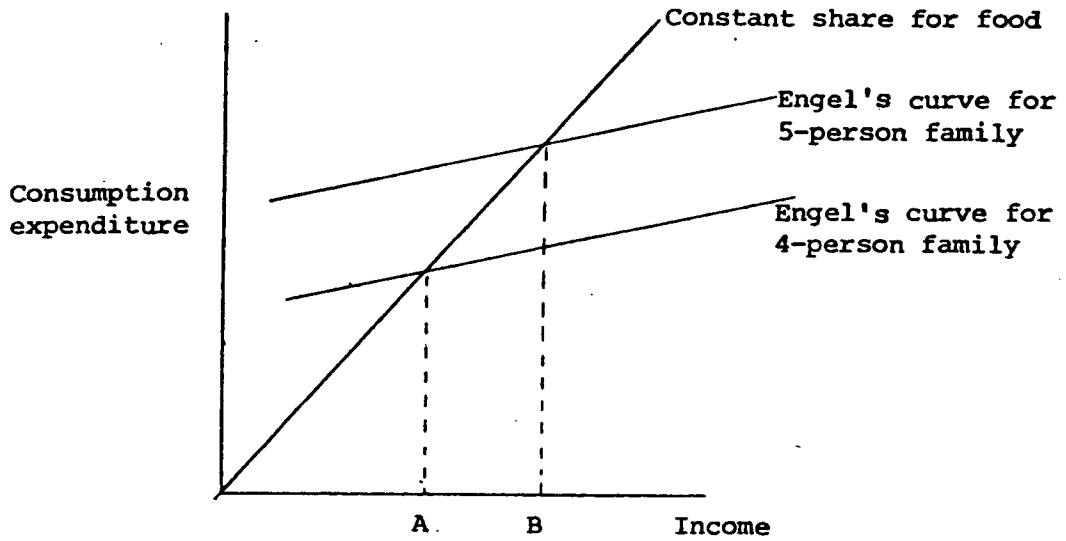
Size of Family Unit	Number of Related Children Under 18 Years Old						
	None	1	2	3	4	5	6 or more
NONFARM							
Male Head							
1 person (unrelated individual):							
Under 65 years	53						
65 years and over	48						
2 persons:							
Head under 65 years	67	74					
Head 65 years and over	60	74					
3 persons	77	80	84				
4 persons	102	104	100	105			
5 persons	123	125	121	118	120		
6 persons	141	142	139	136	132	134	
7 persons or more	178	179	176	173	169	163	161
Female Head							
1 persons (unrelated individual):							
Under 65 years	49						
65 years and over	47						
2 persons:							
Head under 65 years	61	67					
Head 65 years and over	59	67					
3 persons	75	71	79				
4 persons	98	102	101	100			
5 persons	118	121	121	120	116		
6 persons	137	140	139	138	133	129	
7 persons or more	172	175	174	173	168	165	157

CURRENT POVERTY MEASURE EQUIVALENCY MATRIX (CON.)

Size of Family Unit	Number of Related Children Under 18 Years Old						
	None	1	2	3	4	5	6 or more
FARM							
Male Head							
1 person (unrelated individual):							
Under 65 years	45						
65 years and over	41						
2 persons:							
Head under 65 years	57	63					
Head 65 years and over	51	63					
3 persons	66	68	72				
4 persons	87	88	85	89			
5 persons	105	106	103	100	102		
6 persons	120	120	118	115	112	114	
7 persons or more	151	153	150	147	144	138	137
Female Head							
1 person (unrelated individual):							
Under 65 years	42						
65 Years and over	40						
2 persons:							
Head under 65 years	52	57					
Head 65 years and over	50	57					
3 persons	64	61	67				
4 persons	83	86	86	85			
5 persons	100	103	103	102	98		
6 persons	117	119	118	117	113	110	
7 persons or more	147	149	148	147	143	140	133

Early consumption studies à la Engel suggested that the percentage of income a family would spend on a particular group of goods would change as the family's income level changes. For some goods--termed necessities--the percentage declined as income level increased.* In general, then, if we had two equivalent families with different incomes, the percentages which they would spend on given items would differ; for necessities (such as food), the higher income family would, in general, spend a smaller percentage of its budget. The Bureau's "equivalent income" technique assumes that families which spend equal proportions of their income on food have attained equal levels of living. Suppose, for example, that an average family of four with an income of $10,000 spends 25 percent of this income on food. An equivalent level of living for a family of five is determined by identifying that income level at which this family also spends 25 percent of its income on food. In the figure below, Income-Consumption curves ("Engel's-curves") are plotted for the two family types mentioned above. The diagonal line represents a constant income share for food. If point A is identified as the poverty level for a four-person family, then B is the equivalent five-person level. The ratio of B to A is known as the scaling index.

Exhibit 4



*Formally, necessities are defined as goods with income elasticities of less than 1: a 10% increase in income increases quantity demanded of the good by less than 10%.

The Bureau makes two additional assumptions in constructing its equivalency levels. It assumes the income elasticity for food expenditures is constant over family types and equal to .5. Finally, the Bureau assumes a log-linear relationship between average expenditure for food by family type and the product of that family's income and its propensity to consume food. The average propensity to consume food is then calculated for each family class considered. Families are stratified by size, age of family head and age of the oldest child. Average propensities to consume food for families with different aged heads (same family size and type) are plotted and smoothed graphically. Smoothed results are then replotted for different family types within same family size group and again smoothed. Finally, values for seven age groups are smoothed and combined into three age classes. The resulting 1974 B.L.S. equivalency standards by family type are given in Exhibit 5. Although the equivalency standards are relatively easy to use, they suffer from the arbitrariness of the assumptions and the ambiguity of the "smoothing" process.

The Watts Iso-Prop Index is quite similar to the B.L.S. index; here too equivalency in living standards is equated with equivalency in the proportion of income consumed. Watts, however, differentiates his index by geographic region and urban-rural designation, as well as by family type. Moreover, scales are factored into independent components (Watts, 1967).

There are several problems with the B.L.S.-Watts technique. In particular, equal income elasticities for all family types in the set of Engel curves on a given commodity are assumed: this is equivalent to assuming that all families undertake an equal percentage change in food consumption for a given percentage change in income. Other evidence in consumer economics suggests that this is untrue; and indeed Watts, among others, is uneasy with this assumption. Furthermore, the B.L.S.-Watts results are very sensitive to the commodity chosen as an index. Percentage of income spent on food has been used in the past; however, one might argue that proportion of income spent on housing (another necessity) is as good a measure of well-being as percentage spent on food. Unfortunately, the derived scaling index differs depending on whether we use food, housing, or, indeed, some third commodity (Watts, 1967; Morgan and Smith, 1970).

The major empirical work strongly supports the hypothesis that consumption needs increase with family size at a decreasing rate (Friedman, 1952; Bureau of Labor Statistics, 1960 and 1968; USDA, 1955; Watts, 1967), although random articles have appeared which deny this particular family size--consumption relation (Forsyth, 1960). The effect of age on consumption expenditures is less clear: Due found age uncorrelated with consumption (Friedman, 1952); the USDA found age significant (1955); as did Watts (at least for the head of household) and the Bureau of Labor Statistics.

The Effect of Family Size and Composition Adjustments on Measures of Poverty

What effect does correcting for family size and composition differences have on measures of poverty? The question is far from trivial: in particular, unless adjustments alter the estimates of either the

Exhibit 5

Revised Equivalence Scale[1] for Urban Families of Different Size, Age, and Composit

(4-person family—husband, age 35 to 54, wife, 2 children, older 6 to 15 = 100)

Size and Type of Family[2]	Age of Head			
	Under 35	35–54	55–64	65 or over
One person	35	36	32	28
Two persons: average[3]	47	59	59	52
Husband and wife	49	60	59	51
One parent and child	40	57	60	58
Three persons: average[3]	62	81	86	77
Husband, wife, child under 6	62	69	—	—
Husband, wife, child 6–15	62	82	88	81
Husband, wife, child 16–17	—	91[4]	88	—
Husband, wife, child 18 and over	—	82	85	77
One parent, 2 children	67	76	82	75
Four persons: average[3]	74	99	109	91
Husband, wife, 2 children, (older under 6)	72	80	—	—
Husband, wife, 2 children, (older 6–15)	77	100	105	95
Husband, wife, 2 children, (older 16–17)	—	113	125	—
Husband, wife, 2 children, (older 18 or over)	—	96	110	89
One parent, 3 children	88	96	—	—
Five persons: average[3]	94	118	124	—
Husband, wife, 3 children, (oldest under 6)	87	97	-	—
Husband, wife, 3 children, (oldest 6–15)	96	116	120	—
Husband, wife, 3 children, (oldest 16–17)	—	128	138	—
Husband, wife, 3 children, (oldest 18 or over)	—	119	124	—
One parent, 4 children	108	117	—	—
Six persons or more: average[3]	111	138	143	—
Husband, wife, 4 children or more, (oldest under 6)	101	—	—	—
Husband, wife, 4 children or more, (oldest 6–15)	110	132	140	—
Husband, wife, 4 children or more, (oldest 16–17)	—	146	—	—
Husband, wife, 4 children or more, (oldest 18 or over)	—	149	—	—
One parent, 5 children or more	125	137	—	—

1 The scale values shown here are the percentages of the cost of goods and services for family consumption of the base family (4 persons—husband, age 35–54, 2 children, older child 6–15 years) required to provide the same level of living for urban families of different size, age, and composition.

2 Husband-wife and one-parent families with their own children (including adopted and stepchildren) present, but with no other persons living with the family.

3 Scale values for individual family types weighted by the number of families of each type in the universe. The averages includes some types for which values were not shown separately because of the small number of such families in the sample.

4 Revised.

SOURCE: Derived from BLS Survey of Consumer Expenditures, 1960–61.

aggregate number of the poor, or the attributes of the poor, there is little point in undertaking the somewhat elaborate adjustment procedure outlined above.

Indeed the undifferentiated poverty line first offered by the Council on Economic Advisors (CEA) in 1964 was justified precisely on this pragmatic basis: the CEA argued that, while adjustments for family size would be technically correct, "the analysis of the source of poverty and of the programs needed to cope with it would remain substantially unchanged." (Council of Economic Advisors, 1964).

The Council's assertion did not go unchallenged. Indeed, in its next report (1965), the Council itself rejected this position. In particular, the Council found that adoption of the Social Security Administration's variable poverty line, while leaving the aggregate count of the poor unchanged, did in fact alter the composition of the identified poor. There are fewer elderly families, and more large families; the number of children estimated to be in poverty in 1962 rose by one-third (Council of Economic Advisors, 1965). Similar results were found by Friedman (1965) and by Miller (1964).

Bressler (1974) provides the most recent and comprehensive estimates of the effects of family size adjustments on the income distribution, and the poverty population. Bressler begins with family income data, by size of family, reported in the Current Population Reports. Income data, for each family size, is then adjusted by applying a scaling factor derived from the Orshansky estimates of the relative needs of families of different sizes. For example, a family of 4 has 1.5 the needs of a family of 2. Thus, a family of two earning $1,000 is "standardized" to a family of four earning $1,500.

Usual measures of inequality and poverty are then derived, for the period 1947-1971, using this adjusted data. Family size adjustments increase the degree of inequality identified* since family size and income are negatively correlated. Adjusted data, however, indicate a greater trend toward equality in the post-war period than do unadjusted data. The share of income of the lowest quintile of the population--a second measure of poverty--is also reduced by adjustments. Finally, if Fuch's definition of poverty--the number of families falling below ½ the median income--is used, the results in terms of trends are ambiguous: adjustments increase estimates of the size of the poverty population if made in 1949 and decrease those estimates if done in 1971.

Finally, family size adjustments affect not only the aggregate count of the poor, but the revealed composition of the poverty group. Adjustments increase the number of large families identified as poor; this, in turn, reduces the number of aged, and increases the number of non-whites counted as poor. Thus such adjustments carry with them significant policy implications.

---

*Inequality is measured using the Gini index (See Appendix B).

V. Regional Cost of Living Differences as a Function of Public Sector Differences

It is well documented that the cost of living varies across regions thus affecting our assessment of differentials in needs across areas of the country. The Bureau of Labor Statistics verifies this monthly with its regional surveys of the cost of living. What is less well documented is the extent to which regional cost-of-living differences are due to differentials in the provision of government services. The role of government in the provision of services has grown tremendously in the past twenty years. The share of government in the national product rose from 13.0 percent in 1948 to 24.2 percent in 1972. Furthermore, there is some evidence (though not substantiated) that differences in government services, particularly in the area of public welfare, have encouraged Americans to migrate from one state to another.

The Bureau of Labor Statistics, in its sample budgets, has made some attempt to account for these differences in its estimates of transportation costs. People who live in cities which have extensive public transport systems are allocated smaller transportation budgets than those people in areas with limited public transportation. B.L.S., on the other hand, does not make extensive corrections for variations in the public provision of medical care or many other public services across regions.

In developing a comprehensive measure of poverty, consideration of regional differences in the provision of public services is particularly important because government services play a major role in the economic well-being of this country's poor. Clearly two families earning the same income are not equally well-off if one receives free medical care through state medical assistance while the other does not. Health care finance is only one of several public services that affect the economic welfare of the poor. In this paper, we will also consider public assistance, housing, transportation and education. These are the areas on which the literature is primarily focused.

In spite of the importance of including public sector differences in a measure of the cost of living, there is a dearth of literature addressing this subject directly. This is undoubtedly due to the difficulty of constructing such a measure, together with the relative unimportance of government services prior to 1940. What exists, on the one hand, is a vast body of literature on regional, state, and urban-rural comparisons in the provision of various public services; and, on the other hand, a theoretical, economic literature on the public good and economies of scale in city services.

This paper will first present a review of research findings on geographical variation in public service provision, by type of service. It will become apparent that some public services, such as health care and public assistance, lend themselves more readily than others to the measurement of regional dollar differences. However,

there are serious problems in incorporating almost any public service into a measure of regional poverty status. Discussion of specific services will be followed by a review of the theoretical economic literature which examines: (a) the problems of determining a market price for the public good, and (b) the economies of scale in city services.

Geographical Differences in the Provision of Public Services

Most of the literature on geographical public sector differences falls into two categories. One group is concerned with the problems of rural poverty, or urban poverty, or poverty in a particular region, such as the South. Although some comparisons are made among geographical areas, the focus is usually on a particular area; hence we must extrapolate from these studies, to a certain extent, to form an overview of geographical differences. The second group of literature is concerned with the provision and quality of specific government services. Sometimes, but not always, geographical comparisons are made. Hence, again some extrapolation is necessary to gain an overview.

In general, we found that rural areas were the most seriously disadvantaged in terms of availability, quality, and access to government services.

In the first place, rural poverty is less visible than urban poverty and therefore the rural poor are less likely to benefit from federal programs. Clawson found that only one-fourth of the rural poor received direct aid from the government in terms of loans, hot lunch programs, welfare benefits, and other federal services. When the rural poor migrated to urban areas, they would band together, and, through their numbers, could exert more influence (Clawson, 1967). The relative prominence of the public media in urban areas has also led to greater recognition of the problems of poverty groups (Hill, 1966).

Government services in rural areas suffer from an eroded tax base due to out migration and the disappearance of the community as an effective institution. As the Presidential Advisory Commission observed:

> In the past the rural community performed the services needed by farmers and other rural people.... Larger towns and cities have taken over many of the economic and social functions of the villages and small towns.
>
> The changes in rural America have rendered obsolete many of the political boundaries to villages and counties. Thus, these units operate on too small a scale to be practicable....In consequence the public services in the typical poor rural community are grossly inadequate in number, magnitude, and quality. Local government is no longer able to cope with local needs.
>
> (N.A.C.R.P., 1967)

In sum, there is much evidence that the quantity and quality of education, vocational training, housing, welfare programs, health care, cultural activities, and antipoverty programs are inferior in rural areas. Additionally, due to lack of public transportation, access to services is poor (U.S. DOL, 1966; Presidential Advisory Commission on Rural Poverty, 1967).

Urban areas, on the other hand, have more abundant and accessible public services, but their quality is nevertheless often very poor.

A prime example is housing. The problem in rural areas is that there are not enough public housing and housing subsidies. In urban areas, public housing is more readily available, however, the quality of life in an inner city housing project is degraded by multiple urban sociological problems.

Public Assistance

Public assistance is provided by three programs:

1) Aid to Families with Dependent Children (AFDC) which serves families having only one household head.

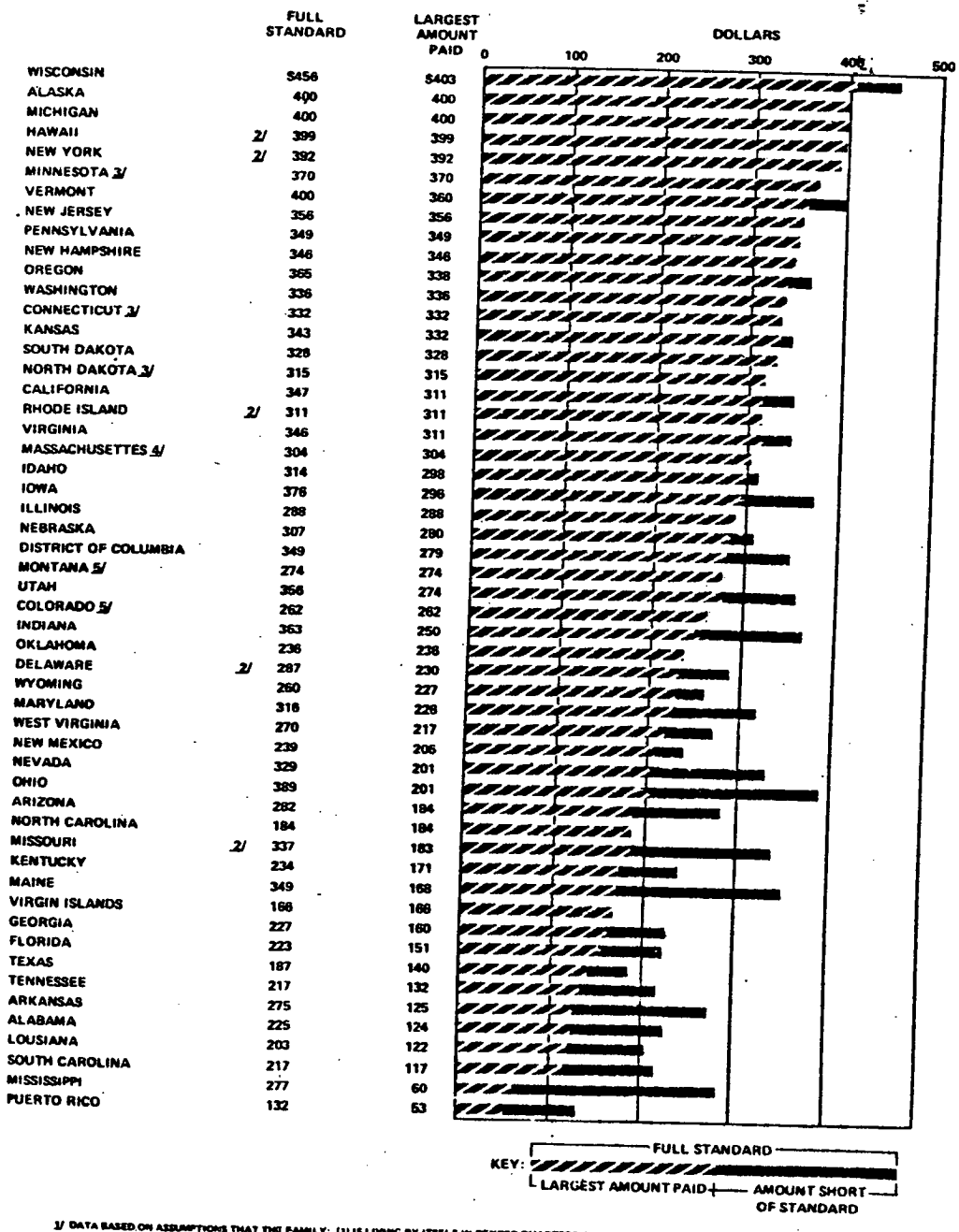
2) Supplemental Security Income Program (SSI) which serves the aged, blind, and disabled; and

3) General Assistance, which serves low income persons between age 21 and 65.

To demonstrate the variance in payment levels for AFDC recipients, Exhibit 6 depicts the largest amount paid to a family of four, as well as the amount calculated as needed. The range runs from $53 in Puerto Rico to $403 in Wisconsin. Payment levels are typically lowest in the South. In a 1971 study of urban-rural contrasts in public welfare, Mugge and Eppley found that non-metropolitan counties paid smaller average monthly payments to AFDC recipients than did the metropolitan counties. (See Exhibit 7.) The highest payments were made to white families in the inner cities, the smallest to farm families in rural areas (Mugge and Eppley, 1971). It is also apparent from the map that payments were highest in the far West, North Central and Northeast regions; and lowest in the South.

Exhibit 6*

AID TO FAMILIES WITH DEPENDENT CHILDREN: FULL MONTHLY STANDARD FOR BASIC NEEDS FOR A FAMILY CONSISTING OF FOUR RECIPIENTS AND LARGEST AMOUNT THAT CAN BE PAID TO SUCH FAMILY, BY STATE, JULY 1974 1/



1/ DATA BASED ON ASSUMPTIONS THAT THE FAMILY: (1) IS LIVING BY ITSELF IN RENTED QUARTERS; (2) NEEDS AN AMOUNT FOR RENT THAT IS AT LEAST AS LARGE AS THE MAXIMUM AMOUNT ALLOWED BY THE STATE FOR THIS ITEM; AND (3) HAS NO INCOME OTHER THAN ASSISTANCE.

2/ INCLUDES AN ESTIMATED AVERAGE FOR RENT.

3/ INCLUDES RECURRENT SPECIAL NEEDS.

4/ EXCLUDES GRANT FOR SPECIAL NEEDS. THIS GRANT WAS INCLUDED IN THE DATA PUBLISHED FOR JULY 1973.

5/ ALLOWANCE FOR SUMMER MONTHS; WINTER ALLOWANCE HIGHER.

NEW-SRS-IS-NCSS NO. 200

*Source: U.S. Department of Health, Education, and Welfare, Aid to Families with Dependent Children: Standards for Basic Needs, July 1974 DHEW #SRS 75-03200, p.7.

Exhibit 7

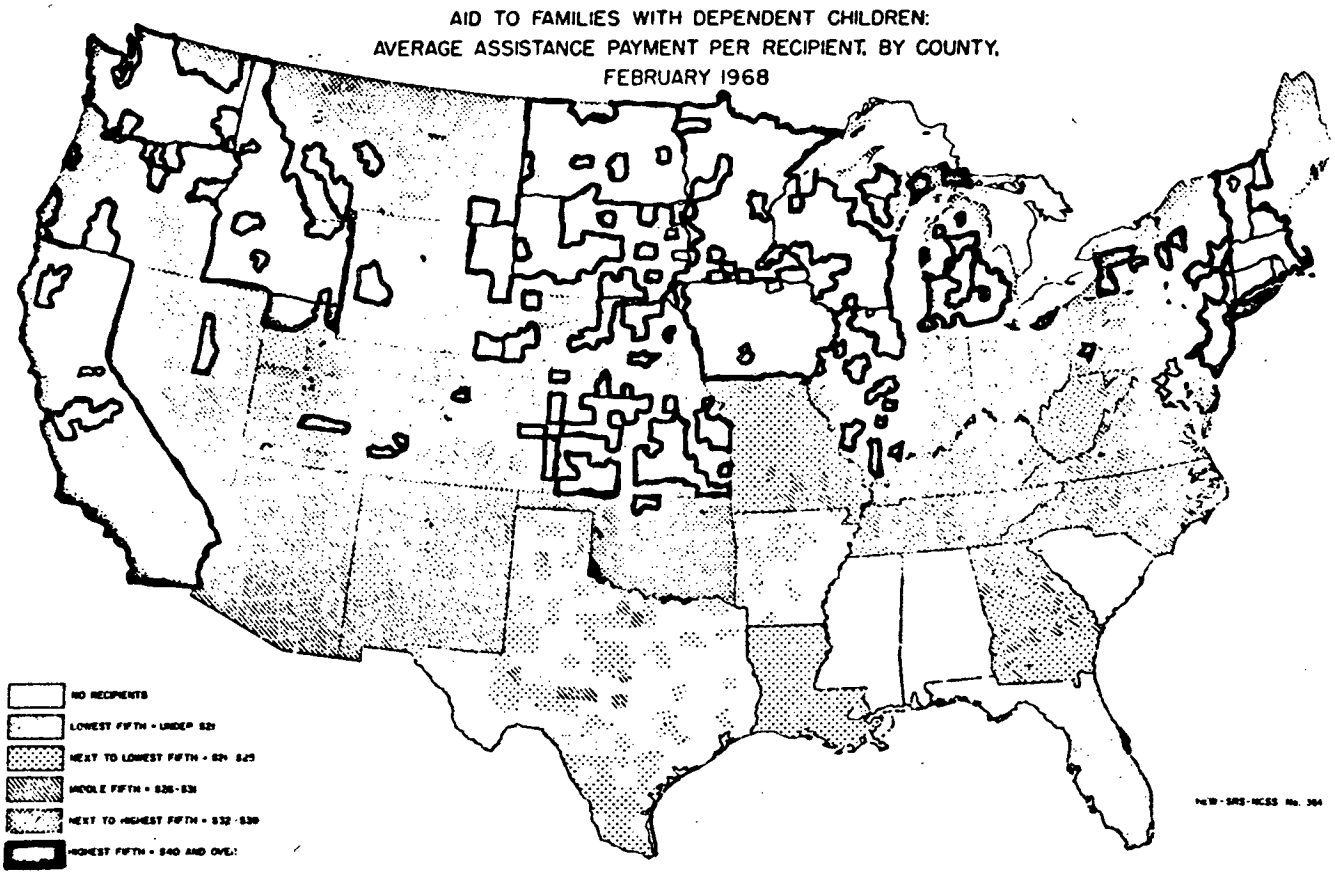


FIGURE 5

SSI, a federally administered, state supplemented program for adult recipients, also varies widely among states. This is because most states supplement the flat grant that the federal government provides with their own grants. The federal government pays $46 per month to all SSI recipients; and, in the case of recipients who were receiving assistance prior to SSI, the states are required to supplement that amount with whatever amount is necessary to bring payments up to their December 1973 grant levels. In addition, states may opt to supplement the $146 grant for new recipients. As a result, the lowest amount paid an adult recipient is $146 per month. Thirteen states pay this amount, seven of which are in the South. The other 6 are in the Central and South Central regions.

Mugge and Eppley found similar rural-urban patterns of assistance for adult recipients as they had for AFDC. Once again, metropolitan areas provided higher payments and generally better social services than did non-metropolitan areas.

Many states also provide public assistance to persons between the ages 21 and 65 who are not eligible for federal assistance. Exhibit 8 demonstrates the variance in General Assistance expenditures. Total money payments for 1972 ranged from $18,000 in Alabama to $188,413,000 in New York.

Health Care

The Bureau of Labor Statistics does not make extensive allowances for variance in the public provision of medical care across areas. However, Medicaid, the principle health insurance plan for the poor, does not provide equal benefits across states. In the first place, while all states must provide Medicaid to AFDC recipients, eligibility for the AFDC program varies, as shown in the previous discussion on public assistance. There is also some variance in state treatment of the "medically needy" individuals whose incomes are deemed too high to receive public assistance, but low enough to receive free medical care. Currently, only twenty-eight states offer Medicaid to these individuals. In addition, some states extend Medicaid eligibility to persons whose incomes are above the medically needy levels but whose medical expenses are particularly high. This is known as the Spend-down Provision. States also vary in the scope of benefits covered: a core of nine basic services is required, but the amount, duration, and scope of all services vary by state. Exhibit 9 provides an indication of the extent to which coverage varies by state.

Davis (1974) found that the ratio of Medicaid recipients to poor persons was 1.03 in the Northeast and 1.16 in the West, indicating that most of the poor, and many of the near poor were receiving benefits. In contrast, she found that only a third of poor persons were receiving Medicaid in the South. Per person payments ranged from $536 in the Northeast to $95 in the South. (See Exhibit 10.)

Exhibit 8

CALENDAR YEAR 1972

General Assistance
Expenditures for Assistance to Cases, by Type of Payment 1/

(Amounts in Thousands)

State	Total Assistance including Vendor Payments for Medical Care	Money Payments	Vendor Payments for Medical Care	
			Amount	Percent of Total
TOTAL	$838,218	$741,026	$97,192	11.6
Alabama	18	18	---	---
Alaska	3,549	256	3,292	92.8
Arizona	2,524	2,524	---	---
Arkansas	68	68	---	---
California	48,718	48,718	---	---
Colorado	4,748	4,375	373	7.9
Connecticut	17,144	14,293	2,851	16.6
Delaware	1,983	1,983	---	---
District of Columbia	4,718	4,718	---	---
Florida 2/	2,904	2,904	---	---
Georgia	946	946	---	---
Guam	70	69	2	2.9
Hawaii	12,759	12,759	---	---
Illinois	83,297	58,526	24,771	29.7
Iowa 2/	1,812	1,812	---	---
Kansas	6,832	6,832	---	---
Louisiana	6,075	5,493	582	9.6
Maine	3,680	2,890	790	21.5
Maryland	16,341	16,341	---	---
Massachusetts 2/	52,314	37,963	14,351	27.4
Michigan	72,308	69,013	3,295	4.6
Minnesota	9,709	9,709	---	---
Mississippi	258	258	---	---
Missouri	10,739	10,739	---	---
Montana	5,164	642	4,522	87.6
New Hampshire	1,174	1,174	---	---
New Jersey	22,516	18,032	2/ 4,484	19.9
New Mexico	34	34	---	---
New York	188,413	188,413	---	---
North Carolina	1,844	662	1,182	64.1
North Dakota	190	129	61	32.1
Ohio	70,731	47,852	22,879	32.3
Oklahoma	387	387	---	---
Oregon	3,819	1,806	2,013	52.7
Pennsylvania	133,522	133,522	---	---
Rhode Island	8,986	6,576	2,411	26.8
South Carolina	248	133	115	46.4
South Dakota	1,654	173	1,481	89.5
Tennessee	633	633	---	---
Texas 2/	3,312	3,312	---	---
Utah	1,044	1,036	8	.8
Virgin Islands	183	183	---	---
Virginia	8,118	7,740	378	4.7
Washington	4,321	4,321	---	---
West Virginia	513	512	1	.2
Wisconsin	17,068	10,452	6,616	38.8
Wyoming	831	97	734	88.3

1/ Excludes Idaho, Indiana, Kentucky, Nebraska, Nevada, Puerto Rico, and Vermont; data not available.

2/ Estimated.

Source: DHEW, Funds, by Source, Expended for Public Assistance Payments and For Administration, Services, and Training, Calendar Year Ended December 31, 1972, July 1973.

Exhibit 9

Medicaid Payments per Recipient and per Poor Person, and Ratios of Recipients to Poor, by Age and State, 1970

Region and state	Children, under age 21			Adults, age 21–64			Adults, age 65 and over		
	Medicaid payments per child recipient	Ratio of recipients to poor children	Medicaid payments per poor child	Medicaid payments per adult recipient	Ratio of recipients to poor adults	Medicaid payments per poor adult	Medicaid payments per aged recipient	Ratio of recipients to poor aged	Medicaid payments per poor aged
United States	$126	0.55	$69	$408	0.61	$250	$ 527	0.69	$ 363
Northeast	132	1.24	163	404	1.31	530	999	0.67	667
Maine	109	0.48	52	321	0.46	147	341	0.32	110
New Hampshire	98	0.46	45	471	0.37	174	150	0.52	78
Vermont	201	0.80	160	351	0.60	215	601	0.72	435
Massachusetts	•	•	•	•	•	•	•	•	•
Rhode Island	134	0.72	97	354	1.02	362	633	1.30	825
Connecticut	149	1.04	155	674	0.53	359	1,803	0.51	918
New York	133	1.68	224	450	1.72	773	1,049	1.02	1,075
New Jersey	153	0.70	108	215	0.63	134	1,942	0.22	433
Pennsylvania	117	0.97	113	329	1.28	422	675	0.38	259
North Central	137	0.49	67	525	0.41	216	780	0.40	279
Ohio	103	0.40	41	435	0.36	156	629	0.29	185
Indiana	89	0.26	23	417	0.22	93	376	0.21	78
Illinois	159	0.70	111	558	0.50	279	546	0.34	185
Michigan	122	0.51	62	573	0.62	356	1,260	0.47	593
Wisconsin	237	0.66	155	848	0.47	395	1,054	0.62	656
Minnesota	143	0.72	103	607	0.40	243	1,044	0.55	573
Iowa	103	0.43	44	319	0.32	101	227	0.32	73
Missouri	80	0.33	26	331	0.33	110	296	0.55	161
North Dakota	142	0.20	29	587	0.22	127	928	0.40	367
South Dakota	114	0.14	17	440	0.14	62	690	0.28	196
Nebraska	120	0.31	38	492	0.31	154	382	0.39	150
Kansas	129	0.51	66	498	0.45	226	478	0.36	170
South	108	0.20	21	359	0.23	79	334	0.53	176
Delaware	64	0.81	52	343	0.48	165	151	0.28	42
Maryland	118	0.73	86	376	0.83	313	464	0.68	316
District of Columbia	171	1.10	189	442	0.72	317	431	0.67	291
Virginia	98	0.20	19	374	0.18	69	250	0.28	69
West Virginia	87	0.38	33	183	0.39	71	135	0.19	25
North Carolina	•	•	•	•	•	•	•	•	•
South Carolina	65	0.09	6	325	0.19	60	475	0.38	180
Georgia	87	0.26	23	447	0.31	139	416	0.71	296
Florida	68	0.20	13	192	0.25	48	351	0.43	150
Kentucky	76	0.38	29	262	0.37	96	231	0.68	158
Tennessee	66	0.16	10	222	0.17	37	165	0.32	53
Alabama	97	0.10	10	446	0.11	48	511	0.49	253
Mississippi	43	0.11	5	264	0.07	20	131	0.49	89
Arkansas	56	0.06	4	179	0.10	17	68	0.19	13
Louisiana	112	0.08	9	260	0.18	46	245	0.94	230
Oklahoma	201	0.37	75	402	0.43	174	583	0.64	372
Texas	215	0.08	17	738	0.09	69	326	0.66	213
West	122	0.96	117	389	1.29	500	350	1.97	690
Montana	127	0.28	35	451	0.26	118	669	0.31	207
Idaho	90	0.26	23	436	0.29	126	829	0.26	217
Wyoming	75	0.18	13	308	0.18	56	273	0.24	67
Colorado	91	0.40	36	340	0.55	186	328	1.34	440
New Mexico	97	0.26	25	352	0.29	103	274	0.37	101
Arizona	•	•	•	•	•	•	•	•	•
Utah	190	0.27	52	329	0.73	240	376	0.50	186
Nevada	119	0.47	56	558	0.34	190	794	0.55	440
Washington	99	0.70	69	317	1.13	359	748	0.67	498
Oregon	99	0.35	35	283	0.47	133	298	0.31	92
California	126	1.33	168	389	1.73	672	321	3.17	1,017
Hawaii	100	0.92	92	319	1.01	322	1,162	0.96	1,119
Alaska	•	•	•	•	•	•	•	•	•

(Davis, 1974)

Exhibit 10

Reimbursement per person served, selected services, by geographical region, 1968

	All services	Inpatient hospital services	Physician services	Extended care facility services
United States	$670.08	$ 872.75	$198.18	$817.05
Northeast	703.75	1,048.36	209.37	911.55
North central	672.13	858.16	178.01	798.04
South	594.88	692.71	192.91	701.84
West	678.36	963.13	213.83	838.69
Ratio, West to South	1.140	1.390	1.108	1.195

Source: U.S. Department of Health, Education, and Welfare, Social Security Administration, Office of Research and Statistics, Medicare 1968: Section 1, Summary, 1973.

In general, the rural poor receive less benefits than persons in urban areas. Few rural children receive Medicaid because they typically have unemployed or underemployed fathers, rendering their families ineligible for AFDC related assistance. The aged received twice as many benefits in urban as in rural areas (Davis, 1974).

But much of the inferiority of rural health care is due to non-monetary barriers to medical care. Access to medical care is hindered in rural areas by lack of effective information dissemination channels, poor transportation, and scarcity of medical services, causing rural residents to receive a disproportionately small share of Medicaid benefits. Exhibits 11 and 12 provide support for this thesis.

Medicare, the health insurance plan for the aged, was designed to provide uniform costs and benefits across the country. However, as Davis suggests, benefit disparities exist due to differences in costs and availability of medical resources. Variations in medical care costs suggest inequities in Medicare uniform premium assessment. Persons in low medical-resource, low medical cost areas are doubly penalized; they lack access to adequate medical service, and they must subsidize cost of medical services in high-cost areas. Medicare provider reimbursement procedures also penalize low-cost low resource areas (Davis, 1973). Furthermore, areas with low prices for medical services tend to attract fewer physicians. Medicare, while making reimbursements on the basis of prevailing charges, tends to perpetuate this situation. In addition, rural Medicare recipients face the same access and availability problem - as do rural Medicaid recipients.

The Neighborhood Health Center Programs and the Maternal and Child Health Program represent national efforts to overcome non-financial barriers to health services. However, commitment to these programs has been limited (Davis, 1974).

Housing

Government agencies provide housing in a variety of ways and under a variety of programs. Depending on personal circumstances and geographical location, low income people may receive housing assistance through one of several rent subsidy programs: housing loan programs including loans to meet market rates as well as subsidized low interest loans, public housing programs, and public assistance cash grants to meet a variety of special housing-related needs. For purposes of brevity, we will confine this summary to two of the most important forms of government housing services: public housing and housing loans and subsidies.

Public housing is housing that it owned and constructed by the federal government, and rented to low income people at below market rates. Government housing subsidies come in many forms, such as loans and interest credits, and are designed to enable low income

Exhibit 11

Mean Expenditure for All Personal Health Services Per Low Income Person by Source of Payment by Age, by Residence 1970

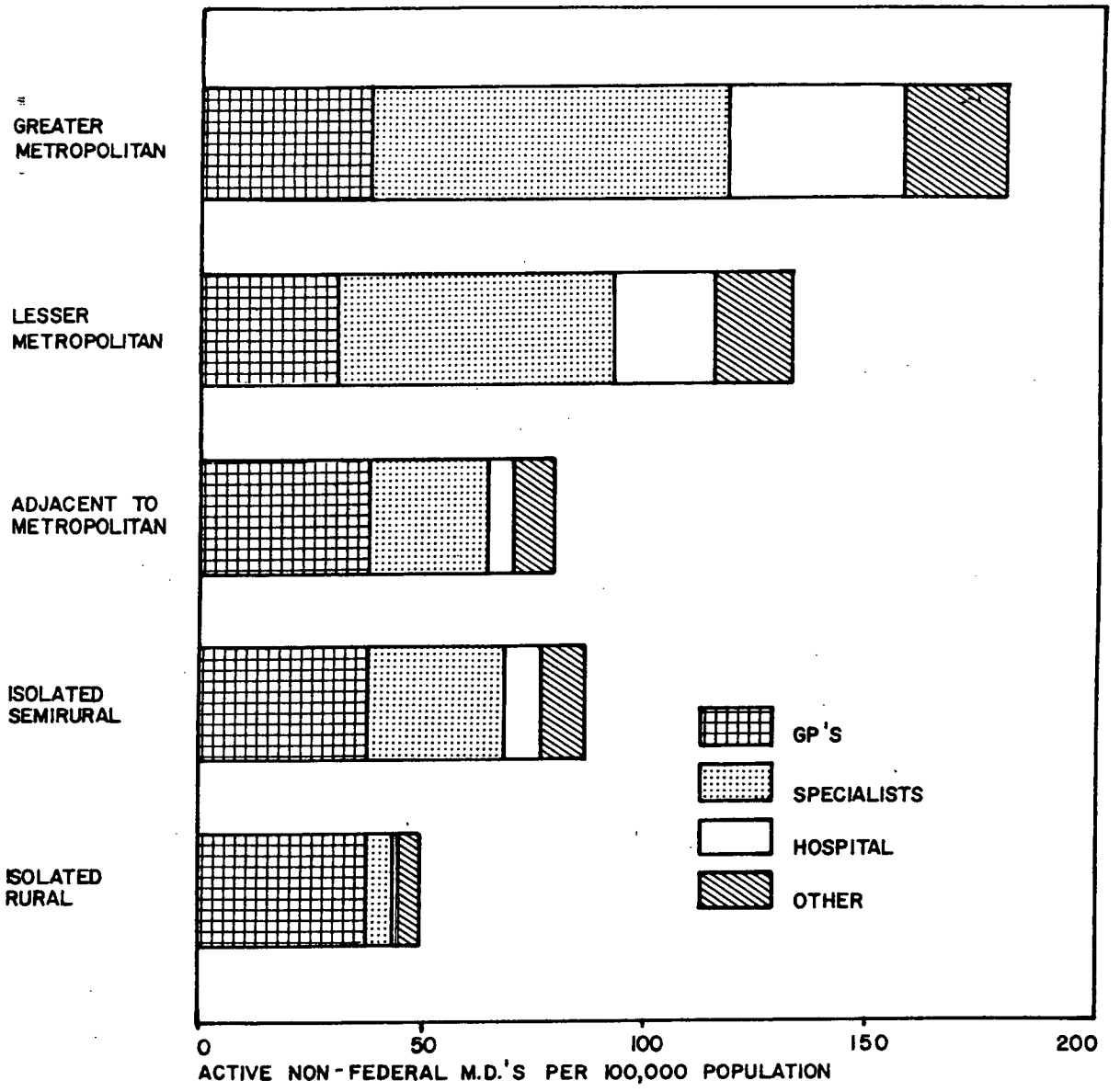
AGE	TOTAL MEAN EXPENDITURES			MEDICAID AND OTHER FREE CARE			PERCENT OF EXPENDITURES PAID BY MEDICAID OR FREE CARE		
	SMSA, CENTRAL CITY	OTHER URBAN	RURAL	SMSA, CENTRAL CITY	OTHER URBAN	RURAL	SMSA, CENTRAL CITY	OTHER URBAN	RURAL
LOW INCOME 1/									
BIRTH TO 17	$101	$124	$ 46	$ 76	$ 58	$ 5	75.2 %	46.8 %	10.9 %
18 - 64	360	352	281	158	83	52	43.9	23.6	32.9
65 AND OVER	446	329	407	54	38	27	12.1	11.6	6.6

Source: Ronald Andersen, et al., Expenditures for Personal Health Services: National Trends and Variations, 1953-1970, U.S. Department of Health, Education, and Welfare, Health Resources Administration, October 1973.

1/ Low Income defined as family income below $6,000

Exhibit 12

Urban-Rural[1/] Differences in Physician Supply, 1962



[1/] Counties within standard metropolitan statistical areas, as defined by the Bureau of the Budget, are here classified as greater metropolitan (if they are part of a SMSA of 1 million or more population) or lesser metropolitan (SMSA population of 50,000 to 1 million). Adjacent counties are counties that are not themselves metropolitan but are contiguous to metropolitan counties. All other counties are classified as isolated; semirural counties contain an incorporated place of 2,500 or more population, rural counties do not.

Source: Health Manpower Source Book, Section 18, U.S. Department of Health, Education, and Welfare. Public Health Service, Washington, D.C.

people to own their own homes at lowered cost. In examining geographic differences in government provision of public housing and subsidies, it is immediately apparent that while everywhere the poor are inadequately supplied with government housing services, rural areas suffer the most. In the first place, the Farmers Home Administration (FmHA), which is the principal federal agency serving rural areas, does not provide public housing--only subsidies. Public Housing is administered by the Department of Housing and Urban Development (DHUD). While DHUD is permitted to serve rural areas, the focus of its public housing program is definitely urban.

In order to assess regional differences in housing costs, insofar as they are a function of public sector differences, we must examine first the price that people pay for housing while receiving government housing services across regions; and second, the availability of housing services. Furthermore, these must be analyzed in the context of general non-public housing costs and conditions.

Public Housing. Rent levels for public housing are based on family income and are determined by the local housing authority. Information on geographic trends in rent levels is not readily available. However, due to the passage of the Brooke Amendment,* public rents may not exceed 25% of the tenant's income. Since this is 25% of a tenant's adjusted income, tenants of public housing often only pay 20% of their net income after adjustments are made for family size and income disregards. Ahlbrandt and others (1973) used 1970 census data to demonstrate the extent to which people spend more than twenty-five percent of their income on housing. This study was done before the Brooke Amendment was passed, and includes both public and non-public housing tenants. Their analysis revealed that 80.4 percent of low income families (under $5000) living in central cities spent more than twenty-five percent on rent, (see Exhibit 13), compared to 78.8 percent for all low income families. These figures tell us that four-fifths of low income Americans spend at least twenty-five percent of their income on rent. Unfortunately these figures do not enable us to discern urban-rural differences in spending.

An examination of the availability of public housing reveals that public housing is clearly an urban focused program. The Rural Housing Alliance and the Housing Assistance Council (1973) found that the distribution of public housing is closely related to the density of the population and the metropolitan status of the county. While the most urban counties contain 65% of the nation's population, they have 75% of the public housing. The more densely populated, non-

---

*Actually there were three "Brooke Amendments"; here we refer to Brooke I, December 1969 which is an amendement to the Housing and Urban Development Act of 1969.

Exhibit 13

RENTERS PAYING 25 PERCENT OF THEIR INCOME TOWARD RENT

SOURCE: United States Department of Commerce, Bureau of the Census. *1960 Census of Housing* and *1970 Census of Housing, Volume I and Volume II.*

	1960	1970		
Income	Percent of United States Total	Percent of United States Total	Percent of Standard Metropolitan Statistical Areas Total	Percent of Central Cities Total
Less than $2000	55.6	38.6	35.5	38.7
$2000-$2999	18.9	16.7	16.4	17.4
$3000-$3999	13.1	13.5	13.7	14.1
$4000-$4999	6.8	10.0	10.6	10.2
$5000-$5999	3.0	7.6	8.4	7.5
$6000-$6999	1.7	5.4	6.0	4.9
$7000-$9999	.8	6.4	7.3	5.5
$10,000-$14,999	.2	1.6	1.9	1.4
$15,000-$24,999	—	.3	.3	.3
$25,000 and above	—			
Number of renter households *(in thousands)*				
Total United States	20,227	22,334	17,433	11,032
Paying 25 percent or more of income toward rent	7,317	9,204	7,277	4,777
Percent of total United States	36.2	41.2	41.7	43.3
Renter households paying in excess of 25 percent of income toward rent				
Percent living in units with 1.01 or more persons per room	—	7.6	7.5	7.9
Percent living in units lacking some or all plumbing facilities	—	7.0	4.7	4.9

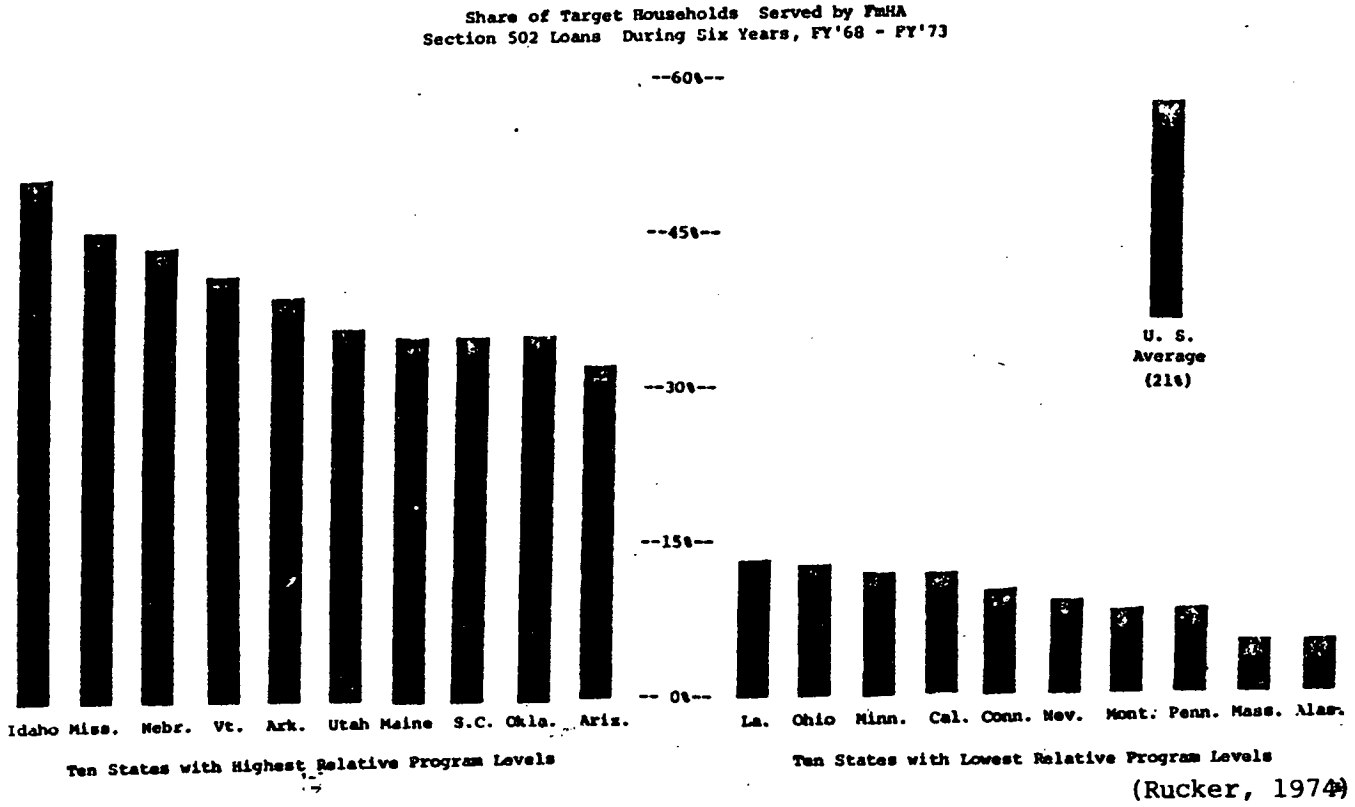
(Ahlbrandt, et al., 1973)

metropolitan counties, which contain 4% of the population, have less than 3% of the public housing. These urban-rural differentials were not found to be a function of need, since, on the average, the percentage of families living in substandard housing was higher for counties without public housing (Alhbrandt et al., 1972).

Bird et al. (1972) found that while housing areas served by the FmHA improved about as much as in more urbanized areas, the FmHA areas contained a disproportionately high percentage of sub-standard housing.

Government Housing Loans. For the most part, government housing loans to low income people are provided at standard interest rates, hence there is no geographical variation in cost to the recipient. However, the average amounts of loans per target share of household do vary significantly across states. In an analysis of the Section 502 homeownership loan program of the Farmers Home Administration, Rucker (1974) ranked states according to the share of their target households that were being served. See graph below.

Exhibit 14



(Rucker, 1974)

One reason for the wide disparities in provision of loans is that FmHA allows states considerable leeway in operating their loan programs (Rucker, 1974, p.ii). Secondly, FmHA was initially intended to serve farmers and has had difficulty meeting the needs of nonfarm areas, as the program was expanded.

In addition to federal housing programs, many states have programs to provide housing assistance to low income families. These include rent supplements, leased housing and public housing construction. State housing finance agencies are generally found in states with at least one major city. They can increase the supply of housing available at reasonable cost to low income households. Since state programs are much more available in urban states, urban-rural housing differences are often exacerbated.

Transportation

Public transportation tends to be a more important mode of travel for the low income person that it is for the rest of the population (U.S. DOT, 1972; 1974). Furthermore, the availability of public transportation varies significantly between urgan and rural areas. Hence, the inclusion of transportation costs in measuring regional differences in the cost of living is very important.

As noted previously, the Bureau of Labor Statistics accounts for regional variation in public transportation in its monthly family budgets. For their low-level budget, they calculate the cost of automobile ownership which then becomes the transportation component of the non-metropolitan cost-of-living. The average costs of automobile owners and nonowners in the lower budget were weighted by the following proportions of families: Boston, Chicago, New York and Philadelphia, 50 percent for automobile owners, 35 percent for nonowners; nonmetropolitan areas, 100 percent for automobile owners. The intermediate budget proportions are: Boston, New York, Chicago, and Philadelphia, 80 percent for owners, 20 percent for nonowners; Baltimore, Cleveland, Detroit, Los Angeles, Pittsburgh, San Francisco, St. Louis, and Washington, D.C. with population or 1.4 million or more in 1960, 95 percent for automobile owners and 5 percent for nonowners; all other areas, 100 percent for automobile owners. The higher budget weight is 100 percent for automobile owners in all areas. (Autumn 1974, Urban Family Budgets)

In assessing the value of public transportation to the poor, however, it is important to note the benefits of access to the poor. Access to frequent public transportation service can allow the poor to take advantage of many special programs as well as to open up job opportunities which would otherwise be inaccessible. The current spatial distribution of job opportunities and residential concentration of the poor have made it difficult for public transportation to meet the needs of the poor. Job opportunities, while still available in the central cities, have increasingly moved to the suburbs, while residential concentrations of the poor are located in either the central cities or dispersed through rural areas. Since current public transportation systems are geared to suburban to city work trips, they do not always provide adequate mobility for the poor who depend on them most. Gurin (1974) has suggested that suitable

opportunities for the poor are often located in dispersed locations which are relatively inaccessible by public transportation, thus necessitating provision of more flexible public transportation or subsidizing an automobile for the poor. Reverse commuter experiments in the 1960's which provided public transportation to carry low income city residents to suburban jobs have been estimated to provide benefits of between $3 and $30 per week in additional income for each rider (U.S. DOT, 1972). A study of a program to provide free bus service in a rural area indicated that benefits in reduced transportation costs and additional program participation amounted to more than $20 per month. These studies all indicate that public transportation designed to meet the mobility needs of the poor can effectively increase their income and can permit them to make trips which would otherwise be foregone. The effect of the lack of public transportation is most apparent in rural areas where surveys have shown that the poor make 15 percent of the trips that the average American makes (Burkhardt, 1969).

Although the lack of mobility is most obvious in rural areas, questions have been also raised about the benefits of public transportation in urban areas for the poor. The basic issue is whether low income people are served less well than the more affluent. However, in a preliminary study in Atlanta, Dajani and Egan (1974) found that benefits from the proposed transit system were greater in areas where family incomes were lower.

Energy and Fuel

Although they are generally provided through the private sector, energy and fuel are considered in this paper because the price and availability is governed to a great extent by public action and regulation. Since the energy crisis of 1973, many programs to conserve energy have focused on increased prices and taxes to encourage conservation. The effects of both energy prices and availability vary according to both household income and the region of the country.

Low income families are differentially affected by energy price and availability according to the region in which they live. In cold regions, low income families are at a disadvantage compared with higher income families in the same region and with families in warmer regions (Federal Energy Administration, 1974). In regions such as the Northeast, which depend on imported oil, poor families are most heavily impacted by public actions such as quotas on imported oil, politically motivated oil embargos by exporting nations, and taxes and price increases which are intended to minimize the use of energy.

Education

Public education is uniformly available to poor persons throughout the United States; however, quality education is not. While the literature indicates that rural areas tend to have the poorest education, large education differentials occur across states, within states, and within districts. As Guthrie points out: "poor neighborhoods have poor schools and good education in America is a prerogative of the middle and upper classes." A number of recent judicial decisions* have given legal support to this contention, resulting in a widespread call for school finance reform across the country. Presently a host of alternative plans for school finance reform are being considered by several states,** however, it is unlikely that these will result in any dramatic changes in educational inequality in the near future.

The quality of education can be evaluated in a number of ways. Per pupil expenditures, teacher's salaries, teacher-pupil ratios, and student achievement are some of the more prominent indicators of educational quality. The U.S. National Advisory Commission on Rural Poverty (1967) found that rural schools are consistently inferior to suburban and urban schools:

> Rural adults and youth are the product of an educational system that has historically short-changed rural people. The extent to which rural people have been denied equality of educational opportunity is evident from both the products of the educational system and the resources that go into the system. On both counts, the quality of rural education ranks low.

Rural students drop out sooner, and, in 1960, about half as many went to college as urban students. The quality of the teachers, the buildings, the facilities, the curricula, and the educational programs were classified as low compared to urban schools (National Advisory Commission on Rural Poverty, 1967).

---

*Rodriquez vs. San Antonio, Federal Suppl., U.S. District Court of Western Texas, December 23, 1971; Serrano vs. Priest, L.A. 29820, Superior Court No. 938254, cited in Harv. Ed. Review, Nov. 1971, 41, 503.

**The most prominent of these alternatives is "District Power Equalizing" developed by J. E. Coons, W.H. Clune, and S.D. Sugarman in Private Wealth and Public Education, Cambridge, 1970. A summary of District Power Equalizing and other school finance reform alternatives that have been adopted or are presently being considered by state governments is contained in R.D. Reischauer and R.W. Hartman, Reforming School Finance, The Brookings Institution, Washington,D.C. 1973.

Exhibit 15

Selected Characteristics of Education by Degree of Rurality of States, United States

	Percentage of total population rural, 1960 1/	Current Educational Expenditures			
		Per pupil, in average daily attendance, 1964 2/	As percentage of total personal income, 1963-64 3/	Percentage of total for transportation, 1961-62 3/	Average salary of classroom teachers, 1964-65 4/
	Percent	Dollars	Percent	Percent	Dollars
North Dakota	64.8	424	4.2	9.0	4,800
Mississippi	62.3	273	4.1	8.2	4,103
West Virginia	61.8	327	3.8	5.7	4,590
Vermont	61.5	522	4.0	5.8	5,362
South Dakota	60.7	444	4.5	4.7	4,475
North Carolina	60.5	322	3.9	3.4	5,022
South Carolina	58.8	284	4.0	5.6	4,500
Arkansas	57.2	317	4.1	7.1	4,200
Kentucky	55.5	324	3.3	6.1	4,700
Idaho	52.5	341	3.9	7.1	5,100
Montana	49.8	570	4.7	7.3	5,600
Maine	48.7	371	3.6	6.8	5,200
Tennessee	47.7	300	3.6	5.5	4,850
Iowa	47.0	464	4.2	5.6	5,747
Nebraska	45.7	407	3.4	3.3	4,893
Alabama	45.2	277	3.9	4.5	4,700
Georgia	44.7	330	3.7	6.3	5,050
Virginia	44.4	380	3.5	4.5	5,450
Wyoming	43.2	554	5.3	6.2	5,975
New Hampshire	41.7	440	3.3	5.9	5,435
Kansas	39.0	487	4.1	4.5	5,587
Minnesota	37.8	534	4.4	6.1	6,463
Oregon	37.8	569	4.7	4.5	6,420
Indiana	37.6	490	3.9	5.5	6,530
Oklahoma	37.1	366	3.9	4.7	5,160
Wisconsin	36.2	543	3.7	5.8	6,125
Louisiana	36.1	418	4.7	6.9	5,175
Delaware	34.4	539	3.3	4.1	6,800
New Mexico	34.1	475	5.5	5.8	6,200
Missouri	33.4	449	3.1	5.3	5,660
Washington	31.9	534	4.5	4.2	6,400
Nevada	29.6	543	3.4	3.0	6,530
Pennsylvania	28.4	479	3.4	3.9	6,150
Maryland	27.3	508	3.3	4.2	6,727
Ohio	26.6	465	3.6	3.8	6,025
Michigan	26.6	510	4.0	3.8	6,700
Colorado	26.3	470	4.1	3.5	6,025
Florida	26.1	412	3.5	2.7	6,140
Arizona	25.5	478	4.5	2.4	6,700
Utah	25.1	407	5.0	2.7	5,945
Texas	25.0	396	3.9	2.7	5,465
Connecticut	21.7	600	3.4	3.6	6,975
Illinois	19.3	551	3.1	3.5	6,809
Massachusetts	16.4	528	3.0	3.2	6,950
New York	14.6	790	3.9	3.3	7,800
California	13.6	565	3.8	2.2	7,900
Rhode Island	13.6	514	3.2	3.2	6,251
New Jersey	11.4	607	3.5	3.0	6,698
United States	30.1	484	3.7	3.9	6,220

1/ 1960 Census of Population
2/ U.S. Bureau of the Census, Statistical Abstract of the United States, 1965.
3/ National Education Association, Rankings of the States, 1965.
4/ U.S. Office of Education, Digest of Educational Statistics, 1965.

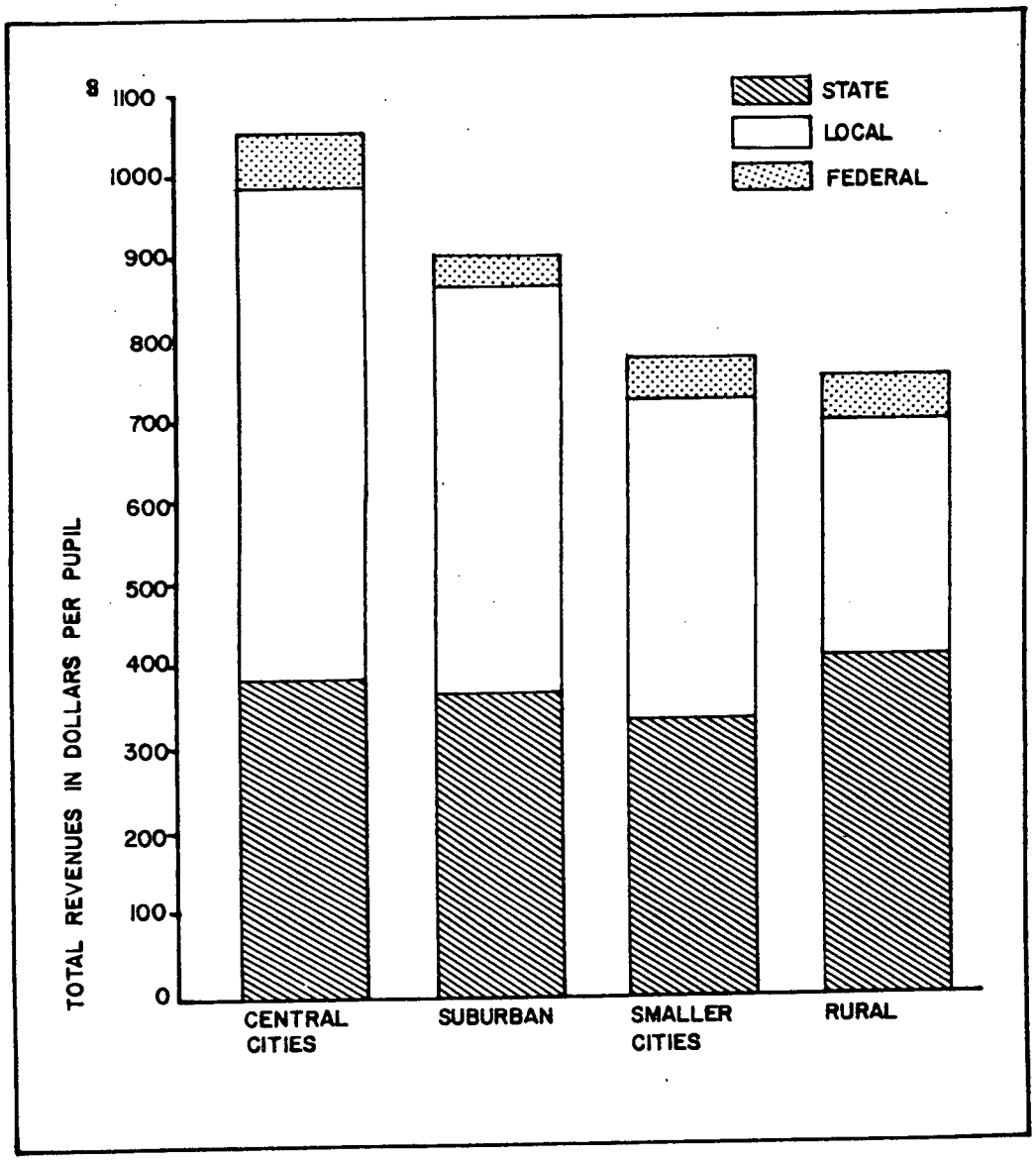
(DOA, 1966)

Exhibit 16

Revenues by Source and Type of District

All Study States*

1968-1969
In Dollars



*Delaware, North Carolina, Washington, California, Michigan, New York, Colorado, New Hampshire. (Hawaii excluded.)

Exhibit 17

Estimated Expenditure per Pupil in Average Daily Attendance in Public Elementary and Secondary Day Schools, by State: 1972-73

State	Expenditure per pupil			
	Total	Current	Capital outlay	Interest on school debt
1	2	3	4	5
UNITED STATES	$1,182	$1,026	$113	$33
Alabama	630	590	76	14
Alaska	1,961	1,473	395	93
Arizona	1,291	1,038	228	25
Arkansas	731	651	58	22
California	1,129	1,000	92	37
Colorado	1,138	955	152	31
Connecticut	1,385	1,241	89	35
Delaware	1,575	1,162	349	64
District of Columbia	1,628	1,327	299	--
Florida	1,030	885	124	21
Georgia	895	782	79	34
Hawaii	1,240	1,065	177	8
Idaho	868	772	79	17
Illinois	1,394	1,235	118	41
Indiana	1,100	855	204	41
Iowa	1,238	1,055	157	26
Kansas	1,025	969	42	14
Kentucky	788	707	53	28
Louisiana	1,002	897	79	26
Maine	952	840	86	26
Maryland	1,473	1,065	365	43
Massachusetts	1,234	1,080	104	40
Michigan	1,461	1,271	135	55
Minnesota	1,387	1,179	154	54
Mississippi	761	689	53	9
Missouri	984	831	99	24
Montana	(1)	(1)	(1)	(1)
Nebraska	1,074	953	95	26
Nevada	1,199	976	165	58
New Hampshire	1,073	913	129	31
New Jersey	1,476	1,294	133	49
New Mexico	1,105	984	102	9
New York	1,808	1,584	162	62
North Carolina	880	802	65	13
North Dakota	956	855	81	20
Ohio	1,038	946	67	25
Oklahoma	778	704	64	10
Oregon	1,262	1,155	84	23
Pennsylvania	1,427	1,177	160	90
Rhode Island	1,232	1,113	88	33
South Carolina	847	751	77	19
South Dakota	900	817	71	12
Tennessee	811	730	50	31
Texas	943	778	125	40
Utah	843	739	87	17
Vermont	1,360	1,307	20	33
Virginia	1,082	920	130	32
Washington	1,119	953	128	38
West Virginia	826	749	68	9
Wisconsin	1,241	1,134	68	39
Wyoming	1,193	1,059	117	17
OUTLYING AREAS:				
American Samoa	719	653	66	--
Canal Zone	(1)	(1)	(1)	(1)
Guam	1,047	856	191	--
Puerto Rico	483	453	30	--
Virgin Islands	1,433	1,433	(1)	(1)

[1]Data not available.

(Grant, 1974)

However, no such obvious measure exists for public services. Some of the difficulties of measuring the value of public services are due to the fact that many of them are public goods. Public goods, by definition, have two properties: (1) the good does not get "used up" as it is consumed, hence there is no consumer competition for the good and a market price cannot be easily assigned; and (2) individuals or groups cannot be easily excluded from consuming the good, making it impossible to charge individually for its use. National defense is an example of a pure public good; it does not diminish as more people immigrate to this country and receive its benefits, and no one living in this country can be excluded from having it. A roadway is an example of a quasi-public good because its utility to users does not diminish automatically as more people use it; however, eventually it does diminish when crowding occurs.

Because many government services are public goods, and also because many government services are meant to be shared by all, the user fees charged by government rarely reflect all costs. For example, the cost to the consumer of a public service, such as water supply, may reflect the full cost to the municipality of providing the services, but such prices fail to include the subsidy that arises from Federal tax exemption on municipal bonds (David, 1975). On the demand side, Aaron & McGuire (1970) have shown that assessing the impact of public goods on the distribution of income requires that an assumption be made regarding the utility functions for public goods of individuals in the various income brackets. Under different, equally plausible assumptions, individuals in the top bracket were found either to pay net taxes of $10,000 or to receive a net transfer of $8000.

In practice, the Bureau of Labor Statistics family budgets account for variation in only one publicly-provided good: transportation. For their low income budgets, they use the cost of a substitute form of transport, the automobile; and assume that the cost of transport (i.e., the cost of owning and operating a car) is proportional to the extent of the municipality's public transportation system. The basis for their procedures is not made explicit.

To arrive at more refined statistics assessing the contribution of public services to individual welfare, economists have suggested the estimation of a demand curve from individual expenditures or from survey data. David (1975) and others invoke the theory of collective choice to derive demand curves for the median voter from actual municipal expenditures.

In a study of outdoor recreation, Clawson and Knetch (1966) determine the economic value of a public park by taking the area under a demand curve which, in turn, is inferred from users' expenditures of dollars, time and travel. Simply multiplying the number of users by the fee charged by private parks will produce misleading results, for the price of private parks is affected by the existence of public parks, and, more importantly, the number of users of public parks would drop precipitously if a charge were

imposed for their use. Furthermore, the direct interview method, which has been also suggested, requires skillful interviewing to avoid biases. The results of this costly method are difficult to compare with data collected elsewhere.

Nevertheless, numerous studies of public services, particularly service programs, have relied upon interview data. Morrison et al. (1974) assessed federal programs in aid of the rural poor qualitatively in terms of their goals. The output of programs designed for the poor is especially difficult to quantify, especially since the "Median voter", so central to the theory of collective choice, is not included among the users of the service.

The only explicit attempt to include public services in a cost of living index was made by David (1975). The discussion below follows his paper. The true cost of living is the dollar cost of maintaining a fixed level of utility; this is opposed to a price index, which measures changes in the cost of a fixed bundle of goods. David identifies the conceptual problems involved and offers two possible methods for including the public sector in a measure of the cost of living. The first method involves conceptualizing and then quantifying units of public output. The second, more complex method, involves determining quality change, estimating production functions to arrive at meaningful cost functions, and then clarifying the role of jurisdiction in providing prices for heterogeneous bundles of public goods.

Attempts to identify output units and value them in terms of quality characteristics have proved most successful in cases where there are few externalities, where basic service units can be defined and quantified, and where relatively few quality dimensions exist. Refuse collection can be defined as containers of refuse collected per year, while important quality dimensions such as collection frequency, location and nature can be introduced to "adjust" the basic service output units (Hirsch, 1973). Mohring (1972) offers a precise theory concerning the relationship between congestion and the utility of transport services. Hirsch (1973) shows how regression analysis can be employed to measure the value of deterrence services such as police protection. Each service must be separately analyzed, for even in the "arts" category of recreation we find the capital-intensive visual arts having entirely different characteristics from the labor-intensive performing arts.

Borcherding and Deacon (1972) accounted for quality variations by assuming the quality of labor in the services to be directly proportional to the quality of labor in manufacturing. The Inter-Agency Task Force on Measuring Federal Government Productivity (1973) found that greater expenditures do not necessarily mean higher quality or greater quantity. The derivation of production functions for publicly-provided goods is complicated by the existence of economies of scale. Hansen (1964, 1970, 1971) claims that cities as a whole are most efficient in the intermediate size ranges. Hirsch (1972) finds that the labor-intensive services (which account for most

of expenditures) have constant returns to scale, while the capital intensive utilities are subject to increasing returns. This creates a serious difficulty since the production of government services takes place in a variety of market areas. School districts have one local market area; sewage treatment services another, while some services, such as hospitals may lack a clearly defined market area or clientele.

Urban areas commonly contain many independent municipalities, each usually economically homogeneous and providing a different mix and level of public services. Ellickson (1970 and 1971) and Bish (1971) point out that individuals ought to have this choice and that allocative efficiency demands many choices. Redistribution can be achieved by a tax authority embracing the entire metropolitan area. Thompson (1965) on the other hand feels that economies of scale could be achieved if the entire metropolitan area were consolidated.

David invokes the theory of revealed preference to estimate the parameters of the consumer's utility function. These can be derived if we assume consumers are in equilibrium with respect to both public and private consumption. This was the approach of Bergstrom and Goodman (1973). Data on budget shares for median voters at the state and local level are available from the Survey of Consumer Expenditures, but all the problems of measurements of outputs described above remain.

Finally, David proposes a direct measure of the cost-of-living including government. He would select individuals who state that they are as equally well-off this year as last year and who are satisfied with the extent of government. If individuals in this equilibrium group had a higher income this year than last year, then the cost-of-living including government can be said to have risen. A numerical index can be constructed using the ratio of median incomes in the present and preceding years. Surveys of this kind were found by Muller (1963) to be feasible and accurate.

Summary

It is clear from the literature that there is a great deal of regional variation in the provision of public services, particularly those services utilized by the poor. Furthermore, these variations do have differential effects on the economic well-being of the poor. Hence we conclude that any comprehensive measure of poverty should include regional public sector differences. Unfortunately, as the literature also indicates, very few attempts have been made to address this problem directly. On the theoretical side, David (1975) has proposed a general method for including public services in a cost of living index. On the practical side however, no one has attempted to measure geographical differences directly and in a comprehensive fashion. In any case, it is clear that persons living in rural areas receive relatively fewer benefits from the public sector, and that persons living in southern rural areas receive the fewest.

VI. Regional Cost-of-Living Differences as a Function of Private Sector Differences

There are relatively large differences across regions and between rural and urban areas in the income levels of the resident populations. From the perspective of this study, there are several questions concerning these income differentials that are of interest: First, where are the major concentrations of poverty populations located? Secondly, to what extent are income differences offset by parallel differences across areas in the cost of living? And, finally, to the extent that income differentials persist despite adjustments for cost-of-living differences, what factors cause these differences? Migration, inasmuch as it has been traditionally viewed as a mechanism for smoothing-out income differences across areas will be considered separately in section 4 of this chapter.

VI.1. Regional Income Differentials

The distribution of poverty populations across the four major Census regions is provided in Exhibit 18. As indicated in that chart, the South has a disproportionate concentration of poverty, while the Northeast is relatively well-off. The patterns indicated in Exhibit 18, however, have been shifting somewhat over time. In particular, while the southern states have been among the nation's poorest since the 1920's, the gap between North and South diminished somewhat during the 1960's. Southern states with large metropolitan areas in particular have improved their relative positions. The extent to which this trend will continue is unclear.

The four region-classification presented in Exhibit 18 is quite aggregated, and masks a substantial amount of intraregional income disparity. Morrill and Wohlenberg (1971), in developing a typology of poverty areas, disaggregated the Census regions substantially. In particular, seven regions were distinguished; these are presented below in approximately declining order in terms of the severity of poverty:

- The Agricultural South
- The Small Appalachian Coalfields
- The Inland Hills and Mountains (East and West South Central U.S.)
- The Agricultural Interior (North Central U.S.)
- The Urban South
- The Metropolitan North (Northeast U.S.)
- The Non-metropolitan Periphery (West U.S.).

Even a cursory glance at the Morrill-Wohlenberg classification points out the problems in relying exclusively on the four-region Census break-down. The agricultural South, for example, is the most severely impoverished on the Morrill-Wohlenberg list; the urban South, however, does reasonably well. The Census figures of Exhibit 18 miss this distinction.

Exhibit 18

Families with Incomes Below Poverty Level, 1970

	U.S.	Northeast	North Central	South	West
Total	5,462,216	935,906	1,171,102	2,581,333	773,875
Percent of all families	10.7	7.6	8.3	16.2	8.9
Mean family income (dollars)	1,935	1,895	1,866	1,996	1,886
Mean income deficit ($)	1,542	1,528	1,462	1,575	1,570
Percent receiving public assistance income	21.5	25.9	18.6	20.3	24.3
Mean size of family	3.88	3.70	3.69	4.05	3.82

Source: U.S. Department of Commerce, Bureau of the Census. "General Social and Economic Characteristics". U.S. Census of Population: 1970. V.I. Characteristics of the Population, Part 1, United States Summary, Section 1, Chapter C, Table 184. Washington, D.C., 1973.

Although Morrill and Wohlenberg's book on the spatial distribution of poverty is a comprehensive study and demonstrates the importance of regional income differences, its usefulness is limited by its reliance on data from the 1960 Census. More recent statistics have been compiled by Bowles, Bacon, and Ritchey (1973). Unfortunately, however, little analysis has to date been done on this data.

In Exhibit 19, a map of the regional distribution of income is provided which further disaggregates regions. The more than 150 regions used in this exhibit correspond to the regional classification used by the Office of Business Economics. If this map is compared with the Census classification of Exhibit 18, once again the large inter-area income differentials lost in the Census aggregation become evident.

In addition to the interregional income differences discussed above, income differences also exist within any particular region (however defined) across rural and urban subsectors. In general, the incidence of poverty varies inversely with city size. Exhibit 20 is a graphical representation of this relationship (Berry and Horton, 1970). Urban-rural differences are particularly striking in the South. Hansen (1975, forthcoming) has found non-southern states to have the highest income levels, and non-metropolitan southern areas were found to have the lowest median income, with the incidence of poverty varying inversely with the median income levels.

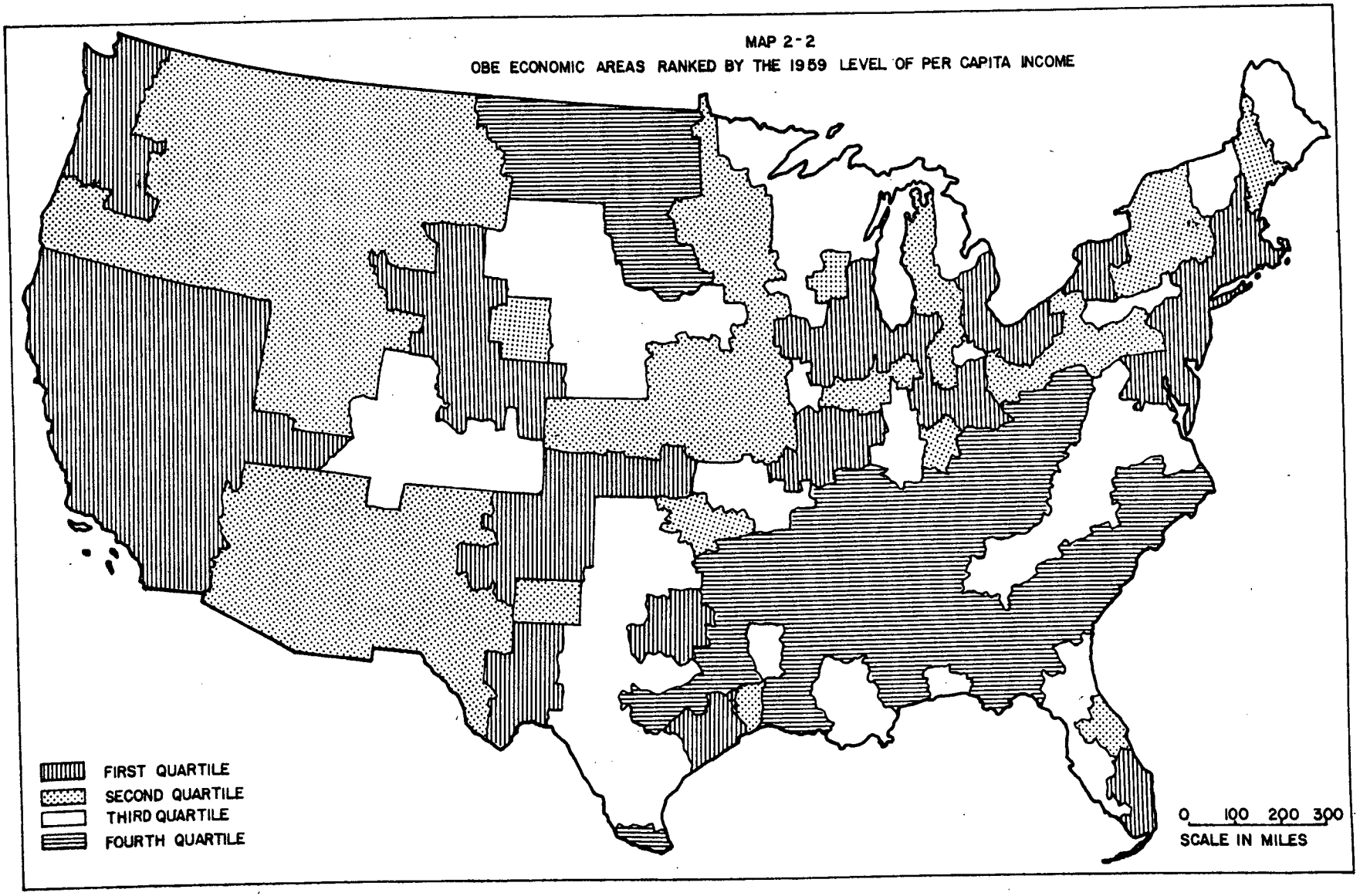
VI.2. Price Differences

Observed income variations across regions and between rural and urban areas are difficult to interpret. In particular, these income differentials reflect real differences in economic well-being only to the extent that they are not offset by cost-of-living differences across these areas.

The theoretical difficulties associated with accurately capturing regional cost-of-living differences through the use of index numbers was discussed in Chapter III, as well as in Appendix C of this report. In brief, the major problem in constructing these indices is in appropriately specifying "equivalent" market baskets for different regions of the country. Should we, for example, allow for a smaller quantity of fuel in the market basket of southern consumers on the grounds that the weather is warmer? If so, how much less? Similar problems in defining equivalency in other areas abound.

In practice, most regional indices are constructed by simply pricing identical market baskets in several different areas. Sherwood (1974) suggests that using a uniform market basket rather than a basket varied slightly according to climatic differences across regions has only a slight effect on cost-of-living differentials. Unfortunately, since Sherwood's analysis was done only on Bureau of Labor Statistics budgets, which are designed using urban workers, the loss imposed by using uniform markets baskets across areas for poverty programs remains somewhat unclear.

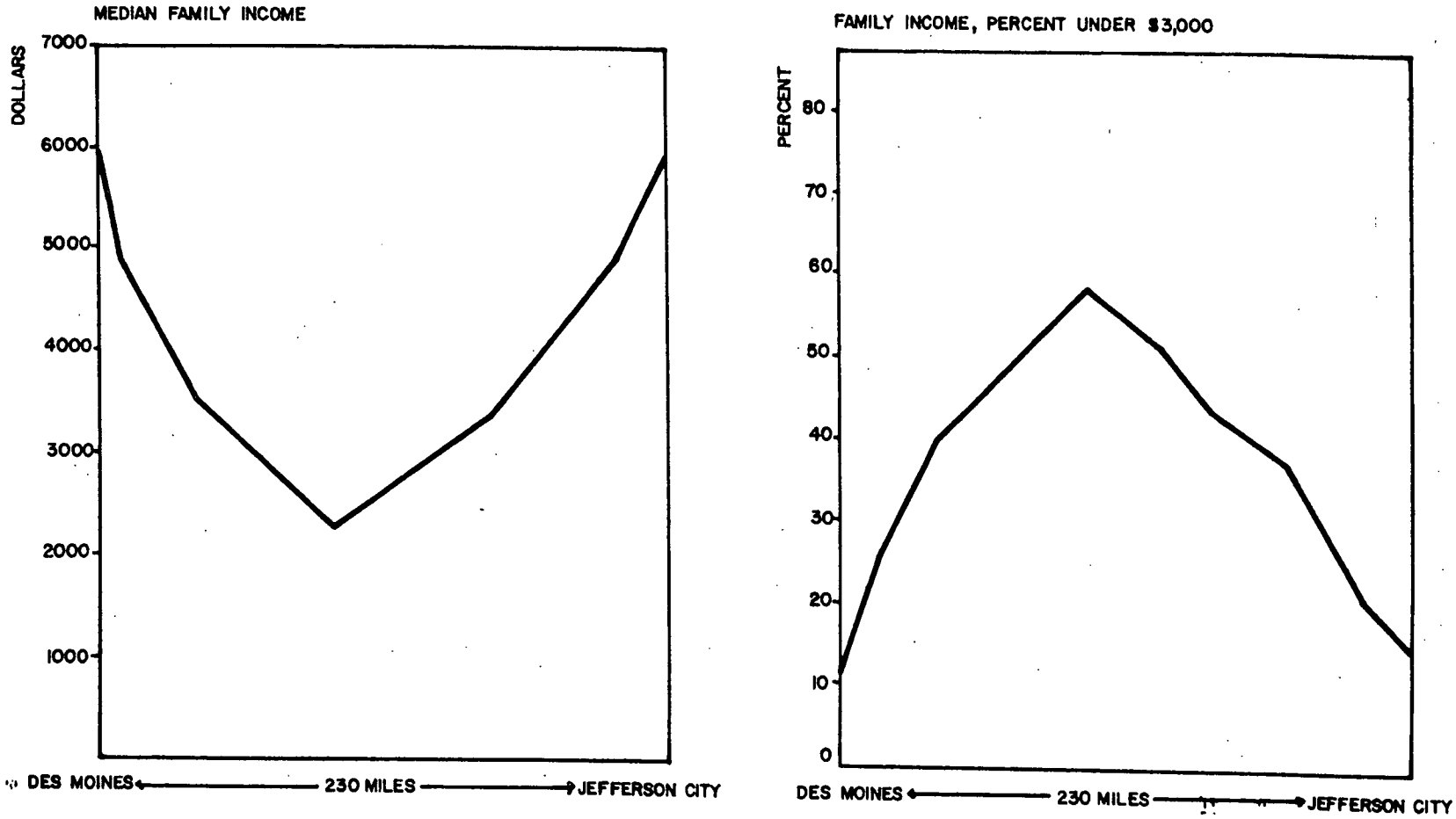
Exhibit 19



Source: Sample, James C. Patterns of Regional Economic Change: A Quantitative Analysis of U.S. Regional Growth, Cambridge: Ballinger, 1974.

Exhibit 20

Gradient of Urban Influence on Traverse Between Des Moines and Jefferson City



Source: Berry, Brian and Horton, Frank. Geographical Perspectives on Urban Systems. Engelwood Cliffs, New Jersey: Prentice Hall, 1970.

In Exhibit 21 cost-of-living differences developed by the Bureau of Labor Statistics for a number of different cities in the U.S. are provided. These differences, while not directly relevant to our study inasmuch as they come from surveys of the non-poor, are nevertheless illustrative of the large variance across areas in price levels. As one might expect, in general, southern cities have lower price levels than average, while western and northern states have somewhat higher levels.

A somewhat more relevant, though less detailed estimate of cost-of-living differences across regions and in urban versus rural areas is provided in Exhibit 22. The figures in this exhibit were calculated assuming uniform market baskets (except for food produced-consumed at home by farm residents) and were designed to directly reflect differences in prices relevant to the poverty population. Once again, the wide range in price levels is clear. Moreover, the data suggest that at least in the North central and Southern regions, urban and rural price differences are outweighed by farm/non-farm differences.

The cost-of-living then clearly does vary across areas. Moreover, the variance parallels income variance: low income areas on average seem to have lower prices than more affluent areas. Unfortunately, given the difficulties of constructing reliable, accurate indices it is not possible to definitively quantify the extent to which such price differences neutralize income differences.

VI.3. Causes of Regional Income Differences

Now that we have established that the median income does in fact vary across regions, as well as between rural and urban areas, it is useful for policy purposes to explore the reasons for those income differences. Causes of regional income differentials will be discussed in the context of (a) the socioeconomic characteristics of the native populations of poor regions and (b) the lack of economic development of the regions containing large proportions of poor people.

Socioeconomic

In most examinations of the causes of poverty, socioeconomic factors such as age, family structure, racial characteristics, and education are cited among the most important causes of poverty (Morgan, et al., Five Thousand American Families). Differences in the concentration of people with these poverty-related socio-economic attributes across regions is frequently cited as a major cause of interregional income differences. Thus, low income areas frequently contain disproportionate numbers of the aged, single parent families, racial minorities, and people with low educational attainment vis-a-vis the population of the rest of the country (Thomas, 1972; Morrill and Wohlenberg, 1971; Seligman, 1968; Smith, 1973; and Kraft, 1971).

Exhibit 21

COMPARATIVE LIVING COSTS
MEASURED BY
URBAN FAMILY LIVING STANDARDS
(lower standard, spring 1967)

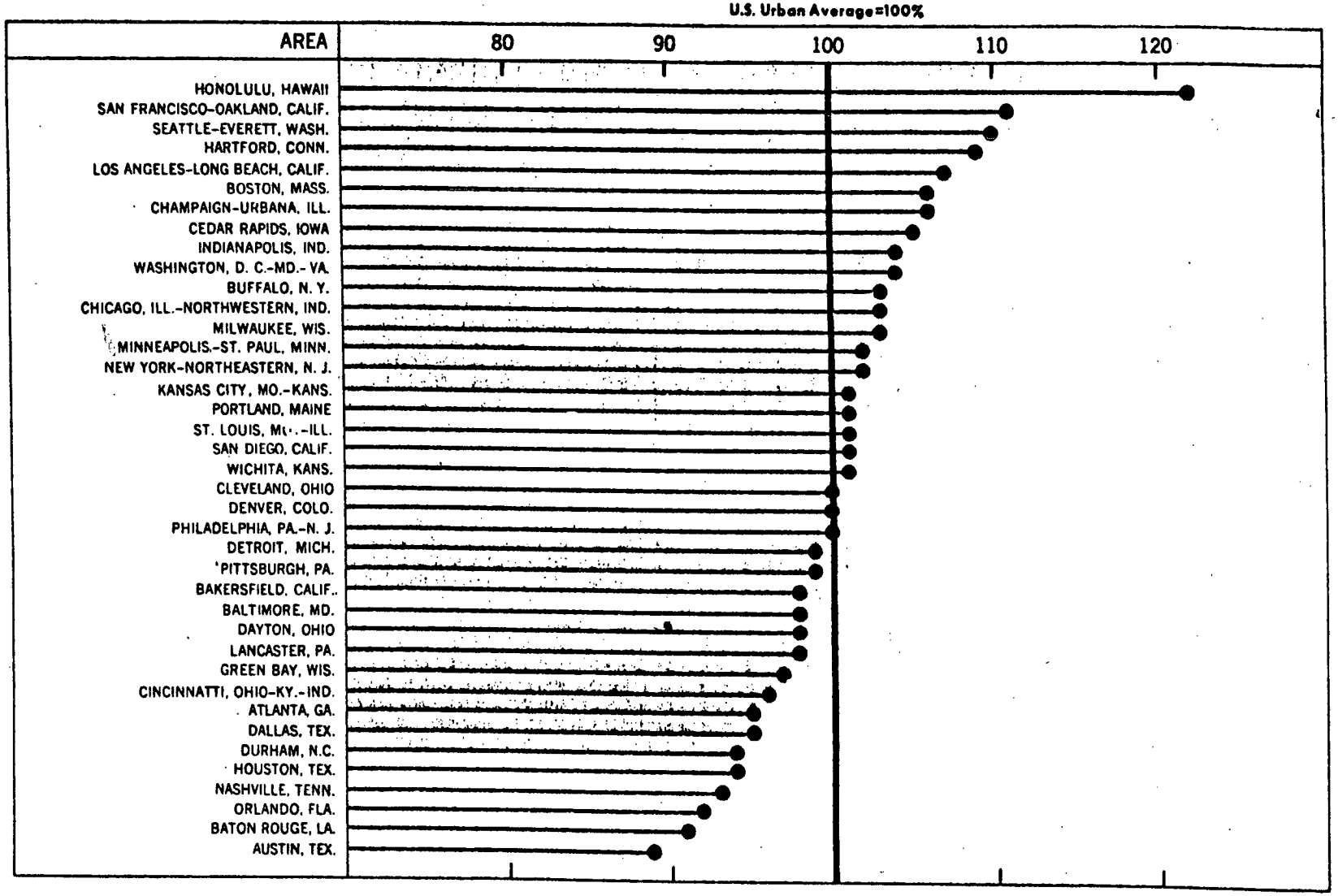


Exhibit 22

Required Incomes for the Economy Food Plan Level, Family Size 4, Family Type 3 (oldest child 6 to 17 years)

	Urban	Rural nonfarm	Rural farm	Ratio of farm to urban
	Dollars	Dollars	Dollars	Percent
Owners:				
North Central	4,760	4,941	3,325	70
South	3,214	3,575	2,899	90
Renters:				
North Central	4,404	4,075	3,724	85
South	3,382	3,527	3,093	91

Source: The President's Commission on Rural Poverty, 1968.

Moreover, the existence in some areas of large concentrations of individuals with low "socio-economic" scores has adverse dynamic consequences for a region. In particular, demographic characteristics and educational levels determine the quantity and quality of the available labor supply, which in turn affects the development potential of regions, since industries normally evaluate the available labor supply when deciding where to locate (Rice, 1973; USR&E, 1973). Thus, poor areas often remain poor.

Unfortunately most of the demographic variables discussed above are not amenable to change through government policies; education in the long run, and manpower training in the short run, being exceptions. Thus, while these factors are important to consider in trying to predict the likelihood of a large poverty population in a particular area, they are less useful as policy tools for correcting inter-area differences.

Inadequate Economic Development

Variations in economic structure, and, in particular, differences in industrial and occupational composition also produce regional income differentials. Richardson (1969) has found that the "dominant factor behind differential changes in regional per capita income throughout the period 1880-1950 was changes in the relative importance of agricultural and manufacturing employment within each region." Areas with large concentrations of high wage industries and occupations tend to have a generally low incidence of poverty. Agricultural areas, with low farm incomes have until recently presented serious rural poverty problems. Although the national economy is becoming increasingly service oriented, the key to regional economic development appears to remain with the manufacturing sector. Industrial development is believed by some to occur in two stages (Till, 1974). In the first stage, the availability of low wage labor attracts marginal, labor intensive industries from areas with higher labor costs. The relocation of the textile industry from the Northeast to the South is a good example of the first stage development. During this stage training is provided for the labor force, and some infrastructure is developed. The second stage, according to Till, occurs as higher wage, less labor intensive industries enter in response to the stimulus of the first stage. Economic growth and higher incomes are contingent upon the second stage.

In line with the analysis described above, regional income disparities may be reduced by encouraging industries to relocate to the less-favored areas. Attracting industries to these locations would involve the use of stimuli such as infrastructure investments, the provision of sewerage, water supply and other services available in large cities. Manpower training might also be useful in providing the skilled labor force necessary for attracting industries.

Alternatively, access to economic opportunity might also be improved through migration (this will be discussed in the following section). In short, one might move people rather than firms. A final alternative, described in Hansen (forthcoming), would be to extend the transportation network to connect several smaller cities to form a "metropolitan" network. This would permit industries and public sector services to enjoy the economies of scale offered by large urban concentrations without the attendant problems of urban congestion.

IX. Determinants of the Turn-over Rates of Poor Families

The problem of poverty is inextricably bound up with the problem of mobility. In particular, for some families and individuals poverty is a temporary condition, produced by a sudden reversal in economic fortunes. From the point of view of public policy, these people require at most temporary, short-run help. For other families or individuals, however, poverty is a permanent condition, often passed across generations. For these people, longer-run anti-poverty strategies must be developed. To the extent that we can distinguish between temporary and permanent poverty a priori, anti-poverty programs might be designed more effectively.

The first section of this chapter is a summary of the available estimates of changes in the size of the overall poverty population over time. This data provides a first, rough approximation of the persistence or permanence of poverty. In the second section of this chapter, the literature which tries to identify causes of turn-over is reviewed.

IX.1. The Over-all Level of Mobility

Estimates of the extent to which the poverty population has changed over time are very sensitive to the way in which the initial poverty population is defined. Alternative estimates are provided here for the major classes of economic definitions of poverty discussed in Chapter II of this report.

The Social Security Administration defines poverty as inadequate income relative to needs, where needs are defined by constructing and then pricing a "market basket" representing a reasonable standard of living. Using this definition, the size of the poverty population decreased from 40 million in 1960 to 25 million in 1967 (USHEW, 1969). Exhibits 30 and 31 further disaggregate this decrease. It should be noted that this decrease occurred despite the increases made by the Social Security Administration in its income criterion. Not only has the absolute size of the poverty population diminished, but the poverty "gap"--the amount of money needed to move people out of poverty through income transfers--has also shrunk by one-quarter (Orshansky, 1966).

Less reassuring results emerge if one uses a more relative definition of poverty. Clearly if one uses a purely relative definition of poverty--for example, the poor are those people in the lowest 20% of the income distribution--no change in the over all size of the poverty population can be observed over time. Even if we use a quasi-relativistic poverty definition, however, the reduction in the poverty population in the post-war period has been significantly less than Social Security Administration figures suggest.

Quasi-relativistic definitions categorize persons and families with incomes below X% (usually 50-70) of the median income as poor. The focus of these definitions, then, is on inequality: unless the income distribution changes over time, the size of the poverty population will remain constant. Evidence on changes in the income distribu-

VI.4. Migration

Migration is an important aspect of regional income differentials because it may be one way of decreasing these differences. In order to understand the role of migration in equalizing regional income differentials, we will examine the reasons people migrate, and the effect that migration has on their incomes.

Why do people move? Studies seeking to determine why people move have had conflicting results. In general, however, people move to improve their economic well-being, to improve their social well-being, and to live in better surroundings (Blevins, 1969 and Greenwood, 1975). The poor are particularly sensitive to expected gains. They are more likely to relocate to improve their economic welfare than people with higher incomes (Kaluzhy, 1975). A study by Abt (1970) suggests that the perception of economic opportunities, as opposed to actual income differentials, represent the real determinants of migration. Job opportunities, low wage income, and non monetary benefits are some other factors evaluated in decisions to move.

Welfare payments represent the most frequently discussed non-wage income component. A number of studies have addressed the following question: Do poor people move in order to take advantage of differentials in welfare payments? Some of these (DeJong and Donnelly, 1973 and Hamilton, Collignon and Carlson, 1970) reject the notion that the poor move in order to collect higher welfare checks. Others disagree; Glantz (1973) and Cebula (1974) claim that differential welfare payments do explain migration patterns.

Quality of life considerations are also significant in the decision to move. Weather conditions, recreational opportunities, and crime rates are among the factors considered by Liu (1973) and Cebula (1973).

Finally, some social factors appear to be at work in shaping the patterns of migration. The social phenomena include return migration caused by improved economic opportunities in the initial sending area, failure to succeed in the receiving area, or homesickness. Chain migration, on the other hand, describes the destination of movers. It hypothesizes that people move to locations where they have ties, friends, and information.

In short, it appears that economic forces (viz. income differentials) do encourage some migration and therefore tend to reduce wage differentials in the long run. The force of economics in this situation, however, is not inexorable.

Who moves? According to the classical view of migration, the economically disadvantaged, the poorest and the unemployed, have the greatest incentive to move. The non poor also move for reasons of economic incentive, with educational and professional achievements increasing their job opportunities. According to Hansen, manpower training programs "transform unskilled natives into skilled migrants." Age is also important in the decisions to move: people in their early twenties have the highest migration rates in the U.S. (Morrison, 1973).

There is general agreement that mobility increases the movers' incomes (Morgan, 1974; Glantz, 1973; and Morrison, 1973). This is not unexpected since better economic opportunities are among the most important reasons for moving. According to one study (Wertheimer, 1970), moving from the South to the North increases the movers' annual incomes by $600, and from rural to urban areas by $800.

While mobility appears beneficial to the migrant, the effect of migration on sending and receiving areas should also be considered. Are regional income differentials in fact equalized and should migration be encouraged as a policy for the elimination of pockets of local poverty? In the short run, there is some evidence that migration tends to equalize employment opportunities, and thus reduces overall unemployment (Mazek, 1969). In the long run, however, regional differences may be accentuated. The sending area loses the best segments of its labor force through out-migration, as the skilled and young leave in search of better opportunities. This further reduces the attractiveness of the sending area for industrial location--contributing to a further decline. The receiving areas on the other hand augment their labor pool through migration, which contributes to their sustained growth (Lowry, 1966; Lansing and Miller, 1967; Morrison, 1973). In addition, in-migration has some potentially negative effects on the receiving centers: congestion, higher income rates, and greater welfare loads are among the negative influences feared.

VII. Wealth/Assets and Consumption as Measures of Poverty

The argument over whether income is an appropriate measure of one's economic condition is an old one, and is most frequently articulated in the tax literature. Thomas Hobbes argued, for example, that the appropriate base for taxation (and hence for negative taxation which is welfare) was wealth, not income; that people should be taxed on the basis of what they "took out of the pot," not what they put into it (Hobbes, 1924). Since Hobbes' time, the debate has become somewhat more complex, but the issues remain essentially the same: is economic well-being best measured by income, wealth, or consumption?

In summarizing the literature on this subject, this paper will first present the arguments for the use of wealth and consumption in measuring affluence, followed by a summary of the findings of researchers who have surveyed poor populations to determine the actual effect that using wealth and consumption measures would have on the identification and measurement of the poor.

The Arguments

There are several problems with using current income figures to identify the poor. In any one survey year, the observed low-income group will include some people who are earning below their normal level, as the result of negative windfalls (Friedman, 1957). Moreover, low-income people in particular tend to under-report income (Reid, 1964). The Office of Business Economics of the U.S. Department of Commerce corrects to some extent for this under-reporting using field survey data, but these adjustments are clearly problematic.

Consumption has frequently been offered as an alternative poverty definition because it is a better proxy for permanent income than current income and thus eliminates much of the transistory phenomenon manifest in present income figures. We are interested in permanence for two reasons: In the first place, we feel that a family that earns say, $6,000 in 1967, $0 in 1968, $6,000 in 1969 is better off than a family that earns $4,000 every year. Under the current income measure of poverty, the first family would have been considered destitute in 1968, the latter family would not be considered poor. Secondly, programs designed to help poor people should be designed to treat the permanent and the temporary poor differently.

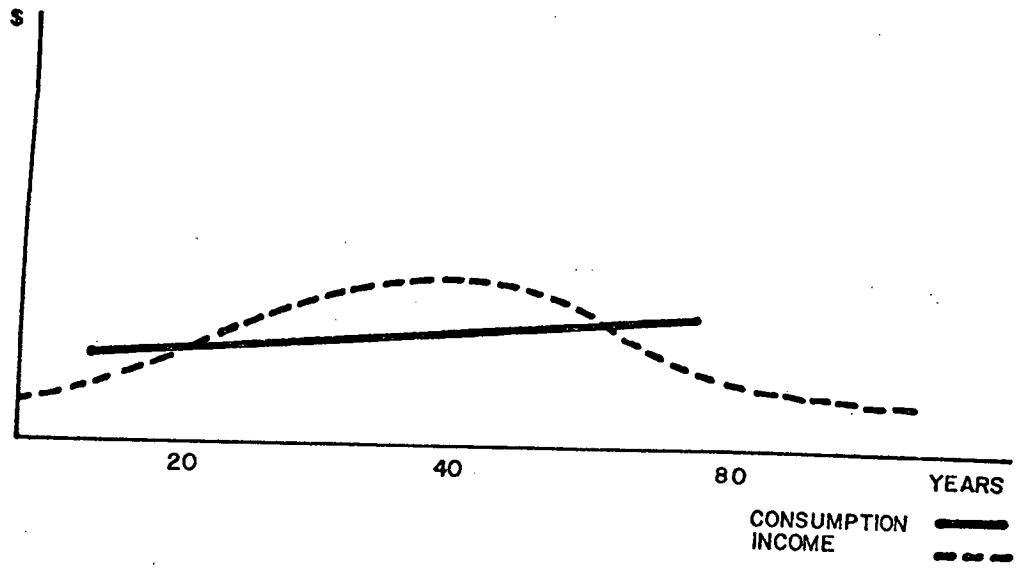
We are concerned with the use of wealth and assets in measuring poverty because they are thought to influence consumption--a theory primarily based on the Modigliani-Brumberg "life cycle" hypothesis that is discussed below. Furthermore, it is argued that income from wealth and assets is different in kind than income from labor. People who possess wealth and assets have a kind of security not available to individuals at comparable income levels who have no wealth. Hence this argument for incorporating wealth and assets in a poverty measure is motivated out of concern for equity.

The primary theoretical bases for using consumption and wealth to capture permanent income are Friedman's Permanent Income Hypothesis and Modigliani and Brumberg's Life Cycle Hypothesis of Saving. Friedman argued that consumption decisions are made, not on the basis of current income alone, but on a variable which he called "permanent income" which was a longer run measure of the resources available to the household. Current or "measured income" consisted of "permanent income" and "transitory income." Transitory income was hypothesized to be uncorrelated with permanent income, with a long-run average value of zero. The functional relationship between consumption and permanent income was assumed to be altered by wealth, among other things. Since "permanent income" was not susceptible to direct measurement, a proxy was used: the weighted average of income of previous periods. Except for the omission of an intercept in the consumption function, the "permanent income" consumption function was seen to be identical to the simple distributed lag consumption functions already in existence. This specification of the consumption function performs significantly better than the earlier models, especially when consumption is defined in such a way as to amortize consumer durables over their lifetime. On balance, work in the area of distributed lag consumption functions, including Friedman's work, suggests that individual saving and expenditure decisions can be more effectively explained using measures other than current income. In particular, either a weighted average of past income or consumption itself appear to be good predictors. At the same time the permanent income evidence on the effect of wealth, assets and interest rates on consumption behavior is somewhat weaker; for example, the empirical form used by Friedman to test his hypothesis did not subsume these variables (Friedman, 1957).

Closely related to Friedman's hypothesis is the Modigliani-Brumberg life cycle hypothesis which attempts to explain the relationship of consumption to income over one's lifetime. Typically, households experience income fluctuations over their lifetimes: a usual scenario involves low income during the early years of education and training, a peak in the middle years and a final fall at retirement. Modigliani and Brumberg suggested that households are typically aware of this income pattern (at least in its broad outlines), and that households save as a way to "even out" the income stream. Thus, saving occurs during high income periods, and dissaving during particularly lean years. In the figure below, an example of the way in which saving might be used to even out the consumption stream, given a variable income stream, is provided* (Modigliani and Brumberg, 1954).

---

*The flat consumption stream is presented for heuristic reasons; in general, consumption would not be flat.



Several empirical studies have been done to test the permanent income and life-cycle hypotheses. In an analysis of the BLS-Wharton Study of Consumer Expenditure, Incomes, and Savings, Modigliani and Ando gave statistical support to Friedman's proposition that consumption is determined not by current income but rather by a longer run measure of resources available to the household (Modigliani and Ando, 1959). Although some studies were done that found that current income had a great weight in determining consumption, a re-examination of this data by Darby suggested that the studies were biased and that, in fact, the desired rate of consumption was a stable, linear function of permanent income. This lends strong support to both Friedman's and Modigliani and Brumberg's hypothesis (Darby, 1974).

Survey studies, particularly in terms of the behavior of young people, have been somewhat less supportive of the Freidman, Modigliani-Brumberg arguments. In a survey study of the relationship of saving to age, Projector found that the data did not fully confirm the notion that the function of saving is to smooth out consumption over one's lifetime. Using survey data from 1963 and 1964, she found that savings increase with age to a peak after middle age when dependents are few and income is still high. In the later years, on the other hand, households do seem to conform to Modigliani-Brumberg expectations: after retirement, in particular, the predicted dissaving does occur (Projector, 1968). The Projector results are confirmed by the other survey studies which indicate that consumers show an expenditure peak in the middle age years, and that during the younger years, when people should be borrowing against expected future income, they actually curb consumption (Thurow, 1969).

behavior results from imperfect credit markets that prevent consumers from borrowing as much against their future income as they would like (Thurow, 1969). Keizo Nagatani, on the other hand, explains this phenomenon in terms of the risk and uncertainty associated with the consumer's future income: young people would like to consume according to their permanent incomes, but are uncertain as to what their future incomes will be. Since people tend to be risk averse, they are likely to borrow less against future earnings than they actually expect to earn (Nagatani, 1972). Heckman offers a third explanation for observed consumer behavior. He contends that leisure is an important consumption item that has been omitted from the list of consumer expenditures. Hence, although it may appear that people's consumption patterns are variable, they are actually constant if leisure is included as a consumption item (Heckman, 1974).

The Effect of a Wealth and Consumption Measure on Poverty Status

The obvious question that arises in a consideration of the use of wealth and consumption in measuring poverty is: What effect will these measures have on the identification and measurement of the poor? Most of the literature in this area concerns the effect of wealth and assets rather than consumption because data on wealth and assets is more accessible than consumption.

Consumption. What data there is indicates that replacing income with consumption as a poverty measure may have significant repercussions. Margaret Reid estimated that in 1960 for large U. S. cities, consumers with incomes under $1,000 were spending $224 for every $100 of income received. The average expenditure for families in Washington with incomes under $1000 was $5,404. Thus, she concluded, the Council on Economic Advisors' estimates of the extent of poverty (based on current income) were inflated by a number of households suffering only temporary reductions of income, but which were in fact maintaining their previous levels of consumption. (Reid, 1964)

Lenore Epstein, on the other hand, found that using consumption expenditures rather than income as a poverty measure leaves the total count of the poor unchanged: it does, however, alter the mix of the poor. In particular, when income is used as a poverty threshold, young people (who are frequently suffering only temporary poverty) are over-represented in the count. The use of expenditure data corrects this since young people tend to overspend in anticipation of an expected higher income. The table following shows the number of poor families that are identified by income and expenditures measures. The data was aggregated by the Social Security

Administration from 1960-1961 consumer expenditure survey data to show size of consumption expenditures. The families that spend less than the poverty thresholds are those that would be classified as poor under a consumption measure of poverty. Epstein maintains that these are the families that would be poor for longer than one year. (Epstein, 1969). Notice the close correspondence between the two measures in the aggregate number of families categorized as poor.

Exhibit 24

% Poor based on	Families of 2+	1- Person Units
Income	12.3	32.4
Expenditures	12.3	33.0

(Epstein, 1969)

Wealth and Assets. Studies of the effects of a wealth and assets measure on the number and composition of the poor reveal that with the exception of the aged, poor people in general do not have enough wealth to bring them out of poverty. On the other hand, the effects of a wealth and assets measure would make significant differences on the measurement of the economic status of the overall U.S. population, especially in the upper income brackets.

Weisbrod and Hansen, Murray, and Projector and Weiss all used a measure of net worth (assets minus liabilities) plus current income to determine financial well-being. Although each study differed slightly in its method, the technique used was basically as follows: Net worth was converted into an income flow by treating it as an annuity. The value of the annuity depends on three factors: the amount of net worth, the rate of interest, and the length of the time period over which net worth might be annuitized. Variations in any of these three factors will affect the determination of a family's economic status. Hence studies that choose a higher interest rate tend to show a greater affect of the wealth and assets measure than those using a lower interest rate. Weisbrod and Hansen used both a four percent and a ten percent interest rate to test the sensitivity of their results. Murray and Projector and Weiss used four percent.

The length of the time period over which net worth is to be annuitized is also critical to the assessment of the contribution these assets make on economic status. Weisbrod/Hansen and Murray used as the time period the life expectancy of the owner. Hence, at a given interest rate and net worth, people with shorter life expectancies

of being substantially better off when this system is used. Another approach is to assume that net worth is annuitized over some arbitrarily specified time period, such as the maximum time period necessary to liquidate wealth and assets. Projector and Weiss consider this approach.*

Although the studies themselves vary in scope, the results seem to complement and support each other. Weisbrod and Hansen looked at the effect of wealth and assets on the income distribution of the overall population. They found that when the more comprehensive income net worth measure is used to determine economic status, the entire distribution shifts upward and its shape is altered. The table below shows that when the simple income measure is used, 20% of the population are in poverty. This shifts to 18 and 17 percent when net worth is incorporated into the measure, using respectively 4 and 10 percent interest rates. However, note that the shift is more dramatic for upper income families. Thus, if one used a relative definition of poverty (i.e., income less than 50% of the median income) including wealth/assets increases the poor count! The Lorenz curve illustrates more dramatically the effect of the income-net worth approach on income distribution. (See Exhibit 26.)

Exhibit 25

PERCENTAGE DISTRIBUTION OF FAMILIES BY TWO MEASURES OF ECONOMIC POSITION, BY INCOME, 1962

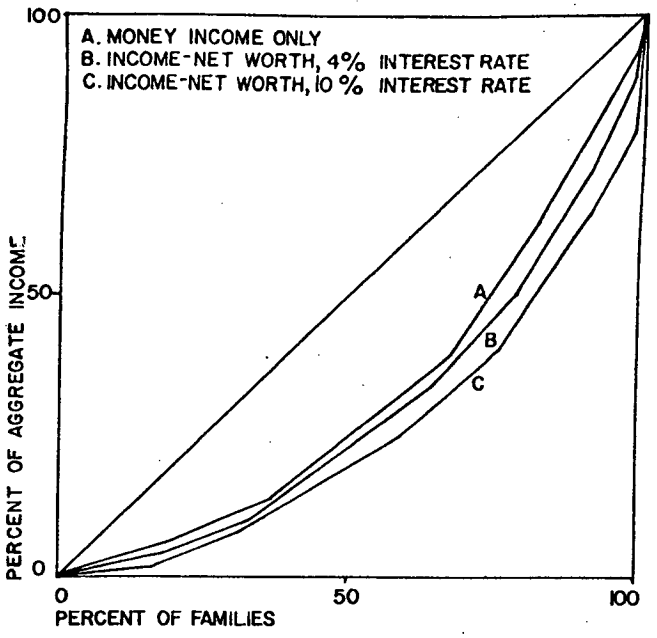
Income Size Class	Percentage Distribution of Families		
	Current Money Income	Income-Net Worth	
		4 Per Cent	10 Per Cent
	(1)	(2)	(3)
Under $3,000	20	18	17
3,000- 4,999	19	17	16
5,000- 7,499	27	25	24
7,500- 9,999	17	17	16
10,000-14,999	13	15	17
15,000-24,999	4	6	7
25,000 and over	1	2	3
Total	100	100	100
Median	$5,960	$6,480	$6,750

Source: Column 1—See [14, Table 3, p. 26]. Columns 2, 3—Based upon data from [14, Table 3, p. 26] and [11]; see Appendix to this paper for method of calculation.

(Weisbrod and Hansen, 1968)

---

*It should be noted that all of these studies failed to include non personal wealth in their data, that is, wealth owned indirectly through financial intermediaries, such as pensions and life insurance. In interpreting the results of these studies, one should keep in mind that the effects of wealth and assets on poverty status are probably understated.



LORENZ CURVES: PERCENTAGE SHARE OF INCOME AND INCOME-NET WORK RECEIVED BY FAMILIES, 1962

The relatively small effect which including net worth in income has on the aggregate count of the poor reflects the lack of assets of this group.

The results of Projector's survey on the size, distribution, and composition of wealth in the United States are summarized in Exhibit 27. Of those falling below the Social Security Administration's economic level poverty line, twenty-eight percent reported no assets while two percent had a negative net worth. Another twenty-one percent had some wealth but less than $10,000 and twelve percent had between $10,000 and $12,000 in assets. Only 6% had more than $25,000 in assets. Only 7% of the poor had sufficient home equities that the addition of a 4% implicit return would raise them above the poverty line. When net liquid and investment assets are considered as being used up over five years to supplement income in addition to home equity, 9% of families and 19% of individuals are raised above the poverty line.

Including wealth as an addition to income in determining poverty does have some effect on the composition of the poor. The aged had more wealth on average than younger heads of poor families. Families had more wealth than single persons; and, among families, those consisting of 2 persons had the most wealth. Savings rather than inheritance was the major source of wealth for most individuals. Both wealth and current savings vary positively with current income. Liquid assets, homes and automobiles are widely held while holdings of financial assets are highly concentrated in the upper income/wealth groups (Projector, 1966).

SHARE OF WEALTH IN SPECIFIED FORM: POVERTY INCOME STATUS GROUPS, DECEMBER 31, 1962

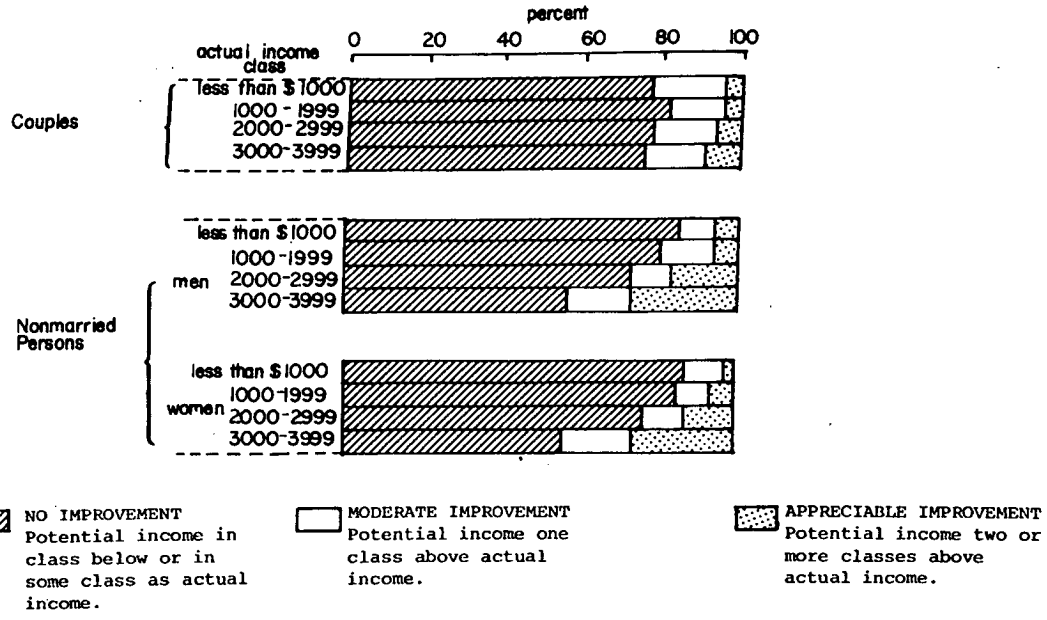
(Percentage distribution of dollar aggregate)

Characteristic of consumer unit	Total wealth	Own home	Automobile	Business, profession (farm, nonfarm)	Portfolio of liquid and investment assets						Miscellaneous assets
					All	Liquid assets	Investment assets				
							All	Publicly traded stock	Mkt. sec. other than stock	Other	
Units with income below Level 1[1]	100	37	2	18	40	15	25	14	2	9	2
Unrelated individuals	100	45	1	8	44	23	21	8	*	14	1
Under age 65	100	37	2	18	40	18	22	15	*	7	3
Age 65 and over	100	51	1	*	48	27	21	2	*	19	*
Families of 2 or more	100	32	3	25	38	10	28	19	3	6	2
Size of family: --											
2 persons	100	32	1	15	51	13	38	29	5	4	1
3 or 4	100	37	4	43	9	3	6	*	*	6	6
5 or more	100	29	8	43	19	8	11	*	*	11	*
Age of head:											
Under 35	100	20	13	39	5	5	*	*	*	*	23
35 – 44	100	32	7	42	18	9	9	*	*	9	*
45 – 64	100	29	2	38	28	6	22	11	7	4	2
65 and over	100	37	1	3	58	15	43	36	*	7	*
All other units	100	26	3	19	47	13	34	18	2	14	6
Unrelated individuals	100	19	1	5	55	14	41	24	2	15	19
Under age 65	100	18	2	5	43	12	31	19	1	11	32
Age 65 and over	100	21	1	5	72	18	55	30	5	20	2
Families of 2 or more	100	27	3	20	45	12	33	17	2	14	4
Size of family:											
2 persons	100	24	3	18	54	14	40	23	2	14	2
3 or 4	100	30	4	20	43	12	30	14	2	14	3
5 or more	100	29	4	26	33	9	24	11	1	12	8
Age of head:											
Under 35	100	38	10	15	32	12	19	11	1	8	5
35 – 44	100	32	5	23	30	10	21	7	1	13	10
45 – 64	100	28	3	22	44	12	32	16	1	14	3
65 and over	100	20	1	15	63	15	47	28	5	15	1

* Less than ½ of 1 per cent.
[1] Level 1 is the economy level as defined by the Social Security Administration. See also footnote 18, p. 37.
Note.—Based on means in Table A 41. Details may not add to totals because of rounding.

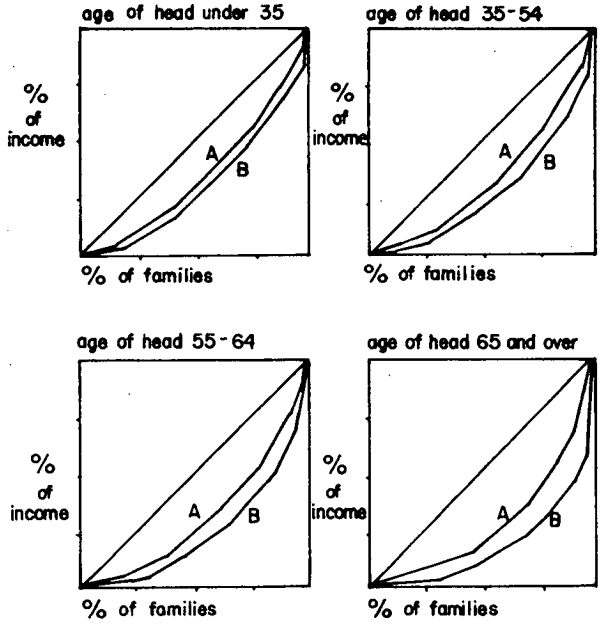
Janet Murray examined the effect of an income-net worth measure on the poverty status of the aged. She found that median incomes were increased 10% when prorated assets excluded the owned home and increased more than 30% when equity in the owned home was included. More than three-fourths of those with income of less than $3,000 did not have asset holdings great enough to place their potential income in a higher $1,000 interval than that in which their actual income fell.

Exhibit 28 illustrates this point while also showing that the effect of assets diminished as actual incomes decreased. Also couples were less affected than non-married persons (Murray, 1964).



Similar results were found by Hansen and Weisbrod (1968). Wealth and assets contribute more to inequality among the aged than to inequality among younger families.

Exhibit 29



LORENZ CURVES: PERCENTAGE SHARES OF MONEY INCOME (A) AND INCOME NET-WORTH, AT A 10 PER CENT INTEREST RATE (B), RECEIVED BY FAMILIES, BY AGE OF HEAD, 1962

(Weisbrod and Hansen, 1968)

aged, the inclusion of net worth in a measure of economic status does not greatly alter the position of most of the families in poverty. Out of concern for those families that would be affected, however, Projector and Weiss have criticized the use of such a measure. Particularly concerned for the aged, they contend that when assets are used as a criterion for public assistance, those who risk having to go on welfare have no incentive to save, since such savings serve only to delay the start of welfare payments.* Furthermore the annuity method which gives greater weight to those with shorter life expectancies finds a sixty-year-old with a $10,000 net worth to be substantially better off than a forty-year-old with equal net worth. Yet the sixty-year-old's earning power has peaked while the forty-year-old's wealth can be expected to increase. Another problem is that investments in owned homes, automobiles, or businesses can not be liquidated readily, and, even then, not without drastically altering people's lives.

Projector and Weiss do not suggest that wealth and assets be disregarded in assessing economic status, but rather that only those assets that are liquidated should be considered. Hence only actual income received would be counted towards a person's economic status (Projector and Weiss, 1969).

Clearly the incorporation of wealth and assets figures into a measure of poverty status poses many technical problems. In addition to the ones mentioned above, there are the issues of properly assessing the value of an individual's wealth, choosing the appropriate interest rate, and arriving at a fair period of time for annuitization. In some cases, for example an owned home, converting wealth and assets into an annuity might be inappropriate, and some other methods would be needed. In any case, these and other problems do not obviate the need to consider using more than just current income in assessing a person's financial status, for, as we have seen in the literature, people's financial well-being depends on more than just current income.

---

*The magnitude of the actual effect of including assets in a measure of poverty eligibility on savings is not well-established in the literature.

According to the canons of traditional microeconomic theory, individuals choose the number of hours they would like to work by trading-off the satisfaction received from earned income against the satisfaction which they would get from the leisure which must be sacrificed to earn that income. The number of hours chosen depends, of course, on the tastes of the individual, the relevant job attributes, particularly conditions and wages, and the conditions of leisure, including the existence of any leisure income (viz. income guarantees).

Formulating the work choice problem in this way introduces an additional problem in determining resources for the purposes of defining poverty. If leisure is indeed a "good", how do we adjust for differential leisure opportunity in measuring the relative well-being of individuals?

Suppose we have two people, Smith and Jones, each earning a poverty income of $2,000 per year. Smith works full-time 52 weeks a year for his income. Jones, on the other hand, works only sporadically. Are Smith and Jones equally well-off, or is Jones somehow better off because of the additional leisure he consumes?

The resolution to the issue posed above is to be found in the way in which we interpret Jones' behavior. In particular, to the extent that his sporadic work pattern is voluntary, enjoyable, and thus in some sense a consumed "good", most people would agree that Jones is less deserving of aid than Smith. On the other hand, if Jones is intermittently unemployed involuntarily, we might be less anxious to make that distinction. Indeed, in this latter case Jones is in all likelihood consuming not a "good" called leisure, but a "bad" called anxiety.*

The literature directly on this issue is scanty and goes little beyond a kind of philosophical distinction between voluntary and involuntary leisure.

One technique which implicitly adjusts for leisure differences is to define poverty on the basis of hourly earnings. Miller, in his construction of a sub-employment index, used this measure (Miller, 1973). The implicit assumption here is that leisure is voluntary: Jones is "better off" than Smith.

Enke (1966) suggests that non-working time be divided into discretionary versus non-discretionary time. Only discretionary (free) time would count as leisure. Morgan et al. (1974) applied an approach similar to Enke in discriminating between the employed and unemployed. In particular, part of the unemployed time of an individual was allocated in the Morgan study to "job search" and thus subtracted from leisure time.

*It is interesting to note that sub-employment indices, if used as a proxy for poverty, discriminate in favor of Jones and against Smith. Working poor (Smith) are classed as poor only if their income falls below the poverty threshold; the unemployed (Jones) are called poor so long as their income is less than the society's median income.

In a recent article, Morgan suggested that a composite measure of a family's well-offness be constructed using control over economic resources in conjunction with adjustments for leisure. In adjusting for leisure, Morgan suggests that we first subtract from the normal twenty-four hour day twelve hours needed for "survival". From this should be subtracted time spent on paid and unpaid work. The remainder (leisure) would then be divided by the number of adults in the family to generate an average adult family-member leisure figure (Morgan, 1975).

A somewhat novel approach to defining poverty suggested by Garfinkel and Haveman (1974) is also applicable to this problem. Garfinkel and Haveman criticize the use of annual money income as a poverty measure on the grounds that this ignores any human or physical capital people may possess. As an alternative, a new measure, "net earnings capacity" (NEC), is offered. The NEC is intended to capture a family's full ability to generate income when utilizing all potential human and physical capital at full capacity. Thus, if a particular family chooses to consume leisure rather than producing income, this would not alter our ranking of the family's well-being. Unfortunately, the NEC is rather difficult to operationalize for policy purposes.

The question of whether and how one should adjust poverty standards to accommodate individual differences in consumption of leisure is clearly a difficult one. At the present time, however, the state-of-the-art in this area is too primitive to allow us to make any reasonable distinction of this sort for implementing policy.

Exhibit 30

PREVALENCE OF POVERTY AMONG FAMILIES
BY AGE, SEX, AND COLOR OF HEAD
UNITED STATES: 1967
(families as of 1968)

Family Characteristic	Number		Percent	
	White	Nonwhite	White	Nonwhite
All Families	3,730,000	1,536,000	8.3	30.6
Male Head	2,724,000	820,000	6.7	22.2
Female Head	1,007,000	716,000	25.1	54.1
Male Head 65 and over 1/	782,000	107,000	17.8	43.3
Female Head 65 and over 1/	176,000	33,000	24.6	43.4
Farm	296,000	106,000	12.0	48.6
Non-Farm	3,435,000	1,430,000	8.1	29.8

1/ Includes only 2-person families.

Data Source: U.S. Bureau of the Census
Prepared By: Community Profile Data Center, CHS

Exhibit 31

POVERTY STATUS OF FAMILIES
UNITED STATES: 1959-1967

Year	Percent of ALL Families	
	Income Under $3,000 1/	Poor by SSA Measure
1967	12.3	10.6
1965	15.5	13.4
1963	17.5	15.5
1961	19.4	17.3
1959	19.7	18.4

1/ In 1966 dollars

Data Source: U.S. Bureau of Census

Prepared By: Community Profile Data Center, CHS

tion since World War II is mixed. The consensus appears to be that family income has become slightly more equally distributed since 1950 (Solow, 1967; Ackerman, 1970; Smith and Franklin, 1974; Schultz, 1965; Miller, 1966), while individual incomes have become somewhat less equal (Budd, 1970; Gastwirth, 1972; Henle, 1972).* If we extrapolate from this evidence, it appears that the poverty population, if we defined it in a quasi-relative fashion, has been at best reduced only slightly since 1950.

Our concern in this paper goes beyond interest in the overall size of the poverty population. We are also interested in changes in the identity of individuals in the poverty group. In particular, does the poverty population contain a number of temporary members--people moving rapidly in and out of poverty--or is it primarily a collection of permanent residents? Unfortunately, very little reliable work has been done in this area. The most definitive piece of recent research sponsored by Department of Labor (Longitudinal Study of the Labor Market Experience of Men) suggests that movements in and out of poverty are relatively infrequent. During the period 1965 to 1968, 2% of the population moved out of the poverty group (using the SSA criterion) and 1.5% of the population newly became poor. The study also suggested that blacks were less likely than whites to escape poverty during this period. This result was confirmed by McCall (1971) in a study using Social Security data, as well as Morgan (1974) using data from a longitudinal study of 5,000 families.

IV.2. Causes of Turn-over

The discussion above suggests that, at least under some definitions of poverty, the size of the poverty population has diminished over time. Moreover, research suggests that there are at least some people who "escape" from poverty with the passage of time. To what extent can overall trends in the population and "escape rates" be explained on the basis of either the perturbations of the economy or individual attributes?

Proponents of the "trickle-down" theory of economic prosperity argue that poverty can be substantially reduced through the effects of growth (Galloway, 1966; Blumen, Kogan and McCarthy, 1955). Growth and economic prosperity, it is argued, increase employment opportunities and wages, and, moreover, these improvements will eventually "trickle-down" to the poor. Thus, high unemployment rates, tend to reduce the number of hours worked--both for the employed and unemployed--and thus reduce income (Morgan, 1974). Access to information and job opportunities, once again increased by economic prosperity, increase the level of economic well-being and reduce the probability of persistent poverty (Morgan, 1974)

Economic growth, however, is not considered a panacea for poverty by everyone. In particular, it is argued that some groups (particularly minorities and women) are sufficiently isolated from the rest of the economy that general prosperity has little effect on them (Anderson, 1964; McCall, 1971; Tobin, 1970; Kelly, 1973; Chase and Laber, 1969). Thus, more direct, specific programs are needed for these groups.

---

*The trends are elaborated further in Appendix B of this paper.

Changes over time in public assistance for the poor also affect the size of the poverty population. It has been estimated that an additional 10% of the population would be poor without welfare assistance (Morgan, 1974). And, contrary to the popular claim that a more generous scale of assistance payments would swell the welfare rolls, there is some, albeit inconclusive, evidence that neither the average amount of the welfare grant nor its rate of increase positively influences the relative size or growth rate of the AFDC population (Winegarden, 1973).

If we turn to the question of identifying the attributes of individuals which increase their probability of escaping from poverty, the evidence is considerably less definitive. The most authoratative and comprehensive study on the turn-over problem was conducted by the Michigan Survey Research Center (Morgan, et al., 1974). A longitudinal survey of 5060 families was made, in which a wide range of socio-economic data was collected and analyzed. A second important study in this area is McCall's A Markovian Model of Income Dynamics (McCall, 1971). In this analysis, data from the continuous SSA sample was used to estimate a model of income dynamics.

Conventionally, economists as well as public administrators argued that education is the major vehicle for escaping poverty (Palmer, 1954; Parnes, 1974). To a large extent this position rested on the observation that people with more education typically earned higher incomes. Indeed, as is indicated in Chapter XI of this report, low educational attainment is sometimes used as a proxy for poverty. More recently, however, this confidence that education contributes to upward mobility has been somewhat shaken. In particular, it is argued that educational attainment, while positively correlated with income, is also correlated with a number of other factors, including ability, motivation and parental status, which themselves independently affect income (Clark, 1966; Duncan and Hodge, 1963; Jencks, 1972; Morgan, 1974; Spady, 1967). Thus, when we observe a relationship between education and income at least part of what we observe may be the underlying relationship between say parental status and child's income.

A second challenge to the belief that education promotes upward mobility has been made by researchers analyzing the current structure of educational opportunity. It is argued that under the current system, in which upper income children receive better educations than the children of the poor, education retards mobility (Coll, 1965; Sexton, 1961; Sochet, 1965).

Finally, the arguments in support of education as a vehicle for mobility have been attenuated by recent evidence which indicates that gains from education are smaller for minorities and women than for white men (Carliner, 1975; Morgan, 1974). In other words, education is a less viable technique for escaping poverty for some groups than for others.

The Morgan study (1974) also considered the effect of several demographic and attitudinal factors on escape rates. There is slight evidence that turn-over rates decrease with family size (U.S. Department

of Labor, 1970, 1973; Morgan, 1974). Attitudes (at least the self-reported attitudes used by Morgan) do not seem to explain very much about an individual's chances of upward mobility. It should be noted that this result is at variance with the work of Alix and Lantz (1973) in which the lack of motivation was found to be a significant obstacle to mobility.

Unfortunately, as indicated in the review above, the existing literature on the determinants of turn-over is quite sketchy. As a result it is not really possible to be definitive about this issue, and additional work is clearly in order.

X. Social and Economic Proxies for Poverty

Although income is the most frequently used criterion of poverty, a number of alternatives are also possible. Alternative criteria proposed are considered to serve two functions. First, reliable income data on the candidate study site is not always available; this problem crops up most frequently in studies of less developed countries but also occurs in studies of sites which are sub-sets of heterogeneous Census tracts. Thus, in some literature, varied social and/or economic characteristics are used for pragmatic reasons as a second-best alternative to income. There is a second class of studies, however, in which non-income data serves a philosophically quite distinct role in poverty measurement. Here, social and economic attributes are used as adjuncts to income in defining poverty. In particular, it is argued that exclusive reliance on income or wealth-adjusted income abstracts form much of the essential complexity of the poverty phenomenon, and, more pragmatically, biases the choice of poverty programs. It is argued, for example, that strict income-focussed poverty definitions result in cash oriented programs, even in cases in which in-kind transfers might be more viable.

Among the measures of poverty suggested as either alternatives or adjuncts to income have been "social" indicators: infant mortality rates, morbidity, illiteracy, and so on. These proxy measures are considered at length in Chapter XI of this report. There is, however, a second category of proxy measures--economic proxies. Included in this category are the employment-related poverty measures, as well as broader indices of economic status. In this section, the major work on this group of proxies is reviewed.

Employment Oriented Proxies of Poverty

Major employment oriented poverty measures include unemployment, sub- or under-employment, labor force participation, and job vacancy indices. Of these, the first three--unemployment, subemployment, and labor force participation--can be and have been used to identify both poor people and poor areas. Job vacancy estimates, on the other hand, are primarily useful as an index of area well-being and cannot be used to identify particular poor people. Moreover, the prime asset of job vacancy measures is that they allow one to identify structural problems in local labor markets. Since this is issue is beyond the scope of this project, job vacancy indices will not be covered in this report.

Unemployment Rates

Prior to the 1960's, the unemployment rate was the major rival to income as a measure of economic hardship. Unemployment, after all, was early recognized as a major cause of poverty: In the seventeenth century, the British used work houses as a major anti-poverty device (Lampman, 1971); U.S. government work programs in the 1930's reflected a comparable, albeit more humanitarian, belief in the concomitance of poverty and unemployment. Indeed, at the present time, reductions in unemployment are still considered a major tool for alleviating poverty (Anderson, 1964; Ferguson, 1970), at least for a selected sub-set of the poor (Tobin, 1965). To the extent that it is still used administratively as a measure of poverty, unemployment is generally coupled to low income to form a kind of composite index: thus, the Department of Labor identifies the target population for its manpower programs as the "poor" (low income) who lack suitable employment; H.E.W. allocates funds in its vocational education program to "economically depressed" areas, evidencing high rates of unemployment; the Economic Development Administration similarly allocates funds using a ranking of areas by per capita income and unemployment.

A brief review of the technique used to calculate the unemployment rate will help to clarify the problems associated with the use of this measure as a proxy for poverty. Each month, the Department of Labor conducts a household survey of employment: the sample is selected to reflect the mix of personal and residential attributes found in the country as a whole. In 1973, 47,000 households were sampled. Individuals, on the basis of survey responses, are then categorized as "employed", "unemployed", or "not in the labor force". The employed include all those who have worked, for pay or profit, during the survey period, those who worked at least 15 hours (in a week) without pay in family businesses, and those with jobs who were temporarily absent. The unemployed include those without jobs, who have looked for work in the preceding 4 weeks, and workers who have been temporarily "laid off". Remaining individuals are classed as "not in the labor force": these are people without jobs, who are not actively searching either because of age, inclination, or discouragement (U.S. Department of Labor, 1973).

Significant problems arise in trying to use unemployment as a poverty indicator. All working poor are obviously excluded from the index; Levitan and Taggart estimated that in 1972, there were over 2 million family heads who were employed full time and still earned income less than the poverty line (Levitan and Taggart, 1973). A second problem arises from the unemployed/not in the labor force distinction made by the Labor Department. A substantial proportion of the non-working poor become discouraged as a result of long job-search frustrations. To the extent that these people stop searching

for work, they are excluded from the count of the unemployed. Ferguson (1971) estimated that 40 percent of the jobless poor were excluded from the unemployment statistics. Finally, some individuals who are unemployed, nevertheless have adequate incomes. Levitan and Taggart, for example, estimated that slightly more than one half of those officially designated as unemployed in March, 1972, earned in excess of poverty level incomes (Levitan and Taggart, 1973).

Indeed Feldstein has recently argued that the adequacy of the income of the unemployed is an important contributor to the persistence of this unemployment (Feldstein, 1974).

The use of unemployment as a proxy for poverty results, largely because of the problems alluded to above, in a mis-estimate of the composition, as well as the number, of the poor. In particular, women and minorities tend to leave the labor force in discouragement with greater frequency than white men (Mooney, 1967; Ross, 1967). Moreover, white men are also more likely than are minority workers (though perhaps not women) to possess adequate income despite their unemployment: this is largely a result of the persistence of Black versus white unemployment. Thus, the unemployed population on average will have relatively more white men than has the poor population; this is, of course, an important source of bias in poverty programs which focus on unemployment.

Sub-Employment Indices

In 1966, the Department of Labor, recognizing the inadequacy of unemployment as an indicator of economic distress, began to develop a new "subemployment" measure. Subemployment, in its initial form, consisted of:

(1) The unemployed (formally defined using the criteria discussed above);
(2) Part-time workers who desired full-time work;
(3) Employed family heads with weekly wages less than the Council of Economic Advisors poverty threshold (not adjusted for family size, region, etc.);
(4) Half of all males ages 20-64 who were not in the labor force--a rough estimate of discouraged workers;
(5) Half the difference between the measured female and measured male populations--an adjustment for the undercount of males in the survey.

(Feld, 1968)

The application of this measure to ten ghetto areas resulted in subemployment estimates of 35 percent, as opposed to formal unemployment estimates of 11 percent (Stambler, 1968).

A number of refinements of the basic Department of Labor subemployment index subsequently appeared. The formal derivation of the major subemployment indices is summarized in Exhibit 32, taken from Vietorisz, Mier, and Giblin (1975). A number of technical differences mark the indices catalogued; the primary substantive distinction among them,however, is in the degree to which unemployment and poverty indicators are merged. The Spring-Harrison-Vietorisz Index (SHV), and the Vietorisz, Mier, Giblin Index (VMG) define the subemployed as the working poor, plus all individuals either unemployed or discouraged. These indices, then, capture the full poverty population, plus the involuntarily jobless who are not poor. Levitan and Taggart (L&T), and Miller define somewhat more restrictive indices: the working poor, plus unemployed or discouraged workers living in families with incomes below the median U.S. income constitute the subemployment population. Thus, the L&T index and Miller's index exclude the well-off unemployed. The population thus derived is larger than the strict income-based poverty group (since the income test applied to the unemployed is more generous than the usual poverty-line income), but somewhat smaller than the SHV or VMG estimates. A comparison of subemployment estimates derived using alternative definitions is given in Exhibit 33.

As a measure of joblessness, the SHV index or the VMG index appear to be superior to the L&T or Miller index. All individuals unwillingly jobless or inadequately remunerated are counted. As a poverty proxy, however, both the SHV index and the VMG index are problematic inasmuch as they potentially include quite affluent individuals. In this respect, the L&T index or the Miller index is superior.

There are, however, problems with the L&T and Miller indices, particularly when used as poverty proxies. Indeed, in some respects, these indices are a rather curious amalgam of poverty and joblessness measures. The income test applied to workers is the poverty threshold. The unemployed, however, are subject to a much less stringent inclusion criterion: family income less than the median. The rationale for this distinction is unclear: to the extent that any distinction at all is legitimate, one might argue that it should go in the opposite direction. Employed people, by and large, have larger needs (due to the conditions of their employment) than do the unemployed; one might reasonably argue, therefore, that the income test applied to workers should be less stringent than that applied to non-workers.

Exhibit 32

Detailed descriptions of 5 subemployment indexes

Item	Spring-Harrison-Vietorisz Index	Levitan-Taggart Index	Miller Index	Exclusion Index	Inadequacy Index
Numerator—The numerator consists of the sum of all individuals who fall into one of the following categories:					
A. Unemployed	1. Officially unemployed.	1. Officially unemployed 2. and not over 64; 3. and not a 16–21 year old student; 4. and not a resident of a household with above average family income in the previous year. (Hereafter defined to be the nationwide mean family income for SMSA's or non-SMSA's, as appropriate.)	1. Officially unemployed 2. and not over 64; 3. and not a 16–21 year old student; 4. and not a resident of a household with above average family income in the previous year. (Hereafter defined as the mean family income for the SMSA in which the family resides.)	1. Officially unemployed.	1. Officially unemployed; 2. and a household head or an unrelated individual.
B. Discouraged worker	1. Not in the official labor force; 2. and not over 64; 3. and "inability to find work" is the primary or a secondary reason for not seeking work.	1. Not in the official labor force; 2. and not over 64; 3. and not a 16–21 year old student; 4. and not a resident of a household with an above average family income in the previous year; 5. and currently desiring work but not looking because they cannot find work for either job market or personal reasons. (Job market reasons are: "looked, but could not find" and "think they are too young," or they "lack education, skills or training," or they possess "other personal handicaps").	1. Not in the official labor force; 2. and not over 64; 3. and not a 16–21 year old student; 4. and not a resident of a household with an above average family income in the previous year; 5. and not looking for work, because they believe no work is available.	1. Not in the official labor force; 2. and desires work.	1. Not in the official labor force; 2. and a household head, or unrelated individual 3. and desires work.
C. Involuntary part time	1. In official full-time labor force; 2 and working less than 35 hours a week for economic reasons.	1. In official full-time labor force; 2. and not over 64; 3. and not a 16–21 year old student; 4. and not a resident of a household with above average family income in the previous year;	1. In official full-time labor force; 2 and not over 64; 3. and not a 16–21 year old student; 4 and not a resident of a household with an above average family income in the previous year;	1. In official full-time labor force; 2. and working less than 35 hours per week or less than 50 weeks per year for economic reasons	1. In official full-time labor force; 2. and a household head or an unrelated individual; 3. and working less than 35 hours per week or less than 50 weeks per year for economic reasons.

Continued—Detailed descriptions of 5 subemployment indexes

Item	Spring-Harrison-Vietorisz Index	Levitan-Taggart Index	Miller Index	Exclusion Index	Inadequacy Index
		5. and not a household head or unrelated individual earning less than a poverty income (hereafter defined as the official Social Security Administration annual family poverty budget adjusted for family size); 6. and working less than 35 hours per week for economic reasons.	5. and working less than 35 hours per week for economic reasons.		
D. Earnings	1. In official labor force; 2. and working more than 34 hours per week; 3. and earning less than an "adequate" individual income (defined either as the Bureau of Labor Statistics "lower level" annual family budget for a family of four, or as $4,000 per year, corresponding to the proposed minimum wage level of $2 per hour debated by Congress in 1972).	1. In official labor force; 2. and a household head or unrelated individual; 3. and not over 64; 4. and not a 16–21 year-old student 5. and not a resident of a household with above average family income in the previous year; 6. and earning less than "poverty" income in the previous year adjusted for family size; 7. and not previously counted as unemployed, discouraged, or involuntary part-time.	1. In official labor force; 2. and working more than 34 hours per week; 3. and a household head or an unrelated individual; 4. and not over 64; 5. and not a 16–21 year old student; 6. and not a resident of a household with an above-average family income in the previous year; 7. and earning less than an adequate weekly income adjusted for family size (defined as the legal minimum wage unadjusted for family size).	1. In official labor force; 2. and working more than 34 hours per week; 3. and not previously counted as involuntary part time; 4. and earning less than an adequate income in the previous year (defined parametrically).	1. In official labor force; 2. and working more than 34 hours per week; 3. and a household head or an unrelated individual; 4. and not previously counted as involuntary part-time; 5. and earning less than an adequate family income in the previous year adjusted for family size (defined parametrically).

Denominator—The denominator consists of the sum of all the individuals who fall into one of the following categories:

	1. Official labor force; 2. plus discouraged workers.	1. Official labor force; 2. plus discouraged workers.	1. Official labor force.	1. Official labor force; 2. plus discouraged workers.	1. Official labor force; 2. plus discouraged workers; 3. and a household head or an unrelated individual.

Subemployment Rate—The subemployment rate is obtained by dividing the numerator by the denominator. The number of individuals subemployed equals the number of individuals included in the numerator.

Source: T.Vietorisz, R. Mier, J. Giblin. "Subemployment: exclusion and inadequacy indexes." Monthly Labor Review, May , 1975.

Exhibit 33

Comparison of Subemployment Measures in Detroit Employment Survey Area, Fall 1970

	Spring-Harrison Vietorisz Index		Miller Index		Levitan-Taggart Index		Exclusion Index		Inadequacy Index	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Base (denominator).....	204,979	----	193,108	----	218,008	----	238,080	----	143,067	----
Unemployed.....	27,157	13.2	17,601	9.1	19,163	8.8	27,730	11.6	11,900	8.3
Discouraged worker.....	11,872	5.9	9,651	5.0	24,895	11.4	39,686	16.7	17,783	12.4
Involuntary part-time.....	9,069	4.4	5,722	3.0	6,373	2.9	9,231	3.9	5,365	3.8
Subemployed subtotal.....	48,098	23.5	32,974	17.1	50,431	23.1	76,647	32.2	35,048	24.5

Source: Vietorisz, Mier, and Giblin, Op. Cit.

Other Employment-Related Indices

Unemployment and subemployment are but two of the employment-oriented candidates for poverty measures. In our view, however, the alternatives described below are appropriately used as poverty indicators only when inadequate data precludes the construction of either sub-employment or pure income measures.

The Bureau of Employment Security (BES), for example, has used "persistent unemployment" as a basis for allocating funds spatially. Persistent unemployment is defined as a combination of high and long-lived unemployment (Alexander, 1968). This, of course, is quite reasonable for some purposes; as a poverty measure, however, it is dominated by the L&T or Miller subemployment index. The duration of unemployment is captured adequately by the income criterion used by L&T and Miller: lengthy unemployment depletes resources more than does short-lived but otherwise equivalent unemployment. Moreover, the B.E.S measure ignores the discouraged worker problem so pertinent in poverty areas.

Offner (1972), among others, suggests that labor force participation rates out-perform unemployment rates as an index of inter-area differences in economic distress. Subemployment indices, on the other hand, dominate both, at least as an index of poverty. Of course, if income data is unavailable, the participation rates may serve as a reasonable guide for the allocation of funds.

Broader Economic Proxies for Poverty

As an adjunct to or substitute for income in conducting empirical work, several other economic characteristics have at various times in the past been used. Ryscavage (1969), for example, identified poverty neighborhoods on the basis of a composite index covering income, two social indicators--education and percentage of broken homes, and two economic indices--skill level of the population and housing conditions. Bryce (1973) in a search for proxies for income, found a diverse set of significant economic poverty-correlates: employment specialization in an area, occupational skills of the population, housing conditions, and ownership of two or more cars (a specific "consumption" standard). Adelman and Morris (1965) found that two-thirds of the variation in levels of economic development in 74 less developed countries was associated with differences in non-economic characteristics. The Office of Research, Equal Employment Opportunity Commission (1971) identified poor areas on the basis of income of the population, and on the percentage of the population receiving assistance.

Finally, education has been used in a number of studies as a proxy for poverty (Carliner, 1973; Passow, 1963; Ryscavage, 1969; Sexton, 1969; Wayland, 1966). The interest in using low educational attainment as a poverty measure stems from two considerations.

First, there is a strong belief among both policy makers and social scientists that educational inadequacy causes poverty. Thus, in cases in which income data is unavailable, low educational achievement seems a reasonable proxy. Secondly, it is argued that education is a more accurate gauge of an individual's long run earnings capacity than is current income (Garfinkel & Haveman, 1974). Particularly when one is concerned with distinguishing between long-term versus temporary poverty, educational attainment appears to be a reasonable measure.

A caveat on the use of education as a measure of poverty is in order. The use of education in this fashion is legitimate only to the extent that low income is to some substantial degree in fact caused by educational inadequacy. Recent evidence on this is mixed. Hansen (1970), Thurow (1972), Clark (1966) and others have suggested that the education-income relationship is much weaker than had previously been believed. Moreover, the strength of the relationship varies quite significantly by race and sex (Carliner, 1975).

In sum, the legitimacy of using these alternative variables as proxies for poverty varies. In situations in which income data is unreliable or inaccessible, housing conditions, skill levels, or ownership of a particular durable good may serve. It is not recommended that these measures be used to identify the poor for the purposes of administering relief, unless no other options are available. To the extent that proxies capture important causes of poverty, however, they may well be useful in directing the design of poverty programs. Education and the un/sub-employment measures are probably most valuable in this respect.

XI. Social Indicators

"Money can't buy happiness."

Anonymous

"He was subject to a kind of disease which at the time they called lack of money".

François Rabelais

The distinctions between economic and cultural definitions of poverty have been discussed in Chapter II of this paper. It was noted that many social scientists believe that economic well-being does not always correlate well with many of the social and cultural characteristics which are normally associated with "the good life." This assertion has important implications for public policy-makers seeking to ameliorate or eliminate poverty in America. In particular, it suggests that there may have been an over-emphasis upon economic measures of poverty in the past and that continued reliance on economic measures can bias the choice of government programs designed to reduce poverty.

While social scientists have long been studying a wide range of social problems, it was not until the 1960s that they began an organized revolt against what Bertram Gross has called the "new Philisitinism--an approach to life based on the principle that uses monetary units as the common denominator of all that is important in human life"(Bauer, 1966). Given the widespread development and utilization of economic data in the formulation of public policies in the 1960s, these social scientists have pressed for the parallel development and utilization of non-economic "social" indicators of national well-being.

The resulting attention to the development of non-economic social indicators--and the recasting of much of the previous literature about social and psychological problems in this light--has direct implications for the future formulation of antipoverty policy. The literature in this field can generally be divided into two major areas: (a) discussions of the concepts underlying social indicators as the term has been defined above and (b) discussions of specific social problems--such as health, education, nutrition, and so forth--which can be measured through the use of social indicators.

The former category consists of books and articles published in the 1960s and later and includes several prototype "social reports" prepared by the United States government (Department of Health, Education and Welfare, 1969), and the United Nations (Committee of Experts, 1954), as well as academic moncgraphs on the potential and

limitations of such efforts (Bauer, 1966; Freeman, 1970; Knox, 1974; Gross, 1970; Palley and Palley, 1971; Tauber, 1970; and Van Dusen, 1974). The latter category includes a wide range of academic studies of "social problems" conducted over the past few decades which relate one or more commonly accepted "indicators" of well-being to various background factors, most frequently to factors related to socio-economic status (and by extention, to the poor who generally occupy the lowest socio-economic strata). This paper will focus primarily upon the latter topic.

* * *

The social indicators literature provides a good deal of useful information concerning the non-economic concomitants of poverty. In particular, the literature provides a wide range of research data which seeks to answer the questions "In what ways (other than lack of money) do the poor differ from the remainder of society?" and "How do the poor compare with others in terms of 'well-being', 'quality of life', and 'social health'?"

In this regard, the list of items is long, and is rapidly growing longer. Interest has traditionally focussed on such tangible indicators as mortality and infant mortality (Antonovsky, 1967; Anderson, 1958; Armstrong, 1966; Donabedian, et al, 1965; Ellis, 1958; Hunt, 1967; Stockwell, 1963; U.S. Center for Health Statistics, 1966; Willie and Rothney, 1962); morbidity (Baumol, 1974; Bedger, 1966; Elinson, 1974; Graham, 1972; Herman, 1972, Kadushin, 1966; Laughton et al, 1958; Luft, 1973; Laurence, 1958; Ornati, 1966, Ross, 1962); alcoholism and drug addiction (Ausubel, 1958; Bailey et al, 1965; Lawrence and Maxwell, 1962; Suchman, 1972); nutrition and malnutrition (Berg 1970; Berry, 1972; Haughton, 1963; Hepner and Maiden, 1971, McKenzie, 1970); literacy and educational levels (Passow, 1963, Ribich, 1968; Sexton, 1969; Wayland, 1966); as well as such housing and neighborhood conditions as overcrowding and criminal victimization. There is little argument that "acceptable" ratings on these indicators--low mortality, standard housing, absence of alcoholism, and so forth--are necessary if not sufficient conditions for well-being.

More recently, two other types of indicators, the psychological and the socio-cultural, have become prominent in the literature. Psychological indicators include attitudes and values, work orientation, and self assessments (Alix and Lantz, 1973; Beilin, 1956; Coward et al, 1974; Cloward and Jones, 1966; Gladwin, 1961; Allen Hess, 1970; Katz, 1970; Miller, 1967; Powell and Driscoll, 1973; Davidson and Gaitz, 1974). These factors are more elusive and harder to measure than the characteristics noted above, but perhaps no less important in determining the quality of one's life. In relation to poverty or social class in particular, attention has focused on such indicators as mastery vs. fatalism, long vs. short time horizon in planning, instant vs. delayed gratification in consumption, alienation vs. engagement, high vs. low self-esteem, and so on.

Closely related conceptually, but distinguishable for analytic purposes, are the socio-cultural indicators. These include indicators presumed to proxy "stability" of life style or "integration" of the personality in relating to others. Most obviously, these indicators include family structure and activities: divorce, desertion, illegitimacy, child raising and socialization patterns, child neglect or abuse (Berger, 1974; Boek et al., 1958; Chilman, 1965; Simon, 1966). Sociocultural indicators also include membership in a socially defined "caste", often stigmatized, such as race, welfare dependent*, certain categories of mentally ill,** ex-convict, and so on (Gursslin et al, 1964; Hollingshead and Redlich, 1958; Myers, 1970; Miller and Mishler, 1964; Nickson and Karp, 1974; Pasamanick et al., 1964).

As indicated above, much of the social indicator literature seeks to conceptualize and measure one or more of the indicators. Some indicators, like infant mortality, are straightforward conceptually; most, however, are far from clear in an operational sense: nutrition, attitudes of self-esteem, and mental illness are examples of indicators which are extremely difficult to define in a way that can be measured. Measurement itself presents a parallel range of difficulty: divorce rates, racial composition of the population and educational levels lie at one end of the spectrum, *** while

---

*In The Politics of a Guaranteed Income (1973), Daniel P. Moynihan argues that it is dependency and not poverty which underlies the stigmatization of many of the poor, and which is more psychologically debilitating than poverty itself.

**It has been argued by both sociologists and psychiatrists that some persons termed "mentally ill" suffer no determinate"disease," either organic or psychological, but suffer, rather, from an exclusionary strategy on the part of others, usually family members. See G. Bateson et al.,(1956), E. Goffman (1959), T. Szasz, M.D. (1961), D. Cooper, M.D. (1967), R. Laing and A. Esterson, M.D.'s (1964), and R. Laing, M. D. (1967).

***This is not to imply that even these indicators are easy to measure unless certain simplifying assumptions are made. Divorce, for instance, is a legal act and a matter of public record, but divorce rates only partially capture family break-up since they would not capture desertion without legal separation, dissolution of common-law marriages, etc. Similarly, educational attainment defined as highest grade level attained is also public record, although most researchers would naturally rely on self-reported attainment contained in the U.S. Census. Attainment is, however, imperfectly related to educational achievement, for which a wholly separate set of measurement instruments has been devised. The difficulties of defining "race" are well-explored in the anthropological literature; however, most researchers and the Census rely on an individual's self-identification.

attitudes are more difficult, and illegal activities such as child abuse and drug addiction are virtually impossible to measure with certainty. The questions of definition and measurement occupy much of the attached literature. Particularly thorough treatments are E. Sheldon and W. Moore (eds.), Indicators of Social Change: Concepts and Measurements (1968), and A. Campbell and P. Converse, The Human Meaning of Social Change (1972).

The literature on social indicators also attempts to explore correlations and possible causal linkages among two or more indicators. Some of the more well-known works of this nature are The Coleman Report (1966), relating educational achievement, school characteristics and various family-related indicators; The Moynihan Report (1965), relating race, social status and family structure; and Hollingshead and Redlich's Social Class and Mental Illness (1958), relating mental illness to education, occupation, and area of residence. Many other examples of this genre are included in this report (eg. Jensen, 1970). While the studies vary considerably in quality--not the least of their difficulties is defining and measuring the indicators whose correlation is to be analyzed--they do in general serve the very important purpose of demonstrating that few, if any, of the undesirable indicators are found alone. The studies suggest collectively--although few studies claim individually--that the "multi-problem family" is a much more pervasive phenomenon than the family characterized by a single or even a few negative social indicators.

A third task undertaken in the literature--and the one potentially most relevant to this report--is the attempt to relate one or more social indicators to some concept of social class. Most commonly, class is defined for this purpose by income level, although other proxies may be used in addition to or in place of income. Some (e.g., Ausubel, 1958; Bailey et al., 1965) add the more or less standard components of socio-economic status (SES): occupation, education, race, and so on. It should be noted that the broader the definition of SES, the closer the study approaches the second task above--relating indicators among themselves rather than specifically to "poverty"--since many of the components of SES can themselves be considered social indicators. Other researchers use more unusual indicators of class: Beilin (1956) uses father's occupation since social mobility is among his concerns. Others use less conventional class proxies such as Laughton et al. (1958) who use the median rent of the Census tract where the subject resides.

Moreover, membership in a "class" is both a social designation and self-identification of reference group--a mental event as well as a tangible characteristic--and as such is extremely difficult to define unambiguously through measurement of observable features. Class identification is (or was) less difficult when it was defined by birth (feudal) or occupation (early industrial) than in current American society, where considerable mobility is possible.

Despite this complexity, the closest measureable feature of class appears to be wealth, often proxied by income, although other common SES indicators serve to explain stability of class status in the face of short term fluctuations in wealth and income. Therefore, it is legitimate to regard studies relating social problems to "class" as having related them to "poverty," unless the class indicator(s) chosen are clearly flawed.

The results of the three kinds of studies are varied and voluminous. So many researches have been undertaken that some speak of a "social indicator movement," which by now even boasts its own journal called, appropriately enough, Social Indicators. Summarizing the results is not, therefore, an easy task and no comprehensive attempt will be made here. Lower class status (and by extension poverty) has been shown to relate to low or negative ratings on many social indicators, e.g., mortality, morbidity, mental illness, crime, family instability, alcoholism, drug abuse, attitudes of fatalism, short time horizon and low self-esteem, low educational achievement, poor housing, low political participation, and so forth. A "second generation" of studies criticize the specific methods and some of these findings; still others inquire into whether the differentials on indicator ratings in relation to class are changing over time.

Much of the social indicators literature verges on the trivial, some of it is intellectually suspect, a great deal of it is highly competent within the limited goals it sets for itself; a few of the studies have been considered to be landmark-setting. (Among the latter should be mentioned the Coleman Report (1966) and Jencks, et al., Inequality, 1972.) Several of the studies--e.g., HEW's Toward a Social Report (1969) encompass a broad range of indicators, relating them to several variables such as income and race, although none so far has related all (or even a large number of) the indicators to "poverty" and to each other.

In short, none of the studies is comprehensive--the state of the art does not at present permit an overall view of the relationship of "poverty", however defined, to the various indicators of quality of life or well-being, however defined. The difficulties of social indicator definition and measurement mentioned above, in addition to the complexities of defining and measuring "poverty" which are the subject of this report, would appear to preclude such an attempt, at least at present.

Investigations of the interaction effects of the various components of life quality (including poverty) can be found in a variety of disciplines. The classic study of what it means to be poor in terms of the recurring features of one's daily life (i.e., the features which social indicators attempt to measure) remains Henry Mayhew's London Labour and the London Poor (1862). The most comprehensive modern works on this subject are those of Oscar Lewis (1959), whose anthropological methods are similar in many ways to Mayhew's. It may be that the statistical methods characterizing the social indicator literature are inherently inappropriate to uncovering and capturing the interactive, reinforcing, and causative effects of the numerous

and often incommensurate features of social "well-being." They are, however, clearly appropriate and extremely useful in their avowed purpose of estimating the extent and rate of change of various non-economic sources of distress, and attempting to discover the degree of correlations between these and some definition of SES or "class." As Karl Taeuber (1970) remarks, social reporting is clearly an idea whose time has come. But even if social indicators represent an idea whose time has come, the concept of a social definition of poverty is a long way from realization. The literature on social indicators appears to provide an unambiguous answer to the question "Are the poor different?" In general, the literature demonstrates that the poor as defined by income and social class do appear to suffer disproportionately and fairly consistently from low ratings on many quality of life indicators: high alcoholism, poor housing, high illegitimacy, low educational achievement, and so on. These are clearly correlates of poverty, however, and no causative or definitional claims are made by most researchers in the field.

The deeper meaning of the question--the extent to which social problems may be causes as well as correlates or consequences of poverty--is rarely addressed in the literature, although its theoretical importance and policy relevance are succinctly stated by Richard Barringer:

> Presently, to be poor is to be different from the more fortunate among us, at least in a statistical sense. The relevant question for policy is: Are poor people different because they are poor, or are they poor because they are different? Do the poor demonstrate these objectionable characteristics (social indicator ratings) in disproportionate fashion because they lack money and means? Or do they lack money and means because of their own characteristics? If the former is the case, policy should seek to guarantee the poor access to the normal mechanisms by which goods and services are made available to the rest of society. To the extent that the latter applies, eliminating poverty requires the prior "rehabilitation" of the poor in some sense.
>
> (Barringer and Beer, 1970)

Some of the literature, particularly that on morbidity and alcoholism, does point out a two-way causation. Laurence (1958), for instance, notes that not only are the very poor more likely to suffer chronic disease, but that chronic disease significantly effects reduction in socio-economic status. A similar chicken-and-egg phenomenon may be reasonably presumed for many of the problems measured by social indicators, although most researchers are careful not to make

causative statements on the basis of statistical correlation. In any case, definitional statements--answers to the question posed by Barringer--are rarely made in part because the correlations are never perfect: while alcoholics may well suffer loss of income and thus enter the poverty ranks, the fact remains that more than a few quite wealthy persons are alcoholics as well.

The above cited example points up another potential shortcoming of social indicators particularly as they pertain to behavior which is viewed by the society as negative. The sometimes bizarre behavior of the lower class alcoholic is considerably more likely to be visible to the public than that of the upper class "social drinker"; the former is likely to be considered "deviant"; the latter is likely to be considered merely "eccentric." Thus, descriptions of behavior may be more related to subjective prejudices related to social class than to actual actions.

One area where the social indicators literature appears to be serving a useful definitional purpose is the question of attitudes. Findings very as to whether the poor exhibit attitudes (such as fatalism, lack of achievement-orientation, etc.) which serve to perpetuate their poverty, and, when such attitudes are found, whether they are in fact a realistic assessment of one's life chances (i.e., a consequence of poverty rather than a contributory factor) (Lewis, 1959; Rokeach and Parker, 1970). In this connection, it is interesting to note that a recent study of displaced scientists and engineers in Massachusetts (Powell and Driscoll, 1973) found that these solidly middle-class professionals forced into protracted unemployment or underemployment exhibited within less than a year profound apathy, fatalism, cynicism and loss of work motivation--the precise attitudes often considered "causes" of poverty. These attitudinal studies are useful in combatting the ubiquitous distinction between the "deserving" and "undeserving" poor--a distinction based frequently on the actual or imputed attitudes of the poor, that is, the belief that the "undeserving poor" are those who have the ability to better themselves but because of certain attitudes like laziness, unwillingness to work hard, dependency on others, and so forth are unwilling to take the necessary action. Clarity on the issue of whether or not attitudes of the poor can counteract any benefits of income redistribution programs is obviously a vital element in the planning for income maintenance programs of the future (Gladwin, 1961; Lourie, 1964; Moynihan, 1973).

In sum, review of the social indicators literature indicates that current research has by no means approached the vast potential in this area. There is, for example, a widespread consensus that the conceptual framework underlying many social indicators and the available data on this topic are nowhere as well developed as many of the economic indicators upon which social indicators were originally modelled. Generally accepted weaknesses of the social indicator literature include:

underlying conceptual uncertainties--just what is a social indicator and how should social indicators be used?

technical questions of definition--just what are the elements of well-being and what are appropriate variables to measure

technical questions of measurement--unavailability or poor quality of required data

questions of external validity--problems relating to apparently contradictory findings

questions of value judgements in the selection of indicators--while most health related indicators are relatively uncontroversial, many of the psychological and socio-cultural indicators utilized in the past have been criticized as imposing middle class values (e.g. family structure measurements)

inability to use much of the available data to make causal statements

lack of clear policy implications of available research

At the same time, however, the contributions and potential contributions of the social indicator "movement" are equally evident. Most importantly, they provide a useful corrective to overemphasis upon purely economic measures of poverty and well-being. The mere effort to employ social indicators (regardless of their preciseness) can help to avoid policy pitfalls which arise from equating the "poverty problem" to the simple absence of control over monetary resources. Perhaps the best example of this "definition expanding" function is provided by S.M. Miller, et al. who have suggested that "a minimum approach by government in any society with significant inequalities must provide for rising minimum levels not only of incomes, assets, and basic services, but also of self-respect and opportunities for social mobility and participation in many forms of decision making" (Will and Vatter, 1970).

By using social indicator measures as an adjunct to income measures in defining poverty, it may, for example be possible to distinguish between temporary and long term poverty. This enterprise would, in turn, make it possible to distinguish between those government policies which are appropriate to help those who temporarily lack income, and those who have no realistic prospect of improving their income and who are also faced with the health and other social problems which are statistically correlated with long-term poverty.

This corrective to overemphasis upon purely economic indicators of well-being is also quite useful in making cross-national comparisons of well-being. Thus, for example, per capita income is a widely used statistic for such comparisons. But the social indicator perspective would suggest that income comparisons be supplemented by such statistics as infant mortality and literacy rates (as well as more sophisticated measures should they be developed and appropriate).

Given the current state of the art, the use of social indicators as an alternative to income/wealth in defining or measuring poverty would seem premature. But by providing increased visibility to social issues and by providing awareness of progress (or lack of progress) in specific areas, social indicators can play an important role in shaping the future direction of American domestic social policy.

XII. State Administrative Definitions of Poverty

In the earlier chapters of this report, a number of alternative poverty measures were reviewed, and some of the difficulties attendant on these definitions indicated. We will now consider, in light of these difficulties, the techniques used by state welfare agencies to define the poor for administrative purposes.

Implicitly all state welfare agencies define the poor as those families whose incomes and resources are insufficient to provide them with a minimum decency standard of living. Significant differences arise, however, among states' definitions of minimum decency. This is not surprising, since states use different criteria and methodologies to determine people's basic needs.

The Social Security Act, which established the federally supported state welfare programs, requires that income and resources be considered in determining need, but it leaves to each state the right to specify a standard or level of living for determining eligibility for welfare assistance.

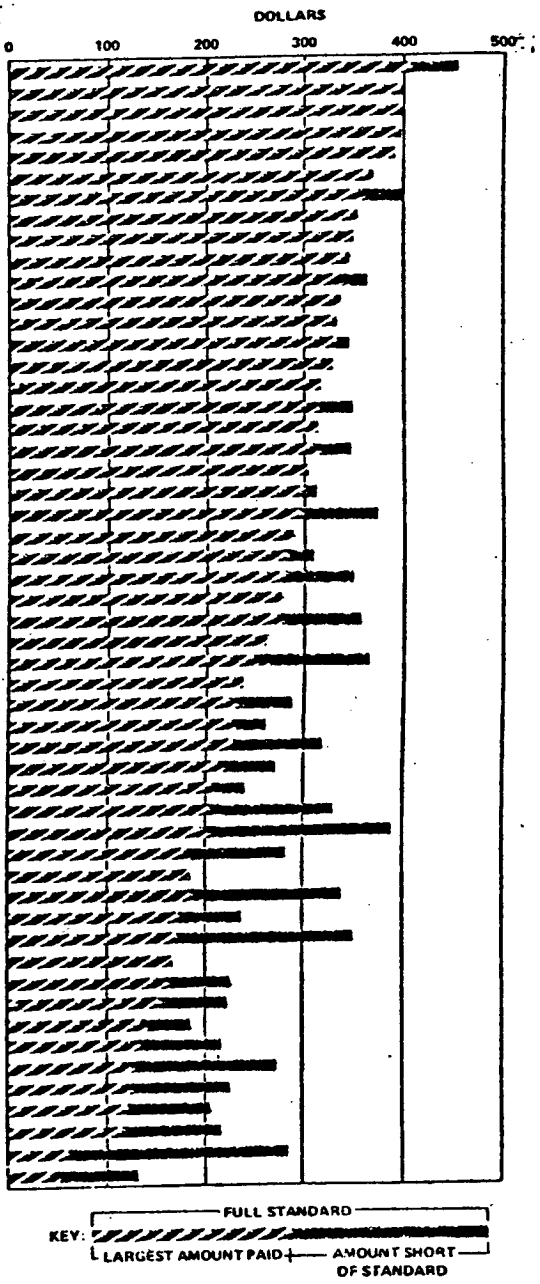
To demonstrate the tremendous variance among states in what is considered necessary for a minimal standard of living, Exhibit 34 depicts the amount calculated as needed monthly by a family of four for each state, as of July, 1974. The range runs from $184 in North Carolina to $456 in Wisconsin. What is important in comparing these two figures is to remember that these two states may use completely different methods in deciding on what items to include in the budget and in establishing the cost of such items to come up with the monthly needs amount.

To determine how states arrive at their need levels, we contacted all fifty states and conducted telephone interviews with welfare program officials. It should be noted that there are problems inherent in telephone interviewing, with no advanced warning for the interviewee and only an outline to follow for the interviewer. Respondents tried to give us the highlights of their programs, and may have missed some details. However, this information could not be obtained readily any other way. Questions were primarily directed toward the AFDC program (Aid to Families with Dependent Children), since the adult programs (Old Age Assistance, Aid to the Blind, and Aid to the Permanently and Totally Disabled) were federalized in 1974 and are now administered by the Social Security Administration under the title of the Supplemental Security Income Program (SSI). We did make inquiries about SSI in cases where states supplemented the SSI payments in accordance with their own calculations of "need" for adults, but found that the federalization of the program has complicated the picture, making it difficult to untangle the various budget components of the state grants. A more detailed discussion of this problem is summarized later in this section.

Exhibit 34*

AID TO FAMILIES WITH DEPENDENT CHILDREN: FULL MONTHLY STANDARD FOR BASIC NEEDS FOR A FAMILY CONSISTING OF FOUR RECIPIENTS AND LARGEST AMOUNT THAT CAN BE PAID TO SUCH FAMILY, BY STATE, JULY 1974 1/

	FULL STANDARD	LARGEST AMOUNT PAID
WISCONSIN	$458	$403
ALASKA	400	400
MICHIGAN	400	400
HAWAII 2/	399	399
NEW YORK 2/	392	392
MINNESOTA 3/	370	370
VERMONT	400	360
NEW JERSEY	356	356
PENNSYLVANIA	349	349
NEW HAMPSHIRE	346	346
OREGON	365	338
WASHINGTON	336	336
CONNECTICUT 3/	332	332
KANSAS	343	332
SOUTH DAKOTA	328	328
NORTH DAKOTA 3/	315	315
CALIFORNIA	347	311
RHODE ISLAND 2/	311	311
VIRGINIA	346	311
MASSACHUSETTES 4/	304	304
IDAHO	314	298
IOWA	376	296
ILLINOIS	288	288
NEBRASKA	307	280
DISTRICT OF COLUMBIA	349	279
MONTANA 5/	274	274
UTAH	356	274
COLORADO 5/	262	262
INDIANA	363	250
OKLAHOMA	238	238
DELAWARE 2/	287	230
WYOMING	260	227
MARYLAND	316	226
WEST VIRGINIA	270	217
NEW MEXICO	239	206
NEVADA	329	201
OHIO	389	201
ARIZONA	282	184
NORTH CAROLINA	184	184
MISSOURI 2/	337	183
KENTUCKY	234	171
MAINE	349	168
VIRGIN ISLANDS	166	166
GEORGIA	227	160
FLORIDA	223	151
TEXAS	187	140
TENNESSEE	217	132
ARKANSAS	275	125
ALABAMA	225	124
LOUSIANA	203	122
SOUTH CAROLINA	217	117
MISSISSIPPI	277	60
PUERTO RICO	132	53



1/ DATA BASED ON ASSUMPTIONS THAT THE FAMILY: (1) IS LIVING BY ITSELF IN RENTED QUARTERS; (2) NEEDS AN AMOUNT FOR RENT THAT IS AT LEAST AS LARGE AS THE MAXIMUM AMOUNT ALLOWED BY THE STATE FOR THIS ITEM; AND (3) HAS NO INCOME OTHER THAN ASSISTANCE.

2/ INCLUDES AN ESTIMATED AVERAGE FOR RENT.

3/ INCLUDES RECURRENT SPECIAL NEEDS.

4/ EXCLUDES GRANT FOR SPECIAL NEEDS. THIS GRANT WAS INCLUDED IN THE DATA PUBLISHED FOR JULY 1973.

5/ ALLOWANCE FOR SUMMER MONTHS; WINTER ALLOWANCES HIGHER.

DHEW-SRS-(B-NCSS NO. 389

*Source: U.S. Department of Health, Education, and Welfare, Aid to Families with Dependent Children: Standards for Basic Needs, July 1974, DHEW #SRS 75-03200, p.7.

AFDC Standards

Most states define their requirements for need in terms of number, kind, and cost of specified consumption items to be included in the assistance budget. Family need falls into two categories: basic needs and special needs. All states recognize food, clothing, shelter, fuel, and utilities as "basic" consumption items, usually referred to as basic needs. All but one of the states we interviewed also include such items as personal incidentals, medicine chest supplies, and household supplies in the basic needs list. The exception was Minnesota where these items are covered under the special needs category, i.e., they are allowed as needed by individual families. In addition, many states include education-related expenses, household chore services, sewer charges, garbage removal, and transportation in the basic needs list. However those that did not specify these items outright may have actually covered them under the basic needs category of personal care, or household items.

Assistance payments for basic needs come in one of three forms: flat grant (also known as consolidated grant); semi-flat grant (also known as semi-consolidated or modified flat grant); and itemized budget. The flat grant system is simply the use of a single, uniform need level to determine eligibility. Using various costing procedures that are described below, states determine the dollar value of the items to be included in the grant and arrive at a single figure for families of a specified size and composition. Families whose incomes and resources fall below the specified level are eligible for assistance. Approximately 60% of the states we interviewed use this system.

Approximately 30% of the states use a modified or semi-flat grant system which is essentially a flat grant for all items except shelter and possibly utilities which are funded according to regional maximums. Several states which use the semi-flat grant mentioned that they are working towards a flat grant system in order to ease administrative problems. Five states (Indiana, Oregon, Tennessee, Arkansas, and New Mexico) use an itemized budget plan whereby basic needs are categorized and each family is funded according to its need for each item.

In addition to the essentials of food, clothing, shelter, personal incidentals, and medical and household supplies, over 60% of the states we contacted recognize special needs which are met according to individual family circumstances. The items covered under special needs vary widely among states. Frequently on the list are special diets, medical transport, telephone installation, school expenses and job training/employment transport. Other items sometimes included are pregnant mother allowances, laundry, guide dog expenses, moving costs, home repairs, medical insurance premiums, car insurance premiums, and child care for working parents.

The methods vary by which states come up with the items to be included in their calculations of need and the cost of such items. The majority of the states initially established the composition and costs of the family needs lists by means of a welfare department survey study held ten to twenty years ago. Often home economists were consulted in this process. The costs of budget items are then periodically updated by the statistical division of the welfare department on the basis of Bureau of Labor Statistics (BLS), U.S. Department of Agriculture (USDA), and Bureau of Census regional and national surveys. The BLS lower living standard by region is used by most of the states we interviewed. In the case of utilities' costs, many of the states perform their own surveys which usually consist of spot checks with local power companies. Fuel and shelter costs are also usually determined by the welfare agency, often by surveying previous expenditures by welfare recipients or using census data on lower income families. Another source used for determining costs is Family Economics Review, which gives yearly average budget item costs by region, and the American Home Economic Study. One state (Ohio) uses surveys conducted by a neighboring state (Wisconsin) to determine the costs of some of its budget items.

At the current time, the only federal requirements regarding the needs standard are that 1) states not be any lower than their July 1969 standard, and 2) that states apply their standards uniformly throughout the state or uniformly in areas with local price differentials to all families in similar circumstances. States are required to report to the regional offices of HEW the methods by which they arrive at their calculations, but the regional office can only sign off as to whether the procedure is sound.

Although most states use elaborate procedures to determine budget items and costs, we suspect that fiscal ability to a large extent influences state determination of need. A welfare official from one state, California, indicated to us that that state bases its need levels entirely on fiscal ability. To account for this discrepancy, many states have two standards: a needs standard and a payment standard. The needs standard or "full standard" as it is called, represents the amount recognized by the state as the level required to meet basic needs for a family of a specified size. This standard is used to determine who is eligible for assistance. Due to fiscal limitations, however, the state may not pay the full amount of its need standard, and a second, lower amount, known as the payment standard, is paid. So although Wisconsin may recognize in its needs standard that a family of four needs $456 a month for living expenses, in fact it will only pay a maximum of $403 in its welfare grant, as shown in Exhibit 34. In making comparisons among states, however, it should be noted that some states paying less than the full needs standard may still be providing a higher level of assistance than a state meeting need in full with a lower standard.

In considering the needs of each family, adjustments may be made for family size and composition and regional differences. Although there is a great deal of variation in the methods used, every state we contacted makes adjustments for family size. A fourth of the states told us that they consult BLS data on low income consuming habits by region for prorating adjustments for family size and composition. Half of the states we contacted did not specify their source but mentioned that they use some kind of economy of scale scheme which provides decreasing amounts per consumption item as the family group becomes larger. The remaining states use a variety of techniques. For example, Pennsylvania provides standard percentage increases for family size and composition for one to six people. Families with more than six receive fifty dollars per month for each additional member. Similarly, Oregon uses an economy of scale scheme for the first three family members, then funds families according to an even progression scheme. Illinois bases their incremental increases for additional family members on average expenditures by size and composition of past public assistance recipients.

Twelve percent of the states also adjust for family age distribution. Massachusetts makes adjustments for age based on average costs per age group for food, clothing, and personal care. For example, adjustments for food are as follows:

Child 0 - 6	$21.60 per week
6 - 13	31.10 per month
13 - 20	38.70 per month
Adult living with family	38.00 per month

Connecticut bases its cost on the assumed basic needs cost of nine year olds, nine years being the average child age. This figure is then multiplied by the number of people in the family to arrive at the family's total basic needs. New Hampshire developed its standards according to a statistical age distribution of children which, based upon available statistical information, seemed appropriate for their cases. The sex of the child became important only when the family included children age twelve or older. The cost of a girl was selected if there was only one child. If more than one, the pattern of girl, boy, girl, etc. was used. Food costs were taken from the USDA low cost food plan, clothing from Clothing the Urban American Family, and incidentals from the BLS III (lower level) Standards of

Living. About a quarter of the states adjust for regional differences, which are reflected in shelter and utilities' cost differentials.

During this period of relatively high inflation and economic change, the degree to which states allow changes in the list of consumption items and the costs of existing items is a critical issue. In about 35 percent of the states we contacted, the state legislature must approve any changes in the list or level of the needs standard. The Commissioner of Welfare has this authority in about forty-five percent of the states, and the authority rests with the governor in the remaining twenty percent. Typically, these decisions are made with the recommendations of the welfare department research and policy staff and input from the state budget office. A little more than half of the states we contacted have made updates in their standards within the past two years, about a third of whom have legislative provisions for automatic cost-of-living increases reflected in the needs standard. In one state, New York, the payment standard was changed due to a court decision (Rosado versus Wyman), but this situation is rare.

Adult Standards - Supplemental Security Income Program

Prior to the establishment of the Supplemental Security Income Program in July 1974, states funded adult recipients (blind, aged, and disabled) in much the same way as AFDC. That is, most states had a payment standard to cover basic needs and an allowance for special needs where appropriate. When these programs became federalized under SSI, the Federal Government paid $146 per person per month for basic needs, and, to avoid recipients receiving less than they had prior to SSI, they required that states supplement the Federal grant with whatever amount was necessary to bring recipients up to their December 1973 payment levels. This supplementary grant, called Mandatory State Supplementation, became part of the recipient's basic need. Hence, if part of a recipient's grant under the old system was a special needs allowance, this would now be included as part of his basic needs. This means that the payment standard for adult recipients may no longer be based on costs of itemized basic needs; the SSI grant level is now a flat grant based on the December 1973 grant level or the Federal level of $146 whichever is greater.

The situation is further complicated by the fact that states may opt to provide additional funds for basic needs, called Optional State Supplementation for Basic Needs. They may also provide additional payments for special needs, called Optional State Supplementation for Special Needs. To add to the confusion, the Federal SSI payment level is tied to the cost of living (and thus increases yearly), while the state mandatory supplementation is not. As a result, some states have chosen to withhold increases until their mandatory

supplemental programs are phased out by the SSI cost of living incre (when the federal payments meet the states' December 1973 levels). For some states with optional supplemental programs, certain basic and special needs are still discretely considered in the construction of the standard. This is the case in New Hampshire, Minnesota, and Connecticut to name a few. However, in most states, the need levels could not be readily explained in terms of cost of specific consumption levels.