POVERTY, WELL-BEING AND SUSTAINABLE DEVELOPMENT: OFFICIAL AND EXPERIMENTAL MEASURES IN POSTMODERN SOCIETIES

RALUCA I. IORGULESCU
SENIOR RESEARCHER, PH.D., INSTITUTE FOR ECONOMIC FORECASTING–NIER, ROMANIAN ACADEMY, ROMANIA
e-mail: raluca_i@lycos.com

Abstract

Poverty and well-being are concepts that cannot be separated, and research on poverty is implicitly linked to welfare economics. Poverty, in the complex conditions of modern societies affected by financial and economic crises, requires a clear definition and measures as accurate as possible.

The paper presents some issues related to official methods and techniques for estimating poverty. Three steps necessary for poverty measurement are introduced and, also, multidimensional and poverty dynamics analyses are highlighted as important issues for poverty eradication policies. Results on youth poverty dynamics, the duration and recurrence of poverty and the perpetuation of poverty in EU countries are presented. The concepts of poverty risk, as well as some results of the search for key factors influencing the likelihood of being at risk of poverty, is discussed.

Traditionally the living standard of households is measured by income, but recently other tools for measuring well-being in the broader framework of postmodern societies have been developed. As examples are some experimental methods and techniques for estimating poverty introduced in the U.S. and the European Union. Also, in the context of discussions related to the design of policies for sustainable development, some aspects of well-being measures in ecological economics are presented.

Keywords: poverty; poverty dynamics; experimental poverty measures; Genuine Progress Indicator GPI; postmodern society

JEL Codes: I3, Q57

1. Introduction

Charles Booth, in the late nineteenth century, was the first author to explicitly write on poverty [1]. He defined the poverty line and made the distinction between “poor” and “very poor”, in order to assess the extent of poverty. Extremely important, and we can say modern, it was the distinction made between “poverty” and “unhappiness”.

In the past five decades, as a result of the disappearance of colonialism and the emergence of new states in the 1950s and 1960s and, consequently, their macrostability policy reassessment, interest in poverty and income distribution analysis greatly increased. Similarly, since the 1970s, poverty in developed countries began to be studied by researchers in order to design policies to alleviate it.

Nowadays, understanding and reducing poverty cannot be separated from the concept of well-being. Not too long ago, following a series of illustrious predecessors, from Adam Smith and his relatively neglected work (by economists) ‘The Theory of Moral Sentiments’, Sir Tony Atkinson pointed out that “The economy is a moral science. Welfare economics should be a central part of the discipline” [2].

In economics, the modern approach to poverty is due to Amartya Sen's revolutionary idea about considering one’s ability to benefit from all his/her “capabilities”. As a result, in the European Union, four of the fourteen structural indicators refer to “social inclusion”, a concept widely used to indicate the fight to eradicate the causes of poverty.

The rest of the paper is organized as follows: Section 2 briefly presents, with examples from the European Union, some formal methods and techniques for estimating poverty. Section 3 discusses some experimental methods and techniques for estimating poverty in the U.S. and the European Union. Section 4 illustrates the measurement of well-being in ecological economics. Section 5 concludes.
The literature on poverty research refers to different types of analysis such as multidimensional poverty analysis, static or dynamic analysis, poverty trends, and more recently, integrated multiscale analysis of poverty. Nunes [3] details the development of the theoretical framework (approaches and related techniques) for poverty measurement while Jenkins and Micklewright [4] list, for the last thirty, forty years, the main directions in the analysis of inequality and poverty.

There is unanimous agreement that poverty is a multidimensional concept. For economists, the problem arises when, for poverty to be measured, the interactions between its different dimensions have to be understood [5]. For example, Bourguignon and Chakravarty [6] suggest that this multidimensionality might be dealt with by defining a poverty line for each dimension, and then, when a person falls below at least one of these different lines, he/she is considered to be poor. They also derive some multidimensional measures of poverty.

In principle, the poverty threshold is an aggregate of the minimum acceptable level for each of the multiple dimensions that define the standard of living [7]. This divides the two categories of interest to social policies: the poor and those who are not poor. Separation between absolute and relative poverty can be based on the purpose of research.

To measure poverty, Anghelache and his collaborators [8] recommend three steps: (i) the choice of a welfare indicator among monetary indicators (income or consumption that can be measured much better than income and better reflects the current standard of living of a person / household) and non-monetary indicators which are an important indicator of well-being such as health and nutrition (nutritional intake of children; the incidence of specific diseases of poverty such as malaria, tuberculosis, etc.; life expectancy; access to health services, etc.) or education (literacy level, the ratio of the number of years of school completed and the number of years of school that should be completed, etc.); (ii) the choice and the estimation of poverty threshold (absolute threshold, relative threshold, subjective threshold); and (iii) the choice of indicators measuring and estimating the incidence of poverty (headcount index), the depth of poverty (poverty gap) and the severity of poverty (quadratic index Foster-Greer-Thorbecke FGT). Additionally, it is presented, for the Romanian National Statistical Institute, a summary of the methodologies used in the study of one-dimensional and multidimensional poverty.

Following the European Council in Lisbon in 2000, one of the objectives was to combat poverty before 2010, the European Year for Combating Poverty and Social Exclusion. An important issue for designing policies to eradicate poverty is poverty’s evolution in time. Below are presented some significant results regarding youth poverty dynamics, duration and recurrence of poverty and perpetuation of poverty in EU countries.

Eurostat statistics show that more than a quarter of the total EU population are young. Although the European Union is striving to achieve convergence among Member States, between 1994 and 2000 a North-South difference regarding poverty among young people after they have left home was emphasized. For eight European countries, Ayllón [9] investigated the dynamics of poverty for young people who become employed and move from the parental home; she estimated a trivariate dynamic probit model with feedback effects, for which the European Community Household Panel data was used. For each period, Ayllón assumed that latent tendencies characterize persons’ poverty, employment status and emancipation. The estimated equations capture these interconnection and feedback effects. When the poverty of a young individual is measured at the household level, the value of the binary indicator functions representing poverty, employment status and emancipation is assumed that latent

The adoption of the multidimensional TFR (Totally Fuzzy and Relative) method requires the calculation of risk indicators, that can express either effective poverty or wealth by effect type indicators (housing conditions—running water, hot water, electricity, toilet with running water, bathroom, central heating, living area per person, kitchen with natural gas; possession of durable goods—stove, fridge, washing machine, vacuum cleaner, TV, telephone, property ownership; total consumption expenditure) or of the risk to become poor by

2. Official methods and techniques for estimating poverty
cause type indicators (level of education of household head; sex of household head; the existence of at least one unemployed family member) [11].

The risk of poverty rate can be calculated as the share of people in households with disposable income below the threshold representing 60% of median disposable income per adult equivalent in the total population. Figures 1 and 2 show the situation of people in some EU member states who are at risk of falling into poverty.

Figure 1 illustrates the situation of those who are employed full-time and Figure 2 that of people employed part-time.

**Figure 1** Risk-of-poverty rate for full-time employees in Bulgaria, Latvia, Hungary, Romania and Slovakia and the EU-27 average

Romania stands out as the country with an extremely high at-risk-of-poverty rate for full-time employees (almost double the EU-27 average). A similar situation is found for part-time employees, in which case the share of those with an equivalent disposable income below the risk-of-poverty limit is over 50%.

In European literature on poverty in the post-crisis period, one of the topics of interest was the search for the main factors influencing the likelihood of someone being at-risk-of-poverty. The initial conditions are a factor that can influence the current poverty status. Using the same data set as above for the EU-15, Andriopoulou and Tsakloglou [13] show that both initial poverty and individual heterogeneity are important factors that perpetuate poverty. They conclude that “there is no single path into or out of poverty, suggesting that multiple policies can be considered to help people getting out of poverty.”
Reinstadler and Ray [14] evaluated for 93 European regions the impact on the person at-risk-of-poverty of regional unemployment and regional GDP as macroeconomic factors. They estimated a random slope model, which combines panel data, macro factors and a three-level modeling (time measured in years, individuals and regions). The results show that both factors affect the risk-of-poverty which means that for European regions with a worse economic condition, the risk of poverty could be mitigated by policies promoting higher rates of economic growth. On the other hand, although this analysis reinforces expectations of a direct positive impact of regional unemployment on the risk of poverty, however, the weakness of this effect was unexpected.

Figure 2 Risk-of-poverty rate for part-time employees in Bulgaria, Latvia, Hungary, Romania and Slovakia and the EU-27 average

3. Experimental methods and techniques for estimating poverty

Reducing poverty through economic growth or redistribution is the classical solution of this problem. Unfortunately, the experience of recent decades shows that it is not enough. The failure of the Lisbon Agenda to achieve the desired impact on the eradication of poverty and social exclusion in the EU, led Sir Tony Atkinson to mention that EU economic and social policies should be designed to complement each other and not to cancel each other effects [16].

In the United States, Census Bureau [17] explains on its website that although traditionally the living standard of households in the U.S. is measured by revenue, there have been developed other tools for measuring broader well-being. Extensive well-being measures are designed to deepen the existing information on the
conditions of households in ways that cannot be captured only by income. Some aspects of well-being, such as fear of crime or quality of local public services may be only loosely connected income. Other measures are more closely related to income, but may also be affected by factors such as cost of living, age, disability status, and sudden changes of circumstances.

U.S. Census Bureau does not make a clear distinction between the terms ‘material well-being’ and ‘difficult material conditions’ and collects extensive well-being measures using the Survey of Income and Participation in Programs SIPP. Data are collected using a particular group of questions covering five major areas:

1. possession of appliances and electronic products such as refrigerators, fixed and mobile phones, and computers;
2. housing conditions, including satisfaction, in general, with home repairs, suitable living space and enough privacy;
3. neighborhood and community services, such as: road conditions and the presence of abandoned buildings, satisfactory police, fire and medical assistance services, as well as attitudes to local schools;
4. fulfilling basic needs, including the ability to pay the bills in full to avoid eviction, and to have enough food, and
5. hope for help, if needed, from friends, family, and community.

DeNavas-Walt reports [18] how in March 2010, the Census Bureau and the Bureau of Labor Statistics (BLS) received several suggestions about the possibility of developing an additional measure of poverty (Supplemental Poverty Measure SPM). The proposal came from an Interagency Technical Working Group (ITWG) consisting of representatives of BLS, Census Bureau, the Economics and Statistics Administration, the Council of Economic Advisers, U.S. Department of Health and Human Services and Office of Management and Budget. The proposal was based on the 1995 report of the National Academy of Sciences ‘Panel on Poverty and Family Assistance’ and on a broad set of research conducted over the past 15 years on poverty measurement.

One ITWG suggestion was that the unit of analysis ‘family’ should be extended to include all persons living in the same household, including children who have no connection with the family but are cared for by the family, and partners living together with their children [19]. The new measure creates a more complex statistical picture incorporating in family resource estimates some additional items such as paid taxes and labor costs. The thresholds used in the new measure are the costs derived from the Consumer Expenditure Survey for basic needs (food, shelter, utilities, and clothing) and are adjusted for geographic differences in the cost of housing.

Provencher [20] examines how the composition of family units is influenced by replacing the definition of family as the unit of analysis used in the official measure of poverty (a group of two or more persons living together related by birth, marriage or adoption) with the above-mentioned wider definition. The analysis uses data from the 2010 Current Population Survey (CPS), Annual Social and Economic Supplement (ASEC).

SPM is an experimental measure that defines income thresholds and resources in a different way from the official poverty measure but is not expected that will replace it. Instead, SPM offers an alternative understanding of economic well-being of American families and how federal policies affect those living in poverty [21].

In the context of sustainable development, for nearly two decades, there is an ongoing national and international effort to complement the GDP. The European Commission published in August 2009 a Communication entitled “Beyond GDP - Measuring progress in a Changing World” aimed at improving the indicators monitoring the social and environmental progress. A month later, the Commission on the Measurement of Economic Performance and Social Progress (Stiglitz-Sen-Fitoussi Commission) published a report (Stiglitz Report) on improving the measurement of economic performance, social well-being and sustainability.

Following the publication of the recommendations of the Stiglitz Report, the National Institute for Statistics and Economic Studies of France (INSEE France) [22] conducted an extensive activity to contribute to the development of new measures. In October 2011, INSEE, the French Ministry of Economy, Finance and Industry and the OECD organized a conference that focused on the review of all initiatives taking place in the world to implement the recommendations of the report and their application to policy.

In the UK, the National Office for Statistics (ONS) [23] coordinates the program Measuring National Well-being (MNW), which aims to produce acceptable and reliable measures for the well-being of the nation. The initial list of well-being areas and national measures was developed based on responses to a national debate and on research initiatives and international agreements.

The measures were the subject of a public consultation that ended in January 2011 and currently ONS continues to review and refine these areas and measures. Table 1 shows a sample of the measures used to assess personal well-being.
Table 1 Measures of personal well-being (ONS, UK)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Area</th>
<th>Source</th>
</tr>
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<tbody>
<tr>
<td>Percentage with medium/high rating of satisfaction with their lives overall</td>
<td>UK</td>
<td>Annual Population Survey, ONS</td>
</tr>
<tr>
<td>Percentage with medium/high rating of how worthwhile the things they do are</td>
<td>UK</td>
<td>Annual Population Survey, ONS</td>
</tr>
<tr>
<td>Percentage who rated their happiness yesterday as medium/high</td>
<td>UK</td>
<td>Annual Population Survey, ONS</td>
</tr>
<tr>
<td>Percentage who rated how anxious they were yesterday as medium/low</td>
<td>UK</td>
<td>Annual Population Survey, ONS</td>
</tr>
</tbody>
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Source: Self and Randall 2013, p. 5 [24]

4. Measuring well-being in ecological economics

In the early 1970s the relevance of economic growth has been called into question, whether or not the concept was outdated. As a result, in 1972, American economists William Nordhaus and James Tobin (Nobel Prize for Economics) developed the indicator Measured Economic Welfare (MEW). After more than fifteen years Herman Daly, one of the founders of ecological economics, and theologian John Cobb continued to investigate how to develop a macro measure of well-being by creating the Index of Sustainable Economic Welfare (ISEW). In the context of recent efforts to transition to a sustainable postmodern society was developed the Genuine Progress Indicator (GPI) as an indicator of well-being. Its creation continued the MEW and ISEW studies. Currently, the GPI is calculated in Alberta Canada, Maryland USA, Australia etc.

![Economic Indicators, Environmental Indicators, Social Indicators](http://www.dnr.maryland.gov/mdgpi/indicators.asp)

Source: Maryland GPI website [25]

Figure 3 Maryland, USA: The 26 indicators of the Genuine Progress Indicator (GPI)

The model used to calculate the GPI in Maryland is a dynamic tool named MARYLAND MD-GPI and enables both policy makers and citizens to use a single indicator to observe how the investments and decisions affect and are affected by other indicators. In the future, the group will continue to adjust the MD-GPI while maintaining comparability with other jurisdictions. By way of illustration, Figure 3 reproduces from the website of the State of Maryland the diagram of the 26 indicators that make up the GPI.
The debate on well-being measurement continues today with research in the fields of happiness economics and neuroeconomics.

5. Conclusions

Poverty and well-being are concepts that cannot be separated, and research on poverty is implicitly linked to welfare economics. Although poverty is a complex concept, mitigating its effects can be done through policies designed in response to the pressure of the economic and financial crises that characterize post-modern societies. Over time many methods and techniques for estimating poverty were adopted on a large scale and became official. The paper highlights the multidimensional and dynamic nature of poverty and the three steps necessary for policy on poverty eradication. In the context of a set of concerted EU policies on combating poverty and social exclusion some relevant results on youth poverty dynamics, duration and recurrence of poverty and perpetuation of poverty are presented. There are also discussed the concept of risk-of-poverty and the research efforts related to the main factors that determine the risk of falling into poverty.

Entering the stage of post-modern societies calls for adaptation of the official poverty measurement methods. If until recently the living standards of households were measured by income, changes in economic and social organization to levels of increasing complexity require the development of comprehensive tools for measuring well-being. So are some methods and techniques, (still) experimental, designed and tested in the U.S. and EU, for estimation of poverty and well-being. To open the discussion about the combination of socio-economic and environmental sustainability, the final part of the article lists several tools for measuring well-being developed by researchers in the field of ecological economics.

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7. References


