

**Report No. 30294-KZ**

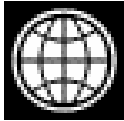
**KAZAKHSTAN**

**DIMENSIONS OF POVERTY IN KAZAKHSTAN**

**(In Two Volumes) Volume II: Profile of Living Standards in Kazakhstan in 2002**

**November 9, 2004**

**Poverty Reduction and Economic Management Unit  
Europe and Central Asia Region**



**Document of the World Bank**

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## CURRENCY AND EQUIVALENT UNITS

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 Currency Unit = Tenge (KZT)  
 US\$1.00 = 150.50 KZT

### Acronyms and Abbreviations

ADB	Asian Development Bank
CEE	Central and Eastern Europe
CIS	Commonwealth of Independent States
ECA	Europe and Central Asia Region
GDP	Gross Domestic Product
GNI	Gross National Income
ha	Hectare
HBS	Household Budget Survey
KPA	Kazakhstan Poverty Assessment
KZT	Kazakhstan tenge
LFS	Labor Force Survey
MI	Million
NFRK	National Fund of the Republic of Kazakhstan
NSA	National Statistical Agency of Kazakhstan
PAYG	Pay-as-you-go
PPP	Purchasing Power Parity
SOE	State-owned enterprise
TSA	Targeted Social Assistance Program
UNDP	United Nations Development Programme
WB	World Bank
WDI	World Development Indicators

#### Fiscal Year

January 1 to December 31

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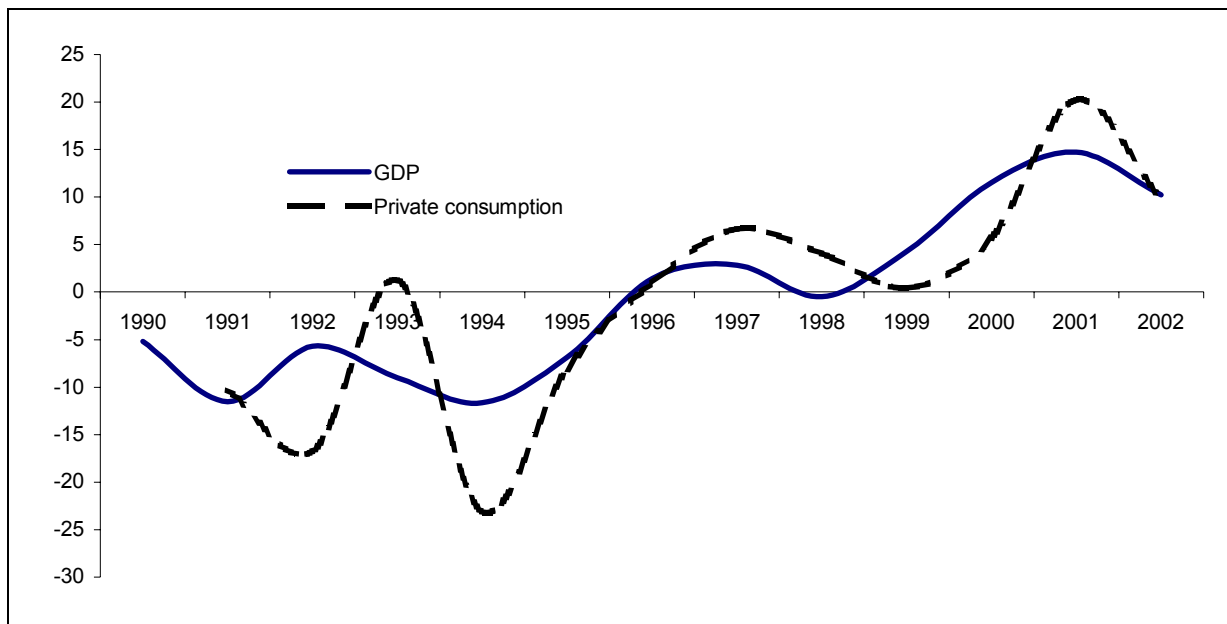


## A. INTRODUCTION

1.1. Measuring the living standards of the population and identifying the economically disadvantaged groups are important tools for policy-makers who wish to ensure that their anti-poverty programs and policies are well targeted. The purpose of this volume is to provide information on the general living standards of the population of Kazakhstan, focusing on the poor. The analysis is based on data from the Kazakhstan Household Budget Survey (HBS) 2002 carried out by the National Statistical Agency of Kazakhstan. For comparative purposes, the Household Budget Survey for 2001 was also analyzed. While the results differed slightly in some areas, the main thrust of the conclusions below hold for both 2001 and 2002. Changes in patterns between 2001 and 2002 are discussed in Annex 9 of this volume.

1.2. Since the end of the 1990s, Kazakhstan has experienced substantial growth in per capita output as well as in private consumption (Figure 1). However, this growth came after several years of notable economic contraction and large year-to-year swings, similar to patterns observed in other transition economies. In the beginning of the 1990s, incomes declined dramatically and inflation, which was in four digits in 1994, led to substantial declines in the value of household savings. By 1996, growth finally started to resume. However, although output growth averaged 7 percent between 1996 and 2002, private consumption was still only at 75 percent of 1990 levels at the end of the period. Kazakhstan's protracted economic downturn, subsequent rapid growth, and high volatility, especially in private consumption, is likely to have affected both the number and the characteristics of the poor. Hence, it is important to evaluate the living standards of the population, focusing on identifying and understanding the socio-economic characteristics of the poorest in the population. How many are they, and where do they live? What do their households look like? What do they consume? What do they live from, and do they have access to public goods and services? These are some of the questions that will be addressed below.

**Figure 1: Kazakhstan Real Growth Rates in Per Capita GDP and Private Consumption, 1990-2002**



Source: World Bank SIMA database.

1.3. Poverty is a multidimensional concept encompassing various aspects of lack of well-being – lack of food and shelter, ill health, illiteracy, etc – and no one indicator captures all the facets of poverty.

Following international standards, this paper uses insufficient levels of consumption expenditure as the definition of poverty. Using data from the Household Budget Survey 2002 (see Annex 1), the poverty statistics here are based on comparison of a welfare measure against a poverty line, which sets a minimum living standard. The expenditure aggregate (or welfare measure) includes actual household expenditures on food, utilities, health, education and other non-food items and, additionally, estimates of the value of durables, gifts and home-produced food (see Annex 2). The individual welfare level is obtained by dividing the household total consumption by the number of persons in the household. Individuals below this minimum standard of living (poverty line) are deemed to be poor which gives an absolute measure of poverty (see Annex 4 for a detailed description of the method as applied to Kazakhstan). The poverty line estimated for this report was computed using a cost-of-basic-needs approach. The first step in this approach is to estimate the cost of buying a minimum number of calories per person per day, based on the food consumption patterns of a reference population. A minimum amount for non-food expenditures is then added to this food poverty line to construct a total poverty line.<sup>1</sup>

1.4. An important part of this report centers around three poverty measures: the incidence of poverty (also called the headcount index), the depth of poverty, and the severity of poverty. The incidence of poverty is the percentage share of poor in the total population. While this is a useful concept, it has recognized weaknesses for analytical and policy purposes, and additional considerations need to be made. First, the percent of people with expenditures below the poverty line does not give a sense of the depth of poverty, because it does not differentiate between the very poor and those just below the poverty line. Thus, this report will also describe the depth and severity of poverty by considering how far the poor are living below a minimum standard (see Box 1). It is moreover important to consider the robustness of a chosen poverty line and whether the profile of poverty (the ranking of groups in terms of poverty rates) changes given different poverty lines

1.5. There are also numerous non-monetary dimensions of poverty, such as access to health and education services, which are important to consider in providing a description of living standards. The non-monetary measures of living standards are important in their own right, but also tend to reinforce monetary inequalities: people who do not consume enough food or other necessities also have less schooling, less access to health services, and so forth.

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<sup>1</sup> This approach to measuring the number of poor by comparing consumption/expenditure to a subsistence minimum is somewhat similar to the official methodology of the government. The differences in the methods include: establishing a food basket from a reference population in the HBS (done here) versus a food basket that is not necessarily representative of any identifiable reference population's eating patterns; measuring adult equivalence by adjusting total household expenditure for household composition; and, perhaps other nuances but for which we do not have documentation to identify. It is important to note that the poverty statistics in this report are not comparable with the levels in other reports due to these differences. Nonetheless, while the levels of poverty are not comparable, the ranking of households by characteristics to identify the poorest households may be more comparable.

### **Box 1: Foster, Greer and Thorbecke Poverty Measures**

The three poverty measures that are used widely in this report are members of a class of decomposable poverty measures proposed by Foster, Greer and Thorbecke (1984):

**P0, the head count ratio**, measures the prevalence of poverty, giving the percentage of the population whose consumption falls below the poverty line. P0 conveys information on how many people are poor, but does not say how poor they are. If the poor became better off, but still remained below the poverty line, P0 would misleadingly indicate that poverty had not changed.

**P1, the poverty gap index**, measures the depth of poverty. Thus, it gives the average poverty shortfall in the population - how far below the poverty line the consumption of the poor falls - as a proportion of the poverty line (the non-poor have zero shortfall). However, neither P1 nor P0 can give information about the level of inequality among the poor. For example, a transfer from a poor person just below the poverty line to an extremely poor person would not change the poverty gap index.

**P1, the poverty severity index**, measures the severity of poverty. It gives the degree of inequality in distribution below the poverty line, giving greater weight to households at the bottom of the consumption distribution.

Source: Annex 5.

## **B. INCIDENCE AND DISTRIBUTION OF POVERTY**

1.6. In 2002, about 15 percent of the population of Kazakhstan were living in poverty (see Table 1). This indicates that about one in six people in the population had consumption expenditures below the level of the poverty line.<sup>2</sup> The poverty incidence was highest in rural areas (at 22 percent) and lowest in large cities, where about 7 percent of the population had expenditures below the poverty line. Overall, this marked an improvement compared to 2001 when poverty was at 18 percent, nationally, and 23 percent in rural areas (see Annex 1).

1.7. Statistical estimates obtained on the basis of any sample survey have only a certain degree of precision. In addition to the calculated poverty rate, Table 1 also presents a 95% confidence interval for each point estimate. While the confidence interval for poverty rate for medium and small cities overlap, the confidence interval for the poverty rate in the rural areas and large cities remain the largest and smallest respectively.

1.8. Turning to the depth of poverty, the average gap between the expenditures of the poor and the poverty line is 3 percentage points. Thus, among the poor, the average consumption shortfall is about a fifth below the poverty line.<sup>3</sup> The depth of poverty is largest in rural areas, and smallest in large cities. The same pattern holds for the poverty severity index. In other words, rural areas have a higher share of people living below the poverty line, the rural poor are generally poorer (meaning further away from the poverty line) than elsewhere, and there is more inequality among the poor.

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<sup>2</sup> The poverty line constructed for this report is approximately equal to \$3.26 per person per day in 1996 prices, converted to US dollars using purchasing power parity.

<sup>3</sup> The expenditure shortfall is calculated as  $[(\text{Poverty gap})/(\text{Poverty headcount})] \times 100$ .

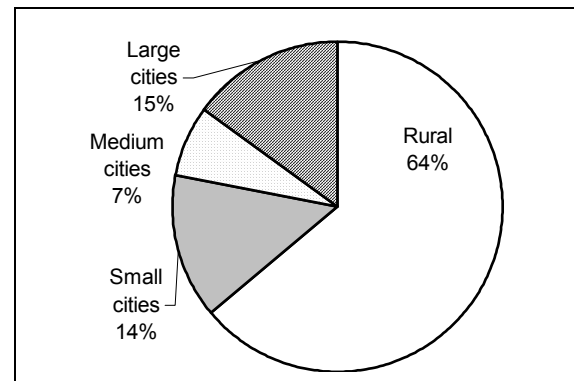
**Table 1: Poverty Measures for Kazakhstan**

Region	Head Count Index (P0)		Poverty Gap (P1)		Poverty Severity (P2)	
	Mean	C.I 4/	Mean	C.I	Mean	C.I
National	15.4	14.5-16.2	3.1	2.9-3.4	1.0	0.9-1.1
Rural	21.7	20.2-23.2	4.5	4.1-4.9	1.4	1.3-1.6
Urban	10.2	9.2-11.1	2.0	1.8-2.3	0.6	0.5-0.8
- Small cities 1/	15.8	13.5-18.2	3.4	2.8-4.1	1.2	0.8-1.5
- Medium cities 2/	16.3	13.1-19.5	2.8	2.1-3.5	0.8	0.5-1.1
- Large cities 3/	6.7	5.8-7.6	1.3	1.1-1.5	0.4	0.3-0.5

1. Less than 10,000 households. 2. Between 10 –30,000 households. 3. Exceeding 30,000 households. 4. 95% confidence interval. Source: KHBS 2002.

1.9. Given the uneven rates of poverty throughout the country, it is important to look at the distribution of the poor at a regional level. Figure 2 confirms that the majority of the poor, two thirds in fact, reside in rural areas. Large cities account for 15 percent of the poor and small cities account for 14 percent. Medium sized cities have the smallest fraction of the population of poor, seven percent each.

1.10. As can be seen in Table 2, poverty rates also vary greatly between oblasts, and within oblasts, by urban and rural status. The poorest oblasts are Kyzylorda, South-Kazakhstan and Jambyl in the south, Atyrau and Mangystau in the west, and Kostanay in the north. Together, these five oblasts account for 53 percent of all the poor, but only 37 percent of the population. In some oblasts, including Mangystau, Kyzylorda, Kostanay, and West and East Kazakhstan, there are also noticeable differences between poverty rates in rural and urban areas. The most extreme example is Mangystau, where three out of four people living in rural areas are poor, while only one in ten living in urban areas is poor. As the sample size is small for some oblasts, the results need to be interpreted with caution, however.

**Figure 2. Distribution of Poor by Area**

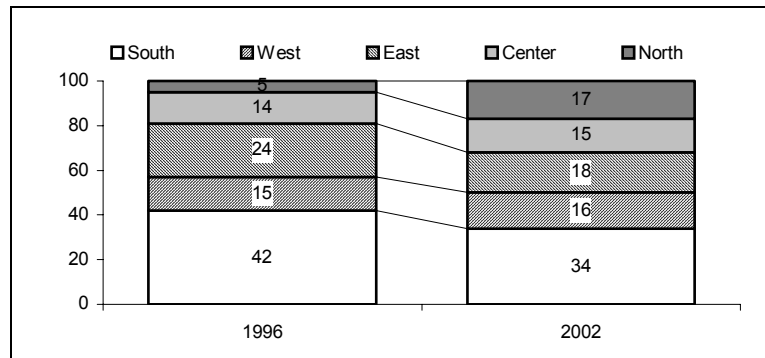
Source: KHBS 2002.

**Table 2: Poverty Incidence, by Oblast**

Oblast (region) 1/	Headcount index (P0)			Share of all poor	Share of total population
	National	Rural	Urban		
Akmola (C)	10.0	12.5	6.9	3.5	5.4
Aktobe (W)	13.8	25.5	4.6	3.9	4.3
Almaty (E)	11.3	13.3	6.3	8.0	10.9
Atyrau <sup>2</sup> (W)	23.3	27.1	20.8	4.9	3.2
West-Kazakhstan (W)	11.7	16.5	3.8	3.1	4.1
Jambyl (S)	23.0	24.3	21.4	10.2	6.9
Karaganda (C)	16.5	32.7	12.7	11.1	10.3
Kostanay (N)	23.0	32.5	14.4	10.3	6.9
Kyzylorda <sup>2</sup> (S)	32.2	49.2	20.2	8.3	4.0
Mangystau <sup>2</sup> (W)	23.5	76.1	8.8	3.8	2.5
South-Kazakhstan (S)	18.0	18.6	17.0	15.9	13.6
Pavlodar (N)	12.0	22.1	5.1	4.0	5.1
North-Kazakhstan (N)	9.2	13.5	2.4	2.7	4.5
East-Kazakhstan (E)	15.2	21.3	10.6	9.5	9.6
Astana (city) <sup>2</sup> (C)	2.9	n/a	2.9	0.4	1.9
Almaty (city) (E)	1.6	n/a	1.6	0.7	7.0
<b>National</b>	<b>15.4</b>	<b>21.7</b>	<b>10.2</b>	<b>100.0</b>	<b>100.0</b>

1. Regional assignments are made in order to be consistent with 1996 KLSS results: C=center, N=north, W=west, E=east, S=south. Due to subsequent changes in the country administrative structure, Akmola oblast in 2001 includes both Akmola and Kokshetau oblasts (the latter was included under Northern region in 1996 KLSS). 2. Indicates oblasts with fewer than 400 households in the sample  
Source: KHBS, 2002.

1.11. In 2002, about one in three poor people lived in the South of the country. The next largest contribution was from the areas in the East, where one-quarter of the poor resided. The patterns of regional contribution to national poverty in 2002 are similar to those estimated in the 1996 KLSS and suggest that reducing poverty in the South and East of the country will lead to reducing poverty nation-wide. However, it is worth noting that according to the 2002 data, many more poor people lived in the North, than the 1996 data suggested.<sup>4</sup>

**Figure 3: Regional 1/ Contribution to National Poverty: 1996 and 2002**

1. Regional assignments are made in order to be consistent with 1996 KLSS results. Source: KHBS 2002.

1.12. The fact that poverty is not very deep (see Table 1) implies that a fairly important number of poor are living close to the poverty line. Hence, we can expect that changing the poverty line even by a small amount could significantly change the share of population in poverty. The effect on the poverty rate from

<sup>4</sup> The differences may arise from other factors. As is noted in Footnote 1 and in Annex 1, the levels of poverty estimated from the 1996 KLSS are not directly comparable to the HBS 2001 results due to differences in questionnaire design, as well as differences in the poverty lines used. However, the patterns of poverty could be compared given that the methodologies are largely consistent with respect to ranking households.

changes in the poverty line is presented in Table 3. A decrease in the poverty line by ten percent lowers the poverty rate by about 5 percentage points; a ten percent increase raises the national poverty rate by about the same amount. Variations in the poverty line, however, do not affect the broad picture of urban-rural and regional differences in poverty. Plotting the cumulative distribution functions of expenditures for sub-groups, which shows the share of population that is poor for any given poverty line, confirms that the rankings patterns are maintained (see Annex 10). Although there are differences in detail, the broad thrust of the findings is maintained. The population in rural areas is poorer than in urban areas; the oblasts in the south remain the poorest.

**Table 3: Sensitivity Analysis of Poverty Rate (P0) to Change in Poverty Line**

Change in poverty line	National	Rural	Poverty rate		
			Small cities	Medium cities	Large cities
Decrease by 10%	10.7	15.3	11.4	10.3	4.6
Decrease by 5%	13.0	18.4	13.9	13.7	5.5
<i>Memo: P0 with no change in poverty line</i>	<i>15.4</i>	<i>21.7</i>	<i>15.8</i>	<i>16.3</i>	<i>6.7</i>
Increase by 5%	18.0	25.2	18.5	19.5	7.9
Increase by 10%	20.6	28.5	20.9	22.5	9.4

Source: KHBS 2002

### C. DISTRIBUTION AND INEQUALITY

1.13. The level of poverty in one country depends not only on the level of income but also on how that income (or those expenditures) are distributed among the population. Countries with high inequality levels therefore tend to have higher levels of poverty. Indicators to capture the distribution of expenditures and inequality are presented in Tables 4 and 5. Table 4 shows that the poorest 40 percent of the population account for about one-fifth of total expenditures whereas the richest 10 percent control about one-fifth.

**Table 4: Share of Real Total Expenditures by Expenditure Decile**

Expenditure Decile	Percentage of Total	Cumulative Percentage of Total
1	3.7	3.7
2	5.2	8.9
3	6.2	15.1
4	7.2	22.3
5	8.2	30.5
6	9.3	39.9
7	10.7	50.5
8	12.4	62.9
9	14.8	77.7
10	22.3	100.0

Source: KHBS 2002

1.14. The Gini coefficient for expenditure in the whole of Kazakhstan is about .28, and .28 and .26 for urban and rural areas respectively (Table 5). Expenditures are most unequally distributed in Kostanay and

Aktobe, followed by East Kazakhstan. Within oblasts, inequality is generally higher in urban than rural areas. However, in Aktobe, Kostanay, and North Kazakhstan, expenditures are decidedly worse distributed in rural areas than in urban areas.

**Table 5: Inequality Measure: Gini Coefficient \***

<b>Oblast</b>	<b>National</b>	<b>Rural</b>	<b>Urban</b>
Akmola (C)	0.26	0.24	0.27
Aktobe (W)	0.31	0.35	0.25
Almaty (E)	0.24	0.24	0.24
Atyrau (W)	0.29	0.23	0.30
West-Kazakhstan (W)	0.25	0.23	0.24
Jambyl (S)	0.25	0.22	0.27
Karaganda (C)	0.27	0.22	0.27
Kostanay (N)	0.31	0.32	0.27
Kyzylorda (S)	0.26	0.23	0.25
Mangystau (W)	0.29	0.15	0.27
South-Kazakhstan (S)	0.22	0.20	0.23
Pavlodar (N)	0.26	0.24	0.24
North-Kazakhstan (N)	0.24	0.25	0.20
East-Kazakhstan (E)	0.30	0.28	0.29
Astana (city) (C)	0.28	-	0.28
Almaty (city) (E)	0.24	-	0.24
<b>National</b>	<b>0.28</b>	<b>0.26</b>	<b>0.28</b>

\* Sample sizes can be quite small in some cells. Within oblasts inequality is based on nominal within-oblast consumption per capita. National inequality is based on real consumption per capita with deflating as described in Annex 3.  
Source: KHBS 2002.

#### **D. INTERNATIONAL COMPARISONS**

1.15. International comparisons of poverty rates should not be based on national absolute poverty lines, since different countries set different subsistence minimum standards. Rather, comparisons tend to be made using a fixed poverty line, for example the well-known “\$1 per day” poverty estimates. In this approach, the poverty line of \$1.08 per day is converted into local current units, using the purchasing power parity (PPP) conversion factor.<sup>5</sup> This conversion is defined as the number of units of a country’s currency required to purchase the same amount of goods and services in that country as compared with another. The most recent PPP conversion factors are for 1996. This conversion factor is updated using the CPI inflation rate for Kazakhstan from 1996 to 2002.

1.16. Table 6 shows the international lines converted into tenge and the corresponding poverty rates. Table 7 presents comparisons of poverty incidence based on \$4.30 per day for a select group of countries in the region. Overall, for this set of countries, the share of the population that are poor by the \$4.30 per

<sup>5</sup> The bench mark international poverty line of \$1.075 per day was chosen because it roughly characterized the absolute poverty line found in the poorest 10 countries. For many countries, such as Kazakhstan, this poverty line is considered to be too low to adequately indicate a minimum level of living standard. It was thus raised by a factor of two and four, hence the reference \$1.08, \$2.15 and \$4.30 per day as international poverty lines.

day standard is high. In addition, the distribution of expenditures as measured by the Gini coefficient is very unequal by international standards. Kazakhstan, however, had the second lowest share of the population living below \$4.30 per day, next to Turkmenistan, about one in three people, and its inequality measure was the lowest of all. The lower poverty rates compared to other countries in the region may be due to both the higher income level of Kazakhstan (in PPP terms, the only richer country is Russia) and the lower degree of inequality.

**Table 6: Poverty Rates in 2002 Using International Lines (percent) 1/**

Poverty line in \$ PPP	Poverty line (Tenge/day/capita.)	Poverty rate (%)
\$1.075/day/cap.	38.1	0.2
\$2.15/day/cap.	76.1	3.5
\$4.30/day/cap.	152.3	35.1

1. The 1996 PPP conversion factor is 19.89. The value of the poverty lines in local currency is calculated by applying the conversion factor with adjustment for inflation between the survey year, 2001, and 1996 (1.68 from *SIMA* IMF database). The expenditure aggregate excludes housing valuation.

**Table 7: Absolute Poverty Rates and GDP Growth in Selected ECA Countries 1/**

	Percent \$4.30/day	Gini	Income share held by poorest 10 percent	Average real GDP growth 1995-2002	GNI per capita (PPP)
Armenia (1999)	86.2	0.32	2.6	6.9	3060
Azerbaijan (1999)	64.2	n/a	3.1	5.5	2920
Georgia (1999)	54.2	0.37	2.2	5.3	2210
<b>Kazakhstan (2002)</b>	<b>35.1</b>	<b>0.28</b>	<b>3.7</b>	<b>3.5</b>	<b>5480</b>
Kyrgyz Republic (1998)	84.1	0.42	3.9	3.5	1520
Russia (1999)	50.3	0.47	1.8	1.5	7820
Tajikistan (1999)	95.8	0.32	3.2	1.2	900
Turkmenistan (1998)	34.4	n/a	2.6	6.5	4570
Uzbekistan	n/a	n/a	3.6	3.4	1590

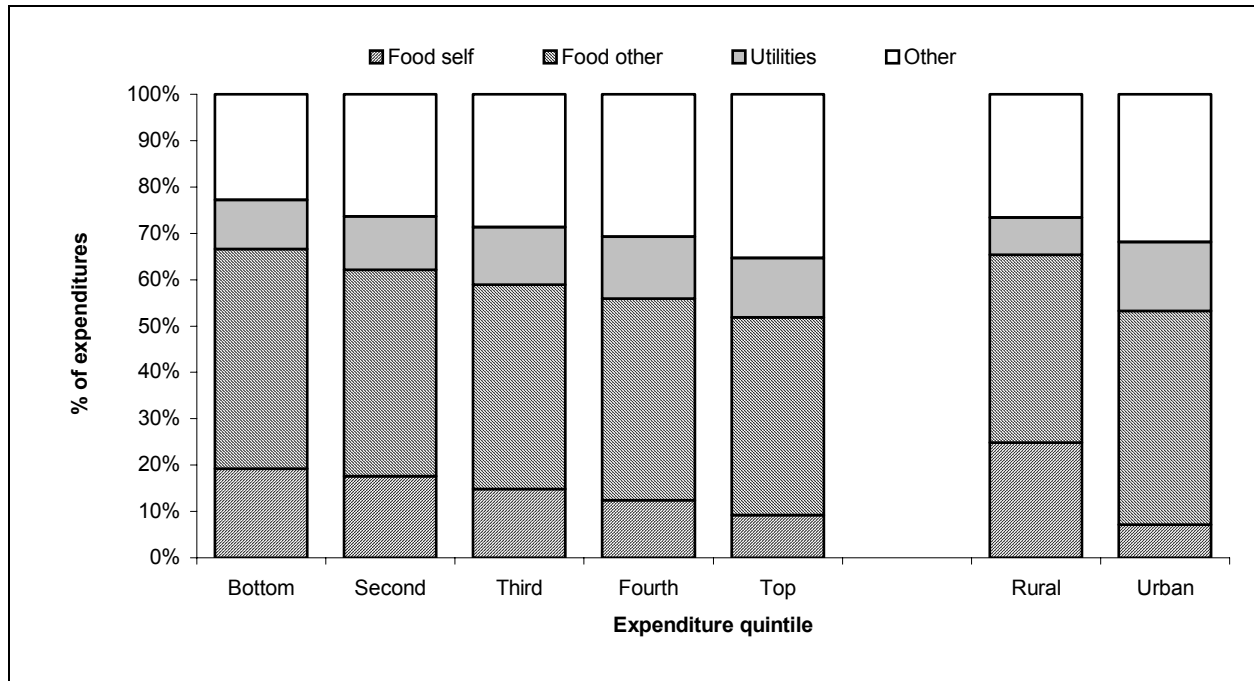
1. Survey year used to compute poverty rate and Gini coefficient is in parentheses. Source: [Making Transition Work for Everyone](#), World Bank (2000), and World Bank *SIMA* data.

## E. CONSUMPTION PATTERNS

1.17. The consumption patterns of the poor are expected to differ considerably from those of other groups: by definition, poor households are constrained to purchasing “basic necessities”. The aggregate shares of the consumption components in total household consumption per capita are reported in Figure 4 (see Annex 2 Table A2.1 for more detail on the components of each category). The share of food consumption (which includes beverage) in total household consumption exceeds 50 percent for all groups. As would be expected, poor households spend proportionally more on food (a basic necessity) and the share of food in consumption decreases among the wealthier households. Food share is further subdivided into two sources: home-produced or purchased, received as gift or eaten prepared outside the home. In poorer households, home-produced food is a slightly larger share of total food expenditure (28 percent of total food for the poorest quintile compared to 21 percent among the wealthiest quintile). Utilities represent another important expenditure for all households, being the second largest component of household expenditure. There are also marked differences in consumption patterns between rural and

urban areas. As expected, self produced food accounts for a much larger share of all food consumption in rural than in urban areas (25 vs. 7 percent). Overall, rural households spend relatively more on food than urban households, most likely because most of the poor still live in rural areas. Rural households also spend relatively less on utilities and other housing services. As will be seen below, the feeble spending on this category for the poor reflects the fact that they have much less access to, or cannot afford, utilities like central heating, water, sewerage and waste disposal, electricity, telephone etc..

**Figure 4: Structure of Household Expenditure (Percent)**



The expenditure categories in the figure refer to: (i) Self produced food (ii) other food (purchased, as gift or eaten out) (iii) utilities and other housing services, and (iv) other expenditures, comprising : Clothes and shoes, Household goods, Education, Health care, Transportation services, Other, less frequent expenditures, Transfers: Goods received, and Household durables. See Annex 2 Table A2.1 for more detail on the components of each category.

## F. HOUSING CHARACTERISTICS

1.18. Housing conditions differ greatly between the poor and the more affluent (Table 9). So, for example, do only 12 percent of the poorest quintile have access to central heating. For the top quintile, however, 60 percent have access to central heating. The pattern is similar for gas, telephone, sewerage and bath or shower. Moreover, only 22 percent of the poorest have access to water supply, compared to 71 percent of the richest in the top quintile. The only exception is electricity coverage, which is almost complete irrespective of expenditure level. Overall, this pattern explains well the limited expenditures of the poor on utilities noted above. In fact, access to infrastructure appears to be one very important dimension of poverty in Kazakhstan.

## G. HOUSEHOLD CHARACTERISTICS

1.19. Poor households differ from less poor households in several aspects of households composition and the characteristics of the household head. For example, they tend to be larger and have more and younger children and thus more dependents. Table 8 presents some household characteristics, for all

households, by households headed by females versus males, and for the poorest and richest quintiles.<sup>6</sup> These statistics show that:

- The poorest of the population reside in larger households. People in households in the bottom quintile have 6.4 household members while those in the top group have just above 3 household members on average. A large part of this difference is driven by a higher average number of children and prime-age adults in poorer households, whereas the number of elderly is not different across quintiles. In the bottom quintile, the number of children among the poor is 2.7 per household compared to .8 among those in the richest households. Families with young children are also disproportionately represented in the lower quintiles. Almost half of the population in the lowest quintile has at least one small child in the household, whereas only 13 percent of the wealthiest have small children.<sup>7</sup> Rural households have on average more members and children than urban households.
- As a consequence, standard dependency ratios are also lower for the wealthiest in Kazakhstan. The dependency ratio indicates the number of household members who depend on prime-age adults (16-59). Among households in the top quintile, on average, each prime-age adult resides with 0.7 persons below 16 or above 59; in the lowest quintile this ratio is 1.2. In other words, poor households have relatively less income generating members and more net consumers, than other households – which of course is an important factor in reducing per capita consumption.
- Households with no prime-age adults (i.e. those with elderly) are less likely to be in the poorest group, suggesting that life cycle factors may render some households more vulnerable to falling into poverty. Less than one-percent of the bottom quintile consist of this type of household, compared to 15 percent for the top quintile. This may in part be explained by sources of income for the elderly (mainly pension income), a subject which will be revisited below.
- The lower prevalence of female-headed households among the poorest quintiles appears to be related to demographic and location factors. Female-headed households tend to be smaller than male-headed households. Second, female-heads of households are older and less likely to have young children. Finally, female-headed households are less prevalent in rural areas and more prevalent in large cities, where poverty rates are lower.<sup>8</sup>

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<sup>6</sup> These statistics are weighted to be representative for the population rather than representative of households. This is an important consideration since the population weighting changes the statistics. For example, the average size of *households* (with the household weight) is 3.6, which is identical to the average household size in the Kazakhstan Demographic and Health Survey conducted in 1999. The average household size *for the population* (applying the population weight) is 4.7.

<sup>7</sup> Although people in households with young children are more likely to be poor, the extent of malnourishment in Kazakhstan appears to be limited. According to the Kazakhstan Demographic and Health Survey conducted in 1999, two percent of children under five years were moderately or severely wasted (having weight-for-height below international standards). Three percent of children were severely stunted (having lower height-for-age).

<sup>8</sup> Thirty seven percent of female household heads are widowed, 20 percent are divorced and seven percent have never been married. Thus, about one-third of all female household heads are, in fact, married, and for almost all of these women, their husband does reside in the household. In the KHBS, household headship was identified by the households and not by the interviewer.

**Table 8: Household Characteristics of Population, by Bottom and Top Expenditure Quintile and by Female/Male Headship**

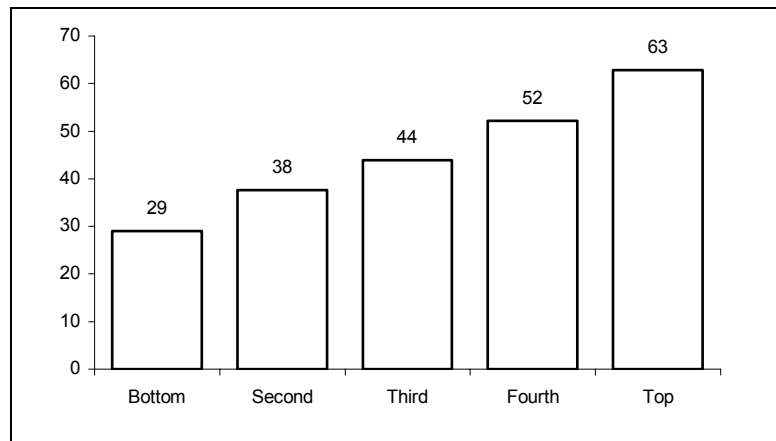
Household characteristics	All households		Female-headed households		Male-headed Households:	
	Bottom quintile	Top quintile	Bottom quintile	Top quintile	Bottom quintile	Top quintile
Household size	6.4	3.2	5.8	2.9	6.7	3.6
Headed by females (%)	33.1	52.5				
Age of household head	49.0	49.9	51.4	50.7	47.9	49.2
Average number of children 1/	2.7	0.8	2.4	0.7	2.8	0.9
Average number of prime-age adults 2/	3.3	1.9	2.9	1.7	3.5	2.2
Average number of elderly 3/	0.5	0.5	0.5	0.5	0.4	0.5
Household with no prime-age adult (%) 2/	0.4	14.8	0.8	18.1	0.2	11.2
Dependency ratio among households with any prime-age adult 2/	1.2	0.7	1.3	0.7	1.2	0.6
Household with children <6 years (%)	46.6	13	44.3	10.6	47.7	15.7

1. 0-18 years. 2. 18-53 years for women and 18-63 for men. 3. 54+ years for women and 64+ years for men. Source: KHBS 2002.

## H. ACCESS TO EDUCATION AND HEALTH

1.20. Human capital – broadly defined here by education levels and health status - increases opportunities to find employment and receive higher earnings in the labor market, and, in the case of health, increases well-being overall as well as the capacity to work. The opportunity to access education and health is therefore key to escaping poverty.

1.21. Overall levels of education in Kazakhstan are quite high, reflecting historically high levels of investment in education, and almost no prime-age adults have never attended school. Nevertheless, consistent with international experience, education levels are lower in poorer households, although the discrepancy between the poor and the non-poor is perhaps not as important as in some other countries. Individuals in wealthier households are more likely to have attended secondary schooling or beyond, compared to the population in the poorest quintile (figure 5). Only 3 percent of the prime age adults in the poorest quintile have higher education, compared to 25 percent for the top quintile.

**Figure 5: Percentage of Prime Age Adults with Secondary Schooling, by expenditure Decile 1/**

1. People aged 16-59 with at least general secondary or secondary vocational training. Source: KHBS 2002

1.22. Table 9 reports the distance to the nearest school. Generally, people in richer households are closer to schools than poorer households. The differences are not very important, however: 75 percent of households in the poorest quintile have a school less than 20 minutes away, compared to 82 percent for the richest quintile. The differences are also quite small between rural and urban areas.

**Table 9: Distance to Nearest School of Population (Percent)**

Distance	Expenditure quintile					Region		Total
	Bottom	Second	Third	Fourth	Top	Rural	Urban	
Less than 10 minutes	25.4	28.4	30.2	34.1	37.7	26.7	34.8	31.1
10-20 minutes	49.0	48.3	50.1	44.9	43.8	51.4	43.8	47.2
20-30 minutes	19.9	18.0	16.1	17.0	14.9	17.9	16.6	17.2
30-60 minutes	5.0	4.9	3.2	3.6	3.2	3.7	4.2	4.0
More than 1 hour	0.8	0.4	0.5	0.4	0.5	0.4	0.6	0.5
All	100	100	100	100	100	100	100	100

Source: KHBS 2002.

1.23. Regarding health facility access, similarly, the differences between poor and rich households are not very significant according to the household data. About one in five people in Kazakhstan live within 10 minutes of a medical facility, and 85 percent live less than 30 minutes away. Some 82 percent of the poorest quintile live less than 30 minutes away, compared to 86 percent of the top quintile. The data also suggest, somewhat surprisingly, that rural areas are well off regarding health access (Table 10).

**Table 10: Distance to Nearest Medical Facility of Population (Percent)**

Distance	Expenditure decile					Region		Total
	Bottom	Second	Third	Fourth	Top	Rural	Urban	
Less than 10 minutes	18.8	17.8	19.6	19.4	18.9	22.8	15.6	18.9
10-20 minutes	38.6	42.2	41.7	37.6	39.2	46.1	34.7	39.9
20-30 minutes	24.9	24.4	23.5	27.5	27.8	19.3	30.9	25.6
30-60 minutes	12.1	11.5	11.4	12.0	10.9	7.0	15.4	11.6
More than 1 hour	5.7	4.2	3.9	3.6	3.2	4.9	3.4	4.1
All	100	100	100	100	100	100	100	100

Source: KHBS 2002

## I. LABOR FORCE PARTICIPATION AND UNEMPLOYMENT

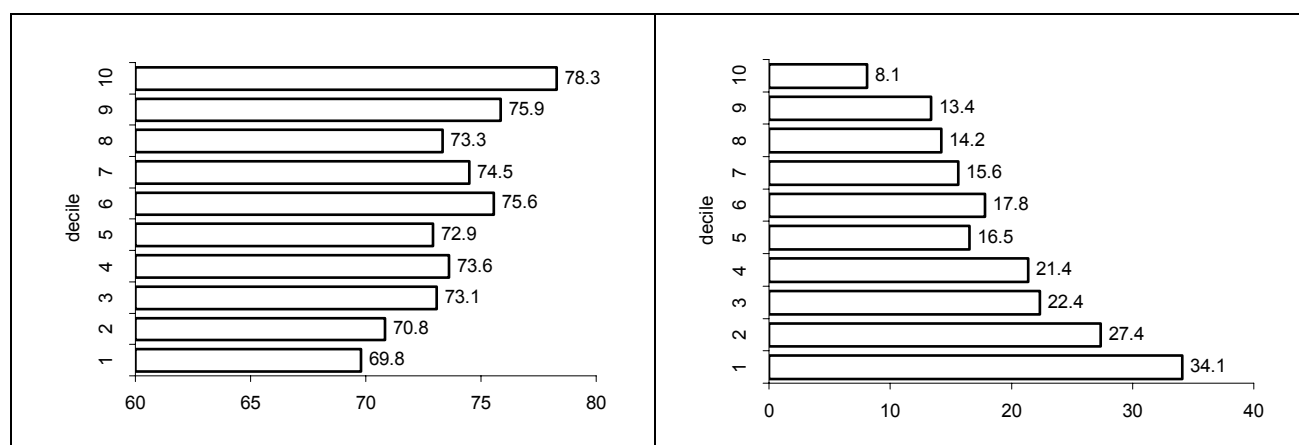
1.24. Whether and where people work provides crucial information for understanding poverty, since labor income tends to be the key source of revenue for the poor who lack other forms of income generating assets, and because employment in high productivity economic activities creates prospects for real income growth and higher consumption. However, the poor are less likely to be working or looking for work than the non-poor, if they do look for work they are less likely to encounter one, and when they do work, they are generally confined to low productivity, low wage jobs.

1.25. Below, the labor force participation rate is defined as the percent of prime-age adults (16-59 years) either employed or unemployed. The unemployed are defined as those without a job who searched for a job or initiated starting their own business in the last 4 weeks. The unemployment rate is the share of the labor force that is unemployed.<sup>9</sup> Since the HBS is a quarterly survey, there is quarterly labor force and unemployment information available. The information here is drawn from the first household interview conducted in 2002, but the levels of labor force participation and unemployment are not significantly different across the four quarters.

<sup>9</sup> The official unemployment rates (Annex 7) are computed from the Labor Force Survey. In order to compare the unemployment rate across the two surveys, it is necessary to evaluate the definitions used, since they may not be defined in the exact same manner.

1.26. The connection between employment and poverty is quite strong in Kazakhstan: the poor are at once less likely to be economically active, and more likely to be unemployed. As can be seen in figure\_ the poorest two deciles have the lowest participation rates of all expenditure groups. In Kazakhstan, as in other countries in the region, unemployment rates are also higher among poorer households (Figure 6). The poorest decile of prime-age adults have an unemployment rate of 34.1 percent, which is almost twice the national average (18 percent) and more than four times that of the top expenditure decile (8.1 percent). In rural areas, the poor and non-poor are less economically active than in urban areas (Table 11). Unemployment rates, however, are higher in urban areas, especially for the poor. Table 11 also confirms that labor participation is very low for the poor in some of the poorer oblasts, such as Atyrau, Jambyl, Kyzlorda and Mangystau (in the latter, it only reaches 58 percent). In these oblasts, the differences are also more pronounced regarding the level of economic activity for the poor and non-poor. The pattern is less clear for unemployment. In some of the poorest oblasts, such as Atyrau, Kyzlorda and Kostanay, the poor have unemployment rates of 40 percent or higher. However, this also holds for some oblasts with relatively low incidence of poverty (West Kazakhstan, Pavlodar and North Kazakhstan). In all oblasts, however, unemployment rates are significantly higher for the poor than for the non-poor.

**Figure 6: Labor Force Participation Rates, percent (left), and Unemployment Rates, percent (right), by Expenditure Decile**



Source: KHBS 2002.

**Table 11: Labor Force Participation and Unemployment Rates by Region and Poor/Non-Poor (%)**

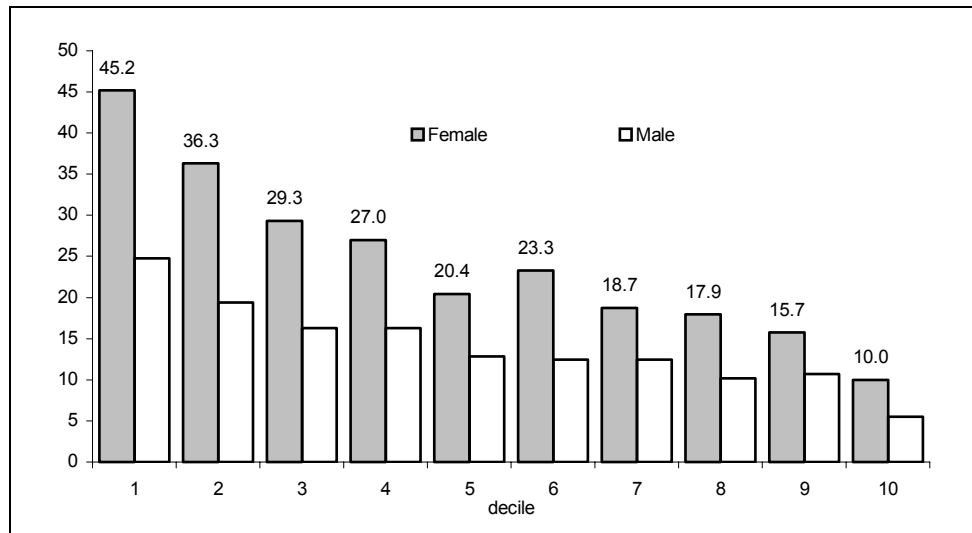
<b>Oblast</b>	<b>Participation Rates</b>		<b>Unemployment Rates</b>	
	<b>Poor</b>	<b>Non-Poor</b>	<b>Poor</b>	<b>Non-Poor</b>
Akmola	75.9	77.8	26.7	9.4
Aktobe	74.0	75.2	30.8	19.3
Almaty	69.5	69.5	18.9	14.0
Atyrau	61.2	73.9	54.0	29.8
West-Kazakhstan	75.0	72.2	40.3	17.5
Jambyl	66.5	75.8	28.8	27.8
Karaganda	72.2	76.3	27.6	17.7
Kostanay	71.2	78.6	39.9	18.3
Kyzylorda	63.5	66.9	41.4	27.8
Mangystau	57.6	65.9	34.5	12.9
South-Kazakhstan	69.6	72.8	18.6	9.8
Pavlodar	75.1	79.6	46.1	23.7
North-Kazakhstan	83.4	77.6	46.8	16.8
East-Kazakhstan	77.0	74.4	31.4	12.0
Astana (city)	71.2	72.9	0.0	3.2
Almaty (city)	69.0	77.4	25.0	15.3
Rural	67.9	72.3	28.3	15.3
Urban	74.5	76.2	35.8	16.9
National	70.4	74.6	31.3	16.2

\* Sample sizes can be quite small in some cells.

Source: KHBS 2002.

1.27. Figure 7 shows unemployment rates for men and women, for each expenditure decile. It is important to note that (i) unemployment rates are higher for women than for men, independently of expenditure level (ii) unemployment rates are highest for both men and women who belong to poorer households, and (iii) the gender gap – i.e. the discrepancy between female and male unemployment rates - is largest for the two poorest deciles. Thus, poor women are – by far - the group who has the hardest time finding a job in the labor market.

**Figure 7: Unemployment Rates (%), Men and Women, by Expenditure Decile**



Source: KHBS 2002

## J. INCOME SOURCES

1.28. The prevalence and share of household income by sources is presented in Tables 12-13.<sup>10</sup> Income Earned (salary and self-employment, agricultural production self-produced, agricultural revenue, additional earnings) is the most prevalent source of household income and the most important based on share of total income on average.<sup>11</sup> As seen in Table 12, almost all households in the poorest quintile, receive some form of income earned. Half of them also benefit from transfers, both private and public. Compared to the top quintiles, there are more poor households that receive income earned and public transfers, but less that receive pensions.

1.29. Regarding the income shares, households in the bottom quintile receive slightly less income earned as a share of their total income sources; about 59 percent, compared to 62 percent for the top quintile.

1.30. Pensions are the second main source of income: 41 percent of all households in have some pension income. But pensions account for less household income for the poorest households (which is consistent with the elderly being more prevalent among the wealthier households). About 27 percent of household income comes from pensions for the highest quintile compared to 16 percent for the households in the lowest quintile.

1.31. While private transfers are very common, its contribution to total household income is small, averaging about six percent of total income. Private transfers are more important among poor households

<sup>10</sup> Per capita income is, on average, about one-third lower than per capita consumption values, consistent with the assumption that income is difficult to measure due to multiple income sources, informal income activities, and seasonal income which makes it difficult to report income accurately.

<sup>11</sup> It is interesting to note that while about fifteen percent of households never reported a working household member in the four quarters of data, almost all of them do report at least some income related to remuneration for labor activities.

where it is nearly eight percent of total income (which is also consistent with the higher share of home-produced foods among household expenditures for the poor).

1.32. Social transfers are more prevalent among poorer households, however, and, in terms of share of total income, they are also more important for the lower quintiles. Altogether these number suggest that social programs are targeting the poorer households at least to some extent. About one in two households in the poorest quintile reported some income from public transfers. As a share of total income, these sources of income were as large as pension income for the poorest quintile; social transfers are about 16 percent of total income for the poorest households. Table 13 also shows that rural households (which tend to be poorer) receive more social transfers than urban ditto, but somewhat less private transfers.

**Table 12: Percent of Households with Income by Source, by Expenditure Quintile and Region**

Source of Income	<i>Expenditure Quintile</i>					<i>Region</i>		Total
	Bottom	Second	Third	Fourth	Top	Rural	Urban	
Income Earned	99.3	99.4	98.8	99.4	99.2	98.9	99.4	99.2
Pensions	30.6	34.0	37.9	43.4	43.1	40.0	38.6	39.1
Rental Income	0.7	0.6	1.4	2.3	3.0	1.0	2.3	1.8
Social Transfers	50.3	37.0	31.2	27.6	24.0	38.0	28.0	31.7
Private Transfers	52.2	49.4	47.1	49.3	51.0	48.3	50.6	49.8
Other Income	6.1	6.2	6.6	6.0	5.1	9.4	3.8	5.9

Source: KHBS 2002.

**Table 13: Share of Total Household Income by Source, by Expenditure Quintile and Region**

Source of Income	<i>Expenditure Quintile</i>					<i>Region</i>		Total
	Bottom	Second	Third	Fourth	Top	Rural	Urban	
Income Earned	63.2	67.5	66.6	62.8	65.1	65.0	65.0	65.0
Pensions	14.5	17.0	20.4	25.4	23.8	19.7	22.1	21.2
Rental Income	0.1	0.1	0.2	0.3	0.5	0.1	0.4	0.3
Social Transfers	15.8	9.4	6.7	5.6	3.6	9.4	5.8	7.2
Private Transfers	5.7	5.3	5.2	5.3	6.6	5.1	6.1	5.7
Other Income	0.7	0.7	0.8	0.7	0.4	0.7	0.6	0.6
Total	100	100	100	100	100	100	100	100

Source: KHBS 2002.

## K. CORRELATES OF POVERTY

1.33. The simple correlations that have been established between consumption poverty and the set of variables discussed above suggest that there are some key features which are linked to poverty – lack of education, many children, unemployment, etc.. However, it can sometimes be difficult to separate these factors: are people unable to reach a minimum standard of living because they lack education, because they are unemployed, or simply because they live in a specific region? Multivariate analysis permits to control for and compare the different impacts of these variables on consumption levels.

1.34. Table 14 presents the estimates of the relationship between per capita consumption and a key set of household characteristics, using OLS regression with robust standard errors. Generally, the set of key household characteristics are highly significant. Because the regression uses log of per capita consumption, the coefficients of the regression can be interpreted as partial effects measured in percentage terms. For example, the coefficient for female-headed households is -0.03, which means that, holding all other variables constant, a female-headed household has three percent less consumption per capita than a male-headed household. The evidence of lower consumption for female headed households,

whether in rural or urban areas, is an important result, since the cross tabulations above did not indicate any consumption penalty for female headed households. It supports the suggestion that demographics (that female heads of households are generally older and have less children) is the key factor in equalizing poverty levels for male and female headed households.

1.35. Ethnicity of the household head does have an impact on consumption levels, both in urban areas, where Russian headed households have higher consumption, and for rural areas, where households belonging to the category “other (including Ukrainian, Uzbek, etc.) have higher consumption levels than Kazaks, other things equal. As would be expected, given the higher unemployment levels among the poor, households whose head is not employed have significantly lower consumption levels than those where the head is employed, about 17 percent lower in urban areas and 12 percent lower in rural areas. Education turns out to be a strong predictor of consumption. Vocational secondary and post-secondary are associated with higher consumption in both urban and rural households.

1.36. Households with some pension income have higher consumption. For rural households, consumption per capita is 12 percent higher and for urban households it is six percent higher. In both urban and rural areas, receipt of some social benefit is associated with lower consumption levels. Access to farm land in terms of shareholding is associated with higher consumption for rural households, but households with subsistence farm land have lower consumption levels. Having land that was received as part of the land tenure act is not associated with differential consumption.

1.37. Consumption in multigenerational households is 3 percent higher than others, and this impact is largely in the urban population. Larger families and families with children have lower levels of consumption in both urban and rural areas. The population in large cities and in small cities have significantly higher consumption than their counterparts in rural areas, but those in medium-sized cities do not have higher levels than those in rural areas. Moreover, among urban households, consumption levels are higher in large cities and in small cities than in medium-sized cities.

## **L. CONCLUSIONS**

1.38. In spite of the large economic swings in the 1990s, Kazakhstan’s poor appear to have benefited from recent growth spurt. Poverty levels in 2002 appear relatively low, at least by regional standards, and inequality is also not very high. Moreover, data suggest that growth between 2001 and 2002 was decidedly pro-poor, which also bodes well for further reductions in poverty. In addition, the poor appear not to have been left behind regarding access to health and education, both of which are crucial to improving the prospects of escaping poverty in the future.

1.39. There are nonetheless some disturbing news. First, there are considerable differences between regions: in some oblasts, poverty rates are twice the national level, and extremely high in rural areas. Second, there are important gaps between the poor and the non-poor in terms of access to infrastructure services, including water, sewerage, gas, telephone, etc. Partly this result is driven by vast differences between rural and urban areas. Third, the labor market picture is also fairly discouraging from the perspective of poverty status. The poor have much less access to jobs than the non-poor, and especially women are at a disadvantage. Clearly, policy makers wishing to improve the living standards of the population need to focus on regional inequalities, on how to ease access for the poor to the labor market, and how to ensure better housing conditions for the poor.

**Table 14: Determinants of Household Consumption per capita**

Variable	National	Urban	Rural
<b><i>Characteristics of the household head</i></b>			
Female	-0.028**	-0.037**	-0.033*
Ethnicity (reference category: Russian)			
Kazakh	-0.022*	-0.031**	-0.027
Other (Ukrainian, Uzbek, etc)	0.004	-0.016	0.059**
Age	0.003	0.002	0.009**
Age Squared /100	-0.002	-0.002	-0.006*
Not working	-0.152**	-0.165**	-0.119**
Education (reference category: Basic)			
General Secondary	0.002	0.005	0.010
Vocational Secondary	0.110**	0.103**	0.133**
Post Secondary	0.240**	0.241**	0.234**
<b><i>Household Income Sources</i></b>			
Any pension	0.081**	0.056**	0.124**
Any social benefits	-0.061**	-0.055**	-0.059**
<b><i>Any land access</i></b>			
Any farm land based on land tenure act	0.020	-	0.029
Any farm land as shareholder, LLP, coop., etc	0.051	-	0.074**
Any subsistence farm land	-0.032**	-	0.012
<b><i>Demographic composition</i></b>			
Multi-generational household	0.025*	0.033*	-0.002
Number of household members	-0.113**	-0.125**	-0.112**
Any children	-0.122**	-0.128**	-0.093**
<b><i>Strata</i></b>			
Large city	0.079**	0.021	-
Medium city	0.021	-0.037*	-
Small city	0.053**	<i>Ref. Cat.</i>	-
Rural	<i>Ref. Cat.</i>	-	-

**Table continues on next page**

Notes: \*\* indicates significance at 1%; \* at 5%. Constant term included but not reported.

**Table 14 (cont.): Determinants of Household Consumption per capita**

Variable	National	Urban	Rural
<i>Oblast</i>			
Akmola	-0.144**	-0.120**	-0.119**
Aktobe	0.030	0.058*	0.036
Almaty	-0.046**	-0.097**	0.039
Atyrau	-0.109**	-0.107**	-
West-Kaz	-0.145**	-0.177**	-0.053
Jambyl	-0.277**	-0.348**	-0.129**
Karaganda	-0.264**	-0.270**	-0.220**
Kostanay	-0.224**	-0.176**	-0.252**
Kyzylorda	-0.267**	-0.222**	-0.269**
Mangystau	-0.080**	-0.050	-0.229**
South-Kaz	-0.181**	-0.284**	-0.025
Pavlodar	-0.222**	-0.192**	-0.224**
North-Kaz	-0.182**	-0.196**	-0.129**
East-Kaz	-0.159**	-0.149**	-0.139**
Astana	<i>Ref. Cat.</i>	<i>Ref. Cat.</i>	-
Almaty	<i>Ref. Cat.</i>	<i>Ref. Cat.</i>	-
<i>R-squared</i>	0.407	0.363	0.393
<i>Number of households</i>	11818	7463	4355
<i>F statistic</i>	238.3	136.9	99.25

Notes: \*\* indicates significance at 1%; \* at 5%. Constant term included but not reported.  
Note: Dependent variable is the log (expenditure per capita).



## ANNEX 1. HOUSEHOLD BUDGET SURVEY DATA

1.40. The data used for this poverty update are from the 2001 Household Budget Survey (HBS), completed by the National Statistical Agency of Kazakhstan (NSA). The 2001 HBS marks the implementation of a comprehensive redesign of the HBS system by the NSA. In 2001, the HBS changed in two fundamental ways: sample design and questionnaire content. The salient features of the changes are noted below.<sup>12</sup>

### HBS Sample

1.41. For the 2001 HBS, the NSA drew a new probability sample based on an updated sampling frame from the 1999 Population Census. A stratified multi-stage cluster sample of 12,000 households, meant to be representative at Oblast level<sup>13</sup> was drawn from the 1999 Population and Housing census listings. Stratification was based on six strata:

1. Large cities exceeding 30,000 households
2. Medium cities between 10-30,000 households
3. Small cities and city-type settlements less than 10,000 households
4. Rural
5. Almaty city
6. Astana city

1.42. The sampling was done in stages as follows. In the first stage, within each oblast (except Almaty city and Astana city), areas were designated into 4 strata: large cities, medium, small towns, and rural settlements. In the second stage, primary sampling units (PSUs) with not less than 150 households were chosen. Within each chosen PSU, households were sampled with sampling probability proportional to the size of the household. Thirty households were listed, with 10 additional households (reserves) listed and to be used as replacements in case the principal household refuses to participate in the survey during the first visit.

1.43. A total of 30 households from each of the 400 selected Enumeration Areas (EAs) were drawn. Reserve households were to be matched by enumerators from the pool available based on household size. A total of 2,421 substitutions (reserves) were used in January 2001. During the course of the four quarters, there is non-response among 355 households. The non-response rates of the 2001 HBS are comparable with the ones of the better performers in Western Europe.

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<sup>12</sup> As the new HBS design introduced in 2001 adopted fundamentally different methodologies from previous HBS, very little comparability exists to allow for analysis of trends. However, given the rapid changes during transition, and in particular in the past few years, it would be extremely useful to study the dynamics of living standards (and poverty) in the country. Unfortunately, beyond previous HBS – which, as just said, are not comparable – very limited information is available to make such an inter-temporal comparison possible. One such an option is the 1996 Kazakhstan Living Standard Study (KLSS) conducted with the assistance of the World Bank. The 1996 KLSS was based on a nationally representative sample consisting of a total of 1,996 households (7,223 individuals). Although the sample was not designed to be representative at sub-national levels, it was sufficiently large to obtain indicative results for the five main regions of the country: north, west, central, south, and east. However, the 1996 KLSS questionnaire is quite different from the 2001 HBS, for example collecting food consumption by 7-day recall whereas the HBS uses a 14-day food diary. It remains to be evaluated as to whether they are comparable for poverty comparisons over time.

<sup>13</sup> However, the proportional allocation of the sample among Oblasts resulted in a couple of smaller Oblasts (Atyrau and Manghistaу) and Astana having inadequate sample sizes for analysis at domain level.

1.44. Households remain in the sample for at least one full year. Rotation of 25 percent per annum was planned to be implemented starting in January, 2002.

1.45. The universe includes all households residing in either an individual house, part of a house of individual apartment, and exclude households and individuals residing in institutions and the homeless. Table A1.1 below compares the HBS 2001 target sample with the Census projections.

**Table A1.1: HBS 2001 Target Sample and Census Statistics**

Oblast	Households			Persons		
	HBS Number of households to be surveyed	HBS Weighted number of households	Census 1999	HBS Weighted number of persons	Census 2001 projection	% difference
Akmola	750	242,336	242,	821,723	751,200	9.39
Aktobe	510	169,087	169,	676,587	671,700	0.73
Almaty	1,140	375,260	375,	1,649,116	1,559,100	5.77
Atyrau	270	93,071	93,	494,883	446,100	10.94
West-Kazakhstan	480	449,185	161,	607,782	603,600	0.69
Jambyl	690	232,791	232,	1,011,649	981,900	3.03
Karaganda	1,350	313,245	449,	1,544,682	1,370,900	12.68
Kostanay	960	114,503	313,	1,034,086	962,600	7.43
Kyzylorda	360	76,430	114,	608,765	603,800	0.82
Mangystau	240	393,777	76,	348,878	323,000	8.01
South-Kazakhstan	1,200	161,084	453,	2,049,649	2,019,190	1.51
Pavlodar	720	238,546	238,	762,546	773,100	-1.36
North-Kazakhstan	660	221,128	221,	706,681	703,000	0.52
East-Kazakhstan	1,380	453,711	393,	1,492,840	1,501,700	-0.59
Astana (city)	239	79,675	79,	266,580	440,800	-39.52
Almaty (city)	1,040	349,545	349,	1,057,623	1,130,300	-6.43
Kazakhstan	12,000	3,963,375	3,	15,134,070	14,841,900	1.97

1.46. The sample used for the poverty statistics in this note exclude 118 households for whom the consumption aggregate is missing. These 118 households were excluded due to two reasons. Eleven were excluded because of insufficient information regarding household size and composition. The other 107 households had more than 25 percent of the total value of expenditure imputed.

1.47. Table A1.2 presents the number of households and weighted population estimates using the HBS data by oblasts.

**Table A1.2: HBS Samples**

<b>Oblast</b>	<b>Number of households surveyed</b>	<b>Number of households for poverty analysis</b>	<b>Weighted number of persons for poverty analysis</b>
Akmola	750	739	795,028
Aktobe	510	498	647,550
Almaty	1,140	1,130	1,608,193
Atyrau	270	267	480,231
West-Kazakhstan	480	478	577,788
Jambyl	690	690	986,313
Karaganda	1,350	1,323	1,502,299
Kostanay	960	957	988,549
Kyzylorda	360	359	593,631
Mangystau	240	239	344,973
South-Kazakhstan	1,200	1,200	1,986,130
Pavlodar	720	719	738,863
North-Kazakhstan	660	648	671,742
East-Kazakhstan	1,380	1,356	1,448,958
Astana (city)	240	239	256,682
Almaty (city)	1,050	1,040	1,003,527
Kazakhstan	12,000	11,882	14,630,456

## **HBS Questionnaire**

1.48. The HBS questionnaire was significantly modified. In 2000, NSA worked with the World Bank on the redesign of the survey, in order to develop a more flexible tool to measure the living standards of the Kazakh population and generate a richer set of policy-relevant information. This included implementing a core module completed by each household at least four consecutive times at quarterly intervals (covering mainly expenditures and income) and rotating multi-sectoral modules which could be administered in a single quarter.

1.49. The new survey was fielded for the first time in January 2001, and follows a quarterly schedule of visits to the same household for at least one entire year and for up to four years.

The 2001 HBS questionnaire is comprised of the following sections:

1. Household roster
2. Food and frequency purchased non-food 14-day diary
3. Quarterly questionnaire, summarizing quarterly expenditures and income based on recall, supported by quarterly journal
4. Annual questionnaire covering housing, access to utilities, durables (estimate current value), availability of land, livestock and machines, short-form on education, and employment administered in Quarter 1. Employment is re-administered in Quarters 2-4.
5. Education module administered in Quarter 4
6. Health module administered in Quarter 3



## ANNEX 2. WELFARE MEASURE

1.50. The main welfare measure used in this analysis to rank households is the monetary value of household consumption. The HBS 2001 was used to construct this estimate which includes food (purchased, home-produced and received), and non-food goods and services, *excluding housing*.<sup>14</sup> This total household consumption level is then adjusted for household size, adjusted for oblast price differences, and compared with a poverty line. The 2001 poverty line was then updated with the consumer price index to arrive at a poverty line for 2002.

1.51. The welfare measure we want in order to study poverty should identify those without the means to meet an established minimum living standard. In many settings, an individual's means are measured by income. In this report, however, income is not used as the welfare indicator for several reasons. A large fraction of people do not have regular income sources which make it hard to assess income at a point in time. Many people are engaged in informal sector activities and may under-report income. Income from farm activities and the informal sector may be hard to assess if households do not keep formal accounts of revenues and expenditures. For these reasons, we assess a household's means by its consumption and expenditures rather than income. This is broadly consistent with the indicator used in the poverty statistics from the 1998 report which uses the 1996 KLSS.<sup>15</sup>

1.52. The consumption aggregate used in this report is the money value of all food and non-food goods and services consumed by households. It includes all purchases, as well as the value of home-produced goods (such as food) and goods and services received in-kind. These data are collected at a household-level and annualized. The household-level total consumption aggregate is then applied on a per capita per month basis to each household member to generate population poverty statistics. (See section below on Equivalence Scales).

1.53. Table A2.1 outlines the major components for the consumption aggregate. More details follow regarding the valuation of home-produced food, durables, and housing. Some expenditure categories which are included in the HBS but which are excluded from the consumption aggregate are: housing, housing renovations, car for hire to transport agricultural goods or construction materials, repair for durables, and tax payments.

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<sup>14</sup> The NSA also excludes the rental value of housing from its computation of household consumption.

<sup>15</sup> "Kazakhstan Living Standards During the Transition," World Bank Report No. 17520-KZ (1998)

**Table A2.1: Consumption/Expenditure Categories from 2001 HBS**

<b>Component</b>	<b>Note</b>
Food and beverage (purchased, home-produced, received as payment or present), excluding alcoholic beverages and tobacco	14-day expenditure/consumption diary
Non-food, frequently purchased (alcoholic beverages, pet food, tobacco, small electronic items, detergents, games, toys, newspapers, periodicals, personal hygiene items, non-housing fuels, etc...)	14-day expenditure diary
Clothes and shoes	Quarterly expenditure <sup>b</sup>
Household goods (small durables such as home appliances, furniture, and other major goods) <sup>a</sup>	Quarterly expenditure <sup>b</sup>
Utilities and other housing services (central heating, fuel for housing, water, sewerage and waste disposal, electricity, satellite or cable TV, telephone, and regular payments for housing maintenance and operations paid to housing cooperatives)	Quarterly expenditure <sup>c</sup>
Education	Quarterly expenditure <sup>c</sup>
Health care	Quarterly expenditure <sup>c</sup>
Transportation services (trams, train, aircraft, taxi)	Quarterly expenditure <sup>c</sup>
Other expenditure (tailoring services, dry cleaning, shoe repair, hair cuts, legal services, cinema, theater, other entertainment, hotel, medical insurance, etc...)	Quarterly expenditure <sup>c</sup>
Transfers: Goods received (self-reported valuation of clothes, shoes, medicine and other goods)	Quarterly expenditure <sup>c</sup>
Household durables (refrigerator, washing machine, sewing machine, vacuum cleaners, television set, tape recorder, VCR, video camera, personal computer, jewelry, microwave oven, car, cargo car, motorcycle, bicycle, and music center/karaoke)	Ownership reported in Annual questionnaire

a. Excluding the 16 large durable items reported in the annual questionnaire.

b. Households report total expenditure for each item purchased in the quarter.

c. Households report expenditure for each of the three months in the quarter.

### **Food: Valuation of and Non-purchased Food**

1.54. For non-purchased food (either own-produced or received as a gift or payment), only information on quantities was collected. In order to compute the value of this food, prices need to be applied.<sup>16</sup> Unit-value prices are constructed from purchased food data in the 2001 HBS (in which there is both quantity and total expenditure for each food item purchased). The mean of this price estimate for each food item by oblasts is then applied to the quantity of the food consumed in order to value the food consumption. In a small percent of cases there is only a national price estimate if there are not enough price estimates within oblasts (less than 120 price observations for the food item).

### **Durable Goods**

1.55. Durable goods are infrequently purchased and, as such, we would want to include in the consumption aggregate only the flow of services, or benefits, derived from the ownership of such goods. In order to estimate the user value, the following information is needed: (1) the age of the of the good; (2) the remaining useful life of the good; and (3) the estimated current value of the good. Information on (1) and (3) is available in the HBS for the 16 durable items (see Table A2.1). Using this information, the annual user value of 16 durable goods was included in the consumption aggregate.<sup>17</sup>

1.56. Assuming that a similar percentage of households in the sample purchases the good each year, then if we compute the average age of each durable goods owned by the households in the sample, we

<sup>16</sup> In the poverty analysis using the 1996 KLSS, the value of home-produced food is computed using the prices obtained from the community questionnaire. The 2001 HBS does not include a community questionnaire.

<sup>17</sup> See Hentschel, J. and P. Lanjouw (1996) "Constructing an indicator of consumption for the analysis of poverty : Principles and illustrations with reference to Ecuador," LSMS working paper 124, The World Bank.

would obtain the average age of that particular good<sup>18</sup>. Multiplying the mean life by two gives the expected lifetime of the good. By subtracting the reported age of the good from the expected lifetime we obtain the remaining useful life in years. By dividing the estimated current value by the useful life remaining, we obtain the annual user value for that particular good. The opportunity cost of owning the good (which should be set equal to the interest rate) is assumed to be zero.

## Housing

1.57. The majority of households in Kazakhstan own the dwelling in which they reside. Over 95 percent of households are home-owners. The data sources for housing consumption vary depending on whether the household is an owner or renter of the dwelling. For renters, quarterly rent payments are collected. For owner-occupied dwellings, owners are asked to estimate how much they would pay to rent the dwelling if they did rent. Certainly, in context of very thin rental markets, it is possible that some owners do not have a clear idea of the rental value of their unit. For households that do not report an estimated rent, the housing component is estimated using the characteristics of housing to predict the estimated rent. Thus, for the vast majority of the households, the housing component is estimated rent reported by the household.

## Imputation for Missing Values

1.58. In cases where values were missing for a subcomponent of the expenditure aggregate, imputations were made for the value of the specific component. Households where more than 25 percent of the value of total household expenditure was estimated are excluded from the analysis. As well, households where household size in the diary was missing in all four quarters are excluded.

## Equivalence Scales

1.59. The measure of well-being used, total household consumption and expenditures, is collected at the household level, yet household consumption and expenditures need to be adjusted for household size and composition in order to be a useful measure of individual material well-being. We presume that a one-person household spending 7,000 tenge per month is materially better off than a five-person household spending the same amount. Adjusting for household composition can be done in numerous ways, and there is not a clear dominant choice and, therefore, no widely accepted scale.

1.60. A simple solution is to divide by the number of household members. Dividing total household consumption by *household size* (total number of members) gives a *per capita* measure of consumption, where household size is simply:

$$N = A + K$$

where A is the number of adults and K is the number of children

1.61. More complicated solutions consider that there may be *economies of scale* in consumption. For example, a 2-person household does not imply double expenditures on housing, utilities or other non-food items for which consumption can be shared (these are public goods whose cost does not vary whether one person or a number of people use the good). Larger households might also be able to buy food or nonfood items in bulk which can mean lower prices or discounts. Moreover, the age structure of household members, where a child is assumed to not be equivalent to an adult in terms of needs, could be considered. Consider the “adjusted” household size to be:

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<sup>18</sup> We should be aware that the assumption could be not very solid in the Kazakhstan context, as consumer behavior during transition is likely to have been substantially different than prior to 1991.

$$PAE\_N=(A+\alpha K)^\theta$$

1.62. In this equation,  $\theta$  capture the economies of scale in consumption. The parameter  $\alpha$  identifies the weight to convert each child into an equivalent adult.

1.63. The adjustment for household size and composition is done by dividing total household consumption by  $PAE\_N$  (*per adult equivalent household size*) which gives an adjusted measure of consumption. For example, a household with an adult equivalent size of 3.5 needs to spend 3.5 times as much as a single adult in order to be equally well off as the single adult.

1.64. The choice of equivalence scale reflects judgments about differences in needs. For example, the per capita adjustment incorporates the extreme judgment that all household members have equal needs irrespective of age. In Kazakhstan, food is a large share of household consumption. Since food is generally not associated with economies of scale, using per capita adjustment which has no economies of scale seems plausible.<sup>19</sup>

1.65. Because of the difficulty in justifying the use of a particular equivalence scale, a preferred practice is to examine the sensitivity of poverty estimates to a range of plausible scales.

1.66. To test for the sensitivity of this choice to other choices, we examine two equivalence scales from the Organization for Economic Development and Cooperation (OECD), defined as:

$$\text{OECD scale 1: } PAE\_N = 0.3 + (0.7 * A) + (0.5 * K)$$

and

$$\text{OECD scale 2: } PAE\_N = 0.5 + (0.5 * A) + (0.3 * K)$$

1.67. In the OECD scale 1, the first adult is counted as 1 member, and the second adult is counted as .7 of 1 adult. Each child is .5 of an adult. Considering that food is a very high share of the budget and that caloric needs of children are not much lower than adult needs (except for the very young), the scaling of children appears to very large. The second OECD scale is even steeper, by raising the extent to which there are economies of scale and lowering the child-adult equivalence factor to .3. Given the large share of total expenditure devoted to food in Kazakhstan, this scale seems even more inconsistent and results in poverty rates even lower than the first OECD scale

1.68. A more simplistic approach is to make only adjustments in household size for economies of scale. That is,

$$EOS\_N=(N)^\theta$$

This is the approach in the equivalence scale used by the National Statistical Agency (NSA), based solely on household size, defined in Table A2.2.

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<sup>19</sup> The exception to the notion that food does not have economies of scale would be bulk-purchase discounts. If certain foods are perishable and cost of storage is high, then large households may be better able to take advantage of bulk-purchase discounts.

**Table A2.2: National Statistical Agency Equivalence Scale**

Household size	Equivalent household size	Implied Economies of Scale
1	1.00	
2	1.69	0.758
3	2.16	0.701
4	2.81	0.746
5	3.767	0.824
6	3.767	0.740
7	3.767	0.682
8 or more	3.767	0.638 (for 8)

### Sensitivity to Equivalence Scales

1.69. The use of different scales to adjust household size is important because it can change the overall ranking of households. It is therefore important to evaluate the sensitivity of the poverty profile to different adjustments to household size that seem reasonable to account for economies of scale and adult equivalence. There are two comparisons we can make regarding different scales. We can compute new poverty lines for each scale and calculate new poverty rates. Alternatively, we can fix the poverty rate and rank the population based on the new scales. Both are evaluated below. Five scales are used: per capita, economies of scale of .9 (with no adjustment for adult equivalence), both OECD scales, and finally, the NSA scale.

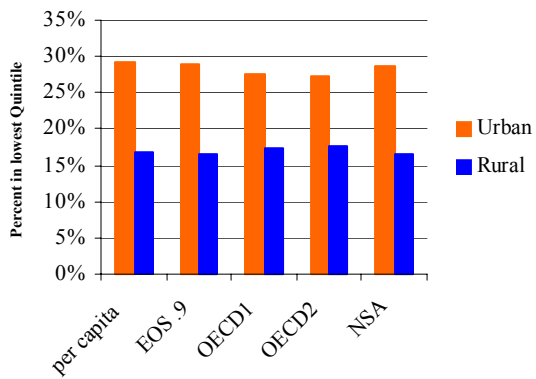
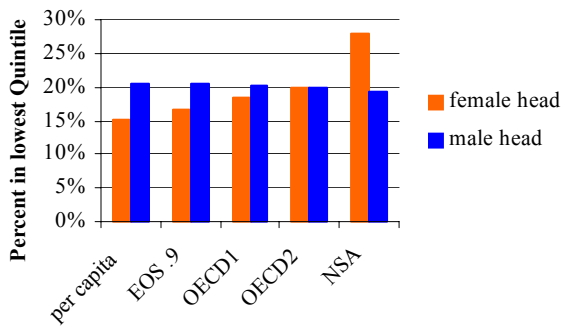
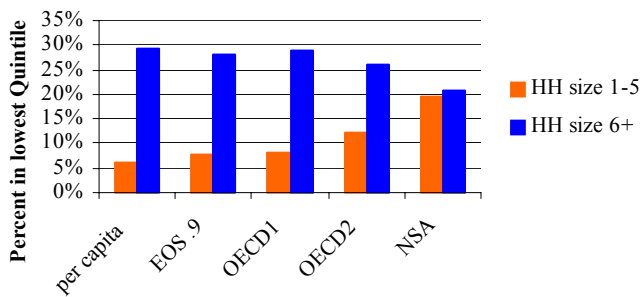
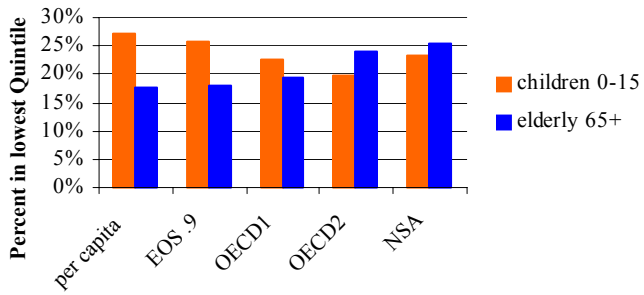
1.70. Table A2.3 shows the poverty rate of different groups when different scales are used, based on the 2001 Household data.

1.71. In Figures A2.1 and A2.2, poverty profiles are shown, setting the poverty rate fixed at 20 percent. The profile is remarkably robust to different scales. In most cases, it is not until the more extreme scales (OECD or the NSA scale) are applied that the profile shifts.

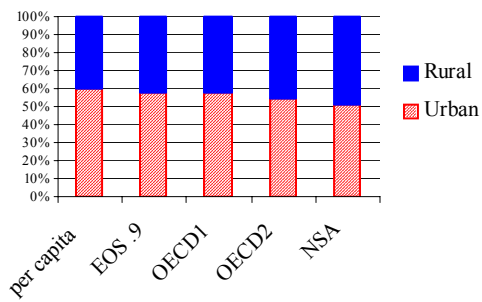
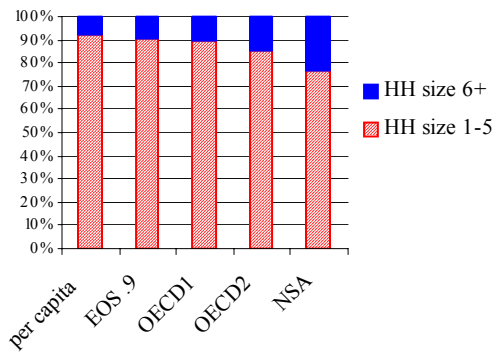
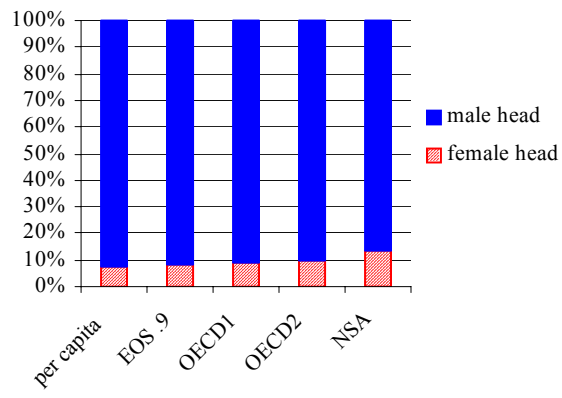
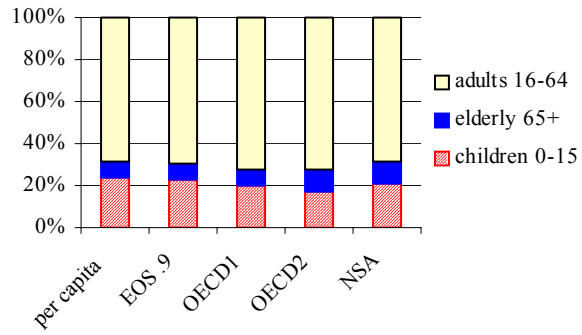
**Table A2.3: Poverty Measures Using Alternative Equivalence Scales, 2001**

	Per capita	$\theta = .9$	OECD scale 1	OECD scale 1	NSA scale
<b>Equivalent Household size</b> (mean)	4.7	4.1	3.4	2.7	3.0
<b>Food poverty line</b> (tenge per year)	23,324	23,324	23,324	23,324	23,324
<b>Poverty line</b> (tenge per year)	37,886	38,534	38,619	40,434	39,452
<b>Headcount index (P0) (%)</b>					
National	17.6	11.9	5.6	2.0	3.8
<i>By strata:</i>					
Rural	23.2	15.2	7.1	2.4	4.2
Large cities	9.5	6.8	3.5	1.7	3.1
Medium cities	18.2	13.2	6.0	1.7	3.8
Small cities	18.6	13.0	5.1	1.4	3.9

**Figure A2.1: Poverty Rates Using Alternative Scales, Holding Poverty Fixed at 20% (2001)**



**Figure A2.2: Share of Poor Using Alternative Scales, Holding Poverty Fixed at 20% (2001)**





### ANNEX 3. SPATIAL AND TEMPORAL PRICE ADJUSTMENTS

1.72. Kazakhstan is a large country with substantial spatial variation in prices. Moreover, the data used in this note were collected over the course of 2001. This raises two issues regarding price adjustments for the welfare aggregate: temporal adjustments for inflation in 2001 and spatial adjustment for regional price variation.

1.73. With regard to temporal price adjustments, there has been no adjustment for inflation in 2001. Inflation was around 7 percent over the year.

1.74. To adjust for regional price differences, ideally we would use price indices based on the cost of food, non-food goods, and services. This information was not available. Therefore, the source of data for price adjustments is the unit value food prices reported in the HBS with weights based on the national average shares of quantities consumed. Table A3.1 below shows these implied price indices relative to the national average.

**Table A3.1: Regional Food Price Indices (2001 and 2002)  
Used to Deflate Consumption Aggregate**

Oblast	Food Price Indices	
	2001	2002
Akmola	0.996	1.011
Aktobe	1.028	0.984
Almaty	0.947	0.867
Atyrau	1.160	1.204
West-Kazakhstan	0.942	0.976
Jambyl	0.856	0.920
Karaganda	1.044	1.233
Kostanay	0.979	1.015
Kyzylorda	0.964	0.949
Mangystau	1.347	1.263
South-Kazakhstan	0.938	0.907
Pavlodar	0.968	0.988
North-Kazakhstan	0.982	0.984
East-Kazakhstan	1.008	1.009
Astana (city)	1.172	1.259
Almaty (city)	1.152	1.126
National	1.000	1.000

Source: KHBS 2001 and 2002



## ANNEX 4. POVERTY LINES

1.75. In order to measure poverty, it is necessary to specify a level of expenditure below which individuals are considered to be poor. The poverty line comprised of a food poverty line to which an amount for non-food expenditures is added.

### Food Poverty Line

1.76. We calculate the food poverty line as the cost to buying a diet of 2,100 calories per capita per day, given the food consumption patterns of households in a reference population.

For each food item  $f$ , a caloric content value,  $c^f$ , is assigned based on calorie tables produced by USDA (2002). There are 190 food and beverage items in the HBS 2001 diary (not including alcoholic beverages).

1.77. For each food, the share of total calorie intake,  $S^f$ , is computed. The reference population to set the food consumption pattern is the population of people in the second, third and fourth deciles of the per capita expenditure distribution among all households. The food basket of this group is meant to capture the food consumption patterns for a relevant, relatively low-income population.<sup>20</sup>

1.78. Based on the consumption shares of this reference population, 2,100 calories per day is then allocated across all food items that are taste-consistent. This minimum calorie diet is then priced using the price-per-calorie ( $P^f/c^f$ ) for each food item. The food poverty line is then computed as the total cost of this diet.

1.79. The food poverty line (FPL) can simply be expressed as:

$$FPL = \sum_f \frac{P^f}{c^f} S^f (2,100)$$

The prices for each food ( $P^f$ ) are drawn from the national unit value prices calculated from the food diary. Using this methodology, the FPL is calculated as 23,324 tenge per capita per year as needed to obtain 2,100 calories per day.

**Table A4.1: Food Poverty Line Using Alternative Reference Populations**

Reference Population for Food Basket	FPL
1 <sup>st</sup> and 2 <sup>nd</sup> deciles	21,404
2 <sup>nd</sup> -4 <sup>th</sup> deciles (baseline for report)	23,324
4 <sup>th</sup> -6 <sup>th</sup> deciles	25,803
5 <sup>th</sup> -7 <sup>th</sup> deciles	27,101
entire population	28,906
7 <sup>th</sup> -9 <sup>th</sup> deciles	29,885
9 <sup>th</sup> and 10 <sup>th</sup> deciles	33,199

### Non-food Expenditures

1.80. After adjusting non-food expenditures for regional price differences (See Annex 3), a non-food allowance is added to the food poverty line (FPL) according to the non-food expenditure patterns of those households closely around the FPL.

1.81. To start, we identify the median non-food expenditure of households whose food expenditure is within a two-percent band around the FPL. This exercise is repeated for households within four, six, eight

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<sup>20</sup> The average calories consumed per day was 3,202 for the total population and 2,557 for the reference population.

and ten-percent bands around the FPL. Finally, the mean non-food expenditure from these five median values is computed. This mean is taken as the non-food expenditure allowance.

1.82. Using this methodology, the total poverty line is calculated as 37,886 tenge per capita per year for food and non-food expenditures. In this measure, the non-food component of the poverty line is 38 percent. This poverty line lies between the official subsistence minimum (55,150) and the official poverty line which is 40 percent of the subsistence minimum (22,060). Adjusted for purchasing power parity, this poverty line of 37,886 is equivalent to \$3.00 per day at 1996 prices.

### **Adjusting to 2002 Prices**

1.83. When the construction of the welfare aggregate and the poverty line was undertaken, 2002 data were not yet available. Hence the 2001 data was used as the basis, following the procedures described above. In order to update this poverty line for 2002, the consumer price index was used to update with a factor of 1.06. The new poverty lines were applied to 2002 household data, once it became available. The total poverty line for 2002 is 40,386 Tenge/person/year. Adjusting for purchasing parity, the poverty line is equivalent to \$3.26 per day at 1996 prices.

### **Alternative Poverty Lines Based on the Subsistence Minimum**

1.84. Alternative poverty lines that could be constructed use the subsistence minimum standards established by the 1999 Subsistence Minimum Law in Kazakhstan. (See “Methodological Recommendations on Determining of Subsistence Minimum and Poverty Line,” 1998, by the Department on Living Standards and Wages in the Ministry of Labor and Social Protection.)

1.85. The foundation of the subsistence minimum (*Prozhitochnyi Minimum*) is the value of the minimum food basket which is then augmented by a the fixed share of expenditures on first-need non-food goods and services. Since 1995, the share of non-food component of the subsistence minimum was set at 30 percent. This value was set several years prior to 2001 and may overestimate the share of expenditures that is food, thereby underestimating a subsistence minimum amount (see Annex 2). The subsistence minimum is estimated on a monthly and quarterly basis across regions.

1.86. The minimum food basket to set to provide a minimum of energy needs (2,137 kilocalories a day) and general protein (69,760 grams a day) for an “average statistical resident of the Republic of Kazakhstan”. The minimum food basket, developed by the Institute of Nutrition of the Ministry of Science, consists of twenty food products and minimum norms of consumption of the main products for 13 demographic groups (by sex and age) and five regions. This basket should reflect the consumption norms (patterns) of the population. As well, an average basket for the nation as a whole is established. The food basket is priced using price data collected from 20 urban areas.

1.87. The official poverty line in Kazakhstan is set by the government as a percentage of the subsistence minimum and varies across years depending on budgetary considerations. In 2001, the official poverty line was set as 40 percent of the SM. This is a social assistance eligibility threshold and is used by the social protection bodies to estimate the number of those who should receive social transfers. The National Statistics Agency uses 100 percent of the subsistence minimum as their poverty line.

1.88. Table A4.2 presents the average subsistence minimum amounts by oblast. The difference between oblasts takes into account price differences across regions. As a reference, the average oblast subsistence minimum is 55,150 tenge per capita per year (4,596 tenge per capita per month). Using 1996 purchasing power parity (adjusted for inflation from 1996 to 2001), this is approximately equal to \$4.75 per capita per day.

1.89. Table A4.2 also presents the poverty rate calculated using the SM as the poverty line compared to the consumption aggregate defined in Annex 2 (per capita consumption, excluding housing).

**Table A4.2: Subsistence Minimum (tenge per capita per year) and Associated Poverty Rates, 2001**

Oblast	SM				Poverty rate	
	Total	Food	Non-food	40%	SM as poverty line	40% SM as poverty line
Akmola	56,676	39,673	17,003	22,670	34.7	2.4
Aktobe	54,960	38,472	16,488	21,984	37.1	6.4
Almaty	53,352	37,346	16,006	21,341	48.1	2.3
Atyrau	64,380	45,066	19,314	25,752	49.8	7.7
West-Kazakhstan	50,832	35,582	15,250	20,333	38.7	0.8
Jambyl	45,060	31,542	13,518	18,024	57.1	2.7
Karaganda	58,500	40,950	17,550	23,400	33.8	1.3
Kostanay	51,552	36,086	15,466	20,621	36.9	3.0
Kyzylorda	47,724	33,407	14,317	19,090	56.7	0.8
Mangistau	72,564	50,795	21,769	29,026	56.7	4.0
South-Kazakhstan	44,220	30,954	13,266	17,688	46.6	1.2
Pavlodar	54,996	38,497	16,499	21,998	23.9	1.6
North-Kazakhstan	55,392	38,774	16,618	22,157	20.4	0.5
East-Kazakhstan	54,816	38,371	16,445	21,926	31.4	2.0
Astana (city)	55,620	38,934	16,686	22,248	4.2	0.0
Almaty (city)	59,688	41,782	17,906	23,875	12.7	0.0
National	55,150	38,605	16,545	20,060	38.0	2.1

### Comparing the World Bank Poverty Line and the Subsistence Minimum

1.90. The basic methods for the SM are largely similar to that of the World Bank poverty, however the values diverge greatly. Some of the reasons for the differences in values are the contents of the food basket, the prices used to value the food basket, and the portion allocated to non-food.

1.91. In regards to the contents of the food basket, generally, the SM food basket allocates a greater share of calories to foods which have a high per calorie cost. This is reflected in Table A4.3 where a larger share of calories come from beef which has a higher cost per calorie. As can be seen in Table A4.4, prices used are also different, with the NSA survey almost always registering a higher price than the HBS.

**Table A4.3: Distribution of Minimum Calories Across Food Groups (%)**

	Subsistence Minimum	WB food Basket
Bread, Rice, Pasta	43.0	62.0
Beef	18.3	6.4
Fish	1.1	0.9
Milk and Dairy	1.0	1.1
Eggs	1.2	0.4
Fats	12.4	12.4
Fruits	0.8	0.9
Vegetables	12.4	5.5
Sugars	9.6	9.2
Spices, Sauces	0.0	0.4

**Table A4.4: Comparison of Unit Price Data**

		<b>NSA Price Survey</b>	<b>HBS unit values</b>
Rice grinded	kg	63	61
Wheat flour of a maximum sort	kg	41	37
Bread rye and rye-wheaten	kg	51	50
Bread wheaten of a wheat flour of a fir	kg	40	41
Macaroni/Pasta goods	kg	73	
Vermicelli	kg		53
Noodles	kg		68
Horns	kg		52
Other kinds of macaroni	kg		78
Beef	kg	267	246
Fresh or cooled fish	kg	109	84
Milk fresh	liter	47	37
Eggs	units	9	9
Butter	kg	346	308
Oil	liter	141	114
Apples, pear	kg	90	71
Cabbage fresh	kg	42	36
Bulb onion	kg	40	37
Carrot	kg	38	32
Potatoes	kg	29	27
Granulated sugar, lump sugar	kg	81	77
Spices (general)		1005	
Pepper red milled	kg		1179
Pepper black milled	kg		1297
Other spices	kg		1001
Salt	kg	19	18
Black tea	kg	603	631

## ANNEX 5. POVERTY MEASURES

1.92. There is a large literature on measure of poverty. Three measures are used widely in this report which are the members of the a class of decomposable poverty measures proposed by Foster, Greer and Thorbecke (1984)<sup>21</sup>:

- (i) the head count ratio, P0, measures the prevalence of poverty
- (ii) the poverty gap index, P1, measures the depth of poverty
- (iii) the poverty severity index, P2, measures the severity of poverty

### Head Count

1.93. The head count ratio, which is the simplest measure, is given by the percentage of people for whom consumption per capita is less than the poverty line. If  $q$  people have consumption per capita below the poverty line and there are  $n$  persons in total, then

$$P0 = q / n$$

1.94. Although P0 conveys information on how many people are poor, it does not say how poor they are. It assigns the same weight to a poor person regardless of the level of consumption being 1 percent of the poverty line (extremely poor) or 99 percent of the poverty line (close to non-poor status). If poor people get richer over time but their consumption remains below a stationary poverty line, then P0 would give the misleading impression of no change in the condition of the poor.

### Poverty Gap Index

1.95. In order to account for the depth of poverty, we use the poverty gap index. It distinguishes among the poor according to how far below the poverty line their consumption falls. If  $y_i$  is consumption (per capita) of the  $i$ th poor person and  $z$  is the poverty line, then

$$P1 = \frac{1}{n} \sum_{i=1}^q \frac{(z - y_i)}{z}$$

P1 measures the average poverty shortfall in the population (the non-poor have zero shortfall) as a proportion of the poverty line. Thus it is a measure of the depth of poverty. PG is sometimes used to compute the fiscal costs of eliminating poverty, assuming perfectly targeted transfers. The fiscal cost is calculated as the sum of poverty shortfalls, usually expressed as a percent of GDP. In practice, leakages and incentive effects would raise the actual fiscal costs of poverty elimination through transfers.

### Poverty Severity Gap

1.96. The disadvantage of P1 is that it is not sensitive to the distribution of the poor. The P2 measure gives more weight to individuals who are further away from the poverty line. It is the weighted sum of the poverty gaps, where the weights are the poverty gaps themselves. It measures the degree of inequality in distribution below the poverty line, giving greater weight to households at the bottom of the consumption distribution.

$$P2 = \frac{1}{n} \sum_{i=1}^q \frac{(z - y_i)^2}{z^2}$$

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<sup>21</sup> Foster, J., J. Greer and E. Thorbecke (1984) "A Class of Decomposable Poverty Measures," *Econometrica*, 761-766.



## ANNEX 6. POVERTY STATISTICS INCLUDING HOUSING IN THE EXPENDITURE AGGREGATE

1.97. With housing included in the expenditure measure, the total poverty line is re-estimated to be 44,436 (tenge per person per year) for 2002, compared to 40,386 tenge when housing is excluded. Table A6.1 shows Poverty measures when housing is included in the expenditure aggregate. As can be seen, the inclusion of housing only marginally changes the headcount index and poverty gap at a national level. However, there are larger differences at a more disaggregate level, where the rural-urban discrepancy in poverty rates widens. Rural poverty increases when housing expenditures are included, while that of cities, especially large and medium cities, falls. The same is true for the poverty gap and the severity of poverty.

**Table A6.1: Poverty Measures, Excluding and Including Housing in the Expenditure Aggregate**

	Head count index		Poverty Gap		Poverty Severity	
	Excl.	Incl.	Excl.	Incl.	Excl.	Incl.
National	15.4	15.8	3.1	3.2	1.0	1.0
Rural	21.7	24.4	4.5	5.1	1.4	1.6
Large cities	6.7	4.8	1.3	0.9	0.4	0.3
Medium cities	16.3	14.3	2.8	2.4	0.8	0.7
Small cities	15.8	15.2	3.4	3.3	1.2	1.1

Source: KHBS 2002



## ANNEX 7. NSA STATISTICS

Table A7.1: NSA Poverty Statistics

Oblast	2001 Headcount index (P0)	2001 Pov Gap (P1)	2001 Pov Sev. (P2)	2001 Urban	2001 Rural	Ratio of wealthiest to poorest decile
Akmola	21	5.2	2.0	18.3	23.0	9.3
Aktobe	30	9.0	4.0	17.8	46.9	12.9
Almaty	39	11.6	4.7	33.4	41.8	8.9
Atyrau	41	13.9	6.4	37.0	46.7	12.0
West-Kazakhstan	27	6.3	2.2	23.5	29.8	8.5
Jambyl	48	12.6	4.6	39.8	54.0	7.4
Karaganda	23	5.8	2.2	20.5	31.9	9.2
Kostanay	26	8.6	3.8	13.4	38.7	13.1
Kyzylorda	40	8.7	2.8	32.9	50.0	6.1
Mangystau	46	16.0	7.0	34.2	95.5	13.4
South-Kazakhstan	39	10.0	3.7	28.5	44.9	7.7
Pavlodar	17	4.2	1.7	11.8	23.0	8.5
North-Kazakhstan	10	2.2	0.8	4.8	13.3	7.3
East-Kazakhstan	21	6.1	2.5	14.8	29.7	10.6
Astana (city)	2	0.5	0.1	2.1	-	9.8
Almaty (city)	5	1.0	0.3	5.0	-	7.8
National	28	7.8	3.1	20.0	38.5	11.3

Source: *Living Standards of Population: Statistics Bulletin*, Agency of the Republic of Kazakhstan, Almaty, 2002 (pp 80,81).

Table A7.2: Unemployment Rate by Oblast, 2001

Oblast	Percent
Akmola	10.8
Aktobe	11.4
Almaty	10.2
Atyrau	13.5
West-Kazakhstan	12.5
Jambyl	12.7
Karaganda	9.2
Kostanay	10.3
Kyzylorda	13.9
Magnystau	10.5
South-Kazakhstan	11.5
Pavlodar	9.2
North-Kazakhstan	8.9
East-Kazakhstan	7.3
Astana (city)	9.3
Almaty (city)	10.8

Source: *Labor and Unemployment in 1991-2001*, Agency for the Republic of Kazakhstan on Statistics, Almaty, 2002 (p. 168).



## ANNEX 8. POVERTY TRENDS

1.98. In considering the comparison of living standards over time, it is important to consider the various changes that make such a comparison problematic. These differences could be due to differences in:

- sampling design and coverage
- questionnaire design, especially the recall period related to expenditure items
- definition of consumption aggregate as indicator of welfare (including components therein and application of equivalence scales)
- prices used to value home-produced consumption items
- definition of minimum needs (the subsistence minimum or poverty line), an especially important consideration if the minimum needs are defined differently across time.

1.99. As the 2001 HBS adopted fundamentally different methodologies from previous HBS, very little comparability exists to allow for analysis of trends. However, given the rapid changes during transition, and in particular in the past few years, it would be extremely useful for the Poverty Assessment study to have some information on the dynamics of living standards in the country. Unfortunately, beyond previous HBS – which, as just said, are not comparable – very limited information is available to make such an inter-temporal comparison possible. The 1996 Kazakhstan Living Standard Study (KLSS) conducted by the NSA with the assistance of the World Bank is probably better suited for comparison.

**Table A8.1: Poverty Statistics from Different Sources/Years/Methods**

	<b>Subsistence Minimum (tenge per person per month)</b>	<b>Headcount index (P0)</b>	<b>Share of pop below food SM</b>	<b>Poverty Gap (P1)</b>	<b>Poverty Severity (P2)</b>	<b>Gini coefficient</b>	<b>Ratio of wealthiest to poorest decile</b>
1996 <sup>a</sup>	2861	34.6		11.4	5.2	0.319	--
1997 <sup>b</sup>	3505	43.0 (38.3)*	12.7	12.1	3.1	0.338	10.2
1998 <sup>b</sup>	3716	43.4 (39.0)*	16.2	12.8	3.8	0.347	11.3
1999 <sup>b</sup>	3394	34.5	14.5	13.7	5.5	0.340	11.0
2000 <sup>b</sup>	4007	31.8	11.7	10.3	4.0	0.343	11.9
2001 <sup>b</sup>	4596	28.4	11.3	7.7	3.0	0.348	11.3

Source: Statistics from 1996 are from KLSS 1996, per capita; statistics for other years from *Draft Government Poverty Reduction Program for 2003-2005* (December 2002).

\* Figures in parentheses are re-estimates of poverty using the 1999-2000 SM food basket.

1.100. Since there is now 2002 data available, and there is consistency between the 2001 and 2002 surveys, it is possible to analyze the change between 2001 and 2002 (see Annex 9). This type of analysis can possibly tell us something of how poverty reacts to growth in one given year. However, the time frame is very short and it is not possible to speak of poverty trends based on one year's difference.

## ANNEX 9. CHANGES IN THE POVERTY PROFILE BETWEEN 2001 AND 2002.

### Introduction

1.101. In 2001 and 2002, Kazakhstan experienced remarkably high economic growth rates: per capita GDP grew by 13.5 percent in 2001 and 9.5 percent in 2002, and per capita private consumption grew by 20.2 in 2001, and 9.8 percent in 2002 (national accounts data). Growth rates of this magnitude are very likely to have lowered poverty and inequality in Kazakhstan, and affected the overall poverty profile, i.e. who the poor are. Using household data from 2001 and 2002, this section investigates to what extent poverty changed in scope and nature during this period, and what might have contributed to those changes.<sup>22</sup>

### Incidence and Distribution of Poverty

1.102. Overall, poverty rates in Kazakhstan responded well to the high growth levels in 2002. As seen in table A9.1, the nationwide poverty index fell from 17.6 percent to 15.4 percent of the population, a reduction by 13 percent. Using international (PPP adjusted) poverty lines of \$4.30, some 35.1 percent of the population was poor in 2002, compared to 37.1 percent in 2001.

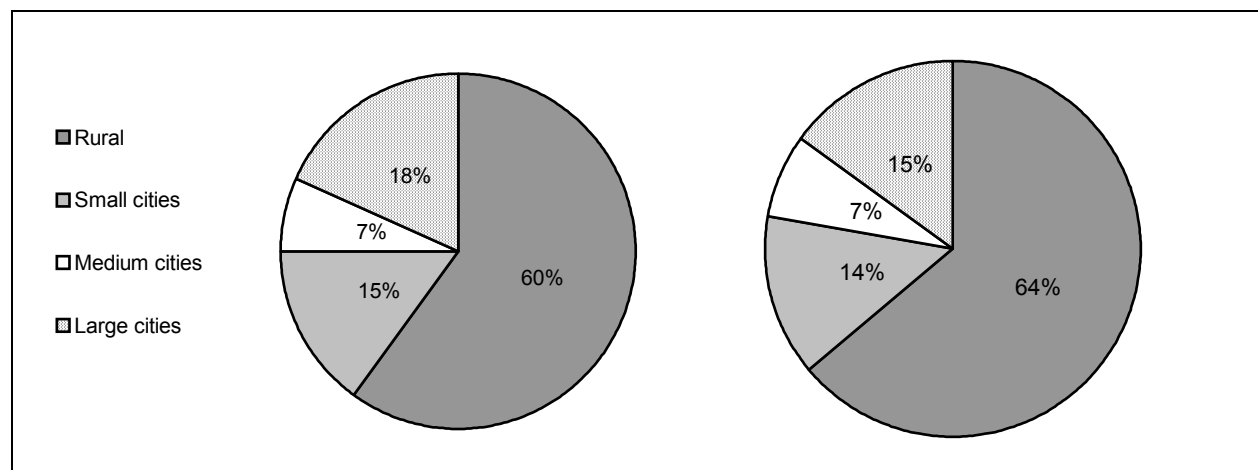
1.103. This important reduction was mostly driven by improvements in urban areas, however, and especially in large cities, where the poverty index was reduced by one third, from 9.6 to 6.7 percent. In rural areas, in contrast, poverty fell only by 6 percent. As a result, the share of poor living in rural areas increased, from 60 to 64 percent between 2001 and 2002, while the share of poor living of urban areas, and especially larger cities, fell (Figure A9.1).

**Table A9.1: Poverty Measures: Headcount Index, Poverty Gap, and Poverty Severity, 2001 and 2002**

Region	Head Count Index (P0)		Poverty Gap (P1)		Poverty Severity (P2)	
	2001	2002	2001	2002	2001	2002
Rural	23.2	21.7	5.2	4.5	1.8	1.4
Urban	13.0	10.2	2.9	2.0	1.0	0.6
- Small cities	18.6	15.8	4.1	3.4	1.4	1.2
- Medium cities	18.2	16.3	3.8	2.8	1.1	0.8
- Large cities	9.6	6.7	2.2	1.3	0.8	0.4
<b>National</b>	<b>17.6</b>	<b>15.4</b>	<b>3.9</b>	<b>3.1</b>	<b>1.3</b>	<b>1.0</b>

1.104. The poverty gap also fell, as did the poverty severity index. Again, large cities saw the sharpest fall in the poverty gap and the poverty severity index. The ranking between areas – with rural areas the poorest, followed by small, medium and large cities – did not change between the years, however, for any of the poverty measures. The fact that poverty became less deep in 2002 implies that a larger share of the poor population came closer to the poverty line. As a consequence, the headcount index was also more sensitive to changes in the poverty line in 2002 than in 2001.

<sup>22</sup> Source of data are the *Kazakhstan Household Budget Surveys* from 2001 and 2002.

**Figure A9.1: The Distribution of Poor, 2001 and 2002.**

1.105. At the regional level, there were important differences in the degree of poverty reduction, and although most oblasts saw an improvement, some oblasts even became poorer between 2001 and 2002 (table A9.2). Several poor oblasts saw an important reduction in the headcount index, for example Mangystau and South Kazakhstan as well as Jambyl. Yet, poverty levels increased in some poorer oblasts, including Kostanay and Kyzylorda, but as well as in some less poor oblasts, such as Karaganda, Pavlodar and North Kazakhstan. With the exception of Kostanay, poverty increases in these oblasts were essentially driven by large increases in rural poverty. The situation in Karaganda, Kyzylorda and Pavlodar merits special attention: rural poverty doubled in Karaganda, from 16.7 to 32.7 percent, and increased from 30 to 50 percent in Kyzylorda. In 2001, rural poverty was only at 7 percent in Pavlodar, but tripled, to 22 percent, in 2002.

**Table A9.2: Head Count Index (P0) by Oblast: 2001, 2002, and % Change**

Oblast	National			Rural			Urban		
	2001	2002	% change	2001	2002	% change	2001	2002	% change
Akmola	11.0	10.0	-9.2	10.7	<b>12.5</b>	<b>16.9</b>	11.3	6.9	-39.0
Aktobe	18.2	13.8	-24.0	29.0	25.5	-12.1	10.1	4.6	-53.8
Almaty	19.9	11.3	-43.2	20.4	13.3	-34.7	18.6	6.3	-66.2
Atyrau	23.6	23.3	-1.1	23.1	<b>27.1</b>	<b>17.1</b>	23.9	20.8	-13.0
West-Kazakhstan	16.2	11.7	-28.1	19.7	16.5	-16.5	10.4	3.8	-63.0
Jambyl	29.0	23.0	-20.7	29.9	24.3	-19.0	27.8	21.4	-23.1
Karaganda	11.6	<b>16.5</b>	<b>42.6</b>	16.7	<b>32.7</b>	<b>96.0</b>	10.4	<b>12.7</b>	<b>21.8</b>
Kostanay	20.6	<b>23.0</b>	<b>11.7</b>	31.1	<b>32.5</b>	<b>4.5</b>	11.0	<b>14.4</b>	<b>30.9</b>
Kyzylorda	28.1	<b>32.2</b>	<b>14.6</b>	28.9	<b>49.2</b>	<b>70.2</b>	27.6	20.2	-26.6
Mangystau	38.8	23.5	-39.3	95.5	76.1	-20.4	22.8	8.8	-61.4
South-Kazakhstan	28.7	18.0	-37.2	31.5	18.6	-40.9	23.7	17.0	-28.0
Pavlodar	6.3	<b>12.0</b>	<b>90.1</b>	7.0	<b>22.1</b>	<b>217.7</b>	5.8	5.1	-11.3
North-Kazakhstan	5.4	<b>9.2</b>	<b>70.3</b>	6.2	<b>13.5</b>	<b>118.9</b>	4.1	2.4	-41.1
East-Kazakhstan	13.2	<b>15.2</b>	<b>14.9</b>	18.1	<b>21.3</b>	<b>17.3</b>	9.6	<b>10.6</b>	<b>11.3</b>
Astana (city)	1.6	<b>2.9</b>	<b>81.3</b>	-	-	-	1.6	<b>2.9</b>	<b>81.3</b>
Almaty (city)	3.2	1.6	-50.8	-	-	-	3.2	1.6	-50.8
<b>National</b>	<b>17.6</b>	<b>15.4</b>	<b>-12.5</b>	<b>23.2</b>	<b>21.7</b>	<b>-6.5</b>	<b>13.0</b>	<b>10.2</b>	<b>-21.8</b>

1.106. As a result of variations in poverty reductions between oblasts, there were also important shifts in the distribution of poor by region. The poverty increase in poverty in Karaganda implied that more of the poor (+5 percent) lived in the center of Kazakhstan in 2002 than was the case in 2001. Similarly, since

poverty increased in all northern oblasts (Kostanay, North-Kazakhstan and Pavlodar), the share of poor living in the North increased by 6 percent. Conversely, the share of poor living in the South, East and West fell by 11 percent.

### Inequality Measures and Growth Pattern

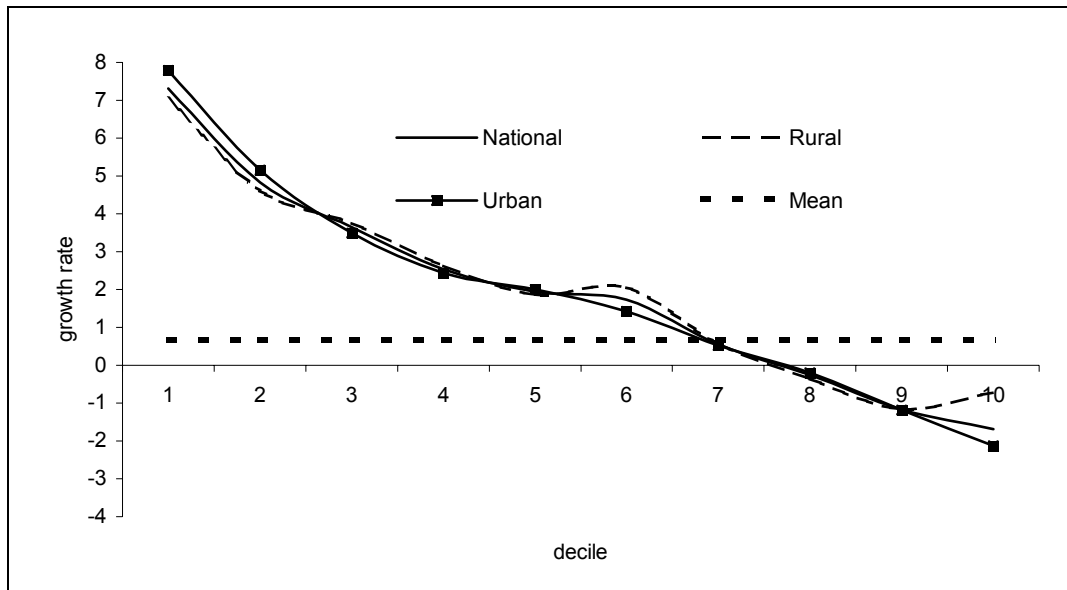
1.107. Improved income distribution is likely to have played an important role in reducing poverty in 2002. Indeed, the population in the poorest expenditure deciles increased their share of total consumption, at the expense of the richest deciles (Table A9.3). The Gini coefficient conveys a similar picture: in 2002, the Gini was lower in both urban and rural areas than in 2001 (Table A9.4). In fact, only two oblasts, Kyzylorda and East-Kazakhstan, and Astana City, experienced an increase in the Gini coefficient. Importantly, these three areas also saw an increase in poverty in the same period.

**Table A9.3: Share of Real Total Expenditures by Expenditure Decile in 2001 and 2002 (%)**

Decile	Percentage of Total		Cumulative Percentage of Total	
	2001	2002	2001	2002
1	3.5	3.7	3.5	3.7
2	5.0	5.2	8.5	8.9
3	6.0	6.2	14.5	15.1
4	7.1	7.2	21.6	22.3
5	8.1	8.2	29.7	30.5
6	9.3	9.3	39.0	39.9
7	10.7	10.7	49.7	50.5
8	12.5	12.4	62.2	62.9
9	15.1	14.8	77.3	77.7
10	22.7	22.3	100.0	100.0

**Table A9.4: Inequality Measure: Gini Coefficient (2001 and 2002)**

Oblast	Urban & Rural		Rural		Urban	
	2001	2002	2001	2002	2001	2002
Akmola	0.28	0.26	0.25	0.24	0.30	0.27
Aktobe	0.33	0.31	0.35	0.35	0.29	0.25
Almaty	0.25	0.24	0.24	0.24	0.27	0.24
Atyrau	0.29	0.29	0.26	0.23	0.30	0.30
West-Kazakhstan	0.26	0.25	0.25	0.23	0.26	0.24
Jambyl	0.25	0.25	0.23	0.22	0.28	0.27
Karaganda	0.27	0.27	0.21	0.22	0.28	0.27
Kostanay	0.30	0.31	0.32	0.32	0.26	0.27
Kyzylorda	0.23	0.26	0.18	0.23	0.25	0.25
Mangystau	0.32	0.29	0.14	0.15	0.29	0.27
South-Kazakhstan	0.25	0.22	0.23	0.20	0.28	0.23
Pavlodar	0.26	0.26	0.25	0.24	0.26	0.24
North-Kazakhstan	0.24	0.24	0.24	0.25	0.24	0.20
East-Kazakhstan	0.29	0.30	0.27	0.28	0.29	0.29
Astana (city)	0.27	0.28	-	-	0.27	0.28
Almaty (city)	0.26	0.24	-	-	0.26	0.24
<b>National</b>	<b>0.29</b>	<b>0.28</b>	<b>0.27</b>	<b>0.26</b>	<b>0.29</b>	<b>0.28</b>

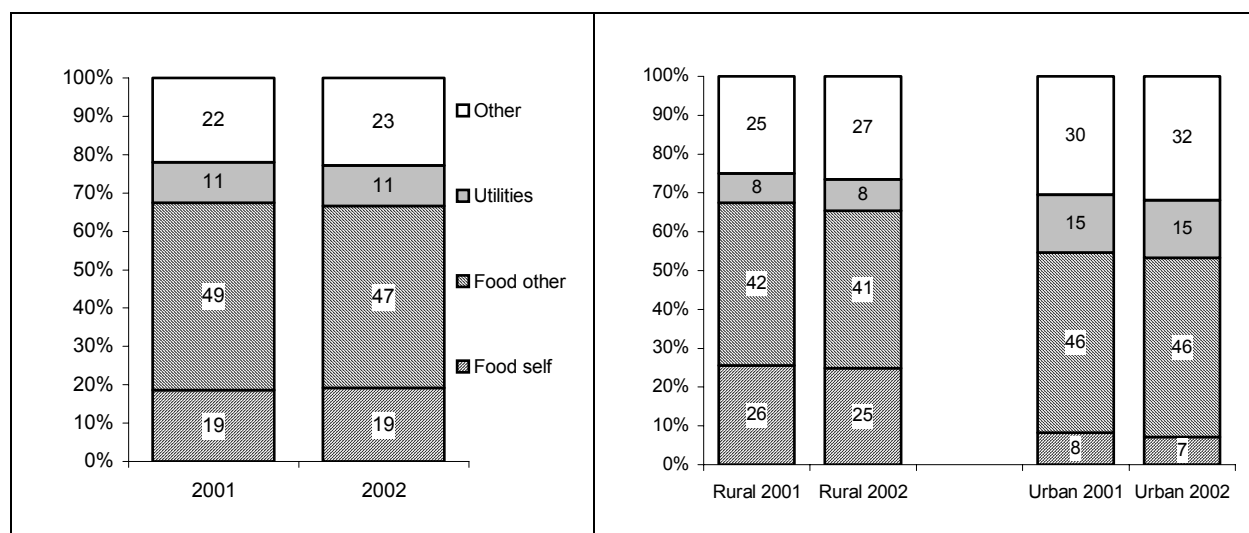
**Figure A9.2: Growth in Mean Consumption, by Expenditure Decile, 2001-2002**

1.108. The improvement in expenditure distribution is the result of pro-poor growth in Kazakhstan. Figure A9.3 shows growth rates in mean consumption for each decile. As can be seen from the downward slope, growth rates are declining the higher the level of expenditures, i.e. the richer the decile. For example, the poorest decile saw an increase in per capita consumption by 7.3 percent between 2001 and 2002, while the richest decile saw a fall in per capita consumption by 1.7 percent. Growth, hence, favored the poor much more than the rich. In addition, it appears that the poorest two deciles in urban areas experienced slightly higher growth rates than those in rural areas – again consistent with the finding that poverty rates fell more in urban areas.

### Consumption Patterns and Household Characteristics

1.109. The overall decline in poverty also affected consumption patterns. Generally, the budget-constrained poor would be expected to spend more on food, especially self-produced, and less on other goods. However, since the poor on average were less poor in 2002 than in 2001, their consumption pattern also changed, although by very small amounts. As seen in Figure A9.4, the share of food in total consumption expenditure fell slightly for the bottom quintile. The small reduction in food consumption shares could be observed in both rural and urban areas.

**Figure A9.3: Consumption Shares, Bottom Quintiles (left) and Rural and Urban Areas (right), 2001 and 2002**



1.110. Household characteristics also changed slightly in tandem with the lower poverty rates (Table A9.5). For example, average household size for the bottom quintile shrank from 6.6 to 6.4 people. The average number of children per household also fell, while the number of households with elderly increased. The share of households with children under age 6 fell from 49.2 to 46.6 percent. In addition, the share of female headed households increased, for all quintiles.

**Table A9.5: Household Characteristics of Population, 2001 and 2002**

Household characteristics	Bottom Quintile		Top Quintile		Total	
	2001	2002	2001	2002	2001	2002
Household size	6.6	6.4	3.4	3.2	4.9	4.7
Headed by females (%)	31.1	33.1	45.9	52.5	38.2	41.3
Age of household head	48.3	49.0	49.4	49.9	49.0	49.6
Average number of children 1/	2.9	2.7	0.8	0.8	1.7	1.6
Average number of adults 2/	3.3	3.3	2.1	1.9	2.7	2.6
Average number of elderly 3/	0.4	0.5	0.5	0.5	0.5	0.5
Household with no prime-age adult (%) 2/	0.3	0.4	12.6	14.8	5.6	6.4
Dependency ratio among households with any prime-age adult 2/	1.2	1.2	0.6	0.7	1.0	1.0
Household with children <6 years (%)	49.2	46.6	13.6	13.0	30.0	27.9

1. 0-18 years. 2. 18-53 years for women and 18-63 for men. 3. 54+ years for women and 64+ years for men.

### Access to Education, Health, and Infrastructure

1.111. There were some small improvements in the education levels of the population in Kazakhstan between 2001 and 2002, especially for the poorest twenty percent of the population. The share of people in the bottom quintile with at least general secondary or secondary vocational education increased from 28.4 to 29 percent of the population. The biggest improvements were registered at the level of basic vocational and general secondary level (Table A9.6).

**Table A9.6: Education Levels of Adults (16-59 years), (%), Bottom and Top Expenditure Quintiles**

Education Level	Bottom		Top		Total	
	2001	2002	2001	2002	2001	2002
None	1.1	0.6	0.5	0.3	0.8	0.4
General Primary	6.5	6.4	3.3	2.9	4.9	4.6
General Basic	19.9	16.9	7.6	7.5	13.1	12.0
Basic Vocational	44.2	47.1	25.7	26.5	36.8	37.6
General Secondary	11.0	12.2	8.9	9.4	9.8	11.4
Secondary Vocational	13.2	13.4	28.9	28.4	21.8	21.5
Higher Vocational	4.2	3.4	25.1	24.9	12.9	12.6
Post-graduate	0.0	0.0	0.1	0.1	0.0	0.1
<b>All</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<i>With at least general secondary or secondary vocational</i>	<i>28.4</i>	<i>29.0</i>	<i>63.0</i>	<i>62.8</i>	<i>44.4</i>	<i>45.5</i>

1.112. Access to school and health facilities also appears to have improved for the poorest quintile between 2001 and 2002, although the changes are so small that they may not be significant. The share of the population with less than 20 minutes to the nearest school increased from 73.9 percent to 74.4 percent in the poorest quintile, while the share with less than 20 minutes to the nearest health facility increased from 53.3 to 57.3 percent (Table A9.7 and A9.8).

**Table A9.7: Distance, in Traveling Time, to Nearest School, % of Population**

Distance	<i>Expenditure Quintile</i>				<i>Region</i>					
	Bottom		Top		Rural		Urban		Total	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
Less than 10 minutes	25.7	25.4	36.7	37.7	28.2	26.7	34.1	34.8	31.4	31.1
10-20 minutes	48.3	49.0	44.7	43.8	49.6	51.4	43.9	43.8	46.5	47.2
20-30 minutes	19.1	19.9	14.4	14.9	16.9	17.9	16.1	16.6	16.5	17.2
30-60 minutes	5.5	5.0	3.6	3.2	4.5	3.7	4.9	4.2	4.7	4.0
More than 1 hour	1.5	0.8	0.7	0.5	0.7	0.4	0.9	0.6	0.8	0.5
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Less than 20</i>	<i>73.9</i>	<i>74.4</i>	<i>81.4</i>	<i>81.5</i>	<i>77.8</i>	<i>78.0</i>	<i>78.1</i>	<i>78.6</i>	<i>77.9</i>	<i>78.4</i>

**Table A9.8: Distance, in Traveling Time, to Nearest Health Facilities, % of Population**

Distance	<i>Expenditure Quintile</i>				<i>Region</i>					
	<b>Bottom</b>		<b>Top</b>		<b>Rural</b>		<b>Urban</b>		<b>Total</b>	
	<b>2001</b>	<b>2002</b>	<b>2001</b>	<b>2002</b>	<b>2001</b>	<b>2002</b>	<b>2001</b>	<b>2002</b>	<b>2001</b>	<b>2002</b>
Less than 10 minutes	17.1	18.8	20.0	18.9	22.8	22.8	16.3	15.6	19.2	18.9
10-20 minutes	36.2	38.6	36.2	39.2	44.6	46.1	32.3	34.7	37.9	39.9
20-30 minutes	27.0	24.9	28.0	27.8	19.7	19.3	31.6	30.9	26.2	25.6
30-60 minutes	11.5	12.1	12.9	10.9	8.1	7.0	15.5	15.4	12.1	11.6
More than 1 hour	8.2	5.7	2.8	3.2	4.8	4.9	4.3	3.4	4.5	4.1
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
<i>Less than 20</i>	<i>53.3</i>	<i>57.3</i>	<i>56.3</i>	<i>58.1</i>	<i>67.4</i>	<i>68.9</i>	<i>48.6</i>	<i>50.3</i>	<i>57.1</i>	<i>58.7</i>

1.113. Access to infrastructure services/utilities like gas, phone, water, etc., appears to be one of the relatively few areas where the conditions of the poor still differ remarkably from the non-poor in Kazakhstan. As Table A9.9 shows, between 2001 and 2002, this divergence actually worsened for many key utilities. Mostly, the gap between the top and bottom expenditure quintile increased due to a worsening of the situation for the poor (rather than an increase for the rich). Thus, the share of the poorest 20 percent living in a household with central heating fell from 22 to 16 percent, while the share with water supply in the house fell from 25 to 22 percent. Given the reduction in poverty in Kazakhstan, it is not clear what accounts for these developments, especially since the rural-urban gap in services access actually was reduced over the same period.

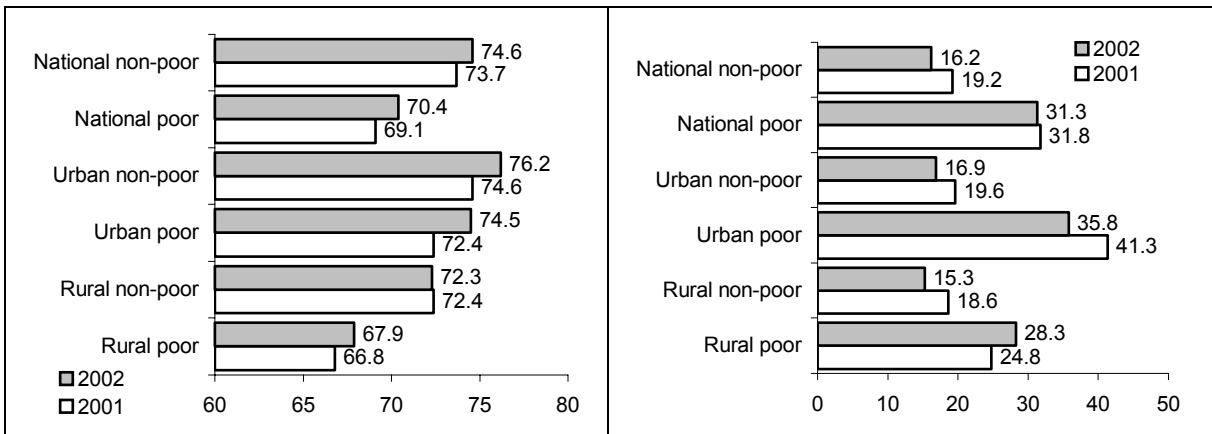
**Table A9.9: Housing Characteristics of Population (%)**

	<i>Expenditure Quintile</i>				<i>Region</i>					
	<b>Bottom</b>		<b>Top</b>		<b>Rural</b>		<b>Urban</b>		<b>Total</b>	
	<b>2001</b>	<b>2002</b>	<b>2001</b>	<b>2002</b>	<b>2001</b>	<b>2002</b>	<b>2001</b>	<b>2002</b>	<b>2001</b>	<b>2002</b>
Central heating	15	12	60	60	2	2	61	60	34	33
Gas	22	16	46	48	10	11	49	48	32	32
Telephone	12	14	66	66	18	18	53	57	37	39
Sewerage	15	13	61	61	2	2	63	62	35	35
Bath or shower	15	12	61	60	2	2	61	61	34	34
Electricity	99	99	100	100	99	100	100	100	100	100
Refuse chute	1	1	11	9	0	0	9	8	5	4
Garage	10	11	27	25	16	18	19	19	18	18
Hot water supply	9	7	52	53	1	1	48	48	27	27
Water supply	25	22	69	71	6	8	74	75	43	44

### Labor Market and Sources of Income

1.114. Overall, labor market conditions improved in 2002 compared to 2001. Labor force participation increased from 72.9 to 73.9 percent, and the unemployment rate fell quite significantly, from 21.1 to 18.6 percent. The most significant changes took place in urban areas, where labor participation increased from 74.3 percent to 76.0 percent, and unemployment fell from 22.1 to 18.9 percent. Indeed, labor participation increased uniformly for all groups, except for the rural non-poor (Figure A9.5). However, although unemployment rates fell overall, the rural poor actually saw an increase in unemployment rates between 2001 and 2002. As a result, the employment gap actually increased between the poor and the non-poor. In all, these results suggest that growth and job creation did not benefit the rural poor to the same extent as others.

**Figure A9.4: Labor Participation Rates (left) and Unemployment Rates (right), by Poverty Status and Location**



1.115. Aggregate unemployment numbers are in fact hiding a growing labor market segregation along gender, location and poverty status. As can be seen in Table A9.10, female unemployment rates increased, from 21.5 percent to 23.1 percent, while male unemployment rates fell from 17.1 percent to 14 percent. Importantly, the increase in female unemployment rates was entirely driven by increases in unemployment for the two poorest deciles, which in turn means that the stagnation in unemployment rates for the poor was due to unemployment among poorer females. Similarly, the poor in rural areas fared worse than urban areas. The two poorest deciles in rural areas were the only groups that saw increases in unemployment, whether in urban or in rural areas.

**Table A9.10: Unemployment Rates (16-59 years) by Expenditure Decile and by Gender and Location (%)**

Decile	Gender				Region					
	Female		Male		Rural		Urban		Total	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
1	44.1	45.2	25.3	24.7	28.1	30.4	42.5	39.7	34.2	34.1
2	34.3	36.3	22.3	19.4	20.6	24.3	37.8	32.0	27.9	27.4
3	39.0	29.3	22.5	16.3	26.1	20.7	35.4	24.5	30.2	22.4
4	31.3	27.0	19.2	16.3	23.5	18.4	26.7	24.6	25.1	21.4
5	26.1	20.4	19.7	12.8	19.5	15.2	26.0	17.8	22.7	16.5
6	24.4	23.3	19.1	12.5	19.8	14.7	23.5	20.3	21.7	17.8
7	19.4	18.7	12.6	12.5	12.4	12.9	18.5	17.4	16.0	15.6
8	19.1	17.9	13.1	10.2	15.6	11.1	16.5	16.0	16.1	14.2
9	16.8	15.7	12.4	10.7	15.1	11.3	14.5	14.2	14.7	13.4
10	10.4	10.0	6.8	5.5	6.3	9.7	9.4	7.7	8.8	8.1
<b>National</b>	<b>21.5</b>	<b>23.1</b>	<b>17.1</b>	<b>14.0</b>	<b>19.9</b>	<b>18.1</b>	<b>22.1</b>	<b>18.9</b>	<b>21.1</b>	<b>18.6</b>

1.116. The general improvement in labor market conditions can also be seen in the composition of household income. Table A9.11 presents the share of households that received some form of either type of income, and the share of total household income by source of income. It is clear that the share of income earned increased for all groups – by 2002, there were hardly any households (around 0.8 percent only) that did not receive any income earned, and the share in total income increased from 61.1 to 65 percent. This increase was also observed across all expenditure quintiles. In contrast, the importance of

pension income was reduced, as were the contributions of social transfers and private transfers to household income. It is worth pointing out, however, that the share of social transfers in income fell less for the poorest quintile than for any other group.

**Table A9.11: Sources of Household Income, by Expenditure Quintile, 2001 and 2002**

	Bottom		Second		Third		Fourth		Top		Total	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002
<u>Percent of households with income by source</u>												
Income Earned	97.5	99.3	96.4	99.4	95.3	98.8	93.6	99.4	94.3	99.2	95.1	99.2
Pensions	32.6	30.6	35.5	34.0	40.1	37.9	46.0	43.4	43.4	43.1	40.7	39.1
Rental Income	0.5	0.7	1.2	0.6	0.9	1.4	1.7	2.3	1.6	3.0	1.3	1.8
Social Transfers	49.3	50.3	41.8	37.0	35.5	31.2	30.9	27.6	24.4	24.0	34.0	31.7
Private Transfers	56.0	52.2	51.7	49.4	52.3	47.1	50.7	49.3	49.9	51.0	51.6	49.8
Other Income	6.1	6.1	5.7	6.2	5.9	6.6	5.7	6.0	5.6	5.1	5.7	5.9
<u>Share of Household Income by Source</u>												
Income Earned	59.7	63.2	63.0	67.5	61.9	66.6	58.4	62.8	62.1	65.1	61.1	65.0
Pensions	15.6	14.5	18.0	17.0	22.4	20.4	29.1	25.4	26.5	23.8	23.5	21.2
Rental Income	0.0	0.1	0.2	0.1	0.1	0.2	0.2	0.3	0.2	0.5	0.2	0.3
Social Transfers	16.3	15.8	11.9	9.4	8.7	6.7	6.4	5.6	4.1	3.6	8.3	7.2
Private Transfers	7.5	5.7	6.0	5.3	6.1	5.2	5.3	5.3	6.5	6.6	6.2	5.7
Other Income	0.9	0.7	0.9	0.7	0.8	0.8	0.5	0.7	0.6	0.4	0.7	0.6

## Conclusion

1.117. Overall, household data from 2001 and 2002 indicate a reduction in poverty and an improvement in the situation of the poor in Kazakhstan, most likely due to high growth that also benefited the poor to a important extent. In just one year, the poor became less poor, had higher levels of education and better access to education and health services. However, there are some less positive developments that need to be taken into account. First, poverty fell much less in rural areas than in urban areas. Second, there were very different regional outcomes in terms of poverty reduction, and in some oblasts, poverty actually increased quite significantly. Third, the gap between the poor and the non-poor in terms of access to services actually widened. This is all the more important given that access to services is one area where there remain large differences between the poor and the non-poor. And finally, although labor market conditions improved in response to higher growth, the poor, especially women, and especially in rural areas, were much less able to profit from job creation than other groups.

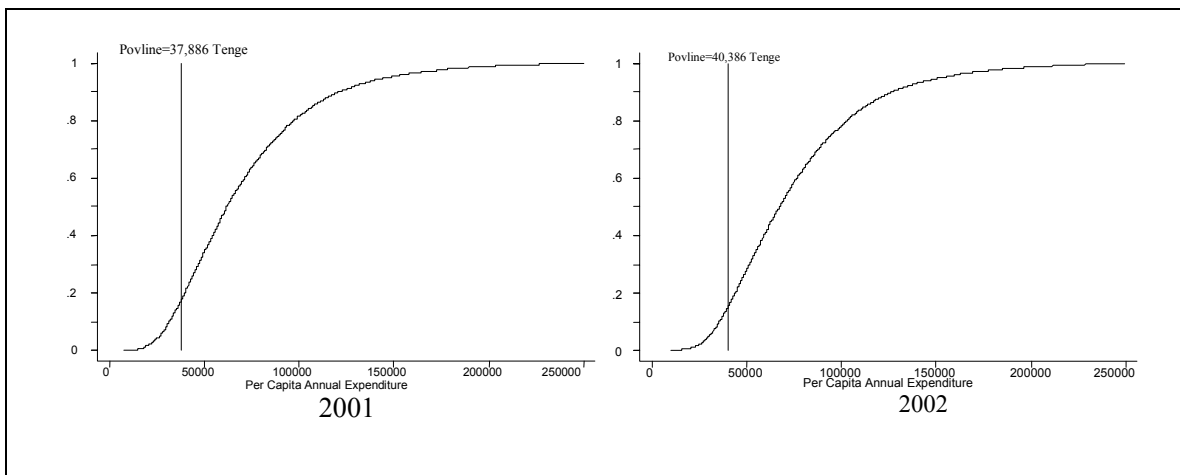
## ANNEX 10. ROBUSTNESS OF POVERTY LINES: POVERTY INCIDENCE CURVES, 2001 AND 2002

1.118. Poverty in Kazakhstan is not very deep. As a result, small changes in the poverty line may have a magnified impact on the proportion of the population in poverty. Perhaps more importantly, variations in the poverty line could also affect the broad picture of urban-rural differences in poverty and temporal patterns, and the rankings of different groups in terms of poverty. It is therefore important to evaluate the robustness of the conclusions regarding poverty trends and patterns.

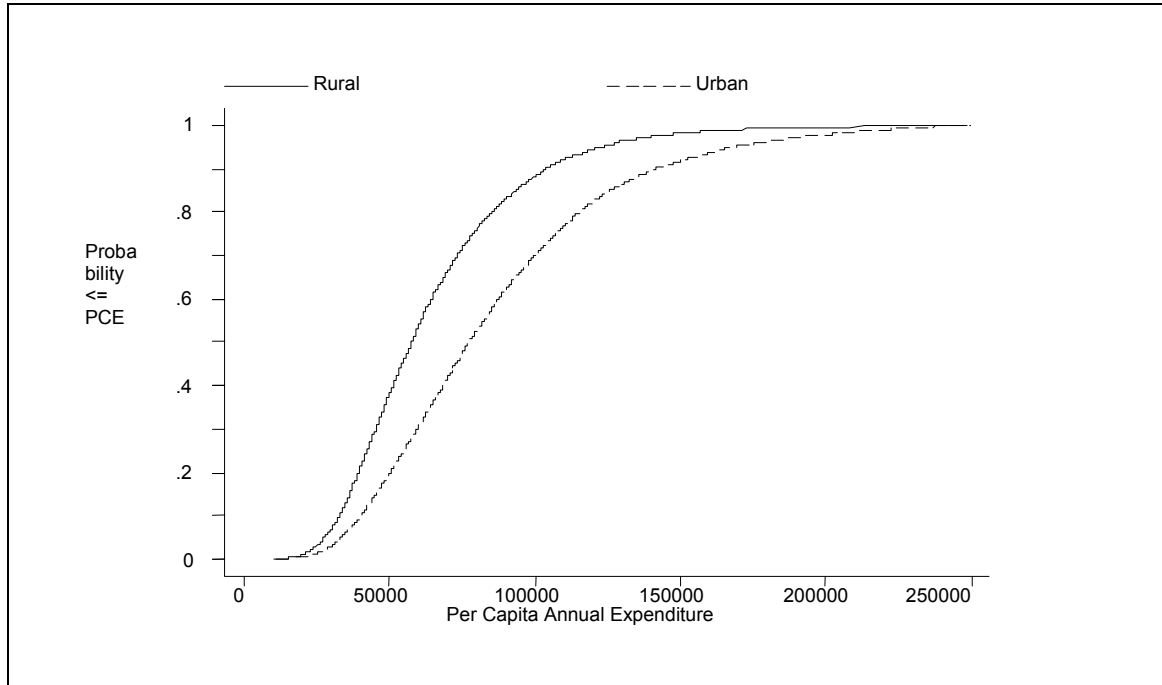
1.119. Figure A10.1 plot the poverty incidence curves, or, simply, the cumulative distribution of the poor population corresponding to alternative poverty lines. As these figures show, the main conclusions regarding regional and temporal poverty trends are robust to the choice of poverty lines. While the slope of the curves varies across areas and will lead to different poverty rates for a given change in the value of the poverty line, the rankings patterns are maintained, and the conclusions hold:

- Poverty fell in 2002 compared to 2001 (Figure A10.1)
- The rural population is always poorer than the urban population (Figure A10.2)
- The south and the center regions are poorer than the north, the west and the east (Figure A10.3).

**Figure A10.1: Cumulative Distribution Function, National, 2001 and 2002**



**Figure A10.2: Cumulative Distribution Function, Urban and Rural Areas, 2002**



**Figure A10.3: Cumulative Distribution Function, Regions, 2002**

