How Poor Are the Poor? The Distribution of Income-to-Poverty Shortfalls Across EU Countries

Iryna Kyzyma

Luxembourg Institute of Socio-economic Research

iryna.kyzyma@liser.lu

The increase in relative income poverty over recent decades has been raising concerns among researchers and policy-makers in most European countries (OECD, 2008; Frazer et al., 2010; OECD, 2013; Atkinson et al., 2015). According to recent statistics provided by the Eurostat, the percentage of people living below the poverty line increased in 16 out of 27 European Union (EU) countries between 2007 and 2014. To secure inclusive growth in all its member states, the European Commission has announced the eradication of poverty by 25 percent (a reduction by 20 million people) as one of the five headline EU targets to be achieved by 2020 (European Commission, 2010).

The main limitation of these policy targets, as well as recent academic literature evaluating the trends in cross-sectional poverty in rich countries (e.g. Dickens and Ellwood, 2003, 2004; Hoynes et al., 2006; Thompson and Smeeding, 2013; Atkinson et al., 2015) is their explicit focus on the headcount ratio as a measure of poverty. Using absolute or relative definition of poverty, scholars analyze, above all, the prevalence of poverty in a given country or across different population sub-groups. In this case, all poor are treated in the same way regardless of how far away they are from the poverty line. For example, a person whose income falls just one euro below the poverty threshold contributes the same to the poverty measure as someone with zero income.

The focus on the incidence rather than intensity of poverty has been widely criticized in the literature as such that provides only crude evidence on the extent of poverty in a society and precludes development of effective policy measures. Lifting an individual with a small shortfall of income from poverty might require completely different policy measures than lifting someone whose income falls far away from the poverty line. From this perspective, setting the same target of poverty reduction for different countries does not make sense as soon as they differ in terms of how poor the poor actually are. The focus on the headcount ratio as a measure of poverty also provides only limited information about the evolution of poverty over time. Even if the poverty rate remains the same, one might find different distributions of the poor in terms of how far away their incomes are away from the poverty line. This paper aims to look beyond the widely used headcount ratio for measuring poverty and analyze how poor the poor actually are. To do that, we move from the binary measure of individual poverty status (poor versus non-poor) to a continuous measure which represents the ratio between the total net equivalized household income and the poverty threshold. As a next step, we model the entire distribution of income-to-poverty ratios among the poor and relate it to a set of characteristics of individuals and their households in a flexible way, that allows deriving heterogeneous profiles of the poor across the distribution of income-to-poverty ratios. We perform the analysis separately for each country with the aim to identify whether countries with similar levels of poverty also face similar distributions of income-to-poverty ratios and similar profiles of the poor at different points of these distributions. The estimations are

based on data from the EU-Statistics on Income and Living Conditions (EU-SILC) for year 2013. The contribution of the paper to the literature is twofold. First of all, the paper provides a novel approach to characterization of poverty. A lot of studies have undertaken an attempt to derive a poverty index which could simultaneously account for the incidence, intensity and inequality among the poor (see, among others, Sen, 1976; Thon, 1979; Blackorby and Donaldson, 1980; Kakwani, 1980; Clark et al., 1981; Chakravarti, 1983; Foster et al. 1984). The major limitation of these indexes, as any aggregate measures, is that they mask individual experiences of poverty and largely depend on the definition they are based on. Depending on the definition used, different conclusions might be reached about the extent of poverty in a society and its development over time. In addition, aggregate measures of poverty are difficult to interpret which limits their usefulness for the development and evaluation of policy measures. Rather than deriving aggregate measures of poverty as most studies do, we model the entire distribution of income-to-poverty ratios among the poor. From this perspective, our paper falls in the stream of poverty measurement literature which relies on poverty ordering of income distributions in different populations and their comparisons using stochastic dominance criteria (Atkinson, 1987; Spenser and Fischer, 1992; Jenkins and Lambert, 1997). We extend this literature by modeling the distribution of income-to-poverty ratios in the presence of covariates, which represent personal and household characteristics of the poor. To do that, we take advantage from the distribution regression technique which makes it possible to estimate heterogeneous effects of covariates at different places of the distribution of dependent variable (Chernozhukov et al., 2013).

The second contribution of the paper to the literature is empirical in its nature. In particular, we demonstrate the usefulness of the distributional approach to poverty measurement by constructing and analyzing the distributions of income-to-poverty ratios for 27 EU countries. The comparative framework of the analysis allows us to demonstrate the importance of looking beyond aggregated measures of poverty. In particular, we show that countries characterized by similar poverty rates often face completely different distributions of the poor in terms of the distance of their incomes from the poverty line. Along with simple descriptive evidence, we also identify profiles of individuals located at different parts of the income-to-poverty distribution and compare to what extent these profiles differ along the distribution and across the countries.