

POLICY PAPER

Identifying Economically Vulnerable Groups as the Economic Crisis Emerged*

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Abstract: A frequent refrain during recent debates on welfare cuts and tax increases has related to the need to “protect the vulnerable”. However, it is far from clear that a consensus exists on which individuals or groups are to be included under this heading with a consequent lack of clarity for the policy implications of pursuing this goal. In this paper, operating with a conception of social exclusion that incorporates notions of dynamics and multidimensionality, we make use of EU-SILC 2008 data for Ireland to clarify the distinction between income poverty and economic vulnerability. We then proceed to consider the relationship between these outcomes and multiple deprivation, financial pressures and perceptions of recent and future economic prospects. Our analysis is then extended to compare patterns of risk for poverty and vulnerability in relation to key socio-economic groups. Finally, we will consider the relationship between poverty and vulnerability and the distribution of welfare dependence. Our analysis suggests that the vulnerable but non-poor group may need to be a key focus of policy attention in the future.

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I INTRODUCTION

A frequent refrain, during recent debates relating to the cuts in public expenditure and increased taxation considered necessary to deal with the impact of the economic crisis, has been the need to “protect the vulnerable”. Where the focus is on particular socio-economic groups, however, there appears to be very little consensus regarding which groups are to be included under this heading. Attention can shift from older people to children, from the low-paid to the unemployed from lone parents to those with a disability; with the amount of time each group is on stage appearing to be influenced as much by their capacity to mobilise public opinion as the objective merits of their particular cases.

The main alternative to focusing on particular socio-economic groups has involved a reliance on household income measures and associated poverty measures. The recent TASC Hierarchy of Earnings, Attributes and Privilege (HEAP) report is one example of such a focus based exclusively on income statistics from EU-SILC (McDonough and Loughrey, 2009). This approach ignores the long-standing critiques of relying solely on current income at both national and European levels (Nolan and Whelan, 2007 and 2010). In recent years, general agreement has emerged that, despite the continuing vagueness of the term “social exclusion”, its main value lies in drawing attention to issues of dynamics and multidimensionality (Berghman, 1995; Room, 1999; Sen, 2000).

From this perspective, the ideal analysis would be based on panel data that allow us to explore the impact of the economic crisis on individuals in the future. An alternative, that would provide important insights into how such processes might unfold, would be to consider panel data for recent years. EU-SILC, the main data set on which we focus does have a rolling panel element. In principle, one-quarter of the original sample is retained over a four-year period. However, such data is not yet publicly available and since the number retained in practice appears to be considerably lower than one-quarter, the uses to which that data can be put remains to be explored. In the absence of appropriate panel data, we shall proceed to apply analytical techniques that seek to provide a proxy for dynamic analysis to the cross-sectional EU-SILC data set for 2008. One advantage conferred by a focus on the 2008 data is that a special module on debt, which is particularly relevant to our current concerns, was included that year. Experience of the consequences of accumulated debt is likely to be one of the major factors distinguishing the manner in which the current experience of recession will be distinguished from the comparable experience in the 1980s.

The income date for EU-SILC 2008 relates to the twelve month period prior to when interviews were conducted in the household while the remaining information relates to the point at which the interviews were conducted in 2008. The first reference to a recession in Ireland in the Economic and Social Research Institute's (ESRI) *Quarterly Economic Commentary* appeared in June 2008. Between 2007 and 2008 total public finance expenditure increased from 39 per cent of GDP to 45 per cent, a GNP increase of 4.4 per cent was translated into a decline of 2.9 per cent. The building employment index went from a small annual change of -1.9 per cent to a dramatic reduction of -15.6 per cent. An increase of 74,000 in 2007 in the total number of persons at work was transformed into a decline of 23,000 and the unemployment rate went from 4.6 per cent to 6.3 per cent.

Our analysis occurs then at a point in time where knowledge of the recession and the consequent implications for public expenditure was emerging and when its initial effects were gradually being felt. It cannot, however, provide a fully comprehensive account of the social consequences of the recession either for the population as a whole or for those we identify as economically vulnerable.

II USING NON-MONETARY DEPRIVATION INDICATORS TO CAPTURE POVERTY AND SOCIAL EXCLUSION

As knowledge of the limitations of relying solely on income to measure poverty and social exclusion has become more widespread, attention has been increasingly focused on multi-dimensional approaches (Boarini and d'Ercole, 2006; Bradshaw and Finch, 2003; Gordon *et al.*, 2000; Guio *et al.*, 2009; Nolan and Whelan, 2010; Whelan *et al.*, 2001). Such developments have taken advantage of the availability of non-monetary information to improve the measurement and understanding of poverty and social exclusion. Most quantitative research employs income to distinguish poor from non-poor. Initially, the motivation to employ deprivation indicators came from a perspective that accepted that low income could be used to identify the poor, but did not tell us all we needed to know about what it was like to be poor, and how people arrived in and coped with that situation (Townsend, 1979). However, deprivation indicators were subsequently employed to underpin a more radical critique of reliance on income relating to its failure to identify those who are unable to participate in their societies due to lack of resources and its failure to capture the fact that poverty and social exclusion are intrinsically multidimensional and about "more than money" (Ringen, 1988; Mack and Lansley, 1985; Gordon *et al.*, 2000; Pantazis, Gordon and Levitas, 2006, Nolan and Whelan, 2007).

Income poverty is conventionally measured as falling below a specified percentage of median income, for example 60 per cent (having adjusted income to take household size and composition into account).¹ Consistent poverty, as currently measured in Ireland using EU-SILC data, involves being below 60 per cent of median income and experiencing enforced deprivation in relation to two or more items making up an index of “basic deprivation”. The constituent items in this index relate to food; heating; clothes; furniture; and being able to afford to engage in family and social life. Using this measure involves a rather simple form of multidimensional analysis. Those who are both below a specified relative income threshold and experiencing enforced basic deprivation – marginalised on two constituent items rather than just one – are identified as consistently poor. In 2008 this measure identified 4.2 per cent of individuals as consistently poor compared to 14.4 per cent experiencing income poverty (or “at risk of poverty”) at the 60 per cent income threshold. In this paper we seek to extend the notion of multidimensionality in a number of distinct ways.

III ECONOMIC VULNERABILITY AND DYNAMICS

In addition to being concerned with multidimensionality, advocates of the social exclusion perspective have sought to distinguish it from the conventional income approach through its emphasis on dynamics – the manner in which processes unfold over time. Such concerns have led to the emergence from a number of sources of a focus on what has been termed ‘vulnerability’. This involves a shift of focus from current deprivation to insecurity and exposure to risk and shock. The International Monetary Fund (IMF) (2003), the United Nations (UN) (2003) and the World Bank (2000) have developed a range of approaches to measuring vulnerability at the macro level. The World Bank (2000) sees vulnerability as reflecting the risk of experiencing an episode of poverty over time but also a heightened probability of being exposed to a range of risks.

Our objective in this paper is to focus at a micro level to identify groups who are vulnerable to economic exclusion in the sense of being distinctive in their risk of falling below a critical resource level, being exposed to life-style deprivation and experiencing subjective economic stress. Usually, the groups into which researchers classify their observations are known in advance and correspond to the values taken by particular variables or combination of

¹ Using the national equivalence scale where a weight of 1 is attributed to the first adult (aged 14+ years), 0.66 to each subsequent adult and 0.33 to each child aged less than 14 years.

variables. In some cases, however, the groups of interest are not known a priori and must be discovered using suitable classification techniques. Latent class analysis assumes that each individual is a member of one and only one of N underlying classes and that, conditional on membership of an unobserved class, the observed variables are independent of each other. Conditional independence is a version of the familiar idea that the correlation between two variables may be a result of their common dependence on a third variable (McCutcheon and Mills, 1998).

The basic notion is that there are underlying processes that result in distinct clusters of individuals. Within those groups, indicator outcomes are independent of each other because the factors that lead to individuals being located there are those that accounted for the original correlations. The question is then whether such simplifying assumptions allow us to identify clusters of individuals with distinct multidimensional profiles while at the same time producing an allocation of individuals to the cells of the relevant multidimensional table that comes sufficiently close to the observed patterns.

The contrast between clusters is in terms of *risk profiles* rather than *current* patterns of deprivation. In the analysis that follows we specify that individuals are allocated to one of two classes. However, neither the size of the underlying clusters nor the risk profiles are specified a priori but are determined by the objective of finding the closest possible fit to the observed data consistent with the simplifying assumptions of our model.²

We begin by seeking to implement a relatively restricted notion of vulnerability. Starting with the income poverty measure and the basic deprivation component of the Irish consistent poverty measure we add an indicator relating to the extent to which households experience “difficulty or great difficulty in making ends meet”. We then ask whether we can identify a cluster of individuals who are characterised by a multidimensional profile relating to these three indicators that involves a heightened level of risk that sets them apart from the remainder of the population.

IV DATA

Our analysis makes use of the Irish 2008 EU-SILC survey which is a voluntary annual survey of private households conducted by the Central Statistics Office (CSO). In 2008, the total completed sample size was 5,247 households and 12,551 individuals (CSO,). The analysis reported here refers to all persons in the EU-SILC. Where household characteristics are involved

² Earlier applications of this approach include Dewilde (2004) and Moisiu (2004).

these have been allocated to each individual. Where more than one person answered a question, the response of the household reference person (HRP) has been allocated to each individual in the household.

Our income measure focuses on income poverty defined in terms of median disposable income adjusted for household size employing the OECD modified equivalence scale. Our analysis distinguishes four categories; those below 50 per cent of median income, those between 50 to 60 per cent, those between 60 to 70 per cent and those above 70 per cent.

Our analysis makes use of forty-two life-style deprivation indicators. Full details of these items and a comprehensive discussion of the choice of thresholds are provided in Whelan *et al.* (2007). They can be broken down into the following five relatively distinct life-style deprivation dimensions.

1. Basic deprivation – consisting of 11 items relating to food, clothing, furniture, debt, and minimal participation in social life. Our subsequent analysis distinguishes between those deprived on 2 or more items and all others.
2. Consumption deprivation – comprising 19 items. Our subsequent analysis distinguishes between those deprived on 4 or more items and the remaining individuals.
3. Housing facilities – is a four-item index comprising basic facilities such as bath, toilet etc. Our analysis involving this variable focuses on the dichotomy between those experiencing deprivation on one of these items and all others.
4. Neighbourhood environment – is a five-item index encompassing pollution, crime/vandalism, noise, and deteriorating housing conditions. Our analysis focuses on the contrast between those experiencing deprivation on 2 or more of these items and all others.
5. Health status of the HRP: This dimension comprises three-items relating to overall evaluation of health status, having a chronic illness or disability and restricted mobility. In this case our analysis relates to the contrast between those experiencing deprivation in relation to any of these 3 items and the remaining individuals.³

We also make use of an “economic stress” dichotomy that distinguishes those households that have “difficulty” or “great difficulty” in making ends meet from all others.

³ The inclusion of health as an element of deprivation is open to debate as health is so substantially influenced by age. However, unlike aspects such as social isolation that has been included as part of a multidimensional conception of social exclusion, health outcomes have consistently been shown to be associated with other dimensions of deprivation.

Finally we employ a set of measures relating to financial pressures that comprise the following set.

- Arrears relating to mortgage payments, rent utility bills etc. We distinguish between those experiencing problems in relation to any of these elements and all others.
- Debt problems in the last 12 months relating to ordinary living expenses, identified by a binary outcome (Yes/No).
- Housing costs experienced as a great burden. Distinguishing those thinking that housing costs are “a heavy burden” or “somewhat of a burden” from all others.

V ANALYSING ECONOMIC VULNERABILITY

The World Bank (2000) sees vulnerability as reflecting both the risk of experiencing an episode of poverty over time but also a heightened probability of being exposed to a range of interrelated risks. Here, following Whelan and Maître (2005a, b), we implement an approach to the measurement of vulnerability at the micro level through the use of latent class analysis.

Our analysis focuses on explaining the distribution of individuals across a 4*2*2 tabulation comprising four categories of income poverty by the dichotomous basic deprivation indicator by the dichotomous economic stress. Our objective is to find a parsimonious model of the underlying processes producing an allocation of individuals to the sixteen cells of this table that generates a set of expected frequencies that comes close to reproducing the observed frequencies. Our analysis employs a latent class model that specifies that the observed patterns are accounted for by identifying two underlying and contrasting vulnerable and non-vulnerable groups. This is obviously an oversimplification. However, specifying a larger number of classes leads to further differentiation within the non-vulnerable class rather significantly affecting our conclusions regarding the size and nature of the vulnerable class.

In Table 2 we display the results for model fit, size of the vulnerable class and conditional probabilities. Given the large sample size, any truly parsimonious model is unlikely to produce a satisfactory fit to the observed data by strict statistical criteria. Nevertheless, the latent class model with two classes does remarkably well in accounting for the patterns of association. The G^2 likelihood ratio is a measure of goodness of fit. The lower its value the more closely the expected frequencies correspond to the observed. The size of the G^2 for the independence model provides one benchmark against which to assess the fit of the latent class model. The independence model assumes, somewhat

unrealistically, that there is no relationship between risk of poverty, consumption deprivation and subjective economic stress. The latent class model reduces the deviance for the independence model by 99.1 per cent. Focusing on the index of dissimilarity or the proportion of cases misclassified, the figure for the two class model is .009. Thus in each case the 2-class latent class model comes close to reproducing the observed data.

Table 1: *Economic Vulnerability Profile with EU-SILC data*

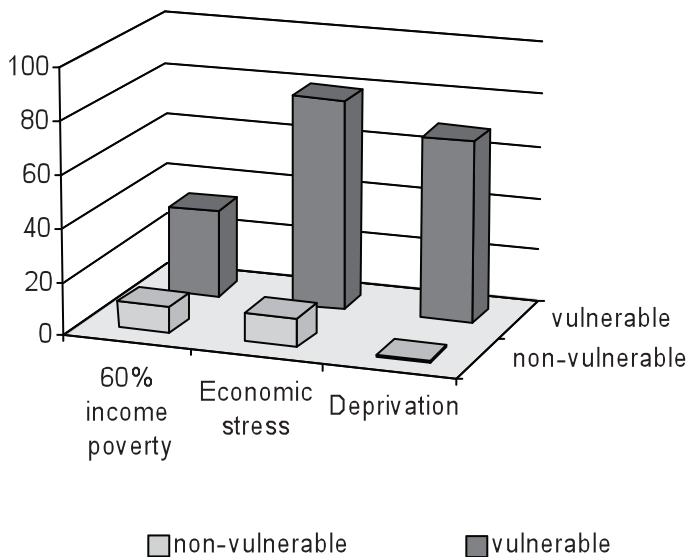
<i>Class Type</i>	<i>% Non-Vulnerable</i>	<i>% Vulnerable</i>
Class Size	81.3	18.7
G ²		33.9
Df.		4
Reduction in independence model G ²		99.1%
Index of dissimilarity		0.009
Income poverty		
< 70 per cent of median income	17.8	59.9
< 60 per cent of median income	10.0	33.2
< 50 per cent of median income	5.9	16.5
Basic Deprivation (2+)	0.8	69.1
Economic Stress (difficulty or great difficulty in making ends meet)	10.9	80.1
N		12,530

The two class model identifies 18.7 per cent of individuals as economically vulnerable compared to 14.4 per cent falling below the 60 per cent income poverty line. The consistently poor form a sub-set of the much larger vulnerable group. The patterns of differentiation between the economically vulnerable and non-vulnerable, in terms of relative risks of experiencing each of the three forms of disadvantage included in the analysis, are set out in Table 1 and in a graphic summary in Figure 1. Focusing first on income poverty we see that economic vulnerability carries a risk of 33.2 per cent of being found below the 60 per cent of median income threshold compared to 10.0 per cent for the non-vulnerable (the corresponding figures for the 50 per cent income threshold are 16.5 and 5.9 per cent and for the 70 per cent income threshold, 59.9 and 17.8 per cent). In each case the disparity between the two classes is approximately 3:1.

Despite these disparities, income is the least powerful differentiating factor. The respective figures for subjective economic stress are 80.1 and 10.9

per cent involving a differential of almost 8:1 which is substantially higher than for any of the income poverty lines. However, even this disparity is modest in comparison with that relating to basic deprivation. A mere 0.8 per cent of the non-vulnerable class experience enforced deprivation of 2 or more basic deprivation items compared to 69.1 per cent of the vulnerable involving a disparity of over 80:1.

Figure 1: *Vulnerability to Economic Exclusion*



The primary factor differentiating the vulnerable from the non-vulnerable class is the relative risk of being found above the basic deprivation threshold. It is followed at some distance by subjective economic stress. Income poverty is clearly a contributory factor but the contrast is a good deal less striking than in relation to the foregoing factors.

In Table 2 we document the overlap between economic vulnerability and income poverty at the 60 per cent income threshold. Given the numbers respectively poor and vulnerable, the maximum overlap that could be observed is 77.0 per cent. The actual overlap is a good deal more modest at 48.3 per cent. Looked at another way just over one-third of the vulnerable cluster is drawn from the poor and two-thirds from the non-poor. Poverty and economic vulnerability are obviously related but still relatively distinct.

The consistently poor constitute a sub-set of the much larger economically vulnerable cluster. While none of the non-vulnerable are consistently poor this figure rises to 23.1 per cent for the vulnerable.

Table 2: *Risk and Composition of Economic Vulnerability by Income Poverty at 60 Per Cent of Median Income*

	<i>Non-Poor</i> %	<i>Poor</i> %
Risk	12.8	48.3
Composition	63.5	36.5

In order to explore the differences between economic vulnerability and income poverty, in what follows we construct a “poverty and vulnerability profile” that involves cross-classifying the two outcomes. In Table 3 we show the distribution of individuals across the four categories of the profile. Three-quarters of the population are neither poor nor vulnerable. The remaining one-quarter are divided as follows. Of the population 7 per cent are poor but not vulnerable. A further 11 per cent are vulnerable but not poor. Finally, 7 per cent are both vulnerable and poor. This final category includes all of the consistently poor who make up 60 per cent of the group. It also includes 2.6 per cent of the population who are both poor and vulnerable but are not experiencing enforced deprivation relating to two or more basic items.

Table 3: *Distribution Across Categories of Poverty and Economic Vulnerability Profile*

	%	<i>N</i>
Non-Poor and Non-Vulnerable	74.6	9,353
Poor and Non-Vulnerable	7.4	931
Non-Poor and Vulnerable	11.0	1,378
Poor and Vulnerable	6.9	869
Total	100	12,530

VI POVERTY, ECONOMIC VULNERABILITY AND MULTIPLE DEPRIVATION

Levitas *et al.* (2007) develop the notion of multidimensional deprivation as involving a wider restriction of access to commodities and services necessary for full participation in society.⁴ Adopting this broader focus on multiple

⁴ Levitas *et al.* (2007) see such multidimensional deprivation as affecting both the quality of life of individuals and the equity and cohesion of society as a whole. However, we would prefer to see such relationships between individual outcomes and societal characteristics as matters for empirical enquiry rather than definition. (See Whelan and Maitre, 2005b.)

deprivation, problems arise from the fact that correlations between deprivation dimensions tend to be a good deal more modest than is often imagined. This is true even in relation to income and consumption deprivation but the observed overlap becomes considerably lower if concern with multi-dimensionality encompasses factors such as housing, neighbourhood environment, health and, indeed, social and political participation.

Because of the foregoing difficulties we have chosen to focus initially on economic vulnerability involving exposure to a set of key interrelated but restricted risks. This leaves open the issue of the relationship between such vulnerability and multiple deprivation understood as simultaneous experience of a range of deprivation dimensions. In Table 4 we show the distribution of a variety of forms of deprivation, levels of multiple deprivation, financial pressures and perceptions of recent and future economic circumstances across the categories of the poverty and vulnerability profile.

Focusing first on different forms of deprivation, we find that in each case the major contrast is between the two vulnerable groups and the remaining categories. Somewhat surprisingly, the highest level of deprivation is observed for the vulnerable but non-poor group. For the consumption dimension, the lowest level of 3 per cent is observed for the non-poor and non-vulnerable group. The figure rises to 7 per cent for the poor and non-vulnerable. It then increases sharply to 36 per cent for the vulnerable and poor before peaking at 46 per cent for the vulnerable and non-poor. For housing deprivation the lowest level of 27 per cent is associated with the poor and non-vulnerable group. It rises marginally to 30 per cent for the non-poor and non-vulnerable cluster. For both vulnerable groups the figure lies between 45-50 per cent. For neighbourhood environment deprivation, the lowest level of 7 per cent is again associated with the poor but not vulnerable cluster. It rises slightly to 10 per cent for the non-poor and non-vulnerable group. This figure doubles to 18 per cent for the group both vulnerable and poor. The highest level of 23 per cent is found for the vulnerable but non-poor group. Finally, in relation to health, little difference is observed within the non-vulnerable category with the respective figures for the non-poor and poor being 27 and 29 per cent. The level rises to 42 per cent for those both vulnerable and poor and increases to 49 per cent for the vulnerable but non-poor.

Multiple deprivation is calculated as the sum of the four dichotomies utilised in Table 4 together with basic deprivation of 2+. Being above the relevant threshold on three or more of the deprivation dimensions is an extremely rare phenomenon among the non-vulnerable characterising less than 1 per cent of the non-poor group and less than 2 per cent for the poor. The figure then rises strikingly to almost 31 per cent for those vulnerable and poor. A further significant increase to almost 42 per cent is observed for those

vulnerable but not poor. The numbers experiencing deprivation on two dimensions ranges between 7 to 8 per cent for the non-vulnerable. It rises to 23 per cent for those both poor and vulnerable and peaks at 29 per cent for those vulnerable but not poor. The figure for those exposed to deprivation on two or more dimensions ranges between 8 and 10 per cent for the non-vulnerable, It rises to 53 per cent for those both vulnerable and poor and finally to over 70 per cent for those vulnerable and non-poor.

Table 4: *Deprivation Dimensions, Multiple Deprivation, Financial Problems and Perception of Past and Future Financial Circumstances by Poverty and Vulnerability Typology*

	<i>Non-Poor and Non-vulnerable</i> %	<i>Poor but Not Vulnerable</i> %	<i>Vulnerable but Not Poor</i> %	<i>Vulnerable and Poor</i> %
<i>Deprivation Dimensions</i>				
Consumption 4+	3.0	6.9	45.5	35.5
Housing 1+	29.6	27.4	49.8	44.6
Neighbourhood 2+	9.6	6.9	23.1	18.4
HRP Health 1 +	27.2	28.6	49.1	41.7
% in category	74.6	7.4	11.9	6.9
<i>Multiple Deprivation</i>				
0	61.8	56.5	2.4	17.0
1	30.1	33.4	25.8	27.7
2	7.2	8.4	29.4	22.9
3+	0.9	1.7	41.8	30.9
<i>Financial Problems</i>				
Arrears	1.6	1.2	12.4	12.1
Debt problems for ordinary living expenses	5.2	4.2	40.3	31.8
Housing cost a burden	14.2	16.0	69.4	64.9
<i>Perceptions of Past and Future Financial Circumstances</i>				
Major drop of income in the past 12 months	16.1	19.1	36.3	34.8
Expect financial situation to worsen in the next 12 months	19.7	20.3	35.8	35.0

We extend our analysis by considering patterns of differentiation in relation to arrears and debts. For arrears we find that the level is just over 1 per cent for the non-vulnerable groups. The figure rises to 12 per cent for the two vulnerable groups. The numbers in non-vulnerable households experiencing debt problems ranges between 4 and 5 per cent. The figure rises sharply to over 30 per cent for those vulnerable and poor. Finally, it increases to 40 per cent for the vulnerable but not poor cluster. Focusing on perceptions of financial situation relating to the previous and next year, we find 16 to 19 per cent of the non-vulnerable report experiencing a drop in income in the past twelve months. The figure then rises sharply to 36 per cent for the vulnerable but not poor group before falling back slightly to 35 per cent for those vulnerable and poor. An almost identical pattern was observed with regard to expectation relating to the future financial situation.

The foregoing analysis demonstrates that the economically vulnerable are sharply differentiated from the non-vulnerable not only in terms of the constituent elements that define such vulnerability but also in terms of broader patterns of deprivation, levels of multiple deprivation and experience of financial pressures. Vulnerability is in this important sense quite clearly a multidimensional phenomenon. As we noted earlier, a revealing aspect of these results is that the economically vulnerable but not poor group are consistently the least favoured group directing our attention to unfavourable circumstances that go beyond low levels of current disposable income. Correspondingly, the situation of the poor but non-vulnerable group is consistently more favourable than might have been anticipated which as we shall see raises questions about the extent to which current disposable income constitutes an adequate indicator of their command over resources.

VII POVERTY, ECONOMIC VULNERABILITY AND SOCIO-ECONOMIC DIFFERENTIATION

Following Chambers (1989, p. 2), we can define vulnerability as not necessarily involving current deprivation but rather insecurity and exposure to risk and shock. In this section we consider the socio-economic factors that are associated with different combinations of poverty and economic vulnerability. In considering the factors contributing to such vulnerability it is useful to keep in mind Bradshaw and Finch's (2003) suggestion that it is useful to distinguish between *risk factors*, which signal the greater susceptibility of a category of individuals, and *triggers* which have a direct causal impact. It is on the former that we focus.

Our particular focus here is on factors that differentiate between those vulnerable and not poor and those poor but not vulnerable. Our exploratory analysis led us to focus on a restricted set of factors. Our analysis of the pattern of socio-economic differentiation covers variables such as employment status, social class and housing tenure, which in terms of an increasingly employed distinction may be thought 'old social risks' conceived of as originating in the industrial revolution. The second set of indicators that are associated with post-industrialism and changing family structures comprise separation, divorce and lone parenthood.⁵

Table 5 sets out the results of a multinomial regression that examines the extent to which these factors allow us to predict in which category of the poverty and vulnerability typology individuals are located. The characteristics of the HRP entered into the analysis as independent variables comprise labour force status, marital status and lone parent. The final variable entered related to housing tenure. When entered simultaneously these factors produced a Nagelkerke R^2 of 0.308. When entered separately the LFS, tenure, marital status and lone parent variables were associated with R^2 of respectively 0.208, 0.049, 0.031 and 0.045. The effects of these variables are relatively independent with the sum of these figures equalling 0.333 compared to the figure of 0.308 when they are entered simultaneously.

The coefficients we report in Table 5 are odds ratios showing the impact of a particular socio-economic factor on the odds of being in the category of the typology under consideration relative to the odds of being in the reference category containing those individuals neither poor nor vulnerable. Focusing first on the contrast between being poor and vulnerable versus being neither poor nor vulnerable, a clear pattern of differentiation emerges in relation to the labour force status of the HRP. The odds ratio increases gradually as one moves from the self-employed with and without employees; farmers; home duties; unemployed and ill/disabled where the odds ratio reaches 15 and in education where it peaks at 20. Exclusion of the HRP from the labour market and the extent to which that is involuntary and sustained proves to be a powerful differentiation factor.

The findings in relation to housing tenure also provide a clearly interpretable pattern. The most favoured position is occupied by mortgage holders. For outright owners the odds on being poor and vulnerable rather than neither poor nor vulnerable is 1.8 times higher than for the mortgage

⁵ For further discussion of the distinction between new and old social risks see Bonoli (2006); Taylor-Gooby (2004) and Whelan and Maitre (2008). In this context we also considered the impact of life cycle. Age is negatively associated with vulnerability. However, the age group of the HRP had an extremely modest impact (Nagelkerke $R^2=0.012$) and added little to the level of variance accounted for by the factors we have included in our analysis.

holders group. The disparity rises to 2.7 for private tenants before increasing respectively to 5.9 and 8.0 for local authority owners and tenants. Clearly housing tenure captures variation in accumulated resources that go beyond the value of property as such.

A greater likelihood of being found in the poor and vulnerable rather than non-poor and non-vulnerable category is associated with each of our indicators of 'new' social risk but the scale of impact is more modest. For separation the odds ratio is 1.5 and for divorce it is 2.6. Finally, for a lone parent HRP the disparity is 4.3. Each of these factors can be seen to have an impact on both resources and needs.

Switching our attention to the factors differentiating those in the vulnerable but not poor category from the poor and vulnerable group, we observe a somewhat different picture. The self-employed are relatively unlikely to be found among the vulnerable but not poor category. The self-employed with employees are actually over six times less likely than employees to be found here. Farmers are only half as likely to be found in this category. For those in home duties, unemployment and illness/disability categories the odds ratio while clearly significant are more than halved relative to the figures for poverty and vulnerability.

The pattern of differentiation for tenure is much less sharp for this comparison and outright owners constitute the most advantaged group. Similarly, for lone parenthood we observe a halving in the odds ratio but for separation and divorce we find a modest increase. Finally, turning to the poor but not vulnerable group, we find a further variation in the pattern of results. Relative to employees the self-employed are substantially more likely to be found in this category than the poor and not vulnerable. This is particularly true of those with employees where the odds ratio reaches 8. Exclusion from the labour market continues to be significantly differentiating but less so than when poverty is combined with vulnerability. For the housing tenure variable we also observe a change in the ordering with local authority purchasers group having the highest likelihood of being found in this category with an odds ratio of 8. The divorced group are actually slightly less likely to be found in this category than the reference group while the odds for the separated group and lone parents exceed 2.

Overall, we find that those vulnerable and poor are sharply differentiated from those non-poor and non-vulnerable across the full range of 'old' and 'new' social risks that we have identified. Labour force status is the key factor but housing tenure, marital status and lone parenthood are also key contributory influences. The influence of this range of factors undoubtedly reflects the extent to which they are associated with both current and permanent income and household needs. Membership of this cluster is associated with a set of

Table 5: *Multinomial Regression of Poverty and Vulnerability Typology on Household and Household Reference Person Characteristics (Reference Category is Being Neither Poor Nor Vulnerable)*

	<i>Poor and Vulnerable</i>		<i>Vulnerable Not Poor</i>		<i>Poor Not Vulnerable</i>	
	<i>Odds Ratio</i>	<i>Significance</i>	<i>Odds Ratio</i>	<i>Significance</i>	<i>Odds Ratio</i>	<i>Significance</i>
<i>HRP Labour Force Status</i>						
Employee (reference)	1.000		1.000		1.000	
Retired	1.612		1.539		3.091	***
Self-employed with employees	2.012	*	0.157	**	3.226	**
Self-employed without employees	5.113	***	1.564		8.281	***
Famer	7.106	***	0.498		4.642	***
Home Duties	7.867	***	2.962	***	4.327	***
Unemployed	15.037	***	6.807	***	4.200	***
Ill/Disabled	15.015	***	7.885	***	6.518	***
In Education	20.190	***	3.236	***	10.662	***
<i>Tenure</i>						
Mortgage Holder (Reference)	1.000		1.000		1.000	
Outright Owner	1.816	**	0.733		2.758	***
Private Tenant	2.685	***	2.271	**	4.295	***
Local Authority Purchaser	5.858	***	4.168	***	7,973	***
Local Authority Tenant	8.032	***	4.156	***	3.970	***
Separated	1.449		2.177	**	2.339	**
Divorced	2.596	**	3.052	***	0.804	
Lone Parent	4.334	***	1.856	***	2.455	***
Nagelkerke R ²	0.308					
Reduction in likelihood ratio	3,554					
Degrees of freedom	45					
N	12,366					
*P,< .1 ** P<.05 *** P < .001						

factors that appear to reflect not simply distinctively low incomes, although 60 per cent of the group are in the bottom three deciles, but with extremely limited command over longer-term resources.

The picture that emerges for the non-poor but vulnerable groups is somewhat different. With the exception of retirement, the impact of being

inactive in the labour market is significantly weaker. Self-employment is generally less likely to be associated with membership of this group as is outright home ownership. While marital instability and lone parenthood increase the risk. This is a group that appears to be characterised by an absence of sufficient accumulated resources to cope with what appear to be distinctive financial pressures. For the income poor but not economically vulnerable cluster a distinctive pattern of risks also emerges. Here self-employment and home ownership have positive influences. The profile of social differentiation is consistent with low current income but with a capacity to draw on accumulated resources and a lesser set of demands on such resources.

Further insight into the distinctive character of the individual clusters that we have identified can be obtained by examining, as we do in Table 6 using the European Socio-economic Classification (ESeC) (see Rose and Harrison, 2007 and 2009), the impact that social class has on cluster membership where the HRP is aged less than 65 years. While the inclusion of categories relating to self-employment in the schema means that ESeC cannot be interpreted entirely in hierarchical terms, for the contrast between the vulnerable and poor and the non-vulnerable and non-poor a relatively straightforward pattern of hierarchical differentiation emerges with the higher salariat as the benchmark. The odds ratio rises from 1.8 for the lower salariat to 5 for higher grade white and blue collar groups. It then rises to 11.6 for the lower grade white and blue collar groups before rising to 13.1 and 15.9 for the petit bourgeoisie and farmers respectively. The odds ratio finally peaks at 19.3 for semi- and non-skilled workers. The strength of the hierarchical effects for this cluster is consistent with significant disparities between the classes in terms of both current and permanent income.

For the vulnerable but not poor cluster two important differences are observed. In the first place the contrasts between the middle class and working class groups are less sharp. Similar reductions are observed for each of the comparisons involved. While a clear contrast exists between the middle class and the working class in terms of likelihood of being in the vulnerable but not poor category, the risk of being found there is more evenly spread across the class hierarchy. The second distinguishing factor relates to a much less sharp contrast between the property owning groups and the higher salariat. The crucial differentiating factors appear to be related more to longer term command over resources than current income.

Finally, a strikingly different pattern emerges for the income poor but not vulnerable group. For this cluster the highest odds ratios of 8.8 and 8.1 respectively are associated with the petit bourgeoisie and farmers. These groups are followed closely by the semi- and non-skilled group but the next

Table 6: *Multinomial Regression of Poverty and Vulnerability Typology on HRP Social Class*

<i>HRP Social Class</i>	<i>Poor and Vulnerable</i>		<i>Vulnerable Not Poor</i>		<i>Poor Not Vulnerable</i>	
	<i>Odds Ratio</i>	<i>Significance</i>	<i>Odds Ratio</i>	<i>Significance</i>	<i>Odds Ratio</i>	<i>Significance</i>
Higher Salariat (ESeC Class 1) Reference Category	1.000		1.000		1.000	
Lower Salariat (ESeC Class 2)	1.797		3.466	**	1.871	
Higher Grade white and blue collar (ESeC classes 3 and 6)	5.006	**	7.800	***	2.459	*
Petit Bourgeoisie (ESeC Class 4)	13.067	***	5.004	***	8.807	***
Farmers (ESeC Class 5)	15.948	***	0.738	***	8.082	***
Lower Grade white and blue collar (ESeC classes 7 and 8)	11.561	***	10.897	***	4.290	***
Semi and non-skilled workers (ESeC class 9)	19.299	***	12.073	***	7.885	***
Nagelkerke R ²	0.127					
Reduction in likelihood ratio	1,312.2					
Degrees of freedom	18					
N	11,926					
*P < 0.1, ** P< 0.01, *** P < .001						

highest odds ratio is 4.3. The balance of impact between property effects and hierarchy effects is strikingly different for this cluster than for the other two. These findings reflect the distinctive situation of property owning groups in relation to longer term command over resources.

It is clear from the foregoing analysis that conclusions relating to the impact of social class are crucially affected by the comparison on which one focuses. Where we take both poverty and economic vulnerability into account a notable pattern of class differentiation emerges. The contrast between middle class and working groups is striking. Property effects are more powerful than we might expect and probably reflect both heterogeneity in these groups and the tendency for current income to be underestimated. Focusing on vulnerability unaccompanied by poverty, we find a more muted contrast between middle class and working class groups accompanied by weak

to negative property effects. Finally, for the poor but not vulnerable group property effects dominate and hierarchical effects are weaker than in either of the two earlier cases.

Our findings suggest that concerns expressed by authors such as Daly and Silver (2008, p. 556) that a social exclusion framework necessarily promulgates a dichotomous view of society are misplaced. Focusing on a dichotomous outcome variable does not preclude us from uncovering differentiated patterns of social disadvantage. What our analysis reveals is that the extent and nature of such differentiation may be crucially influenced by the choice of comparison.

VIII POVERTY, ECONOMIC VULNERABILITY AND WELFARE DEPENDENCE

In order to enhance our understanding of the nature of vulnerability, in Table 7 we show the distribution of welfare dependency experienced by the households in which individuals are involved by the poverty and vulnerability profile. We are using the term “welfare dependency” to refer to the proportion of a household’s income derived from such sources and not in the sense of dependency of last-resort means-tested social assistance. For almost two-thirds of the non-poor and non-vulnerable group welfare income constitutes less than 25 per cent of their net household income and for four out of five it comprises less than 50 per cent. For only 13 per cent does welfare income account for over 75 per cent of their net incomes.

Among the poor but non-vulnerable we observe a polarisation. For 30 per cent of this group welfare is the source of less than 25 per cent of their income. On the other hand, for almost 50 per cent the figure is 75 per cent or more. For the vulnerable but not poor, the number exhibiting a low dependency is significantly lower with only 20 per cent being found in the group drawing less than 25 per cent of their income from welfare sources. In contrast over 40 per cent are found in the intermediate categories. Finally, less than 15 per cent of the vulnerable and poor group derive less than 25 per cent of their household income from welfare transfers while 55 per cent draw 75 per cent or more from this source.

In Table 8 we break down the types of welfare support by the typology. The key benefits differentiating between categories of the poverty and vulnerability typology are the disability and unemployment benefits. Among those vulnerable almost one in two are in households with some income from this source. For both of the non-vulnerable categories this figure is closer in each case to one in five. The poor and vulnerable cluster constitutes an

Table 7: *Distribution of Welfare Dependency by Poverty and Vulnerability Typology*

	<i>Non-Poor and Non-Vulnerable</i>	<i>Poor but not Vulnerable</i>	<i>Vulnerable but Not Poor</i>	<i>Vulnerable and Poor</i>
	%	%	%	%
<i>Welfare Dependence</i>				
< 25 per cent	65.6	30.2	19.9	14.6
25-50 per cent	14.5	10.5	22.3	13.8
50-75 per cent	6.7	11.3	17.1	16.9
75-100 per cent	13.2	47.9	40.7	54.6

Table 8: *Forms of Welfare Support by Vulnerability Typology*

	<i>Non-Poor and Non-Vulnerable</i>	<i>Poor but not Vulnerable</i>	<i>Vulnerable but Not Poor</i>	<i>Vulnerable and Poor</i>
	%	%	%	%
<i>Type of Benefit</i>				
Old Age Pension	20.2	15.4	14.9	5.5
Survivors' Benefit	2.8	4.1	3.3	2.5
Disability Benefit	19.9	14.9	46.1	22.8
Unemployment Benefit	19.5	20.0	45.7	37.7
Family/Children's Allowance	60.9	68.0	78.1	77.8

intermediate case being closer to the non-vulnerable groups in relation to disability, but to the vulnerable but not poor group with regard to unemployment benefit. Both vulnerable groups are somewhat more likely to be in receipt of income for family/children benefits with the figure being close to 80 per cent, the figure falls to close to 70 per cent for the poor but non-vulnerable and to 61 per cent for the non-poor and non-vulnerable. Receipt of old age benefit is most likely to be observed in the households of the non-poor and non-vulnerable where the figure is 20 per cent and lowest for the poor and vulnerable where it falls to 6 per cent. The vulnerable and non-poor are, therefore, quite clearly differentiated from the poor and non-vulnerable not only in terms of a range of socio-economic factors but also in terms of receipt of welfare benefits directly related to exclusion from the labour market.

IX CONCLUSIONS

In this paper we have sought to address a set of issues relating to economic vulnerability in the context of recent debates relating to the consequences of cuts in public expenditure. We have developed the argument that it is not

possible to address such issues solely on the basis of a focus on income poverty. This is so because over half of those identified as income poor do not appear to be distinctively disadvantaged in terms of a range of deprivation dimensions that we have considered or in terms of multiple deprivation across these dimensions. Our findings relating to experience of financial pressures and perceptions of financial circumstances in the past and forthcoming year are entirely consistent with this conclusion.

These findings are in line with the arguments that motivated the development of a consistent poverty measure in addition to an income poverty indicator. However, as we have noted, the consistent poverty measure involves a highly restricted form of multidimensionality. Here, drawing on the literature on social exclusion, we have sought to develop an approach that captures a somewhat broader notion of multidimensionality and recognises the dynamic aspect of such exclusion. We have done so by identifying an economically vulnerable group comprising 18 per cent of the population. This group can be partitioned in a cluster making up 7 per cent of population that are also income poor and 11 per cent who are above the income poverty threshold. The consistently poor are all drawn from this former group but it also includes a group of 2.5 per cent of the population who are currently income poor and at *high risk* of experiencing basic deprivation and economic stress but are not *currently* above the basic deprivation threshold. As we might expect, the vulnerable and poor group are sharply distinguished from the non-vulnerable groups in terms of deprivation, financial pressures and perceptions of recent and future financial circumstances. However, it is notable that this contrast is just as striking in relation to the non-vulnerable who are found above the poverty line as for those below it. Similarly, those vulnerable but not poor are differentiated from both non-vulnerable groups in a manner that is as sharp, and in a number of cases sharper, as for the poor and vulnerable cluster.

As the forgoing makes clear, if poverty and social exclusion are about something more than money and if that “something” includes a higher risk of being exposed to the range of factors we have considered such as forms of deprivation and economic stresses and pressures, then it appears to be economic vulnerability rather than income poverty that is crucial. In order to understand the contrast between income poverty, as such, and vulnerability we proceeded to consider the socio-economic patterning of such risks. Different combinations of poverty and vulnerability are characterised by varying patterns of social structuring. These findings are consistent with an understanding that simultaneous exposure to vulnerability and poverty appears to be related to deficiencies with regard to both current and long-term resources and the need to provide for additional needs. The experience of

vulnerability unaccompanied by poverty appears to be linked with an absence of wider ranging or long-term resources and above average needs. Finally, exposure to income poverty in the absence of vulnerability seems to be related to the limitations of current disposable income as an indicator of broader command over resources.

The key socio-economic factors distinguishing the economically vulnerable and, in particular those vulnerable and not poor, include exclusion from the labour market, lower social class and local authority housing. These factors are a priori ones that are likely to be particularly good indicators of limits on the capacity to accumulate the kind of resources that provide a buffer against current deprivation, economic stress and financial pressures. Other factors such as separation, divorce and lone parenthood and specific forms of labour market disadvantage such as illness and disability are likely to serve as proxies for both limited accumulation of resources and distinctive need levels. In contrast, the strength of the association of self-employment with being income poor but not vulnerable and the very limited role of the foregoing variables in identifying this cluster suggest for this group that current income is a particularly poor indicator of the balance between resources. The observed patterns of variation across the categories of the poverty and vulnerability profile in relation to patterns of deprivation, financial pressures and perceptions of the economic environment are entirely consistent with these conclusions.

The vulnerability perspective leads to a substantially greater emphasis on stratification by labour force status and social class than life-cycle or life course per se.⁶ It suggests that a discourse on social policy that focuses primarily on the life course is unlikely to be helpful in identifying and targeting those most affected by the economic crisis. A major advantage of the economic vulnerability perspective is that it allows us to deal not only with “false positives”, as is the case with consistent poverty measures but also “false negatives”. Heady (2009) a recent advocate of a multidimensional approach to measuring poverty, proposes that an appropriate measure should take into account consumption and wealth, leading to much lower estimates of poverty than purely based on income measures. This approach suggests that households which have an adequate income or a reasonable amount of net asset value should normally be capable of providing a sustainable level of adequate consumption for themselves while otherwise policy intervention of family supports are needed.

⁶ Earlier analysis shows the importance of interaction between social class and life-cycle or life-course stage (Whelan and Maitre, 2008).

This seems to involve a rather narrow conception of policy interventions. It was precisely to avoid the dangers arising from such narrowness that those responsible for the development of consistent poverty indicators in Ireland have never recommended sole reliance on them (Layte *et al.*, 2001, Whelan, 2007). As we have shown, while the non-vulnerable and non-poor have a low dependence on social welfare all three of the remaining groups exhibit a relatively high level of reliance on such income. In the case of the low income and non-vulnerable group it does not automatically follow that, either in terms of longer-term sustainability of an adequate level of consumption or recognition of accumulated welfare rights, that such expenditure is necessarily misplaced. However, the fact that unlike the case for the non-poor and vulnerable this expenditure is concentrated in the middle stages of the life-course does suggest that this requires further exploration. In the case of the vulnerable but not poor there is nothing in their current circumstances to suggest that they are in a position to maintain a sustainable level of adequate consumption going forward in the absence of continuing welfare support or re-engagement in the labour market. In fact, as our finding in relation to financial pressures and debts suggest, that the manner in which accumulated debts shape the experience of this group is likely to be a major factor distinguishing the current recession from that to which we were exposed in the 1980s.⁷ Our analysis took place as the recession was emerging and the socio-economic profile of this group suggests that in the interim their position may have deteriorated in both absolute and relative terms and that this group needs to be a key focus of attention in future analysis.

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⁷ For a recent analysis of mortgage burdens in Ireland and the implication of the recent rapid increase in unemployment and the potential impact of likely interest rate scenarios see McCarthy and McQuinn (2010).

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