Armenia Poverty Profile in 2001

1. Data sources and their comparability over time

This study uses the latest available data set for Armenia, Integrated Living Conditions Survey (ILCS) conducted throughout year 2001. The 2001 ILCS was representative on the marz, or regional level, as well as on both urban and rural areas. The sample size included 4,037 households. The questionnaire consists of sections on household composition (including limited information on labor market status), housing conditions, migration and transfers between households, education, health, agriculture, savings and borrowing, and social assistance. The questionnaire includes also a diary of expenditures and consumption during last 30 days and a section on annual consumption.

The survey provided the basis for comparison of poverty measures with the 1998/99 estimates which were based on ILCS carried out in the period between July 1998 and June 1999. Previous comparisons of poverty indicators between 1996 and 1998/99 were limited due to differences in the welfare measure available for poverty analysis and time period of the survey[1].

Table 1.1 provides information on sample size, period of the survey, sampling frame and questionnaire design of the two latest surveys that will be used for poverty comparisons between 1998 and 2001. Given that both surveys were carried out within 12 months, seasonal fluctuations will not affect comparisons of poverty measurement results. The main drawback of both surveys is the sampling frame which was based on the outdated Population Census data from the late 1980s. In addition, we found that urban areas are over-represented in the 2001 ILCS data. This conclusion is based on the assumption that the urban/rural structure was not changed significantly over the period 1998/99-2001, as the 2001 survey data showed. This assumption is supported by the results of the Educational Survey conducted by the UNDP in 2001, which showed very similar structure of urban and rural areas, as obtained from ILCS in 1998/99 (see table A1.1 in Annex I). Therefore, poverty estimates for 2001 used urban/rural structure from 1998/99 ILCS data.

Table 1.1. Information on data sources used in the analysis

	ILCS 1998/99	**ILCS 2001**
Sample Size	4,260 households	4,037 households
Survey Period	July 1998 - June 1999	January 2001 – December 2001
Sampling Frame	198? Population Census	198? Population Census
Questionnaire Design	• all information for constructing consumption aggregate exist • module on employment exists • separate module for self-employed	• all information for constructing consumption aggregate exist • module on employment does not exist • separate module for self-employed does not exist

[1] For further details on comparability between 1996 and 1998/99 see Armenia Poverty Update (WB, 2002a).

The 2001 survey contains all information necessary for constructing consumption aggregate comparable with consumption aggregate used in 1998/99 poverty analysis. Differences appear between some modules in the 1998/99 and 2001 questionnaire. In contrast to 1998/99 ILCS, the latest survey data has limited information necessary for imputation of the rental value of housing in constructing the consumption aggregate for 2001. In addition, information on the employment status of individuals is limited in 2001 survey data (with no module on self-employment household members), which might affect comparison of poverty by employment categories between those surveys. Given the fact that the new Labor Force Survey in Armenia was conducted in 2001 with the six-month rotation along with the ILCS, further insight into relationship between poverty and labor market can be provided using the latest available LFS data.

2. Definition of consumption and poverty lines

The consumption aggregate

The consumption aggregate was estimated for the first time in Armenia using the 1998/99 Integrated Living Conditions Survey. This study uses the same definition of welfare measure as adopted for the 98/99 Armenia Poverty Update. The only difference between consumption aggregate in 1998/99 and in 2001 is dwelling rental value which was not imputed in the 2001 consumption aggregate due to a small number of observations of households who paid rent[2]. Thus, for the purpose of comparisons of poverty measures, consumption aggregate for 1998/99 was re-calculated excluding the imputed rental value of dwellings.

The components of the consumption aggregate for 2001 are: 1) value of food and non-food consumption which also includes consumption from home production, aid received from humanitarian organizations and other sources; and 2) rental value of durable goods. The non-food consumption comprises the following categories: clothing and shoes, household goods, utilities, dwelling rental, education, health, and the rental value of durable goods[3].

Given the fact that the 2001 ILCS was carried out throughout the year, the value of consumption from different quarters in 2001 was adjusted for inflation over the observed period. This price adjustment which also takes into account urban/rural price differences was applied for food consumption due to different food price changes between rural and urban areas[4]. Given that the National Statistical Service of Armenia does not distinguish between urban and rural food prices, the survey data were used for price adjustment over time and across regions for food items. The non-food consumption is adjusted for inflation, however, using the official Consumer Price Index for appropriate non-food expenditure sub-groups provided by Armenia National Statistical Service[5].

[2] In the 2001 ILCS, there is no question on rent payment in advance (before the start of the survey month) like in the 1998/99 Survey, which may extend the size of the sub-sample. The sub-sample of households who paid rent amounted to only 3% which is very small sample size for estimating hedonistic rental equations.

[3] For detailed explanation of consumption aggregate and its components see Armenia Poverty Update (WB, 2002a).

[4] Factors for price adjustments of food consumption are reported in table A1.2 in Annex I. Fisher CPI index was used to make consumption comparable at the Autumn-urban price levels. While Fisher index based on survey data shows that annual inflation was –6.4% in urban areas and –13.3% in rural areas, the official overall CPI index for the same period amounted to 97 and CPI for food amounted to 94.1.

[5] For discussion of methodology used see Armenia Poverty Update (WB, 2002a).

Equivalence scales

The consumption aggregate is standardized by the number of adult equivalent members which are based on equivalence scales and size economies. Total consumption was divided by adjusted per-equivalent consumption suggested by Deaton and Zaidi (1999)[6] where typical national household is not affected by changes in α and θ parameters[7]. The estimates of equivalence scales (α=0.68) and scale economies (θ=0.75) estimated and applied in 1998/99 poverty assessment were used, hence avoiding changes in poverty indicators due to changes in those parameters. The typical Armenian household is a five-member household with three adults and two children.

Poverty lines

The 2001 poverty lines are based on re-estimated 1998/99 poverty lines. The food poverty line was estimated for the first time using the 98/99 Survey data and it was based on food-energy intake method. This method finds the level of equivalent household expenditures that is associated with the household attaining the minimum recommended energy intake from food consumption. The cost of 2,100 calories consumption food basket is estimated at 8,730 drams per adult equivalent per month (291 dram per adult equivalent per day), which used as 1998/99 extreme poverty line. This line is then adjusted for inflation over the period Spring 1999 - Autumn 2001 using the official CPI for food provided by Armenia National Statistical Service and expressed in Autumn 2001 values, thus obtaining 2001 extreme poverty line. The value of extreme poverty line for 2001 was estimated at 7,979 drams per adult equivalent per month (table 2.1).

Table 2.1. Poverty lines in 1998/99 and 2001

	Original 1998/99	Re-estimated 1998/99	2001
Extreme poverty line (in drams)	8,730	8,730	7,979
Complete poverty line (in drams)	12,306	12,276	11,221

Source: ILCS 1998/99 and 2001.

In order to obtain complete poverty line for 2001, which comprises food poverty line and non-food allowance, first we re-estimated 1998/99 complete poverty line, or more precisely, its non-food component. Non-food allowance for 1998/99 complete poverty line was estimated using the Food Expenditure Method (WB, 2002a). According to this method, the non-food share is estimated as the non-food share of those households whose food consumption is around the food line. Namely, non-food share in total consumption in 1998/99 was re-estimated due to the fact that original consumption aggregate for 1998/99 was also re-estimated in order to exclude imputed rental value of dwelling. These adjustments were necessary for the purpose of comparisons of poverty measures between 1998/99 and 2001. The new share of non-food consumption was estimated at 28.9 percent of the total minimum consumption. Thus, the re-estimated value of complete poverty line for 1998/99 was 12,276

[6] They argued that per adult equivalent consumption measure overestimates total consumption in all household types except in single-adult households.

[7] For further description of equivalence scales and size economies used see Armenia Poverty Update (WB, 2002a).

drams per adult equivalent per month. Assuming unchanged structure of poverty line or non-food share of 28.9 percent in 1998/99, we obtained a complete poverty line for 2001 of 420 drams per adult equivalent per day or 11,221 drams per month.[8]

3. Comparing poverty between 1998/99 and 2001

Poverty indicators for 2001 cannot be directly compared with the previous 1998/99 poverty estimates. The main reason for this limitation lies in the fact that the original consumption aggregate for 1998/99 reported in Armenia Poverty Update (WB, 2002a) included imputed rental value of dwelling in contrast to the consumption aggregate for 2001. The imputation of rental value of housing in the 2001 consumption aggregate was not possible due to a small number of sub-sample of households who paid rent. Therefore, consumption aggregate and complete poverty line for 1998/99 were re-estimated to exclude imputed rental value of dwelling and new poverty estimates for 1998/99 were obtained. There are no significant differences between original and re-estimated 1998/99 poverty indicators (see table A3.1 in Annex III and next table 3.1). The results of the original poverty estimates for 1998/99 reported in Armenia Poverty Update (WB, 2002a) are briefly presented first, and then, when making comparison of 1998/99 poverty indicators with 2001, re-estimated 1998/99 poverty measurement results were used.

The poverty profile in 1998/99

Despite Armenia's economic growth in the late 1990's, the World Bank report Armenia Poverty Update (2002a), revealed that poverty was still widespread and persistent in its nature. Based on the Integrated Living Conditions Survey, the study reported that over the period between July 1998 and June 1999 around half of the population lived in poverty. It was estimated that one quarter of population was in absolute poverty with consumption per adult equivalent below the food poverty line. The major justification for poverty persistence in Armenia in 1998/99 were low output and high inequality in its distribution. Two additional factors sited were narrow based growth and the impact of the Russian crisis in 1998/99. Poverty was not only more widespread among the urban than among rural population (poverty incidence was 60.4% for urban population versus 44.8% for rural areas)[9], but was also deeper and more severe (see table A3.1 in Annex III). Population groups which were more likely to be poor in 1998/99 were: very young children (0-5 years of age) and elderly (over 60 years of age), unemployed, adults not participating in the labor market and population living in earthquake regions.

Evolution of poverty between 1998/99 and 2001

Armenia poverty indicators in 1998/99 and 2001 are presented in table 3.1. As a result of considerable economic growth over the last three years, overall and extreme poverty incidence significantly decreased in Armenia between 1998/99 and 2001. Using the complete poverty line, it was estimated

[8] See Annex II for discussion of applied unchanged structure of 1998/99 complete poverty line in the estimates of complete poverty line in 2001.

[9] Poverty estimates were based on consumption aggregate which included imputed rental value of dwelling.

that 48.3% of the Armenian population was poor in 2001 as compared to 54.8% in 1998/99. There was also significant reduction (at the 1% significance level) in the number of extremely poor from 1998/99 (by 6.8 percentage points), so that extreme poverty affected 20% of the population in 2001. Along with reduction in overall and extreme poverty incidence, significant drop in depth and severity of poverty also occurred. The shortfall between the consumption of the poor and the complete poverty line was, on average, 27% in 2001. Among extremely poor, the shortfall was estimated at 23.2%.

These poverty indicators are based on 1998/99 urban/rural structure (see section 1). Table A3.2 in Annex III reports poverty measurements in 2001 using the structure of urban and rural areas from the 2001 ILCS.

Table 3.1*:* Armenia Poverty Indicators in 98/99 and 2001
(standard errors in parenthesis)

	Extreme (Food) Poverty Line (8,730 drams in 98/99) (7,979 drams in 2001)			**Complete Poverty Line** (12,276 drams in 98/99) (11,221 drams in 2001)		
	Incidence (P0)	**Gap (P1)**	**Severity (P2)**	**Incidence (P0)**	**Gap (P1)**	**Severity (P2)**
Total						
98/99	26.8%	6.0%	2.0%	54.8%	16.2%	6.5%
	(0.82)	(0.24)	(0.11)	(0.92)	(0.37)	(0.20)
2001	20.0%	4.6%	1.6%	48.3%	13.0%	5.1%
	(0.71)	(0.21)	(0.11)	(0.88)	(0.33)	(0.18)
Urban						
98/99	32.9%	7.8%	2.6%	61.4%	19.3%	8.1%
	(1.13)	(0.35)	(0.16)	(1.14)	(0.50)	(0.28)
2001	21.9%	5.0%	1.7%	48.5%	13.7%	5.5%
	(0.89)	(0.27)	(0.14)	(1.05)	(0.41)	(0.23)
Rural						
98/99	18.7%	3.7%	1.2%	46.1%	12.1%	4.5%
	(1.16)	(0.31)	(0.14)	(1.46)	(0.52)	(0.27)
2001	17.0%	4.0%	1.5%	47.9%	12.1%	4.6%
	(1.16)	(0.35)	(0.17)	(1.53)	(0.55)	(0.23)

Note: Consumption aggregate does not include imputed rental value of dwelling. Poverty indicators are based on 1998/99 urban/rural structure.
Source: ILCS 1998/99 and 2001.

Poverty in Armenia was not exclusively an urban phenomenon any more, as no significant differences in poverty incidence appeared between urban and rural areas in 2001 (48.5% as compared to 47.9% respectively). This was the result of a significant drop in poverty among the urban population in 2001 compared to 1998/99[10]. Rural population experienced a small rise in overall poverty and small drop in extreme poverty over the period observed, but those changes were not statistically significant. Although poverty was almost equally widespread in urban and rural areas, urban population experienced higher depth and severity of poverty (13.7% versus 12.1% for poverty gap; 5.5% versus 4.6% for severity of poverty). The recent evolution of extreme poverty in urban and rural regions

[10] In most transitional countries, the reduction in urban poverty has been more pronounced than in rural areas (Transition Report, 2002).

resulted in significant differences in the percentage of extremely poor between these areas. Extreme poverty was more prevalent among the urban population in 2001 and also deeper.

The changed structure of poverty is tightly associated with the situation in the labor market in Armenia. While unemployment rate in urban areas slightly decreased, rural population was faced with increased scarcity of jobs, as unemployment rate almost doubled in 2001 as compared to 1998/99 (see section 4).

Consumption versus Income Poverty in 2001

This study uses consumption-based measures of poverty as the household consumption is generally accepted as a more accurate measure of material well-being. However, it may be useful to explore to what extent consumption-poor and income-poor overlap i.e., consist of the same individuals. Income-poor are defined as individuals whose income fell below the poverty line. If we explore extreme poverty, income-poor are individuals whose income is lower than 7,979 drams per adult equivalent per month. In exploring overall poverty, income-poor are individuals whose income is lower than 11,221 drams per adult equivalent per month.

Table 3.2. Consumption and Income Extreme Poverty in 2001
Extreme (Food) Poverty Line = 7,979 drams

	Consumption poor	**Consumption non-poor**	**Total**
Income poor	17.9%	46.5%	64.4%
Income non-poor	2.1%	33.5%	35.6%
Total	20.0%	80.0%	100%

Note: Consumption aggregate does not include imputed rental value of dwelling.
Source: ILCS 2001.

Table 3.3. Consumption and Income Poverty in 2001
Complete Poverty Line = 11,221 drams

	Consumption poor	**Consumption non-poor**	**Total**
Income poor	43.6%	34.7%	78.3%
Income non-poor	4.7%	17.0%	21.7%
Total	48.3%	51.7%	100%

Note: Consumption aggregate does not include imputed rental value of dwelling.
Source: ILCS 2001.

Using both extreme and complete poverty line, around 90% of the consumption poor were also income poor (table 3.2 and table 3.3.). This indicates that almost the same individuals who were consumption poor were also income poor. In contrast, the large correspondence does not exist if we look at those individuals who were income poor. Using the extreme and complete poverty lines, only 27.8% and

55.7% individuals respectively who were income poor were also consumption poor indicating a large fraction of individuals whose income did not exceed poverty line but consumption exceeded.

Poverty by regions between 1998/99 and 2001

Table 3.4 provides insight into the regional evolution of poverty between 1998/99 and 2001. The overall and extreme poverty incidence increased most in the regions which had poverty rates much below the national average in 1998/99. These regions are Tavush, Vayots Dzor, Armavir, the province with the most fertile agriculture conditions, and Gegharkunik.

Table 3.4. Poverty and extreme poverty incidence by regions in 98/99 and 2001

	Extreme poverty incidence, %		**Poverty incidence, %**	
	98/99	2001	98/99	2001
Aragatzotn	27.0	22.8	57.5	60.3
Ararat	17.8	9.3	51.3	39.8
Armavir	13.7	21.1	37.3	52.0
Gegharkunik	14.6	24.6	45.7	56.8
Lori	35.9	21.8	62.6	54.7
Kotayk	32.1	16.3	60.8	38.0
Shirak	43.0	21.4	78.2	54.9
Syunik	27.3	2.0	51.6	15.1
Vayots Dzor	16.0	19.3	34.7	50.5
Tavush	14.9	44.0	28.0	70.7
Yerevan	30.7	20.2	57.7	44.7
Total	26.8	20.0	54.8	48.3

Note: Consumption aggregate does not include imputed rental value of dwelling.
Source: ICLS 98/99 and 2001.

Overall poverty incidence in Tavush increased by 152 percentage points in 2001 as compared to 1998/99 (70.7% versus 28%), while extreme poverty incidence almost tripled (44% versus 14.9%). Tavush became the region with the highest risk of overall and extreme poverty. After Tavush, Aragatzotn was the region with the highest overall poverty incidence (60.3%), although its poverty rate has not increased considerably over the period observed. Another regions with high poverty risk were Gegharkunik and Lori. Gegharkunik has experienced significant rise in poverty; overall poverty incidence increased by one quarter over the last three years (56.8% versus 45.7%), while extreme poverty doubled (24.6% versus 14.6%). In contrast, the lowest overall and extreme poverty incidence was found in Syunik (only 2% and 15.1% respectively).

Table 3.5: Regional Poverty Incidence in 2001

	Poverty Incidence	Relative poverty risk	% share in the population	% share in the poor	Poverty gap	Severity of poverty
Aragatzotn	60.3%	24.8%	4.6%	5.7%	15.2%	5.6%
Ararat	39.8%	-17.6%	11.8%	9.7%	8.2%	2.6%
Armavir	52.0%	7.8%	10.5%	11.4%	14.2%	5.8%
Gegharkunik	56.8%	17.5%	7.7%	9.0%	15.2%	5.8%
Lori	54.7%	13.3%	10.7%	12.1%	14.5%	5.5%
Kotayk	38.0%	-21.3%	6.1%	4.8%	10.3%	4.1%
Shirak	54.9%	13.8%	8.5%	9.7%	13.9%	5.1%
Syunik	15.1%	-68.7%	4.3%	1.3%	2.9%	0.7%
Vayots Dzor	50.5%	4.6%	2.3%	2.4%	11.5%	3.9%
Tavush	70.7%	46.4%	5.2%	7.7%	25.3%	11.7%
Yerevan	44.7%	-7.4%	28.3%	26.2%	12.9%	5.4%
Total	48.3%	-	100%	100%	13.0%	5.1%

Note: Consumption aggregate does not include imputed rental value of dwelling. Poverty risk is measured as the percentage increase in the poverty headcount for each group compared to the national average.
Source: ICLS 2001.

Finally, it is important to emphasize that Yerevan, the largest urban region in Armenia, which faced higher relative poverty risk than the national average in 1998/99, had lower overall poverty incidence than the national average in 2001, while the extreme poverty was the same as the national average (table 3.4 and table 3.5)[11].

Table 3.6. Poverty and land size in rural areas in 98/99 and 2001

	Extreme poverty incidence		**Poverty incidence**	
	98/99	2001	98/99	2001
Up to 0.2 hectares	32.1%	26.7%	55.9%	56.7%
Between 0.2 and 0.5 ha.	19.9%	21.7%	51.9%	55.8%
Between 0.5 and 1 ha.	19.5%	11.5%	51.5%	44.4%
More than 1 ha.	13.5%	12.7%	37.1%	40.6%
Total for rural areas	18.7%	17.0%	46.1%	47.9%

Note: Consumption aggregate does not include imputed rental value of dwelling.
Source: ICLS 98/99 and 2001.

Although the number of poor in rural areas did not significantly increase by 2001, it may be interesting to explore poverty incidence across different size of land holdings in rural areas between 1998/99 and 2001 (table 3.6). Increased overall poverty incidence among the rural population can be explained by increased poverty incidence among individuals living in households with the size of land holdings between 0.2 and 0.5 hectares and with the size of land over one hectare. Households with the smallest plots of land contributed very little in increased poverty incidence between 1998/99 and 2001. Only households with the size of land holdings between 0.5 and one hectare experienced reduction in poverty rates over the period observed, with the poverty incidence below the national average in 2001.

[11] Table A3.3 in Annex III reports poverty indidence by regions in 2001 using the structure of urban and rural areas from the 2001 ILCS.

Table 3.7. Poverty by land size in rural areas in 2001, in %

	Head count 2001	Relative poverty risk	% of Population	% of the poor	Poverty gap	Severity
Up to 0.2 hectares	56.7%	18.3%	20.5%	24.3%	17.2%	7.2%
Between 0.2 and 0.5 ha.	55.8%	16.4%	19.8%	23.1%	14.4%	5.6%
Between 0.5 and 1 ha.	44.4%	-7.4%	26.0%	24.1%	9.5%	3.1%
More than 1 ha.	40.6%	-15.2%	33.7%	28.5%	9.7%	3.7%
Total for rural areas	47.9%	-	100%	100%	12.1%	4.6%

Source: ILCS 2001.

If we observe poverty incidence within 2001, it is evident that it decreased with the size of land (table 3.7). Individuals living in households with the plot of land smaller than 0.2 hectares faced the highest poverty risk (56.7% or 18.3% more than the national average). Their poverty was the deepest and most severe.

Monetary costs of poverty reduction in Armenia in 2001

Table 3.8 provides an estimate of the minimum cost of eliminating poverty, assuming perfect targeting of the poor. The estimates were based on the population of 3.1 million. In order to reduce extreme poverty in Armenia in 2001, it was necessary to provide 13.7 billion drams or 1.2% of GDP, assuming perfect targeting of the poor. As the assumption of perfect allocation of resources to the poor households is not realistic, the real monetary cost necessary for eliminating poverty could be several times higher. In market economies, they are at least twice as high as the minimum costs necessary for eliminating poverty under conditions of perfectly targeted poor households. In transition countries (Poland, Hungary, Bulgaria, Estonia and Russia), for 1 US dollar of welfare for the poor the costs of social welfare range from 1.5 US dollar to 8 US dollars (not taking into account administrative costs of paying out these funds).[12] As the presented monetary magnitude is very high, the economic growth is viewed as the only possible way to alleviate and reduce poverty.

Table 3.8*:* A monetary magnitude of poverty reduction in Armenia in 2001

	Extreme poverty	**Poverty**
Average consumption of the poor (drams per adult equivalent per month)	6,131	8,189
Poverty line (drams per adult equivalent per month)	7,979	11,221
Additional consumption needed (drams per month)	1,848	3,032
Shortfall (% of poverty line needed for the poor)	23.2%	27.0%
Budget required (billion dram)	13.7	54.5
% of GDP (GDP=1,175.5 billion drams)	1.2%	4.6%

Source: ILCS 2001.

4. Who are the Poor in Armenia in 2001?

Poverty by age groups. The age distribution of poverty in table 4.1 highlights the extent to which poverty in Armenia was concentrated among the young and the very old. Children under five years of age had the highest poverty incidence which exceeded 52.2% and the highest poverty risk in 2001 (8.1% over the national average). Another age group facing higher than the average poverty risk were young individuals aged between 19 and 25. Although they do not represent a large fraction of the poor (12.9%), their poverty was the deepest and most severe. The elderly (over 60) were also affected by poverty, as 51% of them were poor with poverty risk above the national average (by 5.6%).

Table 4.1: Poverty by Age Groups in 98/99 and 2001, in %

	Head count 2001	Relative poverty risk	% of Population	% of the poor	Poverty gap	Severity
Children 0-5	52.2%	8.1%	6.8%	7.3%	14.3%	5.9%
Aged 6-14	45.6%	-5.5%	16.7%	15.8%	11.6%	4.3%
Aged 15-18	49.3%	2.2%	8.3%	8.5%	13.7%	5.5%
Aged 19-25	51.6%	6.8%	12.1%	12.9%	15.0%	6.2%
Aged 26-45	47.6%	-1.3%	28.6%	28.3%	12.7%	5.0%
Aged 46-60	44.4%	-8.0%	13.3%	12.2%	12.1%	4.8%
Aged 61+	51.0%	5.6%	14.2%	15.0%	13.6%	5.3%
Total	48.3%	-	100%	100%	13.0%	5.1%

Source: ILCS 98/99 and 2001.

Household composition and poverty. It appeared that larger households were more likely to be poor but this also depended on the household composition (table 4.2). Single member households are relatively rare in Armenia and their poverty risk was among the lowest (22.4% below the national average). Presence of children considerably increased the poverty incidence, gap and severity of poverty but this depended on household composition. Among households with children, only households with two adults and two children had lower than the average poverty risk (by 15.4%). If elderly are included in the household besides poverty incidence, poverty gap and severity increased considerably as well, compared to the household with the same composition but without the elderly. It can be concluded that households with elderly and/or children were more likely to be poor compared to households with no children and/or elderly. This feature is in line with the age distribution of poverty reported in the previous table 4.1.

[12] J. Braithwaite, C. Grootaert and B. Milanovic, Poverty and Social Assistance in Transition Countries, 2000.

Table 4.2: Poverty measures by household composition in 2001, in %

Household type	Extreme poverty incidence	Poverty incidence P0	Relative poverty risk	% of population	% of the poor	Poverty gap P1	Severity of poverty P2
single member households	19.9%	37.5%	-22.4%	2.5%	1.9%	12.4%	5.5%
2 adults, 2 children	13.9%	40.9%	-15.4%	11.3%	9.6%	9.6%	3.3%
2 adults, 2 children, 1 elderly	24.3%	54.4%	12.7%	4.0%	4.5%	15.1%	5.8%
1 adult, with children	23.7%	46.6%	-3.4%	2.1%	2.0%	14.3%	6.2%
1 adult, 1 elderly, with children	32.5%	66.2%	37.1%	1.2%	1.6%	19.3%	8.5%
2 elderly, no children	13.8%	46.5%	-3.8%	2.6%	2.5%	10.5%	3.6%
2 elderly, 2 children	50.0%	75.0%	55.3%	0.1%	0.1%	22.1%	8.0%
Female head, no children	21.3%	46.5%	-3.8%	5.9%	5.6%	14.0%	6.2%
Female head, with children	27.2%	54.8%	13.5%	15.3%	17.3%	16.9%	7.2%

Source: ILCS 2001.
Note: Children are individuals up to 18 years of age. The elderly are defined as 60 and over.

Poverty and education. Table 4.3 presents the link between education of the household head and poverty in 2001[13]. It is clear that the higher the education, the lower the poverty incidence. The household heads with primary or incomplete secondary education did not have only poverty rates well above the average, but the poverty gap and severity were also significantly higher than for other groups. Many household heads with low education have low-paid jobs, often insufficient to keep their families above the poverty line. This also holds for those with secondary education. In contrast, households where the head had a higher, university education had the lowest poverty incidence, almost two times lower than for those with primary education. This difference in the impact of education is largely associated with the stage of transition. In most advanced transitional countries returns to higher education significantly increased during the transition relative to the lower educational levels, which was sufficient to escape poverty. Thus, in Hungary and Poland, the poverty incidence among households where the head has university education was extremely low and ten times lower than among households with heads who have primary education (Braithwaite et. al., 2000). In Kyrgyz Republic this link is almost non-existent (corresponding poverty rates were 43.2 compared to 37.6). Armenia is situated between these two extremes. Table A4.1 in Annex IV reports overall and extreme poverty incidence by education of the household head between 1998/99 and 2001.

Table 4.3. Poverty and Education of the Household Head in 2001, in %

	Head count	Relative poverty risk	% of Population	% of the poor	Poverty gap	Severity
Primary	60.4%	25.1%	9.7%	12.1%	17.8%	7.8%
Incomplete Secondary	59.6%	23.4%	13.0%	16.1%	16.8%	6.8%
Complete Secondary	53.6%	11.1%	31.7%	35.2%	14.7%	5.7%
Technical	43.0%	-10.9%	26.6%	23.7%	11.4%	4.4%
Higher Education	32.8%	-32.1%	19.0%	12.9%	7.7%	2.8%
Total	48.3%	-	100%	100%	13.0%	5.1%

Source: ILCS 2001.

[13] Table A4.1 in Annex IV reports poverty and extreme poverty incidence by education of the household head in 1998/99 and 2001.

Poverty and labor market status. Changed structure of poverty with decreasing importance of poverty among urban areas over the last three years could be explained by unfavorable trends in the Armenian labor market.

Table 4.4 reports participation and unemployment rates in 1998/99 and in 2001. Low participation rates and high unemployment rates are the main characteristics of Armenian labor market. Participation rate, defined as percentage of active individuals (employed and unemployed) in the working age population (over 16), appeared very low in 2001, even lower than in 1998/99. Less than 60% of the population over 16 participated in the labour market. This reduction in the labour market activity was primarily the result of a significant drop in participation rate in rural areas (by 21.4 percentage points). At the same time, participation rate in urban areas slightly increased but this improvement was not enough to compensate for the large activity reduction in rural areas.

Table 4.4. Participation rate and unemployment rate in 98/99 and 2001 (percentages)

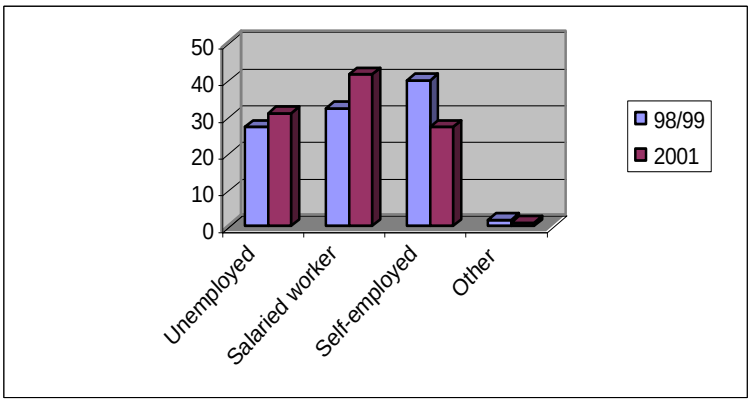
	Participation rate		**Unemployment rate***	
	98/99	2001	98/99	2001
Urban	52.2%	56.3%	42.9%	40.6%
Rural	71.8%	56.4%	9.4%	17.2%
Total	60.2%	57.0%	27.0%	30.7%

***** Including seasonal unemployment.
Source: ICLS 98/99 and 2001.

Unemployment rate increased during the previous three years and accounted for 30.7% in 2001. In rural areas, unemployment rate almost doubled, from 9.4% in 1998/99 to 17.2% in 2001. It appeared that agricultural activity could not absorb excess labour in rural areas, unlike three years before. Some positive trends occurred in urban areas, as unemployment rate slightly decreased from 42.9% to 40.6%. As 2001 ILCS does not distinguish between seasonal and actual unemployment, it was assumed that the seasonal unemployment was already included in the 2001 survey data on the number of unemployed [14]. This allowed comparability of unemployment rates over time. Information on the labor market participation was limited, as there was no section on the labour market as in the 1998/99 survey - only two questions on the economic status of individuals. Therefore, these findings should be treated with caution. Especially, given that the survey data based on self-reported underestimate actual labor market activity and overestimate unemployment (Transitional Report, 2000). If inactive and unemployed members of households who own land or have family businesses were treated as active (based on assumption that all family members were somehow involved in self-employment activity of their household in some way), participation rate would be considerably higher and unemployment rate considerably lower[15]. These two groups present non-core employment category and their work is classified as informal subsistence activity. As they are over-represented in the bottom consumption quintile, their activity is viewed as a way to escape poverty (WB, 2002b).

[14] In the 1998/99 ILCS, both data on actual and seasonal unemployment exist.
[15] These adjustments were made only for 1998/99, as the section on the labor market in 2001 survey does not exist.

Figure 1. Labor Market Participants in 98/99 and 2001



Source: ICLS 98/99 and 2001.

Figure 1 shows unfavorable structure of the labor market participants in 2001 as compared to 1998/99. Besides larger number of unemployed, salaried workers increased their proportion in the labor market while the proportion of self-employed decreased. Table 4.5 reports that unemployed were the largest category among the poor and extremely poor. Around 41% of the poor were unemployed and they represent around half of the extremely poor. The second largest category were salaried workers which made up around one third of both poor and extremely poor. Distribution of labor market participants by poverty appears different between urban and rural areas. Unemployed were the largest category among the poor and extremely poor in urban areas (53.4% and 61.1% respectively), while self-employed constituted most of the poor and extremely poor in rural areas.

Table 4.5. Poverty and Labor Market Participants in 2001

	Total		**Urban**		**Rural**	
	% of extremely poor	% of the poor	% of extremely poor	% of the poor	% of extremely poor	% of the poor
Unemployed	51.0%	40.6%	61.1%	53.4%	32.5%	22.4%
Salaried worker	30.5%	32.9%	28.5%	33.7%	28.9%	27.4%
Self-employed	17.6%	25.8%	9.6%	12.3%	37.5%	49.4%
Other employment	0.9%	0.7%	0.8%	0.6%	1.1%	0.9%
Total	100%	100%	100%	100%	100%	100%

Source: ILCS 2001.

Table 4.6 highlights that the poverty incidence is very much linked with the labor market status of the household head[16]. Among participants, the group with the highest poverty incidence (62.9%) and, therefore, with the highest risk of poverty (30.3% above the national average) were those where the head is unemployed. Although they made up only 15.3% of the poor, their poverty gap and severity were the largest. Slightly lower poverty incidence was found among those living with non-participant

[16] Table A4.2 in Annex IV reports poverty and extreme poverty incidence by labor force participation of the household head in 1998/99 and 2001.

household head (54.2%). They faced positive relative poverty risk (12.2% over the national average) and constituted 45.1% of the poor. Other labor force participants, regardless of the employment status, faced lower than the average poverty risk and lower poverty gap and severity than the average values.

Table 4.6. Poverty and Labor Force Participation of the Household Head in 2001, in %

	Head count	Relative Poverty Risk	% of the population	% of the poor	Poverty Gap	Severity of poverty
Non-participants	54.2%	12.2%	40.2%	45.1%	15.5%	6.3%
Unemployed	62.9%	30.3%	11.8%	15.3%	19.3%	8.2%
Salaried worker	37.1%	-23.1%	26.4%	20.3%	9.4%	3.6%
Self-employed	43.2%	-10.6%	20.8%	18.6%	9.4%	3.2%
Other employment	38.3%	-20.7%	0.8%	0.6%	11.2%	4.2%
Total	48.3%	-	100%	100%	13.0%	5.1%

Source: ILCS 2001.

5. Determinants of welfare and poverty

This section examines the factors that affect welfare and poverty, and that can be identified and affected in the context of social policy intervention to alleviate and reduce poverty. Although important welfare determinants remained unidentified (e.g., personal ability), the model used identifies significant factors that are closely related to poverty. The examined factors include characteristics of the household (age composition, education and gender of the household head, size of the household), economic variables (labor force participation of the household head, labor market status of the household members), asset holdings, such as land, and location of the household. These factors are used as explanatory variables in a simple regression model, where consumption per adult equivalent represents the dependent variable. The model that identifies factors most closely related to per adult equivalent consumption is estimated using the OLS procedure and the results are presented in table 5.1.

The danger of relying on mean regression procedures lies in the fact that the data may contain outliers and the residual distribution may be characterized by a non-normal distribution, thus using quantile regression procedure, that is less sensitive to outliers, may be more appropriate (see e.g., Chamberlain 1994). The quantile regression approach provides a framework within which effects of different variables can be estimated at different points of the distribution (e.g., at the 10^{th}, the 25^{th}, the 50^{th}, the 75^{th}, or the 90^{th} percentile)[17]. Therefore, for the sake of comparison, the median regression based on the Least Absolute Deviations (LAD) estimator is presented in table 5.1, while estimated coefficients at various percentiles are provided in Annex. Regression results for poverty headcount, gap and severity of poverty are presented in Annex VI.

The mean and median regression estimates reported in table 5.1 appear slightly different, so that focus on mean regression only may provide a misleading picture of the consumption determinants.

[17] The quintile regression models may also have better properties than the OLS procedure in the presence of heteroscedasticity (Koenker and Bassett, 1978).

Household demographics have an important role in explaining consumption. The share of elderly in the household has significant negative effect on consumption. In other words, the larger the share of elderly (over 61) in the household, the lower the consumption of the household relative to the base category (those between 46-60). This effect appears significant, not only on average but also across the consumption distribution. The overall size of the household reduces the consumption (per equivalent adult) levels. Female-headed households have lower welfare than male-headed households, being similar in all other characteristics. It is interesting to note that the shortfall is larger among the poor than among the better-off.

The higher the education of the household head relative to those whose heads attained only primary education, the higher the consumption of the household and lower the poverty risk. Households where the head achieves technical education have consumption level 18% above that of the reference category. On average, the university education is associated with a large welfare gain relative to primary education (+36%), while this effect is smaller using the median regression estimates (+30%). In general, consumption gain from technical and university education of the household heads is larger among the poor than among the better-off.

Non-participation of the household head is negatively related to the economic well being and, thus, reduces consumption by 6% relative to salaried worker household heads. This effect is much more pronounced among the poor, as they face lower consumption by 11%. Poverty incidence, poverty gap and severity of poverty significantly increase by the incidence of non-participant household heads. Similarly, the larger the share of unemployed members in the household, the lower the consumption and the higher the poverty risk relative to the reference category (fraction of salaried workers in the household). This effect is highly significant across the consumption distribution and increases moving from the lower consumption levels to the better-off households. The share of the self-employed is not significant variable both in the mean and median regression estimates, but it is highly significant among the poor and better-off. The consumption increases with increased share of self-employed in the household relative to the base category (share of salaried workers) among the poor, but decreases among the better-off .

Access to land is positively associated with consumption. This effect is not significant in the mean and median regression estimates, but it is significant among the better-off households. Land use increases household consumption among the better-off relative to those without access to land (base category). Estimates of poverty headcount show that probability of being poor reduces by about 6 percentage points if the share of land holding owned by the household is increased by one thousand square meters.

The livestock improves household consumption. This effect is highly significant across the whole consumption distribution. On average, if the household owned livestock, the consumption would increase by 17 percent.

Finally, location of the household plays an important role in explaining the economic well-being in Armenia. The large location effects on consumption remain after controlling for all household characteristics included in the model. The consumption ‘penalty’ for living in particular location appears the highest for those households living in Tavush, Gegharkunik and Aragatzotn relative to the largest urban region – Yerevan (base category). Their consumption levels are lower by 31%, 24% and

23% respectively, relative to the base category. The only region that experiences consumption gain is Syunik with consumption level 40% higher than in Yereven. These results are very similar with those reported in table 3.4 without any controls.

Table 5.1*:* Determinants of poverty in Armenia
Dependent variable : *ln* (consumption per adult equivalent)

	OLS			**LAD**		
	Estimate	s.e.		estimate	s.e.	
Fraction age 0-5	-0.047	(0.116)		0.044	(0.116)	
Fraction age 6-14	0.166	(0.117)		0.265	(0.092)	**
Fraction age 15-18	-0.017	(0.098)		0.001	(0.098)	
Fraction age 19-25	-0.146	(0.147)		-0.050	(0.092)	
Fraction age 26-45	-0.060	(0.050)		-0.054	(0.065)	
Fraction age 61+	-0.162	(0.067)	*	-0.142	(0.059)	*
Ln(Household size)	-0.135	(0.050)	**	-0.154	(0.036)	**
Age of head	0.002	(0.002)		0.002	(0.001)	
Female head	-0.065	(0.021)	**	-0.055	(0.027)	*
Incomplete Secondary	0.038	(0.025)		-0.002	(0.045)	
Complete Secondary	0.088	(0.029)	**	0.052	(0.042)	
Technical	0.163	(0.026)	**	0.139	(0.043)	**
Higher Education	0.310	(0.041)	**	0.262	(0.045)	**
Non participant	-0.064	(0.021)	**	-0.064	(0.030)	*
Unemployed	-0.064	(0.047)		-0.086	(0.041)	*
Self-employed	-0.031	(0.026)		-0.023	(0.043)	
Other employment	-0.013	(0.160)		0.038	(0.145)	
% Unemployed in hh.	-0.195	(0.078)	*	-0.166	(0.037)	**
% Self-employed in hh.	0.027	(0.023)		-0.002	(0.043)	
% Other employment in hh.	0.153	(0.248)		0.099	(0.177)	
Total land used by hh.	0.018	(0.025)		0.015	(0.009)	
% land owned	-0.002	(0.037)		0.021	(0.032)	
% land irrigated	-0.013	(0.076)		-0.032	(0.036)	
Received credit. Y/N?	0.036	(0.061)		0.020	(0.040)	
Has livestock. Y.N?	0.153	(0.035)	**	0.151	(0.029)	**
Aragatzotn	-0.262	(0.023)	**	-0.276	(0.051)	**
Ararat	-0.065	(0.044)		-0.061	(0.042)	
Armavir	-0.179	(0.030)	**	-0.128	(0.038)	**
Gegharkunik	-0.269	(0.045)	**	-0.276	(0.048)	**
Lori	-0.175	(0.016)	**	-0.151	(0.035)	**
Kotayk	-0.040	(0.029)		-0.021	(0.044)	
Shirak	-0.202	(0.042)	**	-0.166	(0.038)	**
Syunik	0.334	(0.038)	**	0.347	(0.052)	**
Vayots Dzor	-0.213	(0.035)	**	-0.250	(0.065)	**
Tavush	-0.371	(0.020)	**	-0.344	(0.050)	**
Constant	9.517	(0.119)	**	9.459	(0.105)	**
F(9,3990)	19.44[0.000]			MSD	1314.1	
R-squared	0.2457			RSD	1515.0	
Adj R squared	0.2370					
Root MSE	0.4335					

Note: * indicates 5 percent significance. ** indicates 1 percent significance.

6. Household income sources and inequality

Labor market earnings were still a dominant source of household income in 2001, although their share considerably decreased as compared to 1998/99 (figure 2). Wage earnings represent only 37% of the household income. In contrast, income from self-employment (excluding farm-related ones) significantly increased its own share, almost three times relative to 1998/99, despite a drop in the number of self-employed in 2001. The importance of other sources of income slightly changed over the last three years. The composition of the household income sources differs considerably across quintiles and between urban and rural areas.

Figure 2. Household income sources in Armenia in 98/88 and 2001

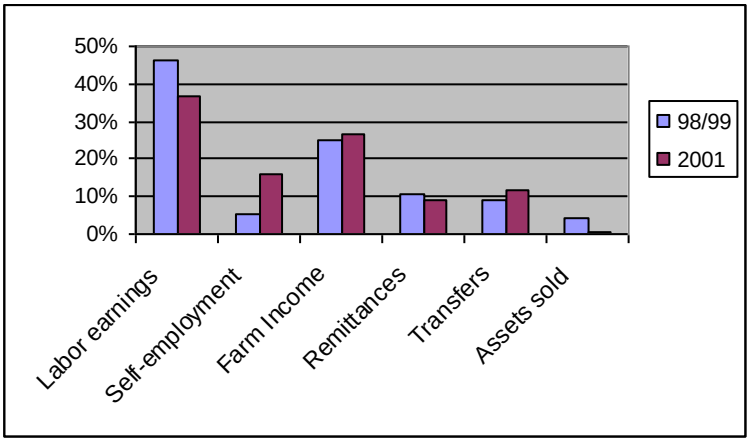


Table 6.1 presents household income sources by income quintiles. Government transfers (pensions, social assistance and other transfers) represented the major source of income of the poor. About 40% of the household income in the poorest quintile was derived from the government transfers. The importance of government transfers significantly decreased among the well-off, which may indicate effective targeting. They accounted for 8% of the total income in the richest quintile. Similar distribution appeared in urban and in rural areas, but the importance of the public transfers was much higher for urban than for rural households.

The second largest source of income of the poorest households was income from farm activities. Around 35% of the poor depend on farm incomes, and much more in rural than in urban households. For the poorest in rural areas subsistence agriculture provided a safety net or coping mechanism against extreme poverty. Thus, farm incomes were the major source of income in rural areas and presented over half of the total income of the poorest quintile. In urban areas, the share of farm incomes increased moving from the top of the distribution to the bottom (from 7% of the total income in the top quintile to 22% in the bottom quintile). This may indicate that small family plots in urban areas, especially in small towns, derived income from agriculture activities as a means of survival.

The third largest income source of the poorest households were remittances (external and internal) which made up about 9% of their incomes. They represented an important source of income, especially for the urban households. In urban areas, remittances accounted for around 10% of the total household income, while this share represented 6% in rural areas. Remittances were almost uniformly distributed across all quintiles both in urban and rural areas.

Table 6.1: Household Income Sources in Armenia by Quintiles, in %

	Poorest	2	3	4	5	Total
All Households						
Labor earnings	9.7	21.7	32.6	39.7	39.5	36.7
Self-employment	3.9	6.4	12.7	13.9	19.2	15.9
Farm Income	34.8	30.2	28.6	28.6	24.3	26.4
Remittances	9.1	10.6	9.3	7.8	9.2	9.0
Transfers	40.1	30.3	16.2	9.6	7.6	11.5
Assets sold	2.4	0.8	0.5	0.4	0.1	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Urban Households						
Labor earnings	11.3	29.3	44.2	53.1	56.9	51.3
Self-employment	4.5	7.6	16.6	16.7	17.3	16.1
Farm Income	21.8	11.7	9.8	10.0	7.2	8.8
Remittances	10.4	13.2	11.0	9.7	11.3	11.0
Transfers	48.8	36.9	17.6	9.8	7.2	12.3
Assets sold	3.2	1.2	0.8	0.6	0.1	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Rural Households						
Labor earnings	6.5	12.4	16.9	19.9	15.8	16.3
Self-employment	2.7	4.9	7.3	9.7	21.7	15.7
Farm Income	60.7	52.6	54.3	56.1	47.8	50.9
Remittances	6.4	7.5	7.0	5.0	6.4	6.3
Transfers	22.8	22.3	14.3	9.2	8.1	10.5
Assets sold	0.9	0.4	0.2	0.1	0.2	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: ILCS 2001.

It is clear that labor market earnings were not the major source of income of the poor. In contrast, wage earnings represented negligible share of their incomes (10% in the poorest quintile). In urban areas, they accounted for 11% of their incomes in the poorest quintile and 6% in rural areas. The share of wage earnings increased among the well-off, thus, representing the major source of income of the non-poor, particularly for urban households. Over half of the household income of the richest quintile was derived from labor earnings in urban areas.

Income from self-employment was more important source of income among the better-off households than among the poor. Income from self-employment represented around 19% of the household income in the richest quintile, while only about 4% in the poorest quintile indicating that the self-employed were less represented in low-paying positions than in a highly paid professional occupations. Similar situation appears both in urban and rural areas. It appeared that self-employment in Armenia is not a coping strategy but means to achieve higher incomes for those whose skills were required in the process of transition, as in the case of some other transitional countries (Transition report, 2000). In addition, it was estimated that less than 10% of the self-employed in Armenia in 1998/99 were engaged in informal activities (WB, 2002b)[18].

[18] Informal self-employed were defined as own-account workers with no written contract or those who worked at home.

Income from selling assets and durables was more important among poor than among better-off households, regardless of their location. Income derived from selling assets and durables represented around 2% of household income of poor, while only 0.1% of the total income of better-off households.

Table 6.2. Consumption and Income in Armenia in 98/99 and 2001

	Consumption		Income	
	98/99	2001	98/99	2001
Average (in dram)	13,816	13,195	9,981	8,768
Median (in dram)	11,626	11,409	5,385	5,729
Coefficient of variation	0.772	0.591	2.862	1.789
Gini coefficient	0.298	0.278	0.574	0.522
Theil mean log deviation E(0)	0.146	0.129	0.580	0.528
Theil entropy E(1)	0.171	0.137	0.770	0.574

Note: Both consumption and income are measured per adult equivalent.
Source: ICLS 98/99 and 2001.

Armenia is still faced with high inequality of the income distribution with 10% of the richest earning over half of the country's income. Income inequality measured by the Gini coefficient was estimated at 0.52 in 2001. Although inequality had slightly decreased by 2001 both in urban and rural areas (see table 6.2 and table A5.1 in Annex V), Armenia is the country with the highest income inequality among ECA countries (Armenia Poverty Update, WB 2002a). Compared to 1998/99, inequality at the top of the distribution decreased most in 2001, as suggested by Theil entropy index E(1). However, measures of income inequality should be treated with caution due to problems associated with collecting accurate information on incomes and their irregularity. Thus, inequality measured by consumption is much lower than income inequality, even compared to countries with similar per capita incomes (Armenia Poverty Update, WB 2002a).

Table 6.3: Decomposition of Income Inequality in Armenia 98/99 and 2001
(income per adult equivalent)

Income Components	**Share of income, %**		**Concentration Index**		**Contribution to inequality**	
	98/99	2001	98/99	2001	98/99	2001
Labor earnings	44.5	36.7	0.64	0.64	50.6%	45.0%
Self-employment	5.5	15.0	0.90	0.83	8.7%	23.9%
Farm Income	26.8	26.0	0.73	0.45	33.1%	22.4%
Remittances	10.8	9.8	0.30	0.37	6.0%	7.0%
Transfers	8.7	12.1	-0.02	-0.05	-0.3%	-1.1%
Assets sold	3.7	0.4	0.27	-0.07	2.0%	-0.0%
Total	100.0	100	0.574[a]	0.522[a]	100.0%	100%

Source: ILCS 1998/99 and 2001. Note: (a) Gini coefficient.

Table 6.3 highlights the income inequality by primary income components in 1998/99 and 2001. The concentration coefficient measures how evenly or unevenly each component of income is distributed. Although the highest concentration index was observed for incomes from self-employment, this source of income was the second largest contributor to overall inequality, due to their relatively small share in the total income. Labor earnings - the major source of income, represented the largest contributor to income inequality as in 1998/99. They explained almost half of the overall inequality. It is important to note that government transfers slightly reduced inequality - the effect also observed in 1998/99.

7. Conclusion

As a result of significant improvement of economic activity over the last few years, overall and extreme poverty incidence decreased in Armenia in 2001. Although the reduction in poverty incidence was significant in 2001 relative to 1998/99, poverty was still widespread among Armenian population in 2001, as almost one half of the population lived in poverty and one fifth lived in extreme poverty.

There was not clear distinction between poverty in urban and rural areas, due to significant drop in poverty among the urban population and small rise in poverty among rural population in 2001 relative to 1998/99. Despite these structural changes in poverty by regions, urban population still experienced higher depth and severity of poverty. Unfavorable trends in the Armenian labor market, particularly in rural areas, where unemployment rate almost doubled, might show how tightly are developments in the labor market linked with (structural) changes in poverty. Inequality of the income distribution remained high (0.52) in 2001, so that the benefits of economic growth are likely to be shared unequally, thus, having negative implications for poverty reduction strategy.

Population groups which were more likely to be poor in 1998/99 were: children (between 0-5 years of age), the young (19-25) and elderly (over 60), unemployed, adults not participating in the labor market and individuals living in household with primary-educated household heads.

References

Braithwaite, J. Grootaert, C. and B. Milanovic (2000), Poverty and Social Assistance in Transition Countries. St. Martin's Press, New York.

Chamberlain, G., (1994). 'Quantile Regression, Consoring and the Structure of Wages' in C. Sims and J.J. Laffont eds., *Proceedings of the Sixth World Congress of the Econometrics Society*, Barcelona, Spain, New York: Cambridge University Press.

Deaton, A. and S. Zaidi (1999). *Guidelines for Constructing Consumption Aggregates for Welfare Analysis*. Research Program in Development Studies Working Paper No. 192. Princeton University. October.

Economic Trends (2001) Armenia. Quarterly Issue. (several issues).

EBRD (2000) Transition Report.

EBRD (2002) Transition Report.

Koenker, R. and Bassett, G. (1978). 'Regression Quantiles', *Econometrica* 46(1): 33-50.

World Bank (1999) "Improving Social Assistance in Armenia," Report No. 19385-AM. June.

World Bank (2000) *Making Transition work for Everyone. Poverty and Inequality in Central Asia*. The World Bank. Washington, D.C.

World Bank (2001) "Armenia: Growth Challenges and Government Policies", Main Report, Report No. 22854-AM.

World Bank (2001) "Kyrgyz Republic: Poverty in the 1990s in the Kyrgyz Republic," Report No. 21721-KG. June.

World Bank (2002a) Armenia Poverty Update. Mimeo.

World Bank (2002b) A Study of Informal Labor Market Activity in the CIS-7, Mimeo.

ANNEX I

Table A1.1. Urban-rural structure by data source

	ILSC		Education Survey
	99/98	**2001**	**2001**
Urban	60.56%	67.90%	58.07%
Rural	39.44%	32.10%	41.93%

Source: ILCS 1998/99, 2001 and ES 2001.

Table A1.2. Factors for price adjustment of food consumption
(multiplied by 100)

	Urban			**Rural**		
Quarter, 2001	Laspeyres	Paasche	Fischer	Laspeyres	Paasche	Fischer
January-March	94.4	92.7	93.6	97.6	91.0	94.2
April-June	98.0	94.8	96.4	98.0	106.1	102.0
July-September	103.0	102.6	102.8	100.1	101.8	101.0
October – December	**100.0**	**100.0**	**100.0**	108.4	108.8	108.6
Implicit annual inflation (Survey data)	-5.6%	-7.3%	-6.4%	-10.0%	-16.4%	-13.3%

Note: Factors convert food expenditures into amounts comparable with urban areas during the last Survey quarter (October - December 2001). Food consumption values from different households were multiplied by these factors for the corresponding poverty analysis.
Source: ILCS 2001.

ANNEX II

Advantage and drawback of using the unchanged structure of the 1998/99 poverty line

As the Armenian economy has been stable since 1999, we used unchanged structure of 1998/99 complete poverty line in constructing the complete poverty line in 2001 or, the same non-food share in total consumption as used in 1998/99 poverty line. This implied that the same consumption patterns were assumed for 2001 as in 1998/99, so that the poverty can be measured in a comparable way over the previous three years. This appeared to be an advantage of using unchanged structure of 1998/99 poverty line for poverty analysis in 2001.

However, this methodology is not without any disadvantages. The major issue here refers to the share of consumption that is devoted to non-food consumption. As the households need to spend some non-food items, besides food, the allowance for non-food necessities needs to be added to the food (extreme) line. This share of the non-food items in the total consumption was assessed in 1998/99 using the estimates of the non-food share for the households whose food consumption was around the food poverty line. What happened when we used the same structure of poverty line in 2001 as in 1998/99? We assumed that the non-food share of those households whose food consumption was around the food line in 2001 was the same as in 1998/99. However, the 2001 survey data showed a different picture.

Table A2.1. Estimates of non-food share expenditures and poverty indicators in Armenia in 2001

	Non-food share expenditure	Incidence P(0)	Gap (P1)	Severity (P2)
2001*	28.9%	54.8%	16.2%	6.5%
2001	39.6%	61.5%	18.6%	7.8%

* Assuming non-food share expenditures as in 1998/99.

Source: ILCS 2001.

Households whose food consumption was around the 2001 food poverty line (i.e., 1998/88 food line adjusted for inflation) spent more on non-food items than three years before. Their non-food consumption represented 39.6% of their total consumption. This share was much smaller (28.9%) in 2001 than in 1998/99 (table A2.1). This shift in the non-food share will lead to a different allowance for non-food necessities in addition to the food poverty line and, thus, a different poverty line. Not taking into account the changed structure of consumption (food versus non-food) of those households around the food poverty line leads to an understatement of the level of poverty in Armenia. This appeared to be the disadvantage of using unchanged structure of the 1998/99 poverty line.

The re-calculated poverty line, which uses non-food consumption share found in 2001, gives much higher poverty headcount than the one used in this report (61.5% versus 54.8%)[19]. The poverty level in

[19] In contrast, in Kyrgyz Republic the re-indexation of 1996 poverty line used for poverty estimates in 1999 (assuming the unchanged food/non-food consumption shares) overestimated poverty incidence - from 52% to 64% (see WB, 2001).

urban areas is similar to the poverty in rural areas when re-calculated poverty line is applied. It appears that regardless of the poverty line used, poverty is not exclusively urban phenomenon in Armenia.

Finally, it can be concluded that, although taken with caution when using food/non-food structure of 1998/99 poverty line, comparability of poverty over time is only kept when the living standard (poverty line) remained unchanged over time. Therefore, the structure of 1998/99 poverty line is used in this study for the purpose of comparing poverty levels between 1998/99 and 2001.

ANNEX III

Table A3.1*:* Armenia Poverty Indicators 1998/99
(standard errors in parenthesis)

	Extreme (Food) Poverty Line (8,730 drams)			**Complete Poverty Line** (12,306 drams)		
	Incidence (P0)	**Gap (P1)**	**Severity (P2)**	**Incidence (P0)**	**Gap (P1)**	**Severity (P2)**
Total	25.4%	5.5%	1.8	53.7%	15.5%	6.1
	(0.81)	(0.23)	(0.10)	(0.92)	(0.36)	(0.19)
Urban	31.2%	7.0%	2.3	60.4%	18.4%	7.6
	(1.11)	(0.33)	(0.14)	(1.14)	(0.49)	(0.27)
Rural	17.7%	3.4%	1.1	44.8%	11.6%	4.2
	(1.14)	(0.30)	(0.13)	(1.46)	(0.51)	(0.26)

Note: Consumption aggregate includes imputed rental value of dwelling.
Source: Armenia Poverty Update (WB, 2002a).

Table A3.2*:* Armenia Poverty Indicators in 98/99 and 2001
(standard errors in parenthesis)

	Extreme (Food) Poverty Line (8,730 drams in 98/99) (7,979 drams in 2001)			Complete Poverty Line (12,276 drams in 98/99) (11,221 drams in 2001)		
	Incidence (P0)	**Gap (P1)**	**Severity (P2)**	**Incidence (P0)**	**Gap (P1)**	**Severity (P2)**
Total						
98/99	26.8%	6.0%	2.0%	54.8%	16.2%	6.5%
	(0.82)	(0.24)	(0.11)	(0.92)	(0.37)	(0.20)
2001	20.3%	4.7%	1.6%	48.3%	13.2%	5.2%
	(0.71)	(0.21)	(0.11)	(0.87)	(0.33)	(0.18)
Urban						
98/99	32.9%	7.8%	2.6%	61.4%	19.3%	8.1%
	(1.13)	(0.35)	(0.16)	(1.14)	(0.50)	(0.28)
2001	21.9%	5.0%	1.7%	48.5%	13.7%	5.5%
	(0.89)	(0.27)	(0.14)	(1.05)	(0.41)	(0.23)
Rural						
98/99	18.7%	3.7%	1.2%	46.1%	12.1%	4.5%
	(1.16)	(0.31)	(0.14)	(1.46)	(0.52)	(0.27)
2001	17.0%	4.0%	1.5%	47.9%	12.1%	4.6%
	(1.16)	(0.35)	(0.17)	(1.53)	(0.55)	(0.30)

Note: Consumption aggregate does not include imputed rental value of dwelling. Poverty indicators for 2001 are based on 2001 urban/rural structure.
Source: ILCS 1998/99 and 2001.

Table A3.3. Poverty and extreme poverty incidence by regions in 98/99 and 2001

	Extreme poverty incidence, %		**Poverty incidence, %**	
	98/99	2001	98/99	2001
Aragatzotn	27.0	23.0	57.5	60.5
Ararat	17.8	9.2	51.3	39.1
Armavir	13.7	22.2	37.3	52.9
Gegharkunik	14.6	25.3	45.7	57.9
Lori	35.9	22.8	62.6	55.3
Kotayk	32.1	17.9	60.8	40.7
Shirak	43.0	20.6	78.2	52.9
Syunik	27.3	2.3	51.6	16.5
Vayots Dzor	16.0	21.6	34.7	52.7
Tavush	14.9	43.9	28.0	70.5
Yerevan	30.7	20.2	57.7	44.7
Total	26.8	20.3	54.8	48.3

Note: Consumption aggregate does not include imputed rental value of dwelling. Poverty indicators for 2001 are based on 2001 urban/rural structure.

Source: ICLS 98/99 and 2001.

ANNEX IV

Table A4.1. Poverty by education of the household head in 98/99 and 2001

	Extreme poverty incidence, %		Poverty incidence, %	
	98/99	2001	98/99	2001
Primary	32.6	29.3	61.1	60.4
Incomplete Secondary	33.2	25.3	62.1	59.6
Complete Secondary	28.6	22.8	57.0	53.6
Technical	23.6	17.1	52.4	43.0
Higher Education	17.0	10.9	41.9	32.8
Total	26.8	20.0	54.8	48.3

Source: ICLS 98/99 and 2001.

Table A4.2. Poverty by Labor Force Participation of the Household Head in 98/99 and 2001

	Extreme poverty incidence, %		Poverty incidence, %	
	98/99	2001	98/99	2001
Non-participants	34.8	24.3	63.8	54.2
Seasonally unemployed	10.1	…	39.1	…
Unemployed	39.2	32.1	66.2	62.9
Salaried worker	19.6	14.0	46.6	37.1
Self-employed	19.1	12.3	47.1	43.2
Other employment	19.8	15.5	48.1	38.3
Total	26.8	20.0	54.8	48.3

Source: ICLS 98/99 and 2001.

ANNEX V

Table A5.1. Gini coefficient by region in 98/99 and 2001

	Consumption		Income	
	98/99	2001	98/99	2001
Urban	0.299	0.286		0.523
Rural	0.288	0.266		0.520
Total	0.298	0.278	0.574	0.522

Note: Both consumption and income are measured per adult equivalent.
Source: ICLS 98/99 and 2001.

ANNEX VI: Poverty Regressions

Differential effects of determinants of ln(consumption)

(estimated coefficients and standard errors for quantile regressions)

	10%			25%			50%			75%			90%		
Fraction age 0-5	0.106	(0.116)		0.090	(0.119)		0.044	(0.116)		-0.037	(0.089)		-0.012	(0.144)	
Fraction age 6-14	0.263	(0.095)	**	0.251	(0.098)	**	0.265	(0.092)	**	0.139	(0.070)		0.165	(0.105)	
Fraction age 15-18	-0.003	(0.099)		-0.004	(0.101)		0.001	(0.098)		0.055	(0.077)		0.180	(0.121)	
Fraction age 19-25	-0.161	(0.093)		-0.113	(0.095)		-0.050	(0.092)		-0.083	(0.070)		-0.089	(0.108)	
Fraction age 26-45	0.018	(0.065)		-0.017	(0.066)		-0.054	(0.065)		-0.032	(0.051)		-0.107	(0.080)	
Fraction age 61+	-0.151	(0.057)	**	-0.130	(0.061)	*	-0.142	(0.059)	*	-0.205	(0.045)	**	-0.238	(0.069)	**
ln(Household size)	-0.125	(0.037)	**	-0.158	(0.038)	**	-0.154	(0.036)	**	-0.149	(0.028)	**	-0.210	(0.043)	**
Age of head	0.005	(0.001)	**	0.003	(0.001)	*	0.002	(0.001)		0.001	(0.001)		0.003	(0.002)	
Female head	-0.159	(0.026)	**	-0.100	(0.027)	**	-0.055	(0.027)	*	-0.044	(0.021)	*	-0.008	(0.033)	
Incomplete Secondary	0.062	(0.045)		0.043	(0.046)		-0.002	(0.045)		-0.021	(0.036)		0.046	(0.058)	
Complete Secondary	0.147	(0.040)	**	0.091	(0.043)	*	0.052	(0.042)		0.016	(0.033)		0.062	(0.053)	
Technical	0.208	(0.043)	**	0.183	(0.045)	**	0.139	(0.043)	**	0.074	(0.034)	*	0.119	(0.055)	*
Higher Education	0.304	(0.044)	**	0.286	(0.047)	**	0.262	(0.045)	**	0.241	(0.035)	**	0.256	(0.056)	**
Non participant	-0.128	(0.031)	**	-0.125	(0.031)	**	-0.064	(0.030)	*	-0.003	(0.022)		-0.018	(0.034)	
Unemployed	-0.121	(0.041)	**	-0.100	(0.042)	*	-0.086	(0.041)	*	-0.033	(0.032)		-0.028	(0.051)	
Selfemployed	-0.141	(0.041)	**	-0.125	(0.043)	**	-0.023	(0.043)		0.039	(0.033)		0.055	(0.055)	
Other employment	0.053	(0.111)		-0.227	(0.152)		0.038	(0.145)		0.261	(0.119)	*	-0.055	(0.182)	
% Unemployed	-0.173	(0.037)	*	-0.151	(0.037)	**	-0.166	(0.037)	**	-0.218	(0.029)	**	-0.270	(0.046)	**
% Self-employed	0.173	(0.041)	**	0.128	(0.043)	**	-0.002	(0.043)		-0.085	(0.034)	*	-0.123	(0.057)	*
% Other employment	-0.169	(0.085)	*	0.262	(0.171)		0.099	(0.177)		0.083	(0.141)		0.230	(0.228)	
Total land	0.000	(0.009)		0.009	(0.010)		0.015	(0.009)		0.033	(0.006)	**	0.023	(0.008)	**
% owned	0.037	(0.036)		-0.005	(0.033)		0.021	(0.032)		0.006	(0.024)		0.046	(0.038)	
% irrigated	-0.044	(0.041)		-0.034	(0.038)		-0.032	(0.036)		-0.042	(0.027)		-0.015	(0.043)	
Received credit?	-0.004	(0.039)		-0.019	(0.040)		0.020	(0.040)		0.023	(0.032)		0.143	(0.052)	**
Has livestock?	0.126	(0.031)	**	0.157	(0.029)	**	0.151	(0.029)	**	0.146	(0.022)	**	0.130	(0.034)	**
Aragatzotn	-0.037	(0.048)		-0.159	(0.050)	**	-0.276	(0.051)	**	-0.387	(0.041)	**	-0.473	(0.064)	**
Ararat	0.109	(0.041)	**	0.029	(0.041)		-0.061	(0.042)		-0.137	(0.033)	**	-0.277	(0.053)	**
Armavir	-0.052	(0.040)		-0.088	(0.039)	*	-0.128	(0.038)	**	-0.210	(0.029)	**	-0.324	(0.046)	**

Differential effects of determinants of ln(consumption)

(estimated coefficients and standard errors for quantile regressions)

	10%			25%			50%			75%			90%		
Gegharkunik	-0.101	(0.052)	*	-0.149	(0.049)	**	-0.276	(0.048)	**	-0.386	(0.037)	**	-0.515	(0.059)	**
Lori	-0.030	(0.036)		-0.095	(0.035)	**	-0.151	(0.035)	**	-0.243	(0.028)	**	-0.359	(0.044)	**
Kotayk	0.062	(0.046)		-0.011	(0.045)		-0.021	(0.044)		-0.077	(0.034)	*	-0.181	(0.056)	**
Shirak	0.003	(0.034)		-0.098	(0.037)	**	-0.166	(0.038)	**	-0.241	(0.031)	**	-0.418	(0.052)	**
Syunik	0.398	(0.048)	*	0.351	(0.050)	**	0.347	(0.052)	**	0.383	(0.044)	**	0.290	(0.073)	**
Vaiots Dzor	-0.065	(0.063)		-0.140	(0.068)	*	-0.250	(0.065)	**	-0.311	(0.049)	**	-0.358	(0.072)	**
Tavush	-0.290	(0.051)	*	-0.339	(0.051)	**	-0.344	(0.050)	**	-0.411	(0.039)	**	-0.486	(0.059)	**
Constant	8.655	(0.102)	**	9.033	(0.106)	**	9.459	(0.105)	**	9.867	(0.082)	**	10.164	(0.126)	**

Determinants of Poverty Headcount

Probit estimates — Number of obs = 4037
LR chi2(46) = 688.31
Prob > chi2 = 0.0000
Log likelihood = -2451.6993 — Pseudo R2 = 0.1231

poor	dF/dx	Std. Err.	z	P>|z|	x-bar	[95% C.I.]	
sage05	.1247981	.1021685	1.22	0.222	.067897	-.075448	.325045
sage614	-.0880591	.0834782	-1.05	0.291	.166698	-.251673	.075555
sage1518	.1201364	.0892759	1.35	0.178	.083334	-.054841	.295114
sage1925	.1728592	.0883505	1.96	0.050	.120901	-.000305	.346023
sage2645	.0843741	.0640305	1.32	0.188	.286458	-.041123	.209872
sage61	.2197122	.0620296	3.54	0.000	.142173	.098136	.341288
lhhsz	.1467718	.0316892	4.63	0.000	1.52098	.084662	.208882
hdage	-.0004824	.00118	-0.41	0.683	53.782	-.002795	.00183
hdfemale*	.0367195	.0238223	1.54	0.123	.211033	-.009971	.08341
hdedseci*	-.005328	.0366298	-0.15	0.884	.130416	-.077121	.066465
hdedsecc*	-.0718919	.0338461	-2.11	0.035	.316737	-.138229	-.005555
hdedtehn*	-.1595181	.0339418	-4.57	0.000	.266445	-.226043	-.092993
hdedhigh*	-.2552496	.032501	-7.17	0.000	.189703	-.31895	-.191549
hdlfp0*	.0478499	.025716	1.86	0.063	.402132	-.002553	.098252
hdlfp1*	.0780848	.0357289	2.18	0.030	.117665	.008058	.148112
hdlfp3*	.0556662	.035043	1.59	0.113	.20843	-.013017	.124349
hdlfp4*	.2368876	.109273	1.94	0.052	.00819	.022717	.451059
slfp1	.1925039	.0312842	6.15	0.000	.25764	.131188	.25382
slfp3	-.0112391	.034476	-0.33	0.744	.256392	-.078811	.056333
slfp4	-.3767091	.1592122	-2.37	0.018	.008547	-.688759	-.064659
lndtot	-.0106458	.007837	-1.36	0.174	.574586	-.026006	.004715
slndown	-.0549906	.0275884	-1.99	0.046	.483412	-.109063	-.000918
slndirr	.0339235	.0300376	1.13	0.259	.264548	-.024949	.092796
agcred*	.0079762	.0313096	0.25	0.799	.093623	-.05339	.069342
aglvstk*	-.1354714	.0236901	-5.63	0.000	.349096	-.181903	-.08904
marz1*	.2793814	.0371489	6.52	0.000	.045924	.206571	.352192
marz2*	.0193683	.0348914	0.56	0.579	.117906	-.049018	.087754
marz3*	.136806	.0313793	4.27	0.000	.105323	.075304	.198308
marz4*	.2399947	.0348233	6.31	0.000	.076518	.171742	.308247
marz5*	.1358946	.0312696	4.26	0.000	.107008	.074607	.197182
marz6*	-.0129487	.0389116	-0.33	0.740	.060845	-.089214	.063317
marz7*	.1612467	.0334344	4.66	0.000	.084935	.095716	.226777
marz8*	-.224589	.0441434	-4.49	0.000	.043092	-.311108	-.13807
marz9*	.2134723	.0520626	3.78	0.000	.023185	.111431	.315513
marz10*	.2988139	.0340099	7.45	0.000	.052255	.232156	.365472
month1*	-.2693459	.0338226	-6.81	0.000	.080445	-.335637	-.203055
month2*	-.0341322	.0409806	-0.83	0.407	.083818	-.114453	.046188
month3*	-.012758	.0409974	-0.31	0.756	.084714	-.093111	.067595
month4*	.0244088	.0413416	0.59	0.555	.082196	-.056619	.105437
month5*	.0325301	.0418602	0.78	0.437	.079067	-.049514	.114575
month6*	.0444527	.0417401	1.06	0.287	.079374	-.037356	.126262
month7*	.0267027	.0412051	0.65	0.517	.084372	-.054058	.107463
month8*	-.0551524	.0406816	-1.34	0.179	.086041	-.134887	.024582
month9*	-.0183441	.0412645	-0.44	0.657	.083234	-.099221	.062533
month11*	-.0312566	.0408739	-0.76	0.446	.088236	-.111368	.048855
month12*	-.1134731	.0392671	-2.81	0.005	.08853	-.190435	-.036511
obs. P	.4828326						
pred. P	.4782801	(at x-bar)					

(*) dF/dx is for discrete change of dummy variable from 0 to 1
z and P>|z| are the test of the underlying coefficient being 0

Determinants of Poverty Gap

Tobit estimates — Number of obs = 4037; LR chi2(46) = 852.79; Prob > chi2 = 0.0000; Log likelihood = -19781.504; Pseudo R2 = 0.0211

pgap	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
sage05	316.5142	704.027	0.450	0.653	-1063.772	1696.8
sage614	-1249.672	582.4849	-2.145	0.032	-2391.668	-107.6762
sage1518	679.9591	623.2007	1.091	0.275	-541.8623	1901.781
sage1925	1409.968	617.1726	2.285	0.022	199.9654	2619.971
sage2645	439.7738	452.7499	0.971	0.331	-447.8688	1327.416
sage61	1473.82	440.0236	3.349	0.001	611.1277	2336.512
lhhsz	1147.551	220.3506	5.208	0.000	715.5411	1579.562
hdage	-14.08531	8.201794	-1.717	0.086	-30.16541	1.994787
hdfemale	565.6351	163.4614	3.460	0.001	245.1594	886.1108
hdedseci	-263.2378	244.5719	-1.076	0.282	-742.7353	216.2597
hdedsecc	-737.9763	230.7656	-3.198	0.001	-1190.406	-285.5469
hdedtehn	-1395.126	241.7957	-5.770	0.000	-1869.18	-921.071
hdedhigh	-2316.576	259.8332	-8.916	0.000	-2825.994	-1807.158
hdlfp0	573.9637	181.4656	3.163	0.002	218.1897	929.7376
hdlfp1	644.7519	242.0266	2.664	0.008	170.2447	1119.259
hdlfp3	583.1768	249.2263	2.340	0.019	94.55416	1071.799
hdlfp4	1570.394	891.0003	1.763	0.078	-176.4646	3317.252
slfp1	1364.909	210.1222	6.496	0.000	952.9522	1776.866
slfp3	-540.2641	242.6133	-2.227	0.026	-1015.922	-64.60656
slfp4	-1827.236	1084.973	-1.684	0.092	-3954.389	299.9168
lndtot	-76.43451	56.96211	-1.342	0.180	-188.1121	35.24303
slndown	-235.1163	190.7461	-1.233	0.218	-609.0852	138.8525
slndirr	146.6944	208.3734	0.704	0.481	-261.8338	555.2227
agcred	105.3931	225.0465	0.468	0.640	-335.8238	546.6099
aglvstk	-1176.523	169.3094	-6.949	0.000	-1508.464	-844.5824
marz1	1704.491	307.5403	5.542	0.000	1101.54	2307.441
marz2	-195.0735	249.4167	-0.782	0.434	-684.0696	293.9226
marz3	936.5059	223.9557	4.182	0.000	497.4276	1375.584
marz4	1639.687	268.0664	6.117	0.000	1114.127	2165.247
marz5	744.2288	220.5231	3.375	0.001	311.8804	1176.577
marz6	-162.852	278.9227	-0.584	0.559	-709.6964	383.9923
marz7	825.4926	240.3004	3.435	0.001	354.3696	1296.616
marz8	-2245.545	408.0013	-5.504	0.000	-3045.456	-1445.635
marz9	1277.402	405.9341	3.147	0.002	481.5444	2073.259
marz10	2530.645	273.019	9.269	0.000	1995.375	3065.914
month1	-2319.921	309.1427	-7.504	0.000	-2926.013	-1713.829
month2	-245.1797	283.8784	-0.864	0.388	-801.7398	311.3804
month3	-102.2308	282.8396	-0.361	0.718	-656.7543	452.2927
month4	48.6391	283.1209	0.172	0.864	-506.436	603.7142
month5	75.20167	286.1941	0.263	0.793	-485.8987	636.302
month6	238.6734	284.8768	0.838	0.402	-319.8443	797.1911
month7	95.85541	282.2431	0.340	0.734	-457.4987	649.2095
month8	-661.8791	286.1402	-2.313	0.021	-1222.874	-100.8846
month9	-424.5658	287.0958	-1.479	0.139	-987.434	138.3024
month11	-514.8154	282.7116	-1.821	0.069	-1069.088	39.45719
month12	-1151.232	288.1763	-3.995	0.000	-1716.218	-586.2454
_cons	-673.4349	667.4099	-1.009	0.313	-1981.931	635.0612
_se	3234.684	57.34322	(Ancillary parameter)			

Obs. summary: 2087.805 left-censored observations at pgap<=0
1949.195 uncensored observations

Determinants of Poverty Severity

Tobit estimates — Number of obs = 4037; LR chi2(46) = 812.74; Prob > chi2 = 0.0000; Log likelihood = -36607.54; Pseudo R2 = 0.0110

psev	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
sage05	2303093	4219904	0.546	0.585	-5970275	1.06e+07
sage614	-9084690	3497193	-2.598	0.009	-1.59e+07	-2228240
sage1518	3805486	3739157	1.018	0.309	-3525350	1.11e+07
sage1925	7644172	3702419	2.065	0.039	385363.6	1.49e+07
sage2645	2419575	2719032	0.890	0.374	-2911246	7750397
sage61	7615621	2644616	2.880	0.004	2430697	1.28e+07
lhhsz	6471075	1321782	4.896	0.000	3879644	9062507
hdage	-96666.48	49218.86	-1.964	0.050	-193162.9	-170.0342
hdfemale	3935212	978998.2	4.020	0.000	2015829	5854595
hdedseci	-2547137	1462312	-1.742	0.082	-5414085	319811.1
hdedsecc	-5532403	1381083	-4.006	0.000	-8240097	-2824708
hdedtehn	-9135765	1448113	-6.309	0.000	-1.20e+07	-6296655
hdedhigh	-1.43e+07	1557851	-9.166	0.000	-1.73e+07	-1.12e+07
hdlfp0	3282154	1089483	3.013	0.003	1146159	5418149
hdlfp1	3411624	1448646	2.355	0.019	571468.9	6251778
hdlfp3	3719353	1500009	2.480	0.013	778497	6660209
hdlfp4	5492009	5307227	1.035	0.301	-4913120	1.59e+07
slfp1	8235395	1257333	6.550	0.000	5770320	1.07e+07
slfp3	-4047388	1459834	-2.772	0.006	-6909477	-1185299
slfp4	-4806411	6336455	-0.759	0.448	-1.72e+07	7616579
lndtot	-421909.2	344693	-1.224	0.221	-1097700	253881.5
slndown	-1329669	1145143	-1.161	0.246	-3574790	915451.3
slndirr	553209	1252099	0.442	0.659	-1901605	3008023
agcred	637669.1	1357008	0.470	0.638	-2022825	3298163
aglvstk	-6590953	1017351	-6.479	0.000	-8585529	-4596376
marz1	8758862	1844110	4.750	0.000	5143377	1.24e+07
marz2	-1529732	1501564	-1.019	0.308	-4473635	1414171
marz3	5570979	1341555	4.153	0.000	2940781	8201176
marz4	8908195	1607204	5.543	0.000	5757177	1.21e+07
marz5	3585327	1321868	2.712	0.007	993726.1	6176927
marz6	-903312.9	1674791	-0.539	0.590	-4186839	2380213
marz7	3771787	1443214	2.613	0.009	942281.3	6601292
marz8	-1.34e+07	2497840	-5.348	0.000	-1.83e+07	-8461314
marz9	6512754	2439821	2.669	0.008	1729343	1.13e+07
marz10	1.50e+07	1628854	9.218	0.000	1.18e+07	1.82e+07
month1	-1.25e+07	1857992	-6.723	0.000	-1.61e+07	-8848037
month2	-815963.9	1701289	-0.480	0.632	-4151441	2519513
month3	334762.6	1694246	0.198	0.843	-2986905	3656430
month4	468242.6	1697530	0.276	0.783	-2859865	3796350
month5	-7573.678	1718133	-0.004	0.996	-3376075	3360927
month6	1142328	1709029	0.668	0.504	-2208323	4492980
month7	104212	1694309	0.062	0.951	-3217580	3426004
month8	-4428933	1721403	-2.573	0.010	-7803845	-1054021
month9	-2284748	1722843	-1.326	0.185	-5662482	1092985
month11	-3291198	1697604	-1.939	0.053	-6619449	37053.13
month12	-6800256	1733654	-3.922	0.000	-1.02e+07	-3401325
_cons	-3957207	4005402	-0.988	0.323	-1.18e+07	3895617
_se	1.92e+07	329733.2	(Ancillary parameter)			

Obs. summary: 2087.805 left-censored observations at psev<=0
1949.195 uncensored observations