Measuring Poverty at the Regional Level in Spain: A Reflexive Approach

Midiendo la pobreza a nivel autonómico en España. Una propuesta reflexiva

Nerea Zugasti and Miguel Laparra

Key words

Autonomous Regions
• Income Distribution
• Measurement Scales
• Household
• Social Indicators
• Standard of Living
• Poverty

Abstract

This article assesses the utility of adjusting the poverty threshold for regional areas of Spain and of using thresholds anchored in time. It also offers a critical review of equivalence scales as a central element in estimating poverty. To do this, data from the Income and Living Conditions Surveys from 2007 to 2012 is used. The results show that poverty rates obtained with national thresholds are strongly influenced by intra-regional inequalities in income. They also show that regional thresholds capture differences in the well-being of the population, controlling for the effects of regional disparities in economic development. In addition, they demonstrate that anchored thresholds avoid inconsistencies in poverty rates tied to changes in income levels of the general population and not to changes in socially necessary resources.

Palabras clave

Comunidades Autónomas
• Distribución de la renta
• Escalas de medida
• Hogar
• Indicadores sociales
• Nivel de vida
• Pobreza

Resumen

El artículo valora la pertinencia de ajustar los umbrales de pobreza a los espacios regionales en España recurriendo además a umbrales anclados. Plantea también una revisión crítica de las escalas de equivalencia como elemento central para aproximarse a la pobreza. Se utilizan para ello las Encuestas de Condiciones de Vida 2007-2012. Los resultados evidencian, primeramente, que las cifras de pobreza derivadas de los umbrales estatales están influidas por las desigualdades de ingresos intra-territoriales. Muestran también que los umbrales autonómicos captan las divergencias en el bienestar, controlando los efectos de las disparidades en el desarrollo económico autonómico. Además, demuestran que los umbrales anclados evitan incoherencias en las cifras de pobreza vinculadas a cambios en los niveles de ingresos de la población general y no a modificaciones de los recursos socialmente necesarios.

Citation

Nerea Zugasti: Universidad Pública de Navarra | nerea.zugasti@unavarra.es
Miguel Laparra: Universidad Pública de Navarra | laparra@unavarra.es

Introduction

Diverse lines of research on poverty associated with different theoretical perspectives have contributed to the establishment of a range of approaches for quantifying it. This article evaluates the adequacy of methods for measuring poverty based on relative thresholds (linked to a reference year) in contrast to anchored thresholds for understanding the evolution of poverty. In addition, we look at the importance of regional thresholds for understanding the phenomenon at the regional level in Spain. Lastly, the factors that must be taken into account in addressing poverty after analysing the income necessary *to reach the end of the month* in Spain are also examined.

Reflections on these issues are relevant for two reasons:

First, because the comparison of poverty rates during the current period of crisis, a time in which there have been significant changes in the distribution of income and in poverty thresholds, may not adequately reflect changes in individuals' needs. Secondly, because this general problem can be aggravated when sub-samples or reduced geographical regions, where the thresholds may vary widely due to differences in sample deviation, are analysed. The issues to consider accumulate if we take into account the importance of evaluating economic differences among regions, so that we can offer an adequate measure of poverty. In the Spanish case, this need is greater because, as argued by Ayala *et al.* (2014), Spain is one of the OECD countries with the greatest internal social and economic differences.

We start from the premise that relative poverty thresholds may not adequately reveal trends in the evolution of poverty. Ups and downs in the threshold may determine changes in the proportion of the population considered to be poor that do not coincide with variations in what is effectively considered necessary for integration in current ad-

vanced societies. In addition, we understand that the establishment of a national threshold, that is not based on the prices, practices and customs of Spain's different autonomous regions, is an obstacle to understanding the magnitude of the phenomenon.

Approaches to measuring poverty

Studies on poverty have been an important source for understanding social inequalities. We have also seen important modifications and improvements in measurement methods over the years, "overcoming specific problems in comparability (such as household economies of scale), increasing the complexity of indicators (introducing measures of the intensity of poverty, such as the poverty gap) and developing more dynamic analyses based on panel surveys (identifying persistent poverty)" (Laparra and Pérez, 2008).

However, in analysing these methods it is necessary to take into account the importance of an accurate measurement of poverty for establishing policies to fight poverty and for evaluating their impact. As Ayala points out (2014 *et al.*), the establishment of poverty thresholds can have a significant effect on the conclusions we draw regarding the implementation of social policies.

Initial methodological debates on the measurement of poverty

Debates on measuring poverty go back to the very beginnings of the capitalist model. Looking at England in this period is obligatory as it was a reference on a world scale for discussions and proposals for addressing poverty.

Rowntree's studies on poverty in York, based on surveys carried out in 1899, 1936 and 1950, are an important reference underlying much of European analyses of poverty. Rowntree (1901) developed the idea

of a *basket of goods*, which he considered basic for survival and a reference for the establishment of a poverty line. This has been referred to as the "budget standard approach". He established a notion of absolute poverty, based on a level of deprivation or lack of resources that did not allow persons to access the basket of goods and services necessary to develop a minimally healthy life.

Criticisms of Rowntree raised by Atkinson (1989) emphasised problems such as the possible lack of representativeness of York, the limitation of the surveys to working class homes, the lack of response of a proportion of households, the apparent deviation of the sample design and the inexactitude of the information gathered. The most resounding critique of a conceptual nature, however, comes from Townsend (1954), who wrote immediately after the last study by Rowntree.

Townsend introduces the concept of relative poverty, more fitting given the redistributive aims of advanced industrial societies. He was interested in understanding the extent to which the overall population participated in a *common lifestyle* and who were those who did not. "Relative poverty is defined as the lack of resources or consumption in relation to parameters defined by a concrete society regarding what is essential for a dignified life" (Martínez-Virto, Lasheras and Zugasti, 2013). This approach represented a conceptual break and was an important methodological contribution. The analysis of poverty based on the measurements established by the social programmes aimed at eradicating it have been a constant since then.

A range of approaches

The work of Rowntree and Townsend was the starting point for a broad debate in Europe about how to measure poverty. Two major approaches can be identified: subjective or consensual methods, and objective or relative methods.

Subjective or consensual methods

Subjective methods for measuring poverty establish an income scale (a poverty threshold) based on survey results regarding income needs.

The so-called Amberes CSP (Centre for Social Policy) method or Deleeck method (named for Hermann Deleeck, its originator), consists in establishing a social subsistence minimum (SSM), in other words, a minimum level of income necessary to live not only in terms of subsistence, but also based on an idea of what is socially necessary. This minimum is calculated based on responses to three survey questions. The first refers to minimum income (In your opinion, what monthly income would you need to reach the end of the month?). The second question refers to the security of existence (With the income that you receive, how do you reach the end of the month?). The third question captures effective income (What is your family's total income?).

The calculation is carried out in the following manner:

- Households that stated in answering the second question that they have difficulties are selected.
- The average income and average necessary income is calculated for these households and for each type of household (in general, classified according to the schema: /n.° adults /n.° children /n.° elderly). For a household type to be accepted, there must be at least 30 cases in the survey.
- From the average income and average necessary income, the lower is chosen and the average is again calculated eliminating the cases that are more than two standard deviations from that average.

Based on this method, it is possible to establish different gradations. Households with incomes below the social subsistence minimum for their type of household are considered to be in a precarious situation. Those

that have incomes equal to or superior are considered to have a secure existence.

Within subjective methods, the SPL (Subjective Poverty Line) method, which is a simplified version of the LPL (Leyden Poverty Line), is intended to establish a poverty line based on family income, family size and the opinion of those surveyed regarding how much is needed to reach the end of the month. The system for calculating this poverty line is based on the idea that those who know best what is needed to reach the end of the month are those that barely manage to do so. The closer income is to the poverty line, the more accurate is the opinion of those surveyed. The very poor tend to underestimate what is necessary, and the very rich to overestimate it.

The SPL method is theoretically attractive, but has not become widespread in Europe because its indicators are not easily comparable over space and time. In addition, its version of relative poverty establishes high levels of poverty, not very plausible in southern European countries (Gobierno Vasco, 2008). However, there have been important uses of this method within Spain. Methods for measuring poverty as well as precariousness employed by the Basque regional government are based on the SPL method.

Objective or purely relative methods

In contrast with the above approaches, objective or purely relative methods use "objective" economic data, in general net family disposable income per member per year, as a reference to establish an income scale.

Amartya Sen (1995) argues that the seriousness of poverty in a specific society does not exclusively depend on the number of person affected, but also on the intensity of the deprivation suffered and on the inequalities that exist among the poor population. As a result, his methodological approach begins with the number of persons below a particular

income threshold, who in proportion to the total of the population we refer to as H. He introduces the distance of income from the poverty line (poverty gap), which in per capita terms is I, as well as inequality among poor persons, which using the Gini coefficient, is G. A synthetic indicator of poverty, sensitive to all these variables would be:

$$P = H [I + (1 - I) G]$$

In addition, considering the importance of the processual nature of exclusion, and in concrete, the variable of time, other approaches consider the duration of the period in which there is a lack of income, with the classic formula $P=Y T$: Where P is the poverty rate, Y is the income gap and T is the duration of the period of deprivation. However, Robert Walker (1995) revealed the difficulties of this formula to account for, among other things, variations in purchasing power and in the extent and intensity of poverty in distinct phases during which persons are considered to be in situations of poverty.

Regarding the analysis of exclusion, longitudinal analyses of the time in which persons remain as recipients of social assistance programmes have gained in importance. As Buhr and Leibfried (1995) point out, such analyses can define the time considered in different ways: the duration of the last period of payment, or duration during the complete cycle of assistance, either from first contact until final exit from the programme, or considering net time as a recipient.

Differences in the methods used raise a political problem regarding the definition of the groups toward which anti-poverty policies have to directed. In this context, the poverty indicator used by Eurostat – 60% of the national median equivalised disposable income– has become the accepted indicator at the European level.

The European Union is the standard bearer in Europe in establishing a method for

measuring poverty. The analysis of poverty in this context has been clearly linked to the construction of objective indicators of a relative nature. The intention is to see where the population is situated in relationship to a limit emerging from the application of a percentage to a statistical indicator measuring net disposable income or level of incurred expenditure (Gobierno Vasco, 2008).

The initial programmes in Europe to fight poverty employed and consolidated a method for measuring poverty centred on average net equivalised income per capita. Households with net incomes below 50% of average income by equivalent consumption unit were considered poor. This income was obtained by applying a weighting counting the first adult in the household as 1, other adult members and persons over 14 years of age as 0.7 and children as 0.5. Thus, the equivalence scale used at Oxford was employed, also adopted by the OECD.

This methodology was widely employed in Spain (EDIS, 1984; Fundación FOESSA *et al.*, 1998) and significant levels of poverty were found using this 50% average. Debate at the European level continued in the following years and an agreement was reached over a new method that used median income rather than average income and that fixed the poverty line at 60% of median income. An OECD-modified equivalence scale was also used, establishing the following values:

First adult: 1.0

All additional adults and persons aged 14 and over: 0.5

Each child under 14 years of age: 0.3

As a result, Eurostat currently operatively defines the "population at risk of poverty" as those persons who live in households with equivalised disposable income below 60% of national median equivalised disposable income. Although the total income of the household is taken into consideration, the units of analysis are the persons in the household (Atkinson *et al.*, 2002). The term "at risk of poverty" is a political solution to a conflict over whether to identify this group as poor or not. The simplicity of the indicator, clearly understandable by the broad public, has converted it into the most frequently used in studies of poverty in Europe.

However, comparing poverty rates over a period of time in which there are notable changes in the distribution of household income means that changes in the threshold may not adequately reflect changes in household needs. A significant decline in the threshold, result of a general impoverishment of the population, does not mean that the volume of socially necessary resources for a dignified life have necessarily been reduced. The reverse is also true: an increase in the threshold due to a general increase in wealth can hide improvements in the population's standard of living and, concretely, for those most disadvantaged.

This problem can be worse when analysing smaller sub-samples or geographic areas, where the threshold can shift widely due to sample deviation. The solution to this problem, particularly in periods of significant economic change, is to use a constant scale for the period being analysed. This is what Eurostat does when it provides poverty rates calculated in function of a threshold whose value is maintained constant or "anchored in time" over a specific number of years. Clearly, to apply the threshold from an earlier year, a correction must be made for the changing value of money. Authors such as Martínez and Navarro (2014) argue that this option more accurately reflects the experience of families whose incomes have drastically declined during the crisis, due in many cases to having to meet necessary expenditures that are difficult to avoid in the short-term.

METHODOLOGY

This study uses data from Spain's Living Conditions Survey (ECV), part of the European Union's EU-SILC database, as the foundation for analysis. The ECV is a key source of information on issues such as household economic situation. The sample consists of 16,000 Spanish households interviewed and distributed across the country's autonomous regions.

Based on data from 2007-2012, a poverty rate for each autonomous region has been calculated using the widely used Eurostat method – considering those persons at risk of poverty who are below the threshold of 60% of median net annual equivalent income per capita.

However, and taking into account the difficulties in following the evolution of poverty in a period such as the one analysed, in which there have been significant year to year changes in the threshold, we have used a threshold based on the average threshold for each year during the period we are examining, adjusted for changes in purchasing power:

— A threshold is established for each year (60% of median equivalent income).
— The threshold for each year is updated in constant Euros from the last year of the period analysed.
— The average for the thresholds for all the years of the period are calculated in constant Euros.
— The resulting average is converted into current Euros for each year.
— The resulting threshold for each year is applied to the corresponding annual data.

The use of a stable threshold is intended to take advantage of the strengths of the commonly used anchored thresholds, with certain modifications aimed at providing a more accurate measure of poverty. An an-chored threshold is based on the establishment of a poverty threshold for the first year of the period being analysed and then updating it based on the general increase in prices. One of the potential benefits of an anchored threshold is that it permits us to avoid changes in poverty rates resulting from changes in annual thresholds that are the consequence of the impoverishment or enrichment of the population and not necessarily tied to changes in the volume of socially necessary resources for a dignified life.

However, to analyse periods of a specific duration, anchored thresholds can become out of date as a reference depending on how inequality within a population evolves. This is because updating income levels in function of the general level of prices does not necessarily take into account changes in the distribution of income over time or in the expectations of the population. For this reason, the methodological approach to measurement in this study takes into account the average of the thresholds corresponding to all the years of the period, prior to updating the thresholds for each year in function of changes in the level of prices.

In this way, a vision of the overall income levels for the period analysed is provided; in addition, the potential from using anchored thresholds remains. The aim is to answer the question of whether the population that has less than X Euros in a given period increases or decreases.

In addition, it is necessary to point out that in studies on poverty, recourse to a single threshold for the whole country is common. However, in this study we have considered it necessary to use regional thresholds that reflect regional differences. This is justified by the existing differences in consumption patterns, in prices and income levels, as well as by the decentralisation of social policies and variations in social resources across Spain's autonomous regions. Studies such as Rainwater *et al.* (2001) suggest that resor-

TABLE 1. *Rate of risk of poverty, based on a national threshold and an anchored national threshold*

	National threshold						Stable national threshold					
	2007	2008	2009	2010	2011	2012	2007	2008	2009	2010	2011	2012
Andalusia	27.9	29.3	28.4	29.6	32.4	31	28	27.7	25	28	34.4	35.1
Aragon	17.3	15.5	12	15.3	16.4	19.5	17.3	14.7	11.4	13.8	17.5	21.5
Asturias	11.4	13.1	13.2	12.5	10	16.9	11.7	11.2	12.1	11.6	11.6	19.1
Cantabria	12	11	13.3	18.2	18.6	14.9	12	10.6	11.2	16.3	22.9	19.2
Castile-La Mancha	28.7	29.4	29	30.2	33.6	33.1	28.7	27	25.1	29	36.7	37.6
Castile and Leon	23	23.6	19.8	21.2	20.6	17.3	23.3	21.1	17.3	19.7	24.4	20.3
Catalonia	13.8	13.6	15.4	15.9	17.6	16.8	13.9	12.9	14.2	15.2	19.1	18.6
Valencian Community	17.7	22	18.6	22.7	20.6	23.8	17.8	18.8	15.5	21.6	22.5	27.5
Extremadura	40.1	37.5	34.2	38.9	30.9	34.1	40.3	35.7	30.2	36.6	33.6	39.3
Galicia	19.2	21.2	18.6	17.1	19.1	16.8	19.5	20.4	15.1	15.8	20.4	20.8
Balearic Islands	15.7	14.4	16.7	20.3	19.9	24.2	15.7	13.3	15.7	19.6	20.8	26.4
Canary Islands	27.5	27.9	30	33.3	35	33.2	27.5	27.1	25.6	32.3	37.1	39
La Rioja	20.1	21.4	20.5	21.1	23.9	18.8	20.2	20.6	17.3	20.4	25.2	21.8
Madrid	12.9	15	14.8	14.2	15.5	15	12.9	14	13.1	12.7	16.7	18.2
Murcia	26.9	25.8	30.5	29.9	26.6	29.9	26.9	23.9	26.5	29.7	29.9	33.8
Navarre	5.2	5.9	7.6	7.7	9.6	8.1	5.5	5.7	6.8	7.5	10.2	8.6
Basque Country	12.6	10.1	8.4	12.2	11.5	12.6	12.6	9.7	7.7	11.8	12.5	14.3
SPAIN	19.7	20.7	20.1	21.4	22.2	22.2	19.8	19.2	17.6	20.3	24	25.5

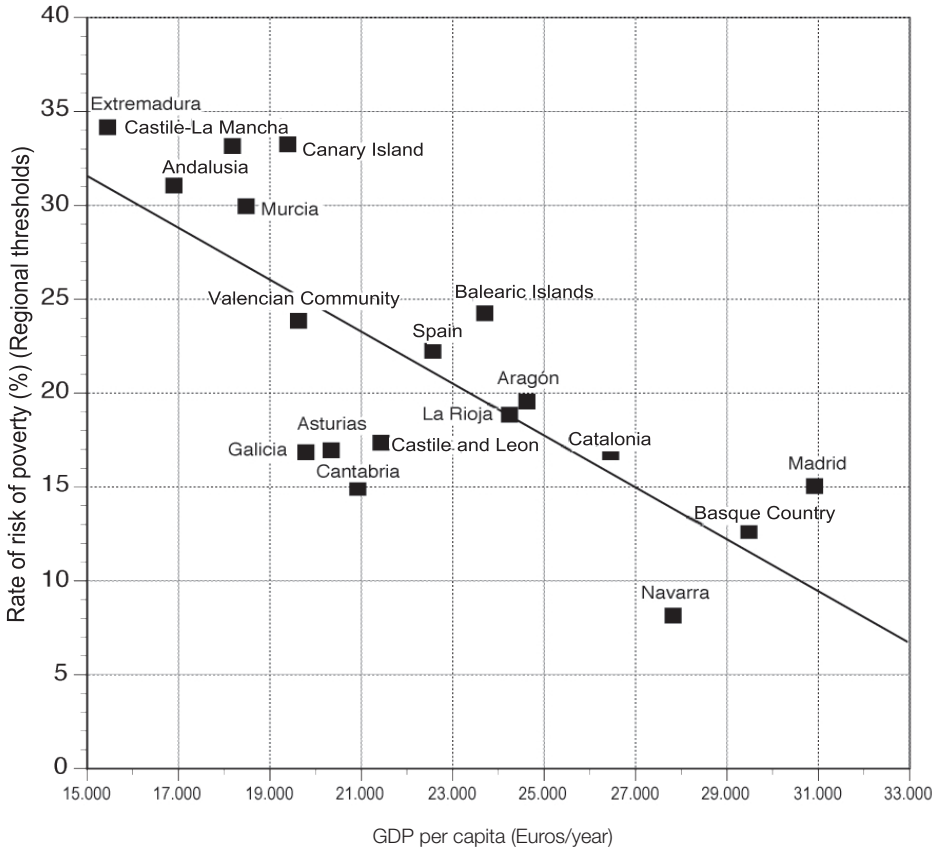*Source:* ECV (INE).

TABLE 2. *Relative national thresholds by equivalent person for calculating the population at risk of poverty in Spain*

	Threshold in Euros	Reduction (%)
2007	6,967	8.5
2008	7,560	2.0
2009	7,714	-1.5
2010	7,600	-4.3
2011	7,272	-1.2
2012	7,182	

Source: ECV (INE).

GRAPH 1. *Rate of risk of poverty by Autonomous Regions (using a relative national threshold) and GDP per capita*

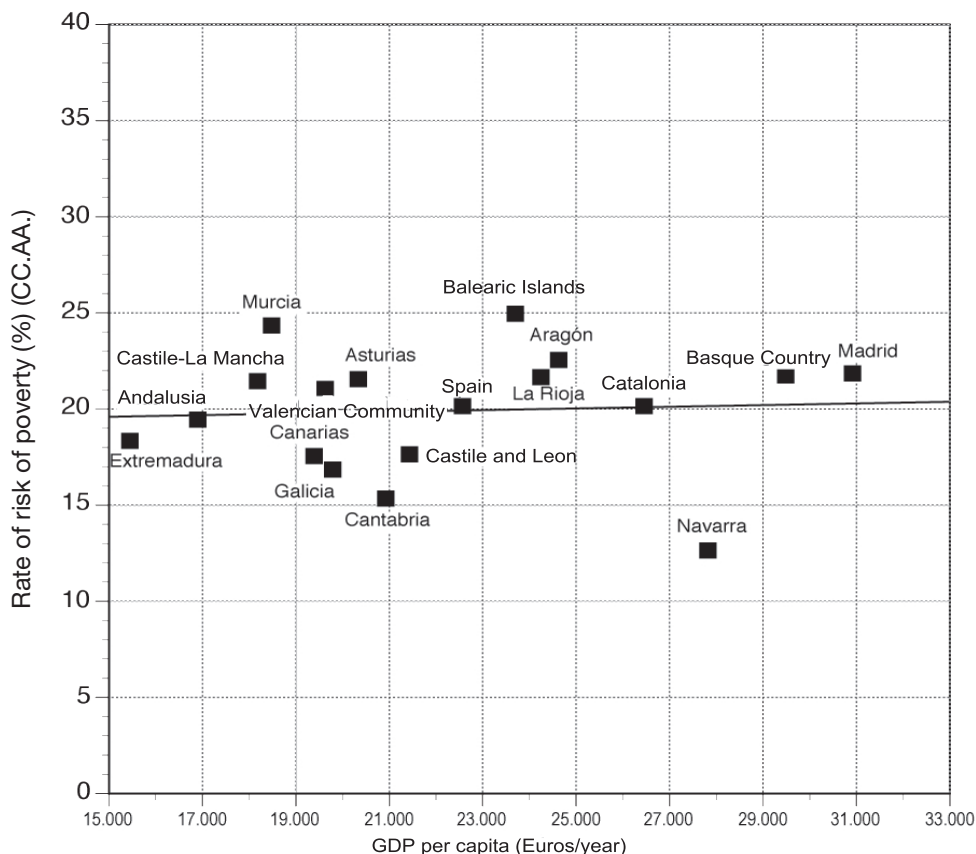*Source:* ECV and 2012 Regional Accounting for Spain (INE).

ting to a local standard to assess poverty that takes into account variations in the cost of living, differences in consumption patterns, as well as differences in the meaning of the possibilities of consumption on social participation and social activities, provides a better, although not perfect, approximation of situations of poverty.

It must be taken into account that in 2013 a new methodology was adopted in carrying out the Living Conditions Survey that consists in the use of administrative files for data related to household income collected in the survey, resulting in a rupture in the series.

Subsequent data is not comparable with prior published data. Nevertheless, the period chosen for the analysis (income from 2006-2011 gathered in the 2007-2012 data) captures a time of transformation in the economic situation of Spanish households with a clear impact on the modification of relative thresholds, making the resulting analysis particularly relevant.

Differences in poverty based on the different methods

In what follows we present a comparison of the results obtained for Spain as a whole and

GRAPH 2. *Rate of risk of poverty by Autonomous Regions (relative regional thresholds) and by GDP per capita*

Source: ECV and 2012 Regional Accounting for Spain (INE).

in the different autonomous regions using a relative threshold established at 60% of median equivalised net income per person as well as the stable threshold we developed. We also examine the results from using stable regional thresholds.

The application of relative and anchored national thresholds

According to the results from using the Eurostat method, it took some time for the crisis to push households in Spain below adequate income levels. The effects begin to be seen

starting with the 2010 survey, which found an increase of 1.3 percentage points in those at risk of poverty in comparison to 2009. The population at risk of poverty continued to grow according to subsequent surveys. Ultimately, in a moment of clear economic, employment and social shock in Spain, based on the 2011 and 2012 EVC, which reflect data from 2010 and 2011, the population at risk of poverty reached 22.2% in 2010 and remained at that rate in 2011.

The results from using a relative national threshold are difficult to understand given the

TABLE 3. *Rate of risk of poverty using regional threshold and stable regional threshold*

	Regional threshold						Stable regional threshold					
	2007	2008	2009	2010	2011	2012	2007	2008	2009	2010	2011	2012
Andalusia	17.5	19.8	20.8	20.3	22.6	19.4	18.4	18.4	18.2	19.4	24	23.7
Aragon	21.5	19.8	18.6	21	19.9	22.5	21.6	18.9	15.1	19.6	21.7	27.6
Asturias	17	14.1	16.3	14.6	17.8	21.5	18.8	14.6	16.1	14.6	16.3	25.3
Cantabria	16.1	13.1	19.1	19.1	22.4	15.3	15.5	11.8	13.3	20	26	21.9
Castile-La Mancha	17.4	18.6	22.4	20.3	22.2	21.4	19	15.9	16.4	17.9	24.5	26.3
Castile and Leon	20.8	20.3	18.7	21.7	21.4	17.6	22.6	21	17	18.7	23.4	20.3
Catalonia	19.5	17.3	19.6	20.9	20.5	20.1	18.9	15.8	17.2	19.3	23.3	22.3
Valencian Community	17.3	18.3	17.4	20.7	19.9	21	16.5	17.4	14.3	20.2	20.8	25.6
Extremadura	16.7	16.2	16.7	22.1	19.5	18.3	19.3	16.9	14.4	22	18.3	21.2
Galicia	17	19.9	14.8	17.1	18.9	16.8	18.6	19.9	14	14	19.4	18.8
Balearic Islands	25.8	15.7	22.4	24.1	24.2	24.9	25.5	15.7	17.7	22.6	24.2	29
Canary Islands	18.1	18.9	19.7	25.5	23.8	17.5	17.6	17.6	19.4	24.5	25.2	25
La Rioja	20	21.4	20.8	26.6	25.1	21.6	21.1	21.4	18.2	21.1	28	23.9
Madrid	21	21.1	21.9	18.8	22	21.8	20.7	19.9	19.5	19.1	24.9	23.7
Murcia	21.3	23.1	22.4	23.3	17.5	24.3	19.5	19.9	20.2	25.1	24.7	28.6
Navarre	15.7	12.6	15.4	18.3	17.3	12.6	16.1	12.9	12.9	15.1	19	21
Basque Country	19.3	16	18.1	20.3	20.3	21.7	20.3	16.8	14.4	18.8	21.1	22.7
SPAIN	18.9	18.8	19.6	20.5	21.1	20.1	19.2	17.9	17	19.4	22.9	23.7

Source: ECV (INE).

current reality in Spain's regions. In the 2009-2012 surveys, which reflect the initial years of the economic and employment crisis, we find a decline in the population in households at risk of poverty in certain autonomous regions. In Castile and Leon, poverty declined by 2.5 percentage points. This trend is also found in Galica (1.8 points), La Rioja (1.7 points) and Murcia (0.6 points). If we look at these results in the context of different studies that examine the impact of the crisis on Spanish households from a regional perspective (Fundación FOESSA, 2014; Laparra and Pérez, 2012), an improvement in the situation in approximately a fourth of the country's autonomous regions is difficult to imagine, as is the lack of a change in the proportion of the population at risk of poverty at the national level between 2011 and 2012.

These findings should be framed within the worsening economic situation for a significant part of the population, which is reflected in a reduction in the income scale from which situations of poverty are defined. The national poverty threshold fell, declining 7% or 532 euros between 2009 and 2012. This reveals a process of impoverishment of Spanish society, based on a decline in income,

an increase in inequality and the collapse of the incomes of those at the bottom of the income scale (Ayala, 2014).

These changes in the income scale do not imply changes in the minimum necessities that must currently be met, nor in the quantity of money necessary to meet them. Instead, they reveal the limitations in measuring poverty in periods such as the current one, in which there has been a significant decline in the economic possibilities of a good part of the population and a consequent modification downward of the poverty threshold.

Turning to anchored thresholds makes sense under these conditions. A stable threshold shows a greater increase in the population at risk of poverty. Thus, from the 2009 survey until the 2012 survey, it reveals a growth of 7.9 percentage points in the population at risk of poverty. In addition, with the use of a stable national threshold, we find an increase in poverty in all of Spain's autonomous regions, particularly alarming in the Canary Islands and Castile-La Mancha .

Looking at the differences in the figures between these two methods, we find that use of national thresholds, whether stable or not, provides support for the idea that regions with higher income levels have lower rates of poverty. The areas with lower levels of the population at risk of poverty are also those with higher median incomes. The cases of Navarre, the Basque Country and Madrid are clear examples of this.

In reality, the differences in official poverty rates between autonomous regions (based on a single national threshold) do not reflect differences in social inequalities, in terms of the social structure, but rather differences in the level of wealth between regions. This can be seen in the following graph, which shows the relationship between GDP per capita and the poverty rate using the relative national threshold.

In other words, a single national threshold is affected by inter-regional income inequali-

ties. Although it can useful in providing information about internal inequalities in the Spanish context, there are doubts about its adequacy for quantifying the proportion of persons that effectively face a lack of income, where factors specific to each region have an impact.

The application of regional thresholds

If we focus on quantifying poverty through thresholds based on income in the different Spanish autonomous regions, the situation changes dramatically. First, we find the order of the regions in function of their level of poverty changes. Galicia and Castile and Leon, which were in intermediate positions in terms of their poverty rates according to the national threshold (both stable and relative), are now in more favourable positions (first and second position as measured by the rate of poverty calculated using a stable regional threshold). Secondly, we also find smaller differences among the regions in the proportion of the population at risk of poverty.

This suggests that the increase in wealth in one region with respect to another does not necessarily indicate a reduction in internal inequality. Variations in the results of the analysis based on regional thresholds have to be understood within an analytical framework that does not capture inter-regional income inequality, as happens with a national threshold, but rather differences in the well-being of the population. The association between economic development and reducing poverty is not clear if we use regional thresholds.

In addition to the findings already mentioned regarding the limitations of national thresholds, strongly affected by regional inequalities in terms of economic development, there are also other factors to be considered. As Ayala *et al.* (2014) point out, the expectation is that prices would be lower in poorer regions of the country. This should be framed within differences in structural factors

TABLE 4. *Regional thresholds by equivalent persons for calculating poverty*

	Relative thresholds						Stable threshold
	2007	2008	2009	2010	2011	2012	
Andalusia	5,651	6,216	6,518	6,238	5,945	5,902	6,368
Aragon	7,806	8,494	8,739	8,479	8,300	8,020	8,724
Asturias	7,642	8,100	8,231	8,209	8,765	8,160	8,603
Cantabria	7,566	8,160	8,694	7,753	7,560	7,327	8,268
Castile-La Mancha	5,600	6,300	6,640	6,298	5,771	5,562	6,337
Castile and Leon	6,574	7,245	7,508	7,707	7,403	7,385	7,699
Catalonia	7,996	8,448	8,612	8,497	8,016	8,082	8,743
Valencian Community	6,835	7,231	7,538	7,202	7,000	6,840	7,460
Extremadura	4,918	5,352	5,708	5,535	5,800	5,274	5,695
Galicia	6,520	7,123	7,253	7,661	7,224	7,187	7,517
Balearic Islands	7,831	7,996	8,360	8,378	8,240	7,406	8,431
Canary Islands	5,764	6,402	6,207	6,277	5,882	5,166	6,156
La Rioja	6,800	7,509	7,749	8,460	7,485	7,707	8,009
Madrid	8,400	9,261	9,254	8,851	8,721	8,720	9,322
Murcia	6,430	7,200	6,880	6,305	6,124	5,984	6,799
Navarre	9,421	9,874	10,382	10,978	9,856	9,662	10,513
Basque Country	8,804	9,141	10,269	9,977	9,702	9,801	10,106

Source: ECV (INE).

related to regional labour markets and economic development. Rubiera *et al.* (2013) show that regions with higher incomes, more specialisation in tourism and with higher levels of urbanisation have higher costs of living. They also argue that if we take standard of living into account, we find a greater level of poverty in those areas than common methods reveal. The coverage of social needs is associated with regional differences in prices and this results in the need for different approaches to measuring poverty on a regional level.

We suggest that levels of regional spending, although mediated by possible differences in practice and customs, can be a proxy for variability in prices. An example of this are annual average housing costs per person. The Household Budget Survey for 2012, carried out by Spain's National Statistics Institute, found a difference of more than 2000 euros in housing costs between the most expensive region, the Basque Country (4,741 euros per person), and the region where housing expenses were the lowest, Extremadura (2,614 euros per person). Housing costs include water, electricity, gas and other fuels; in other words, costs linked to the satisfaction of basic necessities. In addition, we should take into account that responsibility for the strategies to fight poverty and exclusion in Spain and the policies esta-

TABLE 5. *Income that is considered necessary to reach the end of the month for the population situated between 40% and 80% of median equivalent income, by type of household*

	Households	Average	Stan. Dev.	How much more for 1 additional adult	How much more for 1 additional child
1 Single adult	1,223,783	1,013	449.126		
2 Adults	1,206,876	1,348	489.276	335	
3 Adults	545,668	1,640	629.749	292	
1 Adult and 1 child	59,166	1,279	287.828		266
1 Adult and 2 children	13,325	1,484	369.784		205
1 Adult and 3 children	2,789	1,569	172.633		85
2 Adults and 1 child	415,913	1,717	571.670	438	369
2 Adults and 2 children	361,391	1,815	515.109	331	98
2 Adults and 3 children	37,851	1,926	604.498	357	111
		Avg. (Additional Euros)		350	189
		% with respect to 1 single Adult		34.6	18.7

Source: ECV (INE).

blished for this end are increasingly being transferred to regional governments (Ayala, 2014).

In the second phase of national plans, framed within the *European Strategy for Social Inclusion,* stress was placed on the importance of developing a strategy at the local level to be effective and the need to mobilise all social actors. Such a plan is appropriate given the specificities of the Spanish case, as the central state has little presence due to the decentralisation of powers to regional governments and local authorities regarding social services, minimum income and programmes for inclusion. Using regional thresholds so a solid diagnosis of the situation can be made is necessary to address poverty and construct more effective policies.

However, use of relative regional thresholds may lead to important gaps in the data.

There are many autonomous regions in which we find figures that do not reveal any trend, but instead seem to lack explanatory logic. In Murcia, where the sample size is small, we find a decline in poverty of 5.8 points in 2011, followed by an increase of 6.8 points in the following year. Problems with the sample, which can lead to important deviations in annual thresholds, may be behind these results.

In addition, in 7 regions (Andalusia, Canary Islands, Cantabria, Castile-La Mancha, Castile and Leon, Madrid and Navarre) we find declines in the percentage of households at risk of poverty from 2009 to 2012. This was actually a pre-existing trend. This must be related, as we have seen with the situation revealed by the relative national threshold, not so much to a real improvement in the economic situation of the population and households, but to the application of the Eurostat method to the ECV resulting in a de-

TABLE 6. *Income that is considered necessary to reach the end of the month for the population situated between 40% and 80% of median equivalent income, by housing regime, residential environment and Autonomous Region. Comparing Oxford equivalence scale and revised scale*

| | Revised equivalence scale | | | | | | | | | Oxford equivalence scale |
| | Housing tenancy regime | | | | | Residential environment | | | | |
	Owned without mortgage	Owned with mortgage	Rent at market price	Rent below market price	Granted free of charge	Very populated area	Average population	Low population area	Total	Total
Andalusia	918	989	879	763	811	932	861	908	907	792
Aragon	828	1,084	1,027	494	846	969	901	858	907	824
Asturias	896	967	992	835	951	923	1,060	908	931	856
Cantabria	1,088	1,030	1,136	1,039	982	1,175	1,010	1,039	1,068	959
Castile–La Mancha	915	1,010	832	1,040	1,052	1,039	889	913	933	826
Castile and Leon	833	1,169	856	921	926	913	941	875	897	817
Catalonia	1,076	1,437	1,219	1,052	1,018	1,147	1,266	1,175	1,185	1,066
Valencian Community	891	1,003	842	894	871	942	863	939	905	809
Extremadura	723	890	837	704	874	717	677	795	783	691
Galicia	1,062	1,395	995	828	1,025	1,059	1,112	1,102	1,092	975
Balearic Islands	905	1,111	846	598	940	846	876	1,067	921	821
Canary Islands	996	882	933	793	808	920	951	954	933	834
La Rioja	915	1,302	1,170		846	1,056	1,098	872	995	901
Madrid	1,140	1,357	1,228	884	1,520	1,203	1,358	1,298	1,218	1,095
Murcia	848	1,007	834		919	989	843	871	908	799
Navarre	1,025	1,205	1,128	873	1,194	1,087	1,272	991	1,081	980
Basque Country	1,075	1,302	1,086	994	1,079	1,123	1,118	1,066	1,118	1,007
SPAIN	978	1,173	1,042	873	989	1,073	1,019	958	1,026	918

Source: ECV (INE).

cline in regional poverty thresholds in a good number of Spain's autonomous regions. Thus, in the Canary Islands, we find a decline of 12.2% between 2011 and 2012 based on the relative regional threshold and this translates into one of the largest reductions in the rate of poverty, of 6.3 percentage points.

The use of stable regional thresholds, bringing together the potential of regional thresholds, results, in comparison to relative thresholds, in a reduction of the deviations produced by small sample size and by annual changes in the threshold, which are not related to any effective change in the minimums needed to cover basic needs in current societies. As a result, a growth in the population at risk of poverty between 2009 and 2012 is found in all of the autonomous regions. The "erratic" figures (ups and downs in consecutive years) are also reduced, revealing clearer trends in the evolution of poverty.

Revising the most widespread approach to calculating consumption units

This article has already addressed the importance of using anchored thresholds to understand the evolution of poverty, as well as the need to carry out analysis from a regional perspective, both because of the existence of important differences in levels of income and in the structure of systems of social protection across regions. However, a thorough analysis of the methodology for measuring poverty, with the intention of improving the adequacy of the indicators used, which is one of the key aims of this study, cannot ignore a third key factor: the evaluation of calculations of consumption units and consequently a review of equivalence scales.

We have already pointed out the importance of addressing what the population indicates as necessary to reach the end of the month to understand situations of poverty. For this reason in the following table we show a simple calculation of how much income is necessary, according to the population, when an

additional member is added to the household. To do this we have chosen the population that is found in the middle income area (between 40 and 80% of median equivalent income) to avoid the distorting effect of the extremes.

Comparing certain types of households with others (each household is compared with one with one fewer member, adult or minor according to the case), we can estimate how much income is necessary, in the judgement of the Spanish population, to adequately maintain an additional member, whether an adult or minor. Based on these comparisons we have established an average.

We can see that for all the different types of households, the total amounts (the estimated necessary average) is higher than the poverty threshold and much higher than the threshold measuring severe poverty. It should be pointed out, however, that estimated quantities in table 5 are well below the majority of those used in minimum income programmes and in other mechanisms to provide income assistance, which tend to discriminate against larger households.

The calculations indicate that the Spanish population believes that 35% more income is necessary per additional adult and 19% per minor to reach the end of the month. This compares with 50% more per additional adult and 30% per minor on the Oxford scale. This, therefore, suggests the need to further revise equivalence scales.

The differences between the data obtained based on the revised consumption units (35% more for an adult and 19% for a minor) and that from the Oxford scale regarding the money that households need to reach the end of the month, are significant. More importantly, the direct application of the latter does not seem to be grounded in knowledge of how Spanish households function. Rather, it is based on studies carried out in countries (of Protestant roots) with attitudes and habits toward family solidarity that are radically different from those in Spain, and with social

protection mechanisms which are also very different. In fact, Spain's National Statistics Institute (INE) has argued for the inadequacy of the Oxford scale for Spain (INE/UAM, 1996). As can be seen in table 6, when we look at the figures for Spain overall, the income considered necessary according to the Oxford scale is approximately 10% less than that found when we use the revised consumption units.

In addition, and as expected, the estimates differ in function of the key variables. The already mentioned importance of place of residence as a fundamental factor stands out. In Madrid, we see a difference between the two methods compared in table 6 of 123 euros in the quantity considered necessary to reach the end of the month.

The analysis carried out also reveals the importance of other factors to understand situations of poverty, such as the housing tenancy regime. We should emphasise that calculations of poverty using imputed rents or mortgages are relatively common, such data often available online through sites such as Spain's National Statistics Institute and Eurostat. Less common is recognising the impact of differences in cost of living between rural and urban areas in reaching the end of the month. This issue can be clearly seen in table 6, which also reflects how rural-urban differences interact with inter-regional inequalities in the income considered necessary to reach the end of the month.

CONCLUSIONS

Measuring poverty has been an issue of recurring debate in many social science disciplines. However, although discussion continues in Europe over the use of objective and subjective methods, the indicator used by Eurostat for measuring poverty, which defines persons at risk of poverty as those living in households below 60% of median annual net equivalent income, has become broadly established across Europe. The strength of this method is its simplicity and the ease with which results can be understood by the general population.

However, it could be considered more an indicator of inequality than of poverty. Measuring the proportion of the population that is below a specific income (the median), the figures that result are affected by variations in high and middle incomes, without this necessarily indicating any change in the situation of the poor. Interpreting these figures in periods such as the current one, in which there has been a general decline in income for the population, can lead to errors. If the income of the overall population declines, the poverty threshold will also decline, without this necessarily meaning that the minimum needs that must be satisfied have changed. In addition, its application in areas with small sample sizes can lead to deviations in the threshold that may mask actual trends.

The current economic conjuncture in Spain has had a very noticeable impact on the country's most vulnerable groups, with many families facing serious difficulties in meeting their most basic household needs (Laparra and Pérez, 2010 and 2012). However, the Eurostat indicator has been shown to have difficulties in capturing the specificities of this context. The strength of the social crisis in Spain has revealed the limitations of this method for capturing rapid social changes.

The poverty rates for Spain's different autonomous regions, calculated with national thresholds based on the same methodology as Eurostat, are, in reality, reflecting inequalities in inter-regional income. Thus, approaches based on regional thresholds show smaller differences between regions in the proportion of the population at risk of poverty and permit a contextualisation of poverty within a framework based on regional practices, customs and prices. This is particularly important for implementing so-

cial policies, as it is at the regional level in Spain where the potential of such policies are developed.

Despite many comparative studies of poverty using relative national thresholds, the results show that the use of thresholds that do not take into account inter-regional differences in prices and inequalities in income, or the jumps that relative thresholds can and do produce as a consequence of changes in the overall income of the population, can lead to important difficulties in accurately assessing and addressing poverty. This is an important issue and reveals the importance of developing instruments, such as the stable regional thresholds used here.

No less important is the need to revise systems for measuring poverty in function of the size and composition of households. As we have shown, the equivalence scales often used do not seem to be accurately adjusted to households' economic necessities. The choice of equivalence scale has a specific effect when measuring poverty, but above all, it substantially alters the composition of the sectors considered poor. We have also seen the importance of rural-urban differences and housing tenancy regimes in analysing poverty.

BIBLIOGRAPHY

Atkinson, Anthony B. (1989). *Poverty and Social Security*. Hertfordshire: Harvester Wheatsheaf.

Atkinson, Tony; Cantillon, Bea; Marlier, Eric and Nolan, Brian (2002). *Social Indicators: The EU and Social Inclusion*. Oxford: Oxford University Press.

Ayala, Luis (2014). *Desigualdad y pobreza en España en el largo plazo. La continuidad de un modelo*. Working Paper VII Informe sobre exclusión y desarrollo social en España. Madrid: Fundación FOESSA.

Ayala, Luis; Jurado, Antonio and Pérez-Mayo, Jesús (2014). "Drawing the Poverty Line: Do Regional Thresholds and Prices Make a Difference?". *Applied Economic Perspectives and Policy Advance Access*, 36(2): 309-332.

Buhr, Petra and Leibfried, Stephan (1995). "What a Difference a Day Makes: The Significance for Social Policy of the Duration of Social Assistance Receipt". In: Room, Graham (ed.). *Beyond the Threshold. The Measurement and Analysis of Social Exclusion*. Bristol: The Policy Press.

EDIS-Cáritas (1984). "Pobreza y Marginación". *Documentación Social*, 56-57.

Fundación FOESSA (2014). *VII Informe sobre exclusión y desarrollo social en España.* Madrid: Fundación FOESSA.

Fundación Foessa; EDIS and Cáritas (1998). *Las condiciones de vida de la población pobre en España*. Madrid: Fundación FOESSA.

Gobierno Vasco (2008). *1984-2008. 25 años de estudio de la pobreza en Euskadi. Síntesis de los estudios y trabajos estadísticos desarrollados entre 1984 y 2008 por el Departamento de Justicia, Empleo y Seguridad Social del Gobierno Vasco.* Vitoria: Departamento de Justicia Empleo y Seguridad Social del Gobierno Vasco.

INE/UAM (1996). *Desigualdad y pobreza en España. Estudio basado en las Encuestas de Presupuestos Familiares 1973-1974, 1980-1981 y 1990-1991*. Madrid: INE.

Laparra, Miguel and Pérez-Eransus, Begoña (2008). "La exclusión social en España: un espacio diverso y disperso en intensa transformación". En: Fundación FOESSA (coord.). *VI Informe sobre exclusión y desarrollo social en España.* Madrid: Fundación FOESSA.

Laparra, Miguel and Pérez-Eransus, Begoña (coord.) (2010). *El primer impacto de la crisis en la cohesión social*. Madrid: Fundación FOESSA.

Laparra, Miguel and Pérez-Eransus, Begoña (2012). *Crisis y fractura social en Europa. Causas y efectos en España.* Colección de estudios sociales 35. Barcelona: Obra Social «La Caixa».

Martínez, Rosa and Navarro, Carolina (2014). *Pobreza y privación: tendencias y determinantes.* Working Paper VII Informe sobre Desarrollo y Exclusión Social en España. Madrid: Fundación FOESSA.

Martínez-Virto, Lucía; Lasheras, Rubén and Zugasti, Nerea (2013). "La desigualdad y los indicadores de exclusión". *Dossieres EsF,* 9: 30-35.

Pérez Eransus, Begoña (2013). "El impacto de las políticas de ajuste en la cohesión social en Es-

paña". In: Comité Técnico de la fundación FOESSA (coord.). *Desigualdad y derechos sociales. Análisis y perspectivas*. Madrid: Fundación FOESSA.

Rainwater, Lee; Smeeding, Timothy M. and Coder, John (2001). "Poverty across States, Nations and Continents". In: Vleminckx, K. y Smeeding, T. M. (eds.). *Child Well-Being, Child Poverty and Child Policy in Modern Nations: What Do We Know?* Bristol: Policy Press.

Rowntree, Benjamin S. (1901). *A Study of Town Life*. London: Macmillan.

Rubiera, Fernando; Lasarte, Elena and Fernández-Vázquez, Esteban (2013). "Efectos de los incrementos del coste de vida sobre el mapa de la pobreza en España". *Papeles de Economía Española*, 138: 114-128.

Sen, Amartya (1995). *Nuevo examen de la desigualdad*. Madrid: Alianza.

Townsend, Peter (1954). "Measuring Poverty". *British Journal of Sociology*, 5: 130-137.

Walker, Robert (1995). *The Dynamics of Poverty and Social Exclusion. Beyond The Threshold. The Measurement and Analysis of Social Exclusion*. Bristol: The Policy Press.