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Poverty Assessment Methodology in Armenia

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This paper briefly summaries the methodology of the official assessment of the poverty in Armenia by the National Statistical Service of RA based on the “Integrated Living Conditions Survey”.

General Approaches to Poverty Assessment

It is known that poverty has several definitions. “Income poverty” and “Human poverty” are largely used in literature. The first one refers to the abilities to meet the basic human needs or necessary consumption levels, i. e. material welfare levels. Whereas, *human poverty* is a much broader concept and refers to living a distinct life and human development opportunities, including possibilities of and potential for meeting education, healthcare, information, communication and other social needs.

In order to assess *income poverty*, it is necessary to compare the income (or consumption) levels to a certain reference value (poverty line). In general, estimations of income levels through statistical sample surveys do face many difficulties, especially in developing countries. The households tend to hide their actual incomes, or, if not necessarily obliged to, they prefer not to declare them. Such difficulties create problems in terms of reliability and quality of collected income data, thus, reducing the reliability and quality of the entire survey. In order to avoid these, expenditure method of poverty evaluation is normally used: i.e. the households expenditures are compared to the set poverty line, and not incomes.

In fact, this approach fully addresses the income poverty definition, since the latter refers to the actual current welfare level of an individual. In this regard, theoretically, regardless of the income and asset levels (unless they are not spent for the satisfaction of the own material needs of households/individuals) households can be poor.

In Armenia and in many other countries in the world, poverty assessment bases on household surveys through which data on income, expenditure and other parameters are collected.

In order to assess poverty through consumption (expenditure) method, the collected data is summarized as the aggregate of current consumption of households. The latter is then compared to the total poverty line – reference minimum levels of food and non-food consumption. Those households (or individuals), whose consumption levels are below the Poverty line, are considered poor (absolute poverty incidence), whereas, if the consumption is below the Food poverty line, the household is considered extremely poor (absolute extreme poverty incidence).

Other approaches can be also used for the poverty assessment: e. g. through asset levels, or electricity consumption, etc, as well as subjective assessment methods. Poverty is a relative concept, therefore, if an individual finds him- or herself poor through comparing his or her welfare and opportunities, one should to accept this assessment.

Integrated Leaving Conditions Survey (ILCS)

A number of researches were carried out on poverty and its various dimensions in Armenia. Nonetheless, the most comprehensive quantitative research is the “Integrated Leaving Conditions Survey” (ILCS) carried out by the National Statistical Service of Armenia (NSS): it lays as basis for the official estimates of poverty in the country. These sample surveys were started first in 1996 while, since 2001, they are regularly carried out every year.

The methodology of ILCS is declared to be consistent with the international practices. It is worth noting, that the World Bank periodically assists the NSS in terms of improving and developing the methodology to bring it as close to current international standards as possible.

The ILCS of NSS contain very extensive data on households and members thereof. Although they contain detailed data both on incomes and expenditures of households, they are, nonetheless, considered surveys that assess expenditures, rather than incomes of households.

For each survey, data collection process lasted 12 months. Notably, the households are rotated each month. Data on each household is, thus, taken for one month. Two main tools are used for data collection: ILCS questionnaire and diary. According to the methodology, the questionnaire is filled in for each of 5 visits to a household within a month, whereas the diary is filled in by the household every day during the same month.

The ILCS findings, normally, are representative for the entire country, as well as for Yerevan, other urban and rural areas' levels. The sample size and number of settlements covered by the ILCS has changed significantly. Therefore, it is largely believed that the most recent two surveys (2004 and 2005) are compatible only with 1998/99 survey¹.

	<u>1996</u>	<u>1998/99</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>
Actual sample size	4920	3600	4037	4634	4641	6816	5187
Number of communities/settlements in the sample, of which:	128	104	47	44	37	259	119
Urban	28	33	19	14	17	43	28
Rural	100	71	28	30	20	216	91

Thus, the official estimates of poverty incidence and its trends, as well as policies and programs targeted at combating poverty (namely - PRSP) rely on the ILCS. The data collected through these surveys are then processed to estimate the Income poverty incidence by using the above described consumption approach.

Determination of Consumption Aggregate

Like the calculation of the poverty line, estimation of the consumption aggregate is extremely crucial to the assessment of poverty incidence. The methodology of ILCS, namely, the methodology of calculating the consumption aggregate, was modified in recent years. In 2004 and 2005 surveys, per capita consumption is calculated for adult equivalent household members and economies of scale effect. These improvements that have gained large usage in recent years base on the following assumptions. First, empirical studies have revealed that consumption needs of children are smaller than those of adults. Second, the welfare of households with the same per capita income levels may differ depending on the number of household members.

¹ The 1998/99 survey was carried out during July 1998-June1999. The 1996 survey was carried out during Novemr15-December15 of 2006; all other survey was during a calendar year.

Thus, when determining per capita consumption of households, the monetary and non-monetary expenditures of households for food and non-food goods are presented in terms of adult equivalent household members, which are, then, adjusted for the economies of scale coefficient. Currently, the coefficient of an adult equivalent is estimated to be equal to 0.65². I. e. it is estimated that consumption needs of children (below 14 years) are 65% of adult consumption needs. The following formula is used for estimating the number of adult equivalent household members in the HHLS:

$NC = (N + 0.65 * C)$, where

NC is the number of adult equivalent members,

N is the number of household members above 14 years,

C is the number of household members below 14 years.

Meanwhile, economy of scale index is used, too: its elasticity is estimated to be 0.87 degrees. Economies of scale do materialize since in certain cases the increase in household members does not proportionally add to consumption expenditures. E. g. consumption of long-term goods (expenditures for refrigerator, TV, car, newspapers, etc.) for a household with 1 member and 3-member household is almost the same, and consumption expenditures of certain other products and services can be saved on.

Thus, per capita consumption aggregate for household members is determined through the following formula:

$CA = C / (NC^{0.87})$, where

CA is per capita (adult) consumption aggregate,

C is the sum of monetary and non-monetary expenditures of a household for food and non-food goods,

NC is the number of adult equivalent household members.

Consumption aggregate also contains the estimate of the current consumption for the long-term goods.

Determination of Poverty Line

The ILCS uses two poverty lines: total poverty line and extreme poverty line (or food poverty line). Poverty incidence is determined as compared to the total poverty line, while extreme poverty – as compared to the extreme poverty line.

Total poverty line is defined based on extreme (food) poverty line which, in its turn, is determined through the energetic value of food consumption. According to the methodology used until 2004, as per recommendation of the Food and Agriculture Organization (FAO), minimum daily energetic value per capita is taken equal 2100 kCal. By using 24 foodstuff items most widely-consumed by the middle-income group (revealed by the survey), the

² See "Armenia: Social Snapshot and Poverty" statistical-analytical report, NSS of RA, Yerevan, 2006

minimum food basket (equivalent to the abovementioned energy composition level) is constructed. The monetary equivalent of the minimum food basket, calculated at prices for included food items, is the food poverty line.

According to the methodology applied since 2004, the minimum energy value is determined for different age and sex groups, as recommended by the WHO (World Health Organization). Namely, WHO defined (1985) the following per capita minimum daily food energy values:

- Children of 0-6 years: 1614 kCal,
- 7-15 years - 2362 kCal,
- Women of 16-60 years - 2099 kCal,
- Men of 16-60 years - 2655 kCal,
- Above 60 years - 2006 kCal.

Under current demographic composition of Armenian population, by using the above listed minimum values, average per capita daily minimum energy value can be calculated: it equals 2232 kCal.

This average minimum value can be calculated by the actual price per 1 Cal to obtain per capita minimum consumption (market price) for food products per day. The latter is the extreme poverty line per capita per day, which can be then re-calculated into monthly values.

In order to obtain the actual average price per 1 Cal, the market estimate and energetic value of the actual consumption (purchased, self-produced or received for no price) of all households included in the survey were used. By dividing the first value (market value) by the second (energy value), consumed 1 Cal in 2004 costed AMD 167.2 in median prices and AMD 173.7 in average (mean) prices. Finally, the minimum food basket (Extreme poverty line) per capita equaled AMD 11 195.7 ($2\ 232 \cdot 0.1672 \cdot 30$) or AMD 11 631 ($2\ 232 \cdot 0.1737 \cdot 30$) depending on the use of mean or median prices.

If we take into account that the consumption aggregate is calculated per capita, but per 1 adult equivalent, furthermore, if we take into account the economies of scale index, the minimum food baskets need to be adjusted in order to make them compatible to the consumption aggregate. In 2004, a coefficient of 0.898 was used which contains the effects of both adult equivalent and economies of scale. Thus, the extreme poverty line for 2004 would equal to AMD 12 467 monthly ($11195.7 / 0.898$) at median prices and AMD 12 952 ($11631 / 0.898$) at average price.

The minimum consumption of non-food products, and thus, the total poverty line, is then estimated based on the extreme poverty line. Two methods are known for that: Food Expenditure Method (FEM) and Consumption Basket Method (CBM)³. According to those methodologies, non-food good and services' share in the total poverty line is estimated minimum 35.64% and maximum 43.42%.

³ Methodologies developed by the World Bank in 2002.

Thus, extreme poverty line for 2004 was set at AMD 12 467, whereas the total poverty line is calculated by using the minimum share of non-food products and goods to be equal to AMD 19 373 (=12 467/(1-0.3564)).

For 2005 and onwards, the 2004 poverty and extreme poverty lines adjusted for price increases will be used for determining the lines.

	2004	2005
Minimum average kCal	2232	2232
Actual average price for 1 kCal	0.1737	na
Actual median price for 1 kCal	0.1672	0.1779*
Extreme poverty line (for average prices)	12952.1	na
Extreme poverty line (for median prices)	12467.4	13266
Share of non-food goods	35.64	34.61*
Total poverty line (median prices)	19373	20289
Total poverty line, daily, USD*	1.30	1.50
Total poverty line, daily, USD, PPP adjusted*	4.7	5.4

* Estimates and calculations of the author: Average exchange rate for QIV is used for the calculation of the USD equivalent of the Poverty line. PPP adjustment coefficient is taken equal 3.62.

Literature used:

“Social Snapshot and Poverty in Armenia”, Statistical Analytical Reports, 2002-2006, National Statistical Service of RA, Yerevan, Armenia;

“Economic Policy and Poverty” Periodical, volumes 1-3, 2003-2005, EDRC, Yerevan, Armenia