

Local Poverty and Inequality in Albania

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Abstract

This paper presents the results of the latest poverty and inequality mapping update using the 2012 Living Standards Measurement Study (LSMS) survey and the 2011 census. This mapping builds on the methodology outlined in Elbers et al. (2003) and innovates by including new methodological developments, the most important of which is described by Elbers and Van der Weide (2014). The results presented here allow better understanding of the regional inequalities in welfare across Albania and thus can help policy makers address them. This is particularly needed because internal migration over the past decade led to large-scale urbanization in some areas and severe depopulation in others. Internal migration is multifaceted, but mostly flows toward Tirana.

Keywords: Albania, 2011 census, LSMS, Poverty Mapping

1. Introduction

Although Albania experienced impressive per-capita economic growth over the decade up to 2009 and modest growth since then, it remains one of the poorest countries in the Balkan region. Albania also stands out for having one of the youngest populations in Europe, despite continuous increases in life expectancy and large-scale emigration by young people. This out-migration provides an economic safety net for many people but creates some negative externalities for families and communities. Moreover, although Albania is known more for its massive international migration (between 1994 and 2001, it is estimated that 900,000 people emigrated from Albania, leaving a total population of 3.06 million in 2001, and the most recent census, in October 2011, recorded 2.8 million), it also has a high level of internal migration, mostly to the Coastal region and the main urban centers (King 2004). In the 2011 census, 10.6 percent of respondents had returned home within the prior decade after residing outside the country, and, for the first time, the urban population (53.5%) exceeded the rural population (46.5%).

Studies on Albanian migration have shown that internal and international migration flows have distinctive patterns, in terms of both geography and poverty: internal migrants come mainly from the Mountain and northeastern regions, migrate to the outskirts of big urban centers, and are generally poorer (Zezza et al. 2005). Poverty reduction is a key objective of the Albanian government, and, in the context of shifting growth patterns and shifting populations, it is important to update the information base used to guide poverty-reduction policies. This paper contributes to this goal by producing small area estimates (SAE) of poverty (also known as poverty maps) based on the 2011 census and the 2012 survey of households.

Poverty maps, which are among the tools used to guide policy in Albania, have been produced based on all previous household surveys (Betti and Neri 2010; Betti et al. 2013; Dabalen and Ferrè 2008); this paper facilitates the continuation of this practice. The timing of the survey is

fortunate, as the 2008 crisis hit Albania and led to a slump in growth that has continued since then. Thus, although they are a bit dated, the poverty maps can still update our understanding of how the 2008 crisis affected Albania geographically and allows an updating of targeting efforts. The update also includes major revisions in the administrative divisions. Furthermore, the paper incorporates new methodological developments in the SAE literature, not previously applied in Albania, which can help improve poverty estimations.

We conducted this research for four reasons, listed in order of importance. (1) The new poverty-mapping exercise may help us gain a better understanding of the nature of and trends in poverty in Albania, taking into consideration the mapping in 2002, 2005, and 2008. This new mapping is made possible by the availability of the 2012 Living Standards Measurement Study (LSMS) survey and the 2011 census, both of which are the most recent ones undertaken. (2) By demonstrating the implications of adopting an updated approach to poverty mapping for policy makers, it can contribute to policy making aimed at poverty reduction. (3) Since the previous poverty-mapping exercises were conducted, the administrative structure of Albania has been revised, beginning in June 2015. The largest administrative divisions are the 12 Prefectures: Berat, Diber, Durres, Elbasan, Fier, Gjirokaster, Korce, Kukes, Lezhe, Shkoder, Tirane, and Vlore; they are subdivided into 61 communes, the second-level administrative unit, created by merging 373 former third-level communes and municipalities. The merge may not correspond precisely to current administrative divisions because of some consolidation, and these areas have been reorganized as neighborhoods (*lagje*) or villages (*fshat*) within the new municipalities. These new results may nonetheless be more relevant for policy making today because they more closely mirror the administrative divisions on which policy making and poverty initiatives will be focused going forward. (4) The 2011 census recorded a number of notable demographic changes since the previous census was taken in 2001, reflecting a period of great transition. For instance, the population fell by 269,000 (8.8%), the average age of the

population increased from 30.6 years in 2001 to 35.3 years in 2011, the number of children under age 15 declined sharply, from 898,000 in 2001 to only 579,000 in 2011, while the number of people age 65 and over increased from 231,000 to 318,000 in the same period.

The paper has six sections. After this introduction, Section 2 discusses the existing literature in terms of trends and determinants of poverty in Albania from 2001 to 2008. Section 3 presents the methodology and data. Section 4 documents how the method has been applied to the Albanian data. Section 5 presents outcomes and results for all of Albania and disaggregated at prefectural and municipalities/communes levels. Finally, we offer concluding remarks and policy implications in Section 6.

2. Review of the literature on trends and determinants of poverty in Albania

Before we recommend poverty-reduction policies to policy makers, we need to identify the main determinants of poverty in Albania over time. The two main sources of data for analyzing trends in poverty are the cross-sectional LSMS surveys conducted in 2002, 2005, 2008, and 2012 and the poverty mapping conducted in 2001, 2005, and 2008. The LSMS surveys are mainly suitable for monitoring poverty at the national level, while poverty mapping is used for monitoring the implementation of anti-poverty policies at the local level.

According to INSTAT (2009), which is based on LSMS surveys, high rates of growth in the gross domestic product (GDP) and wage and pension increases were accompanied by a strong reduction in poverty from 2002 to 2008. In fact, between 2000 and 2009, Albania enjoyed an average annual growth rate of about 6%, but in 2009 growth fell to 3.3% and has remained low since then. As a consequence, the headcount ratio (FGT(0) of the family of Foster, Greer and Thorbecke 1984) fell from 25.4% in 2002 to 18.5% in 2005 to 12.4% in 2008 (Table 1). However, in the aftermath of the global financial crisis and the overall macroeconomic situation

associated with lower growth rates since 2009, poverty in Albania increased from 12.4% to 14.3% in 2012 (INSTAT 2013).

Table 1 about here

Other measures of poverty have also increased since 2008: the poverty gap FGT(1) increased from 2.3% in 2008 to 2.9% in 2012, and the severity of poverty FGT(2) increased slightly, from 0.7% to 1%, indicating greater inequality among the poor (meaning the range of poverty from slight to severe). However, the number continues to be much lower than it was earlier: the poverty gap fell from 5.7% in 2002 to 4.0% in 2005 to 2.3% in 2008, and the severity of poverty declined from 1.9% in 2002 to 1.3% in 2005 (INSTAT 2013). The Gini coefficient since 2002 shows a decline in inequality: from 32.46 in 2002 to 30.6 in 2005 and then from 29.98 in 2008 to 28.96 in 2012 (meaning that between 2008 and 2012 inequality increased among the poor, given an increase in the severity index). Another attempt to measure poverty in Albania without consumption data but still based on a sample survey is found in Azzari et al. (2006).

Summarizing the results in LSMS surveys, the increase in poverty since 2008 comes after many years of falling poverty rates. Although the incidence of poverty fell in half, from 25.4% to 12.4% of the population, between 2002 and 2008, the trend has unfortunately been reversed since 2008, as poverty rates have risen because of slower economic growth, a decline in remittances from Albanians living elsewhere, and rising unemployment and inflation.

These statistics show that poverty is no longer only a rural phenomenon, and the Mountain region is not the largest contributor to the overall poverty level. Moreover, from 2008 to 2012, rural poverty decreased by 12% and the urban poor increased by 37% (Dávalos and Thomo 2016).

According to the literature, the main determinants of these poverty trends in Albania were the population growth rate, education, employment, and internal and international migration. Although Albania has one of the youngest populations in Europe, with roughly 39% younger than 25 years old, overall the country is aging. Between 2001 and 2011, the average age of the population increased from 30.6 years to 35.3 years, and the proportion of those age 65 years and over increased from 8% in 2001 to 11% in 2011.

Education as an indicator with a long time effect on poverty reduction is lower in Albania than in other European countries. Someone with a higher education level has a greater chance of finding a job and a skilled job, with a high salary and a lower probability of falling into poverty. The enrollment rate remains low and is highly correlated with the poverty level or household structure (Bici and Dumani 2016). Education among the poor also plays an important role in remaining poor (Xhafa and Nurja 2014); moreover, attention should be paid to the higher number of women in higher education (Miluka 2016).

As for migration, between 1994 and 2001, it is estimated that 900,000 people emigrated from Albania. The 2011 census data show a continuing decline in the 20-45 age-group since 2001, which is attributable mainly to emigration. In 2010 alone, net emigration totaled 47,889. Although emigration has been continuous since 1990, massive outflows can be divided into three periods: 1991–92, immediately after the fall of communism; 1997, when a series of corrupt pyramid savings schemes collapsed, bankrupting a large share of Albanian households; and 1999, when the country was destabilized by the Kosovo crisis and an influx of half a million refugees from the conflict region (Hagen-Zanker and Azzarri 2010). Moreover, considerable internal migration toward the Coastal region and the main urban centers has occurred (King 2004). In particular, the population of Tirana increased from 368,000 in 1989 to at least 600,000 in 2002, while unofficial estimates are much higher, as many as 800,000 (Dabalen and Miluka 2010). More than 60% of Tirana's population in 2001 did not live in the capital before 1989

(Zezza et al. 2005). Many of them moved to the outskirts of urban areas, often occupying former agricultural communes or abandoned public industrial areas.

The National Strategy for Social Protection (2008-2013) relied on the 2002 poverty mappings for purpose of designing social welfare (protection) policies. The number of households that received social protection funds in 2016 is lower than in the early 2000s. Similar patterns are seen in the poverty mappings performed in 2001, 2005, and 2008 (Table 2).

Table 2 about here

3. Methodology and data

3.1. Methodology

Poverty mapping from 2008 is certainly outdated for use by policy makers at the local level. This is why we need a new approach to poverty mapping/measurement. The results mentioned above are not very different from those in the LSMS, but they have an advantage over the LSMS by disaggregating estimates at the local level, which can help policy makers better target specific anti-poverty programs. This disaggregation is updated only to 2008, however, and because population in Albania is continuously shifting, especially due to emigration, social policies also have to adapt continuously.

The new poverty mapping in the present paper innovates by including a couple of methodological developments, described in detail by Elbers and Van der Weide (2014): the first innovation led to the development of joint estimation models for urban and rural areas in the Central and Coastal regions; the second the shift to stricter enforcement of means in prediction of variables between the census and the survey. Those are two major methodological breaks with past poverty maps.

Poverty is most often (and arguably best) measured on the basis of consumption data from a sample survey such as the LSMS, in which household per-capita expenditure (or per-adult equivalent) is expressed in terms of its relation to a poverty line. Poverty measures based on surveys have sampling errors, which increase rapidly as the number of respondents becomes smaller. This hinders analysis of poverty at the local level.

The SAE statistical technique (Rao 2003) provides tools for improving survey estimates at low levels of aggregation by combining survey data with information obtained from other sources, most often a population census. A research team at the World Bank developed a methodology for building on the SAE of poverty measures: the econometric method known as ELL (Elbers, Lanjouw, and Lanjouw 2003), which has gained wide popularity among development practitioners around the world.

Several recent methodological developments in the SAE literature have been incorporated into the PovMap software. The methodological improvements include estimation via empirical best, an estimation method proposed in Molina and Rao (2010) that utilizes existing information in the household survey more efficiently and has a particular advantage when surveys cover a large number of primary sampling units (PSUs). Further improvements also include the option of using empirical best based on an approximated empirical distribution (an approach known as normal mixtures), instead of an assumed distribution (Elbers and Van der Weide 2014). The ELL method has been applied by performing the usual three stages. First, a set of variables deemed to have similar distributions in the survey and the census are identified. Second, a model of log per-capita consumption expenditure ($\ln y_{ch}$) is estimated in the survey data based on the identified variables:

$$\ln y_{ch} = \mathbf{X}_{ch}' \boldsymbol{\beta} + \mathbf{Z}' \boldsymbol{\gamma} + u_{ch} \quad (1)$$

where X_{ch}' are explanatory variables for household h in cluster c , β is regression coefficients, z' is location-specific variables, γ is coefficients, and u_{ch} is the error term due to the discrepancy between predicted household consumption and the actual level. X_{ch}' is household-level variables that have similar distributions in both the survey and the census, while z' represents location-specific averages of variables in the census, and other external variables available at local levels for the entire country. The error term of the model is decomposed into two independent components, $u_{ch} = \eta_c + \varepsilon_{ch}$, where η_c is a cluster-specific effect and ε_{ch} a household-specific effect. This error structure allows for both a location effect—common to all households in the same area—and heteroskedasticity in the household-specific errors, although in many applications, the estimated location-level variance component has been negligible. Details of the heteroskedasticity model and variance components are in Haslett (2013), and details of models based on total household disposable income instead of consumption expenditure are reported in Betti et al. (2015); finally, a comparison of SAE techniques for estimating poverty and inequality at the local level are in Crescenzi et al. (2016).

In the third stage, poverty and inequality estimates and their standard errors are computed. The estimation process has two sources of errors: errors in the estimated regression coefficients ($\hat{\beta}, \hat{\gamma}$) and the disturbance terms, both of which affect poverty estimates and their level of accuracy. ELL propose a way to properly calculate poverty estimates as well as their standard errors, taking into account these sources of bias. A simulated value of expenditure for each census household is calculated with predicted log expenditure $X_{ch}'\hat{\beta} + Z'\hat{\gamma}$ and random draws from the estimated distributions of the disturbance terms, η_c and ε_{ch} . In Albania, these simulations are repeated 200 times. For any given location (e.g., a municipality or a town), the mean across the

200 simulations of a poverty statistic provides a point estimate of the statistic, and the standard deviation provides an estimate of the standard error.

Many factors affect the standard errors in poverty estimates, including sampling and measurement errors in the survey, which cannot be prevented during the construction of the poverty map. Other aspects can be controlled (at least partially), such as precision of the consumption model, the spatial level at which cluster effects are estimated, and the number of households in each area. Tarozzi and Deaton (2009) highlight some concerns with the ELL methodology. Notably, they show that, under certain circumstances, the ELL method can result in an overly optimistic assessment of the standard errors in the local poverty estimates. The implicit assumption is that the relationship between household expenditures and its correlates is the same for all households, and that all remaining differences are due to nonstructural factors. This is not a minor assumption, and it is explicitly acknowledged as such in ELL. However, Elbers et al. (2008) provide evidence that the concern does not have large practical implications. Moreover, Tarozzi and Deaton (2009) caution that the misspecification in the error structure can lead to underestimation of standard errors. They show that, under some conditions, ignoring the spatial correlation can cause bias in standard errors of poverty estimates. Finally, Betti and Ballini (2008) propose a modified JRR (Jack-knife Repeated Replications) method for estimating standard errors in poverty measures at the prefectural level in the 2005 LSMS in Albania: this could help to compare standard errors in the ELL poverty mapping with those estimated in the corresponding LSMS survey.

3.2. Data

The two primary data sources used for the Albanian Poverty Map are the 2012 LSMS and the 2011 census. The method takes advantage of the strengths of both the survey and the census. The strength of the LSMS data is its measurement of consumption, which is the direct basis for measuring poverty, while the strength of the census data is its coverage of all households.

The last Population and Housing Census, taken in October 2011, recorded 2.8 million residents in Albania (INSTAT 2012).

The census includes a large number of variables that can be matched to the LSMS survey (see more on this below). As noted in the introduction, compared to the previous census, the 2011 census documented a number of notable changes that had occurred in the interim. During this decade, internal migration in particular led to large-scale urbanization in some areas and severe depopulation in others. Although internal movements are multifaceted, the majority of internal migration flows evidently went in the direction of Tirana, mostly to its outskirts. Between 2001 and 2011, 228,952 people in Albania changed the prefecture of their usual residence, accounting for 8% of the population in 2011. Some 280,863 individuals moved either between towns or between villages during the same period. Nearly half these internal migrants relocated to Tirana Prefecture.

The methodology in the 2012 LSMS (INSTAT, 2013) is similar to that in the surveys conducted in 2002, 2005, and 2008. Previously, the survey divided the country into four regions (Central, Coastal, Mountain, and Tirana) by urban and rural strata. In the 2012 census, the geographic representative sampling domains were expanded to include Albania's 12 Prefectures, by urban and rural strata. This created a considerable increase in the sample size from 3,600 to 6,671 households, enabling the calculation of indicators of living conditions for 24 strata.

In designing the sample for the 2012 LSMS, it was important to review the sample design and results in the 2008 LSMS. Data in the 2008 LSMS were used in a simulation to calculate the approximate level of precision needed for the 2012 LSMS estimates of key indicators, based on the proposed sample size and distribution (World Bank 2012).

4. Construction of the Albanian poverty mapping

The definition of poverty in the poverty maps follows the official poverty methodology, which is the one used in the LSMS survey, and the national poverty line of 4,890 leks in the 2002 value of the currency is applied to all the results.

4.1. The Consumption Models

The Albanian Poverty Mapping is based on four regional consumption models (Central, Coastal, Mountain, and Tirana).¹ Splitting the LSMS sample into different regions is better at capturing local conditions, and the lower number of observations limits the number of variables that can be included in the model. The implicit assumption is that the parameter estimates on the regressors are the same for households in a particular region. In other words, a national model assumes that the relationship between household expenditure and household characteristics is uniform throughout the country. This assumption may not be tenable. Fitting separate models by regions that are more homogeneous allows the relationship between expenditure and the explanatory variables to vary, and it reduces the standard error of poverty prediction due to the error in modelling. However, if regions are too small, they might become prone to overfitting, and the predictions can become overly influenced by idiosyncrasies in the LSMS sample. Hence, a model needs to have a balance between allowing heterogeneity across

¹ This poverty mapping diverges from previous poverty mapping (Betti et al. 2003; Neri et al. 2005) in that it estimates one model for Coastal regions and another model for Central regions. The earlier version relied on coastal urban, coastal rural, central rural, and central urban models. Some communes have both urban and rural observations, and for those areas the estimated headcounts in Betti et al. (2003) rely on two different prediction models. In this case, the estimated standard errors of the FTG and inequality measures are correct only under the assumption that the two estimation models are uncorrelated. This assumption does not seem likely to hold, so joint models were preferred over split models.

the country while, as the same time, not be overfitted to a small LSMS sample. The four regions seem to satisfy both assumptions, as the models replicate poverty as measured in LSMS well, without having relative large variations in the cluster effect and are based on relatively parsimonious models with high R-squares (Appendix Table A1). The following sections elaborate on each of these different aspects.

4.2. Alignment of Explanatory Variables in the 2011 Census and LSMS 2012

As mentioned above, in a poverty mapping only variables with similar distributions in the LSMS and the census can be explanatory variables in the regression models. The Albanian Poverty Mapping, in this regard, is a nearly perfect setting, as the census includes many variables highly correlated with consumption, including demographic characteristics, education, occupation, housing characteristics, and durable and productive assets.

Furthermore, the survey and census were conducted around the same time, limiting variation in the variables due to changes over time. Only variables common to the census and the survey, using the same definition and similar distributions in both databases, are considered in our analysis. However, one important aspect was not comparable between the 2011 census and the 2012 LSMS: migration. On a scale of “complete,” “good” and “scarce,” the comparison of distributions of international and internal migration were “scarce,” and therefore the corresponding variables were not included in the final models in Appendix Table A1 (INSTAT 2016).

In a previous paper, Betti and Neri (2014) include international migration in the models, and the variable “household head migrated abroad for more than a year” was significant (and is positively correlated with consumption) only in the coastal rural and central urban strata. Responses on this question were collected in the 2011 census and the 2012 LSMS differently than in previous surveys; in fact, previous LSMS rounds and the 2001 census asked whether a household member migrated before or after 1990. This difference was significant in several

models estimated during 2001-2008 (including updating of poverty mapping). King et al. (2010) confirm that the net breakpoint in international migration from Albania was 1990. However, even if variables related to migration are not included in the final models, their implicit effect could be present via other correlated variables. In fact, Castaldo et al. (2007) demonstrate that the determining factors of international migration are age, gender, employment status, and education, which are all among the significant parameters in Appendix Table A1; Stampini et al. (2008) also mentions other determinants of international migration in the 2002-3 LSMS.

4.3. Stability and Accuracy of Consumption Models

A good prediction model needs to balance several objectives. It should have a high correlation between consumption and household characteristics. This can be gauged in the adjusted R-square of the consumption regression models in equation (1). However, maximizing only R-square can easily lead to other weaknesses. One such potential weakness is excessive reliance on the specific survey sample. To avoid such issues, models were designed not to be too specific to the selected sample in LSMS. This was done by excluding variables with skewed distributions (variation relying on relative few observations) and by testing different models and comparing final predictions. These different models gave very similar results. Further, the variables found to have the highest importance score in Random Forrest predictions were considered a first set of explanatory variables.²

² Random Forrest is a prediction algorithm that both selects variables and predicts consumption. The method is known to produce more robust predictions, as it in our application relies on 500 different models, and variables that were consistently included are seen as more robust predictors. See Sohnesen and Stender (2017) for an evaluation of the prediction method for poverty prediction.

As laid out above, the census estimates come with some uncertainties captured in standard errors, and as highlighted by Tarozzi and Deaton (2009) our estimated standard errors are only correct if there is a minimal amount of spatial correlation above the cluster level. Following the previous poverty maps in Albania (Betti et al. 2003), the level of spatial correlation is assessed by:

$$\rho_l^2(Y | X) = \frac{\hat{\sigma}_\eta^2}{\hat{\sigma}_\eta^2 + \text{var}(e_{c*})} \tag{2}$$

where $\hat{\sigma}_\eta^2$ is the variance of the cluster component and $\text{var}(e_{c*})$ the variance at household level.

4.4. Spatial Structure

At the time of the data collection used for the mapping exercises in 2002 and 2012, Albania was spatially divided into 12 Prefectures (first-level local administrative units) and, 373 communes (third-level local administrative units). Because the 2001 and the 2011 censuses were both carried out based on the older system, including the 36 districts that were second-level local administrative divisions before 2015, the core results of the poverty mapping exercises in 2002 and 2012 reflect this system.

Nonetheless, the standard errors of the poverty estimators increase as the population of the estimated area decreases. This is illustrated in Figure 1, where the standard errors of the poverty headcount decline as the number of households in the area increases. The average standard errors in the poverty estimates for communes are 0.04.

 Figure 1 about here

In comparison, the LSMS domain (regional) standard errors range from 0.01 to 0.03. As expected, the municipal poverty estimates are thus associated with greater standard errors

relative to the regional estimates based on the LSMS data, particularly in those areas with fewer than 3,000 inhabitants (log 8 in Figure 1).

5. Results Seen in the New Poverty and Inequality Maps

One of the great advantages of the ELL SAE methodology applied in the Albanian Poverty Mapping is that it estimates the entire distribution of consumption for each small area. A standard output from the PovMap program, therefore, includes the following indicators: FGT(0), the poverty rate or head count; FGT(1), the extent of poverty; FGT(2), the extent of poverty squared or the severity of poverty; the Gini coefficient; and general entropy measures of inequality.

All these indicators can easily be mapped and overlaid with spatial data, such as roads, elevations, and health and educational institutions. Hence, maps can illustrate and analyze new aspects. Moreover, to check the robustness of our method, the poverty measures computed on the census data can be compared with the interval estimates—the range that expresses that the true poverty measure with high certainty—computed on the survey data, for the area for which these estimates are significant.

5.1. Description of Results

This section summarizes the main results of the poverty and inequality mapping exercise (see Table 3), and their policy implications are reported in Section 6. The poverty rate (headcount) in Albania was estimated at 14.3% in 2012, the same as the national poverty rate estimated in the 2012 LSMS.

A robustness check of the poverty mapping, the predictions of poverty from the models, is compared to the LSMS level of poverty at a level for which the LSMS is representative: in all regions, but the Mountain region, the predicted level of poverty computed on the census data

applying the poverty mapping procedure is within the corresponding 95% confidence interval of the LSMS.

Table 3 about here

Analyzing results disaggregated at the prefectural level, the highest poverty rate was in Kukës (around 22%), and the lowest rate was in Gjirokaštër (around 8%); overall, 398,131 individuals in the country lived in poverty. The number was higher in the Central region (153,968 people), and the lowest number was in the Mountain region (53,337 people). Tirana Prefecture had the highest number of people living in poverty (94,101), and Gjirokaštër had the lowest number (5,988). Average per-capita monthly consumption in the country in 2012 was 8,477 ALL (Albanian leks). Prefectures with the highest average level of consumption were Gjirokaštër (10,190 ALL), Korçë (9,260 ALL), and Berat (8,785 ALL), and those with the lowest level of consumption were Kukës (7,126 ALL), Dibër (7,551 ALL), and Elbasan (8,192 ALL).

Poverty rates varied across communes, from 2.6% in Zagori in Gjirokaštër to 38.5% in Kalis in Kukës. The highest poverty rates were in northeastern communes, shown in Figure 2 in dark. In the southern and southeastern parts of the country, poverty rates were substantially lower. The poverty rates were higher in the communes of the Mountain region (20.6%), and the lowest rates were in the Tirana (11.7%).

Durrës, Kukës, and Tirana showed large differences in the poverty rates across communes. In Durrës, poverty rates ranged from 9% in the commune of Bubq to 21% in the commune of Sukth. In Kukës, the lowest poverty rate was in Bajram Curri (10.0%), and the highest rate was in Kalis (38.5%), which is also the poorest commune in the country. In Tirana, poverty rates varied from 9.2% in the municipality of Tirana to 25.2% in Kamëz. The counties with the largest gap between the lowest and highest poverty rates were Dibër, Elbasan, and Kukës. In

Kukës, the lowest poverty rate was in Bajram Curri (10.0%), and the highest rate was in Kalis (38.5%).

Figure 2 about here

The lowest poverty rate in Elbasan was in Librazhd (8.7%), and the highest was in the commune of Orenjë (30.4%). In Dibër, the lowest poverty rate was in Burrel (11.2%), and the highest rate was in the commune of Sllövë (29.4%).

As noted in Section 2, although Albania has faced a long period of high GDP growth and decreased absolute poverty between 2001 and 2008, inequality has not been reduced according to LSMS data; this phenomenon is not isolated and is common in other European countries (Betti and Lemmi, 2007, 2008a, 2008b). Moreover, the Gini concentration index slightly increased in 2012. These figures are confirmed by the results of poverty mapping: from 2001 to 2011 the Gini index increased slightly, from 29.54 to 29.83, with a great increase in the Coastal region and a strong reduction in the Mountain region. Figure 4 shows the Gini concentration index estimated at the commune level: most communes in the Coastal region and in the northern part of the Central region have higher levels; practically all communes in the Mountain region have a Gini level below the threshold 26.7.

Figures 3 and 4 about here

This effect is also due to massive internal migration from the rural areas in the Mountain region to large cities and coastal urban areas. In fact, based on the 2011 census, for the first time, the number of people living in urban areas exceeds the number living in rural areas: 53.5% of the

population lives in urban areas while 46.5% lives in rural areas. This shows that internal population movements continued at high levels during the period 2001-2011 between the two censuses, mainly from rural areas to urban areas.

Compared to the previous census, about 10.6% of the population changed the place of residence in the country, and 4.0% declared that, at the time of the previous census, they were abroad (meaning they were not counted in the previous one, but since then had returned). In particular, Tirana has historically attracted the largest share of internal migrants because of its economic development, its concentration of social and cultural life, and opportunities for better education. As a consequence, employment has always been concentrated in and around Tirana, which has largely determined the direction of internal migration (INSTAT, 2014). The inflow of migrants from other areas of Albania has led to fundamental changes in the six communes surrounding Tirana (Dajt, Farke, Kashar, Paskuqan, Kamez, and Berxulle). The main reasons for internal movements are employment, study, or family events (marriage).

Appendix Table A2 reports the migration movements between 2001 and 2011 measured by the 2012 LSMS.

6. Concluding Remarks and Policy Recommendations

This paper presents results in the new poverty and inequality maps in Albania using the LSMS 2012 and 2011 census data and incorporating improvements in the poverty-mapping technique. According to the World Bank (2015), these poverty maps can be useful in policy making in three key ways: (1) as a benchmark against existing resource allocation criteria, for example, whether the allocation of social-assistance block grants according to previous criteria correlate with the needs based on current poverty rates; (2) as a tool in determining public spending; and (3) for the provision of data to monitor progress toward achieving particular government social welfare goals.

First, in the case of Albania, the present poverty mapping can help policy makers create more targeted policies aimed at tackling poverty in “unstable local administrative units”. We present poverty maps revised according to the new local administrative divisions in the territorial reform launched in June 2015 and demonstrate that poverty maps can be adapted and made useful in an altered geographic administrative structure.

The highest level of poverty is in Kamëz (about 24%), followed by Has (23.3%), and Kukës (23.2%). The lowest level of poverty is recorded in Pustec (5%), Libohovë (6.7%), and Gjirokastër (6.8%). Figure 4 reports the head count ratio and total number of poor people, according to the new administrative divisions.

These new maps can help promote local governance. In fact, the statistics in some new regions countered expectations; the poverty maps can contribute to a much broader agenda of transparency and good governance at the local level.

Second, this paper shows that inequality has not decreased, despite high GDP growth rates and reductions in absolute poverty rates between 2001 and 2008. Moreover, during the recession in Europe (2008 to at least 2012), the Gini index seems to have increased again. So, the very first goal for the government in Albania should be a reduction in inequality; one relevant policy would be a more even distribution of income, achieved by introducing a system of progressive taxation at least for employment income (currently, there is only a flat rate of 15%) and perhaps leaving unchanged the taxation on rental and capital income, to avoid reducing foreign investment in the country.

Third, the poverty maps corroborate existing knowledge about poverty from the LSMS at the national, regional, and local level but also reveal much more. For example, LSMS surveys show a marked reduction of poverty in the Mountain region, from 26.6% in 2008 to 15.3% in 2012. However, the Poverty Mapping seems to indicate that this great reduction was not homogeneous across the region, and many areas, such as Has, Kukës, and Diber, still have poverty rates higher

than 28% (see Figure 2). More generally, a much higher degree of heterogeneity in the incidence of poverty appears in the statistical sub-regions compared with the estimates in the 2012 LSMS.

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Appendix Table A1 about here

Appendix Table A2 about here

Table 1: Trends in poverty by region, 2002, 2005, 2008 and 2012

	2002			2005			2008			2012		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Coastal	20.2	20.9	20.6	11.6	19.7	16.2	10.7	15.0	13.0	17.3	17.9	17.6
Central	19.3	28.5	25.6	12.5	25.9	21.2	10.3	10.9	10.7	10.3	13.8	12.5
Mountain	24.7	49.5	44.5	17.1	27.7	25.6	14.7	29.8	26.6	13.7	15.9	15.3
Tirana	17.8		17.8	8.1		8.1	8.7		8.7	12.6		12.6
Total	19.5	29.6	25.4	11.2	24.2	18.5	10.1	14.6	12.4	13.6	15.3	14.3

Source: LSMS

Table 2: Trends in poverty mapping by region, 2001, 2005 and 2008.

	FGT(0)_2001	Gini_2001	Gini_poor_2001	GE(1)_2001	FGT(0)_2005*	FGT(0)_2008
ALBANIA	28.60	29.54	12.38	15.05	19%	16.58%
RURAL	36.26	27.72	12.57	13.74		13.06%
URBAN	18.09	28.94	11.74	14.02		18.91%
Coastal	26.64	31.57	12.40	17.68		12.65%
Central	29.49	27.35	11.94	12.43		16.50%
Mountain	40.85	27.40	13.56	12.41	30%	35.73%
Tirana	18.01	29.35	11.88	14.54	6%	8.47%
Coastal urban	15.63	30.25	12.81	15.19	16%	12.85%
Coastal rural	34.84	28.87	12.23	16.54	23%	12.39%
Central urban	19.48	26.34	10.59	11.42	12%	16.25%
Central rural	34.41	27.02	12.25	12.23	24%	16.85%

* Dabalen and Ferrè (2008) did not report decimals in their table.

Sources: LSMS and Census

Table 3. Poverty and inequality measures

Region	FGT(0)	Gini	Gini_poor	GE(1)
Central	13.1%	29.26%	11.69%	14.54%
Coastal	15.5%	30.35%	12.23%	16.69%
Mountain	20.6%	24.39%	9.32%	9.95%
Tirana	11.7%	29.41%	9.37%	14.43%
Albania	14.3%	29.83%	11.41%	15.40%

Source: 2011 Census.

Table A1. Regression models by region

Covariates	Central region	Coastal region	Mountain region	Tirana region
intercept	9.80 ***	9.82 ***	8.72 ***	10.69 ***
CHILD0_5	0.06 **			
CHILD6_14_0	0.07 ***		0.14 ***	-0.07 *
CHILD6_14_1			0.09 **	
CHILD6_14_2		-0.11 ***		
HHSIZE	-0.20 ***	0.27 ***		-0.41 ***
HHSIZE2	0.01 ***	-0.34 ***		0.02 ***
HHSIZE_01			1.17 ***	
HHSIZE_02			0.76 ***	
HHSIZE_03			0.49 ***	
HHSIZE_04			0.29 ***	
HHSIZE_05			0.15 ***	
HH_EDU_L_1		-0.10 ***		
HH_EDU_M_1	0.05 **			
HH_EDU_H_1	0.16 ***			
HIGH_EDU_L_1				-0.13 ***
HIGH_EDU_H_1				0.18 ***
HH_WORK_1			0.08 ***	
SP_EMPLOYEE_1	0.10 ***	0.12 ***		0.14 ***
ROOMS_1				-0.27 ***
ROOMS_2				-0.27 ***
ROOMS_3				-0.14 ***
ROOMSPP	0.09 ***			
NO_HEATING_1	-0.24 ***			
SOLAR_1	0.12 ***	0.22 ***		
MICROWAVE_1		0.25 ***		
INTERNET_1			0.15 ***	
COMPUTER_1	0.18 ***			
DECODER_TV_1	0.09 ***			
CAR_1			0.23 ***	
DWELL2_1				-0.15 ***
TIME4560_1				-0.19 **

Covariates	Central region	Coastal region	Mountain region	Tirana region
PSU means				
MCHILD6_14	-0.27 ***			
MHIGH_EDU1	-5.71 ***			
MHIGH_EDU2	-1.16 ***			
MHIGH_EDU4			2.00 ***	
MHIGH_EDU6	0.21 **	0.48 ***		
MHIGH_EDU7		0.52 ***		
MHIGH_EDU10	1.18 ***			
MHIGH_EDU11	-2.61 ***			
MHIGH_EDU_L		0.29 ***		
MHH_MUSLIM	-0.08 ***			
MSP_AGE		** ***		
MSP_SELF_EMPLOYED		-1.13 ***		
MSURF1				-0.33 ***
MSURF2	0.17 ***			
MSURF3		0.28 ***		
MTV			-0.32 **	
MWASH	-0.28 ***			
MREFRIGERATOR		-0.38 **		
MICROWAVE_1	0.08 ***			
MCAR	0.29 ***		0.40 ***	
MANIMALS	0.16 ***			
MTIME4560	-0.21 **	-0.20 *		
MTIME6180				0.31 ***
URBAN_1	-0.05 *			
DISTRICT_02			0.14 ***	
DISTRICT_09			-0.19 ***	
DISTRICT_19		0.30 ***		
DISTRICT_36		0.09 ***		
Obs	2757	1837	1128	648
R-square	0.51	0.52	0.56	0.57
adj R-square	0.50	0.51	0.56	0.56
R-square alpha model	0.01	0.02	0.03	0.03

* 90% significance level

** 95% significance level

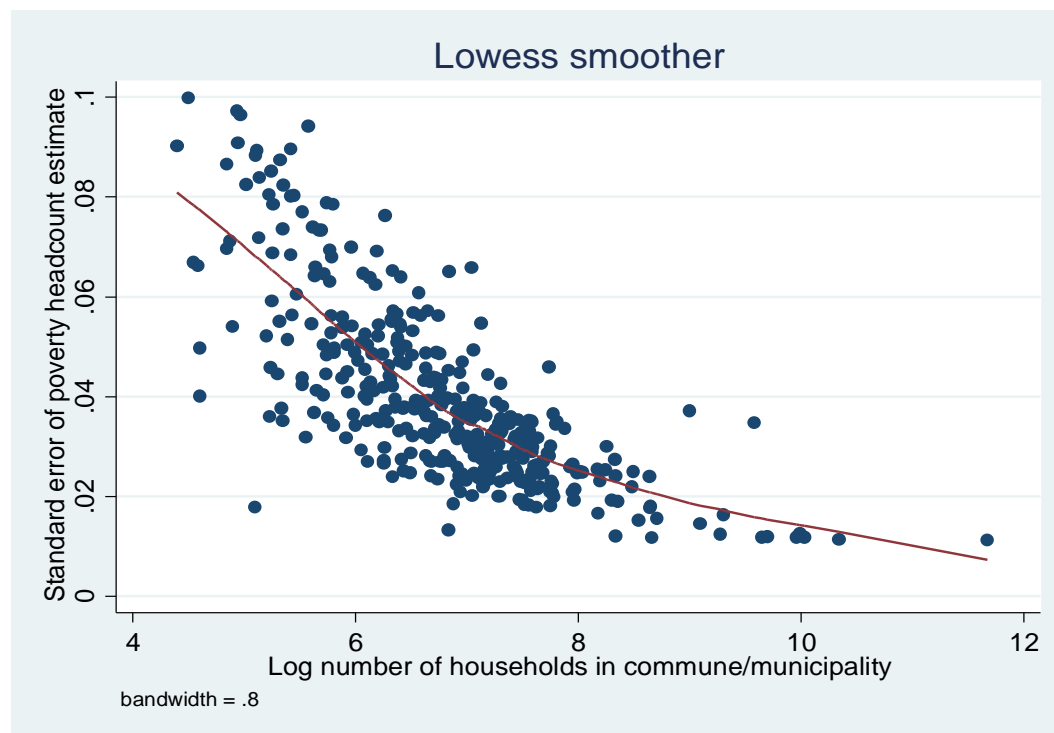
*** 99% significance level

Appendix Table A2: Migration in Albania

Prefecture of origin	Prefecture of residence												
	Berat	Diber	Durres	Elbasan	Fier	Gjirokaster	Korce	Kukes	Lezhe	Shkoder	Tirane	Vlore	Total
Berat	20,236	-	10,963	1,049	8,701	800	2,528	-	-	-	25,383	3,596	73,256
Diber	126	4,642	28,452	553	2,661	-	305	378	2,794	78	68,393	527	108,910
Durres	40	-	7,596	749	266	43	112	91	439	245	11,631	-	21,210
Elbasan	1,086	-	10,367	24,418	4,823	45	2,960	-	415	-	15,846	733	60,693
Fier	1,887	-	3,191	2,072	27,472	501	576	-	182	-	17,133	4,686	57,700
Gjirokaster	831	-	5,129	1,344	3,228	11,471	248	-	91	-	21,702	4,265	48,311
Korce	485	-	4,337	2,998	1,072	153	27,071	-	186	119	34,120	2,683	73,226
Kukes	-	-	6,677	-	2,687	-	136	3,147	1,091	1,075	48,191	369	63,374
Lezhe	67	55	2,514	156	-	-	276	45	23,024	654	11,832	1,328	39,951
Shkoder	-	-	3,536	413	-	-	123	248	10,324	20,038	12,598	123	47,403
Tirane	232	134	4,758	1,095	957	191	562	582	213	307	24,352	1,479	34,861
Vlore	326	-	1,550	117	4,036	430	-	-	94	-	7,774	14,100	28,428
From abroad	2,403	78	1,431	4,764	3,307	1,648	3,222	391	621	3,476	6,787	7,563	35,693
other	87	-	225	206	189	172	310	210	276	336	5,054	426	7,491
Total	27,805	4,909	90,728	39,935	59,401	15,454	38,430	5,092	39,752	26,327	310,795	41,878	700,507

Source: 2012 LSMS.

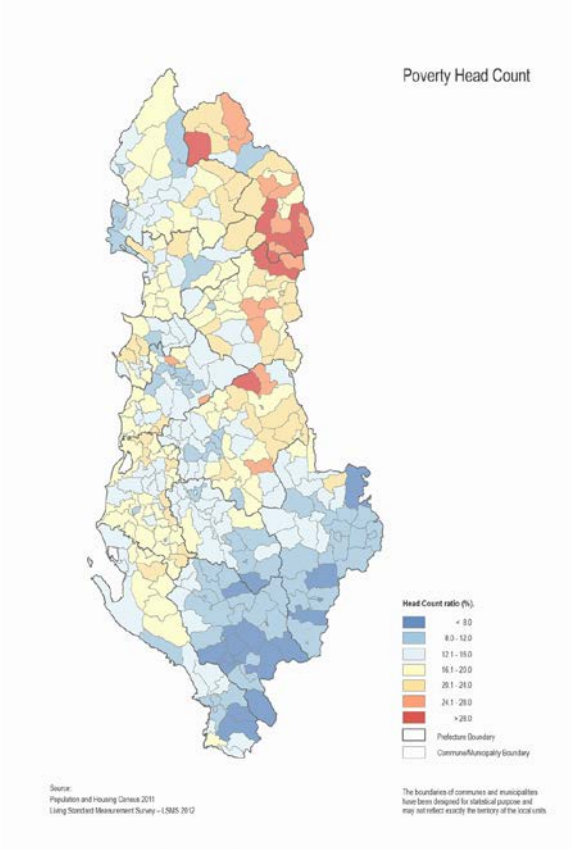
Figure 1. Log number of households in area and standard errors of poverty estimates, Communes



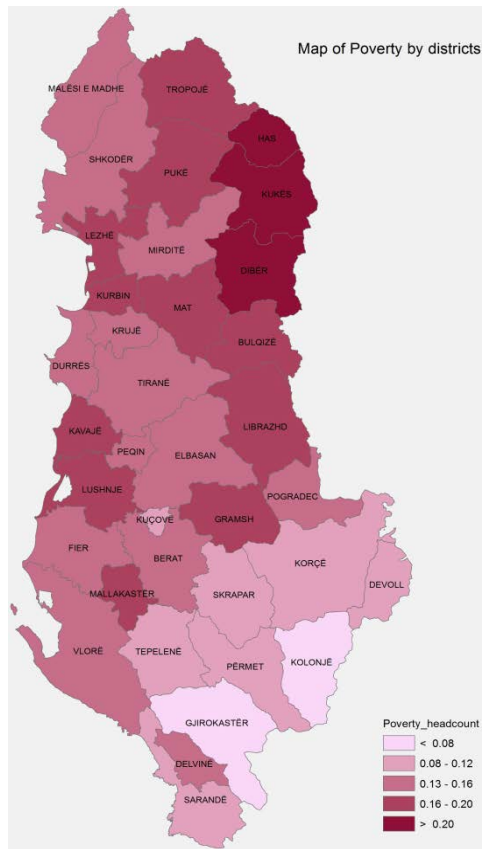
Source: Authors' calculation of poverty headcount standard errors for commune, 2011 Census

Figure 2. Poverty Maps, Communes, and Districts, Albania, 2012

a. Poverty rates, Communes

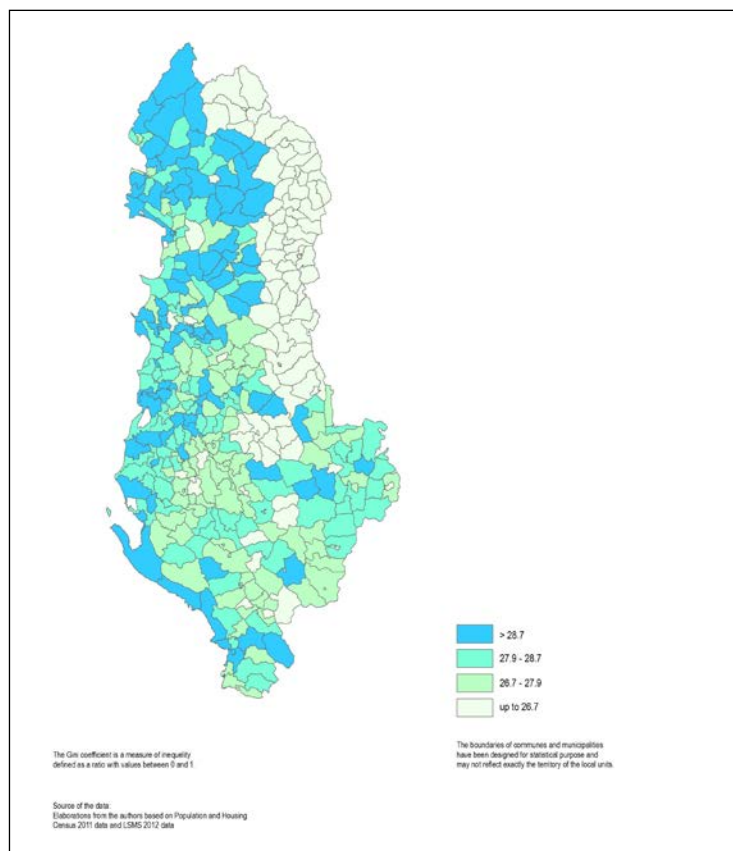


b. Poverty rates, Districts



Source: 2011Census

Figure 3: Gini index, Commune level

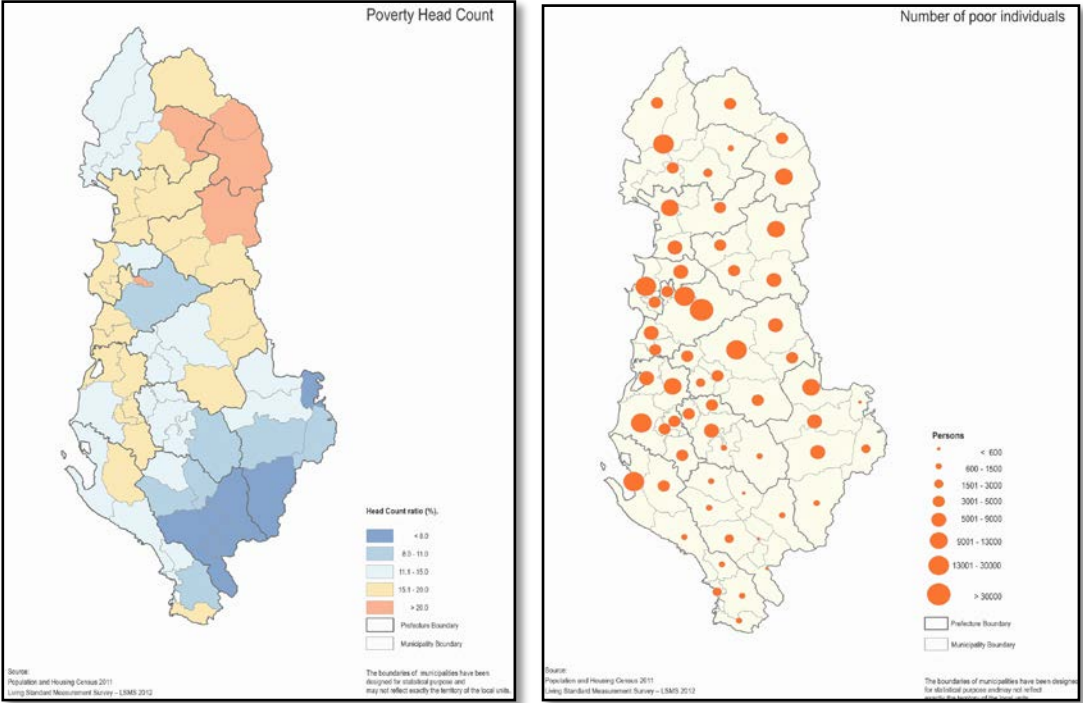


Source: 2011 Census

Figure 4. Poverty Rate and Number of the poor, New Municipalities

a. Poverty rate (headcount)

b. Number of the poor



Source: 2011 Census