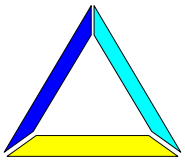
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Poverty in Ukraine

1. Introduction

The low purchasing power of the Ukrainian population has always been a major concern for policy makers and particularly in 2003 when as a result of expectations of a poor grain harvest prices for staple food products jumped in the late spring. The initial reaction of the government, among others, was to control prices by imposing profitability restrictions on producers and mark-up restrictions on retail traders. As grain prices continued to rise, fixed price levels became ever more difficult to defend, why in some oblasts direct government intervention was replaced by money transfers to vulnerable groups. Politicians had learned that directly transferring money can play an important role in providing food relief to the poor. However, given the budget constraints Ukraine faces, policy makers should ensure that the transfer program yields as large benefits to the poor as possible. What usually makes transfer programs ineffective and inefficient is the wrong identification of the target group. Thus, in implementing the program to provide food relief to the poor, the government should have a clear idea about who are the poor and what should be done in the first place to alleviate poverty. This paper is an attempt to identify causal factors for poverty by examining characteristics of those living below the poverty line.

The paper is structured as follows. In section 2 the regional distribution of poverty based on the household survey data is discussed. Section 3 sheds some light on the socio-economic characteristics of the poor such as age, employment status, the number of children, educational attainment, access to land and others. Section 4 discusses some aspects of government food relief program. The final section contains conclusions and policy recommendations.

2. Regional distribution of poverty

The analysis of poverty is conducted using the household survey data for 2001 provided by the Derzhkomstat. Even though the survey data are two-year old and over two years some changes in the well being at a regional level might have occurred the situation is not likely to change very much. According to the Derzhkomstat data in 2001 32.7% of population lived on less than UAH 150 per month per capita, while in 2002 this figure declined to 26%, which is a tremendous decline in poverty taking into account the reduction of a Consumer Price Index in 2002. Nevertheless, the results of the analysis based on 2001 data

can still be relied on, as the principal patterns of poverty is not likely to change as quickly. It should also be mentioned that our analysis uses expenditures as a proxy for general material well being rather than income, which is very often, and particularly, in rural areas underestimated because of unaccounted for home production.

In estimating the poverty line we work with two definitions of poverty. In this section they will be referred to as Type 1 Poverty (or poverty line 1) and Type 2 Poverty (or poverty line 2). The poverty line 1 is a universal poverty threshold used by the World Bank which equals a dollar a day per capita. Allowing for the fact that the official exchange rate in 2001 was 5.4437 UAH/USD Poverty line 1 is estimated at UAH 163.31 per month per capita. However, another definition of poverty used often is that the poor are those who spend 80 percent and more of their income on food.[1] In our paper this poverty threshold is referred to as Poverty line 2[2].

To measure poverty we use two indicators: headcount ratio and Income Gap ratio. Headcount ratio is defined as the ratio between the number of people living below the poverty line and total number of people living in a region. This indicator, however, gives no idea about the depth of poverty, that is, it does not show how far below the poverty line the average poor in a region is. In deciding which region should be aided first, policy makers should measure the depth of poverty and Income Gap ratio is a suitable measure. Income Gap ratio shows amounts by which the poor fall below the poverty line[3]. All three poverty measures are reported in Table 1.

[1] Sharmini de Alwis "A regional Comparison of Poverty Indicators and Profile of the Poor", p. 46

[2]Poverty Line 1 derives directly from the official exchange rate. Even though there is the same exchange rate for USD across Ukraine, the purchasing power of 1 USD is much higher than the exchange rate suggests, particularly, in the countryside. One could argue that a PPP exchange rate could be a better instrument in calculating a poverty line. However, calculation of poverty line using a PPP exchange rate yields $0.18 per day per capita, which is UAH 29 per capita per month. Thus, calculation of income according to PPP eradicates $1/day poverty. In this respect, Poverty Line 2 seems a more reasonable measure of poverty.

[3] Income Gap ratio can be calculated as follows: $IGR = \sum_{i=1}^{q} \frac{(P - y_i)}{qP}$, where IGR stands for Income Gap ratio, P – poverty line, y_i – income of the I-th individual in poverty, q – the total number of persons in poverty.

Table 1. Distribution of Poverty across Ukraine

	Percentage of people living below the poverty line 1 (m persons)	Percentage of people living below the poverty line 2 (m persons)	Income Gap Ratio
West[1]			
Rural	49 (2.72)	28 (1.54)	27.83
Urban	45 (2.41)	9 (0.47)	27.18
North			
Rural	40 (0.93)	29 (0.66)	29.19
Urban	37 (1.26)	10 (0.33)	26.57
Center			
Rural	43 (1.17)	24 (0.64)	28.15
Urban	36 (1.16)	6 (0.21)	25.56
East			
Rural	35 (0.89)	19 (0.48)	30.72
Urban	35 (4.67)	11 (1.41)	26.87
South			
Rural	51 (1.29)	26 (0.67)	34.34
Urban	40 (1.76)	11 (0.47)	29.13
Ukraine	39 (18.70)	14 (7.00)	27.89

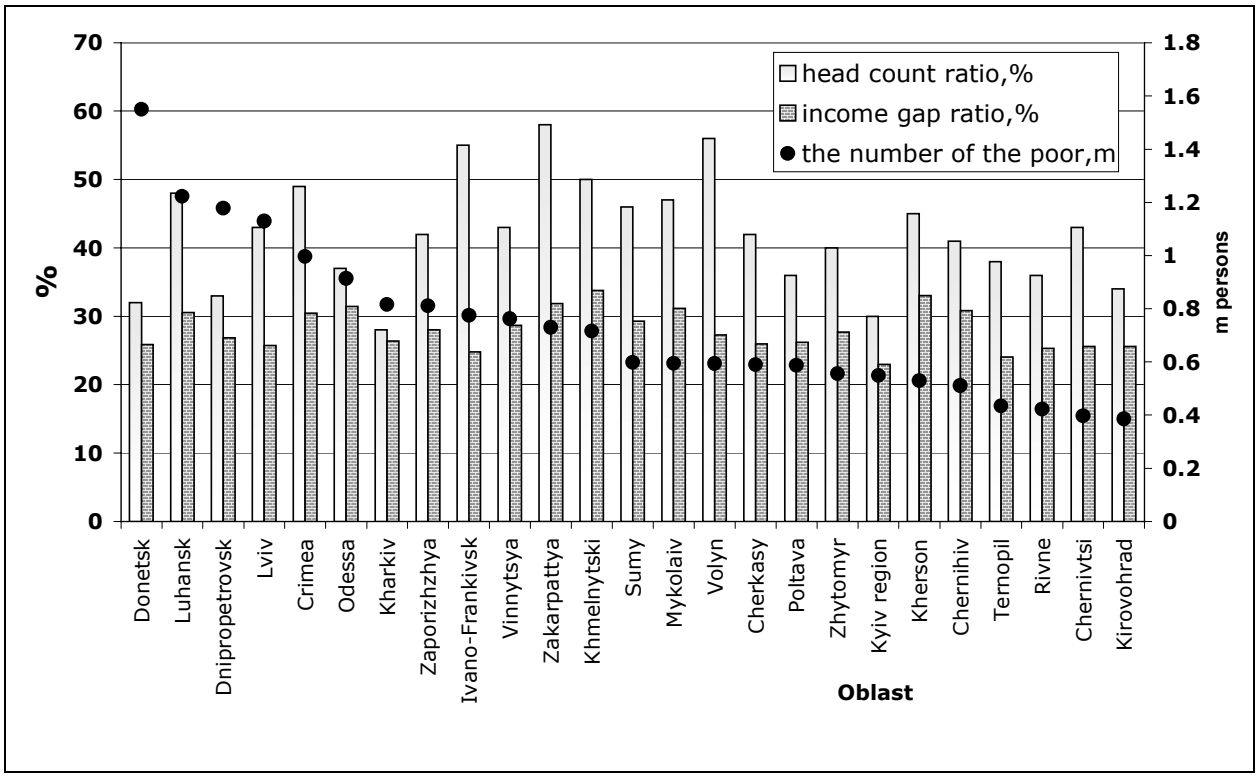
[1] *West*: Transkarpathian, Lviv, Volyn, Ivano-Frankivsk, Ternopil, Rivne, Khmelnitsky, Chernivtsi oblasts; *North*: Zhytomyr, Kyiv, Chernigiv, Sumy oblasts; *Center*: Vinnytsya, Cherkasy, Poltava, Kirovograd oblasts; *East*: Kharkiv, Dnipropetrovsk, Zaporizhzhya, Donetsk, Lugansk oblasts; *South*: Odesa, Mykolaiv, Kherson oblasts and Crimea Autonomy.
Source: own calculation on the basis of household survey conducted by the Derzhkomstat in 2001.

In total, about 18.7 million persons can be classified as poor according to Type 1 Poverty and about 7 mln according to Type 2 Poverty. As can be seen from the table Type 1 Poverty dominates rural areas with the gap in poverty between rural and urban areas being the largest in the Southern part of Ukraine (see a remark below the table). From a policy perspective this implies that in the South it is rural residents who should be granted support in the first place.

As the data reveal, in rural areas Type 2 Poverty is more than twice as large as that in urban ones. This implies that rural residents are much more poorer in terms of consumption of non-food products and services and are, thus, much more vulnerable to food price increases.

Income Gap ratios imply that the income deficit of those living in poverty for Ukraine as a whole is about 28.5%. This means that to lift a person out of poverty the government should on average transfer UAH 46.5 (0.285*163.31(poverty line)) per month per capita. As can also be seen in the South the poor are falling further below the poverty line compared to other regions and an average transfer required to lift a person out of poverty there is UAH 56. The distribution of poverty measures across oblasts is depicted in Figure 1 below.

Figure 1. Distribution of poverty across oblasts



From this figure it is evident that patterns of poverty by oblast are diverse with the share of the at-risk poor varying from 58% in Zakarpattya oblast to the lowest of 28% in Kharkiv oblast. While a relative poverty measure such as headcount ratio gives an idea about the incidence of poverty, an absolute measure such as the number of the poor and income gap ratio should be allowed for when deciding which oblasts should be aided first. As can be seen there is a large variation in the number of the poor across oblasts with the largest number of vulnerable consumers in Donetsk and the lowest in Kirovograd oblast. Income Gap ratios are not that diverse varying from the highest of 33.8% in Khmelnitsky oblast to 23% in Kyiv oblast. These findings have important policy implications: any simple approach to targeting the poor may prove to be ineffective in providing food relief or in alleviating poverty. For example, while in oblasts where the income gap ratio is the lowest a transfer of UAH 6 may offset food price increases, in such oblasts where the ratio is highest, it may yield no improvement at all (**Example?**). Under budget constraints there is always a trade-off between the number of the poor covered by a transfer program and the amount transferred per person. To ensure the effectiveness of food relief programmes in oblasts where the poor are the furthest below the poverty line, it would be advisable to transfer a larger amount and cover fewer persons, than transfer a smaller amount that would comprise only a tiny portion of income deficiency.

3. How are the Poor Characterized?

To develop a successful poverty alleviation programme, a policy maker should be aware of the most important determinants of poverty. In this section we discuss the characteristics of the at-risk poor. Table 1 in the Appendix gives the distribution of the households categorized as poor (living on less than 1 USD a day per capita) and non-poor. Numbers in bold indicate those characteristics that push people into poverty.

From the age distribution a salient feature is a younger profile of the poor. In rural areas the most vulnerable are households headed by a person under 20, while in urban – households headed by a person 21-30 years old. With an increase in the age of the household head probability that the household will be classified as poor decreases. Furthermore, there is no evidence that pensioners are more prone to poverty.

Regarding *employment status* what seems to matter is whether a household head is employed or not.

Family structure seems to be one of the determinants of poverty. Families in poverty are relatively large in size and have relatively more children under 16. This finding has important policy implications: since the number of children is a factor that pushes households into poverty, and as the household survey data reveal 50.6% and 58.4% of children come from poor urban and rural households, respectively, in providing food relief emphasis should also be placed on measures that focus on vulnerable children such as, for example, school mid-day meal programs. Having that many poor children threatens future economic growth of Ukraine, because it means that parents cannot afford appropriate education and training, and health care.

In general, a visual inspection of the data does not allow to determine the major causal factors for poverty. To verify the guesstimates discussed, above we employed an econometric estimation. The Appendix discusses the econometric approach employed, and here in the text we present only the interpretation of the results.

Urban areas. The estimation results reveal that age of a household head (and whether a household head is a pensioner) and having a land plot are not significant determinants for poverty. Of all causal factors unemployment of a household head has the largest effect on poverty: with an unemployed head the probability of a household being poor increases by 20%. Furthermore, if the ratio of workers to family members increases by 0.1 the probability of poverty decreases by 14%. Family structure is also an important determinant of poverty: if household size increases by 1 the probability of poverty increases by 11%, and if the number of children increases by 1 the probability of poverty increases by 5%. Educational attainment is also a significant factor for poverty: studying for one more year decreases the probability of poverty by 2%, while acquirement of

higher education by a household head decreases the probability of a household being poor by 9%.

Rural areas. Age of a household head is not significant factor for poverty. Furthermore, ***pensioners tend to be better off***: if a household head is a pensioner the probability that the household will be classified as poor decreases by 10%. The number of children increases probability of poverty by about 6% and is a significant causal factor. Employment status of a household head is a significant determinant of poverty in rural areas. Having unemployed household head is less significant factor for rural households than for urban ones, however, self-employment[4] plays the most important role in keeping people out of poverty: if a household head is self-employed the probability of being poor decreases by 19%. What also matters in rural communities is whether the household head is employed in agriculture or not. Employment in agriculture increases the probability of poverty by 6%. Like in urban areas access to land is not a significant factor that keeps people out of poverty.

The findings are summarized in the table below.

Table 2. The determinants for poverty

Factors that increase poverty (an increase in the factor)	Probability of poverty increases by,%		Factors that reduce poverty (an increase in the factor)	Probability of poverty reduces by, %	
	Urban	Rural		Urban	Rural
Household size	11.0	10.0	Workers-to-family members ratio	14.2	18.0
The number of children	5.6	4.5	Educational attainment	1.3	1.9
Agricultural employment	-	5.7	Having higher education	9.0	-
Unemployment of the head	19.3	6.7	Self-employment of the head	-	19.8
Being a pensioner	4.5	-	Being a pensioner	-	6.6

The differences between urban and rural poverty as pictured by this analysis are the role of higher education and unemployment in urban areas but not in rural and the role of self-employment in rural areas but not in urban. Furthermore, while in urban areas pensioners are found to be worse off (even though being a pensioner is not a significant determinant of poverty), in rural areas pensioners are better off.

4. Government policy: is it effective?

[4] Production of agricultural commodities for sale or provision of services.

Having employed some administrative measures to keep food price from increasing the government shifted its policy to targeted support. The transfer programs were launched in some regions and the average amount of a money transfer accounted for UAH 6. As was shown earlier an average transfer required to lift a person out of poverty is about UAH 46. Thus, a transfer of UAH 6 per month to compensate bread price increases seems to be too small to help the poor to survive. A natural question then arises: why compensate a bread price increase only? While the government was concerned about bread prices, prices for other food products were increasing which contributed to an increase in the cost of the consumer basket. Table 3 reports the change in the cost of the consumer basket over 2003 as a result of an increase in prices for the major food items.

Table 3. Change in the cost of the food basket of poor consumers

Product	Share of a product in a consumer basket, %	Increase in the price of a product through 2003, %	Increase in the cost of a consumer basket through 2003, %
Meat	9.4	11.1	1.0
Dairy products	8.4	14.4	1.2
Eggs	2.9	17.2	0.5
Flour	2.7	75.1	2.1
Bread	10.0	36.0	3.6
Cereals	5.5	33.7	1.8
Total	**38.9**	**26.3**	**10.2**

As can be seen price increases for other rather than bread food products contributed to an increase in the cost of consumer basket. Why compensate bread price increase only? Dairy products are also important for survival. To keep the poorest unaffected by staple food price increases a money transfer should be roughly UAH 12 per month (118.0*0.102) [5].

However, a food price increase will not necessarily worsen the poverty situation in Ukraine. Even though food price increases increase the incidence of poverty, income increases counteract and mask the effect. As the official statistics shows average income increased by 10.9% throughout 2003,[6] while an average wage increase accounted for 23.7%.[7] In 2003 a minimum value of unemployment benefits increased by 14.3%. Pension payments experienced the lowest increase in 2003 with an increase in a minimum pension amounting to 5.7%. Thus, the average income has been increasing at the same pace as food prices have, which suggests that there is no food crisis, which has been used as an excuse for government intervention, and only pensions seem to lag behind. What impact will food price increase have on the incidence of poverty among pensioners?

[5] UAH 118 is the average income for the poor.
[6] "Monitoring of macroeconomic indicators", Issue 12 (44), Dec. 2003, the Ministry of Economy, p.82
[7] Derzhkomstat

According to 2001 household survey data 8.9% of households are both headed by pensioners and classified as poor according to Type 2 poverty. Assuming that their expenditures would increase by the amount of a pension increase (5.7%) food price increase of 10.9% will increase the share of poor pensioner-headed households to 13.3%. Pensions have not necessarily increase by 5.7%, however, some pensions have experienced a much greater increase. To ensure that the right groups of poor people are targeted the government should identify those who have not benefited from income increases and for whom the food price increases hurt.

An interesting fact arises when one examines the development of government "food relief policy". The first announcements about the intentions of the government to subsidize bread production appeared in October, 2003. The two oblasts where the bakeries got subsidized were Lviv and Kyiv oblasts. After a while the transfer programs were launched in Kherson, Chernivtsi, Zaporizhzhya, Donetsk and Kyiv oblast. Out of this list Kherson, Kyiv, Chernivtsi, Zaporizhzhya oblasts seem to be the "wrong" candidates for food relief programs to be started in the first place taken into consideration that there are some oblasts such as Luhansk, Dnipropetrovsk and the Crimea where the number of the poor is almost twice as large. The decision to transfer money to the poor is made at the oblast level and, consequently, oblasts that lack money for this purpose will not be able to provide support to the vulnerable groups. This calls for the central government to coordinate the allocation of money for food relief programs in such a way that the oblasts that are first in the list to be aided (Donetsk, Luhansk, Dnipropetrovsk, Lviv, for example) get the money first.

5. Policy recommendations

Based on the results of the analysis a few policy recommendations may be warranted.

- First, the Ukrainian public should start to recognise that **not high food prices, but poverty** is the more fundamental problem which has to be attacked.
- We recommend to agree on an appropriate poverty measure, and to prepare an **annual report on the poverty situation** in the country.
- The problem of poverty goes beyond low incomes. The question is whether low incomes increasingly become a reason for reduced life opportunities through malnutrition, poor health care, and educational disadvantages. In short: are parts of the Ukrainian population **caught in a poverty trap?**
- Income increases have largely compensated the impoverishing effect of increased food prices. This means that sustained **economic growth is the best recipe against poverty**. If not benefiting all poor people, it nevertheless increases the potential of the society to support the needy.

- Self-employed people are less likely to be poor. A **policy which encourages entrepreneurial behaviour** will thus help to overcome poverty, as many examples from developing countries demonstrate.
- New **businesses create new jobs** and thus help to overcome poverty caused by unemployment. This is more effective than defending dinosaur companies where employees are poor because the enterprise is a loss-maker.
- However, low-income consumers may still face a problem, provided that neither increased incomes nor improved minimum wages or pensions have actually reached them. In this case, **targeted direct support will be much more useful than comprising government interference in food markets** with all their negative consequences for the trust of market participants.
- It might sound counter-intuitive, but even though surrounded by agriculture, the **rural poor are vulnerable to food price increases**. As the costs of transporting food to rural areas are rather high, in the case of a food deficit, real prices for staple food products (i.e. taking into consideration lower rural incomes) are much higher in remote areas than in urban areas. To ensure that rural residents can buy food at affordable prices, **investments into rural infrastructure** are important as medium-term strategy to improve food security and alleviate poverty risks.
- Centrally co-ordinated aid for poor Ukrainian regions should not lead to permanent money transfers triggering **disincentive effects** for local economic and fiscal policy in the beneficiary regions.
- Having children has developed into a poverty risk! This can have far-reaching consequences for Ukraine's future. It emphasizes the importance of food relief programs with a **focus on vulnerable children**, for example, school mid-day meal programs.

V.G., Lector A.K.

January 2004

Appendix. Part A.

Table 1. Distribution of the households according to socio-economic characteristics of the head, % of households

	Urban			Rural	
	Poor	Non-poor	Total	Poor	Non-poor
Age group					
0-20	14.3	85.7	100.0	**100.0**	**0.0**
21-30	**68.5**	**31.5**	100.0	40.0	60.0
31-40	39.5	60.5	100.0	36.5	63.5
41-55	31.3	68.7	100.0	27.6	72.4
over 55	27.4	72.6	100.0	21.4	78.6
Employment status				*100*	*100*
- hired worker	28.4	71.6	100.0	23.5	76.5
- self-employed	35.3	64.7	100.0	16.3	83.7
- pensioner	28.5	71.5	100.0	22.4	77.6
- unemployed	48.5	51.5	100.0	39.4	60.6
Number of family members					
1	12.0	88.0	100.0	11.9	88.1
2	22.0	78.0	100.0	16.3	83.7
3	32.5	67.5	100.0	36.7	63.3
4 – 5	**51.1**	**48.9**	100.0	42.0	58.0
over 5	**75.6**	**24.4**	100.0	**63.2**	**36.8**
Number of children under 16					
0	22.6	77.4	100.0	16.9	83.1
1	40.1	59.9	100.0	35.6	64.4
2 – 3	**60.2**	**39.8**	100.0	**50.7**	**49.3**
over 3	**100.0**	**0.0**	100.0	**72.1**	**27.9**
Educational attainment					
- primary education	34.7	65.3	100.0	25.8	74.2
- secondary education	35.2	64.8	100.0	27.5	72.3
- vocational training	32.4	67.6	100.0	26.1	73.9
- higher education	25.6	74.4	100.0	24.2	75.8
- complete higher	17.7	82.3	100.0	13.1	86.9
Number of land plots					
0	32.8	67.2	100.0	35.6	64.4
1	28.9	71.1	100.0	22.6	77.4
over 1	32.8	67.2	100.0	27.9	72.1
Ratio of workers to family-members					
0	24.4	75.6	100.0	20.0	80.0
1/5-1/4	**62.1**	**37.9**	100.0	48.8	51.2
1/3-1/2	36.1	63.9	100.0	28.5	71.5
2/5	**57.1**	**42.9**	100.0	45.2	54.8
1/1	11.2	88.8	100.0	8.9	91.1

Part B.

To estimate the impact of individual characteristics on poverty we used 2001 household survey data. In the sample there are 3335 observations for rural residents and 5570 for urban. All households are classified as poor (with per capita expenditures of less than UAH 163.31 per month) and non-poor. As explanatory variables we take the following characteristics of the household:

- the number of children under 16 in the household, CHILD;
- workers-to-family members ratio, WORKER;
- age of the household head, AGE;
- land entitlement (ha), LAND;
- educational attainment (years of schooling), EDUC;
- household size, SIZE;
- dummy variables equaling to 1 if: the head of the household is employed in agriculture (BRANCH), hired worker (HIRED), self-employed (SELF), pensioner (PENS), unemployed (UNEMPL) and has university degree (HEDUC) and zero otherwise.

To estimate the impact of these factors on poverty we employ Probit model. It is a binary model, where the dependent variable takes on only two values: 1 if the household is poor and 0 if it is not poor. The estimation results are presented in the table below.

Table 2. Estimation results

Characteristic	Urban			Rural		
	Coefficient	Standard error	p-value	Coefficient	Standard error	p-value
CHILD	0.168	0.04	0.00	0.13	0.05	0.01
WORKER	-0.430	0.08	0.00	-0.50	0.11	0.00
AGE	-0.001	0.00	0.59	-0.01	0.00	0.06
LAND	-0.000	0.00	0.19	-0.00	0.00	0.18
EDUC	-0.038	0.01	0.00	-0.05	0.01	0.00
SIZE	0.331	0.02	0.00	0.28	0.02	0.00
BRANCH	-	-	-	0.16	0.08	0.06
HIRED	0.096	0.07	0.17	-0.18	0.09	0.04
SELF	0.151	0.17	0.38	-0.68	0.29	0.02
PENS	0.135	0.09	0.14	-0.18	0.11	0.09
UNEMPL	0.529	0.08	0.00	0.48	0.10	0.07
HEDUC	-0.286	0.06	0.00	-0.03	0.11	0.79
Pseudo R^2	0.1324			0.1321		

Probit model estimates the probability of a positive outcome, which is in our case the probability of being poor. The estimation is performed using econometric package STATA.

A positive (negative) value of the coefficient indicates that a unit increase in the value of the variable increases (reduces) the probability of poverty. For instance,

0.168 on CHILD variable means, that probability of poverty increases if the number of children increases by 1; -0.43 on WORKER implies that probability of poverty decreases if the worker-to-family members ratio increases by 0.1. P-values show the significance of the coefficient. Usually 0.1 is taken as a critical value: if p-value is greater than 0.1 then the effect of a variable is insignificant, if it is less than 0.1 – the effect is significant. For example, the p-value of 0.00 of the coefficient on the CHILD variable in urban areas implies that the number of children is a significant determinant of poverty, while a p-value 0.59 on AGE variable implies that the age of the household head is not a significant factor for poverty.

The marginal effect (that is, by how much the probability of being poor increases when a factor increases by a unit, or in the case of a dummy variable when the variable changes from 0 to 1) can be found by multiplying the corresponding coefficient by the value of the normal density function estimated at means. For example, the value of the normal density function is 0.4. Then the marginal effect of a CHILD variable is 0.05 [0.4*0.13]. Marginal effects can also be computed using an econometric program.