Income, Deprivation and Economic Strain in the Enlarged European Union

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Abstract

At risk of poverty indicators based on relative income measures suggest within the enlarged EU that societies located at quite different points on a continuum of affluence have similar levels of poverty. Substantial differences in levels of income between societies do not in themselves invalidate this approach. However, the relative income approach fails to capture the fact that between economic cluster differences in life-style deprivation are sharper at lower income levels. Support for the argument relating to restricted reference groups is found in relation to the contrast between the twelve most affluent EU countries and all others. The limitations of relative income poverty lines have little to do with the process of enlargement as such. Instead the major problem involves the weak association between income and deprivation in the more affluent countries. However, as a consequence of such difficulties, such indicators do not provide entirely meaningful comparisons of levels of disadvantage across economic clusters. The current analysis, rather than supporting the alternative of a focus on absolute income or an EU wide poverty line, suggests that we should take the argument for adopting a multidimensional approach to the measurement of poverty more seriously.

Key words: relative income, deprivation, economic strain, reference groups

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1. Introduction

In this paper we seek to build on earlier work by Whelan *et al* (2001) that took as its starting point a range of work directing attention to the relatively weak relationship between current income and life-style deprivation and the implications of these findings for the rationale underlying the relative income line approach. In the analysis reported here we seek to widen the focus of the inquiry to encompass the full range of EU member countries and the remaining candidate countries. The recent availability of data from the first European Quality of Life Survey (EQLS) now makes such analysis possible across a range of economic clusters running from the less to the more economically developed.

The need to address such issues is shown by the difficulties that EU enlargement has created for the development of a consistent policy perspective relating to variation in disadvantage. The EU social policy perspective continues to define being at risk of poverty in purely relative terms as falling below a percentage of median income. However, while this practice may have appeared to have had limited consequences when the gaps between the member states were relatively narrow, the widening in income inequalities associated with enlargement raises questions about the continued validity of the relative income poverty line approach. If we focus on the Laeken indicator of being at-risk-of poverty, as captured by being below 60% of

median income, we find that there is relatively modest variation in rates across EU member states and candidate countries (Atkinson *et al* 2002). The poverty rate in countries such as Latvia is slightly lower than in countries such as the UK. However, even after adjusting for differing purchasing power standards, there are substantial variations in the absolute levels at which such thresholds are set with the Latvian figure being 2,300 PPS and, at the other extreme, that for Denmark being 10,200 PPS. [1]While the at-risk-of–poverty indicators continue to provide useful information about within nation relativities they can hardly be taken to represent entirely meaningful comparison of levels of disadvantage across countries.

It could of course be argued that relative income poverty lines were never intended to serve this purpose and that the purely national perspective is entirely consistent with the limiting character of the EU' s social policy remit. Thus social policy in the EU is a member state competence and the EU's role in the field is limited largely to a coordination function. [2]However, for EU regional policy the divergence in living standards between regions and member states is the main focus of interest. Regional policy is also firmly grounded in EU law and confers on the EU the power to distribute funds between the EU regions for the purpose of promoting the development of the disadvantaged regions. [3]The policy goal in this context is to promote economic and social cohesion by bringing about convergence in economic development and living standards between the rich and poor member states and regions of the EU (European Commission 2004).

While the social policy perspective takes member state 'thresholds' as its point of reference, the regional perspective uses EU-wide thresholds based principally on GDP per capita (expressed in Purchasing Power Standards – PPS). Using this approach, the regional perspective captures widely differing levels of disadvantage across EU countries and defines the majority of the ten new member states as disadvantaged – all bar Slovenia and Cyprus have a GDP per capita below 75 per cent of the EU25 mean GDP per capita. Greece and Portugal are also disadvantaged in these terms, as are a number of individual regions within the other member states, though not to the degree found in the new member states (European Commission 2004). [1]

It would seem reasonable to expect that the distinction between regional policy and social policy is likely to continue to be of particular significance. Social policy is likely to continue to be developed primarily under national jurisdiction, not withstanding developments such as the open method of coordination that seek to provide a means of moving towards common solutions through differentiated policy harmonisation. Thus, as Begg and Berghman (2001:306) note, despite a variety of initiatives at both national and EU level relating to social exclusion, the scope for EU action is severely constrained and EU involvement occurs "in spite of, rather than because of Treaty obligations and formal rules". Similarly, regional funds are likely to continue to be distributed to governments on the basis of GDP per capita rather than indicators of poverty or social exclusion. However, given the increasing importance attributed to the development of European social

[1] See Fahey, Whelan and Maître (2005).

indicators it seems unlikely that at-risk-of poverty rates that appear to be counter intuitive are likely to be taken seriously as a basis for evaluating the comparative impact of policy interventions, unless an explicit rationale justifying the basis of such comparison is developed. Similarly, if the promotion of social cohesion is a primary objective, then it would seem necessary to look beyond GDP levels and take into account the distributional concomitants of trends in economic development. From this perspective it seems difficult to see how regional expenditure can be justified in the absence of reliable evidence on the consequences of such expenditure for convergence or divergence in European poverty and deprivation levels.

2. Theoretical Background

The social policy and regional perspectives can be viewed as complementary rather than contradictory. However, the radically different directions in which they point does draw attention to the need to develop approaches that can accommodate the dual realities of within and between units variance in an enlarged Europe. Of course the existence of substantial differences in income levels between country, or region, does not necessarily invalidate the use of within country or region relative income thresholds. The general rationale of this approach is that those falling below a proportion of average income thresholds are excluded from the minimally acceptable way of life of the society in which they live because of a lack of resources (Commission of the European Communities, 1981). In circumstances where the societies under consideration are located at widely differing points on a continuum of

affluence, relative income lines will prove most informative when a number of conditions are fulfilled.

- The first, which applies generally, is that income should be a good predictor of the type of deprivation for which it is intended that it should serve as an indirect measure.
- The second is that the capacity of income to discriminate should be relatively uniform across the units under consideration. If these conditions hold true then, despite differences in levels of deprivation between units, we shall have succeeded in defining appropriately differentiated groups in each society. Given that the majority of variation in such deprivation tends to be within rather than between units this would be a significant achievement.
- However, if we wish to argue that the subjective experience of individuals falling below relative income thresholds is comparable across units varying significantly in deprivation levels, as implied in the relative income approach, it is necessary to demonstrate that the consequences of variation in deprivation levels are substantially greater in poorer societies. Thus, in Sen's (1983) terms, a particular increase or decrease in absolute level of deprivation would be associated with a greater exacerbation of the experience of "shame" in an affluent society. In such circumstances relative income lines would continue to provide highly valuable indicators, notwithstanding the existence of substantial income and deprivation

differences between the societies to which the indicators are applied.

The final condition obviously implies some notion of relative deprivation or restricted reference groups. The use of the term ‘relative deprivation’ in the mainstream reference group literature was centrally motivated by concern with subjective feelings, perceptions, and behavioural consequences. Perhaps the most frequent use of the concepts of reference groups and relative deprivation has been to explain why differences in objective living conditions do not necessarily provoke resentment or dissatisfaction (Merton, 1957, Stouffer, 1949). Such outcomes have frequently been interpreted as being a consequence of adopting restricted reference groups. Following in the tradition of Townsend (1979), whose point of reference was the objective average living standards of the wider society as measured by national average income rather than any subjectively determined standard, the literature concerned with relative income poverty measurement pays little attention to such issues. However, in the absence of some such set of assumptions, it becomes much more difficult to defend defining and measuring poverty solely in terms of national (or indeed regional) relative income indicators.

For our current purposes our concern with reference groups is restricted to issues relating to the rationale underlying at risk of poverty measures. Factors other than current life-style deprivation clearly impact on outcome variables, such as subjective economic strain, with which we are concerned. Reference

to ‘restricted reference groups’ must be taken as a shorthand way of referring to complex processes of evaluation of what it is ‘reasonable’ or ‘fair’ to expect (Jasso, 1980, Jasso and Rossi, 1977). The relative weight of different comparisons may also change over time as people’s aspirations and expectations change. Kelley and Zagorski (2005) show how the shift towards a free-market economy in Central-East Europe dramatically changed the public’s norms about income inequality. Thus a complete explanation of subjective responses, such as economic strain, and variation in such levels across geographic units, goes well beyond our current brief. Our key question is whether the relationship between deprivation and the subjective experience of such deprivation varies across geographical or analytic units in a manner that provides support for the use of relative income poverty measures of poverty as valid social indicators in an enlarged EU. In seeking to confront this issue we do so not by addressing questions directly related to such comparison to respondents but by seeking to infer their reference groups from their reactions to objective circumstances. Measures of life-style deprivation, capturing as they do both failure to fulfil current consumption aspirations and the consequences of past successes and failures in accumulating items, are likely to be a powerful predictors of subjective economic strain.

In Section 3 we will describe the data on which our analysis is based and the key measures of income, deprivation and economic strain. Section 4 examines the relationship between income and deprivation both overall and within economic cluster. It is important to be clear that many factors other than current income influence levels of life-style deprivation. Our objective is not to

provide a comprehensive examination of the determinants of such deprivation nor of variation in such levels across economic clusters. Such variation, as we have already noted, does not in itself invalidate the at-risk-of poverty approach based on within unit relative income measures. The key empirical issues are the strength and the uniformity of the income-deprivation relationship. In Section 5 we look at the relationship between deprivation and subjective economic strain where the key issue is the extent to which the strength of this relationships varies by level of prosperity in the manner implicit in the application of the relative income within an enlarged EU. In Section 6 we summarise our conclusions and address their implications. It is not one of our objectives in this current paper to develop multidimensional alternatives to the relative income approach through the combination of income deprivation and economic strain measures (Callan *et al* 1993 and Whelan and Maître 2005). However, we will consider the implications of our analysis, employing the enlarged EU data set, for the likely value of pursuing alternatives to the current use of national relative income poverty lines, including both multidimensional options and an EU wide relative income measure.

3. Data and Measures

The analysis presented below will make use of a clustering of countries adapted from the DG Regio classification. The four groups are as follows:

1. Twelve high-income EU member states whose GDP per capita exceeds the mean GDP per capita of the EU 25 (*EU12 HI*). These

comprise Finland, Sweden, Denmark, Germany, Luxembourg, Austria, Belgium, the Netherlands, France, Ireland, the UK and Italy.

2. Seven intermediate income EU member states whose GDP per capita lies between 60 per cent and 100 per cent of the EU 25 mean (*EU7 INT*). These comprise Spain, Greece, Portugal, Malta, Cyprus, Slovenia, Czech Republic.
3. Six low-income EU members states whose GDP per capita lies below 60 per cent of the EU 25 mean (*EU6 LO*). These comprise Poland, Estonia. Hungary, Slovakia, Latvia and Lithuania.
4. Three candidate countries (*CC3*). Bulgaria, Romania and Turkey. GDP per capita in the CC3 is below 35 per cent of the mean GDP per capita of the EU25.

The data and measures are drawn from the European Quality of Life Survey (EQLS) which was launched by the European Foundation for the Improvement of Working and Living Conditions. The survey was carried out in 28 countries: the 15 EU Member States before May 2004; the 10 acceding countries which became Member States in May 2004; and the three candidate countries Bulgaria, Romania and Turkey. Around 1,000 persons aged 18 and over were interviewed in each country, except for the 'smaller' countries – Cyprus, Estonia, Luxembourg, Malta and Slovenia – where around 600 interviews were conducted. The overall response rate was 59%.[4] The EQLS covers a broad spectrum of life domains with an emphasis on employment and working conditions, housing, family, social and political participation, quality of society, and subjective well-being. The analysis reported in this

paper is based on aggregation of the data to four economic clusters thus minimising many of the potential difficulties associated with small sample sizes and variable response rates across countries. The data have been weighted to take into account the populations sizes of the twenty-eight countries participating in the survey. The findings we report are therefore representative, respectively, of the EU 28 as a whole and the economic clusters that form a crucial part of our analysis.

Inequalities in household income within and between countries and regions are basic to the questions that we address. The income question used in the EQLS was relatively crude. Respondents were first asked which of a list of income sources were received by their household and were then asked to give the net overall monthly household income. The incomes of individual household members were not asked about separately, nor, in cases where the main income earner was someone other than the respondent, was the information checked with the main income earner. Incomes are converted to an artificial common currency called Purchasing Power Standard (PPS) that equalises the purchasing power of different national currencies. Non-response on this item amounted to 21 per cent of the total sample and we shall undertake additional analysis in order to assess the possible effects of such non-response on our conclusions.

The resulting income data cannot be expected to yield a precise estimate of household incomes. Nevertheless, a comparison at the national level between the EQLS income data and aggregate economic indicators shows that the

EQLS data perform reasonably satisfactorily. There is a 92 per cent fit at the country level between median household incomes as measured in the EQLS and GDP per capita. The dispersion of incomes within each country are also broadly as one would expect. There is also a problem with the German income data in that the low median income recorded for the bottom income quartile in that country is too low. However, this problem is not so severe as to require adjustments to the data particularly since we will operate at the regional level. The income measure we use in our analysis is household equivalent income using the modified OECD equivalence scale and adjusted for purchasing power parity.

The ten- item deprivation index we employ summarises such deprivation in relation to a set of basic life-style items. The measure, which we label current life-style deprivation (CLSD), is intended to capture exclusion from participation in a manner generally identified as appropriate in the relevant community. It makes use of three types of items.

For the first set of items the absence and affordability elements were incorporated in one question, as follows: “There are some things many people cannot afford even if they would like them. Can I just check whether your household can afford these if you want them” The following six items were administered in this fashion:

- Keeping your home adequately warm.
- Paying for a week’s annual holiday away from home.
- Replacing any worn-out furniture.

- Buying new, rather than second hand clothes.
- Eating meat chicken or fish every second day, if you wanted to.
- Having friends or family for a drink or meal at least once a month.

For the second set of items respondents were asked if the household possessed the items and in the negative case if it was because they could not afford it. The three items are:

- A car or van.
- A home computer.
- A washing machine.

In these cases we consider a household to be deprived only if absence is stated to be due to lack of resources. A final item dealt with the experience of debt and is constructed from information relating to the experience of arrears in the previous twelve months in relation to utility bills.

The deprivation measure is then constructed as the simple sum of the deficits on these 10 items.

This set of items allows one to construct an index of deprivation, but not a broader based measure of general living standards. No information is available relating to the quality or cost of particular items. Many households in the better off regions will register zero deprivation although their living standards vary. This type of measure we would argue is entirely appropriate

when the dependent variable relates to an extreme outcome such as economic strain but might prove less effective in relation to more broadly conceived measures of subjective well-being. Our focus is on the type of deprivation indicator that has been shown by earlier work to be most strongly related to income and economic strain as opposed to dimensions such as housing deprivation.[5]Notwithstanding the multi-dimensionality of deprivation, for convenience of presentation we shall refer to this measure as 'deprivation' or CLSD throughout this paper.[6] No effort is made to weight items to take into account variations in levels of enforced absence across regions by level precisely because we wish to test if specific deprivations have uniform or variable effects across economic clusters.

In Table 1 we set out estimates of Cronbach's alpha for the EU28 overall and for each economic region. This estimate of reliability indicates the extent to which the individual items are tapping the same underlying dimension. The overall coefficient of 0.87 indicates that the CLSD scale exhibits an extremely high level of reliability. Furthermore, the lowest level of reliability in any of the regions does not fall below 0.80. Both overall and within region the individual items are tapping the same underlying dimension and in that sense deprivation is understood in a common fashion across economic regions. Thus there is no possibility that our conclusions will be affected by between region variations in reliability levels.

Table 1: Cronbach's Alpha Reliability Coefficients for Current Life-Style Deprivation

	Alpha Coefficient
Region	
EU12 HI	0.80
EU7 INT	0.81
EU6 LO	0.81
CC 3	0.82
EU 28	0.87

Our measure of economic strain is based on responses to the question. "Thinking now of your household's total income, from all sources and all household members, would you say that your household is able to make ends meet?" Respondents were offered six response categories ranging from 'with great difficulty' to 'very easily'. Our concern is not with satisfaction with income situation as such but with whether people feel they are sufficiently above a threshold that permits them to live their lives without routinely engaging in what Pearlin *et al* (1981) have described as "economic brinkmanship".

4. The Relationship between Income and Deprivation

In this section we look at the relationship between income and deprivation across regions. Table 2 shows variation in average deprivation levels across region. Thus the mean level for the EU7 INT region is twice that for the EU12 HI. For the EU6 LO this ratio rises to over four to one and for the CC3 to almost six to one. These are differences on a scale beyond anything suggested by relative income comparisons. The question arises of whether we would do better to focus on absolute income differences.

Table 2: Current Life Style Deprivation (CLSD) Levels by Region

Region	Mean Deprivation
EU12 HI	0.83
EU7 INT	1.66
EU6 LO	3.53
CC 3	4.81
EU 28	1.87

In Table 3 we explore this issue by focusing on the manner in which the impact of income on deprivation varies across economic cluster. In examining this relationship it is important to pay attention to the manner in which the income term is specified. Our expectation is that the strength of the impact of income on deprivation will vary across region. Thus Whelan *et al* (2001), using data from the first wave of the ECHP, found that in an analysis involving the twelve original EU member states the relationship between income and deprivation was stronger in poorer rather than richer countries. They suggested that this could be explained by the fact that income was a better indicator of command over resources in the former rather than the latter because of factors such as accumulated wealth, economic support networks and the buffering role of the welfare state.

On this basis we hypothesise that the relationship between income and deprivation will weaken as we move from the least to the most prosperous region. However, while we expect that the impact of income will be variable across economic clusters, we would not be comfortable with an outcome that specified that at a particular level of income level, above which a significant number of our respondents are located, predicted deprivation levels begin to become higher in the more affluent rather than the less affluent regions. To avoid this substantively implausible outcome we must ensure that the

regression lines relating to our four clusters do not cross. Our analysis revealed that this does in fact occur if income is entered in the conventional log form. However, operating with the inverse of income i.e. (1/income) avoids this potential pitfall but still gives us easily interpretable results.

In Table 3 we report the results for the regression of income on deprivation both overall and within economic cluster. An alternative single equation version of the latter analysis, which allows both the slope and constant to vary across region and provides standard errors for such variation, is set out in Appendix Table A1. From this analysis it is clear that variation in the impact of income on deprivation across economic cluster is statistically significant. The B coefficient for the income term rises gradually from 123 for the EU12 HI to 179 for the EU7 INT, then increases to 271 for the EU6 LO and finally peaks at 362 for the CC 3. The impact of income on deprivation is substantially greater in the less prosperous regions. The proportion of variance explained rises from 3.8% in the EU12 HI to 5% in the EU7 INT to 9.7% in the EU6 LO and finally to 26.4% in the CC 3.

Table 3: OLS Regression of Impact of Income on Deprivation by Economic Cluster

	EU 28	EU12 HI	EU7 INT	EU6 LO	CC 3
Inverse of Income	385.516	122.996	179.011	270.619	361.717
Constant	1.096	0.693	1.363	2.778	2.932
R^2	0.231	0.038	0.050	0.097	0.264

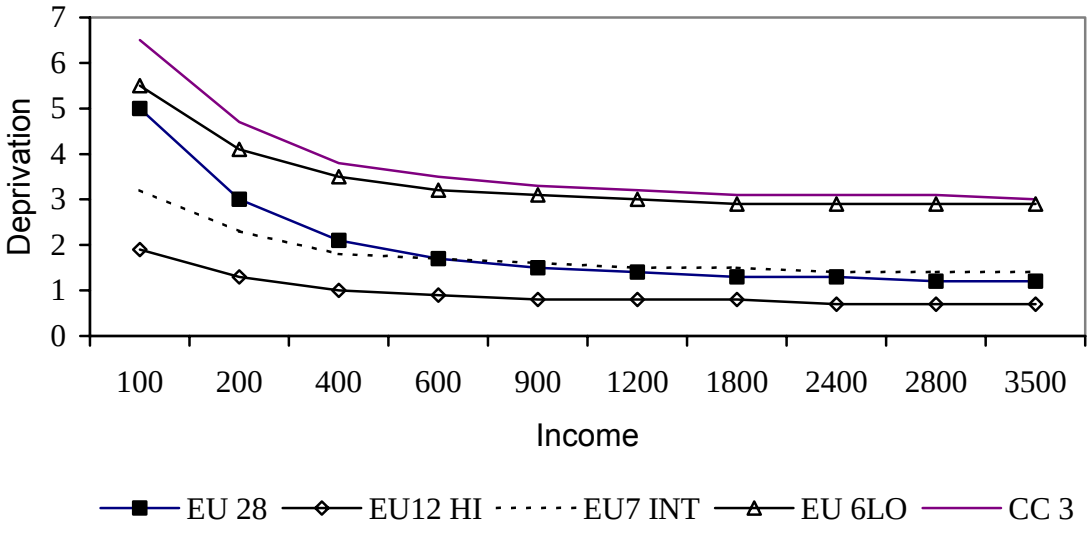
N	20,154	11,219	2,599	2,471	3,861

The substantive consequence of such variation is that between economic cluster differences in deprivation are significantly greater at lower rather than at higher levels of income. This fact is illustrated in Figure 1 across a relevant range of income and deprivation values. There is no one set of regional differences in levels of deprivation but rather a range that varies with level of income. This outcome is consistent with the earlier finding by Whelan *et al* (2001), using data from the first wave of the European Community Household Panel (ECHP), that within the original twelve EU member block the relationship between income and deprivation was stronger in poorer rather than richer countries. They concluded that only in the predominantly less affluent societies would a policy of targeting those below the lowest relative income lines be successful in reaching the most deprived households. As a consequence of such variability in the level of association, we will significantly underestimate between economic cluster differences in levels of deprivation for lower income groups and correspondingly overestimate those at the upper end of the continuum.

As Perry (2002) notes in a recent review of the literature, the available evidence indicates that there is a significant mismatch between poverty measured indirectly using an income approach and direct measures based on life-style deprivation. Focusing on our analysis across economic clusters, it is clear that in the less affluent clusters current household income serves as a significantly superior indicator of command over the kind of resources that are

predictive of deprivation. The percentage of variance accounted for by household income varies from 4% in the EU12 HI to 26% in the CC 3. This is entirely consistent with the residualist nature of the welfare state in the less affluent economic clusters and the lower levels of accumulated household resources resulting in current income serving as a more accurate indicator of a household's command over resources. While in every case a substantial proportion of the variation in deprivation remains unexplained, this is not a problem that is exacerbated by EU enlargement.

Figure 1: The Relationship between Deprivation and Income by Region



With regard to the conditions necessary for the successful implementation of the relative income poverty line approach in an enlarged EU, our analysis thus far points to the following conclusions.

- The weakness of the association between current income and deprivation is clearly inconsistent with the key assumption underlying

the relative income approach to the measurement of poverty. However, this problem diminishes rather than increases as one moves from the most prosperous to the least prosperous cluster.

- Such variation across cluster in the impact of income will have the consequence that a purely relative income approach will fail to capture important between cluster differences in exposure to deprivation among low-income groups and will overestimate such differences for high income groups.
- It should be noted, however, that as the results regarding the overall relationship between income and deprivation set out in Table 3 and illustrated in Figure 1 show, an approach based on absolute income or an EU wide poverty line would also fail to capture such variation.
- An additional argument for rejecting a move to an EU wide relative income line is that, while between cluster differences in deprivation vary by income level, as is clear from Appendix Table A1 and Figure 1, between region variation in deprivation is substantial at every level of income. Controlling for income fails to account for between 80-90% of between economic cluster differences in deprivation.[7]

In the section that follows we seek to test the final assumption implicit in the relative income approach relating to the variable manner in which the impact of absolute deprivation is subjectively experienced.

5. Deprivation and Economic Strain

In Table 4 we break down the detailed six-category question on subjective economic strain by economic region. The number reporting that their household can "make ends meet very easily" ranges from twelve per cent in the EU12 HI to less than one per cent in the EU6 LO. Combining the "very easily" and "easily" categories we find the relevant number runs from four out of ten respondents in the EU12 HI to one in four in the EU7 INT and approximately one in eight in the EU6 LO and the CC 3. At the other end of the spectrum just less than one in two of those in the EU6 LO and CC 3 regions report "difficulty" or "great difficulty" in making ends meet compared to one in five in the EU7 INT region and one in twelve in the EU12 HI. If we focus solely on the "great difficulty" category the pattern of differentiation is even sharper. One in four of the CC 3 respondents are found in this category. This declines to one in six for the EU6 LO and to one in twelve for the EU7 INT and exhibits its lowest value of less than one in thirty for the EU12 HI respondents. Thus a clear and systematic pattern emerges of higher levels of economic strain in the less prosperous regions. Where we treat the economic strain variable as a continuous variable we find that the within economic cluster differences account for 75% of the overall variation.[8]

Table 4: Economic Strain by Region

Region	EU12 HI %	EU7 INT %	EU6 LO %	CC 3 %
Make ends meet				
Very Easily	11.8	4.7	0.5	2.8
Easily	28.3	18.9	10.2	10.5
Fairly easily	31.8	26.5	19.1	9.0
With some difficulty	19.7	30.5	26.0	30.6
With difficulty	5.6	11.5	28.3	20.9
With Great	2.9	7.8	16.0	26.2

Difficulty N	15,251	3,841	2,959	3,995

To what extent are differences in economic strain levels a consequence of variations in levels of household deprivation and to what extent does this relationship vary across economic cluster? In pursuing these issues we make use of the continuous version of the subjective economic strain variable and conduct an ordinary least squares regression showing the relationship between deprivation and economic strain. In order to conduct this analysis it is necessary to consider the appropriate specification for the deprivation term. In the equation where deprivation was the dependent variable we chose to operate with the inverse of income in order to achieve a set of economic cluster equations that did not cross. In other words we sough to avoid the situation where at a particular level of income, above which a significant number of our respondents are located, predicted deprivation levels begin to become higher in the more affluent rather than the less affluent regions. However, in the current case such a specification would clearly be inappropriate since we wish to allow for at least the possibility that at any given level of deprivation economic strain may be higher in the less affluent regions.

The results of the regression of deprivation within economic cluster are set out on in Table 5. The association is clearly strongest in the EU12 HI where the deprivation coefficient has a value of 0.42 for the remaining clusters the value is approximately 0.30. The major contrast is thus between the EU12 HI cluster and all others. As shown in appendix Table A2, which presents a single

equation version that allow slopes and constants to vary across region and thus corresponds to the separate regional equations, the differences between coefficient for the EU12 HI and those for all other clusters are highly significant.

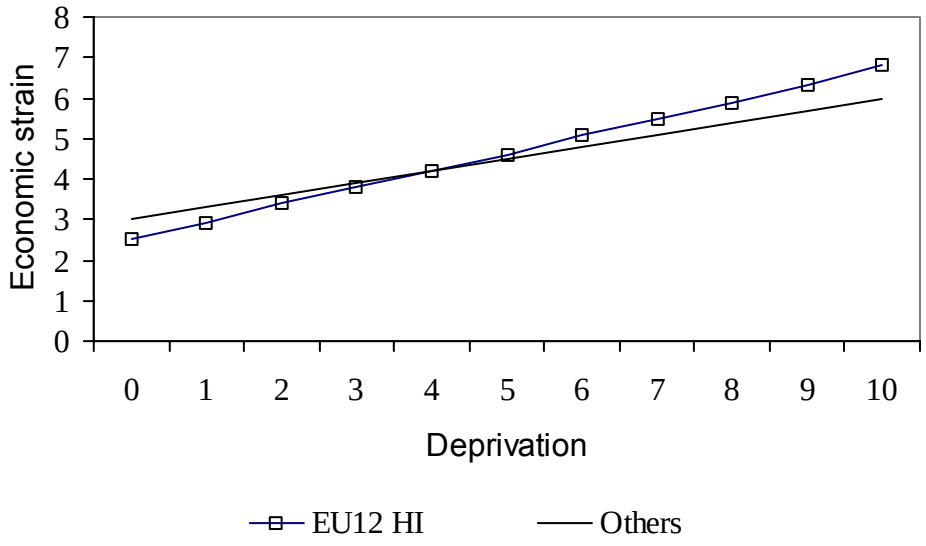
The findings provide substantial support for the restricted reference group implicit in the relative income approach in relation to the contrast between the EU12 HI and the remaining economic clusters. In Figure 2 we provide a graphic representation of this contrast. Since the impact of deprivation is substantially stronger in the EU12 HI the gap in economic strain between the EU12 HI and the remaining clusters declines significantly as the level of deprivation increases and is reversed at higher levels of deprivation. In other words increases in absolute deprivation lead to significantly greater increases in economic strain in the EU12 HI cluster. Failing to take into account variation in the impact of deprivation on economic strain across region would lead one to significantly underestimate levels of economic strain at higher levels of deprivation in the more affluent clusters and to overestimate them in the remaining clusters.[9] Our findings provide significant support for the restricted reference group assumption implicit in the relative income line approach in relation to the contrast between the most affluent group of countries in the EU12 HI cluster and all others. [10]

Table 5: OLS Regression of Deprivation on Economic Strain

	EU12 HI	EU7 INT	EU6 LO	CC 3
Deprivation	0.424	0.301	0.290	0.304

Constant	2.522	2.990	3.165	2.888
R^2	0.324	0.253	0.398	0.414
N	15,250	3,838	2,959	3.994

Figure 2: The Relationship between Economic Strain and Deprivation by EU12 HI versus All Other Regions



Conclusions

In this paper we have sought to consider the implications of EU enlargement for the development of a consistent policy perspective relating to disadvantage and a corresponding set of social indicators. While the social policy and regional perspectives are not necessarily contradictory they are usually discussed without reference to each other and without any attempt at joined up thinking. The underlying tension in EU policy discussions appears to be perfectly illustrated by the anomalies arising from the use of relative

income poverty indicators calculated at the national level in the context of EU enlargement. From this perspective, societies located at quite different points on a continuum of affluence, in terms of indicators such as GDP, are found to have similar levels of poverty.

However, the existence of substantial differences in levels of income between societies does not in itself invalidate the relative income approach. Thus if income is strongly and uniformly associated with the appropriate outcomes then the relative income approach will prove effective. This conclusion will be strengthened where comparative processes vary across regions in a manner consistent with the restricted reference group hypothesis implicit in the relative income group approach. Our analysis confirms earlier finding relating to the relatively weak relationship between income and life-style deprivation. However, rather than this being exacerbated by the process of EU enlargement, income proves to be a more powerful predictor of deprivation in the poorer rather than the richer regions.

Thus, despite the apparent paradox of similar poverty rates among units at almost opposite ends of the European development perspective, it is difficult to argue that problems associated with the application of relative income poverty lines have been substantially exacerbated by the process of EU enlargement. However, the differential impact of income on deprivation across region does constitute a significant problem for this approach. The purely relative income approach fails to capture the fact that between region differences in life-style deprivation are a good deal sharper at lower rather

than higher income levels. However, an approach based on an EU wide poverty line would also fail to capture such variation. An even stronger argument for rejecting a move to an EU wide relative income line is that income does rather poorly in explaining between economic clusters variation in deprivation. The final assumption implicit in the relative income approach relating to restricted references and the differential impact of absolute deprivation across regions is supported by our analysis in relation to the contrast between the EU12 HI and all other clusters, although no such variation is observed between the latter groups.

Overall then the limitations of relative income lines have little to do with the process of enlargement. Instead the major problem with such measures is the already well-known difficulties arising from the weak association between income and deprivation in the more affluent countries. However, a consequence of such difficulties is that it becomes increasingly difficult to provide entirely meaningful comparison of levels of disadvantage across economic clusters. A switch to a focus on absolute income or EU wide relative income lines will not resolve the difficulties arising from variability in the income-deprivation relationship across economic clusters. While a development of this argument takes us beyond the scope of this paper our current analysis suggests that we should take the argument for adopting a multidimensional approach to the measurement of poverty more seriously, as in recent efforts that treat income, deprivation and economic strain as important but imperfect indicators of an underlying state of economic exclusion.[11]

Appendix

Table A.1: OLS Regression of Impact of Region and Income on Deprivation

	B	SE.
EU12 Ref. Cat	0.693	
EU7INT	0.672	0.054
EU6LO	2.086	0.063
CC3	2.239	0.057
Inverse of Income	122.996	7.176
Interactions		
Income*EU7 INT	56.015	16.271
Income*EU6 LO	147.624	15.006
Income*CC3	238.721	10.616
Constant		
R^2	0.439	
N	20,153	

Table A.2: OLS Regression of Impact of Region and Deprivation on Economic Strain

	B	SE.
EU12 Ref. Cat	2.522	
EU7INT	0.468	0.023
EU6LO	0.644	0.032
CC3	0.366	0.032
Deprivation	0.424	0.005
Interactions		
Deprivation *EU7 INT	-0.123	0.009
Deprivation *EU6 LO	-0.133	0.009
Deprivation *CC3	-0.119	0.007
Constant		
R^2	26,046	
N	20,153	

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Notes

[1] The data are taken from Eurostat's Laeken indicator database for 2001 and are based on national currencies adjusted to take account of differing purchasing power standards (PPS) in the different countries (data are missing in this source for Cyprus and Slovakia). They thus represent the EU's 'official' representation of poverty levels in the EU.

[2] See Title XI, Chapter 1 'Social Provisions', Art. 136-137 of the EC Treaty.

[3] See Title XVII, 'Economic and Social Cohesion', Articles 158–162, of the EC Treaty.

[4] This compares to an average response rate in the first wave of the ECHP of 67%.

[5] For discussions concerning the dimensionality of deprivation sees Dewilde, 2004, Perez-Mayo, 2005 and (Whelan, Layte, Maître, & Nolan 2001).

[6] We have repeated the analysis reported in this paper using our ten item deprivation index employing an alternative four-item indicator of housing deprivation which had a somewhat lower level of reliability. The broad pattern of results we observe with the former are also found with the latter but with a substantially lower level of explanatory power. Furthermore, the housing indicator adds little to our ability to predict economic strain once we have taken the impact of the ten items indicator into account.

[7] Conducting our analysis in terms of economic clusters rather than individual countries does not significantly affect this conclusion. Correlations between GDP and deprivation will exhibit significantly higher values. However, in addition to the fact that GDP captures something more or different than income, interpretation is considerably complicated by problems associated with having a small number of observations and multicollinearity. Thus economic clusters that differ in terms of GDP will also differ in many other respects. See Frey and Stutzer (2002) and Inglehart and Klingemann (2000).

[8] The between region variance σ^2_r as a proportion of the total variance σ^2 is equal to $(\sigma^2 - \sigma^2_e)/\sigma^2$. Where the expected value of the within region mean square is equal to σ^2_e is and the expected value of the between region mean square is equal to $(\sigma^2_e + (\sigma^2_r * / \sum n_{i/R}))$. Where R is the number of regions and n_i is the sample size in region i.

[9] In order to check for the effects of the relatively large number of missing values associated with the income variable, we ran separate analyses of the regression relating deprivation to economic strain for the overall sample and for the subset where income data is available. The question we sought to answer was the extent to which our conclusions, relating to the impact of deprivation on economic strain, were affected by selection bias relating to the large number of missing income cases. In fact, the coefficients relating to deprivation were almost identical in the two analyses. These results are available from the authors.

[10] A comparable analysis with a measure of life satisfaction as the dependent variable also shows a stronger effect for deprivation in the EU12 HI compared to the remaining clusters.

[11] Recent efforts to develop such an approach using latent class analysis can be found in Dewilde (2004), Moisio (2004) Whelan and Maître (2005 a & b)).

References

Atkinson, A. B, Marlier, E and Nolan, B. (2002), *Social Indicators: The European Union and Social Inclusion.* Oxford:Oxford University Press.

Berghman, J. (1995), Social Exclusion in Europe: Policy Context and Analytical Framework. in G. J. Room.(ed), *Beyond the Threshold.*, Bristol: The Policy Press.

Begg, I. and Berghman. J. (2001), 'The Future Role of the EU in Dealing with Social Exclusion: Policy Perspectives', in D. G. Mayes, Berghman, J. and Salais, S. (eds), *Social Exclusion and European Social Policy*, Cheltenham, Edward Elgar.

Dewilde, D. (2004), 'The Multidimensional Measurement of Poverty in Belgium and Britain: A Categorical Approach, *Social Indicators Research,* 68, 3, 331-369.

Frey, B. S. and Stuzer, A. (2002), 'What Van Economist Learn from Happiness Research', *Journal of Economic Literature*, XL:402-435.

Commission of the European Communities (1981), *Final report from the Commission to the Council on the First Programme of Pilot Schemes and Studies to Combat Poverty*, Com (81) 769

European Commission (2004) *A New Partnership for Cohesion. Convergence Competitiveness Cooperation. Third Report on Economic and Social Cohesion.* Luxembourg: Office for Official Publications of the European Communities.

Fahey, T, Whelan, C. T and Maître, B. (2005), *First European Quality of Life Survey: Income Inequalities and Deprivation,* Luxembourg: Office for official Publications of the European Communities

Inglehart, R. and Klingemann, H. (2000), 'Genes, culture, democracy and happiness', in E. Diener and E. M. Suh (eds.), *Subjective Well-Being Across Areas*, Cambridge, MA: MIT Press

Jasso, (1980), "A New Theory of Distributive Justice", *American Sociological Review*, 45:3-22

Jasso, G. and Rossi, P. H. (1977), "Distributive Justice and Earned Income", *American sociological Review*, 42:639-651

Kangas, O. and V.-M. Ritakallio.(1998), "Different methods-different results? Approaches to multidimensional poverty". In *Empirical Poverty Research in Comparative Perspective*, edited by H. J Andreß. Aldershot: Ashgate.

Kelley, J. and Zagorski, K. (2005), "Economic Change and the Legitimation of Inequality: The Transition from Socialism to the Free-Market in Central-East Europe, *Research in Social Stratification and Mobility*, 22:321-336.

Merton, R. K. (1957) *Social Theory and Social Structure.* New York: Free Press.

Moisio, P. (2004), ' A Latent Class Application to the Multidimensional Measurement of Poverty', *Quantity and Quality-International Journal of Methodology*, 38, 6:703-717.

Nolan, B and C. T. Whelan, *Resources, Deprivation and Poverty*, Oxford: Clarendon Press

Pearlin, L. , Meneghan, E, Lieberman. M and Mullan, J. T, 'The Stress Process', *Journal of Health and Social Behaviour*, 22:337-51.

Pérez-Mayo, J. (2005), 'Identifying Deprivation Profiles in Spain: A New Approach, *Applied Economics*, 37:843-955.

Perry, B. (2002), 'The Mismatch Between Income Measures and Direct Outcome Measures of Poverty', *Social Policy Journal of New Zealand*, 19:101-127

Room, G. (1995), Poverty and Social Exclusion: The New European Agenda for Policy and Research. In *Beyond the Threshold.*, edited by G Room. Bristol: Policy Press.

Runciman, W.G. (1966), *Relative Deprivation and Social Justice*, London: Routledge

Sen, A. (1983), 'Poor Relatively Speaking', Oxford Economic Papers, 35, 2: 153-69

Stouffer, S.A., E.A. Suchman, L.C. Devinney, S.A. Star, and R.N. Williams (1949) *The American Soldier. I. Adjustment During Army Life*. Princeton NJ: Princeton University Press.

Townsend, P. (1979) *Poverty in the United Kingdom. A survey of household resources and standards of living.* Harmondsworth, Penguin Books.

Whelan , C. T., Layte, R., Maître, B. and Nolan, B. (2001), 'Income, Deprivation and Economic Strain', *European Sociological Review*,17,4:357-372.

Whelan, C. T and Maître, B. (2005a), 'Vulnerability and Multiple Deprivation Perspectives on Economic Exclusion in Europe: A Latent Class Analysis', *European Societies.* 7 :3 :423-450

Whelan, C. T and Maître, B. (2005b), 'Economic Exclusion, Multidimensional Deprivation and Social Integration in an Enlarged European Union', *International Journal of Comparative Sociology*