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Working Paper

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ESRI Working Paper, No. 165

Provided in Cooperation with:

The Economic and Social Research Institute (ESRI), Dublin

Suggested Citation: Whelan, Christopher T.; Nolan, Brian; Maître, Bertrand (2006) : Measuring consistent poverty in Ireland with EU SILC data, ESRI Working Paper, No. 165, The Economic and Social Research Institute (ESRI), Dublin

This Version is available at:

<https://hdl.handle.net/10419/68032>

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MEASURING CONSISTENT
POVERTY IN IRELAND WITH
EU SILC DATA

**Christopher T. Whelan, Brian Nolan
and Bertrand Maître**

May 2006

Working Paper No. 165

Measuring Consistent Poverty in Ireland with EU SILC Data

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Abstract

In this paper we seek to make use of the newly available Irish component of the European Union Statistics on Income and Living Conditions (EU-SILC) in order to develop a measure of consistent poverty that overcomes some of the difficulties associated with the original indicators employed as targets in the Irish National Anti-Poverty Strategy. Our analysis leads us to propose a set of economic strain indicators that cover a broader range than the original basic deprivation set. The accumulated evidence supports the view that a revised consistent poverty measure that combines a threshold of two or more economic strain items with income poverty at seventy per cent of median income, identifies those exposed to generalised deprivation arising from lack of resources in a manner consistent with their use as targets in the National Anti-Poverty Strategy. The consistently poor differ from others not only in relation to income poverty and economic strain but also in terms of exposure to a range of lifestyle deprivations and subjective economic pressures.

Key Words: consistent poverty, economic strain, deprivation, multidimensional, direct measurement, reliability

Introduction

A definition of poverty in terms of exclusion from the life of one's society because of a lack of resources has been enshrined in the Irish National Anti-Poverty Strategy. In measuring and monitoring the evolution of poverty in Ireland over recent years, research at the Economic and Social Research Institute (ESRI) has made extensive use not only of household income but also of non-monetary indicators of deprivation, in order to obtain a more comprehensive picture of household living standards and command over resources. This approach is consistent with a trend towards increased emphasis on direct measurement of deprivation.¹ Particular attention has been paid to those both falling below relative income thresholds and reporting what has termed "basic deprivation", as captured by a specific set of eight non-monetary indicators. Those fulfilling both conditions were identified as experiencing generalised deprivation due to lack of resources (Callan *et al*, 1993, Nolan and Whelan, 1996). This measure of "consistent" poverty has been extensively used in research aimed at measuring the extent and nature of poverty in Ireland.

The Irish approach has attracted a good deal of international attention. A number of in-depth national poverty studies have applied a combined income poverty and deprivation approach and Austria has followed Ireland in the use of a "consistent poverty" measure for official national reporting.² In the Irish case the precise manner in which basic deprivation and consistent poverty are measured, in terms of the specific non-monetary indicators used for that purpose, was initially established using data for 1987 and then 1994, and has been re-examined in several studies since then using more up-to-date information. However, over the past decade Ireland has experienced unprecedented economic growth, accompanied by profound change in standards of living, points of reference and the broader societal context. Important issues arise as to how has this affected the extent and nature of poverty and whether the original consistent poverty is still adequate for the purposes of answering such questions.³

Criticisms of the original basic deprivation index focused particularly on the narrow range of deprivation indicators incorporated. It was seen by some as being more appropriate to a more frugal era and implicitly accepting an absolutist view of poverty. After a period of unprecedented growth and with the recent availability of data from the first wave of the Irish component of the European Union Statistics on Income and Living Conditions (EU-SILC), the time would appear ripe for re-evaluation. The central aim of this paper is to assess how this measure should now be constructed.⁴

It was clear from the outset that, as living standards rose, the specific items employed in the consistent poverty measure would need to be revised at some point, in light of changing notions of what is minimally adequate. The intention was never to measure poverty in an "absolute" manner but, as Bradshaw (2001) has put it, in a "less relative way". In focusing on a set of basic deprivation items it was not considered to be a problem that respondents reporting an enforced lack of such items were in possession of apparently non-essential items.⁵ If we were to impose such a condition then households possessing DVD's, videos or stereos, or indeed spending

money on cigarettes or alcohol, could never be deemed to be poor. We do not have up to date information on what people *say* are necessities, though that tends to move over time in line with actual levels of possession or participation. However, all that is required in order to implement the consistent poverty approach is that we succeed in identifying a group of individuals experiencing enforced absence of items that, given our conceptualisation of poverty, we judge to be appropriate indicators. Of course our choice of items must be subject to empirical validation. In what follows we will refer to our key set of deprivation indicators, comprising the deprivation component of the new consistent poverty measure, as “economic strain”. This label is chosen in preference to the earlier one of “basic deprivation”. This is done for two distinct reasons. The first is that Eurostat has taken to referring to such measures by this label and it seems desirable, in developing measures based on EU-SILC, that we should endeavour to achieve as much consistency in terminological usage as is possible. In addition, given our earlier argument that we do not wish to use the possession of “non-essential” items as a basis for excluding individuals from consistent poverty, we accept that the labels “basic” and “secondary” deprivation have the potential to be misleading.

The form in which the deprivation questions were put to respondents was influenced by the desire to distinguish between constraint and choice. Combining information in relation to deprivation and income is also clearly aimed at fulfilling this condition. Exploring the relationship between consistent poverty and other types of life-style deprivation and the manner in which respondents experience their economic circumstances can further enhance our confidence that we are measuring deprivation arising from an insufficiency of resources. Thus we expect that positive associations will exist between what we conceive as economic strain and other life-style dimensions, however, such relationships are probabilistic rather than all or nothing.

The fact that changes have taken place in the form in which the deprivation questions have been posed in EU-SILC in comparison with the earlier Living in Ireland Survey (LIIS) would in itself makes recalibration of the Irish consistent poverty measure necessary.⁶ Particularly because of the way the consistent poverty measure has been incorporated into the National Anti-Poverty Strategy’s targets, it is important that the measures enjoy broad legitimacy, and the new EU-SILC data offer the opportunity to explore a range of options in the changed economic circumstances. This allows us to take advantage of an up-to-date analysis of the dimensionality of deprivation, as a prelude to establishing the reliability of our indices of deprivation. A further advantage is that it offers the possibility of creating a measure whereby, in order to be consistently poor, it is necessary to report deprivation in relation to more than one item.

While there is now rather general acceptance that poverty is a multidimensional phenomenon, in developing and evaluating appropriate indices the linkage between concept and measurement needs to be thought about carefully. In particular, it is important to distinguish two different aspects of measurement: identifying the poor/counting the number poor versus capturing what it means to be poor. While to document what being poor entails requires the use of appropriate indicators across various dimensions, it may be possible to accurately identify the poor with a much smaller set of indicators. The need for a multidimensional measurement approach in identifying the poor/excluded is an empirical matter. It is not something one can simply read off from the multidimensional nature of the

concepts themselves. Thus in considering the manner in which the Irish consistent poverty measure should be revised we will focus not only on issues of internal consistency but also on the implications of particular choices for the multidimensional profiles of those deemed poor.

The 2004 Irish Component of EU-SILC

In Ireland the information required under this EU-SILC framework is being obtained via a new survey to be conducted by the Central Statistics Office (CSO) each year. This was initiated in 2003, with interviews carried out only on a 6 months period from June to December 2003 that resulted in a small sample of 3,090 households and 8,101 individuals; the survey was then carried out throughout 2004, and again throughout 2005, with first results published in early 2005 (CSO 2005). The EU-SILC survey is a voluntary survey of private households. In 2004 the total completed sample size is of 5,477 households and 14,272 individuals. A two-stage sample design with eight population density stratum groups with random selection of sample and substitute households within blocks and the application of appropriate weight was employed (CSO, 2005).

The components of gross household income are employee income, cash and non-cash, employer's social insurance contributions, other direct income including pension from private pension plans⁷, interests dividends etc and social transfers. Disposable income is gross income less employer's social insurance contributions, regular inter-household cash transfer paid, tax on income and social insurance contributions. The equivalence scale employed attributes a weight of 1 to the first adult, 0.66 to each subsequent adult (aged 14+ living in the household) and 0.33 to each child aged less than 14. Disposable household income is divided by equivalised household size to produce equivalised income, which is then applied to each member of the household. The at-risk-of poverty-rate is the share of persons with an equivalised income below a given percentage of the national median income.

The Irish component of EU-SILC includes a range of questions relating to non-monetary indicators of deprivation. Here we draw on the full set of deprivation indicators in the Irish survey; which is a good deal more comprehensive than that common across the countries participating in EU-SILC. The questions posed cover a wide spectrum of items ranging from possession of consumer durables, quality of housing and neighbourhood environment, aspects of participation in social life and health status. The format of the questions posed to respondents varies across topics.

For the first set of items that we consider, respondents were asked if (1) the household possessed/availed the items (2) did not possess/avail of because they could not afford it or (3) did not possess/avail for other reason. The items are:

- Paying for a week's annual holiday away from home in the last 12 months
- Eating meat chicken or fish (or vegetarian equivalent) every second day, if you wanted to
- Having a roast joint (or equivalent) once a week
- Buying new, rather than second hand clothes

- A warm waterproof overcoat for each household member
- Two pairs of strong shoes for each household member
- Replacing any worn-out furniture
- Keeping your home adequately warm
- Having friends or family for a drink or meal at least once a month
- Buying presents for family/friends at least once a year

A similar format was employed in relation to the set of consumer items set out below.

- | | | |
|---------------------|--------------------------|-----------------|
| • A satellite dish | A video recorder | A stereo |
| • A CD player | A camcorder | A home computer |
| • A washing machine | A clothes dryer | A dish washer |
| • A vacuum cleaner | A fridge | A deep freeze |
| • A microwave | A deep fat fryer | A liquidiser |
| • A food processor | A telephone (fixed line) | |

A second set of items concerns the household dwelling and it was simply asked if the household possessed some specific amenities. Given the widespread availability of these items, we assume that their absence is due to inability to afford them.

- Bath or shower
- Internal toilet
- Central heating
- Hot water

A third set of items relate to the quality and the environment of the dwelling. Respondents were asked if their dwelling suffered any of the problems listed below:

- Leaking roof, damp walls/ceilings/floors/foundations, rot in doors, window frames
- Rooms too dark, light problems
- Noise from neighbours or from the street
- Pollution, grime or other environmental problems
- Crime, violence or vandalism in the area

The questions described to this point concern households and household members. The final set of item we consider were addressed to individuals. For this set

of items, the absence and affordability elements were incorporated in one question (and two part questions for the last two items). The items are as follows:

- Going without heating during the last 12 months through lack of money
- Having a morning, afternoon or evening out in the last fortnight for entertainment.
- A car

The last set of items relate to the health of the household reference person. The specific questions were as follows:

- Evaluation of general health. Five response options were offered. We considered respondents as having health problems when they answered from “fair” to “very bad”.
- If they suffered from any chronic illness or condition. A simple “yes” or “no” was offered to the respondents.
- If they have been limited in usual activities for at least the last 6 months because of a health problem. Three options were offered and those answering “yes very limited” and “limited” are considered as well as having health problems.

The Dimensionality of Deprivation

The analysis reported here refers to all persons in the EU-SILC. Where household characteristics are involved these have been attributed to each individual. Where more than one person answered a question, the response of the household reference person (HRP) has been used - the HRP being the one responsible for the household accommodation (where this responsibility was shared the oldest of those persons was chosen). In the analysis that follows we make use of forty-two indicators of life-style deprivation from EU-SILC described in the previous section. Our first step in the investigation of the dimensionality of deprivation for the EU-SILC set of items involves conducting an exploratory factor analysis of forty-two items. The particular form of factor analysis we employ involves an oblique rotation of the factors, which unlike orthogonal rotation, does not constrain the identified factors to be independent of each other.

Our intention is to use the results of the factor analysis as an aid to the development of appropriate indices. We do not make use of differences in the magnitude of factor loadings across items to attribute different weights to them. However, as can be seen from Table 1, our analysis does allow us to identify five distinct dimensions of deprivation that we label economic strain, consumption deprivation, housing facilities, neighbourhood environment and health status. For ease of interpretation, with one exception, we show the loadings only for the dimension on which the highest loading is observed. The item for which we make an exception is that relating to being able to afford a holiday away from home at least once a year. This item has its highest loading of 0.50 on the dimension that we label “economic strain”. However, it has an almost equally high loading on the consumption deprivation dimension. In deciding which dimension we should allocate this item to we have taken into account that the level of deprivation on the holiday item is

substantially higher than for any of the remaining items in the economic strain. Over one in four respondents say they cannot afford an annual holiday. This is almost twice the level reported on any of the remaining economic strain items. As a consequence the inclusion of the holiday item would unduly influence economic strain and consistent poverty levels. We have decided therefore to include it in the consumption deprivation set.

The economic strain index comprises eleven items. The items include those relating to food, clothes, adequate heating, new furniture, being able to afford an afternoon or evening out, being able to entertain family and friends. These items we argue capture types of deprivation whose enforced experience involves exclusion from a minimally acceptable way of life. The loading of the items on this factor are relatively homogeneous with the highest loading of 0.71 relating to being able to afford new clothes and a roast-joint or equivalent and the lowest of 0.55 being in connection with going without heating.

[Insert table 1]

The second dimension relating to consumption deprivation comprises nineteen items that refer to a range of consumer durables such as a telephone, CD player, dishwasher and PC. Deprivation of these items is considered to constitute a significantly less serious form of exclusion than that implied in the case of the set of economic strain items. However, possession of any one of these items is not inconsistent with the experience of economic strain. The loading of the items on this dimension is once again relatively homogeneous. The full range runs from 0.34 to 0.69 but thirteen of the nineteen items are found in the range 0.56 to 0.69.

The third dimension comprises four items relating to rather basic housing facilities. A bath or shower and an indoor toilet and hot water weight particularly strongly on this dimension with loadings of between 0.79 and 0.83. Central heating load a good deal less strongly.

The fourth dimension relates to the quality of the neighbourhood environment. Here the strongest loading item at 0.68 relates to noise with pollution and crime, violence and vandalism loading slightly lower. Rather weaker weightings are found for housing deteriorating elements such as leaking roof and damp and the rooms being too dark.

The final dimension relates to the health status of the household reference person. Each of the three indicators relating to this dimension namely self-assessed health status, indication of the existence of chronic illness or disability and restricted mobility load extremely high on this dimension. The loadings cover the extremely narrow range from 0.82 to 0.86.

The fact that the various items are separable into these distinct dimensions means that some types of deprivation cluster together but others do not – for example, a neighbourhood with crime or vandalism is often also noisy and polluted, but the presence or absence of such characteristics does not tell us much about the likelihood of observing basic deprivation. Households with health and housing problem are not necessarily located in problem neighbourhoods. Factors such as urban-rural location, life-cycle stage and age are likely to have a substantial influence on such factors over

and above any impact of household command over resources. Many households lacking particular consumption items do not experience economic strain, although we expect that most of those exposed to the latter will experience the former. Our focus on economic strain arises because we consider it captures best the form of generalised deprivation that is appropriate to the life-style component of a consistent poverty index.

Given the relative homogeneity of the item weightings on the observed dimensions, we feel that very little will be lost by using simple additive indices that have the virtue of transparency.⁸ In adopting this approach, we need to confirm the extent to which we can be confident that the component items are tapping the same underlying construct. An index of such reliability is provided by Cronbach's alpha, which is based on the average inter-item correlation between the component items.⁹ In Table 2 we report the value of this coefficient for two different versions of the basic deprivation index and for the remaining dimensions. The first basic deprivation reliability coefficient relates to the set of eight items (see Table 3 for description) that constitute the basic deprivation measure currently incorporated in the National Anti-Poverty Strategy consistent poverty measure. The second relates to the eleven items identified on economic strain dimension in the factor analysis reported earlier. The reliability levels for these indices are respectively 0.79 and 0.86 with the new index being clearly superior to the old one in terms of reliability. The economic strain items are intended to serve as equally reliable indicators across sub-groups of the population. Confirmation that this assumption is justified is provided by the fact that the coefficients for urban and rural sub-groups are, respectively, 0.86 and 0.85. The level of reliability for those aged sixty-five or more is slightly higher than for the younger respondents but still achieves a very satisfactory level of 0.75. Thus we can be confident that our conclusion will not be undermined by the fact that our economic strain measure is a significantly poorer measure for some groups rather than others.

The remaining reliability measures relate to the deprivation indices that we will employ in our analysis as part of the process of validating our measure of deprivation of basic deprivation and consistent poverty. The nineteen-item consumption deprivation index has a particularly high level of reliability with an alpha coefficient of 0.88. Given the much smaller number of indicators it is not surprising that the reliability coefficients for the housing and neighbourhood environment are significantly lower at 0.58.

[Insert Table 2]

Comparing Alternative Deprivation Indices

The 11 items included in the economic strain dimension in EU-SILC index are set out in Table 3. These include six items from the original basic set - shown in the first part of the table - referring to deprivation in relation to food, clothing and

heating. The five new items are shown in the second part of the table; these focus on adequate participation in family and social life. They include being able to afford to entertain family and friends, buy presents once a year, have an afternoon or evening out, keep the house warm and buy new furniture. Two items included in the original basic deprivation set are now dropped, as shown in the final part of Table 3. The item relating to “being unable to afford a substantial meal because of a lack of money” is omitted because the factor analysis shows that its relationship to the underlying dimension we are trying to tap is a good deal weaker than for the other items. We have also chosen to omit the item relating to “going into debt to meet ordinary living expenses” because it is rather general and unspecific and open to different interpretations.¹⁰ As McKay and Collard (2003) note, debt is a rather emotive term that can be used to describe two quite different situations. The first relates to consumer credit while the second refers to financial difficulties involving arrears in payments.

[Insert Table 3]

In constructing the original Irish consistent poverty measure incorporating the basic deprivation index, it was argued that given the extremes of deprivation captured by such items, the enforced absence of even one item together with income poverty was sufficient to fulfil the conditions for consistent poverty. In developing the economic strain index one of our objectives was to develop a measure of consistent poverty where the poverty rate was not dependent on any one item. In deciding, how well our decisions on inclusion and exclusion of items have worked, the crucial evidence will come from comparisons that distinguish the groups who are respectively included and excluded. This question will be addressed explicitly in a later section. For the moment we focus on the issue of the choice of threshold for the economic strain index. The key dependent variable employed in this analysis refers to “capacity to cope with unanticipated expenses”. As Eurostat (2005:11) note, this item seems relatively unlikely to be unduly influenced by consumption goals, even in the case of adaptive preferences and appears to be only weakly influenced by the psychological state and the cultural background of individuals. In this way it contrasts, as Eurostat note, with an item such as that involving reports of the household experiencing “difficulty in making ends meet” which is likely to involve larger subjective component. In Table 4 we compare the capacity of alternative dichotomous versions of the economic strain index involving respective cut-off points of 1+, 2+ and 3+ to discriminate in terms of stated incapacity to cope. The analysis reported involves running a series of logistic regressions with capacity to cope as the dependent variable and the independent variable being in each case the economic strain measure but with the threshold varying in each case. The odds ratios reported in Table 4 show the odds on incapacity to cope versus being able to cope for those above rather than below the relevant economic strain threshold. The value of the odds ratio rises sharply from 15.6 to 23.2 as one moves from a threshold of 1+ to 2+, indicating that the contrast between those with scores of two and all others is considerably sharper than that involving those with scores of one and above. In contrast as one moves to a threshold of 3+ the odds ratio increases only modestly to 25.1 indicating relatively little gain in discriminatory power. Thus, both statistical and substantive grounds lead us to opt for a threshold of 2+ in relation to the economic strain indicator. By so doing we seek to develop a consistent poverty measure that, while not

being unduly dependent on any single item, provides substantial discriminatory power in relation to the kind of outcomes that we expect to be associated with poverty.

[Insert Table 4]

In Table 5 we find further support for the choice of a threshold of 2+ for the EU-SILC 11 indicator in the manner in which it discriminates among those below the 70% relative income poverty lines in terms of the economic pressures that they are experiencing.¹¹ Eight out of ten of those above the deprivation threshold report inability to meet unanticipated expenses compared to two out of ten of those below the threshold. For housing expenses the respective figures are six out of ten and two out of ten. Three-quarters of those above the threshold report difficulty in making ends meet compared to just over one in four of the latter. Finally, the former are five times more likely to report arrears arising from routine expenses with the respective figures being 42 per cent and 8 per cent.

[Insert Table 5]

Consistent Poverty

We now turn to the implications for levels of consistent poverty of the choice of economic strain indicators and thresholds. Since additional analysis indicates that the patterns of economic strain, multidimensional deprivation and economic pressures exhibited by those below the 70% consistent poverty line are no less differentiated than those evident at the 50% and 60% line, for the purposes of the present paper we will focus on the 70% line. While we will proceed to combine income and deprivation measures because “income is not enough”, we wish to establish that each of our basic deprivation indicators is associated with income poverty. Ideally we would like variation in the magnitude of such associations to be relatively modest. The extent to which these conditions are fulfilled is set out in Table 6 in columns one and two for the 60% median income line. In columns three to five we show the odds ratios relating to risk of being deprived for the income poor versus the non-poor for the 50%, 60% and 70% income lines. Focusing first on columns one and two, we find that in every case, there is a positive association between deprivation and being below the 60% income line. The number of the non-income-poor deprived remains relatively stable across items with 4% or less being deprived on eight of the eleven items compared to 7% to 10% on the remaining three items. These latter items comprise being able to afford an afternoon or evening out, being able to replace worn-out furniture and having family or friends over for a drink or a meal. The pattern for those above the 60% threshold is also relatively homogenous. Deprivation for eight of the eleven items varies from 7% to 14%. For an afternoon or evening out, entertaining family and friends and replacing furniture it rises to approximately 25% in each case.

In column three to five of Table 6 we show odds ratios for each item for all three poverty lines. This indicator is not affected by the marginal distributions of either of the variables involved in the relationship and allows us to compare the magnitude of association across both items and income lines. At the 60% line the value of the odds ratios is found in the narrow range running from 3.3 to 4.9. Thus,

the basic deprivation items are significantly and fairly uniformly associated with income poverty. However, the limitations of income measures are shown in columns where we compare odds ratios for the 70%, 60% and 50% lines. As we move from the 70% line to the 50% line the number of persons income poor falls from 29.0% to 11%. However, there is no systematic tendency for the association between income poverty and deprivation to increase. In fact, ten of the eleven odds ratios at the 50% lines are smaller than the corresponding figures at the 70% line. Defining the income threshold more stringently contributes nothing to our ability to discriminate those experiencing deprivation on the economic strain items from the remainder population.

[Insert Table 6]

In Table 7 we set out the consistent poverty rates for the LIIS 8 measure with a threshold of at least one item, and for the EU-SILC 11 measure with one of two or more items. The former gives a consistent poverty rate of 9.6% while the latter provides a figure of 9.3%. Finally we look at the impact of our decision to exclude two of the items from the original basic deprivation index from the measure of economic strain. These relate to debt arising from ordinary living expenses and inability to afford a substantial meal. From Table 7 it is clear that including both these items in the EU-SILC index would have a rather modest effect on the consistent poverty rate, leading to an increase of less than one percentage point.

It may seem paradoxical that having enlarged our set of basic deprivation items, we have identified fewer people as being below the consistent poverty lines. This comes about first because the threshold now relates to an enforced lack of two or more items rather than one or more. This also contributes to the fact that our estimates of poverty are largely unaffected by the exclusion of any one of the eleven items.¹² Secondly, a significant number are no longer defined as consistently poor due to our exclusion of the item relating to incurring debts in connection with routine expenses. The debt item tended to act as something of a catchall item in the case of the LIIS 8 index and consistent poverty levels are a good deal lower when it is removed. We have now deliberately avoided items that unduly influence the consistent poverty rate. The consequence of these decisions is that while 18.8% of persons are found above the LII 8 threshold, only 14.1% are found above the EU-SILC 11 threshold. These decisions must be judged in relation to the analysis we present below on the profiles of those individuals identified as consistently poor.

[Insert Table 7]

Table 8 shows how the consistently poor using the EU-SILC measure are differentiated from the non-poor on each of the 11 items. The non-poor display deprivation levels of 3% or less for eight of the items. For the same items the deprivation levels for the consistently poor range between approximately one in five and two in five. For the remaining items the levels of deprivation for the non-poor range between 5 to 8% while for the consistently poor they go from 57% to 71%. The consistent poverty measure thus identifies two groups who are quite distinctive in their economic strain profiles.

In the final column of Table 8 we show the corresponding odds ratios. The value of the odds ratios ranges from a low of 18:1 for the item relating to “going without heating” to a high of 39:1 for entertaining family and friends. However, nine of the eleven values are found in the range running from 20:1 to 30:1. The number consistently poor at the 70% threshold is only marginally smaller than that below 50% of median income, however the values of the odds ratios for the former are between four to eleven times higher than those relating to the latter; with the median value of 25.9 being seven times higher than the corresponding value at the 50% income poverty line.

[Insert Table 8]

A Reconsideration of the Composition of the Economic Strain

Index

Both the scientific validity and the wider acceptability of a poverty index requires justification in terms of the evidence supporting the decision to include some rather than other items. In order to test further the properties of the EU SILC index, we construct a typology with the following categories:

- Non-poor on both the LIIS 8 and the EU-SILC 11 consistent poverty measures.
- Poor on the LIIS 8 measure but not the EU-SILC 11 index.
- Poor on the EU-SILC 11 index but not the LIIS 8 measure
- Poor according to both indices.

In Table 9 we show how deprivation levels on the remaining dimensions are distributed across the categories of this typology. There is a clear continuum running from those consistently non-poor on both indices to those poor on the LIIS 8 measure only, followed by those poor on the EU-SILC 11 index only and those poor on both measures. In the case of consumption deprivation those poor on the LIIS 8 only measure have levels of consumption deprivation almost two and a half times those of the group that is non-poor on both measures. This ratio rises to over five to one for those poor on the EU-SILC 11 index only, and finally to almost seven to one for those poor irrespective of the measure employed. Deprivation levels for the EU-SILC 11 poor only are twice those for the LIIS 8 poor only. The former are located much nearer to the non-poor across both measures, while the latter come much closer to the consistently non-poor.

A similar, though less sharply differentiated, profile emerges in relation to housing facilities. The housing deprivation level for those poor on the LIIS 8 measure only is twice that for those non-poor on both measures. This rises to almost four to one for those poor only on the EU-SILC 11 index, and to five to one for those poor on both measures. Thus the housing deprivation level is over one and half times higher for those captured exclusively by EU-SILC 11 index than for those identified solely by the LIIS 8 measure. The trend continues with the neighbourhood environment

dimension, where the level for the LIIS 8 and the EU-SILC 11 only are higher than that for those who are non-poor on both measures. The level for the EU-SILC 11 only group is slightly lower than for those on the LIIS 8 only. Those poor on both measures have levels of neighbourhood environment deprivation almost three times those of the group that is non-poor on both measures.

A similar pattern is observed in relation to the health status of the household reference person with the exception of the fact that little difference is observed between the groups poor on only one measure. The evidence thus consistently points to the superiority of the EU-SILC 11 consistent poverty measure. It also demonstrates that a relatively limited set of items can be employed to identify a group who are experiencing a multifaceted form of deprivation.¹³

[Insert Table 9]

We can gain further insight by examining the relationship between the consistent poverty typology and a range of indicators of economic pressure. These include inability to deal with unexpected expenses, experiencing housing expenses as heavy burden, reporting arrears in relation to mortgage, rent, hire purchase etc and reporting that the household is having difficulty or great difficulty in making ends meet. From Table 10 we can see that for all four indicators we observe a striking contrast between those consistently non-poor and those consistently poor while those poor on only one measure occupy intermediate positions. However, if for the moment we focus on the extreme groups we find that the contrast varies sharply across the indicators. To facilitate comparisons across indicators in the final column of Table 10 we report the relevant odds ratios. By far the greatest contrast between the two groups arises in relation to the item concerning inability to cope with unexpected expenses where the odds ratio has a value of 29:1 reflecting the fact that 83% of those poor on both measures report such difficulties compared to 15% of those poor on neither. The ratio for difficulty in making ends meet is 16:1 and the respective percentages are 79% and 19%. For the arrears item the value of the odds ratio falls to 14:1 corresponding to the observed figures of 46% and 6%. Finally, the lowest odds ratio of 8:1 is associated with the item relating to housing costs where the relevant percentages are 66% and 19%.

When we focus on the intermediate categories we again observe considerable variation across the items. In fact, while those poor on the EU-SILC 11 index only are almost twice as likely to report inability to cope with unexpected expenses little difference is observed in relation to difficulty in making ends meet. The LII 8 only group are just as likely to report that housing costs are a burden and to report arrears. The inclusion of the debt item in the LII 8 index seems to capture a number of people who, while having difficulty in coping financially, as reflected particularly in indicators such as experiencing housing costs as a burden and accumulating arrears, enjoy standards of living that are substantially superior to those individuals identified by the EU-SILC 11 consistent poverty measure.

[Insert Table 10]

Conclusions

In this paper we have sought to use the newly available Irish EU-SILC data to develop measure of economic strain and of consistent poverty that overcome some of the difficulties associated with the original basic deprivation and associated consistent poverty measure employed in the Irish National Anti-Poverty strategy. Our analysis identified five distinct dimensions of deprivation. We opted for an 11-item index to serve as the economic strain component of a revised measure of consistent poverty. This set of items covers a broader range than the original basic deprivation set and provides a more comprehensive coverage of exclusion from family and social life. It is important that a national social indicator should enjoy broad legitimacy and the revised set of items seems more appropriate today than the earlier basic set, which appeared to reflect a more frugal era.

Given the range and type of items included in the new basic deprivation index, we proposed that a threshold level of two on that index – together with low income – is appropriate to capturing consistent poverty. The analysis that we have reported confirms this view. The economic strain index displays a high level of internal consistency and no one item unduly influences the level of consistent poverty.

Retaining the items we propose dropping from the previous index - relating to a substantial meal and debt to cover day-to-day expenses - would lead to a modest increase in poverty levels. However, by constructing a consistent poverty typology, which ranged from those defined as consistently non-poor on both indices to poor on one but not the other and finally poor on both, we were able to develop a strong argument for excluding these items. Those poor on the original consistent poverty measure only are closer to those poor on the new measure in terms of experience of subjective economic pressures than in terms of indicators of objective deprivation or exclusion.

The sharply contrasting profiles in relation to each of the basic deprivation items observed for the consistently poor versus all others provides considerable reassurance that our procedures allow us to capture the type of group which we wish to designate as poor. However, as we have amply demonstrated, those defined as consistently poor differ from others not only in terms of income and their basic economic strain profile but also in terms of exposure to a range of life-style deprivations and subjective economic pressures. The new measure of consistent poverty, in addition to explicitly incorporating a wider range of items, and being less dependent on any single indicator, also provide a sharper contrast between the consistently poor and all others on this wider range of outcomes.

The accumulated evidence strongly supports the view that the consistent poverty measure incorporating the EU-SILC 11 basic economic strain index with a threshold of 2+ successfully identifies those exposed to generalised deprivation arising from lack of resources in manner consistent with their use as a target in Ireland's National Anti-Poverty Strategy.

Notes

¹ Recent examples relating to Britain, New Zealand and the USA include McKay and Collard (2003), Perry (2002) and Short (2005)

² Specific studies include Lollivier and Verger (1997) for France, Perez-Mayo (2004) for Spain, Gordon *et al* (2000) for Britain and Forster (2005) for a range of European countries.

³ See Honohan and Walsh (2002) and Blanchard (2002)

⁴ A further reason for conducting such analysis is the concern that conditioning effects in panel surveys may lead respondents exposed to repeated interviewing to report declining levels of deprivation Berthoud *et al* (2004).

⁵ See Mc Kay (2004) for a discussion of the interpretation of respondents' reports of lacking items because they cannot afford them.

⁶ See CSO (2005)

⁷ Not included in EU definition.

⁸ For the economic strain dimension, corrected item-total correlations are all in the range running from 0.49 to 0.62.

⁹ Reliability levels show modest variation across age groups. Latent trait analysis offers an alternative to the procedures we have adopted. However, where an index fulfilling reliability and validity requirements has been constructed using standard index building procedures, the observed results appear to be effectively identical to those produced by a weighted index using either "subjective" or "objective" weighting methods.

¹⁰ An alternative approach would be to use a number of items to capture the kind of debt experiences appropriate for inclusion on a basic deprivation index (see McKay and Collard (2004)).

¹¹ Results relating to the 60% line are almost identical.

¹² Consistent poverty rates for the full set of ten item scales range from 8.3% to 9.6%.

¹³ This conclusion is entirely consistent with the finding by McKay and Collard (2003) that

References

Berthoud, R., Bryan, M. and Bardasi, E. (2004), *The dynamics of deprivation: the relationship between income and material deprivation over time*. Department for Work and Pensions, Research Report No 219

Blanchard, O. (2002). 'Comments and Discussion', *Brooking Economic Papers*, 2002,:1:58-66,

Bradshaw, J and Finch N. (2003), 'Overlaps in Dimensions of Poverty', *Journal of Social Policy*, 32, 4:5113-525

Bradshaw, J. (2001), *Methodologies to Measure Poverty: More than One is Best*, International Symposium on Poverty, Mexic City

Callan, T., Nolan, B., Whelan, C. T. (1993), "Resources, Deprivation and the Measurement of Poverty", *Journal of Social Policy*, 22, 2:141-172.

Central Statistics Office (2005), *EU Survey on Income and Living Conditions (EU-SILC); First Results 2003*, Statistical Release 24 January, SO: Dublin/Cork

Eurostat (2005), 'Material Deprivation in the EU' *Statistics in Focus 05/2005*, A.-C. GUIO.

Förster, M, F. (2005), 'The European Social space Revisited: Comparing Poverty in the Enlarged European Union', *Journal of Comparative Policy Analysis*, 7,1:29-48.

Gordon, D., Adelman, L, Ashworth, K., Bradshaw, J., Levitas, R., Middelton, S., Pantazis, C., Patsios, D., Payne, S, Towmsend, P and Williams, J. (2000), *Poverty and Social Exclusion in Britain*, York: Joseph Rowntree Foundation.

Honohan, P and Walsh, B. (2002), "Catching Up with the Leaders: The Irish Hare", *Brooking Economics Papers*, 2002, 1 1-57

-
- Lollivier, S. and Verger, D. (1997), 'Pauvreté d'Existence, Monétaire ou Subjective Sont Distinctes', *Economie et Statistique*, No 308/309/310 INSEE, Paris 113-142
- Mc Kay, S. (2004), 'Poverty or preference: What Do 'Consensual Deprivation Indicators' Really Measure?', *Fiscal studies*, 25,2:201-223.
- Mc Kay, S. and Collard, S. (2003), *Developing Deprivation Questions for the Family Resources Survey*, Department for Work and Pensions Working paper Number 13. Corporate Document Series
- Nolan, B. and Whelan, C. T. (1996), *Resources, Deprivation and Poverty*, Oxford and New York: Oxford University Press, Clarendon Press.
- Perez-Mayo, J. (2004), *Consistent Poverty Dynamics in Spain*, IRISS, Working papers No. 2004-09
- Perry, B. (2002) , 'The Mismatch Between Income Measures and Direct Outcome Measures of Poverty', *Social Policy Journal of New Zealand*, (2002) 19:101-127
- Short, K. S. (2005), 'Material and Financial Hardship and Income-based Poverty Measures in the USA', *Journal of Social Policy*, 34,1:21-38.

Table 1. Factor Analysis Oblique Rotation Solution for EU-SILC Life-style Deprivation Items

Deprivation Dimensions					
	Economic Strain	consumption	Housing Facilities	Neighbourhood Environment	Health
Going without Heating	0.553				
Shoes	0.702				
Roast joint or equivalent	0.707				
Meals with meat, fish or chicken	0.697				
New rather than second-clothes	0.707				
Warm water proof overcoat	0.691				
Household Adequately Warm	0.661				
New not Second Hand Furniture	0.621				
Family for drink or meal	0.659				
Able to Afford Afternoon or Evening Out	0.594				
Presents for family/friends	0.567				
Holiday away from Home	0.495	0.492			
Telephone		0.497			
PC		0.671			
Satellite Dish		0.582			
Video		0.558			
Stereo		0.645			
CD		0.633			
Camcorder		0.672			
Clothes Dryer		0.584			
Dish Washer		0.682			
Vacuum Cleaner		0.444			
Fridge with Separate Freezer		0.467			
Freezer		0.612			
Micro Wave		0.564			
Deep Fat Fryer		0.596			
Liquidiser		0.663			
Food Processor		0.690			
Car		0.347			
Washing Machine		0.341			
Bath or Shower			0.833		
Toilet			0.785		
Central Heating			0.524		
Hot water			0.812		
Leaking roof & Damp				0.379	
Rooms too Dark				0.324	
Pollution				0.566	
Crime, Violence, Vandalism				0.579	
Noise				0.676	
Assessment of Health					0.822
Chronic Illness					0.839
Mobility restriction					0.864

Table 2: Reliability Levels for Deprivation Dimensions

	Alpha
LIS 8 Item Measure	0.791
EU-SILC 11 Item Measure	0.855
Secondary Deprivation – 19 Item Scale	0.878
Housing – 4 Item scale	0.588
Neighbourhood Environment – 5 Item scale	0.581
Health – 3 Item Scale	0.834

Table 3: EU-SILC Basic Deprivation Items

Items Retained from Original Basic Set

Two pairs of strong shoes
A warm waterproof coat
Buy new rather than second-hand clothes
Eat meals with meat, chicken, fish (or vegetarian equivalent) every second day
Have a roast joint (or its equivalent) once a week
Go without heating during the last 12 months through lack of money

Items Now Added to Basic Set

Keep the home adequately warm
Buy presents for family or friends at least once a year
Replace any worn out furniture
Have family or friends for a drink or meal once a month
Have a morning, afternoon or evening out in the last fortnight, for entertainment

Items Now Dropped from Original Basic Set

Going without a substantial meal due to lack of money
Going into debt to meet ordinary living expenses

Table 4: Relationship between Inability to Cope with Unexpected Expenses and Irish Specific Economic Strain Dimension at Varying Cut Off points

<i>Cut Off Point</i>	Odds Ratio
1+	15.6
2+	23.2
3+	25.1

Table 5: Economic Pressure by Income Poverty Lines and the EU SILC 11 Item Measure

EU SILC 11 Item Index	Below 70% Median Income Line
	% Inability to Cope with Unexpected Expenses
Below Deprivation Threshold	19.1
Above Deprivation Threshold	80.4
	% Experiencing Great Difficulty or Difficulty in Making Ends Meet
Below Deprivation Threshold	28.8
Above Deprivation Threshold	76.4
	% Housing Expenses a Great Burden
Below Deprivation Threshold	21.2
Above Deprivation Threshold	61.1
	% Arrears
Below Deprivation Threshold	8.1
Above Deprivation Threshold	41.5

Table 6: Economic Strain Indicators by Income Poverty Median Income Lines

	Non-Poor at 60% of Median Income	Poor at 60% Of Median Income	Odds Ratios 50% of Median income	Odds ratios 60% of Median Income	Odds ratios 70% of Median Income
	% Deprived	% Deprived			
Going without Heating	4.0	12.1	2.8	3.3	4.1
Shoes	2.4	9.5	3.7	4.2	6.6
Roast joint or equivalent	2.8	11.2	4.2	4.3	5.2
Meals with meat, fish or chicken	2.2	9.7	4.0	4.7	5.1
New rather than second- clothes	3.8	14.2	4.2	4.3	6.0
Warm water proof overcoat	1.8	6.7	3.8	3.9	6.2
Household Adequately Warm	2.2	7.9	3.1	3.8	5.1
Replace worn-out Furniture	10.0	27.8	3.0	3.5	4.2
Family for drink or meal	7.8	25.7	3.7	4.1	5.4
Able to Afford Afternoon or Evening Out	6.5	25.3	5.1	4.9	5.1
Presents for family/friends	2.8	11.6	4.3	4.5	7.0

Table 7: Consistent Poverty Rates at 70% of Median Income for Persons Employing Alternative Basic Deprivation Indices, EU-SILC 2003

	% Consistently Poor
LII 8 Item (Threshold 1+)	9.6
EU-SILC 11 Item (Threshold 2+)	9.3
EU-SILC 13 Item (Threshold of 2+ and including debt and substantial meal)	10.0

Table 8: Basic Deprivation Items by Consistent Poverty at 70% of Median Income

	Consistent Poverty with EU-SILC 11 70% Line		Odds Ratios
	Not Poor	Consistently Poor	
	%	%	
Go without heating	2.7	33.1	17.7
Shoes	1.3	28.2	29.9
Roast joint or equivalent	1.7	30.9	25.2
Meals with meat, fish or chicken	1.4	25.5	23.7
New second-clothes	2.3	39.2	26.8
Warm overcoat	0.9	20.5	28.0
House Adequately Warm	1.3	22.6	21.7
Replace Furniture	7.6	70.6	29.4
Family for drink or meal	5.4	68.7	38.8
Afternoon or Evening Out	5.3	56.7	23.3
Presents for family/friends	1.6	32.9	30.1

Table 9: Dimensions of Deprivation by Consistent Poverty Typology

	Consistent Poverty Typology			
	Neither	LIIS 8 Only	EU SILC 11 Only	Both
	Mean	Mean	Mean	Mean
Consumption Deprivation	0.98	2.30	5.40	6.54
Housing Facilities	0.08	0.18	0.28	0.42
Neighbourhood Environment	0.48	0.77	0.62	1.31
Health	0.57	1.15	1.06	1.31

Table 10: Indicators of Economic Pressure by Consistent Poverty Typology

	Poverty Typology				Odds Ratios: Both v Neither
	Neither	LIIS 8 Only	EU SILC11 Only	Both	
	% Experiencing Economic Pressure 70% Median Income				
Difficulty or Great Difficulty in Making Ends Meet	18.9	55.5	64.8	79.3	16.5
Housing Costs a Heavy Burden	18.7	45.4	43.2	65.5	8.2
Unexpected Expenses	14.5	35.1	69.1	83.2	29.3
Arrears	5.8	22.1	24.5	45.7	13.7