Comparing Poverty Rates Internationally: Lessons from Recent Studies in Developed Countries

Anthony B. Atkinson

Studies comparing poverty in different countries frequently inform the evaluation of past policies and the formulation of future policies for reducing poverty. If the comparisons are to be a valid foundation for such assessments, in particular if they are to be a guide to the effective allocation of funds, the underlying concepts must be examined and defined. This article discusses four issues that are critical in this respect: the choice of poverty indicator, the determination of the poverty line, the unit of analysis, and the choice of equivalence scale. A selection of studies of poverty in countries that belong to the Organisation for Economic Co-operation and Development is used to show how the choices made in defining these indicators affect the findings about the extent and composition of the poor population. Although the context is different, the experience of rich countries may yield useful lessons for developing countries.

World Development Report 1990 (World Bank 1990) estimates that a third of the population of the developing world had incomes below US$370 a head in 1985, but that the proportion varied from about half in Sub-Saharan Africa and South Asia to a fifth in East Asia and Latin America. Investigating the reasons for such differences is an obvious first resort in evaluating the success of different policies in reducing poverty, and in identifying priorities. To take a second example, estimates produced for the European Commission show the proportions in different member countries with incomes below 50 percent of the national average (O'Higgins and Jenkins 1989): such figures may be used to draw conclusions about the relative effectiveness of, for instance, the minimum wage policy in France as against the extensive social assistance network of the United

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Kingdom. Equally important, poverty statistics for different countries may be the basis for allocating investment and readjustment funds by supranational bodies such as the European Community.

If international comparisons of poverty are to be used in this way, it is vital to identify and examine the concepts on which they are based; the objective of this article is to provide a selective review of the principal issues involved. The illustrations are from countries that belong to the Organisation for Economic Co-operation and Development (OECD), but the aim is to inform the analysis of poverty on a world scale, and in particular to draw lessons useful for developing countries.

I. Conceptual Issues in the Measurement of Poverty

The issues that arise in comparing poverty rates across countries are similar to those that arise at a national level, but the explicitly comparative approach gives a different perspective. Methods of measurement differ considerably, and any international comparison has to recognize this diversity of approach. The choices made affect findings on the composition as well as the size of the poor population: whether, for instance, there appear to be more elderly poor in the United Kingdom than in the United States may depend on how the poverty standard is defined, and the policy response will differ accordingly.

The four central conceptual issues considered in the article are the choice of poverty indicator, the determination of the poverty line, the unit of analysis, and the choice of equivalence scale. The studies of poverty or low incomes in OECD countries selected to illustrate these issues are listed in table 1. The selection is intended to be illustrative, not exhaustive: many OECD countries for which data exist are not shown; and for some of the countries that are shown, only one of several available studies has been selected. The countries nevertheless cover a range of income levels and types of social welfare system. Some of the studies are made by official bodies, others by independent research bodies or academics. Because the primary purpose is to bring out the extent of similarities and of differences, and their implications for international comparisons, I concentrate not on the findings (which are not shown in the table) but on the methods.

The choices of indicator, poverty line, unit of analysis, and equivalence scale are frequently discussed in the literature, but even when these have been determined significant differences remain between the ways in which poverty is measured in different countries. The need to resolve these in an international comparison is demonstrated in the more detailed case study of France, Germany, and Great Britain which closes the article. Even if statisticians are provided with an apparently tightly defined brief—to measure income poverty, taking a standard

1. The two studies in question are of Great Britain (excluding Northern Ireland), not of the entire United Kingdom. "Germany" refers to the Federal Republic of Germany before reunification with the former German Democratic Republic.
of 50 percent of the national average, using the household as the unit of analysis—serious questions, of policy as much as of techniques, still remain to be answered.

Note too that the measurement of poverty cannot be seen in isolation from the design of antipoverty policy measures. In several countries, particularly those in which a social assistance scheme exists that aims to provide a guaranteed minimum income, the poverty standard has been closely linked to social security programs. Not only does this mean that national poverty measures reflect the nature and form of policy concerns, but also the operation of the programs may affect the conclusions drawn when other standards are applied in an international comparison (based, for example, on a standard of 50 percent of average incomes).

**Choice of Poverty Indicator**

For the purposes of this article, poverty is assumed to be defined in terms of a single broad indicator of economic resources. This assumption in itself is restrictive. If the concern about poverty takes the form of concern about basic needs, such as food, housing, and clothing, the focus should be on individual items of consumption, and poverty would need to be measured in a multidimensional way, rather than in terms of a single indicator. The same consideration may apply if we are concerned about time as an input and about "time poverty" as well as deprivation of commodities. Or concern about poverty may relate to social or demographic indicators, such as life expectancy or literacy. These multidimensional aspects of poverty are not considered here, even though they may influence comparisons across countries. Countries may differ in the extent of their social provision, and this may affect the interpretation to be placed on a specified level of economic resources. In determining the appropriate relative poverty lines in, say, France and Sweden, account has to be taken of differences in the public provision of medical care, education, and so on. Do parents have to buy school books for their children? For this reason, a method that encompasses a number of indicators—see, for instance, table 2-1 of World Bank (1990)—has a lot to recommend it.

If the measure of disadvantage is limited to a single index of economic resources, then a natural choice may appear to be total consumption, or expenditure plus home produced goods and services. A household is then said to be poor if its total consumption is below a specified amount. But most studies of poverty in advanced countries record poverty on the basis of total income rather than consumption—income is in fact the basis for all the studies listed in table 1 apart from those in Greece.

Why is income used? The first answer is that it is taken as a proxy for living standards, because these are hard to quantify. As such, assessments of poverty based on income have to be qualified: income may understate or overstate the level of living. If a family can dissave or borrow, its current level of living is not constrained by current income. Temporary variations in income may be
Table 1. Poverty and Low-Income Studies in Selected Member Countries of the Organisation for Economic Co-operation and Development

<table>
<thead>
<tr>
<th>Item</th>
<th>Great Britain* (households below average income)</th>
<th>France</th>
<th>Germany</th>
<th>Ireland</th>
<th>Finland</th>
<th>Sweden</th>
<th>United States</th>
<th>Canada</th>
<th>Australia</th>
<th>Greece</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty line</td>
<td>Dispos-Disposable income net of housing costs (resources), &quot;normal&quot;</td>
<td>Disposable income, current disposable income, annual disposable income, current disposable income, annual Disposable income, current Disposable income, annual Gross income, annual Gross income, annual Disposable income, annual Disposable income, annual Disposable income, annual Disposable income, annual Disposable income, annual Disposable income, annual Disposable income, annual Disposable income, annual</td>
<td></td>
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<tr>
<td></td>
<td>Supple-50 percent of mean income, 50 percent of median income, 40 percent and 50 percent of mean income, National pension level, adjusted over time as benefit increased or 50 percent, Official poverty line, adjusted over time by consumer price index, Henderson poverty line, adjusted initially by average earnings, since 1981</td>
<td>50 and 60 percent of median income, 40 and 60 percent of median income, Social assistance level in 1985 (allowing for housing costs), adjusted by consumer price index, Statistics Canada low-income cut-off, adjusted by consumer earnings, since 1981, 2/3 median consumption expenditure per equivalent adult</td>
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<td></td>
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</tr>
</tbody>
</table>

Note: *Great Britain includes Northern Ireland.
percent), adjusted over time as benefit increased of median price index, price index, and index, and revised in 1969, 1973, 1978 and 1986 by household disposable income per capita

<table>
<thead>
<tr>
<th>Unit of analysis</th>
<th>Inner family (benefit unit)</th>
<th>Household</th>
<th>Household</th>
<th>Household</th>
<th>Household</th>
<th>Family</th>
<th>Family</th>
<th>Family</th>
<th>Family</th>
<th>Inner family</th>
<th>Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equivalence scale</td>
<td>Couple = 1.62, Child = 0.34</td>
<td>Couple = 1.64, Child = 0.15</td>
<td>Couple = 1.70, Child = 0.50</td>
<td>Couple = 1.6-1.7, Child = 0.45</td>
<td>Couple = 1.7, Child = 0.3-0.5</td>
<td>Couple = 1.59, Child = 0.44</td>
<td>Couple = 1.25, Child = 0.21</td>
<td>Couple = 1.36, Child = 0.18</td>
<td>Couple = 2.0, Child = 0.34 (simplified scale)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(single person = 1) for couple and for child (aged 15 or under)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reference


a. Excludes Northern Ireland.
b. Self-employment and investment income averaged over a longer period.
c. Disposable income is the most relevant variable, but in Canada and the United States pretax income has been used because of data limitations.
d. Depending on age.
e. Depending on position in family.
smoothed out (though such borrowing may be expensive, with serious consequences for the future). A family that can share in the consumption of others may have higher living standards than its income would permit. An elderly person living with his or her children may benefit from their expenditure. Such considerations would lead one to expect the estimates of poverty to be lower, other things equal, in Greece than in the other countries shown in table 1.

Conversely, income may overstate the level of living when money alone is not sufficient to buy the necessary goods, for instance, if there is rationing or if goods are not available. An obvious implication is that one would have to be careful in making comparisons across countries with different market structures, particularly with regard to housing. It would certainly be unwise to compare the studies in table 1 with those for Eastern European countries, without taking this consideration into account.

The second reason for using income rather than consumption is that it may be seen as intrinsically preferable as an indicator of resources in the measurement of poverty. One argument is that people may choose a low level of consumption, whereas income is closer to a measure of the opportunities open to a family and not influenced by the consumption decisions made: the concern then is with the budget constraint, not with consumption choices. Alternatively, we may move away from the conception of poverty as concerned with standards of living to poverty as concerned with minimum rights to resources (Atkinson 1989, chap. 1). In this view, people are seen as entitled, as citizens, to a minimum income, the disposal of which is a matter for them. This right to a minimum income may be regarded as a prerequisite for participation in a particular society, as a guarantee of "positive freedom."

The conception of poverty adopted will in turn affect more detailed choices about how best to measure it. If income is being used as a proxy for consumption, permanent income may be a closer match than current income, so that in practical terms annual income may be a better indicator than income in a week or month. The choice of time period for income depends in this case on matters of fact. How important are seasonal fluctuations? How far can people in reality borrow to tide their families over bad times? Adoption of the minimum rights standpoint, conversely, involves judgments about interpretation. On the interpretation that the right is to a guaranteed minimum below which no one should fall, even temporarily, current weekly income may be the better indicator.

The definition of poverty chosen will also affect the way income is defined. A standard of living definition will include an estimate of income in kind. (Home production of food is an example, as is the receipt of transfers in kind such as food stamps.) But a minimum rights interpretation might not count income in kind, because it may be cash income that is necessary for people to participate in society. More generally, different items of income may make greater or lesser contributions to the objective in question. The receipt of income may be subject to conditions that reduce its effective value. On a minimum rights interpretat-
tion, for example, we may want to apply a discount to income received subject to a means test that is regarded as a social stigma.

The choice of indicator has to be addressed in the design of social security programs that aim to ensure some minimum standard. Such programs have for evident reasons not taken expenditure as an indicator and typically involve an income test. This test is, however, often accompanied by an assets condition. Those eligible are people with incomes below a qualifying level whose net worth does not exceed a specified level, which conditions may be seen as taking account of the person’s capacity to finance consumption by dissaving. Such an approach takes us back to a multidimensional measure of poverty.

The institutional arrangements for income support in OECD countries also identify the special role of housing expenditure. In Great Britain, for example, income support takes the form of a cash amount intended to cover needs other than those of shelter, the latter being met (approximately) in full by housing assistance. Accordingly, the benefit-based poverty standard in Great Britain has been measured on the basis of “net resources,” or income after deduction of housing costs (see the first column in table 1); the same has been done in Australia. As a result, the poverty cutoff in terms of total income for a particular family depends on its own housing costs. Such an approach may be seen as treating housing expenditure as an unavoidable outlay, or as adjusting for variation across people in the prices faced for housing (for example, where there are rent controls). It may be justified on the grounds that the measure of income does not capture the full benefit to owner-occupiers from the services of the house they own: if the imputed rent of owner-occupiers is not included in income, then the subtraction of the rent actually paid by tenants would put the two tenure groups on the same footing. The institutional features of the housing market in individual countries need to be taken into account.

Determination of the Poverty Level

If standard of living is the concern, then the most straightforward way to determine the poverty line is to specify a basket of goods, denoted by the vector $x^*$, purchasable at prices $p$, and to set the poverty standard as a subsistence standard:

$$ (1) \quad \quad (1 + h)p \cdot x^* $$

where $h$ is a provision for inefficient expenditure or waste, or a provision for items not included in the list $x^*$. This was in effect the method followed in the United States in the derivation of the official poverty line, where $x^*$ represented food requirements and $h$ made allowance for spending on other goods. The list $x^*$ was based on the U.S. Department of Agriculture’s “economy food plan” for households of different composition, and the multiplier to allow for other goods was 3. This method differs from, but has some relation to, the definition of the poverty line as the income at which households spend a specified proportion on
necessities. The Canadian low-income cutoff was based originally on the income level at which more than 70 percent was spent on food, clothing, and shelter (Poduluk 1967).

As was recognized when the U.S. official poverty line was introduced, there is room for considerable disagreement about the subsistence standard. Political judgment played a considerable role in determining the "$3,000 for a family of four" that featured prominently in the speeches launching the War on Poverty, as also in the use by the European Commission of a benchmark of 50 percent of average national income in measuring poverty in Europe. (As may be seen from table 1, the same benchmark approach, with differing percentages, has been used in several European studies.)

These two examples serve also to illustrate the difference between a poverty line such as that depicted in equation 1 adjusted for changes in prices, and often referred to as an "absolute" poverty standard, and a "relative" line related to contemporary levels of living. The latter may follow naturally from the minimum rights approach, where poverty is seen in terms of people being excluded from the "living conditions and amenities which are customary, or at least widely encouraged or approved, in the societies to which they belong" (Townsend 1979, p. 31), or what is often referred to as a participation standard. In adopting its definition, the European Community stated: "The poor shall be taken as to mean persons, families and groups of persons whose resources (material, cultural and social) are so limited as to exclude them from the minimum acceptable way of life in the Member State in which they live" (Council Decision, 19 December 1984).

The choice between an absolute and a relative standard takes on particular importance in international comparisons. World Development Report 1990 (World Bank 1990) used a common dollar figure, adjusted by purchasing power parities, across countries, to reach its US$370 poverty standard; such a method evidently leads to quite different conclusions from those reached applying a specified percentage of national average income. This applies even when countries at relatively similar stages of economic development are compared, as is shown for the eleven European Community countries in table 2. Applying a poverty standard of 50 percent of each country's average income yields a poverty rate overall of 13.9 percent, with the countries with significantly below-Community average incomes (Greece, Ireland, Portugal, and Spain) accounting for 32 percent of those in poverty. But if a poverty line equal to 50 percent of the Communitywide average is used, converted at purchasing power parities, the poverty line for Spain (for instance) would be some two-thirds of its national average. The overall poverty rate now rises (see the right-hand side of table 2) to 17.4 percent, and the lower-income countries (Greece, Ireland, Portugal, and Spain) account for a much larger proportion (55 percent) of those in poverty.

The adjustment of the poverty line may take an intermediate form; for example, in some countries the line has been adjusted regularly for price increases, with additional real increases from time to time as a result of a special decision.
Table 2. Distribution of the Poor in Europe: Comparison of Poverty Lines Based on National Income and Communitywide Income (percent)

<table>
<thead>
<tr>
<th>Country</th>
<th>National Income</th>
<th>EC Income</th>
<th>Share of the European Poor Given Poverty Line equal to 50 percent of Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>France</td>
<td>21</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>18</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>15</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>15</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>11</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>7</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>13.9</td>
<td>17.4</td>
<td></td>
</tr>
</tbody>
</table>

Note: Luxembourg is not shown separately.
a. EC (European Community) average income is calculated on the basis of national averages converted at purchasing power parities.

Source: Author interpolation based on calculations of O'Higgins and Jenkins (1989).

In Canada, the Special Senate Committee on Poverty argued in 1971 that there should be a real increase “to take account of changing socioeconomic conditions over the last decade” (quoted by Wolfson and Evans 1989, p. 12). The ensuing policy changes led to the real value of the poverty line following a step pattern over time. Alternatively, the line may rise steadily in real terms, but less than the increase in other incomes. Subjective definitions of poverty, based on survey responses to questions about the minimum necessary income, have produced such an outcome. In the United States, the Gallup Poll has regularly asked the question: “What is the smallest amount of money a family of four needs each week to get along in this community?” An analysis of the responses over the period 1957–71 by Kilpatrick (1973) showed that they tended to rise about 0.6 percent for each 1 percent rise in per capita income. He notes that on this basis the poverty line would have increased in real terms by some 25 percent between 1959 and 1971, and that the poverty rate would have fallen, not from 22 percent to 12 percent (as it would had the rise in the poverty line kept up with increases in per capita income), but only from 22 percent to 18 percent. In Australia, where the Morgan Gallup poll collects similar data, the average reported minimum amount doubled in real terms between the 1950s and the 1970s (Saunders and Bradbury 1989).

The relation of the poverty line to the objectives of economic and social policy is also important. The U.S. official poverty line was designed quite independently of benefit programs. The Council of Economic Advisers stressed that “no measure of poverty as simple as the one used here would be suitable for deter-
mining eligibility for particular benefits” (U.S. Council of Economic Advisers 1964, p. 58).

In contrast, postwar studies of poverty in the United Kingdom, following Abel-Smith and Townsend (1965), have in several instances taken the scale of entitlement to social assistance (called National Assistance from 1948 to 1966, then Supplementary Benefits until 1988) as the basis for defining low incomes. In Finland, Germany, and Sweden, studies have also used benefit scales. One immediate implication is that adjustments of the scale over time have been in line with benefits rather than prices or average incomes. In the case of Finland, the scale appears to have risen about 0.7 percent for each 1 percent real increase in the median income (on the basis of the estimates of Gustafsson and Uusitalo 1990), and in Germany the rise appears to have been around 0.9 percent for each 1 percent real increase in the average net wage (on the basis of the estimates made by Hauser and Semrau 1989).

The measurement of poverty may also be affected by income maintenance policy if the latter leads to a concentration of people at a particular income level. Taking an international yardstick, such as 50 percent of average income, may lead to misleading conclusions about the proportion in poverty if Country A has a social minimum of 47.5 percent of the average and Country B has a social minimum of 52.5 percent.²

Unit of Analysis: Residence, Spending, and Relationships

The unit of analysis refers to the group of persons for whom resources are assumed to be combined when poverty status is being assessed. A range of different definitions of the unit of analysis is in use—see table 1. The definitions are based on a number of different elements:

- Common residence, with a household comprising those resident in a dwelling and sharing some degree of common housekeeping; this typically constitutes the most extensive unit of analysis
- Common spending, where the spending unit is defined as those taking spending decisions to a considerable degree in common, where this may cover people who have no family relationship
- Blood or marital relationship, where members of the family unit are related by marriage or cohabitation or by blood relations
- Dependence, as where the unit is defined to include a single person or couple plus any dependent children; this constitutes the inner family.

The different possibilities are illustrated in figure 1. As set out there, the criteria are typically applied cumulatively, so that the family unit refers to those members of the family resident in the same household.

In considering the choice between different units, it is helpful to consider first the standard of living approach. Some items of consumption, such as food, are

². This is of course an argument against relying solely on a headcount measure of poverty. The relative merits of different poverty measures are not considered here—see Atkinson (1987).
essentially individualistic, whereas others, such as housing, have some of the attributes of public goods as far as individuals in the household are concerned. For the latter, the spillover may be such that all members of the household enjoy broadly equal levels of living, but for the former there may be considerable inequality within the household or according to gender. The distribution of benefits within the unit is extremely difficult to observe. It is not therefore surprising that in practice many studies have based their analysis on the spending unit, assuming that all within the unit share the same standard of living, or on the household—allowing for the difficulties in treating housing outlays (see table 1). But in ignoring the potential for intrahousehold inequality, these assumptions about resource sharing may misrepresent the extent and nature of poverty (see Haddad and Kanbur 1990 for an investigation of the empirical importance of intrahousehold inequality in a developing country).

When the minimum rights approach to defining poverty is taken, the theoretical concept of rights is usually assumed to be individualistic. The case for considering in practice a wider unit than the individual, such as the inner family, rests on an assumption that within-family transfers are taking place that cannot be adequately observed. In other words, we do not accept that a large number of those with zero recorded cash income are in fact without resources. At the same time, it may be quite wrong to treat all married couples as having equal rights to
the joint income. Even if within-family transfers are such that total family income is equally divided, one cannot treat all sources of income as equivalent: $100 earned by the wife may be valued more highly than $100 given by her husband to pay for the housekeeping. Within the household, transfers from children to elderly parents may be conditional (for example, on the old person going to live with the children) and may induce dependence. From the minimum rights standpoint, there is a strong case for attempting to measure poverty on an individual basis, using, for example, information on the original source of income (this being easier to observe than the distribution of consumption). It is only in this way that issues such as the feminization of poverty can be adequately discussed.

The significance of the choice of unit of analysis may be demonstrated by a single example. Until 1985, the official statistics for Great Britain were based on the inner family unit (table 1). The new Households Below Average Income series is based on the more extensive unit of people “living at the same address having meals prepared together and with common housekeeping.” Among the arguments for this change were that most people in such units are closely related, so that the household is close to the family unit as defined above, and that the living standards of its members are more likely to be related to the total income than to their individual income. (In terms of figure 1, son is likely to be better off than would be indicated by his unemployment benefit.) The effects of the change in definition on the results for 1983 have been investigated by Johnson and Webb (1989), who show that the proportion of the population with income below 50 percent of the average is 11.1 percent on an inner family basis and 8.1 percent on a household basis.

In other words, the changed unit of analysis reduces the number of people with low incomes by 25 percent. And the change to a household basis also affects the composition of the low-income population: the proportion of single nonpensioners below half the national average becomes 8 percent, as against more than 20 percent on an inner family basis (Johnson and Webb 1989, p. 75).

**Equivalence Scales**

If a unit of analysis other than the individual is used, the equivalence scales to be applied to different-sized units need to be considered. An equivalence scale gives the relation between the poverty line for, say, a couple and that for a single person. Equivalence scales may be relevant even on an individual basis, if we wish to make allowance for differing needs according to age, degree of handicap, and so on. The different methods used to arrive at such scales can produce very different results. Table 1 illustrates the variation in the scales applied in the different studies. The scale for a couple, relative to a single person, varies between 1.25 and 2.0. Although there is some clustering in the range 1.6 to 1.7, more than half lie outside. The scale for a child varies between 0.15 and 0.75.

More generally, the differences between equivalence scales have been conve-
niently summarised by Buhmann and others (1988) in terms of the following formula:

\[
equivalent\ income = \frac{total\ income}{n^s}
\]

where \( n \) denotes the number of members of the unit and \( s \) is the elasticity of family "need" with respect to family size. A value of \( s = 0 \) corresponds to making no adjustment for family size, and \( s = 1 \) corresponds to taking per capita income. Equivalence scales based on subjective evaluation (of what is needed "to get along") tend to produce relatively low values for the elasticity; Buhmann and others take a value of 0.25 as representative. Estimates based on observed consumption patterns, and identifying assumptions, tend to be higher; Buhmann and others take a representative elasticity of 0.36. Estimates used in policymaking—those embodied in benefit scales or the official U.S. poverty line—are quite substantially higher: around 0.55. And those used in statistical studies by the OECD and other bodies are represented by an elasticity of 0.72.

Buhmann and others use these representative elasticity values to explore the consequences of using different equivalence scales; a selection of their findings is shown in table 3 for the OECD countries included at that time in the Luxembourg

Table 3. Reported Proportion of Population with Income below 50 Percent of the Median: Results for Different Equivalence Scales (Luxembourg Income Study)

<table>
<thead>
<tr>
<th>Type of scale</th>
<th>Subjective</th>
<th>Observed consumption</th>
<th>Policymaking</th>
<th>Statistical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Country</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>17.9</td>
<td>17.8</td>
<td>17.2</td>
<td>17.2</td>
</tr>
<tr>
<td></td>
<td>(30.5)</td>
<td>(28.3)</td>
<td>(24.3)</td>
<td>(20.7)</td>
</tr>
<tr>
<td>Australia</td>
<td>16.0</td>
<td>14.8</td>
<td>12.3</td>
<td>11.7</td>
</tr>
<tr>
<td></td>
<td>(37.1)</td>
<td>(32.7)</td>
<td>(18.7)</td>
<td>(8.9)</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>15.2</td>
<td>14.0</td>
<td>11.4</td>
<td>8.1</td>
</tr>
<tr>
<td></td>
<td>(66.2)</td>
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Note: Numbers in parentheses are the percentage of those poor households in which the household head is aged 60 years or more. The data used here are not necessarily the same as those referred to in table 1.

Source: Buhmann and others (1988, tables 10 and 13).
Income Study data set (see Smeeding, O'Higgins, and Rainwater 1990). The choice of scale can significantly affect conclusions as to the extent and composition of the low-income population. Although the proportion below 50 percent of the median changes little for the Netherlands and the United States, that in Norway and the United Kingdom is approximately halved on moving from the subjective to statistical scales. The United Kingdom ranks third on the former basis and sixth (out of nine) on the latter. In Norway, older people account for 55 percent of the poor when the subjective scale is employed, but 23 percent with the policymaking scale, and 18 percent with the statistical scale. Using the subjective scale, the older group constitutes the majority of the poor in Germany, Norway, and the United Kingdom, but with the statistical scale the highest proportion is a third (in the United Kingdom and Germany).

II. A Case Study of an International Comparison: France, Great Britain, and Germany

The discussion so far has illustrated the strong influence the differing methods used in the studies may have on the conclusions drawn. To illustrate the corresponding difficulties that beset comparison of such findings, we now describe the results of an attempt to compare poverty in three of these countries—France, Great Britain, and Germany—using the studies indicated in table 1.

The starting point for the investigation is the European Community calculation; the poverty standard is therefore taken as 50 percent of the national average income. Of the two studies for the United Kingdom, the Households Below Average Income study is thus the more apt to the purpose. According to this study (U.K. Department of Social Security 1990, p. 21), in 1985, 9.2 percent of the population of Great Britain lived in households with an income below 50 percent of the mean. In France (Assemat and Glaude 1989, p. 5), in 1984–5, 10.9 percent of households had income below 50 percent of the median. In Germany (Hauser and Semrau 1989), in 1983, 7.0 percent of the population lived in households with incomes below 50 percent of the mean.

Can we conclude from these figures that in the mid-1980s low incomes were less prevalent in Germany and (somewhat) more prevalent in France than in Great Britain? No, for—despite their apparent comparability—the differences in the methods by which the estimates are made are still significant.

The poverty indicator is taken to be net of tax income for the studies in all three countries (the figure for Great Britain being that for income rather than income minus housing costs). But the British figure is for current (weekly or monthly) income, whereas the data for the other two countries are for annual income. This difference is likely to affect the measured extent of poverty (mak-
ing the figure for Great Britain higher), and the composition of the poverty population (if pensioners, for example, are less subject to income fluctuations).

The three studies are comparable in using a household unit of analysis, although the precise definition may vary from country to country. But the equivalence scales employed are noticeably different. For a couple with two children, the scale (single person = 1) is: France, 2.7, corresponding to an elasticity of 0.72; Germany, 2.7–3.3 (depending on age of children), corresponding to an elasticity of between 0.72 and 0.86; and Great Britain, 1.79–2.15 (depending on age of children, these being less than 15 years), corresponding to an elasticity of between 0.41 and 0.55.

Such differences are not as large as those between the subjective and statistical scales discussed earlier, but they are nonetheless sizable. Without access to the microdata in each country, it is not possible to evaluate the quantitative impact on the measured extent of low incomes, but the differences in equivalence scales could change the ranking of the three countries.

Nor is this the end of the problems. Examination of the calculation of the poverty line reveals further divergences. To begin with, in France the median rather than the mean is employed. For the French data cited earlier, the mean is 13 percent higher than the median, so that this difference in definition causes the poverty rate to be understated, relative to that in the other two countries, by about one-third (Atkinson and Cazes 1990). Second, the mean (or median) is calculated in different ways (see O'Higgins and Jenkins 1989), as follows:

\[(\text{Household } h = 1, \ldots, H \text{ has total income } y_h, \text{ contains } n_h \text{ persons, and } e_h \text{ equivalent adults. The equivalent income for the household is } y_h/e_h)\]

Method Alpha: \[\frac{1}{H} \sum_h \left( \frac{y_h}{e_h} \right)\]

Method Beta: \[\frac{\sum_h \left( \frac{y_h}{e_h} \cdot e_h \right)}{\sum_h e_h} = \frac{\sum_h y_h}{\sum_h e_h}\]

Method Gamma: \[\frac{\sum_h \left( \frac{y_h}{e_h} \cdot n_h \right)}{\sum_h n_h}\]

In France (Method Alpha), the average is obtained by taking the equivalent income for each household and treating each household as one unit irrespective of the number of people. In Germany (Method Beta), the average is obtained by weighting each household by the number of equivalent adults, which is the same as dividing total income by the total number of equivalent people. In Great Britain (Method Gamma), the weights are the number of persons. The method
can again make a noticeable difference: applying Method Beta to French data for 1979 reduces the mean, relative to that obtained by Method Alpha, by 12.5 percent (O'Higgins and Jenkins 1989, background information). Third, the related question arises of the weighting adopted in the poverty count. In Great Britain and Germany, the figures count the total number of people; in France, the figures show the total proportion of households. This is important to the extent that the poverty rate differs by size of family.

The significance to be attached to the observed differences in poverty rates depends also on the reliability of the data sources. The studies are all based on household budget studies, but two of them compare the results from different data sources. Assemat and Glaude (1989) have access to a matched sample of households who appear in both the budget survey (Enquête Budgets) and the tax records (Enquête Fiscale), and show that the estimated poverty rate is about 20 percent lower in the latter case. Two of the reasons that they identify for the divergence are illustrative of the kinds of problem that arise. First, the fiscal data attribute to all eligible elderly the minimum guaranteed income to which they are entitled. In view of the evidence that a non-negligible proportion of the elderly do not in fact claim, the number with low incomes will be understated. However, the budget survey is based on reported receipt of transfers, and there is evidence of underreporting, so that the number of elderly with low incomes is overstated. Second, the budget survey shows a larger proportion of farmers and self-employed below the low-income cutoff, and it may be that there is a tendency for this sector to understate income.

The underreporting of income is similarly given as one reason for the divergence in Germany between the results just quoted, which are based on budget survey data, and those derived from the Socio-Economic Panel, although in this case the budget survey is considered to be more complete. The proportion found to be below 50 percent of the mean is about twice as high in the Panel Study. Hauser and Semrau (1990, p. 34) argue that the more extensive procedure of the budget survey allows cross-checking and more comprehensive recording than the single interview of the Panel. There is, however, a second possible explanation which they advance. For both surveys participation is voluntary, but whereas the Panel is a random sample, the budget survey is based on a call for volunteers. In both cases a reweighting procedure is applied, but it is believed that low-income households remain underrepresented in the budget survey (Kitterer 1986).

The case study just described should serve as a warning of the difficulties involved in making detailed intercountry comparisons. Even if statisticians are provided with an apparently tightly defined brief—to measure poverty in terms of income, taking a standard of 50 percent of the national average, using the household as the unit of analysis—there may still be serious divergences in the methods and findings. The case study made use of existing results, and some of the differences could be eliminated by returning to the raw microdata. The equivalence scales could be harmonized; the methods of calculating the poverty
line could be brought into line; the sensitivity of the results to different adjustments for underreported income could be assessed. But some differences would remain that could not be resolved without changes in the raw statistics collected. The time period of income is an example, as is the differing design of the samples. A full-scale comparative exercise is therefore likely to entail a substantial statistical effort which, to be effective, would require the participation of people familiar with the situation in the countries studied—in relation both to the statistical data and the institutional context.

III. CONCLUDING COMMENTS

The aim of this article has been to emphasise the need for clarity about the concepts employed in studying poverty. The "mischiefous ambiguity of the word poor," to use the phrase of the British Poor Law Report of 1834 (quoted by Himmelfarb 1984, p. 523), may be inescapable in political rhetoric, but behind the rhetoric there must be explicit analysis as to what one means by poverty. Clear understanding of the terms of reference becomes even more important when poverty is compared across countries, where terms carry differing significance and where their implications are affected by differing social institutions.

The definition of the poverty indicator, of the poverty level, and of the unit of analysis is not a purely technical matter. It involves judgments about the objectives of policy. Any cross-country comparison of poverty has therefore to consider the purposes of the analysis and the relation between its objectives and those pursued within the countries studied. If the purpose is to measure the relative extent of need in different countries, then external criteria may be appropriate. A supranational body may, for example, decide to measure poverty on an individual basis because it is particularly concerned with gender inequality, even though national governments do not attach the same priority. If, however, the purpose is to assess the comparative effectiveness of antipoverty policy, then national objectives become relevant. A country that gives high priority to the needs of children, and provides generous family support, may score well if the equivalence scale treats children as close to adults, but much less well on another scale.

The interrelation between policy and measurement means that it is important to relate the observed statistics to the underlying economic and social institutions. This applies even to countries as close geographically and economically as those of Western Europe. Woolf (1986) has drawn attention to the differences among Protestant countries such as Denmark, England, and the Netherlands, where outdoor relief was established early as an obligatory parish function, and the Catholic countries, where it remained a matter of charity. The Beveridge tradition of flat-rate social security benefits is different from the earnings-related benefits found in other countries influenced by Bismarck. Such historical differences leave their traces today in the differing forms of income support, and these in turn influence the observed distribution of income.
References


