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subgroups**

by

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Measuring poverty within and between population subgroups

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Abstract

In this paper we propose a decomposition of the Foster, Greer, Thorbecke (FGT) class of poverty indexes into two additive components (namely, poverty within groups and poverty between groups) when both a community-wide threshold and a specific poverty line for each subgroup of population is used. The aim is to suggest an integrated perspective that takes into account both group-specific and overall living conditions, and allows us to throw light on the relative well-being conditions of specific subgroups of population as well as of the entire society. The paper is complemented with an empirical application of the suggested methodology based on the European Community Household Panel.

Keywords: poverty measurement, FGT index, group-specific poverty lines

JEL codes: I3, I32

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1. Introduction

The standard way of measuring poverty disregards an important dimension of poverty, i.e. the relation between how any given individual is poor in his/her community or group and how the same individual is poor with respect to the community as a whole. The analysis of this second dimension (how any individual is poor with respect to the community as a whole) is traditionally carried out by measuring poverty with a common poverty line. The answer to the first issue, and its relation with the second, can only be carried out if one reformulates poverty indexes to embody *within* and *between* components. The *within* element takes into account the “local” dimension of poverty while the *between* element acknowledges the fact that the position of any given individual may change when shifting from his/her own reference group or community to a wider one.

The meaning of “community” can be conceived in different ways: it can be seen in spatial terms (i.e. varying from small local communities to ones at the national, supranational or global level), or regarded in relation to several demographic or socio-economic features relevant for understanding poverty (e.g. age, ethnicity, race or religion). However, in both cases the main aim is to divide the whole (heterogeneous) population into more homogenous subgroups of population. The need to integrate the standard poverty approach with a group-based perspective has been recently emphasised by some authors even if on the basis of different arguments, and with varying consequences and implications in terms of poverty analysis.¹

In this paper we propose a decomposition of the Foster, Greer, Thorbecke (FGT) class of poverty indexes into two additive components (namely, poverty *within* groups and poverty *between* groups) when both a community-wide threshold and a specific poverty line for each subgroup of population is used. The aim is to suggest an integrated perspective that takes into account both group-specific and overall living conditions, and allows us to throw light on the relative well-being conditions of specific subgroups of population as well as of the entire society.

The paper is organized as follows: In section two we discuss some pros and cons of our proposal which is concerned with the introduction of subgroup-specific poverty thresholds in comparison to the standard approach based on a unique poverty line. In section three, we reformulate the FGT class of poverty measurement to capture the *within* and *between*

¹ See, among others, Stewart [2002] and Subramanian [2004, 2005].

components. In order to demonstrate the usefulness of this proposal an illustrative example of our approach, based on the European Community Household Panel, is presented in section four. Section five concludes.

2. Overall vs group-specific poverty thresholds

The standard income-based approach to poverty measurement focuses on a unique evaluative space within which a poverty line z is defined in order to identify who is poor and who is not.

This threshold can be fixed in terms of the minimum amount of income required to satisfy a given set of basic needs (absolute poverty line z_a), or it can refer to some notion of the standard of living, such as the mean or median income or consumption (relative poverty line z_r): in the latter case, a cut-off level in terms of a given percentage of this standard will be chosen. An intermediate and alternative solution, suggested by Citro and Michael [1995], is to adopt “hybrid” poverty lines that, unlike the absolute poverty lines, are sensitive to changes in the standard of living but are not as sensitive as a purely relative approach. Assuming a weighted geometric average of a relative threshold z_r and an absolute threshold z_a , the hybrid poverty line z can be expressed in the following generalized way:

$$z = z_r^\rho z_a^{1-\rho} \quad (1)$$

where $0 \leq \rho \leq 1$ represents the elasticity of the poverty line compared to the standard of living indicator chosen.² A value of ρ equal to zero identifies an absolute poverty line whereas a value equal to one determines a fully relative threshold.³

² See Fisher [1995]. We will return to this formulation later when our proposal will be discussed in detail. On the hybrid approach to z , see also Foster [1998] and Madden [2000].

³ The choice of the ρ value is not simply a technical matter: it can be viewed as a purely normative question if we consider this parameter as a measure of how many poor people share economic growth. Assuming an absolute approach (ρ equals to zero) the standard of living of the poorest becomes totally independent on the economy’s growth dynamic while a value equal to one means that increases in general living standards will be fully reflected in terms of poverty line; intermediate values of ρ will reflect in-between positions. As Foster outlines, the key distinction between absolute and relative poverty lines is not in their specific value but in how this value changes when the economy changes. “The possibility of using a hybrid standard changes the question “absolute or relative?” to “exactly how relative?” with ρ as the relevant decision variable”. Foster [1998, p. 340]

What are the reasons that can justify the choice of a common, unique standard for identifying poor people? Even if scarcely debated and hardly made explicit, some different theoretical and empirical arguments can be identified. Firstly, according to the individualistic mainstream approach to poverty, if the amount of available income is the only element of distinction among individuals as the symmetry or anonymity axiom states,⁴ the comparison across individuals regarding a common benchmark seems to be an obvious choice.⁵ Secondly, if the poverty line identifies the level of resources necessary to reach a minimum (or adequate) living condition in a given society, it seems to be reasonable to suppose that each person belonging to that society should face, or should eventually be entitled to reach, the same minimum standard of living. Thirdly, if one of the aims of the society is to promote social cohesion between subgroups of population, the assumption of a common threshold, instead of the narrow perspective that the reference group can offer for evaluating their own situation, can enlarge the horizons of comparison of the poorest as well as for the most affluent groups. This can further facilitate the convergence towards an overall living standard.

Of course, the arguments for and against the adoption of a common threshold are not independent from the size and the degree of homogeneity of the community. The conventional approach to poverty analysis in affluent societies (e.g. the relative approach) is largely based on the assumption that individuals and households compare their own conditions with the community to which they belong. However, it does not seem to be unrealistic to assume that this comparison usually takes place, not with reference to a generic or representative individual or to the whole human species, but with those that are not very far from our corresponding standard of living in cultural or demographic terms or from a time, or a spatial point of view.⁶ Moreover, local consumption habits, traditions and cultural conventions, and the socioeconomic and natural environment can contribute to determine remarkable inter-community differences in living

⁴ Subramanian argues that symmetry is a desirable property in case of homogeneous populations, but somehow this axiom “is also routinely invoked in the context of exercises which explicitly accommodate groups into the analysis and therefore are concerned with heterogeneous populations”. [2004: 4]

⁵ When poverty analysis are based on household data, equivalence scales are applied for taking into account differences in needs, and thus to allow comparisons among households of different size and composition. This is the only element of heterogeneity usually considered within poverty and inequality analysis.

⁶ A young single professional living in a big city is more likely to match his own living conditions to other similar situations than an elderly widow or a large family with young children living in an urban area.

conditions, thus justifying the adoption of group-specific poverty thresholds.

On the basis of similar arguments, the debate on community-wide versus group-specific thresholds has recently received a renewed attention at the European level (Atkinson et al, [2005], Förster [2005]). The question of an adequate reference group for poverty comparisons in Europe has been raised in particular after the EU enlargement to ten new Member States having an average standard of living lower than the EU-15. Should a European-wide income threshold or country-specific relative income poverty lines be considered?

Currently, income poverty measurement in Europe is based on relative country-specific thresholds (e.g. the poverty line is set at 60% of median equivalised disposable income in each Member State). As a considerable diversity in the average living standards exists within the EU countries, the application of a common European poverty line sensibly affects the incidence of poverty as well as the ranking of the Member States. In an empirical analysis on the EU-12, de Vos and Zaidi (1998) show that the ranking of the European countries shifts considerably when moving from national thresholds to a union-wide poverty line, and thus reason that the arguments to use country specific rather than EU-wide poverty lines are definitively more convincing.

If differences in the living conditions already characterized the EU-12 and EU-15 (the poverty line in Luxembourg is three times higher than the poverty line in Portugal), the 2004 Enlargement determined a wider spread in terms of per capita income level across the Member States. The ten new Member States have average incomes lower than the EU-15 but also, at least in some cases, relatively low levels of income inequality, and thus Enlargement does not seem to significantly increase the range of rates of poverty risk in Europe.⁷ However, as Förster emphasizes “it [the poverty line] reflects the experience of income deprivation within European countries and disregards income gaps *between* those countries [2005: 30].

In an independent report commissioned by the Luxembourg Presidency at the Council of the European Union, Atkinson, Cantillon, Marlier and Nolan (2005) suggest to maintain country-specific thresholds for the primary poverty risk indicators⁸ but recommend to complement

⁷ The EU-25 overall percentage at-risk-of poverty is 15% (almost 70 million people) within a range of 8 and 20: see Atkinson et al. 2005.

⁸ These indicators encompass poverty risk and include: i) the “at-risk-of poverty rate (share of persons living in households with an income below 60% of national median income); ii) the “persistent at-risk-of poverty rate (share of persons with an income below the at-risk-of-poverty thresholds in the current year and in at least two of preceding three years) and, iii)

these indicators with an income-based indicator set at the 60% of the median equivalised PPP income across the European Union. Their proposal is aimed to address in a better way the key issue of social cohesion and the on-going integration process across, and not only within, European countries. Moreover, “on the view that combating poverty is concerned with ensuring the social rights of individuals, it seems reasonable to suppose that people have rights as EU citizens, and that, viewing the EU as a social entity, we would apply a “poverty” standard based on the median for the Union as a whole” (Atkinson et al 2005,114).

With the aim to go beyond a monetary and country-specific poverty perspective, Förster et al (2003) suggest to combine income and non-income deprivation into the so-called concept of “consistent poverty”. Further, they propose to complement traditional national specific poverty estimates with European-wide thresholds and present some exploratory results for the EU-15 plus Czech Republic, Hungary and Slovenia.

This current debate brings us back to an intermediate solution suggested by Atkinson (1990) based on the adoption of an intermediate threshold between the poverty line which is calculated with reference to both the average income of the country (Y_i) and the European Union average income (Y_{EU}). If, for instance, a cut-off level corresponding to 50% of the standard of living indicator is chosen, then the poverty line z_i of the country i will correspond to:

$$z_i = \frac{Y_{EU}^\theta Y_i^{(1-\theta)}}{2} \quad (2)$$

where θ is a weighting parameter. A value of θ equal to one means that the poverty threshold will correspond to half the European average income; if θ is equal to zero, the national poverty line will be adopted for the country i ; an intermediate value, for instance 0.5, will be associated to a poverty threshold for country i which corresponds to half the geometric average between national income and European income.

To sum up: the issue of what could be the adequate reference group or community for comparing individual conditions with respect to given (minimum, average, standard or even optimal) living conditions can be viewed from a geographical perspective - as in the case of local vs national or national vs European poverty lines - or according to some other socio-economic or demographical criteria. In any case, it raises the importance,

the “relative median poverty risk gap” (difference between the median income of persons below the threshold and the threshold itself).

and also the difficulty, of paying attention to the *within* and *between* components, recognizing that they are conceptually and analytically different but at the same time strictly interrelated matters.

As Foster and Sen outlined "even though a person's deprivation has to be judged with respect to the poverty line z , her sense of deprivation and the shortfall of her actual well-being vis-à-vis an acceptable standard may depend inter alia on influences other than her own income x_i and the poverty line z . She could be influenced by the comparison of her own shortfall vis-à-vis the shortfall of others [...]. These considerations suggest that the poverty line z may be drawn differently for different subgroups" [26, p. 185]. Our proposal attempts to take this suggestion seriously.

3. Poverty within and poverty between: a reformulated version of FGT class of measures

In this paper we will refer to the well-known class of decomposable measure formulated by Foster, Greer and Thorbecke [1984] that includes the most famous poverty indexes such as the head count ratio (H), income gap ratio (I) and poverty gap index (PG).

This class of additive poverty measures is usually expressed in the following way:⁹

$$P_{\alpha}(y, z) = \frac{1}{n} \sum_{j=1}^q [p(y_j, z)]^{\alpha} \quad (3)$$

where $p(y_j, z)$ is an individual measure of poverty and q is the number of the poor, that is those whose income is below the poverty line ($y_j < z$).¹⁰

Assuming $p(y_i, z) = (z - y_i)/z$, the value of the non-negative parameter α identifies the most common poverty measures:

⁹ See. Foster and Shorrocks [1991], Ravallion [1994], Rodgers, Rodgers [1991], Zheng [1997] and Foster, Sen [1997].

¹⁰ Donaldson, Weymark [1986] make a distinction between *weak definition of the poor*, where $y_j < z$ and *strong definition of the poor* where $y_j \leq z$. This distinction, although empirically not very relevant, can however affect the properties of the indexes. Generally, both definitions are equally adopted, even if some authors suggested that only the former should be used because it is consistent with the notion of the poverty line. See, Foster, Sen [1997] and Zheng [1997].

- P_α corresponds to the head count ratio when $\alpha = 0$:

$$H = \frac{q}{n} \quad (4)$$

- when α takes on the value 1, P_α is the poverty gap:

$$PG = \frac{1}{n} \sum_{j=1}^q \frac{z - y_j}{z} \quad (5)$$

and $g_j = z - y_j$ is the gap between the income of individual j and the poverty line;

- finally, a squared poverty gap index, better known as the Foster, Greer and Thorbecke index, will occur when $\alpha = 2$:¹¹

$$FGT = \frac{1}{n} \sum_{j=1}^q \left(\frac{z - y_j}{z} \right)^2 \quad (6)$$

This general class of measures $P_\alpha(y, z)$ satisfies a basic axiomatic structure that includes focus axiom, symmetry, replication invariance, scale invariance and continuity. Other properties like monotonicity, transfer sensitivity, decomposability and subgroup consistency are satisfied only for several values of $\alpha > 0$.

As already stated, in the traditional approach to poverty measurement, the shortfall of each person j depends only on their own income y_j and the poverty line z , and thus there is no interdependence between individual deprivation measures. The P_α class of poverty measures is, by construction, totally decomposable and subgroup consistent. In other terms: P_α has no between-group term because the standard against which deprivation is

¹¹ The class of measure P_α is defined for values of α from zero to infinite. Higher values of this parameter assign a higher weight to the gap between personal income and the poverty line and the poverty measure will be more sensitive to the well-being of the poorest person. For instance, when $\alpha = 1$ the same value is assigned to a marginal increment of income lower than z ; the marginal evaluation is linearly decreasing when $\alpha = 2$. Finally, higher values of α assign a higher weight the lower the income. As α approaches to infinite it collapses to a measure that only reflects the poverty of the poorest person. See. Ravallion [1994] and Atkinson [1998].

evaluated (the poverty line) is equal for all groups.

Now let us suppose that a population of n statistical units is divided into k mutually exclusive and homogenous groups with the dimension n_i ($i=1, 2, \dots, k$) and let us assume that individual income y_{ij} ($i=1, 2, \dots, k; j=1, 2, \dots, n_i$) has been chosen as an indicator for the standard of living.¹² Instead of defining a unique threshold for all the n units, our proposal is to define k group-specific thresholds $z_i > 0$. As in the traditional approach to poverty measurement, they can be absolute, z_{ia} , or relative z_{ir} , or hybrid: the general formulation (1) can thus be revised for including the presence of different subgroups-specific thresholds:

$$z_i = z_{ir}^{\rho_i} z_{ia}^{1-\rho_i} \quad (7)$$

For each k group, poor people are identified in the traditional way, that is the j person belonging to the i group is poor if $y_{ij} \leq z_i$. Without losing generalization, we assume that groups are arranged in a non decreasing order of z_i .

To measure the overall poverty when group specific poverty lines are used, we define a new class of poverty index $P_{WB\alpha}$ as the sum of a *within* term P_W and a *between* term P_B :

$$P_{WB\alpha} = P_W + P_B \quad (8)$$

with

$$P_W = \sum_{i=1}^k P_i^\alpha \frac{n_i}{n} \quad (9)$$

where P_i^α is the subgroup poverty measure.

For different values of α (respectively for α equal to 0, 1 and 2), P_W will measure the extension, depth or severity of deprivation within each specific subgroups with the usual meaning assigned to these indexes.

As far as regarding the *between* component, a shift of the comparison from the “local” or group-specific level to the whole community or society is required. Each individual position will be compared to an overall, community-wide standard or threshold, by taking into account how his/her individual position may change when the comparison shifts from the own reference group or community to a wider one.

¹² Of course, there is no reason for excluding that other well-being or poverty indicators can be considered.

Of course, if no difference among groups exists then there would be no need to differentiate poverty lines and therefore $P_B = 0$: in any other case $z_1 \neq z_2 \neq \dots \neq z_k$ and disparities between groups can take place.

In order to quantify the *between* term it is thus necessary to identify an overall or wide-community poverty threshold z^* . This reference point could be the conventional poverty line based on a given percentage of the mean or median income of the whole community.¹³ Or it could be the highest poverty line (e.g the “better off” group in terms of poverty line); in this case z^* will correspond to z_k . Or it could also correspond to the minimum income threshold that is applied in social or fiscal legislation (what is usually defined as statutory, official or political poverty line, see Atkinson et al. 2002). Or, finally, with reference to the above general formulation of z (equation 7), ρ_i could be empirically estimated on the basis of group specific expenditure behaviors: in this case, the common standard necessary to quantify the *between* term will be, as before, the weighted average of the hybrid poverty lines z_i . The ρ value, which refers to the whole population, can be derived ex-post on the basis of the equation (7).

Now we can reformulate the FGT class of measures as additive decomposition of a *within* and *between* component. With reference to the equation (8), if $\alpha = 0$, a reformulated version of *head-count ratio*, called H_{WB} , can be defined as follows:

$$H_{WB} = \sum_{i=1}^k H_i(z_i) \frac{n_i}{n} + \sum_{i=1}^k [H_i(z^*) - H_i(z_i)] \frac{n_i}{n} \quad (10)$$

The first term identifies the *within* term H_W as the weighted average of the head-count ratios H_i referring to the k groups ($k-1$ group if $z^*=z_k$), with the weights being given by the ratio of the population of each group to the total population n . The *between* component (second term included in the square brackets), can be viewed as the poverty level in the k groups when, instead of z_i , z^* is assumed as a standard to measure poverty (positive term) minus the part already included in the *within* component (negative term).

If $\alpha = 1$, $P_\alpha = PG$ and the reformulated version of the index PG_{WB} is:

$$PG_{WB} = \sum_{i=1}^k PG_i(z_i) \frac{n_i}{n} + \sum_{i=1}^k [PG_i(z^*) - PG_i(z_i)] \frac{n_i}{n} \quad (11)$$

¹³ In this case, if the cutoff parameter is equal for all k groups, z^* will simply be a weighted average of all z_i with weights corresponding to the population share of each group.

Also in this case the first term reflects the *within* component calculated as the weighted average, where the weights are expressed in terms of population shares. The second term of this sum is the *between* component and has the same meaning as discussed above with reference to the H_{WB} index.

Finally, for $\alpha = 2$ the corresponding reformulated index FGT_{WB} can be expressed as:

$$FGT_{WB} = \sum_{i=1}^k FGT_i(z_i) \frac{n_i}{n} + \sum_{i=1}^k [FGT_i(z^*) - FGT_i(z_i)] \frac{n_i}{n} \quad (12)$$

Once again, the meaning of the two poverty components does not change while q , that is the number of people with $y_i < z$, will change accordingly to the value of z .

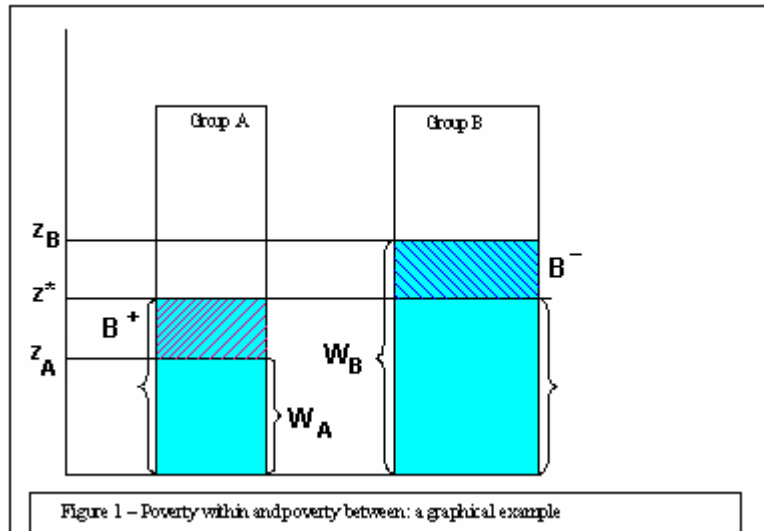
It is worthy to note that the addends of the *between* components will be positive when $z_i < z^*$ while they will be negative if $z_i > z^*$. If one of the aims of poverty analysis is to evaluate the efficiency of public policies, the positive (negative) effects on a group must be identified and quantified independently from the negative (positive) effects on other groups. For this reason, it is important to distinguish the positive component corresponding to the k' groups with poverty lines lower than z^* from the negative component associated to the $k - k'$ groups with poverty lines higher than z^* . So we can write:

$$P_{WB\alpha} = \sum_{i=1}^k P_{\alpha i}(z_i) \frac{n_i}{n} + \sum_{i=1}^{k'} [P_{\alpha i}(z^*) - P_{\alpha i}(z_i)] \frac{n_i}{n} + \sum_{i=k'+1}^k [P_{\alpha i}(z^*) - P_{\alpha i}(z_i)] \frac{n_i}{n} \quad (13)$$

Figure 1 provides a simple graphical example on how the *within* and the *between* components (both positive and negative) contribute to determine the overall poverty indexes. Let us assume that the population is partitioned in two subgroups (Group A and Group B) of different size (namely, group B is bigger than group A as shown by the bigger rectangular). Each group-specific poverty line (z_A and z_B) allows to determine the amount of subgroup-specific or “local” poverty for each subgroup (W_A and W_B) while the comparison with a common reference point (e.g. the threshold z^*) allows to identify the *between* component (B).

In this specific case, namely $z_A < z^* < z_B$, by shifting from a group-specific comparison to an assessment based on a wider community, the

living conditions of group A become worse (i.e. a higher number of people is now poor and those already identified as poor appear to be now in a worse condition) giving a positive contribution to the between component (B^+) while the contribution to the between component of people in group B will be negative (i.e. less people are poor and their living condition will appear to be better off shifting the comparison to a wider community (B^-)).



4. An illustrative example

In order to clarify the features of our proposal and to show the usefulness of the suggested poverty decomposition into a *between* and a *within* component, we present now a simple empirical application. Taking into consideration the relevance of the current European debate on EU-wide vs national poverty lines briefly described in section two, we choose to apply our approach for measuring poverty within and between European countries. The empirical analysis is confined to the EU-15 member countries and is based on the most recent available wave of the European Community Household Panel referred to 2001.¹⁴ In order to quantify the *within* component, poverty is first measured for each individual at national level, assuming a poverty threshold corresponding to the conventional 60% of national equivalised median income while for determining the *between*

¹⁴ While data are collected in 2001, income information refers to the year 2000.

component, a EU-wide poverty line, based on the 60% of the European-wide equivalised median income, has been used.¹⁵ The main results are described in Table 1 and Table 2.

Table 1 compares poverty figures across European countries when country-specific and EU-wide poverty lines are assumed. In the former case, the poverty threshold varies between five thousand Euros in Portugal to a poverty line almost three times higher in Luxembourg. Sixty million people are poor within those EU-15 Member States out of these more than forty millions are living in Germany, United Kingdom, Italy and France. More than one inhabitant out of five lives in poverty conditions in Portugal and Greece, one out of four in Ireland, and in every of the other countries the percentage of people that suffer income-poverty is no lower than eleven per cent.

When a EU-wide poverty line (corresponding to 8211 euros) is chosen, the 18,3% of European citizens would be poor with an increase in absolute terms by almost eight million of persons. Obviously the number of poor significantly increases in those EU member states with a median income, and thus a poverty threshold lower than the average EU level (the countries included in cluster 1), while decreases in the richer EU countries. Almost half of the population in Portugal and Greece, and one out of three in Spain would be poor accordingly to a EU common living standard. The number of poor people in Italy would be close to fifteen million while the number of poor people in Luxembourg would approach to zero. These results are similar to those discussed, for instance, in Förster (2005) or Atkinson et al (2005).

The element of novelty is represented here by the decomposition of the three main poverty indexes (the head-count ratio, the poverty gap and the squared poverty gap) into the *within* and *between* components shown in Table 2. The absolute values of the suggested P_{WB}^{α} indexes are the same of those that would be obtained adopting the conventional approach based on a common poverty line (in this case the EU-wide poverty line). This means that at European level the head-count is still equal to 18,3% but now, on the basis of the proposed approach, we can see that 88,5% of this poverty

¹⁵ On every other aspect, the methodology applied is the standard one used in this kind of analysis: for allowing the comparison across countries and across household the total net household income of the 15 European countries has been converted in purchasing power parity and the OECD-modified equivalence scale is applied (this scale assigns weights equal to one to the first adult, 0.5 to additional adults and 0.3 to children below age 15). Cross-sectional weights for household and grossing weight to population totals have also been applied.

incidence is due to a *within* component (inter-country poverty) while the remaining 11,5% is determined by intra-group poverty (in this case intra-countries) or *between* component. Accordingly to the expectations, the overall *between* component is progressively higher when we move from H_{WB} to PG_{WB} (the between component is 17,5%) and to SPG_{WB} (the between component increases to 18.7%), thus assigning a greater emphasis to the income gap of the poorest people.

In absolute terms the *between* component is positive for the countries belonging to cluster 1 with $z_i < z^*$ and negative for the “richer” ones with $z_i > z^*$ (see also figure 1) while the relative contribution of each of the fifteen Member States to the overall European poverty would vary depending on i) their inter-country level of disparities, ii) their intra-country differences as well as iii) their population share. Large countries with a relative high level of “internal” or “local” poverty and a greater income dispersion such as Italy and Spain but also Germany, United Kingdom and France contribute to determine most of the poverty in Europe. On the contrary, the contribution to overall poverty of relatively small countries with median income quite close to the EU-average and a more egalitarian income distribution such as Denmark or Netherlands, would be necessarily limited. These results are confirmed from all three indexes and opportunely emphasized when a poverty gap and square poverty gap indexes instead of the head-count ratio are applied.

5. Conclusions

The aim of this paper was to suggest an approach to poverty measurement based on the joint use of both group-specific poverty lines for homogenous subgroups of population and a common standard for the whole population or community. This approach allows to make a conceptual and analytical distinction between two important dimensions which are implicitly included in the idea of poverty: the extension, depth or severity of deprivation existing within a given (relatively homogeneous) group of people and the differences in the standard of living between different groups in which population is partitioned. While the *within* element can capture the “local” or “group-specific” dimension of poverty, the *between* element takes into account that the position of any given individual may change when shifting from his/her own reference group or community to a wider community.

The poverty index P_{WB}^α that we propose represents a reformulation of the FGT class of index that embodies and quantifies these two *within* and

between components, thus throwing new light on these two interrelated, but not equally considered aspects of deprivation. The issue of choosing “appropriate” poverty thresholds or identifying the criteria for making well-being or poverty comparisons across societies or across subgroups still remains open. However, the complexity of the socio-economic contexts and the heterogeneity of subgroup living conditions can be partially captured by paying attention to both the within and between dimension of poverty.

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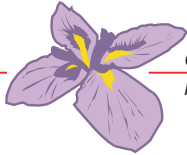
Table 1 – National vs. EU-wide poverty lines											
	<i>Pop.share</i>	<i>Using national poverty line</i>					<i>Using EU-wide poverty line</i>				
<i>Country</i>		p_i^1	<i>N. of poor</i> ²	H_i	PG_i	SPG_i	p_i^3	<i>N. of poor</i> ²	$H_{WB=H}$	$PG_{WB=PG}$	$SPG_{WB=SPG}$
Portugal	2.7	5044	2125	21.2	6.0	2.6	8211	4854	48.4	17.4	8.4
Greece	2.8	5267	2202	21.3	7.0	3.4	8211	4740	45.8	16.6	8.4
Spain	10.6	6352	7509	19.2	5.5	2.8	8211	13113	33.5	10.3	4.8
Italy	15.4	7078	10761	18.8	5.6	2.8	8211	14979	26.1	7.9	3.8
Finland	1.4	7325	764	14.9	3.7	1.7	8211	1110	21.7	5.2	2.2
Sweden	2.3	7488	1062	12.3	3.9	2.0	8211	1401	16.2	4.8	2.4
Ireland	1.0	7511	976	25.4	6.2	2.2	8211	1118	29.1	8.0	3.0
Cluster 1: country with $z_i < z^*$			25399	6.8	2.0	1.0		41314	11.1	3.5	1.7
Cluster 1/EU-15				42.0	44.5	46.4			60.6	63.6	65.4
Netherland	4.3	8574	1734	11.0	3.4	1.8	8211	1555	9.9	3.1	1.7
France	15.5	8669	8919	15.4	4.1	1.9	8211	7719	13.3	3.5	1.7
United Kingdom	15.8	8803	10674	18.1	5.1	2.4	8211	8826	14.9	4.3	2.0
Belgium	2.7	9022	1369	13.3	2.8	1.1	8211	912	8.9	1.9	0.9
Germany	21.9	9457	10244	12.6	3.2	1.3	8211	6753	8.3	2.1	0.9
Austria	2.2	9559	1176	14.7	3.7	1.8	8211	649	8.1	2.5	1.3
Denmark	1.5	9754	783	14.6	3.6	1.5	8211	438	8.2	2.1	1.0
Luxembourg	0.1	14931	53	12.3	2.4	0.7	8211	3	0.7	0.2	0.1
Cluster 2: country with $z_i > z^*$			34952	9.4	2.5	1.1		26856	7.2	2.0	0.9
Cluster 2/EU-15				58.0	55.5	53.6			39.4	36.4	34.6
EU-15	100.0		60351	16.2	4.5	2.1		68170	18.3	5.5	2.6

Source: Elaboration based on ECHP 2001, EU-15, income reference year 2000

Notes: 1) 60% of the national equivalent median income in PPP; 2) in 1000s persons; 3) 60% of the EU-wide equivalent median income

Table 2 -Poverty within and between EU-15												
Country	$H_{WB}=18,3$				$PG_{WB}= 5,5$				$SPG_{WB}=2,6$			
	within		between		within		between		within		between	
	abs	%	abs	%	abs	%	abs	%	abs	%	abs	%
EU-15	16.2	88.5	2.1	11.5	4.5	82.5	1	17.5	2.1	81.3	0.5	18.7
Portugal	0.57	8.4	0.74	17.2	0.16	8.1	0.31	20.5	0.07	7.3	0.2	22.5
Greece	0.59	8.7	0.68	15.9	0.20	9.8	0.27	17.9	0.09	9.7	0.1	20.2
Spain	2.03	29.7	1.51	35.3	0.58	29.1	0.50	33.7	0.30	30.4	0.2	31.0
Italy	2.88	42.2	1.13	26.4	0.86	42.9	0.36	23.9	0.42	43.4	0.2	22.7
Finland	0.21	3.0	0.09	2.2	0.05	2.6	0.02	1.4	0.02	2.3	0.0	1.1
Sweden	0.28	4.1	0.09	2.1	0.09	4.4	0.02	1.4	0.05	4.7	0.0	1.3
Ireland	0.26	3.9	0.04	0.9	0.06	3.2	0.02	1.3	0.02	2.3	0.0	1.2
Cluster 1: country with $z_i < z^*$	6.82	100.0	4.28	100.0	2.01	100.0	1.49	100.0	0.98	100.0	0.70	100.0
Cluster 1/EU15		42.1		203.9		44.6		148.9		46.5		139.1
Netherland	0.47	5.0	-0.05	2.2	0.15	5.9	-0.01	2.5	0.08	6.7	0.0	2.7
France	2.38	25.4	-0.32	14.8	0.64	25.6	-0.09	16.5	0.30	26.3	0.0	15.9
United Kingdom	2.86	30.5	-0.49	22.8	0.80	32.2	-0.13	24.2	0.37	32.8	-0.1	25.9
Belgium	0.37	3.9	-0.12	5.6	0.08	3.0	-0.02	4.2	0.03	2.7	0.0	3.3
Germany	2.75	29.3	-0.94	43.1	0.69	27.8	-0.23	43.2	0.29	25.9	-0.1	43.4
Austria	0.32	3.4	-0.14	6.6	0.08	3.2	-0.03	5.0	0.04	3.4	0.0	4.7
Denmark	0.21	2.2	-0.09	4.3	0.05	2.1	-0.02	4.0	0.02	2.0	0.0	3.7
Luxembourg	0.01	0.2	-0.01	0.6	0.00	0.1	0.00	0.5	0.00	0.1	0.0	0.4
Cluster 2: country with $z_i > z^*$	9.37	100.00	-2.17	100.00	2.49	100.00	-0.53	100.00	1.13	100.00	-0.21	100.00
Cluster 2/EU15		57.8		-103.3		55.4		-53.5		54.0		-42.3
Total	16.2		2.1		4.5		1.0		2.1		0.5	

Source: Elaboration based on ECHP 2001, EU-15



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