

# On ‘Consistent’ Poverty

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## Abstract

The measurement of poverty as ‘consistent’ poverty offers a solution to one of the primary problems of poverty measurement within Social Policy of the last three decades. Often treated as if they were synonymous, ‘indirect’ measures of poverty, such as low income measures, and ‘direct’ measures, such as indices of material deprivation, identify surprisingly different people as being poor. In response to this mismatch, a team of Irish researchers put forward a measure which identified respondents in as being in poverty when they experienced *both* a low standard of living, as measured by deprivation indicators, *and* a lack of resources, as measured by a low income line. Importantly, they argued that the two measures required an equal weight.

In this paper, I present a reconsideration of the consistent poverty measure from both conceptual and empirical perspectives. In particular, I examine the claim that low income and material deprivation measures should be given an ‘equal weight’. I argue that, from a conceptual perspective, the nature of the indicators at hand means that a deprivation-led measurement approach might be understood to align with the definition of poverty which Nolan and Whelan outline and, from an empirical perspective, that it is the material deprivation measure – and not the low income measure – which is particularly effective in identifying individuals at risk of multiple forms of deprivation. However, I argue that greater attention needs to be given to the question of *whether* indicators of material deprivation provide a sufficient measure of material poverty and suggest that advancing the measurement of material deprivation beyond its relatively rudimentary state represents an important priority for poverty research.

## Keywords

Consistent poverty material deprivation low income

## Introduction

The measurement of poverty as ‘consistent’ poverty offers a solution to one of the primary problems of poverty measurement within Social Policy of the last three decades. Often treated as

if they were synonymous, ‘indirect’ measures of poverty, such as low income measures, and ‘direct’ measures, such as indices of material deprivation, identify surprisingly different people as being poor. This presents a measurement problem, because it raises the question of whether one should use low income or material deprivation data in identifying people in poverty, but also a conceptual one, because the Townsend’s oft-quoted definition of poverty assumes a straightforward relationship between resources and deprivation. Townsend’s influential definition was that:

‘Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely encouraged or approved, in the societies to which they belong. Their resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs and activities’ (1979: 31).

The crucial distinction between direct and indirect measures of poverty was drawn most clearly by Ringen (1987; 1988), who noted that low income and material deprivation reflected not just two distinct measures, but, rather, two distinct concepts: direct concepts which focussed on cases where living standards fall below some specified threshold, and indirect concepts which conceptualised poverty as occurring when household resources fall below an identified minimum.

In his important critique, Stein Ringen (1987; 1988) argued that mismatch between low income and material deprivation measures was such that low income measures alone could not be assumed to capture exclusion from one’s society (e.g. 1987: 160). If the concept of poverty referred *both* to respondents’ standard of living *and* to their resources, then a measurement approach which incorporated both low income and material deprivation indicators was required (1987: 162; 1988: 361-6).

A team of Irish researchers at the Economic and Social Research Institute (hereafter ESRI) in Dublin drew on this critique and advocated a ‘consistent’ poverty measure which identified the poor as being those respondents who experienced *both* a low standard of living, as measured by deprivation indicators, *and* a lack of resources, as measured by an income poverty line (Callan *et al.*, 1993; Nolan and Whelan, 1996). They adopted Townsend’s concept of poverty, rewording his definition as ‘exclusion from the life of the society owing to a lack of resources’ (Nolan and Whelan, 1996: 2), and sought to offer a measurement approach which was aligned with this conceptualisation. The context in which this ‘consistent’ poverty measure was put forward was one of questioning whether poverty analysis could rely on ‘income alone’ in identifying the poor (Callan *et al.*, 1993: 142; Nolan and Whelan, 1996: 3, see also Ringen, 1987: 363), or whether indicators of material deprivation should also be incorporated into the measurement exercise.

The purpose of this paper is to reconsider the consistent poverty measure from both conceptual and empirical perspectives. In particular, I examine the claim that low income and material deprivation measures should be given an ‘equal weight’ in aligning measurement with conceptualisation (see below). This reconsideration is timely given Nolan and Whelan’s (2011) recent book, *Poverty and Deprivation in Europe*, in which they advocate the use of both low income and material deprivation measures in analysing poverty across Europe. Furthermore, it is also pertinent given the policy impact that consistent poverty measures have had – not only in

Ireland, where a consistent poverty measure was used to frame the overarching poverty target in the National Anti-Poverty Strategy (Government of Ireland, 1997), but also in the United Kingdom, where a consistent poverty target was one of the four official measures of child poverty enshrined in the 2010 Child Poverty Act<sup>1</sup> and, indeed, within Europe as a whole, where the headline poverty target for the Europe 2020 strategy employs both low income and material deprivation measures (albeit independently and not in combination; see Europe 2020 website, n.d.).

In this reconsideration, I examine the original justifications for the measure put forward by the ESRI team, and analyse data from the British Household Panel Survey in order to provide an empirical assessment of the consistent poverty measure. This twin approach of examining a measure both conceptually and empirically not only follows Nolan and Whelan's original approach, but can be seen to reflect two distinct forms of analysis. The former examines the consistency between the concept and the measure – the extent to which these can be understood to be aligned. The latter examines the extent to which the individuals identified by each of the measures 'appear' to be deprived, using a series of 'third variables'. In each case these 'third variables' reflect measures of multiple deprivation – deprivations which we may *a priori* expect to be related to material poverty. In doing so, I analyse data from the British Household Panel Survey, which is well-suited for this task because of the relative wealth of information on multiple dimensions of deprivation it contains.

In the next section, I outline the scope of the enquiry presented in this paper, and discuss the assumptions which are made. In the subsequent section, I discuss the original justifications for the consistent poverty measure put forward by the ESRI team and ask whether the nature of the indicators at hand points toward the equally-weighted balance between low income and material deprivation indicators that they suggest. I then discuss the data from the 2006/7 wave of the British Household Panel survey which I draw on in the paper and, in the penultimate section, present empirical evidence about the relationship between low income and material deprivation measures, and the relationship between respondents' consistent poverty classification and forms of deprivation which we may expect *a priori* to be related to material poverty. The paper closes with a concluding discussion and includes suggestions for a future research agenda.

### **Scope of enquiry**

There are a number of ways one might approach a consideration and critique of the consistent poverty measure. One could argue that current income is not a good measure of household resources both over time (because a point-in-time snapshot does not necessarily reflect longer-term holdings), as well as at any one point in time (because current income data in household surveys falls short of accounting for the full range of households resources including, for example non-cash income from the state, employers or informal sources) (e.g. Townsend, 1979; Jenkins, 2011).

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<sup>1</sup> which may, however, be sidelined following the recent child poverty measurement consultation (see HM Government, 2012).

Or, one might claim that the deprivation indicators used to capture exclusion from society cannot support the assumptions required for them to be used as a measure of poverty. Berthoud and Bryan (2011: 137, emphasis in original) argue that while the use of indicators of material deprivation to calibrate an income poverty line (i.e. the method of Townsend, 1979) is relatively unproblematic, ‘using an index [of material deprivation] as *an actual measure* of poverty requires a very strong set of assumptions’, principally related to their coverage over ‘the whole range of areas of consumption’. In practice, large-scale surveys tend to collect data on a relatively small set of material deprivation indicators, and the indicators themselves display a high degree of path dependency over time (Jenkins, 2011: 27).

Alternatively, one might argue that ‘exclusion from the life of society’ is just one of the important dimensions for poverty analysis. There is, at present, a shift towards understanding poverty as a multidimensional phenomenon (Nolan and Whelan, 2011: 5), and one might argue that while exclusion from the life of society is *one* of the important dimensions for poverty analysis, a broader conception of poverty, focussing on a wider range of dimensions, is necessary (e.g. Author A).

However, the approach I adopt here is rather different: in this paper, I attempt to consider the merits of the consistent poverty measure in the terms put forward by Nolan and Whelan (1996) themselves – that is, to consider whether and how to incorporate information from both income and deprivation indicators in the measurement of poverty, however these measures are operationalised. Thus, in what follows, I largely restrict my remarks to addressing this question, and for the most part treat income-as-we-currently-measure-it and deprivation-as-we-currently-measure-it as reasonable measures of the constructs of interest, though I harbour doubts in both cases.

Indeed, these assumptions prove difficult to maintain, for the appropriate balance between these two measures can scarcely be decided in absence of considering the extent to which they represent good measures of a lack of resources, and the ability to participate in society, respectively. For this reason, in the concluding discussion I relax these assumptions and try to situate the findings from the preceding analysis within a broader discussion about the conceptualisation and measurement of material poverty.

### **Conceptual analysis**

The ‘consistent’ poverty measure was the result of an attempt to construct a measure of poverty which was ‘more consistent with the most commonly cited definition of poverty [that of Townsend] than conventional methods’ (1996: 2), a definition Nolan and Whelan re-worded as ‘exclusion from the life of the society owing to a lack of resources’ (Nolan and Whelan, 1996: 2). Consistent poverty is, thus, a distinctive approach to *measurement*, rather than a novel conception, and was inspired by Ringen’s emphasis on aligning conceptualisation and measurement.

The reason alignment was so important was not simply because of a desire for theoretical purity, but because, in practice, indirect and direct measures were found to identify substantially different people as being in poverty. This mismatch meant that a low income measure on its own could not be assumed to capture exclusion because ‘if poverty means, in any sense, exclusion from one’s society, it must be visible in the way the poor live.’ (Ringen, 1988: 355). For this, the use of

deprivation or consumption indicators was proposed and, furthermore, a clear division of labour was identified: ‘exclusion from one’s society...is covered by the criterion of low consumption [i.e. material deprivation]. By adding, in addition, the criterion of low income, we exclude from the poverty category those who have a low standard of consumption for reasons other than low income’ (Ringen, 1988: 361).

This is the argument presented throughout *Resources, Deprivation and Poverty* (Nolan and Whelan, 1996). If poverty is conceptualised as relating to ‘*exclusion* arising from a *lack of resources*’ (1996: 115, emphases in original), then ‘the poor must be therefore identified using both a consumption/deprivation and an income criterion: exclusion is to be measured directly, together with an income criterion to exclude those who have a low standard of living for reasons other than low income’ (1996: 115-6).

In arguing for an equally-weighted balance between low income and material deprivation measures, Nolan and Whelan distinguished themselves from both Townsend (1979) and Mack and Lansley (1985), who used information from both income and deprivation indicators in different ways. Townsend had used deprivation indicators to calibrate an income poverty threshold, and this income criterion alone was used to identify people in poverty. Nolan and Whelan claimed this was ‘unsatisfactory because a substantial proportion of those below any such line are not experiencing such deprivation’ (1996: 116). On the other hand, Mack and Lansley had measured poverty directly using deprivation indicators, although they also presented a number of ‘adjustments’ to their headline measure, one of which was to exclude respondents on “high incomes” – in practice, respondents with incomes in the top half of the distribution (see Mack and Lansley, 1985: 175-185). This, too, was argued to be unsatisfactory by Nolan and Whelan because ‘a substantial proportion of those reporting (what they consider to be enforced) deprivation are not on low current incomes’ and because the ‘imposition of additional income criteria is rather *ad hoc* and still gives more weight to deprivation scores than income in identifying the poor’ (1996: 116). In order for measurement to align to their definition of poverty as ‘exclusion from society owing to a lack of resources’ (Nolan and Whelan, 1996: 2), an equal weighting of the low income – material deprivation criteria was, they claimed, required.

However, one important development in the measurement of deprivation indicators must also be considered. In all dedicated poverty surveys since Piachaud’s (1981) critique of Townsend’s *Poverty in the United Kingdom*, respondents have been asked not only if certain deprivation items are absent, but also – where they are – whether this absence is due to a lack of resources or because of choice. Thus, the indicators of material deprivation demonstrably do refer to *both* exclusion *and* to a lack of resources and thus arguably cover both sides of Nolan and Whelan’s revised definition of poverty on their own.

We have seen that the claim for a clear division of labour whereby exclusion would be identified using deprivation indicators and a lack of resources by a low income indicator originated from Ringen’s critique. Curiously, however, Ringen’s 1988 paper does not cite Mack and Lansley’s (1985) major study, which was the first to adopt the two-part structure containing the ‘enforced lack’ criterion (and thus containing both sides of the definition), following Piachaud’s (1981) critique. His 1987 book does cite Mack and Lansley, but not in respect of this important methodological development.

The ESRI team recognised the two-part measurement approach of material deprivation indicators meant both sides of the definition had, on the face of it, been addressed, but they claimed that to allow respondents themselves to decide whether the absence of items was because of a lack of resources, one the hand, or because of choice, on the other, was to refer to ‘individual rather than societal standards to what constitutes “enforced”’ (1996: 120, see also Callan *et al.*, 1993: 155). This distinction between individually- and societally-defined enforcement matters because we may not wish to consider respondents as being poor where they claim an enforced lack of material deprivation items but also appear to possess significant resources.

The problem is that an arbitrary low income threshold, set at 60 per cent of median income (or similar), represents *lowness* rather than *inadequacy* of resources. It does not constitute a ‘societal’ measure of adequacy. This has, of course, long been recognised (including by the authors themselves, see Callan *et al.* 1993: 157) and is not to suggest that the imposition of an income criterion might not be required. But we must be clear about the nature of the measures at our disposal: a rudimentary measure of exclusion because of a lack of resources, individually defined, and an arbitrary societal value of low income. The function of the low income criterion in practice is *not* to divide exclusion because of a lack of resources from exclusion arising for other reasons, nor to provide a societal measure of income adequacy, but to over-rule certain respondents who claim that the absence of items is because of a lack of resources. And, seen in this light, the ‘deprivation-indicators-plus-income-adjustments’ approach of Mack and Lansley (1985) might also be said to align with the definition of poverty which Nolan and Whelan outline.

There is, in addition, a more fundamental point, however, which is that it is very difficult to specify a principled, ‘ideal’ balance between low income and material deprivation measures without considering the extent to which these measures themselves fall short of the ideal – the extent to which they are reasonable measures of the constructs of interest. For example *if* indicators of material deprivation are, taken together, not a good measure of exclusion from the life of society, then their inclusion in the measurement exercise at all may be a mistake, for some of the non-materially deprived individuals may have been classified as deprived if a different set of deprivation items had been selected. Similarly, while the overlap between low income and material deprivation measures of poverty is typically rather low (see below), it is not clear how much of this is due to problems with the income variable (which might support the greater use of indicators of material deprivation) or because the material deprivation index is itself an inadequate measure of exclusion from the life of society (which might suggest that the problem rests with the indicators of material deprivation and not the income variable). I shall return to this point in the concluding discussion, for it suggests that the assumption that the income and material deprivation capture what is intended are difficult to maintain. However, the relative balance between low income and material deprivation indicators in the measurement of poverty is likely to be guided by empirical, as well as conceptual, considerations, and it is these to which we now turn.

## **Data**

The empirical analysis presented in this paper is based on data from the 2006/7 wave of the British Household Panel Survey. The analysis is a completed cases analysis of 4,848 respondents between the ages of 16 and 59, clustered within 2,530 households. Robust standard errors are computed to

account for this clustering. Analysis is restricted to respondents under the age of 60 as it has previously been shown that indicators of material deprivation perform very differently for older respondents (e.g. McKay, 2004; Author A). This is an important area of study in itself, but we restrict attention to respondents under the age of 60 in an attempt to avoid this differential performance having an undue influence on the analysis undertaken here. The individual is chosen as the unit of analysis because (i) there is a theoretical preference for a focus on individuals and not households (Atkinson *et al.*, 2002) and (ii) six of the seven deprivations analysed in the final section are collected at the individual level, and I wish to make full use of this data. Since income and material deprivation data are collected at the household level, this means that the ubiquitous, but problematic, assumption of equal income sharing within households is made. The data are weighted using the cross-sectional individual weight supplied with the BHPS.

The income variable that has been chosen is equivalised net current (i.e. weekly) income (whhnetde2), and is a before housing costs (BHC) measure of income. This income variable employs a Modified OECD equivalence scale, which allocates a weight of 1 for the first adult, 0.5 for additional adults and .3 for each child, and values are expressed in January 2008 prices (Levy and Jenkins, 2008). A binary measure is constructed based on a 60 per cent median income poverty line (calculated using all cases for whom there were positive individual weights), which equates to equivalised £170.99 per week. Since this income measure does not take housing costs into account, this offers one reason why households at any particular income level may experience different levels of material deprivation.

The material deprivation measure is based on an enforced lack of one or more of the nine item deprivation index (see Table 1 below). Thus, I adopt a counting approach, following the measurement of consistent poverty (e.g. Nolan and Whelan 1996). In Table 6, I draw on seven dimensions of multiple deprivation. These are: ill-health, poor mental health, housing deprivation, low autonomy, low life satisfaction, financial stress, and unemployment. The scores presented in Table 6 follow the response categories of the variables themselves (aside from poor mental health and low autonomy, which I discuss below). Where necessary, however, responses have been reverse-coded so that in each case higher values reflect greater deprivation.

The measure of ill-health refers to overall health status in the past twelve months compared to others of the same age and is coded from 1- 'excellent' to 5- 'very poor'. The 12-item General Health Questionnaire module is used as a measure of mental ill-health. This survey module asks respondents how they have been feeling about a number of aspects of life, such as decision making, concentration, confidence and so forth. The response categories refer to whether a respondent is doing (i) better than usual, (ii) the same, (iii) worse than usual or (iv) much worse than usual. I adopt the GHS scoring approach (0-0-1-1) to these responses (e.g. Goldberg and Hillier, 1979). The measure of housing deprivation is a count of the number of housing problems (out of a possible 11) experienced by households, including a shortage of space, a leaky roof, street noise, and so forth. The measure of low autonomy draws on a subset of items from the CASP-19 survey module (Wiggins *et al.*, 2008). This subset comprises three items: (i) ability to plan for the future, (ii) ability to do the things one wants to do and (iii) being pleased with what one does. The response categories to these three questions are: often, sometimes, not often, never. I code these responses 0-0-1-2.

The life satisfaction measure is based on a ‘global’ question asking respondents how satisfied they feel with their life overall. The responses for this measure range from 1-‘completely satisfied’ to 7-‘not satisfied at all’. The financial stress measure is based on a question asking respondents how they are managing financially, with responses ranging from 1-‘living comfortably’ to 5-‘finding it very difficult’. Finally, unemployment is a binary variable recoded from a question about respondents’ economic status.

## **Empirical analysis**

The measure of material deprivation employed in this paper is an aggregate measure based on nine deprivation items, which are listed in Table 1. As can be seen, the proportion of respondents experiencing an enforced lack of any of the items varies significantly from item to item, ranging from 13 per cent who claim to be unable to afford an annual holiday to less than one per cent who claim to be unable to keep their house adequately warm.

### TABLE 1 ABOUT HERE

In Table 2, I present the proportion of the population who fall below low income and material deprivation lines at three levels of severity; namely, income poverty thresholds at 60, 50 and 40 per cent of median income, and an enforced lack of 1+, 2+ or 3+ deprivation items. A somewhat greater proportion of the population aged under 60 are found to fall below the material deprivation lines (18.4 and 14.4 of respondents for the 1+ and 60% income lines respectively, 10.1 and 8.5% at the 2+ and 50% median income thresholds, and 6.2 and 5.4% at the 3+ and 40% thresholds).

### TABLE 2 ABOUT HERE

It may be expected that this implies that low income and material deprivation measures are identifying the same people. But to a substantial extent, they do not. In Table 3, I present the probability of deprivation in each income decile. The probability of deprivation does not rise above .5 in *any* decile (and, indeed, higher in the second decile than the first, most probably reflecting problems with income data at the very lowest ends of the income distribution, see Berthoud and Bryan, 2011). Furthermore, even in the top two income deciles, some respondents report an enforced lack of one or more deprivation items and, far from a clear threshold emerging, the probability of deprivation rises fairly smoothly as one moves down the income distribution (albeit with somewhat more substantial increases between the 5<sup>th</sup> and 4<sup>th</sup> decile, and the 3<sup>rd</sup> and 2<sup>nd</sup> decile).

### TABLE 3 ABOUT HERE

If we seek to move beyond a focus on *either* low income *or* material deprivation alone, but instead consider trying to incorporate them both into the measurement exercise, as suggested by the ESRI researchers, this raises questions about the appropriate *balance* between these indicators. One option is to decide on this balance based on nature of the measures themselves and their relationship to the definition of poverty, as we have discussed above. However, an alternative approach is to examine the empirical relationship between the two measures of material poverty and other forms of deprivation which *a priori* we assume to be related to the construct of interest – in this case, material poverty.



One such example is presented by Nolan and Whelan (2011: 113-115), who construct consistent poverty profiles for respondents in twenty-six European countries, and explore the relationship between these poverty profiles and economic stress, defined as reporting ‘difficulty’ or ‘great difficulty’ in making ends meet (the results for six of the twenty-six countries they present are reproduced in Table 4). In their discussion of the table, they note that the:

‘relative risk of economic stress increases as one goes from the consistently non-poor group to the income poor only, deprivation only, and finally consistently poor [i.e. income poor and deprived]. However, the pattern we observe is not one of a steady increase but rather involves a sharp contrast between those experiencing deprivation and all others’ (Nolan and Whelan, 2011: 113).

What is interesting about Table 4, and indeed in the complete table in Nolan and Whelan (2011: 113), is its sheer consistency: in each of the twenty-six nations Nolan and Whelan survey, respondents who were consistently poor (i.e. have a low income and are materially deprived), experience the greatest risk of reporting economic stress and, in every case, respondents who were deprived but not income poor display a greater risk than those who were income poor but not deprived. This suggests that indicators of material deprivation are particularly useful in identifying respondents at risk of self-reported economic stress.

One might argue, however, that a subjective measure of financial stress is too slender a basis on which to make judgements about the relative merits of low income and material deprivation indicators because ‘to be poor depends on how you live, not how you feel’ (Ringen, 1987: 145). On this view, comparing the performance of low income and material deprivation indicators with a broader range of deprivations would be required in order to present more a thorough evaluation of their relative merits in identifying individuals at risk of forms of deprivation which we might expect to be associated with material poverty. In the following analysis, I draw on seven dimensions of multiple deprivation, using data from Great Britain: ill-health, poor mental health, housing deprivation, a lack of autonomy, low life satisfaction, financial stress, and unemployment. I assume each of these dimensions of multiple deprivation to be related to the construct of interest – namely, material poverty.

Table 5 presents binary correlations between the 60 per cent median income measure, material deprivation measure and seven dimensions of multiple deprivation. With the exception of unemployment, the material deprivation measure is more closely correlated with each of the forms of deprivation presented here – and in some cases (ill-health, housing deprivation, financial stress), the differences between the correlation coefficients are quite substantial.

This supports the findings of Halleröd and Larsson (2008: 23) who compare the association between income poverty, material deprivation and a range of seventeen ‘welfare problems’ including neighbourhood problems, ill-health, and political disengagement, and so forth, using data from Sweden. They find that the deprivation measure displayed a stronger association than low income with most of the welfare problems they considered, and conclude that ‘income poverty was one of the most peripheral of all welfare problems’. This is, of course, problematic because it means that ‘the most commonly used measure discriminates a section of the population that is only marginally connected to other welfare problems’ (2008: 20).

It may be that the stronger correlations between material deprivation and most dimensions of multiple deprivation than are evident for low income arises because income is an ‘input’, whereas material deprivation is an ‘output’; the result of circumstances where one’s income is insufficient to meet one’s needs. Thus, the stronger correlations between most dimensions of multiple deprivation and material deprivation does not imply in any way that additional income might not be the necessary policy response. But it does suggest that material deprivation is particularly useful in terms of *identifying* individuals who are at risk of multiple forms of deprivation which we might expect to be related to material poverty.

#### TABLE 5 ABOUT HERE

However, while we know that there is a substantial mismatch between low income and material deprivation measures, there is also some overlap between them. Thus, we wish to explore not only how low income and material deprivation measures perform on their own, but also to examine the association between respondents in different consistent poverty profiles and the seven dimensions considered here. In constructing consistent poverty profiles for each respondent, the familiar 60 per cent of median income and 1+ deprivation thresholds are adopted.

Table 6 presents the average deprivation score for each of the seven dimensions based on respondents’ consistent poverty profiles. The average deprivation scores reflect the response categories of the deprivations themselves, and in each case higher values imply greater deprivation. The findings show that for five of the seven dimensions considered here (all bar housing deprivation and unemployment), the average deprivation score rises consistently as one moves from non-poor, income poor but not materially deprived, materially deprived but not income poor, and consistently poor, as Nolan and Whelan (2011) found with their measure of economic stress. This supports the idea that the consistently poor are a group who are particularly vulnerable to forms of multiple deprivation. In all cases, the non-poor exhibit the lowest rates of each of the seven forms of deprivation, as we would expect.

However, the two intermediate categories are also of interest. On each dimension bar unemployment, respondents who were materially deprived but not income poor display greater rates of multiple deprivation than those classified as income poor but not materially deprived, and on all six of these dimensions the differences are statistically significant.

In contrast, rates of multiple deprivation for respondents in consistent poverty are only significantly greater than those classified as materially deprived but not income poor on two dimensions (financial stress and unemployment), while on four dimensions (ill-health, mental health, housing deprivation and lack of autonomy), respondents who experience income poverty but not material deprivation exhibit an average multiple deprivation score which is not significantly different than non-poor respondents. Of the two measures of ‘material’ poverty, it is the material deprivation measure – and not the low income measure – which makes the decisive difference in identifying individuals at risk of six of the seven forms of multiple deprivation considered here.

#### TABLE 6 ABOUT HERE

### *Concerns regarding the subjectivity of deprivation indicators*

One concern that is sometimes expressed of deprivation indicators relates to their perceived *subjectivity*. One manifestation of this is the possibility that respondents may interpret the deprivation items in different ways. For example, when respondents are asked whether they are able to afford an ‘annual holiday’, it may be that one respondent who has in mind a trip to Mauritius might report being unable to afford an annual holiday (despite having a high income), while another, more frugal, respondent might report being able to afford a stay at a local campsite (despite their low income). If such subjectivity were systematic, we might expect that low income and not deprivation indicators would be more successful in identifying respondents at risk of other forms of deprivation. This is, of course, not the finding we observe here. Thus, even though some of those reporting material deprivation had incomes above the poverty line, despite their above poverty line incomes, these individuals experienced significantly greater rates of six of the seven dimensions of multiple deprivation than respondents whose incomes were *below* the poverty line but did not report multiple deprivation.

A second source of subjectivity might arise from respondents’ claims about choice and constraint. This relates to the ‘enforced lack’ criterion, whereby respondents are asked not just whether they lack the deprivation items but also – if they do – whether this is because of a lack of resources. There have been concerns that this second question might introduce an unwanted degree of subjectivity into the measurement exercise (e.g. McKay, 2004; Author A). One way to test for this is to repeat the analysis presented in Table 6, but using consistent poverty profiles constructed using the ‘simple absence’ rather than ‘enforced lack’ of deprivation items, since the former might represent a ‘more objective’ material deprivation measure. The findings from this analysis (not shown here, but available from the author) do not disturb our primary conclusion: deprivation indicators (with or without the enforced lack criterion) are again found to be more clearly associated with an elevated risk of most forms of multiple deprivation considered here than the low income measure.

The range of dimensions of deprivation analysed in Tables 5 and 6 arose from a desire to extend analysis beyond a subjective measure of financial or economic stress, and represent an attempt to tap into both objective and subjective dimensions of multiple deprivation. Despite this, the fact that all dimensions are self-reported means that each dimension is to some degree subjective. Nonetheless, the results presented here push us toward two rather extreme alternative hypotheses – either income is a much less useful indicator in terms of identifying individuals at risk of multiple deprivation than might have been suspected, or else the problem of subjectivity is one not just for indicators of material deprivation, but also for most of the dimensions of multiple deprivation considered here.

### **Concluding discussion**

The measurement of poverty as ‘consistent’ poverty represents an attempt to offer a measurement approach which was aligned with the conceptualisation of Townsend, whose definition Nolan and Whelan reworded as ‘exclusion from the life of the society owing to a lack of resources’ (Nolan and Whelan, 1996: 2). Two pieces of information were considered for inclusion, namely respondents’ low income and material deprivation statuses, and these were largely accepted in

their existing, non-ideal forms: ‘this measurement approach serves to highlight features of the [Townsendian] definition itself. Households are only to be categorised as ‘poor’ if they are both at low incomes – however defined – and experiencing deprivation and exclusion – again, however defined’ (Callan *et al.*, 1993: 170). Furthermore, Nolan and Whelan argued that these two measures required an ‘equal weight’, thereby distinguishing the approach from that of Townsend (1979) and Mack and Lansley (1985). The primary context in which consistent poverty was considered was in making a shift away from the dominant, income-centric approach to analysis (“income alone”). In their recent *Resources and Deprivation in Europe*, Nolan and Whelan (2011: 99) continue to make a similar argument: ‘the conceptual and measurement problems in relying on income alone to identify the poor suggest that incorporating deprivation [indicators] into the process could have significant potential’.

In this paper, I have offered a reconsideration of consistent poverty measure and, in particular, of the claim that low income and material deprivation measures should be given an equal weight. In the conceptual discussion, I have argued that the inclusion of the enforced lack criterion within the measurement of material deprivation changes the nature of the deprivation indicators in an important way because these now contain the full definition of poverty on their own, albeit with an individually-defined interpretation of what constitutes an enforced lack. This changes the ‘division of labour’ between the two measures from one where the indicators capture exclusion and the low income measure divide respondents for whom exclusion arises because of a lack of resources from those whose exclusion is caused by other factors (Nolan and Whelan, 1996: 115-6) to one where the deprivation indicators capture exclusion because of a lack of resources, individually-defined, and the function of the low income indicator is to over-rule respondents where their claims of enforcement appear to be in contradiction to their resources. And this suggests that, hypothetically at least, Mack and Lansley’s (1985) deprivation-indicators-plus-adjustments approach might be understood to be compatible with the definition of poverty which Nolan and Whelan outline.

However, a more fundamental point emerges when we relax the assumptions that income-as-we-currently-measure-it and deprivation-as-we-currently-measure-it are reasonable measures of the constructs of interest. Relaxing these assumptions matters because the decision about whether and how to incorporate information from low income and material deprivation measures can scarcely be determined independently of whether we believe that these indicators measure what is intended. Indeed, in this context, the performance of material deprivation indicators in empirical terms is even more surprising since the index analysed in this paper falls far short of the comprehensiveness of an income measure (i.e. the criticisms of Berthoud and Bryan, 2011, and Jenkins, 2011).

Perhaps the greater conceptual limitation of deprivation indicators, then, comes not from whether the interpretation of ‘enforced lack’ is individual or social, but arises from the assumption that, taken together, they represent a reasonable measure of the construct of interest. In order to provide a valid *measure* of material poverty, successfully distinguishing between poverty and non-poverty, the deprivation indicators must, taken together, be necessary *and* sufficient to represent exclusion from the life of society (e.g. Berthoud and Bryan, 2011; Author A). And this poses a challenge to *any* measure of poverty which relies on a short, summary deprivation index – irrespective of whether a deprivation-led *or* consistent poverty measurement approach is adopted.

However, the balance between the low income and material deprivation indicators is likely to draw not only on conceptual arguments, but also on empirical analysis. As I demonstrate here drawing on seven dimensions of multiple deprivation in Great Britain, and as Nolan and Whelan (2011: 114) show using a measure of economic stress in twenty-six European nations, it is the deprivation indicators which are particularly useful in identifying respondents with a pronounced risk of dimensions of deprivation which we might *a priori* expect to be associated with material poverty.

Importantly, this raised risk of multiple deprivation for respondents reporting material deprivation occurs both below *and above* the typical 60 per cent median income line. It is respondents' deprivation status – not their low income status – which makes the crucial difference in predicting their risk of multiple forms of deprivation. Where respondents experience income poverty only, they display a rate of multiple deprivation which is in each case greater than the non-poor, but the differences are typically not statistically significant. When low income co-occurs with material deprivation (i.e. respondents experience 'consistent' poverty), the rates of multiple deprivation they face are substantially elevated. In contrast, the experience of material deprivation, whether this co-occurs with low income or not, is associated with elevated rates of multiple deprivation, and these rates are greater (but typically not significantly so) when low income is added.

Respondents in consistent poverty face the greatest rates of multiple forms of deprivation, bar housing deprivation, a finding which seems to suggest the validity of the measure itself. However, one problem with interpreting this as suggesting that consistent poverty alone is the most valid measure is that a dual criterion, by its very definition, focuses on a subset of respondents in low income or material deprivation alone. And this, in turn, is problematic because the search for groups who display particularly pronounced rates of multiple forms of deprivation may end up validating a measure of residual, extreme poverty. Focussing on ever-smaller subsets of the population who experience ever-greater rates of multiple deprivation can become *reductio ad absurdum*. What we ideally want when testing the validity of a poverty measure in this way is to compare groups of relatively similar sizes.

One such comparison is provided by evaluating the merits of low income, on the one hand, and material deprivation, on the other. If the starting point and relevant comparison is 'income alone', then the incorporation of indicators of material deprivation into the measurement exercise would seem to mark an improvement in terms of identifying individuals at risk of multiple deprivation. But 'income alone' is not the only possible starting point, nor the sole point of comparison for any alternative measure. If one does not constrain the analysis by comparing the consistent poverty measure solely to 'income alone', but if we instead ask whether low income or material deprivation are more useful in identifying individuals at risk of other forms of deprivation, then it would appear that, on six of the seven forms of deprivation considered here using data from Great Britain, and using a measure of economic stress across twenty-six European countries (Nolan and Whelan, 2011), it is the material deprivation measure – and not low income – which makes the crucial difference. Indicators of material deprivation are found to be particularly useful in identifying individuals who face a pronounced risk of multiple dimensions of deprivation – dimensions which we may expect to be related to material poverty.

The real question, therefore, is *why*? Why is it that a relatively rudimentary measure of material deprivation appears, in practice, to have greater success in identifying respondents at risk of

multiple forms of deprivation than an income measure which has been constructed from numerous survey questions about household income, and for which enormous efforts are expended in order to ensure its robustness?

The promising nature of indicators of material deprivation in identifying respondents at risk of multiple forms of deprivation also has implications for the state-of-the-art of poverty measurement in terms of advancing these indicators beyond their relatively rudimentary present state. While there is an important literature examining the extent to which these indicators are considered necessities (e.g. Fahmy *et al.*, 2011), further work is required to test new items, and to assess how aggregate indices and individual items perform in statistical terms – how such items function for different sub-groups of the population (e.g. McKay, 2004), how such indicators can provide a valid measure of poverty over time and in different countries, identifying which indicators are particularly useful in constructing a reliable measure of material deprivation, or help in identifying respondents at risk of multiple deprivation, and so forth. The work of Guio *et al.* (2012) represents one important, recent step in this direction. Undoubtedly many problems remain, but the promise of these indicators in identifying vulnerable individuals is such that further efforts are justified in strengthening the measurement approach.

However, the empirical and conceptual results leave us with something of a conundrum: indicators of material deprivation appear to be surprisingly successful at identifying vulnerable individuals (with *or* without a complementary income measure), but the considerably non-ideal nature of a short, summary index limits their ability to distinguish between poverty and non-poverty since the length of the deprivation list will influence the amount of poverty identified (i.e. additional deprivation items results in more people identified as poor at any given deprivation cut-off). We may legitimately question the poverty estimates and trends which emerge from such short indices, even if they succeed in identifying vulnerable individuals, if, taken together, the indices of material deprivation are not sufficient to capture the construct of interest – i.e. exclusion from the life of society. If we believe that indicators of material deprivation possess important measurement advantages, then advancing the measurement of material deprivation beyond its present, relatively rudimentary state represents an important priority for poverty research.

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**Table 1. Percentage of respondents experiencing an enforced lack of each item**

annual holiday away from home	12.9
replace worn-out furniture	7.2
household contents insurance	5.3
keep home in a decent state of decoration	5.1
have family or friends for a drink or meal once a month	3.0
new, rather than second hand, clothes	2.6
eat meat, chicken or fish at least every second day	2.1
two pairs of all-weather shoes for each adult	1.8
keep house adequately warm	0.7

Source: BHPS 2006/7, respondents under 60

**Table 2. Percentage of respondents falling below typical low income and material deprivation lines**

<60% median	14.4
<50% median	8.5
<40% median	5.4
1+ material deprivation items	18.4
2+ material deprivation items	10.1
3+ material deprivation items	6.2

Source: BHPS 2006/7, respondents under 60



**Table 3: Proportion of respondents in each income decile experiencing material deprivation**

	bottom	2th	3rd	4th	5th	6th	7th	8th	9th	top
deprived (%)	41.5	46.3	30.1	26.3	16.7	13.6	9.7	7.1	4.9	2.9

Source: BHPS 2006/7, respondents under 60

**Table 4. Relative risk of experiencing economic stress by consistent poverty typology by country: Odds ratios**

	income poor but not deprived	deprived but not income poor	income poor and deprived
<i>Social Democratic</i>	1.013	2.917	3.310
Sweden	0.261	3.284	3.572
Norway	0.088	3.194	3.564
Denmark	1.399	3.001	3.579
Netherlands	1.255	3.036	3.165
Iceland	0.813	2.302	2.784
Finland	1.262	2.682	3.198

Source: Nolan and Whelan (2011: 114). Reference category: neither income poor nor materially deprived (not shown).

**Table 5. Correlation between low income, material and multiple dimensions of deprivation, respondents under 60**

	60% median income	1+ deprivation items
60% median income	1	
1+ deprivation items	0.4828	1
ill-health	0.1780	0.3424
mental health	0.1471	0.2587
housing	0.1960	0.4321
life satisfaction	0.2796	0.3909
lack of autonomy	0.1160	0.2118
financial stress	0.3995	0.6218
unemployment	0.4593	0.3862

Source: BHPS 2006/7, respondents under 60

**Table 6. Average multiple deprivation score by consistent poverty status, with 95% confidence intervals**

	<b>non-poor</b>	<b>poor non-deprived</b>	<b>deprived non-poor</b>	<b>consistent poor</b>
<b>ill-health</b>	1.977 <i>1.95 - 2.01</i>	2.049 <i>1.96 - 2.14</i>	2.388 <i>2.30 - 2.48</i>	2.514 <i>2.38 - 2.65</i>
<b>mental ill-health</b>	1.687 <i>1.58 - 1.79</i>	1.907 <i>1.56 - 2.26</i>	2.734 <i>2.37 - 3.10</i>	3.551 <i>3.02 - 4.09</i>
<b>housing deprivation</b>	0.792 <i>.73 - .86</i>	0.989 <i>.77 - 1.21</i>	1.957 <i>1.66 - 2.25</i>	1.847 <i>1.49 - 2.21</i>
<b>lack of autonomy</b>	0.601 <i>.56 - .64</i>	0.720 <i>.59 - .85</i>	0.993 <i>.86 - 1.13</i>	1.014 <i>.84 - 1.19</i>
<b>low life satisfaction</b>	2.747 <i>2.71 - 2.79</i>	2.952 <i>2.80 - 3.10</i>	3.409 <i>3.26 - 3.55</i>	3.680 <i>3.48 - 3.88</i>
<b>financial stress</b>	1.879 <i>1.84 - 1.92</i>	2.222 <i>2.11 - 2.33</i>	2.800 <i>2.70 - 2.90</i>	3.205 <i>3.05 - 3.36</i>
<b>unemployment</b>	0.020 <i>.014 - .025</i>	0.075 <i>.05 - .10</i>	0.054 <i>.03 - .08</i>	0.189 <i>.14 - .24</i>

Source: BHPS, 2006/7, respondents under 60