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Understanding the Implications of Choice of Deprivation Index for Measuring Consistent Poverty in Ireland

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Abstract: In this paper we make use of the Irish component of the European Union Community Statistics on Income and Living Conditions (EU-SILC) survey for 2004 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 items that covers a broader range than the original basic deprivation set and provides a more reliable and valid measure Consistent poverty measures incorporating the revised measure of economic strain and adopting a threshold of two or more items provide similar estimates of levels of poverty to the original measure. However, the new measure is more strongly associated with, respectively, current income, surrogates for permanent income and subjective economic pressures. Furthermore, by constructing a consistent poverty typology we are able to demonstrate that when we contrast those defined as poor when employing the new eleven-item index but not the eight-item one with those for whom the opposite is true the former display a multidimensional deprivation profile that is substantially less favourable. The accumulated evidence supports the view that the revised consistent poverty measures, which combine a threshold of two or more items on the eleven-item EU-SILC11 index with income poverty, 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.

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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.[1] In measuring and monitoring the evolution of poverty in Ireland over recent years, in order to obtain a more comprehensive picture of household living standards and command over resources, 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. This approach is consistent with a trend towards increased emphasis on direct measurement of deprivation.[2] Particular attention has been paid to those both falling below relative income thresholds and reporting what has been 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.[3] 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 survey data for 1987 and the first wave of the Living in Ireland Survey (LIIS) 1994, and was re-

[1] Such a definition can be traced to the seminal work of Townsend (1979) and the adoption by the European Commission of a definition of poverty substantially influenced by Townsend's work.

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

[3] Specific studies include Lollivier and Verger (1997) for France, Perez-Mayo (2005) for Spain, Gordon *et al* (2000) for Britain and Förster r (2005) for a range of European countries.

examined using subsequent waves of this survey. However, over the past decade or so 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 approach is still adequate for the purposes of answering such questions.

Criticisms of the original basic deprivation index focused particularly on the narrow range of deprivation indicators incorporated. Some saw it as being appropriate to a more frugal era and implicitly accepting an absolutist view of poverty saw it. 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.[4] The central aim of this paper is to assess how this measure should now be constructed.[5]

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.[6] 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

[4] A more restricted and somewhat different consideration of these issues, based on EU-SILC 2003, which involved a substantially smaller sample than the 2004 survey, can be found in Maitre *et al* (2006)

[5] 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).

[6] See Mc Kay (2004) and Halleröd (2006) for discussions of the interpretation of respondents' reports of lacking items because they cannot afford them.

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 indicators, comprising the deprivation component of the new consistent poverty measure, as providing an index of "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.

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.[7] 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.

[7] See CSO (2005)

The 2004 Irish Component of the European Union Statistics on Income and Living Conditions

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. 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 plans[8], 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.

In this paper our analysis is conducted at household level and focuses on characteristics of the household and the household reference person (HRP). The HRP is defined as the person responsible for the household accommodation or the oldest of such person where more that one is responsible. However, where we refer to poverty rates these have calculated at the level of persons rather than households.

The Irish component of EU-SILC includes a range of questions relating to non-monetary indicators of deprivation. The questions posed cover a wide spectrum of items ranging from possession of consumer durables, quality of housing and neighbourhood

[8] Not included in the EU definition

environment, aspects of participation in social life and health status. The format of the questions posed to respondents varies across topics. The full range of items and the manner in which they cluster has been has been described in detail in Whelan and Maître (2007a) and Whelan *et al* (forthcoming). Previous analysis shows that the items constitute five relatively distinct dimension of deprivation relating to:

- Economic Strain (captured by alternative 11 and 8 item indices that are described in detail later)
- Consumption Deprivation (index by a 19-item index relating to arrange of consumer durable such as a video, stereo, car, dishwasher, PC together with items such as holidays).
- Housing Deprivation (involving a 4-item scale relating to basic housing facilities such as water and toilet facilities and central heating).
- Neighbourhood environment deprivation (comprising a five item scale made up of items relating to noise, pollution, crime and housing deterioration).
- Health status of the HRP (captured by 3 items relating to chronic illness, mobility restrictions and the respondent's assessment of their general health).[9]

The survey also contains a number of items relating to the extent to which households experience subjective economic pressures such as difficulty in making ends meet and inability to cope with unanticipated expenses, experiencing housing costs as a strain and incurring arrears in relation to mortgage/rent and utility/bills.

Our major focus here is on a comparison of alternative measures of economic strain. However, in the course of seeking to validate our preferred index we will make use of measures of the remaining deprivation dimensions and the indicators of subjective economic pressure.

In total we make use of thirteen items relating to economic strain. For the following nine items, 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:

[9] The range of items available in the 14 -country EU-SILC 2004 data is a good deal more restricted. For a comparison of deprivation indices based on the Irish component and on the common EU set see Whelan and Maître (2007b)

• 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

Additional questions related to the household incurring debt in relation to routine expenses and the HRP going without an adequate meal for financial reasons.

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 he 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.

In each case we have attributed the response of the HRP to the household.

Comparing Alternative Economic Strain Indices

In this paper we argue the case for the superiority of an 11-item index drawn from the items available in the Irish component of EU-SILC over the 8-item measure, originally developed using the LIIS data, that forms part of the current consistent poverty measure as utilized in National Anti-Poverty (NAPS) targeting. In order to bring our terminology in line with current Eurostat usage we refer to such indices as measures of “economic strain” rather than as formerly as measures of “basic deprivation”.

In evaluating the merits of the alternative indices of economic strain, we shall consider issues of reliability and validity. The former refers to the extent to which results are consistent across repeated measurement and a set of items comprising an index can be shown to tapping the same underlying construct. As Carmines and Zeller (1979:16) observe, while reliability is basically an empirical issue validity is in contrast a theoretically oriented issue. Construct validity, on which we focus, is concerned with the extent to which an index is related to other variables in a manner that is consistent with theoretical expectations. In the current instance three consideration are involved. The first relates to the manner in which the alternative indices are associated with current income. Such association cannot be perfect or we would not need the deprivation measure. In particular, on the basis of earlier work, we expect to identify a significant number of low-income households where deprivation is not observed. On the other hand, we would like to minimise the extent to which deprivation is reported in "high" income households. A corollary of the above is the "ideal" deprivation index would make it unnecessary to impose an additional low-income criterion. To the extent to which an economic strain index is more successfully capturing the underlying construct, we would expect to observe stronger relationships with other socio-economic characteristics, such as social class, employment status, educational qualifications and housing tenure, that we think capture longer-term command over resources. We would also anticipate, with some reservations on which we shall elaborate later, that the more successfully such an index taps the underlying construct the stronger will be its relationship to the subjective reports of economic pressure.

The eleven items included in the economic strain dimension in EU-SILC index are set out in Table 1. 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 heating. We propose dropping two items included in the original measure basic, as shown in the second part of Table 1. These comprise the item relating to "being unable to afford a substantial meal because of a lack of money" which showed a weak relationship to the items we propose retaining. 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.[10] The five items it is proposed adding are shown in the second part of the table; these involve an emphasis 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. These items incorporate a rather broader notion of poverty as social exclusion than was true for the original measure.[11]

Table 1: EU-SILC11 Economic Strain Items
Items Retained from the Original Set
Two pairs of strong shoes
A warm waterproof overcoat
Buy new rather than second hand clothes
Eat meals with meat, chicken or fish (or vegetarian equivalent) every second day
Have a roast joint (or its equivalent) one a week.
Go without heating during the past twelve months
Items Deleted from the Original Set
Going without a substantial meal due to a lack of money
Going into debt to meet ordinary living expenses
Items Added to the Original Set
Keeping the home adequately warm
Replace any worn out furniture
But presents for family or friends once a year
Have family or friends for a drink or meal once a month
Have a morning, afternoon or evening out in the past fortnight for entertainment

In Table 2 we show the Cronbach alpha reliability coefficients for the alternative indices.[12] The coefficient for the 8 items that were all available in the Living in LIISS exhibits a highly satisfactory level of 0.788. However, the value for the EU-SILC11

[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 (2003).

[11] Full details of the relationship between these items is provided in Maitre et al (2006).

[12] alpha=[Np/[1 + p(N-1)] where N is equal to the number of items and p is equal to the mean inte-item correlation.

index is even higher at 0.850.[13] Despite the modest superiority of the EU-SILC11 measure, since both indices constitute highly reliable measures, our choice between them must be based largely on the grounds of validity

Table 2: Cronbach's Alpha Level for LIIS8 and EU-SILC1 Economic strain Indices	
LIIS8	0.788
EUSILC11	0.850

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 fulfill the conditions for consistent poverty. The choice of a deprivation a threshold has been a source of considerable debate. Following Townsend's (1979) original work a number of authors have sought to identify an income threshold below which such deprivation escalates.[14] However, given the well-established difficulties in reliably measuring income at the lower end of the distribution, we have not chosen to pursue such a course.[15] Instead we think it is necessary to accept that there can be no absolute validation of any particular threshold. It is of course possible to consider the consequences of a particular choice for our understanding of both levels of poverty and the socio-economic characteristics associated with such poverty. Fortunately, in the case of consistent poverty measures involving both income and deprivation components, the choice of an appropriate deprivation threshold has considerably less consequence than that relating to the appropriate relative income threshold has for relative income poverty levels. In Table 3 we set out the consistent poverty levels for both versions of our economic strain index at 60% and 70% of median income. The rates are almost identical being just below 7 per cent at the 60% line and just above 9 per cent at the 70% line. Raising the deprivation threshold from one to two for the LIIS8 measure would reduce the consistent poverty rates to 4.2 per cent and 6.5 per cent. Similarly raising the EU-SILC11 threshold from two to three would produce rates of 3.8 per cent and 6.4 cent.

[13] Reliability levels show modest variation across age groups.

[14] See in particular Gordon (2002)

[15] Such difficulties are exacerbated in the Irish case by the continued importance of the agriculture sector.

Table 3: Consistent Poverty Rates for Persons by Alternative Deprivation Thresholds and Varying Income and economic Strain Thresholds.		
	LIIS8 (1+)	EU-SILC (2+)
	%	%
60% Median Income Line	6.8	6.6
70% Median Income Line	9.6	9.3

The Relationship of Alternative Economic Strain Measures to Income

Generally, a significant proportion of those below income poverty thresholds do not display high deprivation levels, whereas some households above the income lines do. This finding has been confirmed for a range of counties using data from of data from the European Community Household Panel survey (ECHP) for 11 of the EU–15 countries.[16]. A household's standard of living will depend crucially on its command over resources and its needs compared with others in the same society. While disposable cash income is a key element in the resources available to a household, it is by no means the only one. Savings accumulated in the past add to the capacity to consume now, and servicing accumulated debt reduces it. Similarly, the level of past investment in consumer durables influences the extent to which resources must be devoted to such expenditure now. The most substantial investment made by many households is in owner–occupied housing, and the flow of services from this investment – the imputed rent – should in principle be counted among available resources but very often is not. Non–cash income – in the form of goods and services provided directly by the State, notably health care, education and housing – may also comprise a major resource for households. Cash income itself may fluctuate from year to year, so that current income is an imperfect indicator of long–term or "permanent" income. Since consumption cannot always be fully smoothed over time and households take time to adjust to income "shocks", shorter–term income is still important but needs to be set in the context of the way income has evolved over time.[17]

As we noted earlier, while we expect that that a substantial number of those classified as income poor will not be above the relevant deprivation threshold. However, we are particularly anxious to minimize the number with high incomes who are found to

[16] See among others Bradshaw (2003) and Finch, Whelan *et al* (2001, 2004) in relation to the original EU-12, and for a discussion of the relationship between income and deprivation in the enlarged European Community see Whelan and Maitre (2007c).
[17] See Nolan and Whelan (forthcoming) for a detailed discussion of these issues

be above cut-off point. In Table 4 we show the breakdown of the proportion above the designated thresholds, and the corresponding odds ratios, for both the LLI8 and EU-SILC 11 indices of economic strain by household equivalent income decile. Comparing the LIIS8 and EU-SILC11 indices we find that little difference is observed across the bottom three deciles; with the number above the respective thresholds declining gradually in both cases from just above one in three to one in four. However, for the top seven deciles the number above the deprivation threshold is consistently lower for the EU-SILC11 measure producing a much sharper contrast between the top and bottom halves of the income distribution. Thus for the LIIS8 measure the percentage above the threshold ranges from 22 per cent for the fourth decile to 9 per cent in the top decile whereas for the EU-SIL11 index the corresponding range runs from 19 per cent to 3 per cent.

The level of disparity in risk between the top decile and all other deciles can be expressed by calculating the odds ratios showing the risk of being above rather below the threshold for households in any particular decile divided by the corresponding risk for the top decile. In both cases the odds ratio rises steadily as one moves from the ninth to the second decile. However, the increase is much steeper for the EU-SILC11 index where the range runs from 1.4:1 to 22.4:1. For the LIIS8 index the corresponding interval runs from one for the ninth decile to close to 6:1 for the second decile. Thus differentiation by income in terms of risk of being above the deprivation threshold is much sharper for the EU-SILC11 measure.

Table 4: Percentage Above Thresholds and Corresponding Odds ratios by Equivalent Income Household Decile

	% Above Deprivation Threshold		Odds of Being Above Threshold Compared to those in the Top Decile	
DECILE	LIIS8	EU-SILC11	LIIS8	EU-SILC11
	%	%	Odds Ratio	Odds Ratio
Lowest	35.2	36.2	5.8	22.4
2	32.6	31.1	5.2	17.8
3	25.0	26.3	3.6	14.2
4	22.3	19.2	3.1	9.4
5	16.8	12.1	2.2	5.5
6	14.0	8.5	1.7	3.7
7	10.2	3.6	1.2	1.5
8	10.3	3.5	1.2	1.5
9	8.8	3.4	1.0*	1.4
Top	8.5	2.5	1.0	1.0
All odds ratios except those indicated by a* are significant at the .001 level				

In order to explore the source of the variable association between income and the respective measures of economic strain, in Table 5 we show the breakdown of the odds of being deprived on individual deprivation items by equivalent household income quintile with the highest quintile as the reference category. In this case we use income quintile rather than decile in order to avoid calculations based on very small numbers. We distinguish between the six items from the original LIIS8 index that have been retained in the EU-SILC11 measure, the two original items that have been discarded and the five new items incorporated in the EU-SILC11 measure. Focusing on the first set, we see that the odds ratios involving the comparison of the lowest with the highest quintile range from close to 7:1 for going without heating to 27:1 for the shoes item. Four of the six items are characterised by ratios with values of 10:1 or higher. The two discarded items – going without a substantial meal and debt problems - have substantially lower values of the order of 4:1. In contrast, all of the additional items incorporated in the EU-SILC measure have values of above 10:1 and in the case of the item relating to presents the odds an odds ratio of 55:1. Thus, the source of the stronger association of the EU-SILC11 measure with household income is clear.

Table 5: Odds Ratios (OR) for Individual Deprivation Items by Household Equivalent Income Quintile

Quintile	Lowest	2	3	4	Highest
Items Retained From the Original Set	OR	OR	OR	OR	OR
Shoes	26.5	16.6	7.1	1.0	1.0
Coat	11.1	5.8	3.5	0.9	1.0
Clothes	15.6	10.0	4.0	1.3	1.0
Meal with meat etc	9.5	3.7	2.3	0.8	1.0
Roast	16.2	8.8	4.8	1.7	1.0
Go without heating	6.6	4.4	2.6	1.0	1.0
Items Dropped from Original Set					
Go without substantial meal	3.8	2.5	1.5	1.1	1.0
Debt	4.7	2.8	2.3	1.5	1.0
Item Added to the Original Set					
Keep home warm	10.9	5.9	4.0	0.7	1.0
Presents once a year	55.0	33.6	9.5	3.0	1.0
Replace furniture	10.1	6.2	3.0	1.6	1.0
Family of friends for meal	21.8	14.7	6.7	1.8	1.0
Evening etc out for entertainment	17.9	9.1	5.1	2.2	1.0

The consequence of this increased differentiation in terms of overlap between the deprivation thresholds and the income poverty measures is that, while just over one-third of those below the LIIS8 threshold are also income poor at 60% of equivalent household income, this is true of almost one in two of those above the EU-SILC11 threshold. At the 70 per cent line the corresponding figures are one in two and two in three. While there is a significantly greater overlap between economic strain based on the EU-SILC11 index and income poverty, it is important to keep in mind that they continue to capture relatively distinct phenomena. This fact is strikingly illustrated in Table 6 where, restricting our attention to those below the 60% income poverty line, we document the relationship between two indicators of subjective economic pressure and being above or below the EU-SILC11 threshold. In relation to the risk of the household experiencing difficulty or great difficulty in making ends meet, the level rises from just above one in four for those below the threshold to almost three out of four for those above it. The associated odds ratio is close to 8:1. In relation to inability to cope with unanticipated expenses, the contrast is even sharper with the risk level rising from just above one in five to over four out of five with a consequent odds ratio of 17:1.

Table 6: Subjective Economic Pressures Among the Income Poors at 60% of Median Income by Being Above or Below the EU-SILC11 Threshold

	Below 60% Median Income Poverty Line
	% Of Households Experiencing Great Difficulty or Difficulty in Making Ends Meet
Below Deprivation Threshold	26.3
Above Deprivation Threshold	73.2
Odds Ratio	7.6
	% of Households Experiencing Inability to Cope with Unanticipated Expenses
Below Deprivation Threshold	21.5
Above Deprivation Threshold	82.5
Odds Ratio	17.1

Alternative Deprivation Indices and Surrogate Measures of Permanent Income

As indicated earlier, our conception of construct validity requires us to go beyond consideration of the manner in which economic strain is associated with current income and seek to understand its relationship to longer-term command of resources. In order to

move in this direction, in Table 7 we present the results of a set of logistic regressions showing the gross relationship between risk of being above the relevant thresholds for alternative indices of economic strain and a number of variables, that can be seen to serve as proxies for permanent income or command over resources. These are, respectively, key aspects of the labour force status of the HRP, the level of educational qualification of the HRP, the social class of the HRP employing an aggregated version of European Socio-economic Classification (ESEC)[18] and housing tenure. In every case we find that socio-economic differentiation is significantly sharper in relation to the EU-SILC11 threshold than the LLI8 counterpart. As in the case of income, an examination of the statistics relation to the percentages above the respective thresholds reveals that for the more disadvantaged categories differences in risk levels for the alternative indices are relatively modest but for the LIIS8 measure they are substantially higher for the relatively advantaged categories than for the EU-SIC11 index.

This underlying pattern is reflected in the odds ratios set out in Table 7. Focusing first on employment status we find that for illness/disability the odds ratio rises from 5:1 to 9:1; for being home duties from 2:1 to 3:1; for unemployment from 5:1 to 8:1 and for being in full-time education to 6:1 to 8:1. A similar pattern is observed for educational qualifications with the odds ration doubling from 2.4:1 to 4.8:1 for the situation where the HRP has no educational qualifications; it rises from 2.5:1 to 4:1 for lower secondary and from 1.5 to 2:1 for a Leaving Certificate. For Routine Occupations, comprising those at bottom of the social class hierarchy, the odds ratio rises from 2.7:1 to 4.8:1 and for the next lowest category of Lower Sales, Supervisory and Technical it goes from 2.2:1 to 3.6:1. Finally, focusing on household tenure we find that for local authority tenants the odds ratio rises 6.6:1 to 9.3:1; for local authority owners from 1.6:1 to 2.0 and for private tenants from 3.5:1 t0 3.8. Thus, in every case we find evidence of a stronger relationship between the relevant socio-economic characteristics and EU-SILC11 measure.

[18] See Rose and Harrison (forthcoming).

Table 7: Logistic Regressions Showing Gross Odds Ratio of Being Above LIIS8 and EU-SILC Eco7mic Strain Thresholds by Selected Characteristics of the Household and Household Reference Person		
	LIIS8	EU-SILC11
A.		
Labour Force Status		
Ill/Disability	5.077	9.131
In Home Duties	1.968	3.405
Unemployed	5.315	7.837
In full-time Education	6.068	8.022
Other	1.000	1.000
B.		
Education Qualifications		
No Qualifications	2.432	4.811
Inter	2.476	3.980
Leaving	1.520*	1.983*
Lower Tertiary	1.383*	1.458*
Higher Tertiary	1.000	1.00
C.		
Social Class (ESeC)		
Professional & Managerial	1.000	1.000
Farmers	1.057*	1.385*
Small employers & Self-employed	1.102*	1.400*
Higher Sales, Supervisory & Technical	1.600	2.095
Lower Sales, Supervisory & Technical	2.158	3.597
Routine Occupations	2.728	4.809
D.		
Housing Tenure		
Private Owner	1.000	1.000
Local Authority Owner	1.559	2.002
Private Tenant	3.468	3.763
Local authority Tenant	6.637	9.343
With the exception of those identified by a * all coefficients are significant at the .001 level		

The Consequences of Alternative Deprivation Indices for the Deprivation Profile of the Consistently Poor

In deciding, how well our decisions on inclusion and exclusion of deprivation items have worked, in relation to the construction of consistent poverty measures, crucial evidence will come from comparisons that distinguish the groups who are, respectively, included and excluded. This question will be addressed explicitly in the this section by first constructing a typology at the 60% income line that distinguishes those consistently poor on both measures, those poor using the LIIS8 deprivation threshold only, those poor employing the EU-SILC11 deprivation criterion only and those poor by both criteria. We then proceed to consider how these groups are distinguished in terms of levels of deprivation on the additional dimensions identified earlier relating to consumption, housing, neighbourhood environment and health. We then extend this analysis to encompass subjective economic pressures.

In Table 8 we show the relationship between position on the consistent poverty typology and profiles of multidimensional deprivation. For this analysis the variables have been standardised so the scores reported related to deviations from the mean divided by the standard deviation. In every case, except neighbourhood environment, there is a clear continuum running from those consistently non-poor on both indices to those poor on the LIIS8 measure only, followed by those poor on the EU-SILC11 index only and those poor on both measures. In the case of the consumption dimension, those poor on the EUSILC11 only measure have a level of deprivation over three times higher than that relating to the group that is poor on the LIIS8 measure only and one that is only marginally lower than for the group that is poor on both indices. A similar situation exists with regard to housing deprivation. In relation to the health status of the HRP, the difference between the EU-SILC11 only and the LIIS8 only groups is somewhat less with the ratio being just less than two to one. However, once again, the level for the former is very close to that for the group poor on both indices In relation to neighbourhood environment, a slightly different pattern emerges. The deprivation levels for the two groups poor on only one of the indices are similar. In both cases they are substantially higher than those for those poor on neither index but are three to four time lower than for the group poor on both. Thus, those consistently poor on the EU-SILC11 measure only

display levels of deprivation on the consumption, housing and health dimensions that are substantially higher than for those poor on the LIIS8 index only. They differ from those poor on both indices only in having substantially lower levels of neighbourhood environment deprivation; even here their level of deprivation is significantly above that for those non-poor on both measures.

Table 8: Deprivation Dimensions by Consistent Poverty Typology at 60% of Income: Standardised Scores

	Consistent Poverty Typology			
	Consumption	Housing	Neighbourhood Environment	Health
Neither	-0.136	-0.045	-0.052	-0.054
LIIS8 Only	0.455	0.131	0.214	0.341
EU-SILC Only	1.565	0.455	0.189	0.601
Neither	1.692	0.587	0.728	0.635

The evidence thus consistently points to the superiority of the EU-SILC11 consistent poverty measure. It also demonstrates that, despite the relatively limited set of deprivation items employed in the construction of the index, it succeeds in identifying a group who are experiencing a distinctive multifaceted form of deprivation.

We can gain further insight into the differences between the consistent poverty indicators indices based on the alternative deprivation measures by examining the relationship between the consistent poverty typology and a range of indicators of economic pressure. The four items relate to inability to cope with unexpected expenses, experiencing difficulty in making ends meet, experiencing housing expenses as a heavy burden and reporting arrears in relation to mortgage, rent, hire purchase etc. From Table 9 we can see that for all four indicators we find a striking contrast between those consistently non-poor and those consistently poor while those poor on only one measure occupy intermediate positions. To facilitate comparisons across indicators, in the final two columns we report relevant odds ratios. The first relates to the comparison between those poor on both indices and those poor on neither while the second contrasts the EU-SILLC11.poor only group with the LIIS8 poor only cluster. If for the moment, we focus on the groups at either end of the continuum, by far the greatest contrast between the two extreme groups arises in relation to the item concerning inability to cope with unexpected

expenses where the odds ratio has a value of 30:1 reflecting the fact that 86 per cent of those poor on both measures report such difficulties compared to 17 per cent of those poor on neither. The ratio for difficulty in making ends meet is 13:1 and the respective percentages are 75 percent and 20 per cent. For the arrears item the value of the odds ratio falls to 12:1 corresponding to the observed figures of 42 per cent and 6 per cent. Finally, the lowest odds ratio of 7:1 is associated with the item relating to housing costs where the relevant percentages are 62 per cent and 18 per cent..

Table 9: Indicators of Economic Pressures by Consistent Poverty Typology at 60% of Median Income						
	Consistent Poverty Typology					
	Neither (i)	LIIS8 Only (ii)	EU-SILC11 (iii)	Both (iv)	Odds Ratio (iv/i)	Odds Ratio (iii/ii)
	% Experiencing Economic Pressures					
Inability to Cope with Unanticipated Expenses	16.5	41.6	69.5	85.6	30.2	3.2
Difficulty or Great Difficulty in Making ends Meet	19.5	51.0	64.8	75.2	12.5	1.8
Housing Costs A Burden	18.2	39.5	45.3	62.0	7.3	1.3
Arrears	5.9	26.9	17.7	42.3	11.6	0.6

When we focus on the intermediate categories of the consistent poverty typology, we again observe significant variation across the economic pressure items. For the item relating to inability to cope with unanticipated expenses the relevant odds ratio is 3.2:1 reflecting the fact that the respective figures for the EU-SILC11 only and the LIIS8 only groups are 70 per cent and 42 per cent. For the item relating to difficulty in making ends meet the relevant odds ratio is 1.8:1 corresponding to reported levels of 65 per cent and 51 per cent for the EU-SILC11 and the LIIS8 groups. For housing costs being experienced as a burden there is little difference between the groups with the odds ratio falling to 1.3:1; corresponding to respective figures of 45 per cent and 40 per cent For arrears relating to routine expenses the odds ratio is 0.6:1 reflecting the fact that a higher level of pressure was reported by the LIIS8 poor only group; with the respective figures being 27 percent and 18 per cent.

Those poor on the EU-SILC11 index only are less sharply differentiated from those poor on the LIIS8 index with regard to subjective economic pressures than in

relation to the dimensions of life-style deprivation considered earlier. However, they do exhibit a significantly more disadvantaged profile in relation to both inability to cope with unanticipated expenses and experiencing difficulty in making ends meet. However, the difference in relation to experiencing housing costs as a burden is modest and arrears constitute a greater problem for the LIIS8 group. The inclusion of the debt item in the LII8 index seems to capture a number of people who, while having difficulty currently in coping financially, as reflected particularly in indicators such as experiencing housing costs as a burden and accumulating arrears, are located in households that enjoy standards of living that are substantially superior to those of individuals identified by the EU-SILC11 consistent poverty measure.

Conclusions

In this paper we have sought to reassess the Irish consistent poverty indicators, which form part of the Irish National Anti Poverty Strategy, by comparing the results deriving from measures based on a newly proposed 11-item index based on items available in the Irish component EU-SILC survey with those associated with the original 8-item basic deprivation index derived from the Living in Ireland Survey. In line with current Eurostat terminology, we refer to these indices as measures economic strain. Taken at face value, the new set of deprivation items incorporate a broader notion of poverty as social exclusion than was the case with the original set. However, in choosing between the measure it is necessary to go beyond such 'face validity' and address question of reliability and construct validity.

Both indices produce very similar estimates of consistent poverty. Both indices exhibit highly satisfactory levels of reliability but the coefficient for the EU-SILC11 index is superior. However, it is largely on the basis of criteria deriving from a consideration of construct validity that we argue for the superiority of measures incorporating the EU-SILC11 index. These include its stronger association with, respectively, current income, socio-economic characteristics that that can be taken as proxies for permanent income and subjective economic pressures.

In general, when we focus on the lower end of the income distribution and on the more disadvantaged end of the socio-economic spectrum, differences between the

alternative economic strain measures are modest. However, there is a consistent pattern whereby, at higher levels of income and for more favoured socio-economic groups, higher levels of deprivation are observed for the LIIS8 measure than for the EU-SILC11 measure. As a consequence, the pattern of association between economic strain and socio-economic disadvantage is significantly sharper for the latter.

In a comparison of consistent poverty measures based on such indices, the scale of the differences will be moderated by the addition of the low-income criterion. However, by developing a consistent poverty typology running from poor on neither index to poor on both, we were able to demonstrate that, although the EU-SILC11 economic stain measure is derived from a restricted set of deprivation items, those identified as consistently poor using this measure exhibit a profile of multidimensional deprivation that differentiates them sharply from the rest of the population. Crucially, those who are consistently poor using the EU-SILC11 measure only are also significantly more deprived across a range of dimension than those poor with the LIIS measure only. They also experience higher levels of subjective economic pressures but in this case the contrast is less sharp.

Overall, despite the substantial overlap in items between the LIIS8 and EU-SILC11 measures of economic strain, the scale of the differences in relation to outcomes relevant to construct validity for both the deprivation measures, and the associated consistent poverty indicators, is striking and there can be little doubt regarding the superiority of the EU-SILC11 index. The accumulated evidence supports the view that the revised consistent poverty measures that combine a threshold of two or more items on the eleven-item EU-SILC index with income poverty 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

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