

# **UK POVERTY STATISTICS: A COMPARATIVE STUDY**

by

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**May 1991**

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# Contents

List of Tables

List of Figures

1. Background	1
2. The Three Studies Described	2
A. "The Poor are Poorer": The Townsend Approach	2
B. Report of the Second European Poverty Programme: The EC Approach	6
C. Households Below Average Income 1988: The DSS Approach	8
3. Reconciling the Various Figures	11
A. Changes Over Time	11
I. Data source and consistency	12
II. Means and medians	14
B. Numbers Below Half Average	16
I. Unit of measurement: income or expenditure?	16
II. Adjustments for household size	19
III. Region covered	22
IV. Other issues	23
V. Combined effect	25
4. Summary and Conclusions	27
References	29

## **List of Tables**

1. Equivalence scale values used by DSS	10
2. Principal features of the three studies	11
3. Alternative measures of real income growth: poorest quintile	15
4. Numbers below half average income / expenditure	18
5. Numbers below half average income using alternative equivalence scales	22
6. Average gross weekly incomes in Northern Ireland and whole UK	23
7. Numbers of households in selected EC countries with expenditure below alternative domestic poverty thresholds	24
8. Numbers of individuals in selected EC countries with household expenditure below half national average and half Community average	25

## **List of Figures**

1. Average real income of poorest quintile	4
2. Average real income of poorest quintile: consistent definition of income	14
3. Individuals below 50% of average income / expenditure	17
4. Distribution of income and expenditure: 1985	18
5. Distribution of income and expenditure: 1988	19
6. The changing pattern of household size	20
7. Individuals below 50% of average income: effects of alternative equivalence scales	21
8. Individuals below 50% of average income / expenditure: effect of expenditure basis combined with OECD scales	26

# 1. BACKGROUND

In recent months three new and separate studies have been produced which attempt (amongst other objectives) to assess the extent of poverty in the United Kingdom. All are based on analysis of the Family Expenditure Survey, and yet the results they present are in some respects strikingly different.

First came a study produced by the Statistical Monitoring Unit at the University of Bristol, written by Professor Peter Townsend (Townsend, 1991). The report's main title was "The Poor are Poorer", and it argued that not only had income inequality increased in the UK over the 1980s, but that the poorest fifth of the population were actually worse off after adjusting for inflation.

In apparently similar vein came a report on the European Community's second anti-poverty initiative, published a few days later (EC, 1991). This spawned newspaper headlines such as "Britain moves to top of EC's poverty league",<sup>1</sup> and was reported as showing that "more people are living in relative poverty in the United Kingdom than in any other European Community country".

However, a third report, carried out at IFS for the House of Commons Social Security Select Committee (SSC, 1991), has reached different conclusions from the EC study on the numbers on low incomes and different conclusions from the Townsend study on the real income growth of the poorest groups. This study applied the official Department of Social Security "Households Below Average Income" methodology to Family Expenditure Survey data for 1988. Whilst confirming the result of growing inequality, the DSS approach shows that the real incomes of the poorest tenth of the population may have grown by up to 10 per cent during the 1980s.

Given that each of these studies is based on the same original data source, two questions arise which form the subject of this paper: "Why did these studies produce such apparently different results?" and "What are we to conclude about the 'true' pattern of poverty and low incomes in the UK?".

We begin with a brief description of the principal results of each of the studies and set out in some detail the methods employed. Next we seek to quantify the extent to which different methodological approaches have affected the level of measured poverty in each of the studies. Finally we seek to draw some conclusions about the actual pattern of poverty and low incomes in the UK in recent years.

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<sup>1</sup>*The Guardian*, 8 April 1991.

## **2. THE THREE STUDIES DESCRIBED**

### **A. "The Poor are Poorer": The Townsend Approach**

#### **I. PRINCIPAL FINDINGS**

The Townsend study concludes that not merely has there been a "continuing polarisation ... of the real incomes of the rich and poor", but that "the latest evidence from official sources shows a fall in the real living standards of the poorest groups in the population during the last decade" (Townsend, 1991, p. 3). Specifically, the average income of the poorest 20 per cent of households is found to have fallen from £3,442 per annum in 1979 to £3,282 in 1989 (all expressed in 1989 prices), whilst the average income of the richest 20 per cent rose from £20,138 to £28,124 over the period (also in 1989 prices).

As regards population subgroups, the Townsend study highlights a £33 fall between 1979 and 1989 in the annual income of those single pensioners mainly dependent on the state pension, and a fall of £90 in the annual income of married pensioners in this position. Couples with one or two children are found to have experienced "a distinct improvement" over the period, but larger families are seen to be worse off.

The study concludes by suggesting that these figures may themselves understate the true decline in the real incomes of the poorest groups. Some reasons suggested include the withdrawal of certain forms of income in kind during the 1980s and the introduction of the Community Charge. There is also a call for an end to what the author sees as political interference in the production of official figures concerning those on low incomes.

#### **II. METHOD ADOPTED**

##### *a) Measurement of Living Standards and Definition of Poverty*

One of the principal aims of the Townsend study was to provide an up-to-date picture of poverty in the UK. Detailed Family Expenditure Survey data, provided to researchers in the form of anonymised computer tapes, do not become available until 12 to 18 months after the end of a given survey year. However, a published report containing the principal results of the survey is produced somewhat sooner (usually within a year of the completion of the survey in question) and it is a series of these annual reports which forms the basis of the Townsend study.

Townsend considers the period 1979-89, and examines the published data which provide average incomes for the whole FES sample and for subgroups such as the poorest and richest fifths. These averages are provided on two definitions: "normal gross income" and "normal disposable income". Normal gross income is the sum of household incomes from employment, self-employment, investments and most social security benefits, whilst disposable income is obtained by deducting income tax and National Insurance contributions from this figure. These income measures are, however, adjusted, so that a person who has become sick or unemployed within the three months prior to interview is treated as being "normally in work" and is accorded their in-work income. Both measures also include an amount of "imputed income" for those living in owner-occupied or rent-free accommodation.

The Townsend study prefers *disposable* income as its principal measure, since this is expected to provide a better guide to household living standards.<sup>1</sup> To assess what has happened to the real spending power of the various groups, this income measure is then adjusted for inflation by use of the Retail Prices Index, with income figures being presented in constant 1989 prices.

The study notes at the outset one substantial problem with using published data in this way, namely that of consistency. In 1983 there was a significant administrative change in the housing benefit system which affected the FES household income definition. The nature of the change is discussed more fully in Section 3 below, but in brief it meant that housing benefit paid to the poorest households was included in FES income prior to 1983 but excluded thereafter. As a result there is a sharp discontinuity in the level of average incomes, particularly among the poorest group. This is illustrated in Figure 1, which is based on data from the Townsend study.

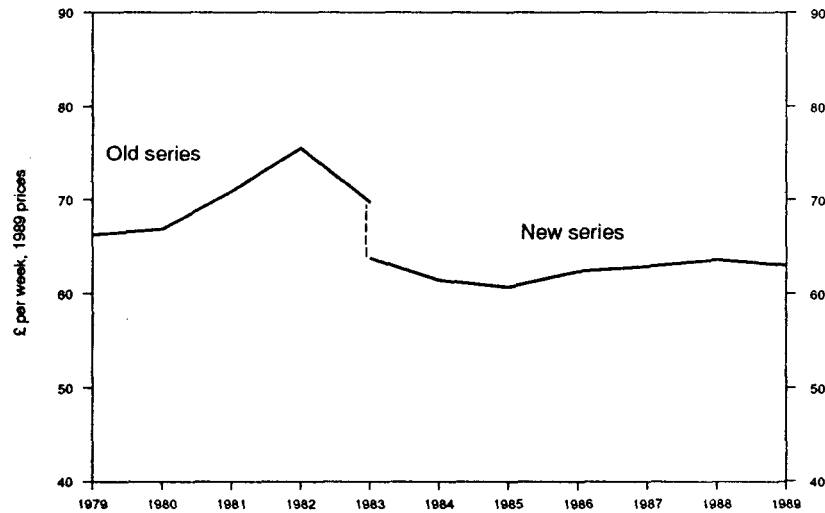
For purposes of comparison, some attempt was made by government statisticians to produce the FES data for 1983 both on the old basis (which included housing help for supplementary benefit recipients) and on the new basis (which excluded such housing help). This attempt was somewhat controversial and was the subject of a lengthy dispute between Professor Townsend and the statisticians in the late 1980s.<sup>2</sup> Although that controversy was never satisfactorily resolved,

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<sup>1</sup> One immediate problem with this approach, not noted in the study, is that the rankings of richest fifth etc. are based solely on gross income. There is thus some inconsistency in taking the average *disposable* income of the richest / poorest fifth ranked according to *gross* income.

<sup>2</sup> The ensuing correspondence is extensively reproduced as an appendix to the Townsend study.

FIGURE 1. Average Real Income of Poorest Quintile: 1979-89



Source: Table 1, Townsend (1991), based on published FES.

it is clear from Figure 1 that the exclusion of the housing help given to supplementary benefit recipients produces a substantial one-off reduction in the post-1983 income figures.

Ideally, FES micro-data should be used to provide a consistent series by including housing benefit in income over the whole period - an approach now adopted by DSS for its official series. Lacking access to micro-data, Professor Townsend is not in a position to do this, but has a separate argument as to why this is not necessary. He contends that a range of other factors such as cuts in benefits in kind over the period mean that the trend shown in Figure 1 "provides a reliable representation of reality" (p. 10). Consequently, the Townsend study proceeds with the published and unadjusted definition of income for all subsequent analyses. The poorest group identified in the study is then the lowest quintile of households based on this definition.

#### *b) Adjustments for Household Size and Composition*

In the Townsend study, income is being used as a proxy for standard of living. When comparing living standards in this way it is sometimes thought necessary to take account of the fact that a given cash income will provide a higher standard of living to a smaller household than to a larger one. One approach to this problem is to use "equivalence scales" whereby incomes are scaled up or down according to the size and composition of the household in question. This is the method adopted in the EC study and also by DSS (see below for details).



Townsend is, however, critical of the practice of "equivalisation". The details of this debate are presented more fully in Section 3, but Townsend's two main criticisms are as follows: that the methods by which existing equivalence scales are derived are unsatisfactory; and that because such a wide range of equivalence scales are used in practice, it is difficult to place much reliance on the results arising from any one particular scale. Consequently, in the Townsend study results are presented in terms of disposable incomes unadjusted for household size or composition.

Professor Townsend is, however, sensitive to the charge that over a period when households were on average becoming smaller this approach might produce misleading results. In response it is noted that the *poorest* fifth of households in 1979 contained almost exactly the same number of individuals as the poorest fifth of households in 1989.

Rejecting equivalisation, then, the Townsend study provides instead figures for the household incomes of population subgroups (e.g. single pensioners, single parents etc.), and argues that this "avoids the need to postulate a formula for 'equivalisation'" (p. 16, quotation marks as in original). Here the reasoning appears to be that since single pensioner households (for example) will always contain one individual then the living standards of such households can usefully be compared over time without any adjustment. Such an approach does not, however, provide any means of assessing changes in the living standard of the population as a whole.

#### *c) Other Features of the Study*

##### *i) Sample*

The figures given above are based on the Family Expenditure Survey sample of around 7,000 households per year. All regions of the UK are thus included, and no households are excluded from the sample. No adjustment is, however, made to reflect the fact that the FES sample is known to be in some respects unrepresentative of the UK population.

##### *ii) Method of averaging*

When referring to "average incomes" for population subgroups, the Townsend study follows the convention adopted in the published FES of using arithmetic means.

##### *iii) Unit of assessment*

The majority of results in the Townsend study relate to households, or to particular family types, rather than to individuals.

## B. Report of the Second European Poverty Programme: The EC Approach

### I. PRINCIPAL FINDINGS

The final commentary on the Second European Poverty Programme (EC, 1991) examines the distribution of income in the 12 member states of the EC for the years 1975, 1980 and 1985. It updates an earlier study by O'Higgins and Jenkins (1989). Using a poverty line of half national average expenditure, the EC study finds that in 1985 there were 50 million EC residents living in poverty as against 49 million in 1980. This compares with figures of 44 million and 39 million respectively produced by O'Higgins and Jenkins, who used a poverty line of half of national average *income*.

The updated EC study found that between 1980 and 1985, whilst the numbers in poverty (using the expenditure yardstick) had barely increased in the Community as a whole, this concealed wide variations between different member states. In particular, it found that "the proportion of low income persons ... increased ... above all in the United Kingdom" (EC, 1991, p. 3). Specifically, the number of UK residents in households with expenditure below half the UK average had risen from 8.2 million in 1980 to 10.3 million in 1985 - a larger proportionate increase than for any other member state.<sup>1</sup> Despite this relative deterioration in the UK's position, the study showed the proportion of individuals in poverty in 1985 remained larger in Portugal, Ireland and Spain than in the UK.

When the poverty line used is 50 per cent of average expenditure in the Community as a whole, the relative position of the UK improves somewhat. On this basis, the UK had 15.8 per cent of its population living in poverty, compared with 69.5 per cent in Portugal and 32.4 per cent in Spain. At the other end of the scale, only 1.8 per cent of Belgians and 2.7 per cent of Danes had household expenditure below half the EC average.

The effects of setting the poverty line at different proportions of average expenditure were also investigated in the EC study. With the poverty line set at 40 per cent of national average expenditure, there were 2.1 million UK households in poverty, compared with 3.8 million using a poverty line set at 50 per cent of the national average.

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<sup>1</sup> This figure of 10.3 million individuals for 1985 compares with 5.0 million individuals below half average *income* according to DSS statistics. The reasons for this difference are discussed below.

## II. METHOD ADOPTED

### *a) Measurement of Living Standards and Definition of Poverty*

The EC study uses household expenditure as a guide to living standards, in contrast to the earlier Europe-wide study by O'Higgins and Jenkins which used household income. This switch appears to have been principally because of doubts about the quality of income data in some national budget surveys. It is, however, recognised that expenditure figures will themselves be only imperfectly measured.

The EC study defines a person as poor where "their material, cultural and social resources are so limited as to exclude them from the minimum acceptable way of life in the Member State in which they live" (p. 2). Inevitably such a definition makes poverty difficult to quantify. Consequently, a yardstick of 50 per cent of *national* average expenditure is used to proxy the "extreme form of inequality of standards of living" which is identified with poverty (p. 2). Bench-marks of 40 per cent and 60 per cent of national average expenditure are also used for comparative purposes, as is a line of 50 per cent of EC average expenditure.

### *b) Adjustments for Household Size and Composition*

In common with the official UK series, the EC study adjusts household data to reflect differences in household size and composition. In the EC study, a weight of 1.0 is applied to a single person, 0.7 for an additional adult in the household, and 0.5 for each child aged up to 14. These are the scales used by OECD in its work on social policy. Under this approach a single-person household with expenditure of £100 over a given period is deemed to attain the same living standard as a childless couple spending £170, or a couple with one child who spend £220.

### *c) Other Features of the Study*

#### *i) Sample*

The EC study is based on household budget surveys from across Europe. In the case of the UK this was the Family Expenditure Survey for 1975, 1980 and 1985. This is "grossed up" to represent the UK population in the relevant years.

#### *ii) Method of averaging*

Where poverty is assessed in terms of a population average expenditure, this is simply the arithmetic mean of the (equivalent) household expenditures.

### *iii) Unit of assessment*

The majority of analyses in the EC study are carried out on the basis both of numbers of individuals and of numbers of households. Each individual is assumed to benefit equally from the expenditure of the household, although it is noted that in many households this may not be realistic.

## **C. Households Below Average Income 1988: The DSS Approach**

### **I. PRINCIPAL FINDINGS**

Researchers at IFS applied the official Department of Social Security "Households Below Average Income" methodology to 1988 Family Expenditure Survey data on behalf of the Social Security Select Committee (SSC, 1991). This approach finds that the number of individuals in Great Britain in households below half average income had more than doubled since 1979. On the basis of income "before housing costs" (defined below) the numbers increased from 3.8 million individuals to 9.1 million in 1988, and on the basis of income "after housing costs" from 4.9 million to 11.8 million.

However, in contrast to the Townsend study, the DSS approach finds that the real incomes of households at all income levels grew between 1979 and 1988. The real income growth of the poorest decile was 9.5 per cent (income before housing costs) or 2.0 per cent (after housing costs). This compared with real growth for the population as a whole of 31.8 or 33.5 per cent respectively.

The study also examines the relative performance of the poorest fifth of households in particular subgroups. Whilst the poorest fifth of the population were 11 per cent better off in 1988 than in 1979 (using income before housing costs), the poorest fifth of full-time workers were 21 per cent better off, and the poorest fifth of pensioners 6 per cent better off. In contrast, the poorest fifth of unemployed families suffered a small real-terms loss over the period.

### **II. METHOD ADOPTED**

#### *a) Measurement of Living Standards and Definition of Poverty*

Household income is used by DSS as a proxy for living standards, but as is noted in the preface to the Department's own series (DSS, 1990), income represents "only one element ... in overall living standards". Income in this case is the current disposable income of the household (i.e. after the deduction of income tax and National Insurance contributions). No attempt is made to "normalise" the data

where income is temporarily depressed or inflated at the time of interview. This contrasts with the Townsend study which uses "normalised" incomes as published in the FES report.

For the purposes of DSS analysis, income is considered both before and after the deduction of housing costs. Income "before housing costs" is simply the sum of all sources of household income such as earnings, investment income and all social security benefits. Income "after housing costs" is then obtained by the deduction of gross housing costs such as rents, domestic rates and payments of mortgage interest.

There has been some debate as to which measure provides the better guide to changes in household living standards. Where housing costs are regarded as a matter of household choice, and where larger housing costs may reflect a higher quality of accommodation, then income "before housing costs" might be a better guide to living standards. This might be particularly the case over longer time periods and for better-off households. Conversely, if households have little choice over the level of their housing costs and if rent increases (for example) do not imply improvements in housing quality, then income "after housing costs" might be a preferred measure.<sup>1</sup>

As regards measuring numbers in poverty, DSS is at pains to stress that the official series implies no explicit poverty line. The "Households Below Average Income" tables do, however, provide information on the numbers and characteristics of households with income below 50 per cent of the national average.

#### *b) Adjustments for Household Size and Composition*

Household incomes are adjusted for family size according to a complex set of equivalence scales devised by McClements (1977). These are derived from analysis of household expenditure patterns in the early 1970s and are set out in Table 1.

#### *c) Other Features of the Study*

##### *i) Sample*

DSS currently provides figures for Great Britain only (i.e. excluding Northern Ireland), and rejects a small subsample of households where income data appear to be incomplete. The resultant sample is then "grossed up" to population totals using differential weights which reflect the extent to which different groups are over- / under-represented in the FES.

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<sup>1</sup>This issue is discussed more fully in Johnson and Webb (1990).

TABLE 1. Equivalence Scale Values used by DSS

	Before housing costs	After housing costs
1st adult (head of household)	0.61	0.55
Spouse of head	0.39	0.45
Other 2nd adult	0.46	0.45
3rd adult	0.42	0.45
Each subsequent adult	0.36	0.40
Each dependant aged:		
0-1	0.09	0.07
2-4	0.18	0.18
5-7	0.21	0.21
8-10	0.23	0.23
11-12	0.25	0.26
13-15	0.27	0.28
16 or over	0.36	0.38

*ii) Method of averaging*

In determining population average income, DSS uses the arithmetic mean of (equivalent) household incomes. However, when attempting to assess the "average" standard of living of population subgroups, DSS has switched to using the "median" income (i.e. the income at the midpoint when the households are ranked by income). This approach is justified on the grounds that for smaller groups, the arithmetic mean can be distorted by the presence of a small number of extreme and unrepresentative values in the data.

*iii) Unit of assessment*

Incomes are assessed over the whole household, and all individuals are then deemed to share equally in the living standard implied by that income level. However, all analyses of population subgroups (e.g. poorest 10 per cent, numbers below half average income etc.) are carried out in terms of numbers of *individuals*. This method is chosen to avoid complications arising from changes in the pattern of household sizes.

### 3. RECONCILING THE VARIOUS FIGURES

Having seen in the last section the range of results obtained by the various studies, we now attempt to quantify how far these differences arise from each of the methodological differences outlined so far. Table 2 summarises these differences.

TABLE 2. Principal Features of the Three Studies

	Townsend	EC	DSS
Area covered	UK	UK / EC	GB
Data source	FES reports	FES micro-data	FES micro-data
Period	1979-89	1975/80/85	1979-88
Unit of measurement	Disposable income <sup>a</sup>	Expenditure	Income before / after housing costs <sup>b</sup>
Definition of poverty	Poorest quintile	Expenditure <50% of national average	No explicit poverty line
Adjustments for household size (equivalisation)	None	OECD scales	McClements scales

<sup>a</sup> Including housing help to SB recipients pre-1983.

<sup>b</sup> See detailed definition earlier.

Studies of this sort are typically used for two purposes: to monitor changes in the living standards of the poorest groups over time and to assess the total numbers in poverty or on low incomes at a particular point in time. We now consider these two main areas, and assess the extent to which the different conclusions reached can be reconciled.

#### A. Changes Over Time

The two studies which attempt to compare the absolute living standard of the poorest groups over time are the Townsend study and the SSC report. Whereas Townsend finds that "The Poor are Poorer" (referring to the bottom fifth), the SSC report gives real income growth of 10 per cent even for the poorest *decile*. How can this apparent contradiction be resolved?

## I. DATA SOURCE AND CONSISTENCY

If changes in living standards are to be measured accurately then a prime requirement is a consistent yardstick for the period under examination. Even with access to detailed micro-data, problems can sometimes arise in creating a consistent series (owing to coding and definition changes etc.); with access only to published aggregate data the task can become impossible - indeed the FES report explicitly states that "it has not been the practice to re-process the data for earlier years when a definition used in the survey is changed" and that "time series shown in the report will be subject to some discontinuities" (e.g. CSO, 1990, Annex A, para. 18).

Of the three studies discussed here, only the Townsend study is dependent exclusively on published data and it is therefore most vulnerable to the problem of inconsistency of data. In particular, as noted earlier, there was in 1983 an administrative change in the way in which housing benefits were paid which resulted in a discontinuity in the published figures for aggregate household income.

Prior to 1983, an individual's entitlement to supplementary benefit was in part dependent on the level of household housing costs. The separate housing benefit system applied only to those individuals who were not entitled to receive supplementary benefit. After 1983, supplementary benefit entitlement was determined independent of the level of housing costs, and help with housing costs was provided to all claimants through an administratively separate housing benefit scheme.

The significance of this for published FES incomes is as follows. FES income includes most social security benefits but excludes housing benefit. When, over the period 1982-84, the housing help to supplementary benefit recipients became payable through a separate housing benefit system rather than being lumped in with their SB, aggregate household incomes of poorer families declined sharply on this measure. This effect explains the rather odd pattern shown in Figure 1.

Professor Townsend does, however, acknowledge this difficulty early on in his study. He notes that "The figure for the poorest 20 per cent ... might accordingly be £150 to £200 [p.a.] lower to be strictly comparable with the data for the mid- and late-1980s" (Townsend, 1991, p. 10). In the absence of micro-data, Professor Townsend is unable to make a more accurate correction. However, rather than abandon the attempt, or concentrate solely on the six-year period for which consistent data are available, the Townsend study argues that this data series is none the less acceptable as an accurate description of recent trends. This is on the grounds that other factors may



artificially bolster figures for the income growth of the poor when they are derived from household surveys. These include the fact that some of the poorer groups such as the sick and disabled may be under-represented, and that no account is taken of changes in the extent of income provision in kind (such as free school meals).

Whilst these caveats clearly need to be considered when assessing poverty figures based on household surveys, it seems implausible that the quantitative significance of these other factors will suitably correct for such a major discontinuity. Furthermore, such an argument is hardly credible for the population subgroups presented in the Townsend study (e.g. single pensioners, lone parents). It seems highly unlikely that all of these groups will have been affected in the same way by these "other factors".

A more fruitful approach would appear to be to try to remove the inconsistency in the data series being used. Once this has been done, it would be possible to attempt to assess the quantitative significance of some of the other factors raised in the Townsend study, and to determine whether the general conclusion that "The Poor are Poorer" still holds. We attempt here to perform the first part of that exercise.

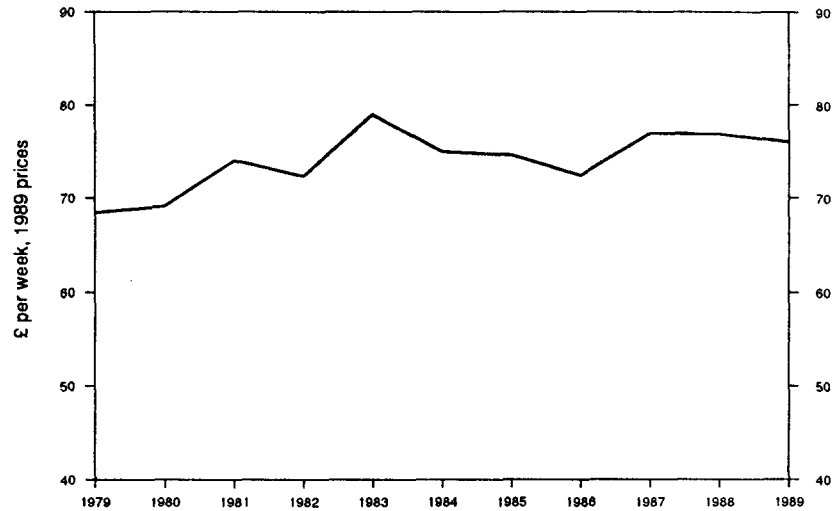
The inconsistency of income definition arises from the exclusion in later years of housing help to supplementary benefit recipients. In order to achieve a consistent definition we should thus add back in the separate housing benefit paid to SB recipients under the post-1983 system. However, over the same period, the borders between SB recipients and other low-income families have regularly changed and so there remains a danger of inconsistency.

Consequently, to achieve a consistent series we add back in *all* housing benefit paid over the whole period. The results of such an analysis for the poorest fifth of the population are shown in Figure 2.

Although the income estimates shown in Figure 2 are still somewhat erratic, on a consistent definition of income it seems clear that rather than being worse off in real terms, the poorest quintile have experienced a modest growth of around 7 per cent in their real disposable incomes over the decade. In recent years though, as Professor Townsend notes, the trend has been relatively flat.

It may be objected that by including housing benefits, this income series is being artificially inflated. Since rents and domestic rates both rose substantially faster than inflation during the 1980s, this would tend to increase housing benefits and thus push up incomes on this measure. To the extent that the price index being used to deflate this series (the all-items RPI) accords an appropriate weight to such increases, then no problem need arise.

FIGURE 2. Average Real Income of Poorest Quintile, 1979-89:  
Consistent Definition of Income



Source: Authors' calculations based on FES micro-data.

However, earlier work by the present authors (Johnson and Webb, 1990) has shown that this may not be the case. In brief, it was found that a deflator appropriate to the bottom deciles might reduce reported real growth over such a period by around 3 percentage points. This suggests that a more accurate estimate of the real income growth of the poorest quintile on this consistent definition would be around 4 per cent between 1979 and 1989.

## II. MEANS AND MEDIANS

As noted in the descriptive section earlier, the DSS methodology uses the concept of median income as a way of estimating the average income of population subgroups. This is simply the income of the household (or strictly speaking the individual) at the midpoint of a group when ranked by household income. For poorer groups during the period under examination, figures for income growth based on mean income are quite similar to those for median income on the income-before-housing-costs definition, but not for income after housing costs. Table 3 summarises the differences for the period 1979-88.

The estimate which we have arrived at so far (i.e. using the Townsend methodology, but with a consistent definition of income) is of the *mean* income of the bottom quintile. This figure of around 4 per cent may look a long way from the 10 per cent shown in Table 3

TABLE 3. Alternative Measures of Real Income Growth 1979-88:  
Poorest Quintile

<i>Definition of income</i>	<i>Measure of average</i>	
	Mean	Median
Before housing costs	10.3%	9.9%
After housing costs	0.4%	5.0%

for income before housing costs (which is a close cousin of the definition we are using). In part this will be because the two studies are looking at different groups of individuals. The poorest fifth of households on the Townsend definition will include many small households, whereas the process of equivalisation in the DSS study will put more large households into the poorest groups.

Furthermore, the warnings about price indices and the treatment of housing benefit apply to the DSS before-housing-costs measure also, and suggest that on the DSS measure a figure for mean income growth of around 7 per cent might be a more accurate reflection. Given that the Townsend figure includes Northern Ireland but the DSS figure does not, this would help further to reduce the discrepancy.<sup>1</sup>

It appears then, that real income ("before housing costs") of the poorest fifth of the UK population grew over the last decade by around 5 per cent. This estimate seems not to be greatly affected whether the mean or the median income is chosen.

On income "after housing costs" the choice between mean and median becomes of more significance. This is because the mean for the whole group is depressed by the presence of a small number of (implausibly?) large values for housing costs. The median value is not affected by the presence of such outliers. It thus seems reasonable to prefer the median value in this case.<sup>2</sup> Both figures would, however, be revised down slightly if Northern Ireland had been included.

<sup>1</sup>The effects of excluding Northern Ireland are considered more fully when attention is turned to the absolute numbers on low incomes.

<sup>2</sup>Neither of the estimates of real growth in income "after housing costs" is affected by the price index issue which applies only to income "before housing costs".

To sum up, on a consistent definition of income, using an appropriate deflator, and for the UK as a whole, a plausible estimate of the real income growth of the poorest quintile lies in the range 3-5 per cent.

## B. Numbers Below Half Average

### I. UNIT OF MEASUREMENT: INCOME OR EXPENDITURE?

Of the various studies of UK poverty referred to so far, the recent EC study is the only one to use household expenditure as a proxy for living standards. This was not for theoretical reasons but simply because of the inadequacy of the income data in the budget surveys of certain member states. In this section we consider the effects of this choice.

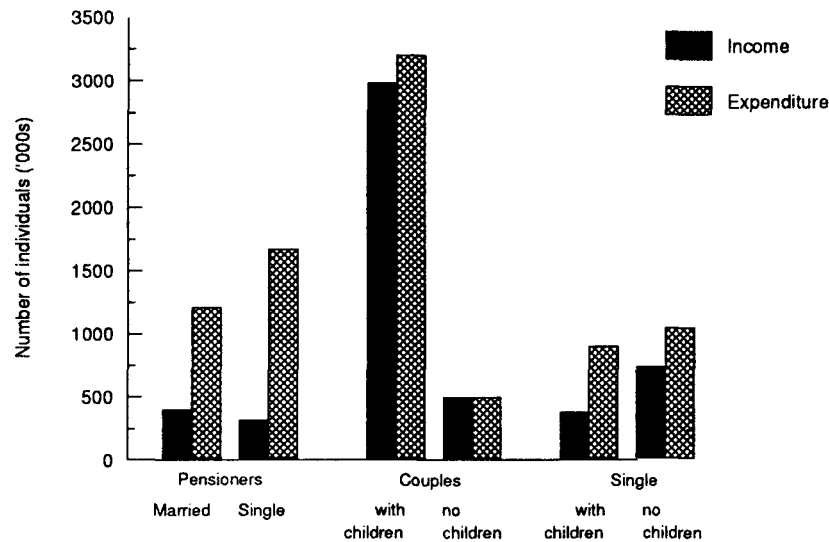
At first glance it would appear that the use of expenditure rather than income has produced much higher figures for poverty. Thus where O'Higgins and Jenkins found 44 million Europeans in poverty in 1985 using income as a yardstick, the revised EC figures (based on expenditure) put the number at 50 million. For the UK the corresponding figures were 6.6 million and 10.3 million respectively.

It would, however, be wrong to infer that all of this change is attributable solely to the switch between income and expenditure *per se*. In the first place, the O'Higgins and Jenkins study uses *annual* income whereas the EC study is based on expenditure over the survey period - just a fortnight in the case of the UK. As a result we would expect the expenditure measure to vary more widely than the income measure, and thus to produce higher figures for poverty. Secondly, with regard to the figures for the EC as a whole, the earlier study drew on a wider range of data sources than the final EC report, with the result that the figures are not directly comparable. This caveat did not, however, apply to the UK figures.

When examining separate studies in this way problems of comparability will inevitably arise and these can make it difficult to assess the true impact of a particular methodological detail. In order to overcome this difficulty we report below the results of a comparative exercise in which the only difference between the two approaches is the use of expenditure rather than income. Specifically, we apply the official DSS methodology to domestic data for 1985, but using expenditure instead of income. The results are shown in Figure 3.

Figure 3 shows clearly that for 1985 data a switch from income to expenditure substantially increases the numbers regarded as poor, particularly among the pensioner population. The total numbers rise from 5.0 million using income to 8.4 million using expenditure. The

**FIGURE 3. Individuals Below 50% of Average Income / Expenditure**



size of the increase is in fact very similar to that which occurred when the EC study switched from using income to using expenditure, although the absolute numbers involved are smaller in our own exercise than in the EC study. This is partly because, for comparability with DSS figures, we have excluded Northern Ireland from the sample, and also because we have used *current* income at time of interview rather than annual income as in O'Higgins and Jenkins.

The dramatic rise in the number of pensioners regarded as poor under the expenditure measure is consistent with an earlier IFS study (Blundell and Preston, 1991) which considered the choice between income and expenditure from a more technical perspective. Blundell and Preston suggest that this apparently higher level of saving amongst pensioners could arise from precautionary saving (e.g. to cover anticipated costs of ill health) or from attempts to compensate for the erosion of interest income by inflation.

It would, however, be wrong to conclude that the use of expenditure will in general have an effect of this magnitude on the numbers below half average income. In order to test the robustness of this conclusion, we repeated the exercise outlined above but for 1988 data. The main results are summarised in Table 4.

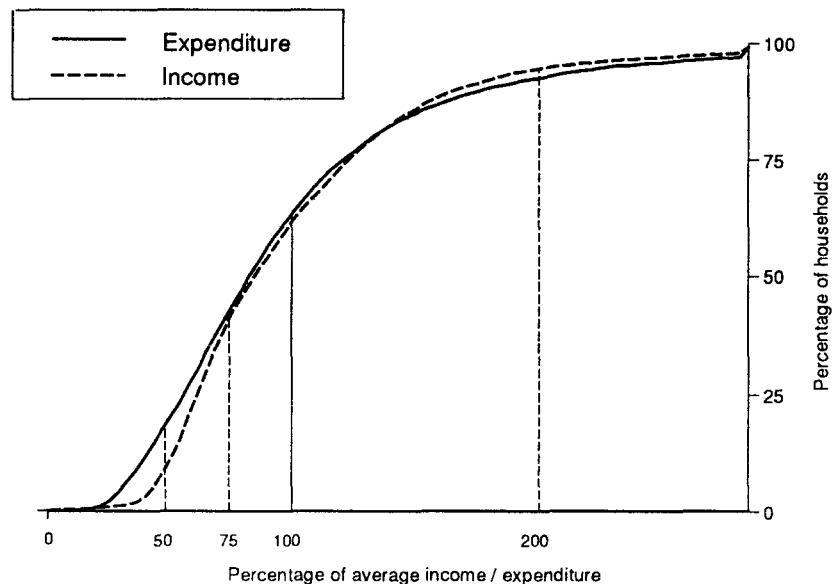
TABLE 4. Numbers Below Half Average Income / Expenditure: 1985 and 1988

(GB, millions)	1985	1988
Below half average income	5.0	9.1
Below half average expenditure	8.4	9.2

This rather dramatic result shows that the effects of the choice between income and expenditure will vary considerably according to the particular year in question. In 1985 the decision is of fundamental importance, whereas in 1988 the use of expenditure would have had negligible impact on the numbers below half average.

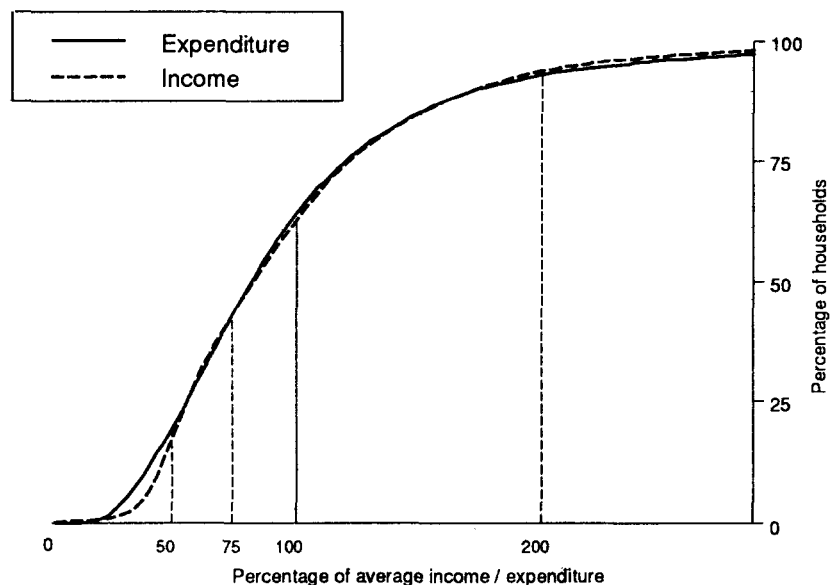
The reason for this may be seen by examining Figures 4 and 5. These show a comparison of the distribution of income and expenditure for 1985 and again for 1988. In each case the distributions have been truncated at slightly below three times average income / expenditure.

FIGURE 4. Distribution of Income and Expenditure: 1985



The first conclusion which may be drawn from Figure 4 is that the particular poverty threshold chosen can be an important determinant of the difference between the income and expenditure measures. At 50 per cent of average the difference is substantial; at 75 per cent of

FIGURE 5. Distribution of Income and Expenditure: 1988



average there is relatively little difference between the two measures. As Figure 5 shows, by 1988 the distribution of income had become more evenly spread at lower levels and consequently the results were much less sensitive to whether income or expenditure was used.

It is clear that a simple "headcount" measure of poverty (such as the number below half the national average) can be highly sensitive to changes in the distribution of income / expenditure and in particular could exaggerate *changes* in the extent of poverty. Ideally a measure of the income / expenditure shortfall of these groups would also be presented, and some analysis of this sort is presented in Blundell and Preston.

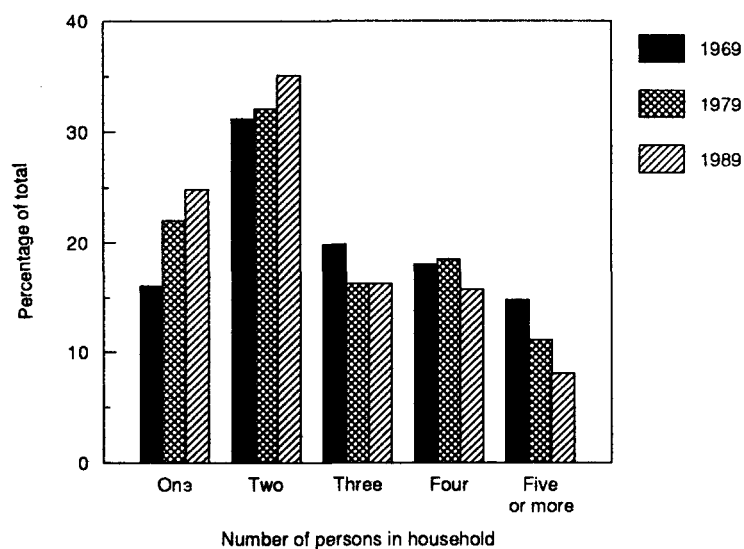
However, concentrating on the 1985 figures we may conclude that a large part of the difference between DSS and EC estimates of poverty in the UK arises from the choice of expenditure, and in particular *short-term* expenditure, as the poverty yardstick, rather than income.

## II. ADJUSTMENTS FOR HOUSEHOLD SIZE

When using household income (or expenditure) to examine trends in living standards over time, it is desirable to take account of changing patterns of household formation. For example, suppose that it is observed that average household income has declined over a period. At first sight, this would appear to prove that living standards have also declined. However, were it the case that average household size

was falling (as has occurred in the UK - see Figure 6), then such a conclusion might be mistaken. In such circumstances average per capita income (for example) might have risen. Thus a simple comparison of average household incomes might be misleading, and it is necessary also to take some account of household size and composition.

FIGURE 6. The Changing Pattern of Household Size: 1969-89



Source: FES reports.

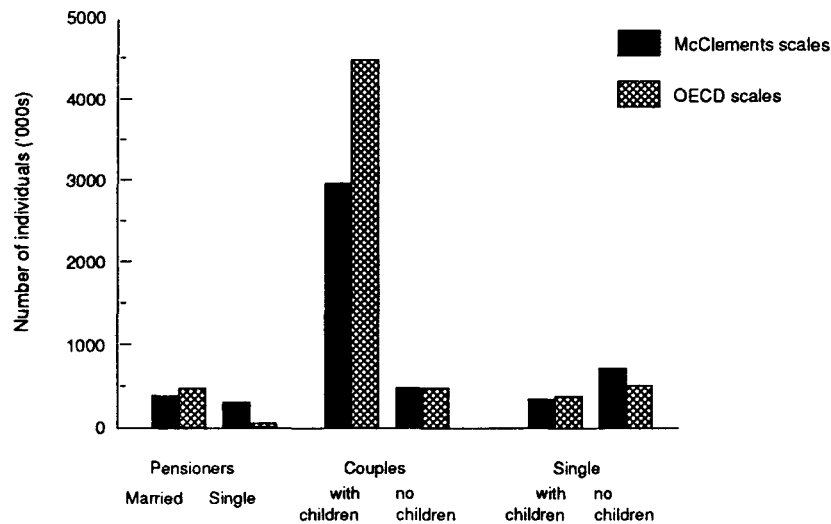
This view is shared by O'Higgins and Jenkins, who write (in the European context): "Given both the rate at which average household sizes are changing and the apparent recent increase in the average household size of those in poverty, there is clearly a need for caution if basing poverty population estimates on household numbers" (p. 12).

As noted earlier, one way to take account of variations in household size and composition is to use "equivalence scales". Of the three studies under examination here, only the Townsend study does not make any adjustment of this kind. Townsend cites evidence showing that a wide range of equivalence scales are in use and that these can produce dramatically divergent results. (For a survey see Atkinson (1990)). Townsend also argues that the conceptual basis on which equivalence scales are derived may also be flawed.



The equivalence scales used in the EC and DSS approaches have been detailed in the descriptive sections above. We examine here whether the particular scales chosen are having an important effect on the aggregate level of poverty reported in the studies. Specifically, we conduct a comparative exercise whereby the scales used in the EC study are inserted into the DSS methodology, again for 1985. The results are shown in Figure 7.

**FIGURE 7. Individuals Below 50% of Average Income: Effects of Alternative Equivalence Scales**



The use of the OECD/EC scales rather than the McClements scales has a substantial effect both on the total number of individuals below half average income in 1985 and on the composition of that group. The total number rises from 5.0 million using McClements scales to 6.3 million with the OECD scales.

Clearly the most substantial effect is seen for couples with children, where an extra 1.5 million individuals are brought in to this poorest group. This is because of the relative weights accorded to children in the two scales. Whilst the OECD scales accord to all children half the weight of a single adult, the weight for a very young child in the McClements scales can be as little as one-seventh that of a single adult. Consequently the relative position of couples with children (already a very large group) deteriorates considerably using the OECD scales. By contrast, there is a substantial fall in the number of single pensioners, whose incomes are quite clustered and whose relative weight is smaller under the OECD scales.

Once again, to test the robustness of these results, a similar exercise was carried out for 1988 data. The results of this are reported in Table 5.

TABLE 5. Numbers Below Half Average Income using Alternative Equivalence Scales: 1985 and 1988

(GB, millions)	1985	1988
McClements scales	5.0	9.1
OECD scales	6.3	9.4

As with the choice between income and expenditure measures, it is clear that the results for 1985 are also much more sensitive to the choice of equivalence scale than those for 1988. In this case, the use of OECD scales would add only around 300,000 individuals to the numbers below half average income. This is mainly because by 1988 families with children as a group were much better off (due to the fall in unemployment) and so even with the OECD scales fewer of them come into the poorest group.

The earlier EC-funded study (by O'Higgins and Jenkins) also examined the use of a range of such "equivalence scales" for the case of income data. The scales which they compare include that used in the *First* European Poverty Programme, which, for reasons of data limitation, makes no distinction between children and other subsequent persons in a household, and also the scale used in the latest EC study. Consistent with our result here, they find that the scale used in the report of the First European Poverty Programme produces still higher numbers in poverty.

Overall then it is clear that the choice of equivalence scales had a substantial impact both on the numbers below particular poverty thresholds in 1985 and on the composition of those groups. In the present case the choice of equivalence scales accounts for around one-third of the difference between DSS and EC estimates for the UK in that year.

### III. REGION COVERED

It has been noted earlier that whereas the Townsend and EC studies refer to the whole United Kingdom, the DSS approach is to exclude Northern Ireland from the sample. We consider here the effects of this exclusion.

It is well known that average household incomes in Northern Ireland are below those for the rest of the UK, even though average household size is slightly larger. Table 6 shows figures based on the extended Northern Ireland Family Expenditure Survey for the period 1983-86 and compares them with results for the whole United Kingdom, again based on FES.

TABLE 6. Average Gross Weekly Incomes in Northern Ireland and Whole UK: 1983-86

(£ per week)	1983	1984	1985	1986
Northern Ireland	155.87	162.47	180.75	193.80
United Kingdom	187.86	197.33	216.86	233.68

Source: *Policy Planning and Research Unit Monitor*, 1989.

An estimate of the effects of the exclusion of Northern Ireland on the numbers below half average income in 1985 may be obtained from an earlier IFS study carried out for the Social Services Select Committee (1990). This considered the periods 1980-82 and 1983-85, and examined the numbers below half the UK average on the official DSS methodology. In both periods it was found that around 24 per cent of Northern Ireland's 1.5 million population were in households with below half UK average income (before housing costs). It seems reasonable to assume then that around 350,000 of the difference between DSS and EC estimates for 1985 will relate to the exclusion of Northern Ireland.

#### IV. OTHER ISSUES

Before attempting to assess the combined effect of some of the differences noted so far, there are some remaining features of the studies which are worthy of note. The first is that as well as presenting results for numbers below 50 per cent of national average expenditure, the EC study also applies thresholds of 40 per cent and 60 per cent of the average. Similarly, DSS figures show thresholds of 50 per cent, 60 per cent, 70 per cent etc. up to 100 per cent of average income. Results for selected countries from the European study are shown in Table 7.

TABLE 7. Numbers of Households in Selected EC Countries with Expenditure Below Alternative Domestic Poverty Thresholds: 1985 (thousands)

Country	40%	50%
Belgium	54	189
Germany	949	2306
Portugal	621	948
UK	2120	3790
TOTAL EC	8555	16121

Source: EC, 1991.

We see from Table 7 that in Europe as a whole the numbers in poverty fall by around half when a poverty line of 40 per cent of average expenditure is used. A broadly similar pattern is also observed for the UK, but for Portugal the fall is only around one-third, suggesting rather deeper poverty. Such additional information is helpful in interpreting single "headcount" measures of poverty which may be highly sensitive to small changes in the threshold chosen.

A second interesting feature of the EC study is that it also compares income levels in member states with the Community average. Table 8 shows for the same countries how the numbers "in poverty" change when the Community average is applied. It should be noted that Table 8 is for numbers of individuals, not numbers of households.

Here it is clear that the more prosperous countries (especially Belgium and Germany) fare substantially better when compared with an average of their European neighbours, whereas the relative position of a poorer country such as Portugal deteriorates quite dramatically.

This exercise must, however, be treated with considerable caution. The EC study itself notes that no account is taken of the extent to which services to those on low incomes may be provided free or at a subsidised price, nor of differences in relative prices within the member states.<sup>1</sup> Such a comparison does, however, provide a useful context in which to set studies of the extent of national poverty.

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<sup>1</sup> A more detailed discussion of the problems of international comparisons is found in Atkinson (1990).

TABLE 8. Numbers of Individuals in Selected EC Countries with Household Expenditure Below Half National Average and Half Community Average: 1985 (thousands)

Country	50% of national average	50% of EC average
Belgium	583	182
Germany	6074	4335
Portugal	3310	7023
UK	10324	8944
TOTAL EC	49700	51292

Source: EC, 1991.

## V. COMBINED EFFECT

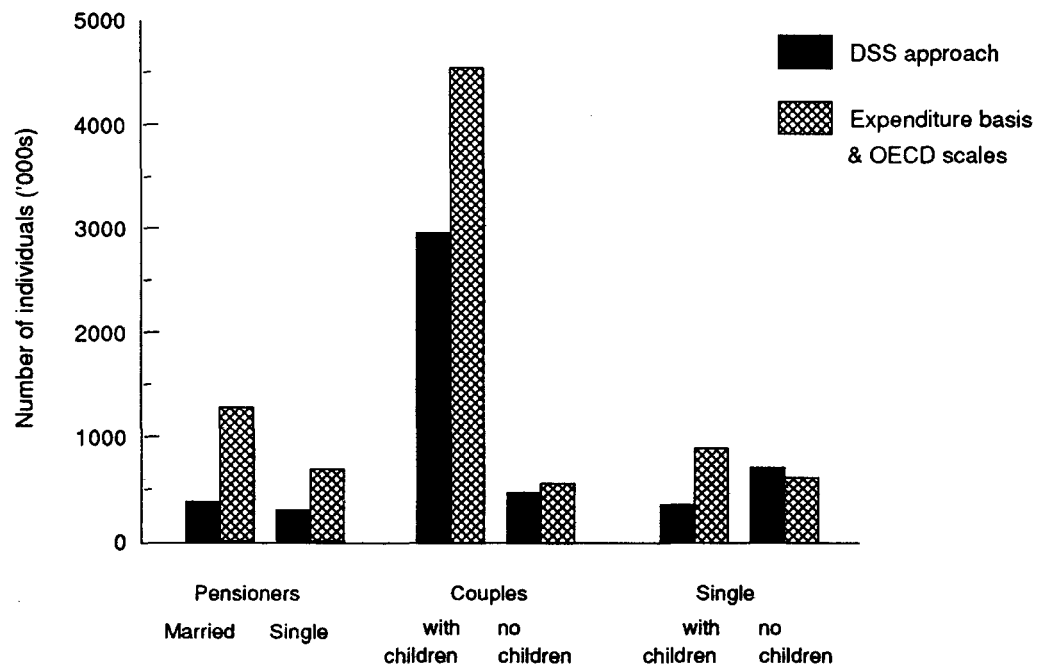
In previous sections we have shown that the two principal reasons for the difference between EC and DSS estimates of numbers on low incomes for the UK in 1985 were the use of expenditure rather than income, and the particular equivalence scales chosen for the respective studies. In this final analysis, we consider the combined effect of these two factors.

Figure 8 compares DSS-style "Households Below Average Income" analysis for 1985 for Great Britain, with a similar exercise based on household expenditure and equivalised using the OECD equivalence scales.

On the basis of household expenditures equivalised by the OECD scales, the number of individuals below half average income / expenditure in Great Britain in 1985 stands at 8.75 million - an increase of 3.75 million over the DSS figure. It will be noted that this is less than the sum of the independent effects of switching to expenditure and of switching equivalence scales. This is because in some cases it is the same individuals who would be brought in to low income by either change. With regard to the composition of this larger group, the pattern is a growth in the number of pensioners (mainly due to the expenditure basis) and a growth in the numbers of families with children (mainly due to the change in equivalence scales).

Since the EC figures are for the whole United Kingdom, a further 0.3 million individuals from Northern Ireland need to be added to these DSS-style figures to ensure full comparability. This produces a total of just over 9 million individuals, compared with slightly more than

**FIGURE 8. Individuals Below 50% of Average Income / Expenditure: Effect of Expenditure Basis combined with OECD Scales**



10 million on the EC basis. There still remains therefore some minor discrepancy (perhaps related to the specific definition of expenditure used in each case) but it is clear that the largest part of the difference can be explained by the three factors discussed above.

## 4. SUMMARY AND CONCLUSIONS

Studies of poverty typically seek to assess both changes in the absolute living standard of the poor, and the numbers affected by poverty / low incomes. Professor Townsend and DSS differ sharply on the first, whilst the EC and DSS reach radically differing conclusions on the second. In this examination we have sought to show that these differences can largely be attributed to a small number of important methodological differences.

In the case of the absolute living standard of the poor, the fall reported by Professor Townsend is found to be attributable to an inconsistency of income definition. Whilst this inconsistency is itself noted in the Townsend study, we have shown that when it is removed, the real incomes of the poorest fifth are found to have risen by up to 5 per cent. This is shown to be broadly consistent with DSS estimates.

On numbers "in poverty" in 1985 we have found that the use in the EC study of expenditure rather than income has the biggest single effect on the numbers. Had DSS used expenditure rather than income for its analysis of the 1985 data, it would have found an extra 3.4 million individuals below half the national average. Also important was the choice of equivalence scale. Had DSS used the OECD / EC equivalence scales, around 1.3 million people would have been added. The combined effect of implementing both of these changes would have been to increase the numbers below half the national average by around 3.8 million. It is also estimated that had Northern Ireland been included in the DSS figures, another 0.3 million would have been added. Altogether these three factors account for around four-fifths of the difference between DSS and EC estimates for the numbers on low incomes in 1985. The two methodologies would, however, have produced far closer results for a more recent year, 1988.

What conclusions can we draw from these comparisons? With regard to the performance of the poorest groups it is clear that even on a consistent definition of income their living standards have grown only slowly over the last decade. Furthermore, we would not dispute Professor Townsend's point that a range of important factors may be left out in figures based on household surveys such as these. We would, however, argue that the best way to demonstrate this is to use income series which are themselves consistent and then to attempt a quantitative assessment of these various other factors.

With regard to the numbers "in poverty" it is clear that the choice of income measure and the way in which incomes are adjusted for household size can be of crucial importance. The technical review which preceded the introduction of the current UK series (DHSS, 1988) offered little justification for the particular equivalence scales which were chosen (merely asserting that "there is no other generally accepted set of equivalence scales" - p. 26), and devoted only a couple of brief paragraphs to the decision to use income rather than expenditure (rejecting the latter option on the grounds of the "volatility" of expenditure data).

Since the numbers involved can be so sensitive to these two key areas, it seems that at the very least far more effort should be devoted to assessing which of the various permutations offers the best guide to household living standards and hence to the numbers in poverty.



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