Construction of the consumption aggregate and estimation of the poverty line

This technical note explains the methodology used to compute the consumption aggregate and estimate the poverty lines. It also reports the results of a sensitivity analysis on some crucial hypotheses. This document and the program files are provided with the understanding that they constitute the only documentation that will be provided.

The note is divided into three sections. Section 1 explains in detail the methodology used for the estimation of each component of the consumption aggregate. Section 2 shows how the consumption aggregate was adjusted to account for regional price differences as well as for household size. Section 3 explains how the poverty lines were computed. Annex I presents the results of an analysis of the sensitivity of the poverty estimates to different hypotheses concerning economies of size and equivalence scales. Annex II explains the programs used to do the calculations.

1. The components of the consumption aggregate

In order to be a good welfare predictor the consumption aggregate must be as comprehensive as possible, and the 2002 LSMS collected the necessary information to calculate all the main components of the aggregate: food consumption (both purchased and consumed from own production), non food expenses (clothing, household articles etc.), utilities (gas, telephone, electricity, etc), education, health, durables, and housing. However, the inclusion of health expenses as well as housing proved to be quite controversial and the decision was made to not include these expenses in the final welfare indicator (see below for a detailed discussion).

Food consumption

Food consumption was collected by means of a 14-day diary. The diary contained 4 sections: 1) purchased items, 2) non-purchased items (own produced and received as gift), 3) food eaten outside home, and 4) a check list of items purchased before the reference period. Both the purchased item section and the check list of items purchased before the reference period asked questions about the frequency of purchase or the period in which the amount bought would have been consumed, in the case of bulk purchases. These pieces of information were used to correct for bulk expenses and adjust the food expenditure in the same reference period.

The total number of transactions recorded in the diaries was more than 250,000. Such a huge collection of data is prone to generate mistakes in recording expenses and in entering the data, and special care was needed to check the consistency of the data and to correct possible outliers. Abnormal expenses were detected after checking food subgroups that accounted for suspiciously high budget shares, and also when the household reported consuming excessively high per capita quantities of certain food items. The total number of corrections was limited to less than 1 per cent of the recorded transactions.

To see the progress of the recorded expenses during the 14 days, a daily transaction index was calculated. This index is computed for each household and each day as the ratio between the number of expenses made that day and the average number of daily expenses for the household. Figure 1 shows the weighted mean values of this index for urban and rural areas.

The declining number of transactions occurs regularly in all surveys that use daily diaries, and is mainly due to respondents' fatigue. In the first day people may tend to record expenses that did not happen that day, whereas the recovery shown in the last day of the notebook is probably the effect of the checklist.

Fig. A1: Daily transactions index for urban and rural areas

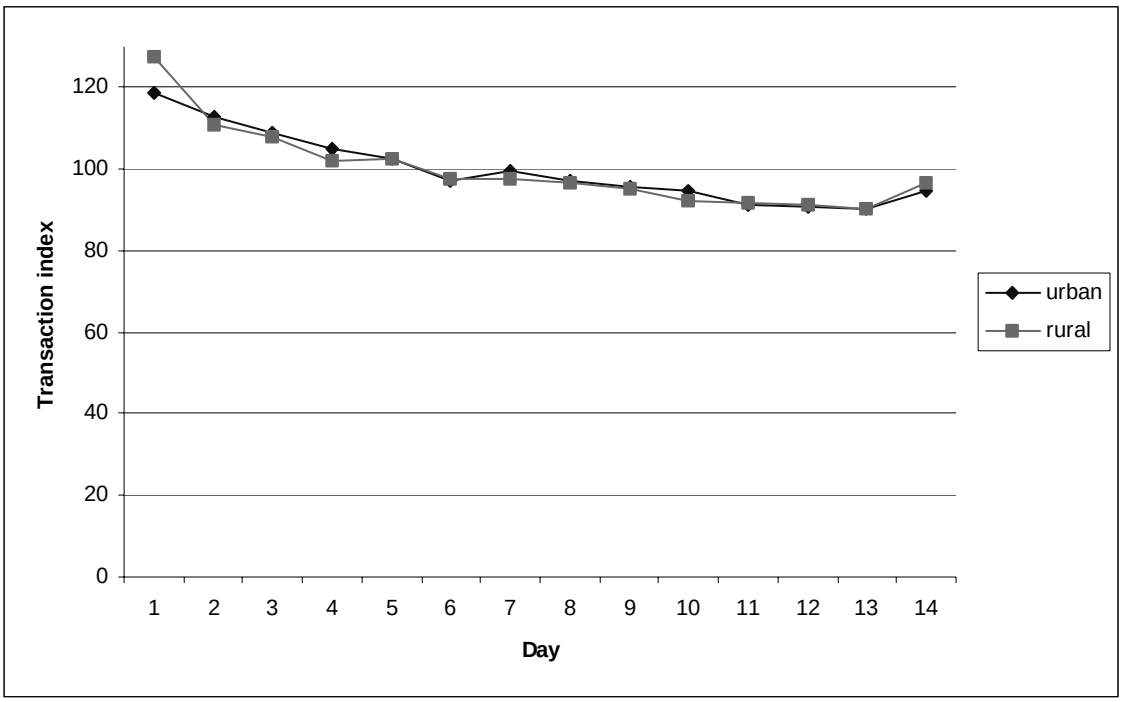


Table A1: Average number of transactions and household size for urban and rural areas

	Average number of transactions	Average household size
Urban	5.0	3.9
Rural	5.4	4.6
Total	5.2	4.3

It is also useful to compare the levels of food consumption expenditure with the self- assessment of food adequacy given by the household, responding to the subjective poverty module of the LSMS questionnaire. Not all of the households answered the questions but among those that did, both the mean and median consumption show a clear positive relationship between the amount of real per capita consumption and the household judgment of food adequacy.

Table 2: Real per capita food consumption and the household's judgment of food adequacy

Description of current food consumption level	Real per capita food consumption		
	Mean	Median	Observations
More than adequate	8,239	7,168	119
Just adequate	5,425	4,840	1,587
Less than adequate	4,324	3,838	1,872
Total	4,918	4,287	3,578

Non food expenses

In a different module of the questionnaire (Module 11), the household was asked to recall expenditures on a number of non-food expenses: clothing, household supplies for cleaning, tobacco, household articles, entertainment, services, etc. Since these expenses generally take place with different frequencies, the questionnaire asked the household to recall their expenditure on these items using different periods of

reference: the last month, the last 6 months and the last year. However, when included in the consumption aggregate all these expenses were adjusted to be expressed in monthly terms. Finally, from this module some expenses unrelated to living standards were left out of consumption expenditure. This includes things such as taxes and one-offs that may skew household/individual rankings: services for maintenance and repair of personal vehicles, and accessories and spare parts; services for maintenance and repair of dwelling (carpentry, plumbers, electricians, painters, etc), home improvements (additions, renovations to home); costs for ceremonies; and the item 'other' in which some substantial, but unclear expenses were reported.

Education

Expenditure for education includes all education related expenses from pre-school to higher education: school fees, uniform, textbooks, meals and lodging, transport, gifts to teachers and services to school, private tutoring and other expenses for education.

Education expenses were recorded using two different periods of recall: either the school/academic year or the last month. However, since schools generally work for 9 months a year, 'last month' expenses were translated into average monthly expenditures by multiplying by 9 and dividing by 12. When expenses were reported for the academic year, they were simply divided by 12.

Utilities

Information on expenses for utilities were collected in a separate module, together with information about the household's dwelling. Utilities include electricity, gas, telephone services (fixed telephone, mobile and public phone), water and fuels (firewood, kerosene, diesel etc.). The inclusion of the expenditures for some of these items required some imputations to adjust for progressive tariffs and to estimate expenses whenever households did not report any expenditure, but reported receiving the service.

In the case of electricity, in Albania there is a simple progressive tariff for which 1 kwh costs 5 new leks for the consumption of the first 300 kwh, and then 9.6 new leks for consumption above 300 kwh. In order not to create welfare differences not justified by a real difference in the service, expenses were adjusted to have a fixed cost of 5 leks for each kwh.

Some imputation was necessary when the household reported using electricity, but did not report any expenditure (this problem was found in about 500 households). The electricity cost was estimated using the approximate quantity range of kwh that the household reported it had consumed, the purposes for which electricity is used (lighting, heating, cooking), the household size, the square meters of the house, and its geographical location.

The price of gas is fixed and equal to 100 new leks per kg, and the monthly cost of gas was estimated considering the capacity of the gas cylinder owned by the household and the information on the average duration of the cylinder.

It is mainly in the cities that there are public facilities that provide water, and each local administration decides a per capita cost for such service. Whenever the household reported receiving water from public facilities, but did not report any expenditure, this was estimated using the median per capita expenditure in the district. Otherwise, the value reported by the household was used.

Other sources used for heating and lighting are firewood, coal, oil/kerosene, and diesel fuel, with firewood being the most important of all. The questionnaire asked for a typical monthly expenditure in the summer period and during winter. The average monthly expenditure was calculated taking the mean of the summer

and winter typical month (since it was assumed that winter and summer have the same length). In very few cases the household was unable to give the value of expenditure, despite reporting consumption of that item. In those cases values were imputed with the median expenditure of households living in the same geographical area and making use of the same alternative sources for heating and lighting. However, a particular problem emerged for firewood expenditure, where a substantial amount of abnormal expenses were reported (in about 50% of the cases). The problem seems to be explained by the fact that, especially in rural areas, households buy firewood for the whole winter season, and apparently in many cases the question was misunderstood and the household reported the total value of the seasonal expenditure. An approximate adjustment was made whenever the household consumed more than 4000 new leks per month (more than 2 M3 of firewood), considering that those values actually represent seasonal expenses.

Durable goods

Purchases of durable items are not included in the consumption aggregate, but it is possible to estimate for each category of items a depreciation rate which can be used to estimate in monetary terms the benefit that the household obtained from the use of durable goods. The survey collected information on the ownership of a number of durable goods, the age of the items and their current value. Although each item is not a homogeneous category, these data were used to estimate the relationship between the value of the item and its age with a smoothing technique that, using many locally weighted regressions, allowed detecting a non-linear smoothing relation.

This graphic technique was used to detect the presence of a non-linear relationship between value and age of the item. The depreciation rate was then calculated through quintile regressions as the coefficient of the age variable. Whenever a clear non-linear depreciation was found, separate quintile regressions were estimated for the relevant intervals of age of the item.

The methodology produced reliable depreciation rates, for instance the highest depreciation rate was found for computers (about 10%), an average value for color TVs and motorcycles (about 5%) and a very low depreciation rate for black and white TVs, bicycles, and sewing machines (about 2%). For three items, freezers, electric radiators and cars, we did not find any relationship between age and value of the item, but this result is explained by the few observations and the heterogeneity of the specific category of items. In such cases we used the depreciation rates of similar items, respectively refrigerators, electric stoves and motorcycles/scooters.

Two examples of the results of the technique used are given below for video players and wood stoves. In the case of video players, as for most of the items, the relationship appeared to be linear (see Figure 2), so that only one depreciation rate was calculated through the coefficient of the quintile regression of value over age (years since the item was acquired). In the case of wood stoves, on the other hand, the depreciation rate is clearly different and assumes a non-linear hyperbolic decreasing trend (Figure 3), with higher depreciation rates when the stove is almost new and then declining rapidly to a virtually nil depreciation rate. In this case, three different depreciation rates were calculated: one for stoves not older than 10 years, one for stoves between 10 and 20 years and the final one for stoves 20 years and older.

Fig. 2: Video player: smoothed relationship between current value and age of the item

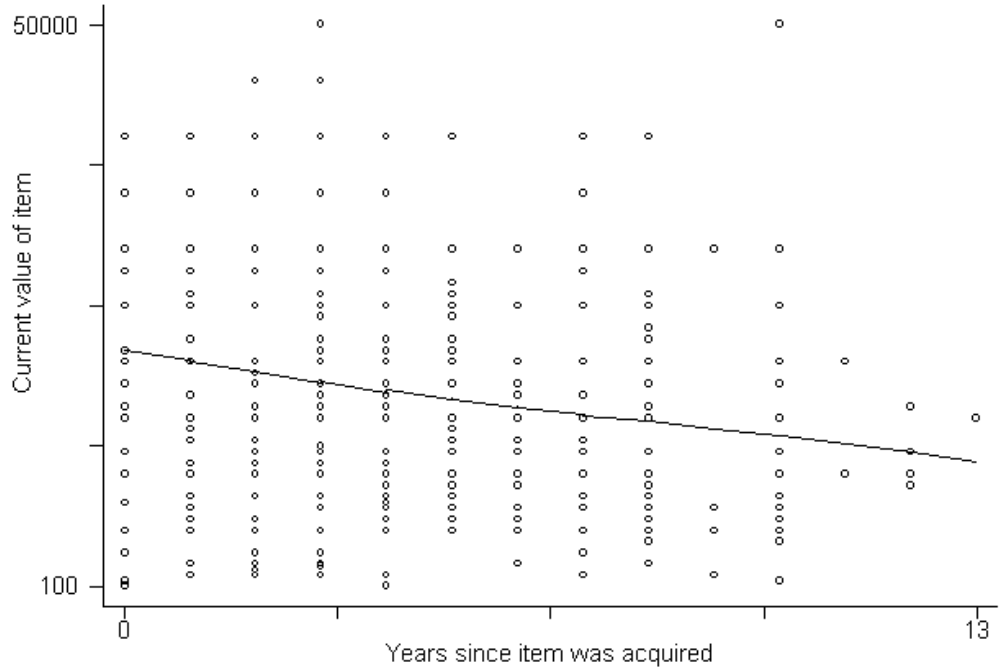
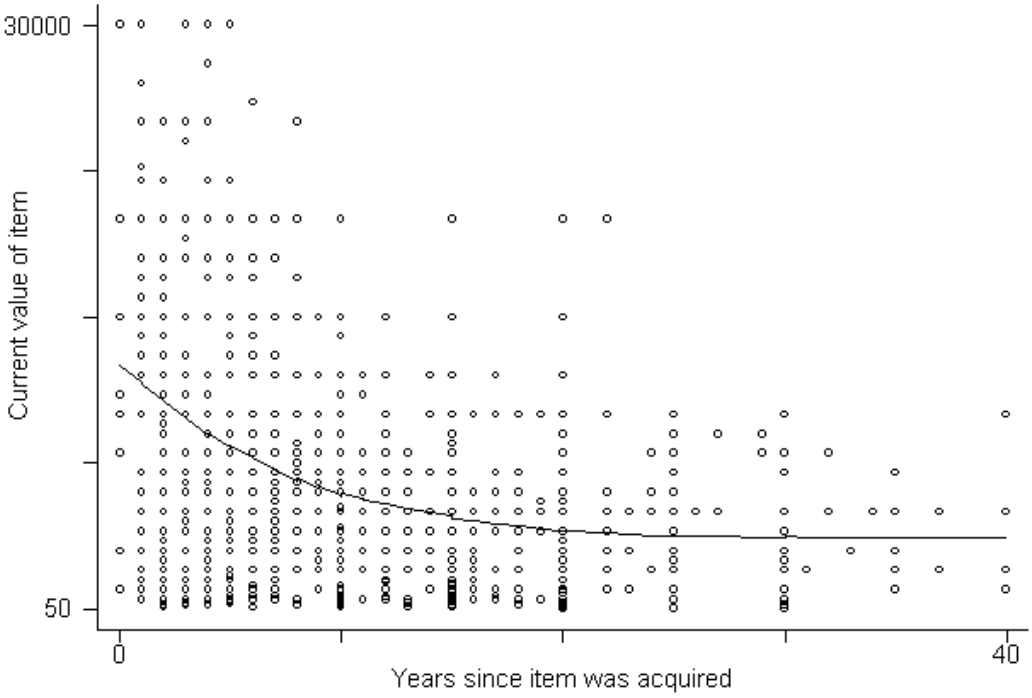


Fig. 3: Wood stove: smoothed relationship between current value and age of the item



Housing
By definition each household lives in a dwelling and its welfare is clearly influenced by its characteristics and comforts. However, it proved particularly difficult to express consistently this benefit in monetary terms.

The benefit that the household obtains from living in a certain dwelling is usually estimated from the value of the rent of the dwelling. However, in Albania the percentage of households who actually rent the dwelling where they live is minimal (below 3%). In order to overcome this obstacle the survey asked the household head to report a likely value of a possible rent if the household had rented their house to other Albanians. Often, however, the household was unable to report any value, because an actual rental market does not exist.

Since including values only for households who reported a rent value would distort the consumption aggregate, a regression analysis was conducted to impute a rent value based on house characteristics and geographical location.

Out of 3599 households, 114 values are based on actual rents, reported by the household, 1930 are values self-reported by the household, and 1555 are based on the regression results. The table below reports separately the mean and median values of rents and imputed rents for Tirana, other urban areas and rural areas.

Table 3: Median rent values by area (leks)

	Actual rents		Self estimated rents		Regression estimates	
	Median	Obs.	Median	Obs.	Median	Obs.
Tirana	13000	38	20000	228	15221	334
Other urban	4000	65	6000	884	6203	410
Rural	4000	11	5000	818	3307	811
Total	5000	114	5000	1930	4691	1555

From Table 3, it is clear that rent levels show a marked difference between Tirana and the rest of the country, and it seems difficult to argue that these differences reflect an actual disparity in housing conditions and their benefits. A higher value for rents in Tirana is clearly expected, but it is the magnitude of the difference that appears to be out of proportion. In particular, self estimated rents appear to be overestimated, and these are the values driving the results of the following regression estimates.

Unfortunately, the problem is not due to few outliers, since in Tirana even the median value of the self-estimated rents is very high. These values are not based on an actual market, and in the LSMS sample in Tirana only 38 households are actually paying a rent. Moreover, if rent values were included in the consumption aggregate, in Tirana they would represent almost 30% of the whole budget, whereas in other urban and rural areas the budget share would be respectively 15% and 11%.

Since the differences between Tirana and the rest of the country do not seem defensible in reasonable terms, the decision was taken not to include rents in the consumption aggregate.

Health
The questionnaire has an extensive health module (Module 4), and health expenditures are recorded on medicines, laboratory exams, hospitalization charges, gifts to medical personnel, transport and other costs related to health. Moreover, the questionnaire distinguishes these expenses according to different health

providers, by helping the respondent to recall expenses related to visits to public ambulatory health centers, private doctors, nurses and paramedic staff, popular or alternative doctors, and dentists.

However, there are two major problems in including health expenses in the consumption aggregate: 1) some medicines are subsidized and they are subsidized for people in possession of special health licenses, and 2) some components of health expenditure have the characteristic to be a reaction to a shock, for which extraordinary means are used. Analyses of the first problem showed that health expenditures should not be included in the consumption aggregate.

In fact, medicines account for almost 50% of the aggregate total health expenditure, and they also represent on average 50% of the household expenditure for health. The substantial role of medicines in the overall health expenditure is explained by the fact that visits to public health providers are free of charge. However, the impossibility to know who received the subsidy and what was the extent of the subsidy is bound to create a substantial distortion if health expenses are included.

Moreover, the survey did collect information on the kind of discount (none, partial and full or free of charge) received when the household bought medicines prescribed after a visit to the public ambulatory health center. The cost of medicines bought after a visit to the public ambulatory health center accounts for 65% of the whole expenditure for medicines, but it was found that people receiving discounts are mainly concentrated in urban areas, and indeed in Tirana, and are the less poor (see Table 4). This has the clear implication that not only is it difficult to correct for the subsidy, but also there is relevant evidence that the subsidy is mainly received by the wealthier, so that the distortion does negatively affect the welfare ranking.

In relation to the nature of health expenditure as a response to a specific shock, the analysis of the section of the health module that investigates access to health care proved to be particularly useful. Fifty percent of the households that spent money for health care, found it difficult or very difficult to pay for health care and consequently reported borrowing money or selling assets to cover those expenses. These results reinforce the decision to exclude health from the consumption aggregate.

Table 4. Type of discount received for medicines by area, and percentage of poor people receiving the discount.

Type of discount received for medicines prescribed	Tirana	Other urban	Rural	Total	Percentage of poor
None	44.40	47.17	74.75	63.45	22.84
Partial	44.35	50.22	24.10	34.08	15.28
Full (received free)	11.24	2.61	1.16	2.47	11.58
Total	100.00	100.00	100.00	100.00	19.98
Number of observations	236	758	1025	2019	2019

2. Correcting for household size and price differences

Once the consumption components have been aggregated, there are two important corrections that need to be made: 1) adjustment for the household size, and 2) adjustment for regional price differences. The analysis of the sensitivity of the poverty estimates to different assumptions regarding equivalence scales and economies of size is presented in Annex I. This section reports on the methodology used to account for price differences.

Nominal expenditures are affected by substantial price differences between urban and rural areas, and between different parts of the country. Since regional price indices do not exist (monthly price indices are

calculated for all Albania and based only on prices of some cities), this adjustment was undertaken using information collected in the household survey (using the budget share collected in the survey as well as the implicit prices or unit values of food items). A separate price index was also calculated using prices collected in the community questionnaire, but no significant differences were found.

The price index was obtained calculating a Paasche price index constructed at the level of primary sampling units, where 8 households where interviewed in the same period of time. A primary sampling unit index was preferred to a household Paasche index in order to avoid the effect of outliers in some households, as well as of cases in which the household consumes most of its budget eating outside. Average budget shares for each primary sampling unit were used as weights for the ratio of median prices faced by households in each primary sampling unit, and the median national prices.

Median prices are preferred to average prices in order to avoid the effect of possible outliers. Since budget shares are already bound in values between 0 and 1, they have been averaged and weighted by the household size[1]. Median national prices, calculated applying household weights, have also been computed. The Paasche price index for the primary sampling unit i is obtained with the following formula:

$$p_i^P = \left[\sum_{k=1}^{n} w_{ik} \left(\frac{p_{ik}}{p_{0k}} \right)^{-1} \right]^{-1} \qquad (1)$$

where w_{ik} is the budget share of item k in the primary sampling unit i;

p_{ik} is the median price of item k in the primary sampling unit i;

p_{0k} is the national median price of item k.

Although consumption of food items was reported using different units of measure, only implicit prices for the most common unit of measure within each item were considered in calculating median prices, so that in all primary sampling units prices were reported with the same unit of measurement (in some primary sampling unit where the implicit price was not available with the standard unit of measurement, we used the median price in the district distinguishing between urban and rural areas).

The table below reports the mean value of the price index by stratum and urban/rural breakdown. As expected the values of the index is higher in urban areas and lower in rural areas. Also, Tirana is substantially more expensive than the rest of the country.

Table 7: Mean price index by stratum and urban/rural areas

	Urban	Rural	Total
Coastal	1.03	0.98	1.00
Central	0.99	0.97	0.98
Mountain	1.00	0.97	0.98
Tirana	1.09	-	1.09
Total	1.03	0.98	1.00

Another Paasche price index was calculated using the prices collected through the community questionnaire and the budget shares coming from the household survey (when in some primary sampling

[1] On price indexes estimation using household surveys see Deaton and Tarozzi. 2000. "Prices and Poverty in India"; mimeo, Research Program in Development Studies, Princeton University.

unit prices were missing they were replaced with median values of the district by urban and rural areas). This index produced very similar results, although some of the items had to be excluded from the index because the community questionnaire only collected the most important prices.

Eventually, we used the price index calculated using only information collected through the household survey, for which we could use all the items included in the food expenditure and in which the number of imputed prices was substantially lower.

3. The calculation of the poverty line

The costs of basic needs methodology (Ravallion and Bidani, 1994[2]) was used to compute the poverty line.

This methodology first calculates a food poverty line, or the cost of obtaining a certain minimum amount of calories, and then augments it by making an allowance for non food basic necessities. The non food component is calculated as the average non food share of expenditures of households that spend roughly the same amount as the food poverty line for food.

Following Ravallion and Bidani (1994), we focused on the food basket consumed by the poor. We used the food basket of the second to the fourth lowest deciles, as calculated from the per capita consumption aggregate already adjusted for price differences (the first decile was excluded in order to avoid influencing the basket with patterns that risk being the result of some mistake, but the basket of the poorest 50 % did produce very similar results).

Taking into consideration the FAO recommendations on the minimum calorie requirements according to age and sex, and adjusting these to the population distribution in Albania, it was estimated that the per capita required calorie intake was 2288 calories per day.

An infinite variety of food baskets, differing in price, are consistent with attaining this level of calories. We decided to use the food basket of the chosen population, thus limiting the arbitrariness of the choice, and to include only items contributing to more than 0.11% to the total budget share. This resulted in using about 60 items, accounting for 97% of total food expenditure.

Using appropriate calorie transformations, the calorie content of the basket and its price were estimated. We then computed the cost of obtaining 2288 calories per day, and transformed that into a monthly value, to obtain the food (extreme) poverty line.

Table 8 shows the composition of the food basket that yields the desired 2288 calories, and the cost shares of each group of items.

[2] Martin Ravallion and Benu Bidani. 1994. "How Robust is a Poverty Profile?" The World Bank Economic Review, Vol. 8, No. 1: 75-102.

Table 8: Sources of calories and their cost in the basket of 2288 calories

	Calories	Cost shares (percentage)
Bread and pastries	266	6
Cereals, flour and pasta	928	14
Meat	60	17
Fish	3	1
Milk and diary products	300	27
Oil	350	8
Fruits	11	2
Vegetables and legumes	101	15
Preserved and frozen vegetables	99	2
Sugar and confectionery	158	4
Condiments and spices	0	0
Non alcoholic beverages, tea and coffee	11	3
Miscellaneous	1	0
Total	2288	100

Finally, the non food component of the poverty line was calculated, taking into consideration the percentage of non food expenditures of those households that spent an amount approximately equivalent to the food poverty line for food.

The food poverty line, also known as the extreme poverty line, was set at 3047 leks per month, whereas the poverty line is at 4891 leks per month.

Other poverty lines used in the main report are the 2 dollar a day in purchasing power parity (PPP) which is equal to 3775 leks per month, and the PPP 4 dollars a day line which is equal to 7549 leks per month.[3] Relative poverty lines were also calculated as 50% and 60% of the median per capita consumption expenditure, equal to 3349 and 4019 leks per month, respectively.

[3] ECA calculations of the 1 dollar PPP for 2002 in leks is 62.03 per person per day.

ANNEX I: Sensitivity of poverty estimates to different hypotheses on economies of size and equivalence scales

Economies of size are related to the share of consumption expenditure for public goods. Since the final aggregate excludes housing, the two main components of quasi-public goods are durables and utilities. Durables have a minor contribution to the overall consumption patterns (1.3%), whereas for utilities the share is higher. Expenditures for gas, electricity, fuels combustibles, and –in part- for telephone services, can be considered quasi-public goods. For these items the share of expenditure is about 8%.

Equivalence scales, which take into consideration the different needs of household members, for instance children having a lower food requirement than adults may be more relevant for this particular consumption aggregate. Education is still subsidized and it is reasonable to believe that the cost of children is lower than the cost of adults.

In order to test how relative poverty levels in different population groups change by making different hypotheses on the extent of equivalence scales and economies of size we used the methodology proposed by Lanjouw, Milanovic and Paternostro (1998).[4]

As explained by Lanjouw et al. (1998) different values of economies of size and equivalence of scales can be introduced considering different value of a single parameter (θ). The welfare indicator is then calculated as:

w=(household consumption expenditure)/((household size)^θ)

θ can assume values that are higher than zero and less or equal to 1. If θ is equal to 1 we calculate a simple per capita consumption expenditure in which we assume neither equivalence scales nor economies of size, whereas these increase as θ approaches zero.

The groups of households considered for this analysis are:

1) Elderly households (households composed exclusively by elderly people: women over 54 year old and men over 59)
2) Households with high child ratio (more than average number of children, children below 16 years of age)
3) Female-headed households
4) Households with high dependency ratio (higher than average dependency ratio)
5) Households with no children
6) Households with 1 child
7) Households with 2 children
8) Households with 3 children or more

These groups of households are used to see how their levels of poverty headcount change by giving different values to θ, but keeping the overall head-count ratio equal to 25.4%. Table A1 shows the results of such analysis considering values of θ from 0.5 to 1. Although as θ decreases, the head count increases significantly for elderly households, female headed households and households with no children, poverty ranking among household groups remains the same. And this result suggests that poverty estimates are not

[4] Peter Lanjouw, Branko Milanovic, and Stefano Paternostro. 1998. "Poverty and the Economic Transition." Policy Research Working Paper No. 2009. World Bank, Development Research Group, Poverty and Human Resources, Washington, DC.

particularly sensitive to assumptions regarding economies of scale. The same results are reported in Figure A1 and Figure A2.

Table A1: Headcount within different groups of households making different assumptions on the extent of economies of scale

	θ = 0.5	θ = 0.6	θ = 0.7	θ = 0.8	θ = 0.9	θ = 1	% of pop.
Poor	25.4	25.4	25.3	25.3	25.4	25.4	
Elderly HH	20.9	14.3	10.0	6.0	4.5	3.5	4.0
Female headed HH	27.2	25.9	24.5	22.9	21.3	20.4	9.4
High Dep. Ratio	27.3	27.7	27.9	27.8	28.3	28.4	60.3
High Child Ratio	32.9	34.3	34.2	33.6	34.0	34.1	30.7
No children	16.6	13.6	11.3	9.6	8.4	7.2	22.1
1 child	21.9	20.3	19.7	19.5	18.3	18.0	22.0
2 children	24.2	25.0	24.6	24.2	24.3	23.6	31.4
3+ children	38.0	41.0	43.9	46.1	48.5	50.7	24.5
Av. hhsize for the poor	4.6	4.9	5.1	5.3	5.5	5.7	
Av. hhsize for the non poor	4.2	4.1	4.1	4.0	4.0	4.0	
% of children in poverty	30.1	31.0	31.6	31.9	32.4	32.8	
% of elderly in poverty	20.7	19.0	18.5	18.0	18.0	17.8	

Fig. A1: Head-count within different groups of households making different assumptions on the extent of economies of scale

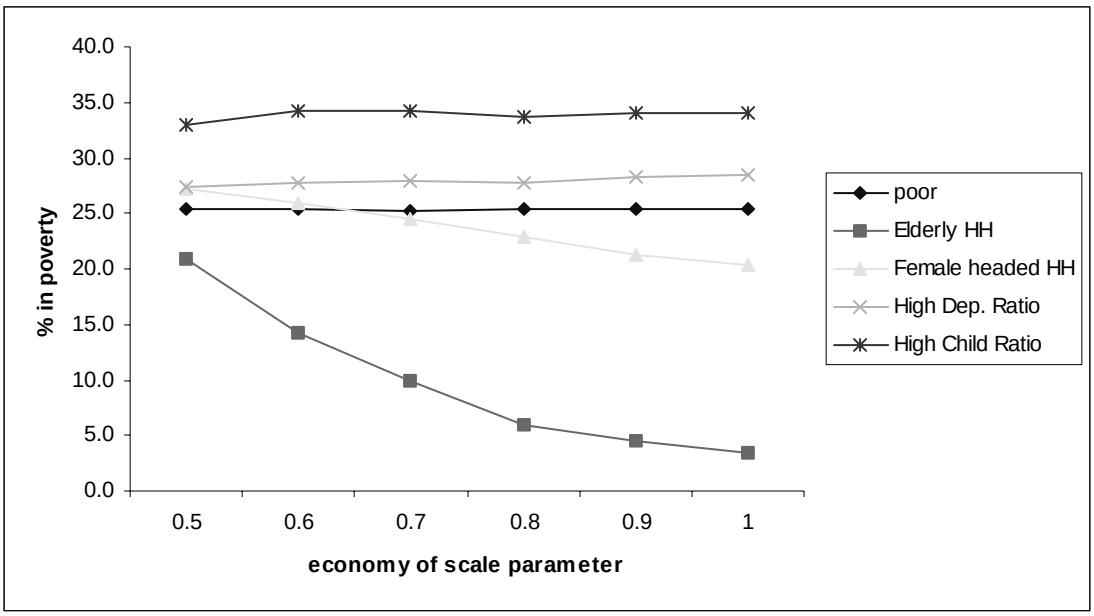
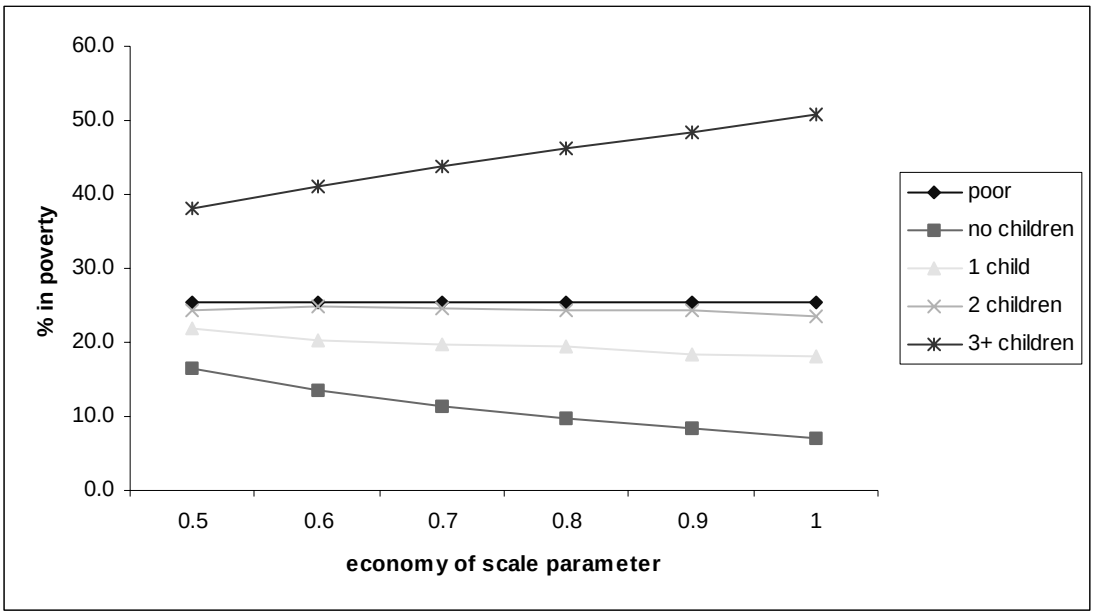


Fig. A2: Head-count within different groups of households making different assumptions on the extent of economies of scale



The same analysis is repeated using the new and old OECD scales and the value of θ recommended by the World Bank Europe and Central Asia (ECA) region (θ=0.75).

Table A2: Head-count within different groups of households making different assumptions on the extent of economies of scale

	New OECD scale	Old OECD scale	ECA parameter θ = 0.75	Per capita θ = 1	% of pop.
Poor	25.4	25.4	25.4	25.4	
Elderly HH	12.4	6.7	8.4	3.5	4.0
Female headed HH	25.7	23.2	23.5	20.4	9.4
High Dep. Ratio	25.2	26.1	27.9	28.4	60.3
High Child Ratio	27.6	28.9	33.8	34.1	30.7
No children	16.9	13.1	10.1	7.2	22.1
1 child	22.2	20.5	19.7	18.0	22.0
2 children	22.4	23.0	24.6	23.6	31.4
3+ children	39.6	43.9	45.1	50.7	24.5
Average household size for the poor	5.1	5.4	5.2	5.7	
Average household size for the non poor	4.1	4.0	4.0	4.0	
Percentage of children in poverty	28.2	29.8	31.8	32.8	
Percentage of elderly people in poverty	21.3	19.8	18.4	17.8	

Fig. A3: Head-count within different groups of households making different assumptions on the extent of economies of scale

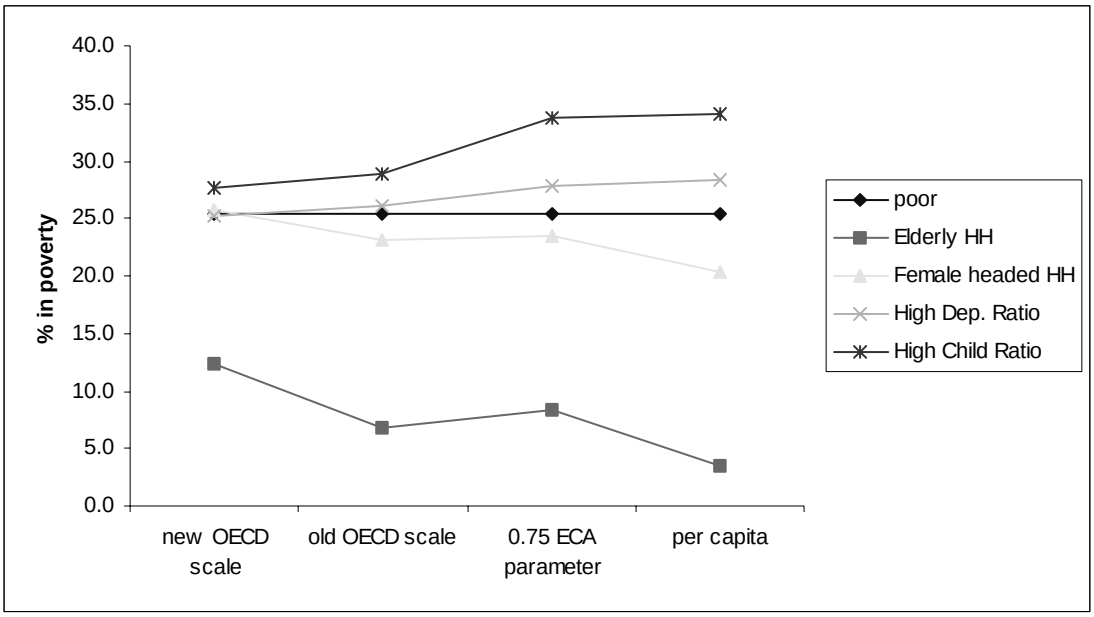
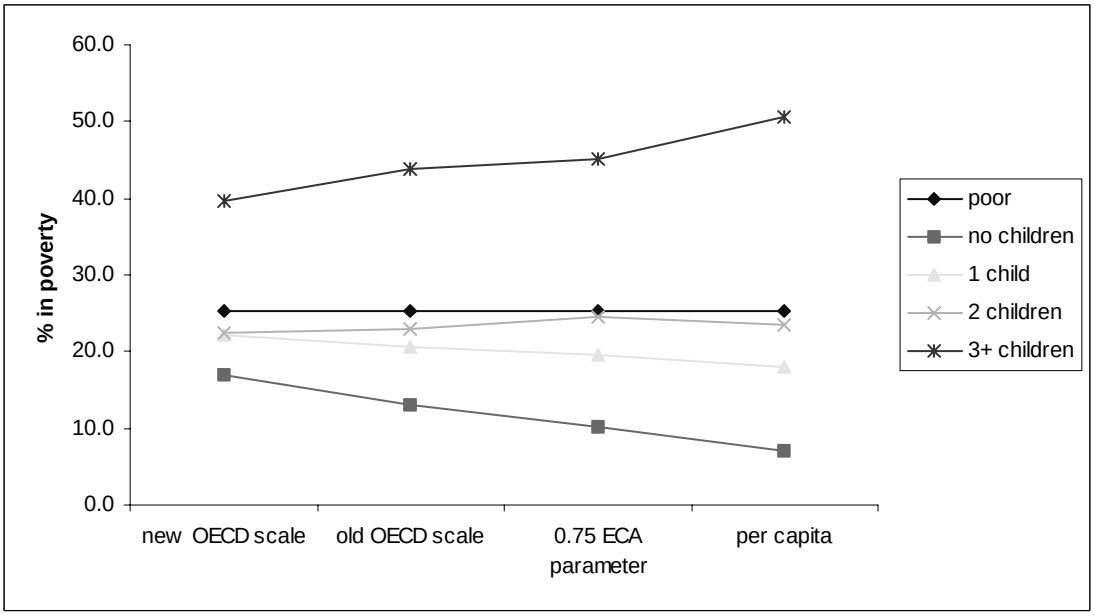


Fig. A4: Head-count within different groups of households making different assumptions on the extent of economies of scale



If we believe that in our specific case only equivalence scales matter, then the sensitivity analysis can also be conducted by testing whether specific equivalence scale parameters change the ranking of poverty of some households by comparing their cumulative distribution functions.

This analysis compares three different types of households: households with only adults, households with adults and children, and households with adults and elders. In the first set of graphs (Figure A5) we compare the CDFs of households made of only 2 adults with households made of 2 adults and 1 child, 2 adults and 2 children, 2 adults and 3 children, and 2 adults and 4 children. In the first part of the figure cumulative distribution functions are based on real per capita consumption whereas in the second graph a child is considered equivalent to 0.5 of an adult. As it appears from the graphs this does not change the ranking of households from the poorest to the richest (we have 121 households with only 2 adults, 170 with 2 adults and 1 child, 478 with 2 adults and 2 children, 215 with 2 adults and 3 children, and 65 with 2 adults and 4 children).

In a second set of graphs (Figure A6) we compare in the same way households with 2 adults and households with 2 adults and 1 elder. The equivalence scale for an elder is equal to 0.7 (we have 121 households with 2 adults and 68 households with 2 adults and 1 elder).

Figure A5: Sensitivity of poverty estimates to child equivalence scales

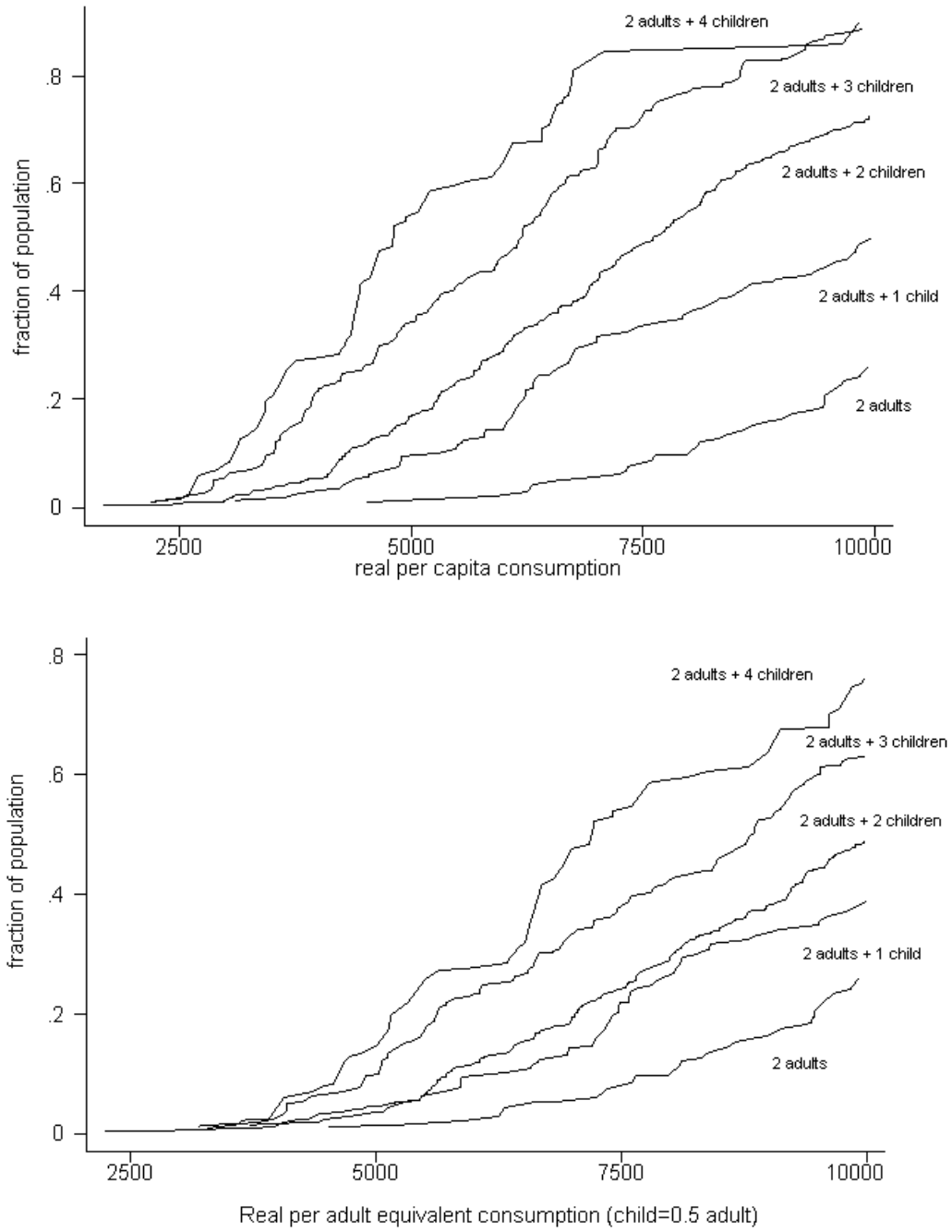
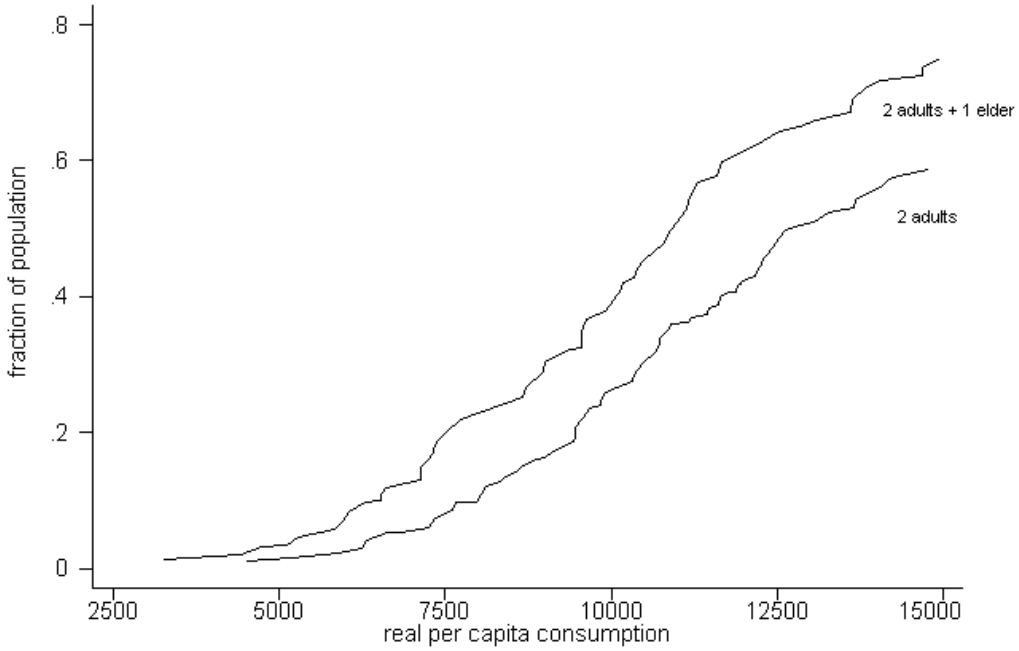
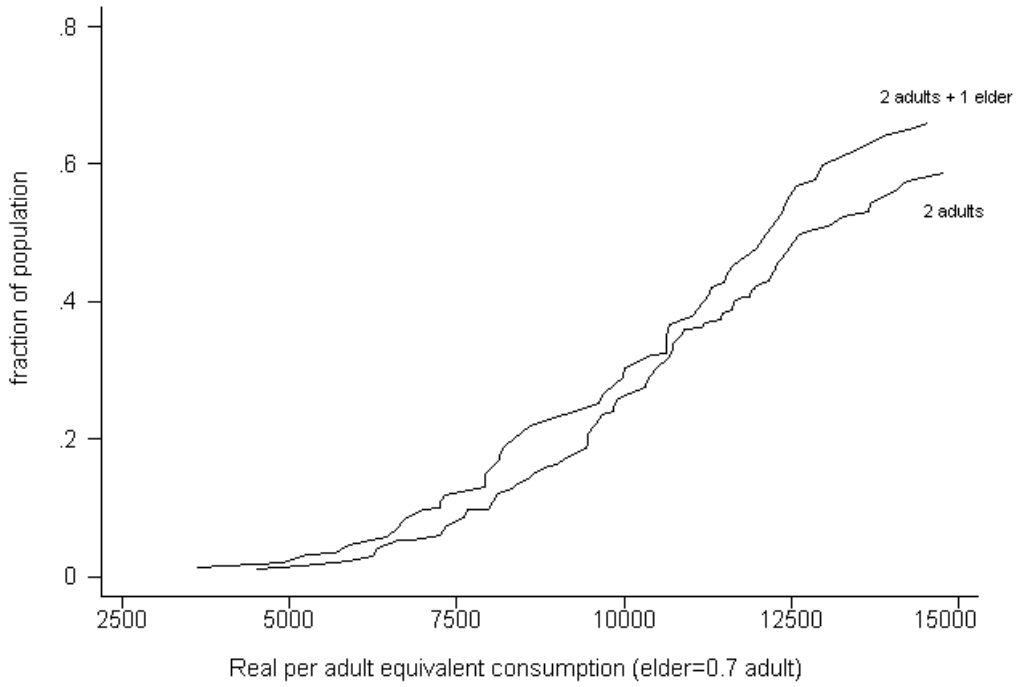


Figure A6: Sensitivity of poverty estimates to elder equivalence scales





ANNEX II: Summary of syntax files and correct sequence in which they need to be run

1) **Base.do** this syntax generates a file with the main survey variables at the household level;
2) **Food.do** this file merges together the various component of the diary, and does a first cleaning of outliers in food expenses;
3) **Dindex.do** computes a daily index for the diary;
4) **Food1.do** this file improve the cleaning of some strange values in the diary, and generates food consumption patterns and the household file for the total consumption;
5) **Nfood.do** this file computes non food expenses from section 11
6) **Eduhealth.do** this file computes education and health expenses at the household level;
7) **Utilities.do** this file computes expenses for rent and all the utilities;
8) **Durables.do** this file computes a consumption flow from durable items;
9) **Prepare prices.do** this file checks implicit prices and creates a file with consistent information about prices;
10) **Paasche_psu.do** this file calculates a psu paasche price index;
11) **Totcons.do** this file merge together all the components of the consumption aggregate, checks and correct some outliers, and produces main consumption patterns;
12) **Povline.do** computes various poverty lines
13) **Poverty.do** produces poverty estimates
14) **Basecom.do** creates some basic variables at the level of the community questionnaire;
15) **Com_prices.do** elaborates community price information and merges it with household budget shares and prices;
16) **Com_paasche_psu.do** calculates a paasche price index based on community prices
17) **Econscale.do** tests sensitivity of poverty measure to different hypotheses of economies of scale
18) **Miscellaneous.do** produces different results used to argue for the exclusion of housing, checking validity of food aggregate etc.

Consumption aggregate, price adjustment, poverty measurement and sensitivity analysis:

Program	*Input files* (data\)	*output files* (results\)
base.do	Weights; metadata_cl; data\hhroster_cl; **results\prefect**	Base; hhroster
food.do	Bnonpurchased_cl; bfoodeaten_cl; bchecklist_cl; bookdaily_cl; results\base; **results\subgroup**; results\hhroster	Food;
Dindex.do	Results\food; results\base; results\hhroster	
Food1.do	Results\hhroster; Food; **results\calories**;	Food1; foodexp; ***food.log***
Nfood.do	nonfoodexp_6m_cl; nonfoodexp_12m_cl; nonfoodexp_1m_cl	Nfood.dta; nfoodexp.dta
Eduhealth.do	Results\Hhroster; health_b; results\base	Eduexp; Healthedu.dta, healthexp.dta
utilities.do	Results\Hhroster; Dwelling_cl; results\base; **results\rentcorr**; **results\hhidofother**	Utilities; ***rent.log***; ***water.log***
Durables.do	Durables_cl;	Durables; durcons; ***durab.log***
Prepare prices.do	Results\food1	Prices
Paasche_psu.do	Results\prices; results\hhroster; results\base	Bshares; Psupind
Totcons.do	health_b; Results\foodexp, results\nfoodexp; results\healthedu; results\utilities; results\durcons; results\durables; results\nfood; **results\correct_sect11**; results\eduexp; results\base; results\healthexp; results\psupind;	Durables1; durcons1; Nfood1.dta; nfoodexp1.dta; edu.dta; utilities1; health; totcons; ***patterns.log***
Povline.do	Results\hhroster; results\totcons; results\psupind; results\calories; results\prices;	Foodpline; povline
Poverty.do	Results\hhroster; results\totcons; results\psupind; results\povline	poverty; ***poverty.log***
Basecom.do	Results\base;	Basecom
Com_prices.do	Price_list_cl2; results\basecom; results\nfood1; results\base; results\prices	Comprices; prices1
Com_Paasche_psu.do	Results\hhroster; results\base; results\prices1;	Psupind1
Econscale.do	Results\hhroster; results\base; results\poverty	Econscale; Econscale1
Miscellaneous.do	Subjpov_cl; dwelling_cl; results\poverty; results\hhroster;	

The overall generation of the aggregate also calls upon two files that include information on the Albanian prefectures (file: results\prefect) and a categorisation of food items into subgroups (file: \results\subgroup).