Report No: 78213-KG

THE KYRGYZ REPUBLIC: POVERTY UPDATE, 2011

June 21, 2013

Poverty Reduction and Economic Management Unit
Europe and Central Asia Region

<u>Document of the World Bank</u>

FISCAL YEAR
July 1-June 30

Currency: Kyrgyz Som (KGS)
$1 = 46.14 KGS

Weights and Measures: Metric System

ACRONYMS AND ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
CPI	Consumer Price Index
ECA	Europe and Central Asia
ECA POV	Europe and Central Asia Poverty Database
GDP	Gross Domestic Product
GNI	Gross National Income
HH	Household
HIV	Human Immunodeficiency Virus
KGS	Kyrgyz Som
KIHS	Kyrgyz Integrated Household Survey
LHS	Left hand side
LSMS	Living Standard Measurement Survey
MBPF	Monthly Benefit for Poor Families
MDG	Millennium Development Goals
MSB	Monthly Social Benefit
NSC	National Statistical Committee of the Kyrgyz Republic
RHS	Right hand side
PCC	Per capita consumption
PPP	Purchasing Power Parity
T-bills	Treasury Bills
UN	United Nations
USD	United States dollar
WB	World Bank

Vice President:	Philippe H. Le Houerou
Country Director:	Saroj Kumar Jha
Country Manager:	Alexander Kremer
Sector Manager:	Carolina Sanchez Paramo
Task Team Leader	Sarosh Sattar

Contents

EXECUTIVE SUMMARY

This report aims to provide an update of the profile of the poor and describe the dynamics of poverty and inequality in the Kyrgyz Republic during 2007-2011. This period was marked by economic and political volatility which adversely impacted the country's capacity to achieve some of the Millennium Development Goals (MDG). The lack of progress in indicators related to maternal and child health and combating HIV/AIDS and other diseases continues to be of concern. However, in comparison to other low-income countries, non-monetary indicators of poverty in the Kyrgyz Republic fare relatively well in such areas as health, education, and access to basic infrastructure services.

The share of the population living below the absolute national poverty line was 36.8 percent in 2011. This translates into over 2 million people being unable to meet their basic food and non-food needs. The extreme poverty rate was 4.5 percent of the population in 2011, which implies that over 252 thousand people were unable to meet their basic food needs. Poverty has a strong regional dimension in the Kyrgyz Republic. The incidence of both absolute and extreme poverty is higher in rural areas where 68 percent of the total poor population resides. The population density varies significantly across the country such that over half of all the poor are concentrated in the two most populous oblasts of Osh and Jalal-Abad.

According to World Bank estimates, after a period of sometime rapid decline, poverty indicators have stagnated in the Kyrgyz Republic between 2009 and 2011. The trend in poverty follows an "L" shape: first declining and then stagnating at a high level. Between rural-urban areas, the trends were divergent: rural poverty proved to be resilient and did not grow in recent years in contrast to urban poverty. By 2011, the gap between rural and urban poverty narrowed to 10 percentage points.

Changes in poverty are correlated with macroeconomic trends: periods of economic growth coincide with reductions in poverty, i.e., growth and poverty reduction episodes appear to be symmetric, while times of economic downturn are linked to poverty stagnation and increases. Though, this linkage seems to weaken in later years as some growth episodes fail to translate into poverty reduction. In the context of stable inequality dynamics, the factor of rising food prices becomes important in explaining poverty trends.

Regional differences in poverty are significant. Traditionally, the capital Bishkek and the Chui oblast have the lowest poverty rates while Talas and Naryn are oblasts with the highest poverty levels in the country. Many oblasts, such as Osh, Talas, Chui, and Bishkek city, have experienced an increase in poverty from 2010 to 2011. In contrast, other oblasts, like Jalal-Abad, Naryn, Batken, have managed to lower poverty during the same timeframe. Finally, the Issykkul oblast stands out as a place where the poverty level continues to decline for four consecutive years.

The report finds that at the micro-level the leading factors associated with poverty are household demographic characteristics. Larger and younger households with relatively fewer income-generating members and more net consumers, such as children, are more prone to poverty. Female-headed households have lower consumption per capita all other things held equal.

Human capital-related characteristics of the head of household are also found to be associated with poverty at the household level. Higher educational attainment is negatively correlated with poverty. The negative relationship between education and poverty is much weaker in rural areas, where informal

activities in the agricultural sector play an important role. In line with this finding, the risk of poverty is lower if a head of household is employed (and the probability of employment positively related to education), especially in wage employment in urban areas.

Non-income dimensions of well-being indicate that large portions of the population lack access to basic infrastructure services. There are disparities in dwelling conditions and in the access to utilities between the poor and non-poor which is a reflection of the rural residence of poverty—yet even the more affluent experience hardship when it comes to access to services. The poor live in more crowded spaces compared to the non-poor. Even though the availability of basic utilities, such as cold and hot water, gas, and heating is low at the national level, the poor have less access than the non-poor and also face more frequent interruption of utilities services.

Differences exist in the level and composition of the total household income and the consumption basket across poor and non-poor households. The share of income from work (e.g., earning) is lower among poorer households while social benefits and pensions play a more important role in the total incomes of the extreme poor. Interestingly, data shows that more affluent households receive more of their income from work and relatives from abroad in absolute terms. As a proportion of total income, there is no reported difference in remittances between the poor and the non-poor. As expected, the poor have a higher share of food in the consumption basket, which makes them more vulnerable to food price shocks. The poorest in urban rural areas spend 72 percent of their total consumption on food, while non-poor households spend 60-65 percent.

Compared to the poor, affluent households spend seven times more on health-related expenses such as medicine, hospitalization, and outpatient treatment. Apart from these costs, the poor report less need for health services. Among the poorest quintile, only 30 percent of respondents indicated the need for health services in 2011, while among the top quintile, this share was almost 50 percent. The lower demand may be the result of the poor quality of services and low overall accessibility among the poor to health services, especially in rural areas. Among the poorest, there were more individuals who did not use health services, though the services were needed. An absolute majority of these people were engaged in self-medication, regardless of wealth status. Monetary considerations were an important factor for all.

The household's poverty status appears to affect children's school attendance. Children in poor households are underrepresented at the secondary level of education and beyond. For instance, the extremely poor in the category of 14-16 year-old males have only an 81 percent of attendance rate while the non-poor have a 97 percent. Attendance is more of an issue for poor and poorer households for the age group, 20-24 years, corresponding to the tertiary level of education.

Labor force participation and employment rates are higher in rural areas, due to the access to land and widespread farming activities. In general, the agricultural sector accounts for one-third of total employment in the country. Despite the better employment opportunities in rural areas, underemployment and the prevalence of informal jobs with low-productivity are the key features of the rural labor market. Labor force participation and employment rates are higher among individuals from wealthier quintiles, while the poor are less involved in the labor market. This pattern is very distinctive in the urban areas while in rural areas the differences between the poor and non-poor in labor market are blurred. The rural poor and non-poor are almost equally likely to be unemployed and do not show significant variations in employment and labor force participation rates.

A. Progress in achieving the MDGs

1.   Close to three years remain until the target date for achieving the Millennium Development Goals (MDGs). Based on the current assessment, the progress achieved so far by the Kyrgyz Republic on the MDGs has been significant but not uniform (see annex for data). Political and economic disturbances may have had negative effects on the achievement of the targets. The area where the country has not made as much progress as hoped for is in the health-related goals of improving maternal health and combating HIV/AIDS and other diseases—these targets are not likely to be reached. Other MDGs appear to be either on track or it is too early to determine the outcome. However, it is clear that much of the success of reaching the targets by 2015 is critically dependent on the reform efforts and consistency of policies by the Government of the Kyrgyz Republic.

2.   The first MDG goal is to eradicate extreme poverty and hunger—in which the country is showing significant progress. The targets under the goal are in the areas of extreme poverty, gender parity in school enrollment, and access to drinking water. International measures of poverty rates are declining but expected to stagnate or moderately increase in coming years. This introduces some uncertainties for future dynamics, but the progress on MDG 1 is visible and the goal is likely to be achieved.

3.   The importance of education is encapsulated in MDG 2 or "achieving universal primary education". The Kyrgyz Republic has traditionally had high primary enrollment and completion rates given its socialist legacy. Enrollment rates remain high indicating the importance the population places on education. There are no significant gender differences in the schooling rates at the national level, though this might not always be the case in rural areas. However, one of the main problems in the education sector is the inefficiency of the financing system, which affects the quality of the education and human capital. The government is making efforts to reform the sector. MDG 2 could be achieved, though the risks in the sector are of a long-standing nature.

4.   The development community continues to place great emphasis on "promoting gender equality and empowering women" (e.g., MDG 3). The situation with gender equality in the country is relatively positive, at least as framed in legislation which ensures equal rights for men and women. The country is adopting a comprehensive strategy to ensure gender equality with assistance from the international donor community. Still, occupational segregation is common and women are more likely to be in low-paying jobs and receive a lower salary than men. The gender wage gap is almost 30 percent according to recent estimates. Progress with female representation in decision-making is mixed. Despite some challenges, this MDG is on track, and more efforts to improve gender equality are expected.

5.   In the area of child mortality, the country has been making progress, as both the infant and under-five mortality rates have been steadily falling. Assuming that the positive trend will be maintained, there is a possibility that this MDG will be achieved, but it is too early to fully confirm this. Despite good progress, infant mortality rates are quite high for the country compared to the average for the Europe and Central Asia (ECA) region. Similar to other countries, the rural poor have lower access to health services, which contributes to the high child mortality rates.

6.   Similarly, the maternal mortality rate is very high in the country compared to the ECA region. The quality of the data in this area is mixed with some improvement in the reporting of these statistics, which resulted in the rise of rates in recent years. However, more fundamental reasons have to do with social factors, like poverty and low access to health services in rural areas. High levels of mortality and its dynamics make this goal less likely to be achieved, even though the statistics of birth attendance by qualified personnel is steady. The country would need to improve the efficiency of resources directed to mother and child health to improve the situation.

7.   The prevalence of HIV and the number of estimated deaths from AIDS grew over the last decade. This situation is alarming and needs policy attention. Compared to the early 1990s, tuberculosis remains a health challenge. The death rate from tuberculosis increased in the mid-2000s and, subsequently, fell to the level of the early 1990s, reflecting the government's greater attention as well as improved health care policies, which are undergoing reforms. Statistics show that problems related to preventing and treating HIV and tuberculosis are not being fully resolved and, thus, the diseases pose continued risks to the population. Given the dynamics of these indicators, it is likely that MDG 6 will not be achieved during the short time that remains until 2015.

8.   Ensuring environmental sustainability (MDG 7) was not a priority in the policy agenda of the country. The economic downturns and decreased level of industrialization resulted in the expansion of forest areas. In addition, donor support helped to increase the share of the population with access to improved water sources. Progress in other targets related to this MDG has been slow or nonexistent, for example, access to improved sanitation facilities. As the dynamics of targets are slow and mixed, it is difficult to determine whether this MDG will be achieved.

9.   MDG 8 covers a range of targets, which include external debt, development assistance, communication, trade, and others. Overall progress in this area has been reasonable and driven by the expansion of the ICT sector: usage of mobile phones and internet services has dramatically increased. Yet, other targets—such as access to essential medicine and reducing youth unemployment—are showing slower improvements and the country continues to be reliant on financial assistance from donors to implement the needed reforms. Given the mixed progress, it is difficult to assess whether this goal could be achieved by 2015.

Table 1: Progress status of MDGs in the Kyrgyz Republic

MILLENNIUM DEVELOPMENT GOALS	1	2	3	4	5	6	7	8
	Eradicate Extreme Poverty and Hunger	Achieve Universal Primary Education	Promote Gender Equality and Empower Women	Reduce Child Mortality	Improve Maternal Health	Combat HIV/AIDS, Malaria, and Other Diseases	Ensure Environmental Sustainability	Develop a global partnership for development
Kyrgyz Republic	Likely	Likely	Likely	Maybe	Unlikely	Unlikely	Maybe	Maybe

B. International comparison of human development indicators

10.   Compared to other countries in Eastern Europe and Central Asia, the Kyrgyz Republic is among the poorest and most vulnerable. It ranks the second highest based on the international poverty line of PPP-corrected $2.50 per day as well as on vulnerability (defined as the share of population falling between PPP $2.50 and $ 5.00 per day) such that more than 85 percent of the population is both poor and vulnerable, while half of the population lives on less than PPP $2.50 per day. It should be noted that the calculation of PPP-corrected $2.50 and $5.00 is standardized across countries. The consumption aggregate uses the purchasing power parity conversion factor to make local currencies comparable across the countries[1].

Figure 1: Poverty and vulnerability rates for selected ECA countries
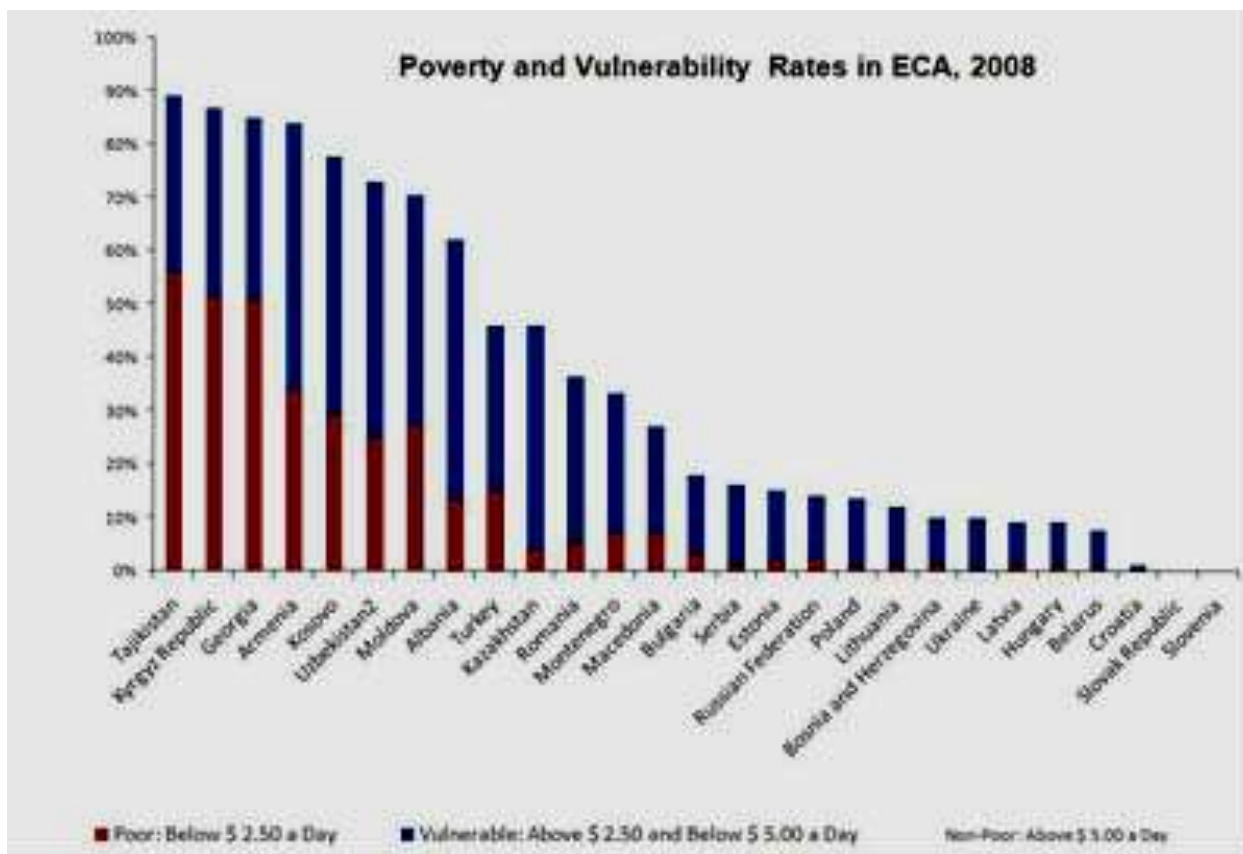
Source: ECA POV data archives

11.   Another international measure of poverty, namely PPP-corrected $2.00 using 2008 and 2009 data, shows that the Kyrgyz Republic has high rates of poverty compared to ECA even when applying the lower poverty line. This is consistent with the lower Gross National Income (GNI): US$880 per capita which falls towards the bottom of the ECA distribution. Also, compared to other ECA countries, the Kyrgyz Republic has also a high level of income inequality as demonstrated by the GINI index. Yet, when compared globally to other low income

---

[1] This welfare aggregate is different from the one used for estimation of national poverty line.

countries, poverty in the Kyrgyz Republic is relatively moderate with a very small share of the population falling below the international poverty line of PPP-corrected $1.25 per day.

Figure 2: GINI index for selected ECA countries 2008 /09
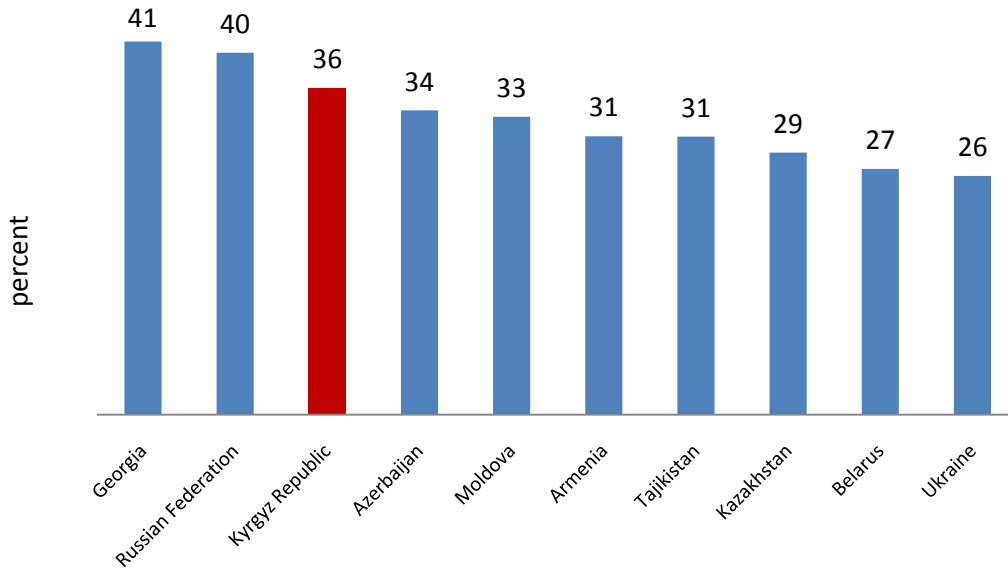
Figure 3: Poverty headcount ratio at $2 a day (PPP) 2008/2009   **Figure 4: GNI per capita, Atlas method, 2011**
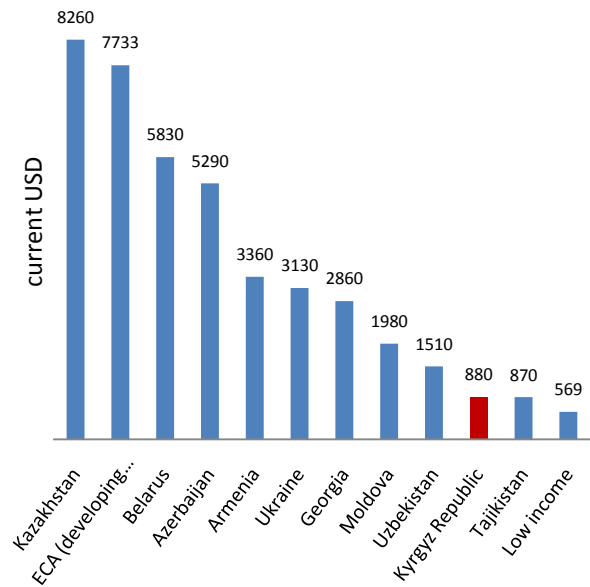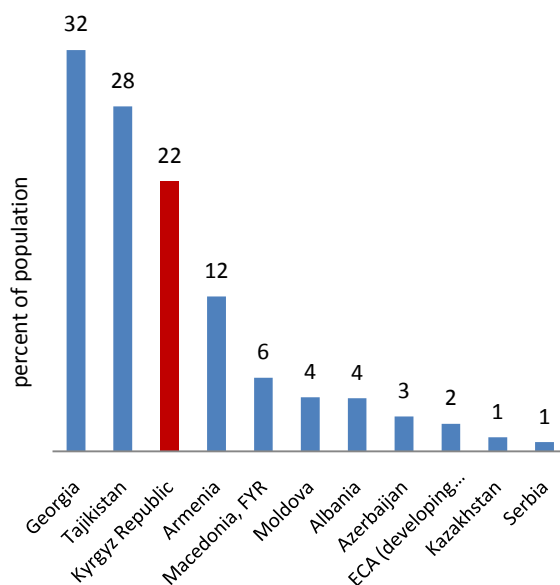
Source: World Development Indicators, World Bank.

12.   Similarly, non-income dimensions of poverty compare well to other low-income countries. The difference is especially pronounced in the health and education sectors. The country's better performance of some social indicators compared to low-income peers might be a result of better initial conditions and the population's continued demand for health and education services, coupled with their availability. The country has managed to keep literacy rates high and

school enrollments comparable with other, more affluent countries (see table below). While the country is in a better position than low-income countries, it lags behind other countries in the Europe and Central Asia Region. The persistence of relatively low social indicators reflects continued economic problems in the country related to the prolonged period of transition and political instability.

Table 2: Selected Social Development Indicators2: An International Comparison

	Kyrgyz Republic	ECA (developing only)	Low income	Armenia	Georgia	Moldova	Tajikistan	Kazakhstan
Health								
Births attended by skilled health staff (% of total)	**98.5**	97.7	43.7	99.8	99.8	99.6	85.7	99.7
Life expectancy at birth, total (years)	**68.7**	69.9	58.2	73.6	73.1	68.6	66.9	67.6
Maternal mortality ratio (modeled estimate, per 100,000 live births)	**71.0**	32.2	410.0	30.0	67.0	41.0	65.0	51.0
Physicians (per 1,000 people)	**2.3**	3.2	0.2	3.7	4.7	2.7	2.1	3.9
Prevalence of HIV, total (% of population ages 15-49)	**0.2**	0.5	2.7	0.1	0.1	0.4	0.2	0.1
Mortality rate, infant (per 1,000 live births)	**29.1**	19.2	66.5	17.2	20.0	14.7	56.5	26.7
Incidence of tuberculosis (per 100,000 people)	**159.0**	91.5	269.3	72.8	107.0	176.5	202.5	169.8
Education and Gender								
Primary completion rate, female (% of relevant age group)	**96.2**	96.7	61.5	103.0	104.0	91.9	98.1	108.8
Ratio of female to male primary enrollment (%)	**99.6**	98.9	93.5	102.5	100.5	98.5	96.2	100.4
Ratio of girls to boys in primary and secondary education (%)	**99.5**	97.2	91.2	102.6	96.7	101.4	90.2	98.7
School enrollment, primary (% gross)	**98.4**	100.0	103.4	107.6	109.7	93.9	101.5	110.2
Literacy rate, adult total (% of people ages 15 and above)	**99.2**	97.9	63.2	99.5	99.7	98.5	99.7	99.7
Labor force participation rate, female (% of female population ages 15-64)	**58.9**	57.5	69.6	54.8	58.8	47.1	60.5	73.8
Hunger and Poverty								
Prevalence of undernourishment (% of population)	**11.0**	6.0	29.4	21.0	6.0	5.0	26.0	5.0
Poverty headcount ratio at $2 a day (PPP) (% of population)	**23.9**	2.2	74.3	16.5	33.6	6.2	32.3	1.2
Other								
Improved sanitation facilities (% of population with access)	**93.0**	84.4	35.7	90.0	95.0	84.3	94.0	97.0
Improved water source (% of population with access)	**89.8**	95.5	64.5	97.3	98.0	95.5	63.5	95.0
CO2 emissions (metric tons per capita)	**1.2**	7.7	0.3	1.7	1.3	1.3	0.5	14.9
Internet users (per 100 people)	**16.7**	30.5	3.8	9.2	20.0	28.6	10.1	21.6
Mobile cellular subscriptions (per 100 people)	**79.3**	115.8	27.1	81.5	76.0	77.7	67.3	109.2

Source: World Development Indicators, World Bank.

---

[2] Statistics is average for the period of 2007-11

C. Macroeconomic indicators and poverty trends

13.   Economic growth rate as measured by changes in GDP averaged 5 percent per annum between 2007 and 2011; however, the trajectory of the growth was not stable. The strong economic growth of 2007 and 2008 was interrupted by the global financial and food crises in 2009. Later, the country experienced internal political and economic crises in 2010 that adversely affected growth. Only in 2011 did the Kyrgyz Republic resume growing, when the growth of real GDP registered 6 percent, due in small part to countercyclical fiscal policy. The country is an open economy and vulnerable to external and internal shocks. Some unexpected developments such as rising food and fuel prices and environmental factors (e.g., "ice sliding" at the Kumtor gold mine which accounts for about 10 percent of country's GDP) negatively affected economic performance in 2012.
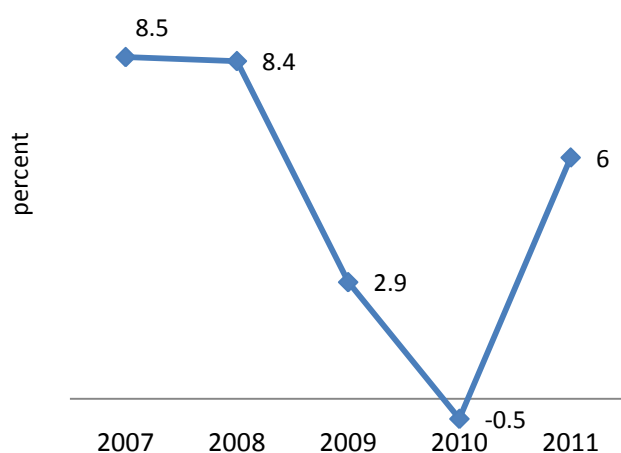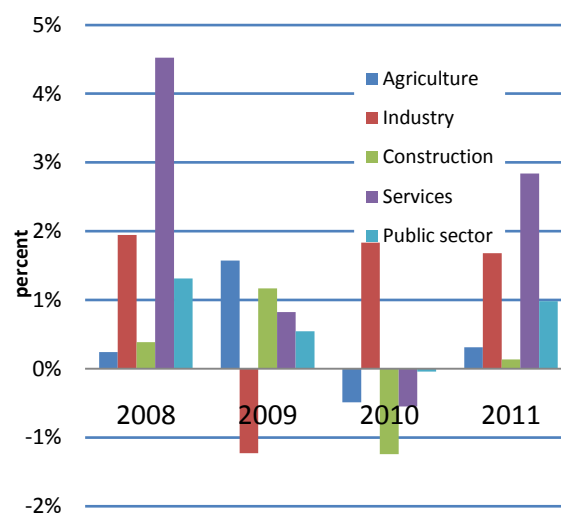
Figure 5: The GDP growth rate

Figure 6: Sectors' contribution to GDP growth

Sources: NSC; National Bank; Ministry of Finance and World Bank's staff calculations.

14.   The episodes of economic growth were mostly driven by growth in total factor productivity, though labor input, capital and investment played an important role. The structural reforms as well as other efforts to further liberalize the economy opening up to foreign trade may have resulted in better allocation of resources to a more productive use, which was reflected in high levels of growth in the late 2000s. The contribution of labor supply growth and capital formation was rather modest as the labor force participation rate and the share of capital/savings in the GDP remained stagnant.

Table 3: Dynamics of expenditure components of GDP

Growth rate of GDP components						Share of components in GDP					
	2007	2008	2009	2010	2011		2007	2008	2009	2010	2011
Final consumption	102.6	110.8	88.1	102	108.1	**Final consumption**	104.6	110.1	96.7	102.7	101.6
of households	102.5	113.4	85.4	102.9	109.5	of households	85.1	91.2	77.0	83.2	82.1
of organizations	112.5	85.6	100.4	93.3	98.2	of organizations	2.4	1.4	1.3	1.4	1.3
of public sector	101.8	100.7	100.7	99.8	101.3	of public sector	9.2	8.9	8.7	8.4	10.2
Gross savings	114.6	113.9	95.1	94.8	106.3	**Gross savings**	26.6	29.0	27.3	27.4	25.5
Export	125.8	109.1	98.9	88.3	115.7	**Export**	52.9	53.5	54.7	51.6	54.5
Import	111	113.6	80.6	93.1	114.9	**Import**	-84.1	-92.6	-78.7	-81.7	-81.6

Sources: NSC; National Bank; Ministry of Finance and World Bank's staff calculations
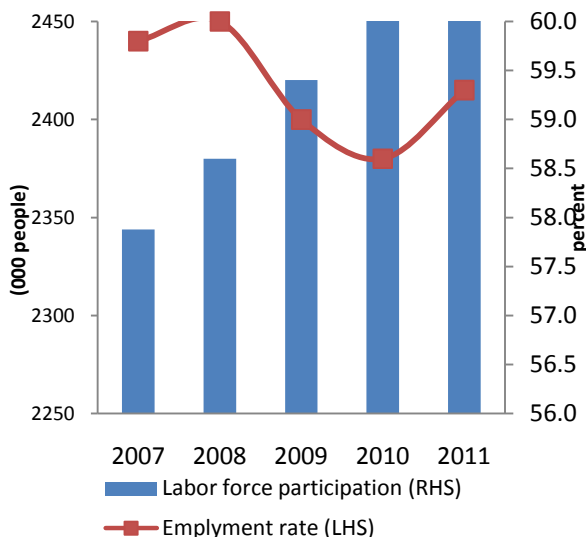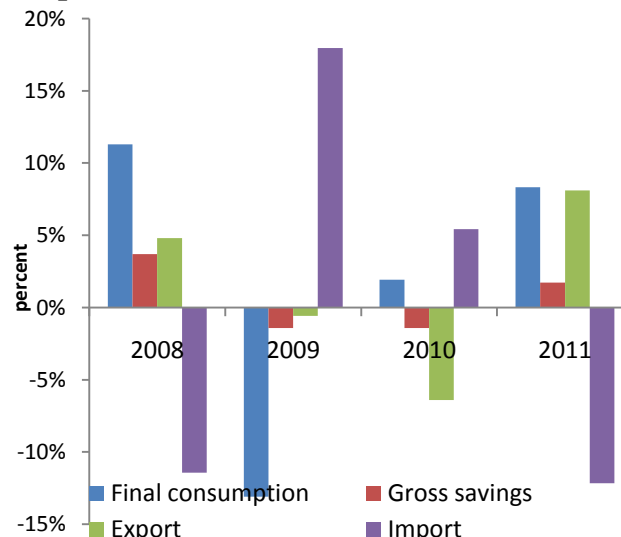
12

Figure 7: Labor Force and Employment Rate

Figure 8: Contribution of demand components to GDP

Figure 7 legend:
- Labor force participation (RHS)
- Emplyment rate (LHS)

Figure 8 legend:
- Final consumption
- Gross savings
- Export
- Import

Sources: NSC; National Bank; Ministry of Finance and World Bank's staff calculations.

15.   The Kyrgyz Republic's economic performance is dependent on domestic demand. Private consumption continues to grow and is to a large degree fueled by continued inflows of worker remittances. High domestic demand contributed to the growth rate of the trade and services sectors which grew by 8 percent on average. The construction sector also benefited from strong private consumption as the private sector continued to demand more new housing and business facilities. Agriculture remains an important sector of the Kyrgyz economy; however, the growth rate of the sector was unstable, reflecting the key infrastructural problems in agricultural production. The share of agriculture in GDP fell from 27 percent in 2007 to 18 percent in 2012, but still the sector accounts for the large share of employment (30 percent of all employed). The industrial sector is dominated by gold production at the main gold mining "Kumtor," so any fluctuations in the production at this enterprise affects aggregated statistics. The non-gold economy is mainly comprised by power generation, food, construction materials, and textile sectors which in turn are volatile given that their exports are dependent upon foreign demand.

Table 4: Dynamics of sector components of GDP

Growth rate of sectors (%)						Share of sectors in GDP (%)					
	2007	2008	2009	2010	2011		2007	2008	2009	2010	2011
Agriculture	101.6	100.9	106.7	97.4	101.8	Agriculture	26.9	23.5	18.8	17.5	16.6
Fishery	150	111.1	96.2	95.7	108.6	Fishery	0	0	0	0	0
Mining	96.8	109.1	107.7	96.4	119.5	Mining	0.5	0.5	0.5	0.6	0.8
Manufacturing	106.3	121.2	90.7	111.3	105.2	Manufacturing	9.9	13.2	14.2	17	18.3
Distribution of electricity etc	107.5	92.6	97.4	111.2	121.9	Distribution of electricity etc	2.7	1.4	2.2	3.1	3.4
Construction	132.3	110.8	122.1	81.5	102.5	Construction	3.6	5.3	6.7	5.5	4.9
Trade	110.9	109.6	102.3	94.4	110.2	Trade	17.9	16.3	16.8	16	15.2
Hospitality	113	113.3	104.2	90.5	116.9	Hospitality	1.2	1.3	1.3	1.3	1.5
Transport and communication	144.4	131.1	105.1	104.2	109.5	Transport and communication	7.4	7.9	8.8	8.6	8.1
Financial sector	108.1	106	106.9	96.5	113.7	Financial sector	3.4	3.7	4	3.9	3.5
Real estate	105	110.2	101.1	104.9	101.6	Real estate	3.1	4	4.6	4.8	4.3
Public sector	101.8	102.9	102.5	99.7	105.2	Public sector	4.3	4.6	5.3	5.6	5.1
Education	100.1	101.4	101.4	99.7	101.3	Education	4.5	4.2	4.4	4.4	5.3
Health and social services	101.5	99.6	99.7	101.7	100.9	Health and social services	2.1	2.1	2.6	2.6	3
Services	101.7	99.2	93.7	97.8	101.3	Services	1.6	1.7	2.1	2.2	1.9
Other	107.4	106.2	107.1	96.8	114.2	Other	-2.6	-2.8	-3.3	-3.3	-2.9
Direct taxes	108.5	108.4	102.9	99.5	106	Direct taxes	13.5	13.1	11	10.2	11

Sources: NSC; National Bank; Ministry of Finance and World Bank's staff calculations.

16.   Imports grew faster than exports since the real exchange rate appreciated, fueled by remittances and external financing. The resulting current account deficit reached 6.5 percent of the GDP at the end of 2011 and 10.5 percent at the beginning of 2012 due to "force majeure" of the gold export.

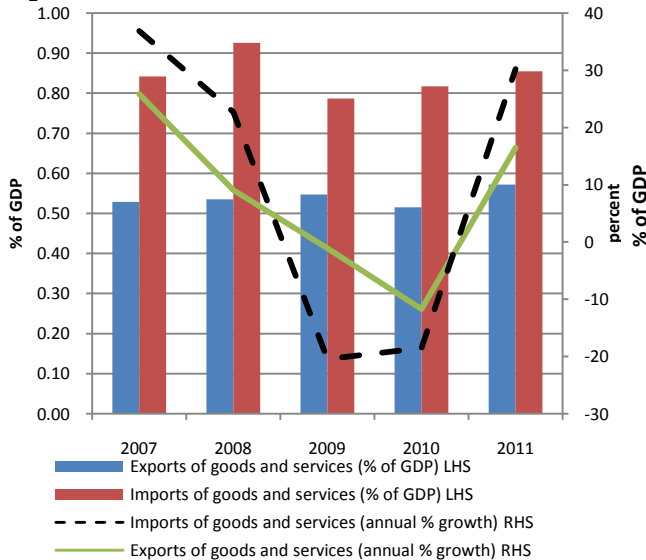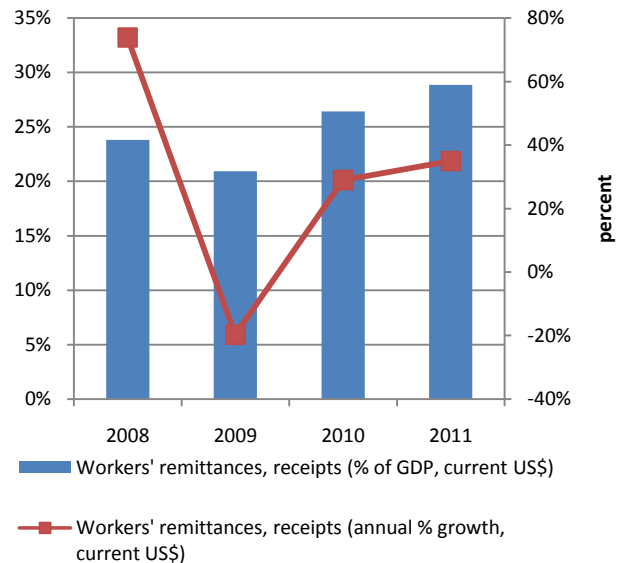**Figure 9: Growth rate and share of export and import**

Figure 10: Growth and share of remittances

Sources: NSC; National Bank; Ministry of Finance and World Bank's staff calculations.

17.   With high inflation and a growing fiscal deficit, the macroeconomic situation could not be called sound in recent years. While fiscal revenues were growing moderately in the last five years, the growth in spending was higher, especially after the 2010 political events. Pensions and the public wage bill are the fastest growing expenditure items. This impacted the budget deficit which now stands at 6 percent of the GDP. High interest rates and rising international food and fuel prices have aggravated an already difficult economic situation. The increase in the average CPI for 2011 was 16.6 percent and is expected to remain in double-digits in the medium-term.

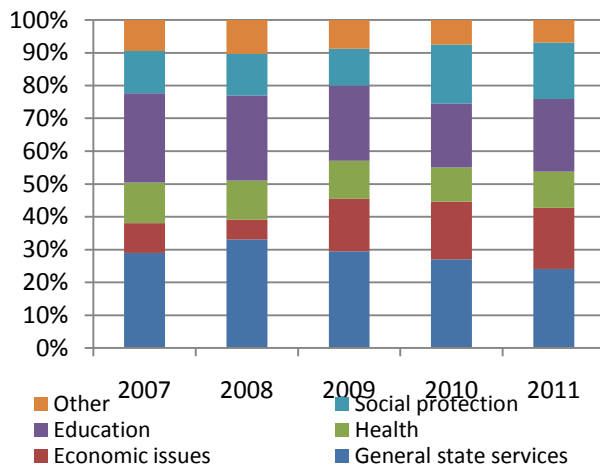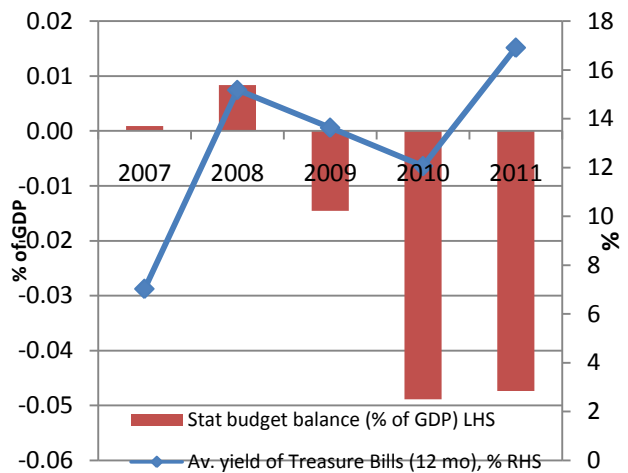**Figure 11: Share of expenditure components in total expenditures**

Figure 12: Budget deficit and T-Bill rates

Sources: NSC; National Bank; Ministry of Finance and World Bank's staff calculations.

Table 5: Dynamics of CPI

	CPI (yoy)							CPI (period average)					
	2007	2008	2009	2010	2011	2012		2007	2008	2009	2010	2011	2012
Total	**120.1**	**120.0**	**100.0**	**119.2**	**105.7**	**107.5**		**110.2**	**124.5**	**106.8**	**108.0**	**116.6**	**102.8**
Food products	131.5	120.9	92.6	127.0	103.5	104.5		114.7	132.3	101.1	106.5	125.0	95.9
Alcoholic beverages and tobacco	109.1	113.0	105.2	112.9	109.8	110.2		104.1	114.9	107.6	107.8	111.4	109.5
Nonfood products	109.8	116.0	110.4	114.2	109.2	109.8		106.3	114.8	113.4	111.4	110.7	110.1
Services	110.6	134.4	104.4	111.9	111.1	109.8		108.3	125.2	118.1	107.2	111.6	110.2

Sources: NSC; National Bank; Ministry of Finance and World Bank's staff calculations.

18.   Overall, economic growth over the last five years was uneven: a period of high GDP per capita growth rates was followed by years of stagnation and decline. Recent stagnation of the Kyrgyz economy concurrent with continued growth of neighboring countries leaves the Kyrgyz Republic with a widening income gap compared to the rest of the region.

19.   To allow for a time series comparison of poverty trends, the poverty lines have been retrospectively re-estimated from 2007 onwards using prices for 2011 (Table 29 in the Annex provides poverty statistics for a period 2002-11). This shows that changes in poverty follows an L shape: first declining from 2007 till 2009 and then leveling off at a high level. However, in regional terms, the trends were divergent: rural poverty proved to be resilient and did not grow in later years as compared to urban poverty; the latter seems to dominate the recent rise in poverty. By 2011 the gap between rural and urban poverty narrowed down to 10 percentage points. Thus, from 2008, the living standards of the population have not been improving, especially so in urban areas.

20.   Changes in poverty generally followed macroeconomic trends: periods of economic growth coincide with the reduction in poverty, i.e., growth episodes appear to be pro-poor, while times of economic downturn are linked to poverty stagnation or increase. However, the linkages appear to weaken in later years as some growth episodes failed to translate into poverty reduction. In the context of declining inequality, the factor of rising consumer prices becomes important in explaining poverty trends.

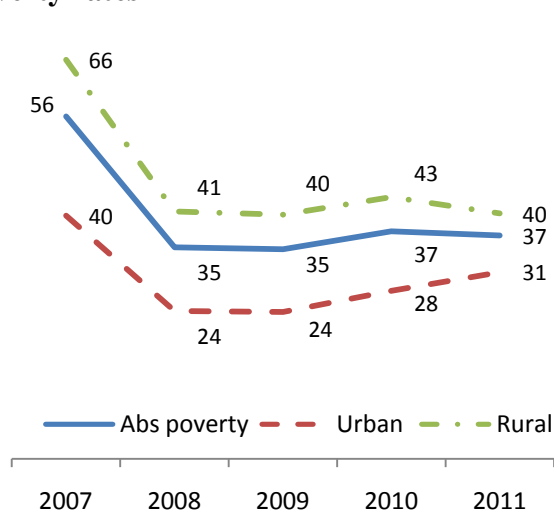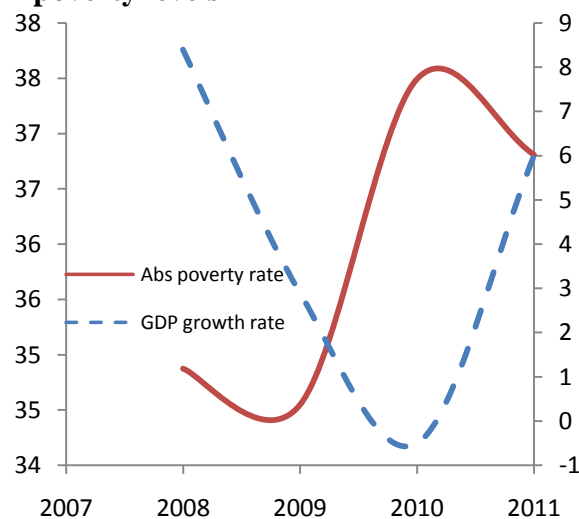**Figure 13: Trends in absolute and regional poverty rates**

Figure 14: GDP growth rate versus change in poverty levels

Source: World Bank's staff calculations based on KIHS 2011

15

21. Raising poverty in urban areas is thought to be linked to the high food prices, observed during the subject period. Food prices, measured by regional deflator, are much higher in urban than in rural areas as shown in figure below. It appears that higher food prices coupled with economic instabilities affected disproportionally urban population, who are less able to insulate from food price shocks. While some rural residents - net food producers- could benefit from higher food prices in the medium run.

Figure 15: Food price index in rural and urban areas
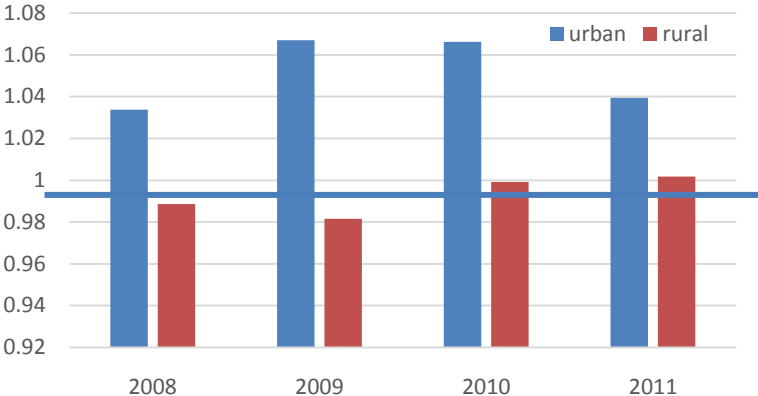
Source: World Bank's staff calculations based on KIHS 2011 and information from NSC

22. The changes in the poverty rates at the oblast level were not uniform. Aggregate poverty numbers mask great variation in living standards at the sub-national level. The capital Bishkek and the adjacent Chui oblast have the lowest poverty rates while Talas and Naryn are oblasts with the highest poverty levels. The majority of the oblasts, e.g., Osh, Talas Chui, and Bishkek city, have seen dramatic reduction in the early period but experienced an increase in poverty from 2010 to 2011. Some oblasts, like Jalal-Abad, Naryn, Batken, have also witnessed a reduction from 2007 until 2008 for 2009, but managed to lower poverty from 2010 to 2011. Finally, Issykul oblast stands out as a place where the poverty level continues to decline annually.

Figure 16: Poverty rates at oblast level, 2007-11
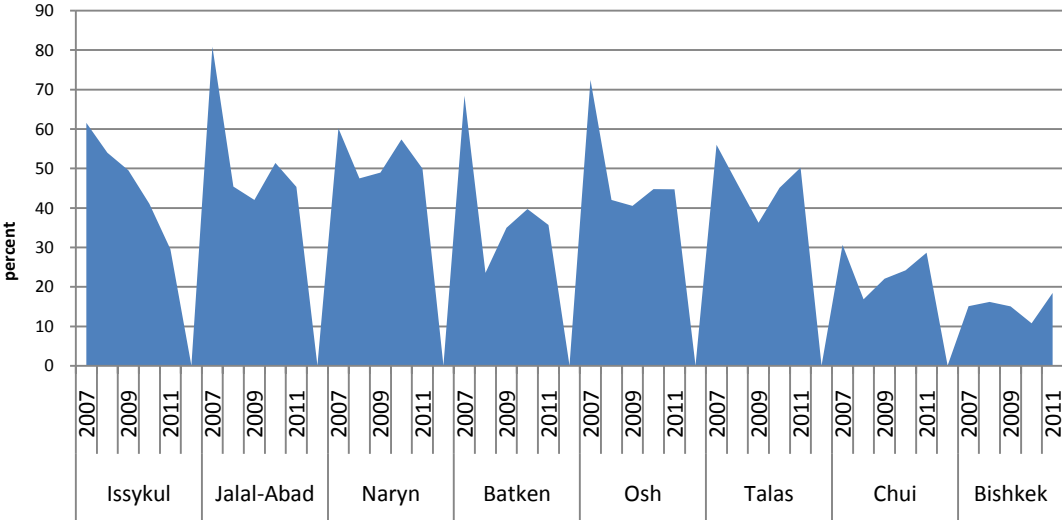
Source: World Bank's staff calculations based on KIHS 2011

23.	An additional welfare measure is mean expenditure by quintile. In the Kyrgyz Republic, the real mean expenditure declined between 2008 and 2011 by 4 percent on average, with the wealthier groups seeing the greatest proportional decline.

Figure 17: Mean expenditure by PCC quintiles, 2007-11

Source: World Bank's staff calculations based on KIHS 2011
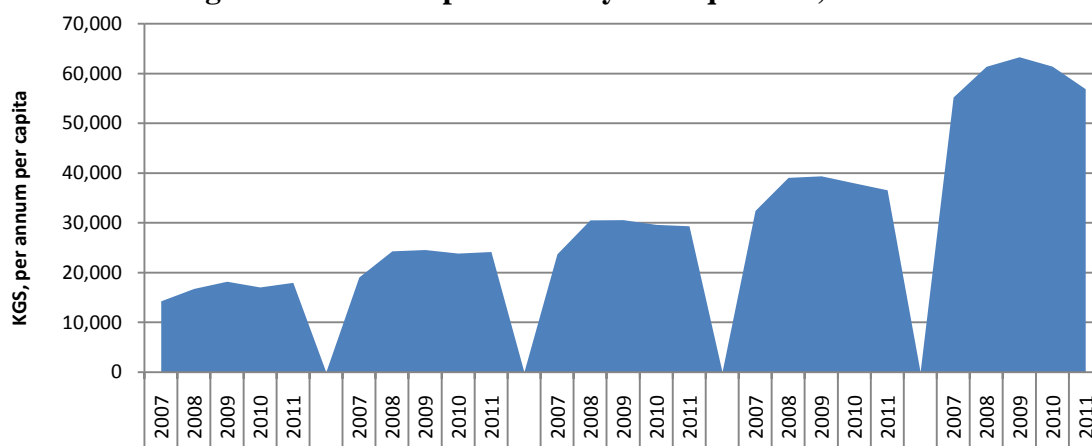
Table 6: Growth rate of mean expenditure (yoy)

	2008	2009	2010	2011		2008	2009	2010	2011
Total	18.9	2.3	-3.5	-3	**Urban**	13.4	1.9	-4.9	-4.8
Region(oblast)					**Rural**	23.4	2.8	-2.9	-1.9
Issykul	13	1.8	9.4	7.8					
Jalal-Abad	37.3	6.5	-8.2	1.2	**Quintiles**				
Naryn	15.6	0.1	-10.4	8.6	**Lowest quintile**	17.5	8.6	-6.3	5.4
Batken	35.4	-4.6	0.6	3.5	**2**	27.5	1.1	-2.9	1.3
Osh	34	6.6	-8.3	-4	**3**	28.8	0.2	-3.1	-0.9
Talas	1.6	10.9	-3.7	-4.8	**4**	20.5	0.8	-3.6	-3.7
Chui	13	-5.3	-0.1	-8.6	**Highest quintile**	11.2	3.1	-3	-7.4
Bishkek	1	1.9	-1.3	-8.4					

Source: World Bank's staff calculations based on KIHS 2007-2011

24.	In terms of inequality, the Gini coefficient shows a moderate decline between 2008 and 2011. It appears that growth volatility and reduction in expenditures did not significantly change the distribution of consumption among different groups of the population.

Table 7: Dynamics of GINI Index, 2007-11

GINI	2007	2008	2009	2010	2011
Total	28.14	25.86	25.52	25.97	23.49
Urban	29.24	25.89	25.78	26.56	25.29
Rural	25.22	24.62	24.10	24.53	21.48

Source: World Bank's staff calculations based on KIHS 2007-2011

25.   Decomposing the changes in poverty into growth and redistribution components shows that the overall decline in poverty from 2007 to 2011 was due to both the growth in mean expenditure as well as changes in the consumption distribution towards the poor population. Notably, in rural areas the growth in mean expenditure was a dominating factor in the rural reduction of poverty when comparing indicators in 2007 and 2011.

Table 8: Growth and redistribution decomposition of poverty changes

| | | | | Change in incidence of poverty | | |
	2007	2011	Actual change	Growth	Redistribution	Interaction
Absolute poverty						
Total	56.42	36.81	-19.61	-9.52	-5.51	-4.58
Urban	40.07	30.75	-9.33	-2.51	-5.98	-0.84
Rural	65.74	40.41	-25.32	-16.77	-3.88	-4.67

Source: World Bank's staff calculations based on KIHS 2007-2011

26.   The Gini coefficient saw a significant decline during 2007-2011 from 28.14 to 23.49. The population around the poverty line became worse off while the poorest better off. This can be seen from the growth incidence curves, which show that the average consumption grew fastest only across the lowest expenditures percentile. The curve representing growth of consumption is above the horizontal axis, implying the consumption growth for all was positive, with mean growth of around 4 percent in nominal terms. The downward slope from left to right indicates that consumption grew faster for the lower part of the consumption distribution compared to the higher percentiles.

Figure 18: Lorenz curve, 2007-11
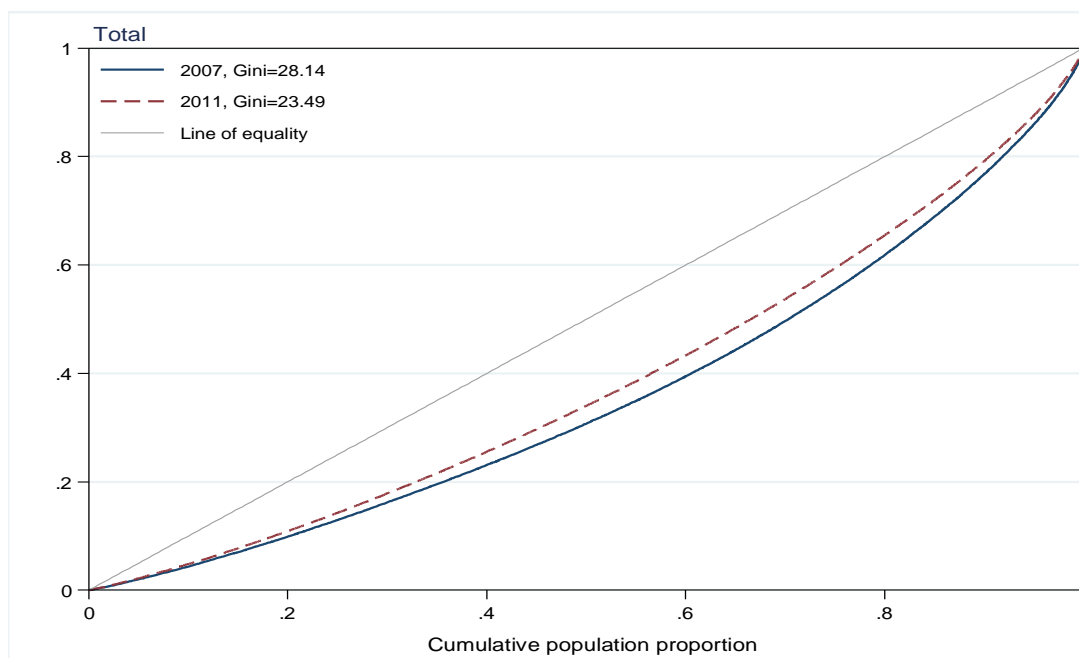
Source: World Bank's staff calculations based on KIHS 2007-2011

Figure 19: Growth incidence curve, 2007-11

Total (years 2007 and 2011)

- Growth-incidence
- Growth at median
- Mean growth rate
- 95% confidence bounds
- Growth in mean
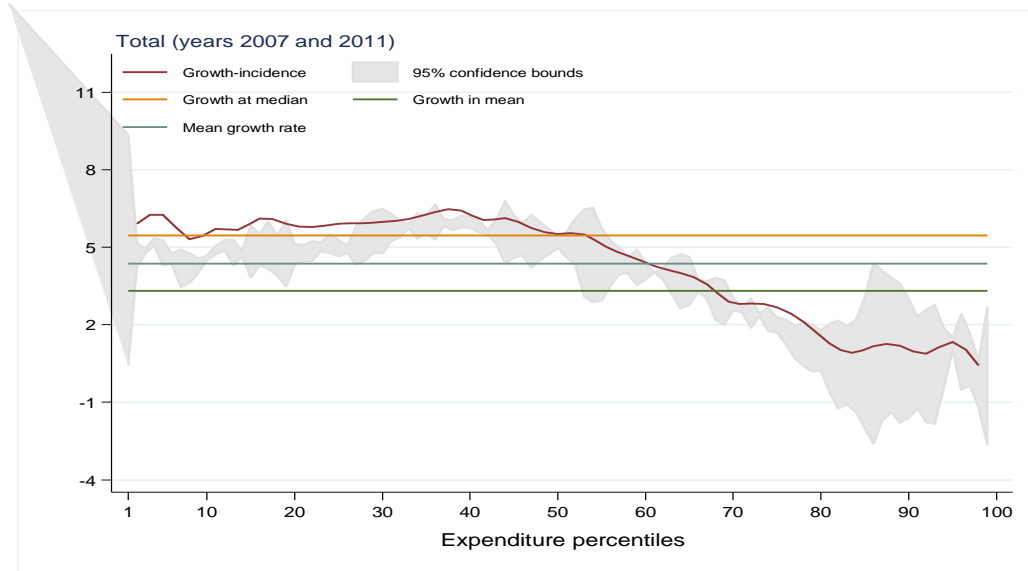
Source: World Bank's staff calculations based on KIHS 2007-2011

27.   Analysis has also employed the poverty incidence curve to aid understanding of poverty dynamics. In the figures below, the horizontal axis shows consumption per capita; the vertical axis represents the share of the population. Each point on the distribution function shows the share of the population with the given consumption level and relative to the poverty line. Thus any distribution located to the right of another can be viewed as welfare improvement. As it appears, the rural areas have witnessed the largest gains compared to urban areas, i.e. rural improvement dominates the changes. In addition, the change in distribution is mainly visible (see thick line) for the lowest percentile in the urban areas and in the low and middle groups of the population in rural areas.

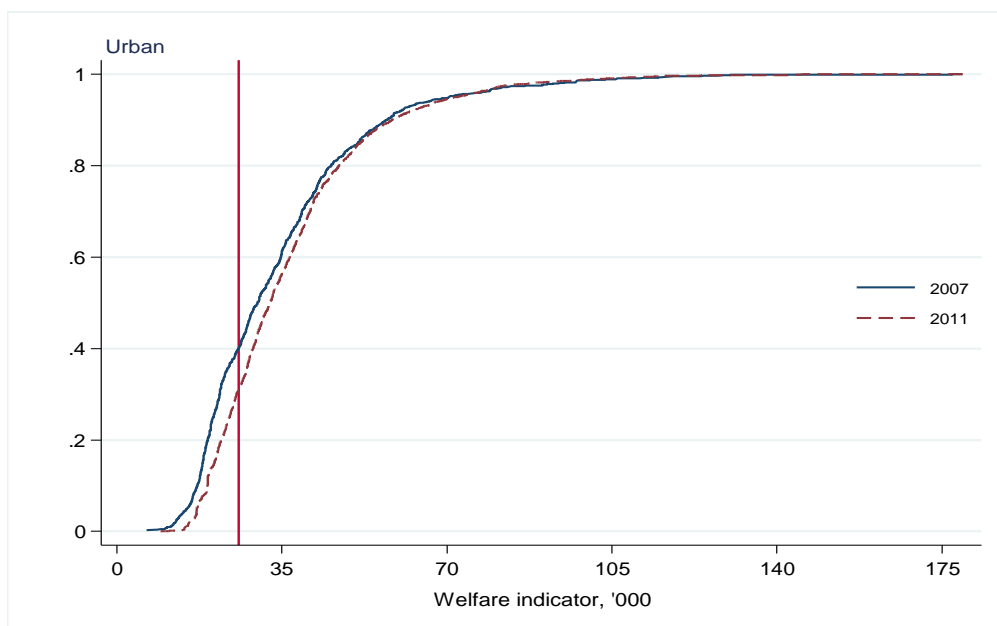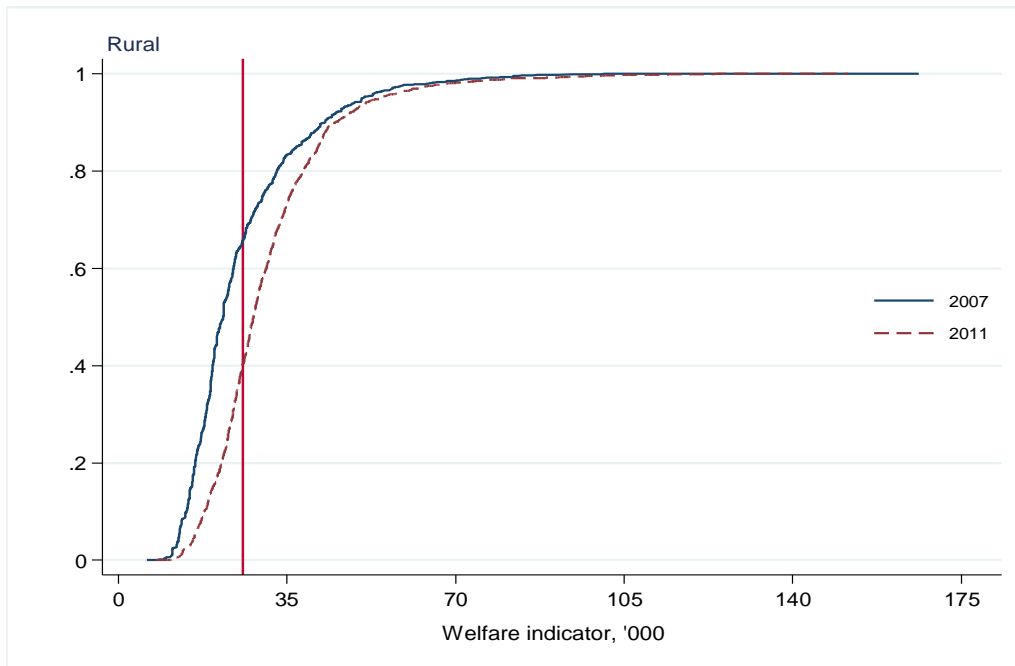**Figure 20: Poverty incidence curve, 2007 and 2011, urban**

Urban

- 2007
- 2011

Figure 21: Poverty incidence curve, 2007 and 2011, rural

Source: World Bank's staff calculations based on KIHS 2007-2011

28.   During 2007 - 2011, the country underwent a series of institutional changes, external and internal shocks, including political unrest, impact from the custom union (between Russia, Belarus, and Kazakhstan), the impact of the global financial crisis, changes in social transfers, unfavorable weather conditions affecting agriculture, and several episodes of a rise in food prices. These factors, undoubtedly, affected the poverty and wellbeing of the population directly and indirectly (via employment, remittances, changes in disposable income, and relative prices, etc.), but discerning the particular impact of these factors proves to be a complex exercise. Nevertheless, comparing trends in macro indicators against poverty trends indicate that unstable macroeconomic conditions were not conducive to poverty reduction.

29.   After 2008—the year of the financial crises, the employment rate stagnated at around 59 percent, and the growth rate of remittances slowed down affecting the growth rate of private consumption. In addition, food prices in 2008 and 2011 grew by 32 and 25 percent, respectively, affecting the real income of households which spend around 60 percent of their consumption budget on food. Further, political stability and good governance are very important factors for poverty changes. The political unrest of 2010 and the subsequent disruption in economic life (notably trade flow interruptions) led to the small rise in poverty in 2011, which was mitigated by massive social spending in the aftermath of 2010 political events.

30.   From the micro perspective, poverty is closely associated with access to markets and infrastructure (i.e., the geographic location of the household plays an important role). The changes in poverty also could be related to the endowment and the returns to household assets. Having capital in the form of good education, health, or land could lead to better income earning opportunities. At the level of the household, shocks in the form of price changes or unfavorable weather conditions could result in higher poverty. Given that poverty has been on the rise in

recent years, one possible explanation is that unstable macro conditions negatively affected welfare. The linkages between micro household characteristics and poverty are more readily understood from the poverty profile presented below.

D. The Poverty Profile in 2011

31.   The Poverty Profile of the Kyrgyz Republic for 2011 presents a discussion of poverty and looks at its pattern using the Kyrgyz Integrated Household Survey for 2011 (KIHS). The profile reviews how poverty varies with geography and how it is affected by different household-level attributes. The profile contains valuable information useful for effective poverty reduction policies and the design of socially inclusive programs. The information is also used for purposes of monitoring and evaluating progress in poverty reduction in the country.

32.   The World Bank adopts the government's poverty lines since the National Statistics Committee follows international best practice in this area. The government has an upper (called "absolute" poverty) and lower ("food poverty") lines. The methodology for estimating the poverty line is based upon the cost of the basic needs approach. The poverty line was last computed in 2008 and then every year subsequently has been updated using the CPI. In 2011, the absolute poverty line was calculated at 25,849 KGS per annum per capita and food poverty line at 16,089 KGS per annum per capita in 2011. The analysis below is based upon these poverty lines.

33.   In the Kyrgyz Republic, almost two out of five people lived in poverty in 2011. The proportion of the population living below the absolute and food poverty lines was 36.8 percent and 4.5 percent respectively. The poverty gap index was 7.5 percent while the squared poverty gap index (poverty severity) was 2.2 percent for the country as a whole, which is deemed moderate and low. The poverty gap ratio measures the distance between the poor and the poverty line, thus indicating how far the poor's consumption per capita lies below the poverty threshold. This is useful for obtaining an understanding of the minimum cost of a perfectly targeted transfer to bring the poor to the poverty line. The poverty severity index is based on the poverty gap ratio, but assigns a higher weight to the poorest, accounting for inequality among the poor. For the food poverty line, the poverty gap index was 0.5 percent, and the poverty severity index was only 0.1 percent.

34.   Out of the estimated population of 5.5 million in 2011, the total number of people below the extreme poverty line was 252 thousand; the number of population living below the absolute poverty line was just over 2 million persons. In addition, there is also a demographic aspect to poverty. Children constitute the majority of the poor. The share of children among the absolute poor is 38 percent (785 thousand), of youth is 25 percent (510 thousand), of adult aged between 30 and 65 years is 32 percent (668 thousand), and of elderly is 4 percent (82 thousand). The age structure of poverty is similar in the rural and urban areas. Thus, poverty in the Kyrgyz Republic has a young face.

35.   Poverty in the Kyrgyz Republic is predominantly a rural phenomenon. Of the country's total number of the poor, 1.4 million (68 percent) live in rural areas while 636 thousand (32 percent) live in urban areas. The share of extreme poor also shows a similar pattern indicating

that the anti-poverty policies in the Kyrgyz Republic need to involve measures that enhance the productivity and diversification of income in the rural areas to accelerate the growth of rural incomes and opportunities.

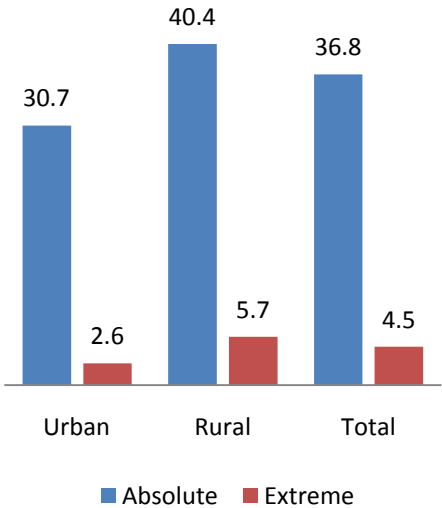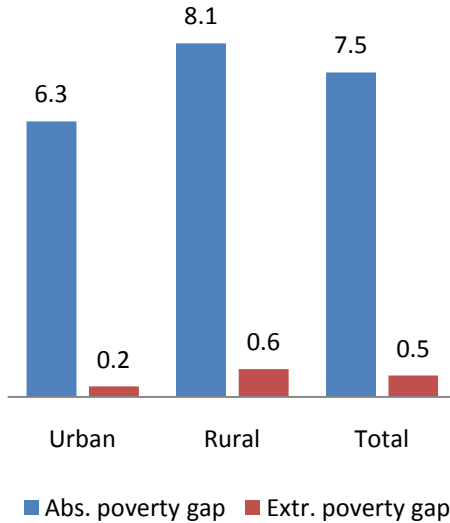**Figure 22: Absolute and extreme poverty rates**

Figure 23: Absolute and extreme poverty gaps

Source: World Bank's staff calculations based on KIHS 2011

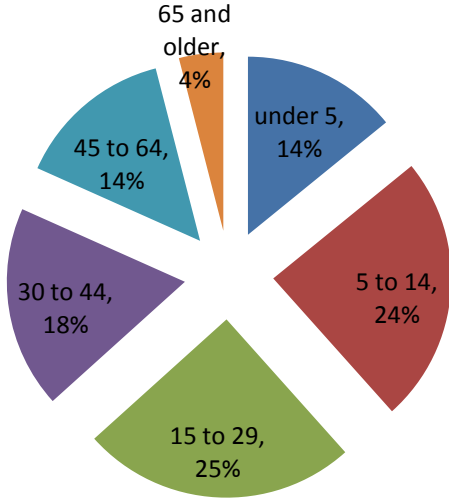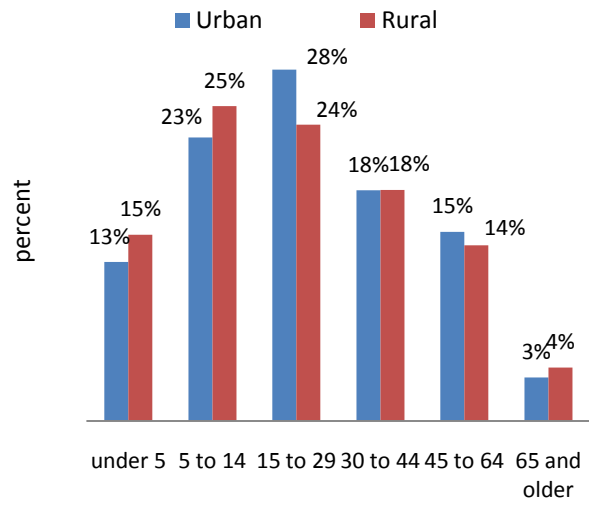**Figure 24: Shares of age categories in absolute poverty at national level**

Figure 25: Share of age categories in absolute poverty by urban, rural

Source: World Bank's staff calculations based on KIHS 2011

Box 1: The Description of the KHIS and the Poverty Line in the Kyrgyz Republic

According to the primer prepared by Esenaliev, Kroeger and Steiner (2011), the KIHS was introduced in the Kyrgyz Republic by NSC in 2003. It had multiple objectives which were to accurately measure consumption-based poverty, analyze social-economic conditions of people's living, inform about the situation in the labor market, monitor food security indicators, and monitor the progress in achieving Millennium Development Goals.

The KIHS is conducted on a quarterly basis and covers about 5,000 households. The sample of the KHIS is drawn using a stratified two-stage random sampling based on the results of the 1999 population census. There are 15 strata in the survey representing urban and rural areas of seven oblasts and Bishkek. The survey is designed to provide representative data at the national, rural/urban, and oblast levels.

The KIHS survey consists of two main parts. The first one is a survey of households, and the second one is a labor force survey. Incorporating the labor force section into the survey allows the analysis of the relationships between poverty and labor market participation. The survey of households contains very detailed information on households' consumption and expenditure based on a diary on food and non-food consumption. This part of the KIHS also includes social-demographic characteristics of household members, household property, and living conditions. The labor force survey contains quarterly information on employment and unemployment of all household members older than 14 years for the preceding seven days.

In this report, the estimation of the absolute poverty line is based on the standard cost-of-basic-needs approach. This involves specifying a consumption bundle with food—including home-produced food—and non-food components. The non-food expenditures include nondurables and the imputed use value of durables, but they exclude housing costs (both rent and the use value of housing).

To ensure that the poverty line reflects the consumption patterns of lower-income households, the reference food consumption patterns are derived from households in the third, fourth, and fifth consumption deciles. The extreme or food poverty line is established at the level of the expenditures on food needed to consume 2,100 calories per person per day. The non-food expenditure component of the poverty line is computed based on those households in which food consumption reaches 2,100 calories per person per day. The sum of these two components yields the absolute or overall poverty line.

This methodology provides reasonable estimates of the minimum food and non-food expenditures needed in a particular country so as to achieve adequate nutrition, while consuming other non-food items considered absolutely essential. It should be noted that a poverty line does not reflect what society may think households should consume, nor does it even include all essentials of a dignified life (such as expenditures for school uniforms or health care).

The NSC established the extreme and absolute poverty lines in 2003 and has subsequently adjusted them for inflation on an annual basis. In 2008, it updated the poverty lines because of the dramatic relative price changes and ensuing shifts in the consumption patterns of households. Though this change adversely affected the consistency in the measurement of poverty over time, leaving it unchanged would have yielded a biased picture of poverty in the country. However, to discuss the trend in poverty over the last half decade in this report, the poverty rates before and after 2008 have been re-estimated for purposes of comparison.

Based on these absolute and extreme poverty lines, poverty can be measured. The three most commonly used poverty indicators are the headcount index, the poverty gap, and the poverty severity measure. These are all poverty measures of the Foster-Greer-Thorbecke type. An individual is considered poor if his or her per capita consumption is below the poverty line. The headcount index is the percentage of the population whose per capita consumption is below the poverty line.

36.   Another important aspect of people's welfare is households' vulnerability to adverse shocks (such as food inflation or economic crises) that reduce the real income. In this context,

the poverty line could be recalculated if significant changes to the consumption basket have occurred. However, updating the poverty line to better reflect existing circumstances has two consequences. First, it makes it difficult to compare poverty rates robustly over time. Second, the country may experience large changes in poverty statistics especially if a significant share of the population is concentrated around the poverty line. Simulations show that changes—positive or otherwise—in the purchasing power of households would generate large changes in the incidence of poverty and, thus, the number of poor.

Table 9: Sensitivity of the Headcount Poverty Rate with Respect to the Choice of Poverty Line

	Poverty Headcount Rate	Change from actual (%)
Actual absolute poverty line	**36.8**	**0.0**
+5%	41.7	13.2
+10%	47.4	28.7
+20%	55.8	51.6
-5%	31.4	-14.7
-10%	26.5	-28.0
-20%	16.9	-54.2
Actual extreme poverty line	**4.5**	**0.0**
+5%	6.1	35.0
+10%	8.9	95.0
+20%	13.6	199.6
-5%	3.0	-34.9
-10%	2.0	-56.5
-20%	0.6	-86.0

Source: World Bank's staff calculations based on KIHS 2011

Geographical Dimensions of Poverty

37.   Absolute and extreme poverty levels are estimated for each of the eight regions (or "oblasts") of the country. This information can be useful for improving targeting of development interventions. There are significant differences in poverty levels among different regions of the country. Jalal Abad, Naryn, Osh, and Talas oblasts have higher poverty rates than the national average. Moreover, the poor population of Osh and Jalal Abad oblasts account for almost half of the country's poor. In terms of the extreme poverty rates, the same oblasts, Jalal Abad, Naryn, and Talas, have poverty rates of 6.7, 14.7, and 8.4 percent, respectively, above the national average. This is in contrast to the poverty level in the capital Bishkek where about 16 percent of the total population resides, and out of it, a relatively moderate 18.4 percent live below the absolute poverty line and 1 percent below the food poverty line.

Figure 26: Absolute poverty head count rates by oblasts
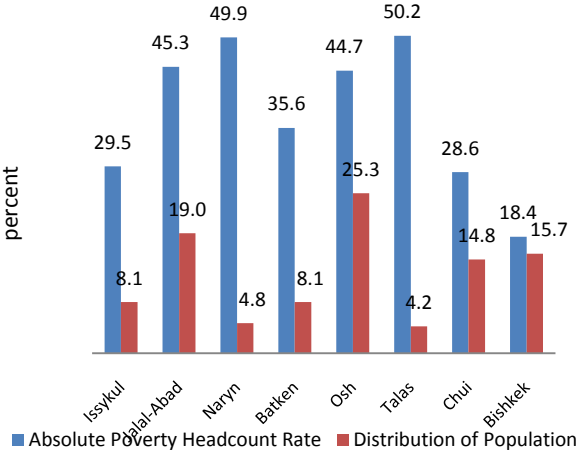
Figure 27: Extreme poverty head count rates by oblasts
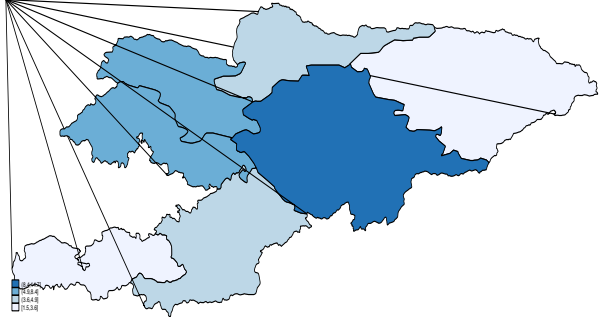
Source: World Bank's staff calculations based on KIHS 2011

38.   The spatial concentration of poverty lies in marginal geographic areas which are characterized by unfavorable climatic and infrastructural conditions. Spatially disaggregated information on poverty is helpful for understanding and monitoring poverty and its linkages with local factors. A recent World Bank study of regional disparities in welfare in the Kyrgyz Republic concluded that variations in oblast poverty come from both differences in the levels of human characteristics and a return to those characteristics. The latter is assumed to be related to the geographic location of people (see more on this and poverty map in the Annex).

39.   Among different indicators of inequality, this report uses the Gini coefficient, which provides a useful summary measure of inequality in the distribution of per capita consumption. The closer the Gini is to zero, the less the degree of inequality in the society. In the extreme, the Gini takes the value of 1 indicating a highly unequal distribution. The national level Gini coefficient (computed using consumption expenditures) was 0.235 in 2011, which is relatively moderate compared with some developing countries. The consumption differentiation is higher in urban areas, while rural areas show a lower inequality (as measured by the Gini coefficient). Across the oblasts, the Gini coefficient does not vary greatly, with the lowest inequality levels in the south: Jalal-Abad and the highest in the north: the Naryn and Chui oblasts (0.19, 0.27, and 0.25, respectively).

40.   Another approach to analyzing the distribution of consumption expenditures among groups of the population is to compare the mean consumption levels of the bottom and top quintiles. The national mean consumption per capita is about 32,850 KGS. The richest (fifth)

quintile has a mean consumption expenditure of more than 57,000 KGS, which is 3.5 times that of the poorest (first) quintile. Thus, households in the poorest quintile consume only a third, the second quintile consumes two-fifth, and a third quintile consumes just half of what the top quintile consumes per capita. These differences are significant. Moreover, when we compare the levels of consumption expenditure to the level of the absolute poverty line (25,850 KGS), we find that distance between the poverty line and the average consumption per capita of the second and third quintiles are small, indicating the vulnerability of these quintiles to economic shocks.

Figure 28: GINI index (PCC)
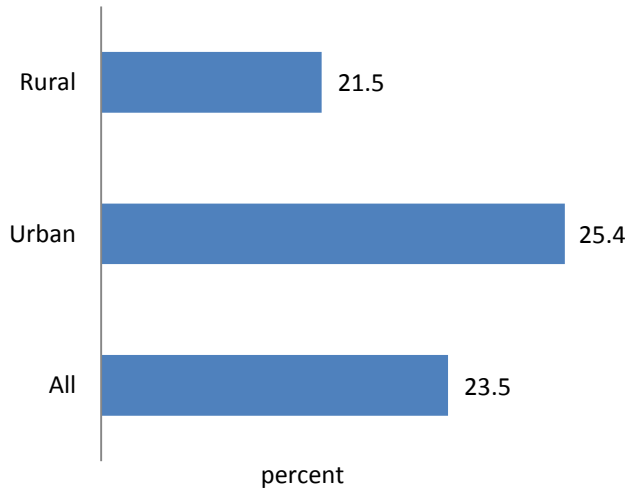
Figure 29: Annual per capita consumption (PCC) by quintiles
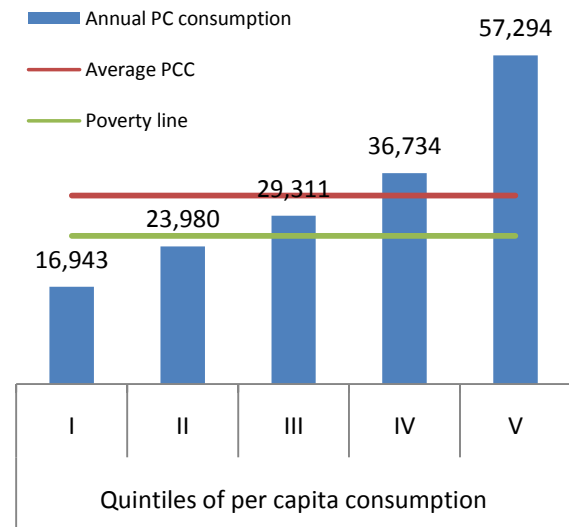
Figure 30: GINI index by oblasts
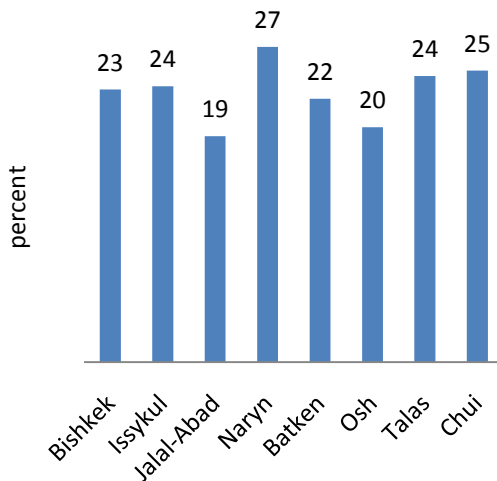
Figure 31: Mean consumption as proportion of highest quintiles mean consumption

Source: World Bank's staff calculations based on KIHS 2011

26
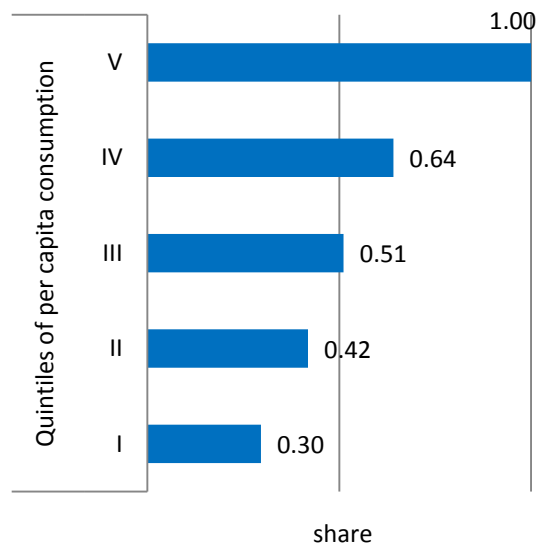
Poverty by Household Head's Characteristics

41.   The depiction of poverty status by characteristics of the household head is the important part of the poverty profile as most of characteristics of a head are easily identifiable and relatively constant so they provide useful guidance in targeting policy actions to specific groups of households. However, the variation in poverty in terms of those characteristics does not necessarily imply a causal relationship between characteristics and poverty, as the latter is affected by other factors both observable and not. Still this exercise is useful in better understanding the correlates of poverty.

Household head's education and poverty

42.   As seen in other low-income countries, households whose head have little or no education are more likely to be poor. There is an inverse relationship between educational attainment of the household head and probability of living below the poverty line. For example, the risk of poverty increases two or more times compared to the heads with higher education attainment. Education is an important component of human capital since it provides opportunities for earning higher income. The majority of the poor living in households where the head has general secondary education. Poverty declines significantly among households where the head has more than secondary education. This points to the importance of investing in human capital for the population.

43.   The negative relationship between educational attainment and poverty is weaker in rural areas. For all education categories, except for elementary and less than elementary school levels, poverty rates are higher in rural areas. For example, the incidence of poverty among households with heads who have higher education is 18 percent in rural areas versus 14 percent in urban areas. This may be driven by labor market differences and the gap in returns to human capital between rural and urban areas.

Figure 32: Poverty headcount rate by education of HH head in rural-urban areas
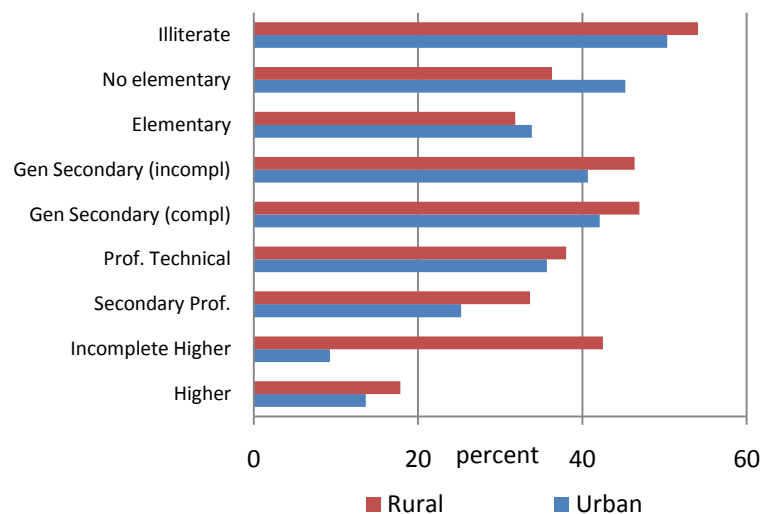
Figure 33: Poverty headcount rate by education of HH head

Education	percent
Illiterate	53.4
No elementary	39.6
Elementary	32.3
Gen Secondary (incompl)	45.0
Gen Secondary (compl)	45.4
Prof. Technical	37.3
Secondary Prof.	30.2
Incomplete Higher	24.2
Higher	15.2

Figure 34: Distribution of the poor by education of HH head

Education	percent
Illiterate	1.9
No elementary	0.6
Elementary	4.0
Gen Secondary (incompl)	7.5
Gen Secondary (compl)	54.1
Prof. Technical	13.2
Secondary Prof.	11.8
Incomplete Higher	0.6
Higher	6.3

Source: World Bank's staff calculations based on KIHS 2011

Household head's gender and poverty

44.   Poverty rates are slightly higher for households headed by men. This holds both in rural and urban areas, though in the latter the difference is more pronounced. There are over one-third of households headed by women. Among those households, 21 percent are below the poverty line, compared to 30 percent of households headed by men. In terms of the extreme poverty, the female-headed households have the same rate of poverty, close to 3 percent. However, it should be noted that the definition of household head is unclear and subjective—meaning that the person being interviewed can determine what "head of household" means.

Figure 35: Poverty headcount rate by gender of HH head

	Male HH	Female HH
Abs.pov.rate	30	21
Extr.pov.rate	3	3
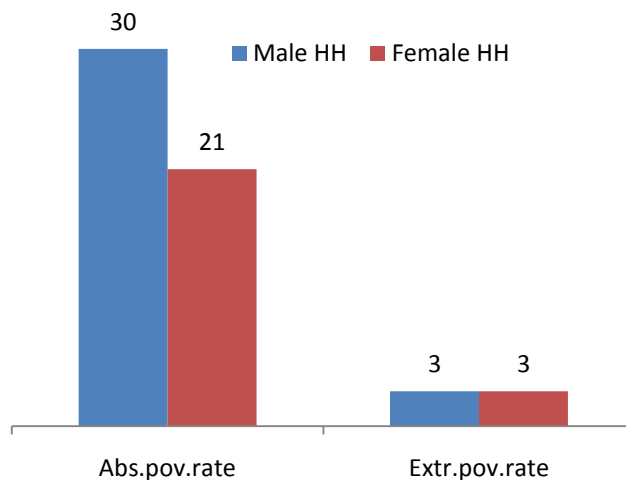
Source: NSC's publication 2012

Household head's age and poverty

45.   Poverty spikes in households where the head is 35-39 years and above 65 years old. Poverty rates have a tendency to decline when the household head is 40 years or older, which could be due to the peak of the work life cycle of the household head. However, in terms of the share of all poor, the largest groups of poor are 50-54 years and above 65 years. More than one-third of the population lives in households where the head is over 55 years old; similarly, a third of the poor live in those households. For example, in relatively younger households with prime working-age adults, lower poverty may be due to having fewer dependents.

Figure 36: Absolute poverty headcount rate by HH age

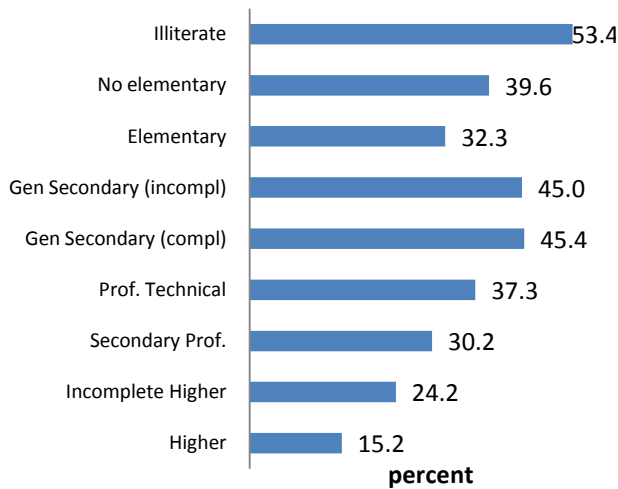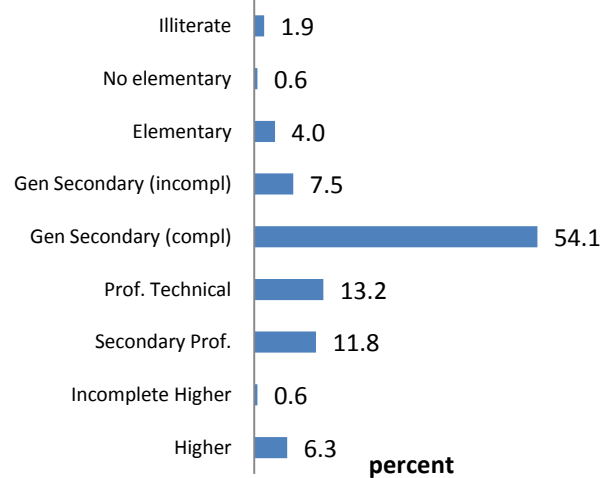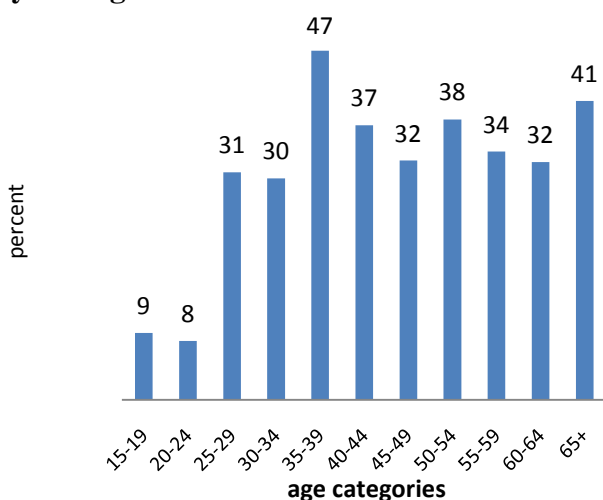**Figure 37: Distribution of the poor by HH age**
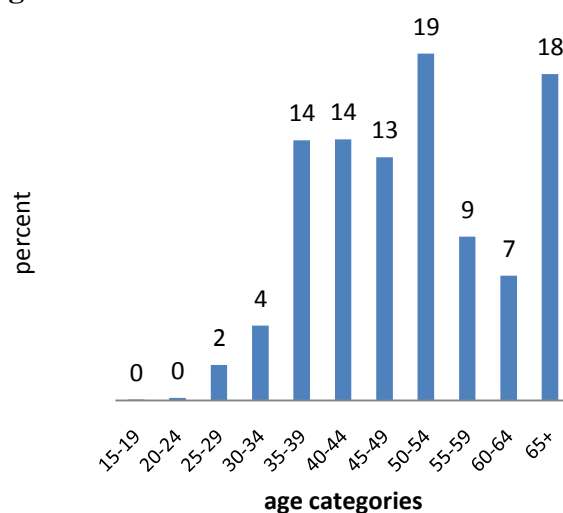
Source: World Bank's staff calculations based on KIHS 2011

Household head's employment status and poverty

46.   Households with employed heads are less likely to be poor, but the relationship is weak, especially in rural areas. According to the KIHS, 62 percent of the heads of poor households were employed in 2011, while among the heads of non-poor households, the employment rate is 67 percent, i.e., higher by a moderate margin of 5 percentage points. In regional terms, the relationship between poverty and employment is more pronounced in urban areas than in rural areas, which may partially be explained by the high level of underemployment and informality in rural areas—a phenomenon that may affect the rural poor more.

47.   In terms of the principal area of employment of the household head, poverty is lowest among households where the head is engaged in individual commercial activities. In contrast, the heads of poor households are concentrated in informal, low-paying sectors such as subsistence farming or wage work for private individuals. There are more heads of poor households in the self-employment category, while wage employment for a firm or enterprise appears to provide better protection against poverty.

Table 10: Area and Type of Employment of Household Head and Poverty Status

		National			Urban			Rural		
		All	Poor	Non-poor	All	Poor	Non-poor	All	Poor	Non-poor
The principal area of activity of HH head	At an enterprise, in organization, collective farm, agric. cooperative, institution	37%	25%	44%	47%	29%	54%	31%	23%	35%
	At a (peasant) farm	19%	27%	15%	2%	5%	1%	29%	37%	25%
	On an individual basis	21%	20%	22%	26%	29%	24%	18%	15%	21%
	Wage work for private individuals (individual entrepreneurs)	20%	25%	17%	24%	36%	20%	17%	20%	15%
	Other	3%	4%	3%	1%	1%	1%	4%	5%	4%
Type of work of HH head	At a own enterprise or own commercial business	34%	51%	26%	6%	16%	3%	49%	60%	41%
	As a worker working for wage paid in cash or in kind, or for money allowance	63%	44%	72%	93%	82%	96%	47%	34%	55%
	As a member of a co-operative, collective farm, agr. cooperative	3%	5%	2%	1%	1%	1%	4%	6%	3%

Source: World Bank's staff calculations based on KIHS 2011

Poverty by Household Size

48.   Poverty is associated with larger households, i.e., with a higher number of persons living in the household. If average household size in the Kyrgyz Republic is close to 4 persons per household, poor households have on average about 5.5 household members while non-poor households consist of just 3.5 members. The difference between poor and non-poor households in terms of the size becomes more evident as one looks into the residence of the household: in urban areas, the difference is more pronounced. It is likely that this relationship has to do with the demographic composition of households and the number of dependents.

49.   There is a positive relationship between the dependency ratio and the poverty status of a household: poor households have a high dependency ratio. The high dependency ratio implies greater pressure on the earning members of the household who are of working age. As shown in the figure below, larger households and households with high dependency ratios in both urban and rural areas are more likely to be poor. At the national level, the dependency ratio among the poor is close to 1, which means that, for every adult of working age there is one dependent person, whether young or old.

Figure 38: Average Household size
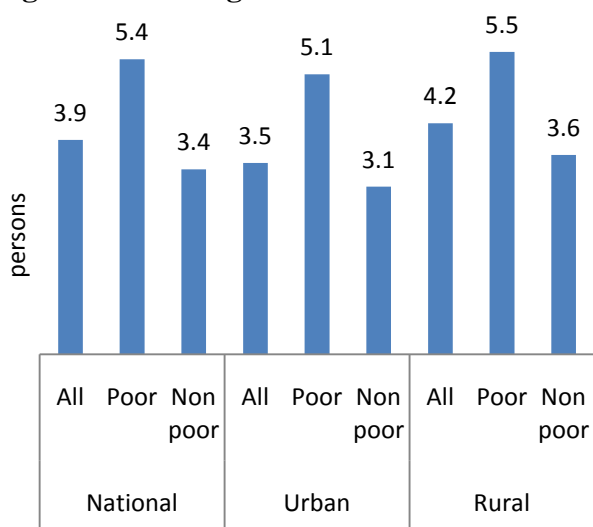
Figure 39: Average dependency ratio
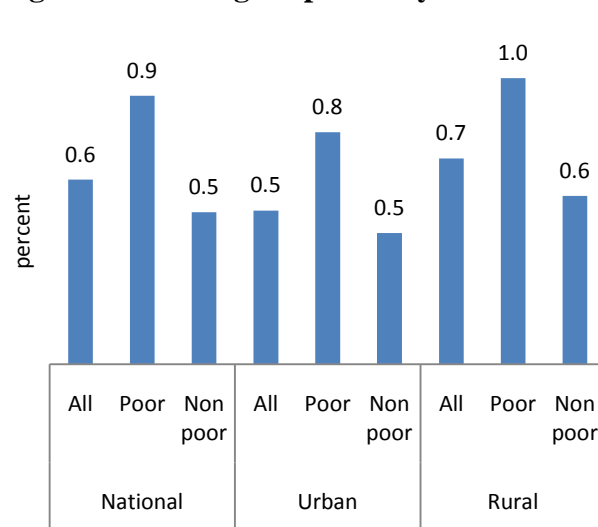
Source: World Bank's staff calculations based on KIHS 2011

50.	The survey data show poverty rates increase with the size of the household—the larger the household, the higher the risk of the household falling into poverty. For example, the probability that a household with 6 members will be poor is almost 10 times higher than for a family of three. Households with one child are two times *less* likely to be poor compared to a family with three or more children. The high dependency ratio is driven mostly by the number of children rather than by elderly family members. As fertility rates continue to climb in the Kyrgyz Republic (from 2.4 to 3.1 births per woman in 2000-2011), this continues to put pressure on households' ability to earn enough income to support large families. .

Figure 40: Absolute poverty headcount rate by household size
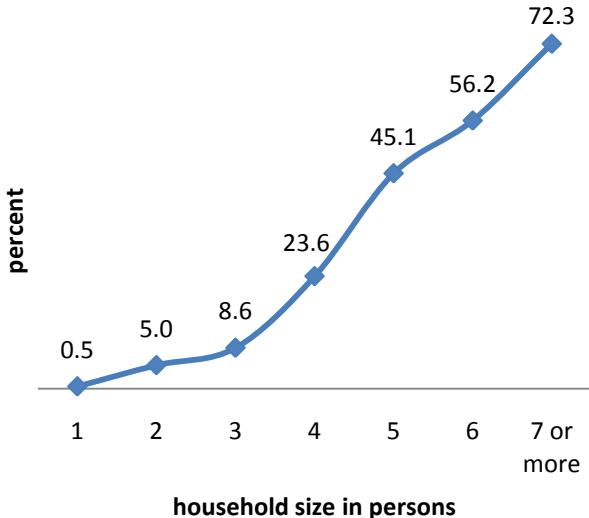
Figure 41: Absolute poverty headcount rate by number of children
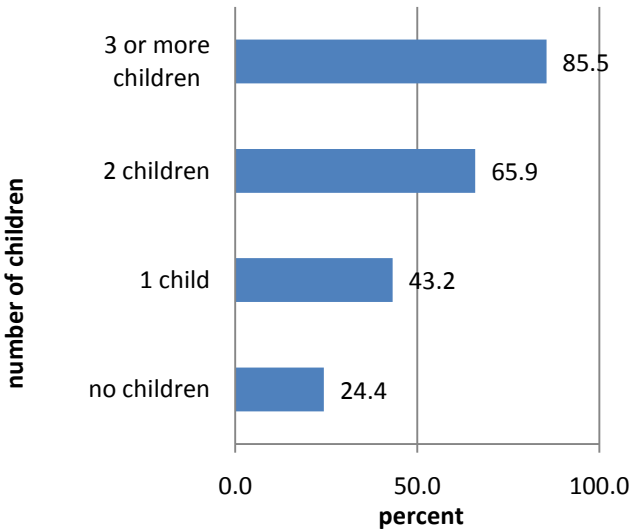
Source: World Bank's staff calculations based on KIHS 2011

Modelling welfare

51.	The basic poverty profile discussed above is conveniently captured in a regression model that relates household characteristics to per capita consumption using KIHS 2011 for urban and rural areas separately. The advantage of using a regression model over cross-tabulation is that it provides the opportunity to quantitatively analyze the association of a particular factor with per capita consumption, while controlling for other determinants. This technique allows estimating the strength of the effect of individual variables on poverty and determining its positive or negative association. Furthermore, by using analyzing urban and rural welfare separately, we acknowledge that some factors may affect urban and rural households differently.

52.	There are two limitations to using regression analysis. First, the model uses only available data, thus, other unobserved variables may have significant effects on poverty but are not captured (e.g., the quality of education). Second, the model does not assume the casual relationship; it only uncovers the statistical relationship between variables assuming per capita consumption to be related to the household and other characteristics. However, these limitations

are also true when we simply look at correlations and, hence, do not affect the overall usefulness of the approach. Rather they suggest the need to be careful in interpreting the results correctly.

53.   According to the analysis, the household's location is an important factor: consumption per capita is significantly higher in Bishkek and Chui. This may be due to a more vibrant labor market with better paying jobs, but also that key services such as health and education are more readily available leading to higher human capital. Also, consistent with the descriptive analysis in the previous part of the report, the regression model shows that a larger household size lowers consumption per capita significantly, but at a decreasing rate. In rural areas, consumption per capita also increases with the age of the household head, which is not the case for urban areas.

54.   Female-headed households are significantly poorer than man-headed households if one controls for other factors. A significant difference is observed both in urban and in rural areas. Besides gender, the educational attainment of a household head is a strong predictor of consumption per capita. In general, more educational attainment is associated with higher consumption. Higher educational attainment increases consumption per capita significantly relative to lower levels of education.

Table 11: Results of the regression model

	Urban		Rural			Urban		Rural	
	coef	t-value	coef	t-value		coef	t-value	coef	t-value
Household characteristics					*Individual characteristics*				
Log of hh **size**	-0.446	*-340.2*	-0.438	*-146.5*	**Log of hh head's age**	-0.01	*-16.5*	0.156	*154.5*
Log of hh **size squared**	-0.037	*-111*	-0.051	*-97.7*	**Male**	(base)		(base)	
Issykul	(base)		(base)		**Female**	-0.065	*-303.9*	-0.057	*-191.2*
Jalal-Abad	-0.12	*-197.5*	-0.131	*-153.9*	**Higher Edu.**	(base)		(base)	
Naryn	-0.082	*-104.8*	-0.126	*-154.7*	**Incomplete Higher**	0.018	*5.4*	-0.021	*-2.4*
Batken	0.053	*70.2*	0.023	*26.9*	**Secondary Prof.**	-0.123	*-311.1*	-0.104	*-101*
Osh	-0.083	*-132.3*	-0.115	*-142.1*	**Prof. Technical**	-0.167	*-327.4*	-0.169	*-160.6*
Talas	-0.193	*-245.1*	-0.062	*-76.1*	**Secondary (complete)**	-0.213	*-736.5*	-0.22	*-300.4*
Chui	0.041	*49.7*	-0.053	*-76.9*	**Secondary (incomplete)**	-0.252	*-199.2*	-0.23	*-161.3*
Bishkek	0.002	3.2			**Elementary**	-0.232	*-185*	-0.248	*-164.1*
					No elementary	-0.206	*-37.9*	-0.239	*-40.5*
Intercept	11.338	*1,070.10*	10.733	*572.9*	**Illiterate**	-0.362	*-50.2*	-0.284	*-45.9*
# of observations	3067		1943		**Adjusted R2**	0.46		0.45	

Note: All coefficients are significant at 95 % confidence. *Source:* World Bank's staff calculations based on KIHS 2011

Education Attainment and Poverty

55.   The link between poverty and education has already been discussed for household heads'. The observed relationship holds true for adults (25 years and above) throughout the country— that is, adults with less education have a greater probability of living in poverty. Moreover, children in poor families—regardless of gender—have less educational attainment compared to the non-poor indicating the development of a "vicious cycle of poverty". Poor households are less likely to send their children (between 7 and 24 years) to schools at all level of education. School enrollment among children from poor families is lower than non-poor households.

Table 12: Education level of adults aged 25 and older, by poverty status and gender

	Extreme Poor		Absolute Poor		Non-poor		National	
	Male	Female	Male	Female	Male	Female	Male	Female
Higher	6%	5%	8%	10%	21%	21%	17%	18%
Incomp. Higher	1%	1%	0%	2%	1%	1%	1%	2%
Secondary Prof.	8%	10%	9%	13%	14%	21%	12%	19%
Gen. Secondary (comp.)	53%	63%	57%	54%	40%	38%	46%	43%
Gen. Secondary (incomp.)	15%	7%	8%	8%	5%	4%	6%	6%
Elementary	5%	1%	4%	3%	3%	4%	3%	4%
No elementary		0%	0%	1%	0%	1%	0%	1%
Illiterate	0%	5%	0%	1%	0%	1%	0%	1%
Primary Prof. Technical (with Gen. Secondary)	11%	7%	13%	5%	13%	7%	13%	6%
Primary Prof. Technical (without Gen. Secondary)	1%	0%	1%	1%	1%	1%	1%	1%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Source: World Bank's staff calculations based on KIHS 2011

Figure 42: Percent of children between 7 and 24 years attending educ. inst.
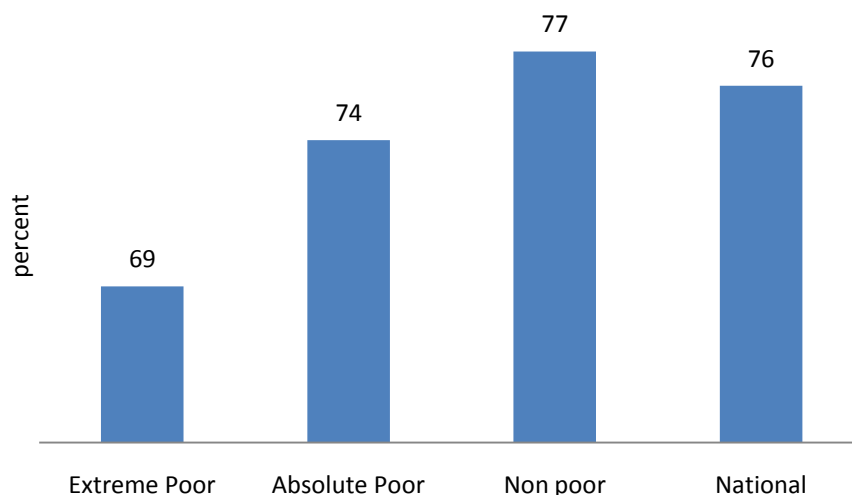
Source: World Bank's staff calculations based on KIHS 2011

56.   It is useful to further disaggregate school attendance in order to identify when in the schooling cycle the poor's presence is less. There is almost no difference in school enrollment rates between poor and non-poor children ages 7-10 years. Close to 98 percent of poor children ages 7-10 years of age are attending school, compared to 99 percent of non-poor children. Similarly for age groups 11-13 years and 14-16 years old, the difference between the poor and non-poor children is also negligible. Only among the extreme poor is there a significant though still small difference in school attendance compared to the national average (97 percent vs. 100 percent).

57.   The divergence in school attendance can be identified after the age of 16 years. Regardless of the comparable school attendance up to age sixteen, poor 16 year-olds boys have lower school enrollment than non-poor boys by 10 percentage points. The gap widens further for the age category of above 24 years old which is associated with tertiary education, where the gap between the poor and non-poor children increased by 17 percentage points.

58.   This pattern is equally reflected in both rural and urban areas; however, the overall school attendance is also lower in rural areas, where 3 percent of boys and 5 percent of girls of 7-10 years do not attend school at all. At the national level, for the non-poor category, school attendance is higher among females relative to males in the 17+ years age-group. However, among the poor, the pattern is different. Female school attendance is still higher after the age of 20, but for the category of 17-19 years old girls have lower attendance both in rural and urban areas.

59.   Clearly the government should apply all efforts to maintain the level of school coverage, especially at primary and secondary levels of education. Still, the dropout rate for older children is high, and the reasons for this need to be studied. High out-of-pocket education expenditures (see below) might play a role in dropout rates at the tertiary level and in rural areas which eventually might increase the gap between poor and non-poor. Hence, targeted actions are needed to promote education in rural areas, which will likely benefit children residing in poor households.

Table 13: Share of children in age group attending School (ALL TYPES), by poverty status, gender and location

	Extreme Poor		Absolute Poor		Non-poor		National	
	Male	Female	Male	Female	Male	Female	Male	Female
National								
7 to 10 years old	100	98	98	96	98	99	98	98
11 to 13 years old	97	97	100	99	100	100	100	100
14 to 16 years old	81	92	95	97	97	97	97	97
17 to 19 years old	53	43	48	48	59	73	56	64
20 to 24 years old	2	17	7	12	24	36	19	27
Urban								
7 to 10 years old	100	100	100	100	98	98	99	99
11 to 13 years old	100	85	100	99	100	100	100	100
14 to 16 years old	92	81	94	93	96	97	95	96
17 to 19 years old	6	15	63	58	77	80	74	74
20 to 24 years old	0	3	14	19	40	47	31	38
Rural								
7 to 10 years old	100	98	97	95	98	99	97	97
11 to 13 years old	97	100	100	99	100	100	100	99
14 to 16 years old	80	99	96	100	98	97	97	98
17 to 19 years old	56	50	41	44	49	68	46	58
20 to 24 years old	2	19	1	8	13	27	9	19

Source: World Bank's staff calculations based on KIHS 2011

60.   Part of the explanation for the difference in school (in tertiary education) enrollment may have to do with the cost of education. Expenditure on education related items are larger among wealthier households. The KIHS asks questions on how much households spend on education related items such as textbooks, fees, tutoring, maintenance, unofficial payments, and preschool care. While on average those expenditures amount to 752 KGS per capita (or around 3 percent of total consumption) for the population, the wealthier households spend 18 times more than households in the poor consumption quintiles. This may be because more affluent households spend more on preschool care and tertiary education fees, which is consistent with the previous observation that households of wealthier quintiles can afford sending children to the universities.

Figure 43: Education expenditures by quintiles   **Figure 44: Health expenditures by quintiles**
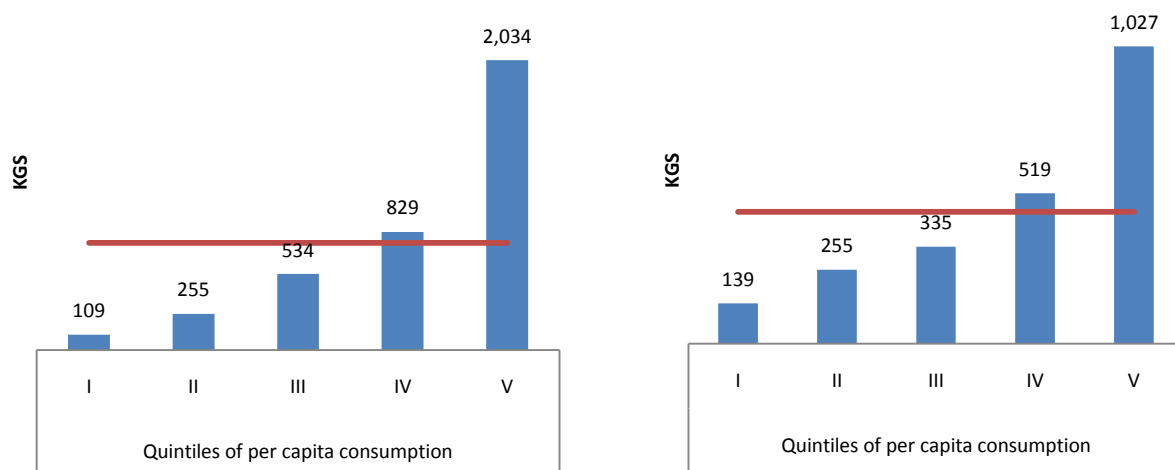
Source: World Bank's staff calculations based on KIHS 2011

Health Expenditures

61.   Similar to education expenditures, health care spending is positively related to the wealth status of the household. Compared to the poor, affluent households spend 7 times more on medicine, hospitalization, outpatient treatment, etc. Apart from this, the poor feel less need for health services. Among the poorest quintile, only 30 percent of the respondents indicated the need of health services in 2011, while, among the top quintile, this share was almost 50 percent. Lower demand may be the result of the poor quality of services and low overall accessibility among the poor to health services. Among the poorest, there were more individuals who did not use health services, though they were needed. An absolute majority of this group were engaged in self-medication, regardless of the wealth status. Monetary considerations were the important factor for all.

Table 14: Access and demand of health services

	Quintiles of PCC					Poverty status		All
	1	2	3	4	5	Poor	Non-poor	
Needed health services in 2011	30.5%	32.9%	33.1%	36.2%	49.6%	31.9%	39.2%	36.5%
Not using health services among those who needed	56.4%	47.6%	36.7%	31.1%	33.7%	52.2%	34.3%	40.0%
Reasons for not using health services								
Self-medicated	86.9%	84.7%	85.5%	86.2%	87.3%	85.7%	86.5%	86.2%
Believe that problem would go away	4.5%	4.5%	4.1%	5.0%	4.0%	4.6%	4.3%	4.4%
Too expensive to pay for the visit	3.6%	2.7%	3.8%	3.9%	3.8%	3.1%	3.9%	3.5%
Too expensive drugs	4.5%	7.3%	4.7%	4.1%	4.0%	6.0%	4.2%	4.9%
Other	0.4%	0.9%	1.8%	0.8%	0.9%	0.7%	1.1%	0.9%
Being requested or needed to be hospitalized, but did not	5.6%	4.1%	4.4%	4.4%	4.5%	5.1%	4.4%	4.6%
Reasons of not being hospitalized								
Too expensive	20.3%	15.0%	31.3%	22.9%	37.8%	17.2%	30.9%	25.3%
Too far away		2.1%	2.9%	2.9%	0.2%	0.8%	1.9%	1.5%
Lack of time	4.8%	4.4%	6.7%	7.1%	12.9%	4.7%	8.7%	7.1%
Self-medicated	55.9%	71.6%	23.8%	49.6%	28.1%	62.8%	34.4%	46.0%
Believe that problem would go away	12.4%	3.4%	14.1%	10.7%	6.8%	9.1%	10.4%	9.9%
Other	6.7%	3.6%	21.2%	6.8%	14.3%	5.5%	13.6%	10.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: World Bank's staff calculations based on KIHS 2011

62.   Along with differences in health expenditures per capita across consumption quintiles, there is also a difference in the structure of the health expenditures. Thus, households in the top quintile spend, on average, seven times more on medicines and other pharmaceuticals, five times more on hospitalization, and six times more on outpatient treatment per capita than households in the poorest quintile.

Table 15: Consumption of health services by components

	Quintiles of PCC					Poverty status		All
	1	2	3	4	5	Poor	Non-poor	
Mean health services consumption per capita, KGS								
Medicine and pharmaceutical materials	98.23	183.74	210.66	302.92	740.13	136.66	406.52	307.19
Out-patient treatment	10.89	24.18	40.17	61.53	127.97	18.31	73.14	52.96
Hospitalization	30.02	47.15	84.17	154.96	158.91	29.07	133.50	95.06
Total health expenditure	139.14	255.07	334.99	519.41	1,027.00	184.05	613.17	455.21
Households w/particular expenditures, %								
Medicine and pharmaceutical materials	64.2%	73.1%	70.2%	73.4%	77.4%	70.5%	73.5%	72.7%
Out-patient treatment	12.2%	18.3%	14.8%	18.5%	17.9%	16.3%	16.8%	16.7%
Hospitalization	7.2%	9.9%	10.2%	11.5%	8.6%	7.8%	10.2%	9.5%

Source: World Bank's staff calculations based on KIHS 2011

Differences between the Poor and Non-poor in Income and Consumption Expenditures

63.   There are obvious differences between income and consumption expenditures among households: wealthier quintiles spend more compared to poor quintiles. Assuming that income represents the budget constraint of a household, it is interesting to note that consumption response to an increase in income is very large. Another aspect of the data is that the phenomenon of "overspending" (when reported consumption expenditures are larger than reported income) is more pronounced for wealthier quintiles. For poor households, the difference between consumption and income is just 2500 KGS while for rich households, it is 8500 KGS.

Income

64.   In regional terms, income per capita follows the patterns of poverty and is higher in urban areas than in rural areas. This may reflect better income earning opportunities in urban areas, but also related to the fact that income in rural areas from agricultural activities cannot be accurately measured and is underestimated. Regional patterns demonstrate that the highest levels of income per capita are observed in the most industrialized locations: Bishkek and Chui: 40100 KGS and 31460 KGS, respectively. The lowest income per capita is observed in the Talas and Naryn oblasts. Talas is not the poorest region based on consumption per capita, but the large share of agriculture in the local economy help, explaining the lowest income status.

Figure 45: Consumption expenditures and income by quintiles
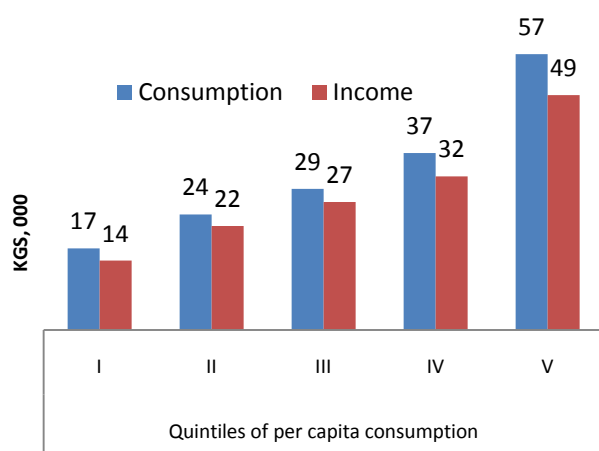
Figure 46: Annual income per capita by oblasts
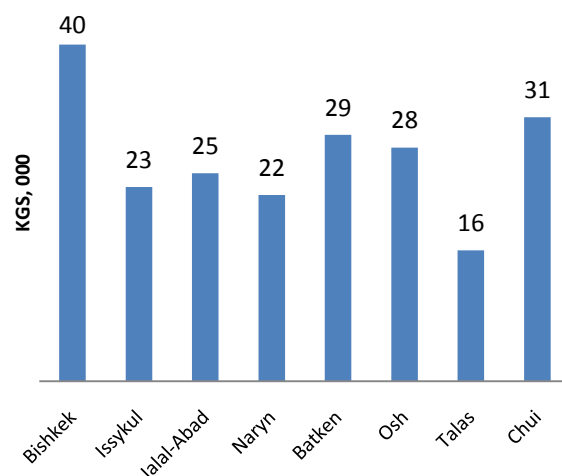
Source: World Bank's staff calculations based on KIHS 2011

65.   While there are obvious differences in the income level of poverty groups, the structure of income sources does not vary much. In terms of the per capita income, the extreme poor receive three times less, while the absolute poor, two times less than the non-poor. The structure of income changes only slightly across poverty groups. The non-poor have a higher share of income from work and a lower share of benefits in comparison with poor households.

Table 16: Income structure by poverty status

	National	Extreme Poor	Poor	Non-poor
Total annual income per capita, KGS	28,687	11,377	18,121	34,841
Share in total income, percent				
Income from work	75.61	70.73	75.37	75.68
Pensions	16.53	19.33	16.90	16.42
Scholarships	0.02	0.13	0.02	0.02
Social benefits	0.77	3.30	1.85	0.45
Welfare from local administration, relatives or friends	5.20	5.61	4.68	5.36
Other income	1.87	0.90	1.19	2.07

Source: World Bank's staff calculations based on KIHS 2011

66.   Recognizing the importance of the remittances, the data was further analyzed focusing on income from abroad. This shows interesting results as wealthier households receive more of their income from work and relatives abroad in absolute terms. Thus, non-poor families have two times of remittances than the poor. However, in relative terms, the difference in the share of remittances in total income between the non-poor and poor is small, 11.2 percent versus 10.7 percent, respectively. In regional terms, the Batken oblast is leading with the highest amount of average remittances, followed by Osh and Jalal-Abad, reflecting the importance of the income from abroad in the household budget. Not only is the average size of the remittances high in the southern oblast, but also the percent of households who receive income from abroad is higher in Batken, Osh, Jalal-Abad. For example, in the Batken oblast, 45 percent of households are recipients (and potentially have family members) of income from abroad, in Osh, 28 percent and Jalal Abad, 26 percent.

Table 17: Total income and the role of remittances

		Total Annual Income per capita	Income from work abroad	Income from relatives or friends living abroad	All Remittances from abroad			Total Annual Income per capita	Income from work abroad	Income from relatives or friends living abroad	All Remittances from abroad
All		28,687	2,479	724	3,203	**Extreme Poor**		11,377	896	264	1,160
						Poor		18,121	1,558	391	1,949
Location type	Urban	35,831	1,467	574	2,040	**Non-poor**		34,841	3,015	918	3,933
	Rural	24,439	3,080	813	3,894						
						Quintiles of PCC	1	14,406	1,151	164	1,314
Oblast	Bishkek	40,100	203	499	703		2	21,635	2,084	615	2,698
	Issykul	23,157	1,395	364	1,759		3	26,620	2,701	781	3,482
	Jalal-Abad	24,801	4,078	220	4,298		4	31,934	3,255	712	3,966
	Naryn	22,183	43	35	78		5	48,822	3,202	1,347	4,550
	Batken	29,346	6,287	1,231	7,519						
	Osh	27,852	3,974	1,393	5,368						
	Talas	15,581	8	298	306						
	Chui	31,457	299	728	1,027						

Source: World Bank's staff calculations based on KIHS 2011

67. The link between remittances and poverty could be better understood by looking at the profile of working migrants. Not surprisingly, it is likely that migrants are from the Osh/Jalal-Abad oblasts, young (age from 15 to 34) males from the rural areas with complete secondary education and from non-poor families. While there are numerous reportinsg on the number of working migrants from Kyrgyzstan, the labor force module of the Kyrgyz Integrated Household Survey counts 230 thousand migrants in 2011.

Table 18: Number and characteristics of working abroad

		Employed abroad				Employed abroad
All		**230,604**				
Location type	Urban	49,425	**Education**	Higher		23,017
	Rural	181,179		Incomplete Higher		8,471
Oblast	Bishkek	5,415		Secondary Prof.		16,761
	Issykul	4,265		Prof. Technical		19,986
	Jalal-Abad	61,414		General (complete)	Secondary	142,093
	Naryn	196		General (incomplete)	Secondary	15,796
	Batken	33,667		Primary and low		4,646
	Osh	114,175	**Extreme Poor**			3,788
	Talas	1,846	**Poor**			60,627
	Chui	9,792	**Non-poor**			169,977
Sex	Male	165,807	**Quintiles**		1	24,884
	Female	64,962	**of PCC**		2	41,003
Age group	15--24	94,856			3	57,042
	25--34	81,067			4	57,928
	35--54	54,120			5	49,748
	55--64	725				
	65+					

Source: World Bank's staff calculations based on KIHS 2011

Social transfers

68.   The distribution of social transfers varies by program type (table below). Public transfers at large are uniform with poor quintiles benefiting equally compared to rich households. However, some subsidies from local authorities, privileges, and money from relatives are regressive, with richer households benefiting proportionally more or equally with poorer households. On a positive note, Monthly Benefit for Poor Families (MBPF), which is the only poverty targeting benefit, is proportionally more distributed at the poor bottom quintiles.

69.   In terms of targeting accuracy, the benefits targeting poor (MBPF) manage to transfer the majority of the funds to the poorest households. Around half of total transfers are accrued by the poorest quintile.

Table 19: Distribution of social protection benefits and private transfers across groups, %

Type of benefit	Quintile I	Quintile II	Quintile III	Quintile IV	Quintile V	Total
Any social transfer	21.1	20.4	18	16.9	23.6	100
Pensions	20.5	19.8	18.4	17.2	24.2	100
MSB	9.2	31.8	24.5	17.7	17	100
MBPF	58.9	24.1	9.6	5.5	1.9	100
Other social insurance benefits	17.4	21.3	18.8	18.7	23.9	100
Privileges	15.7	20.1	18.6	16.1	29.4	100
Cf. Money from relatives	19.5	17.3	15.6	16.7	30.9	100

Source: World Bank's staff calculations based on KIHS 2011

70.   The ratio of social transfers to the average consumption in each quintile shows the relative importance of transfers or the adequacy of benefits. Though the social transfers constitute 30 percent in poor families' consumption, the benefits targeting poor and vulnerable households represent a small share for those in the lower quintiles. In other words, the magnitude of the benefits for poor is inadequate. A noteworthy feature of the households in the country is the importance of the money from relatives across quintiles.

Table 20: Benefit adequacy: Share of benefits in total household consumption for beneficiary households (excluding non-beneficiaries)

Type of benefit	Quintile I	Quintile II	Quintile III	Quintile IV	Quintile V
Benefit adequacy (ratio of benefits/consumption) for beneficiary households (excluding non-beneficiaries)					
Total social transfer	29%	31%	30%	32%	34%
Pensions	34%	33%	32%	35%	35%
MSB	5%	12%	5%	15%	6%
MBPF	9%	6%	4%	2%	2%
Other social insurance benefits	0%	0%	0%	0%	0%
Privileges	1%	11%	2%	3%	3%
Money from relatives	12%	18%	19%	16%	18%

Source: World Bank's staff calculations based on KIHS 2011

Consumption basket

71.   It is also highly relevant for policymakers to identify the structure and variations in the consumption basket across income groups. The obvious use of such information is for studying the consumption pattern in the course of development (e.g., share of tradables and non tradables),

39

issues of food security, the health of the population and assesses the impact of changes in policies (e.g. trade tariffs), prices on different consumption items (including prices of food, energy, etc).

72.   Like in other low-income countries, food consumption takes up the largest share of the total consumption budget of a household: on average, it is 64 percent. As expected, the share of food decreases as the per capita consumption increases, i.e., as the household becomes non-poor-- the phenomena known as Engel's law. Within food consumption, the largest share belongs to the bread and bakery category, especially for poor households, while non-poor households enjoy consuming more of the meat products—a better source of calories.

73.   The high share of the food expenditure and especially of wheat-related products makes the poorest vulnerable to food price increases. Given the high share of bread, meat, sugar, vegetables, and milk in the consumption budget of the Kyrgyz households, the policymakers will benefit from real-time monitoring of prices of these consumption items to assess the changes in the real income of the population.

Table 21: Structure of consumption basket by poverty status

	National	Extreme Poor		Poor		Non-poor	
		Urban	Rural	Urban	Rural	Urban	Rural
Annual per capita consumption (KGS)	32857	14866	13693	20695	20363	44047	37329
Food consumption (% of total consumption)	64	72	73	66	70	59	65
Bread and bakery foods (% of food consumption)	22	33	32	28	28	20	21
Milk and dairy produce (% of food consumption)	9	5	4	6	7	9	10
Meat and meat foods (% of food consumption)	19	15	14	19	17	21	20
Fish and fish foods (% of food consumption)	1	0	0	0	0	1	1
Vegetable oil, margarine and other fats (% of food consumption)	6	8	8	7	7	5	5
Eggs (% of food consumption)	2	1	1	2	1	2	2
Potatoes (% of food consumption)	4	5	5	5	5	3	4
Vegetables, melons and gourds (% of food consumption)	11	9	12	10	11	11	11
Fruits and berries (% of food consumption)	6	4	4	4	5	6	6
Sugar (% of food consumption)	12	12	11	11	12	12	12
Tea, coffee, cacao (% of food consumption)	1	2	2	2	1	2	1
Non-alcoholic beverages (% of food consumption)	1	0	1	0	1	1	1
Other food products (% of food consumption)	2	2	1	1	1	2	1
Alcoholic beverages (% of food consumption)	1	0	0	0	0	1	1
Tobacco (% of food consumption)	1	1	1	1	1	1	1
Eating out (% of food consumption)	4	3	3	3	3	6	3

Source: World Bank's staff calculations based on KIHS 2011

74.   In light of discussed reforms in the energy sector, it is of interest to look at the share of electricity usage across the wealth quintiles. As expected, the average share of electricity consumption in total consumption is just above 2 percent (or 688 KGS per person). The amount spent on electricity rises with per capita consumption status: wealthier households consume more electricity; however, the share of electricity spending only slightly declines for affluent households. Assuming low-price elasticity and given the budget shares of electricity consumption, policymakers can approximate the effect of changes in electricity prices on real income of households across quintiles.

Figure 47: Electricity consumption and its share in total consumption
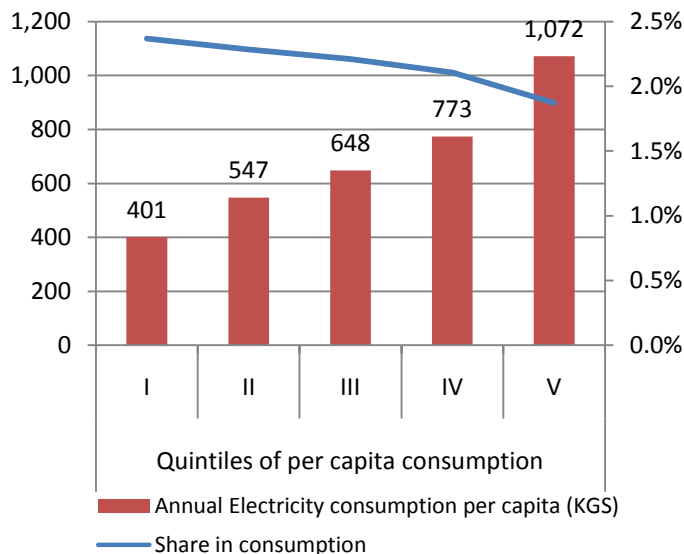
Source: World Bank's staff calculations based on KIHS 2011
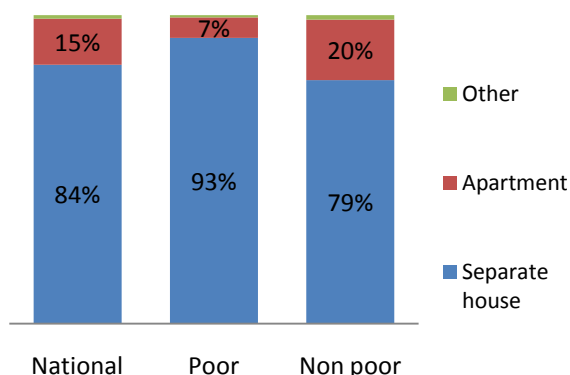
Dwelling, Access to Basic Utilities, and Asset Holding

75.   Inclusion of non-monetary indicators allows for a more comprehensive characterization of poor people to aid policy targeting. Non-monetary correlates of poverty tend to be related to its persistence (i.e., creating a vicious spiral of poverty). Non-monetary indicators of poverty include access to services such as electricity, safe water, sanitation, quality housing, health, and education as well as asset ownership. When a group of the population does not have access to multiple public goods and services, then they can be viewed as "multi-dimensionally" poor.

Housing

76.   Disparities in housing type between the poor and non-poor mostly reflect the residence of the population. In rural areas, the predominant dwelling type is a separate house; as a result, 93 percent of the poor have separate houses versus 79 for non-poor. In urban, more affluent areas, most of the people own apartments, thus 20 percent of non-poor have apartments compared to just 7 percent of poor with apartments. Noticeably, the poor live in crowded places: the per capita living area for poor households is just 10 square meters while non-poor enjoy 15 square meters per capita. Though the KIHS dataset does not reflect the quality of dwelling (building material, roofing, etc.), a close correlation between crowdedness and quality of housing is assumed. This implies that the poor have worse housing conditions compared to the non-poor, which makes them vulnerable to health problems.

Figure 48: Dwelling type by poverty status

Figure 49: Living area of dwelling per capita by poverty status

Source: World Bank's staff calculations based on KIHS 2011
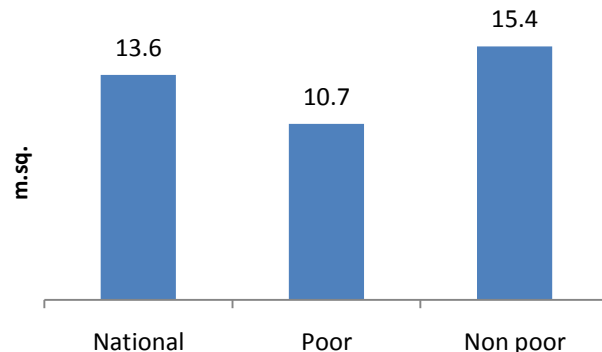
Amenities

77.   Universal access to basic utilities is part of human rights and an indicator of the level of development of the country. In addition, better coverage of the basic infrastructure improves health and productivity (e.g., by empowering women). So, measuring access to public utilities across population groups is an important aspect of the poverty analysis. The policymakers in the Kyrgyz Republic face numerous challenges, e.g., the growing pace of unorganized urbanization in an informal settlement and the need to expand the public utilities to cover the poor. The information extracted from the KIHS should assist policies that would benefit all.

78.   Though the availability of basic utilities such as hot and cold water, gas, and heating is low at the national level, the poor have lesser access to these utilities. As mentioned, this might be partially related to the residence factor: the poor are dominant in rural areas where access to the utilities is traditionally low. This implies that bettering the infrastructure in the rural areas should be pro poor.

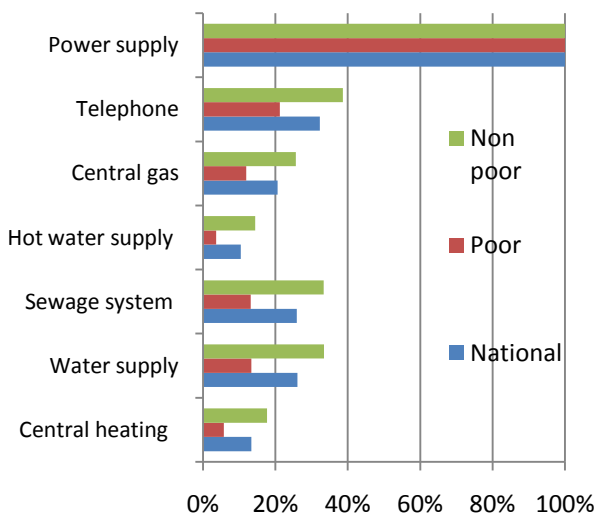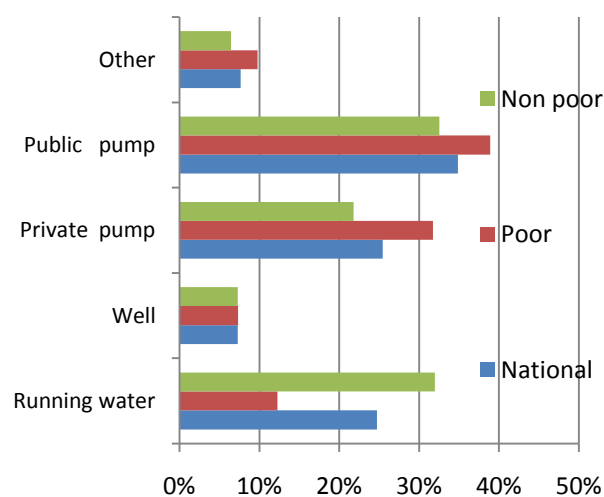**Figure 50: Coverage of basic utilities by poverty status**

Figure 51: Water sources by poverty status

Source: World Bank's staff calculations based on KIHS 2011

79.   Apart from access to services, the poor also suffer from an inferior quality of utility services. The table below reports the response of households to a question of how often the household experienced the disconnection from the gas and electricity supply during a year. It appears that while the electricity supply gets cut more often compared to gas supply, the poor experienced more frequent outage of both gas and electricity. Once again, this is thought to be related to the falling infrastructure in rural areas, where the poor mostly reside.

Table 22: Frequency of disconnect from gas and electricity by poverty status

		National	Poor	Non-poor			National	Poor	Non-poor
Disconnected from the gas supply (times/year) (% among having gas supply)	Never	61%	38%	67%	Disconnected from the electr.supply (times/year) (% among having electr. supply)	Never	9%	5%	12%
	Several times a year	35%	52%	31%		Several times a year	64%	63%	64%
	Once a month	2%	5%	1%		Once a month	17%	23%	14%
	Once a week	0%	0%	0%		Once a week	4%	5%	3%
	Several times a week	0%	1%	0%		Several times a week	5%	4%	5%
	Every day	1%	5%	0%		Every day	1%	1%	2%

Source: World Bank's staff calculations based on KIHS 2011

Asset holding

80.   There are expected differences between poor and non-poor households in terms of possession of the consumer durables, but the disparities are not large. For example, while one out of 10 of the poor have a car, similarly 11 percent of the non-poor also report having a car. The survey, however, does not distinguish the quality and make of the car, which is important. The largest difference between the poor and the non-poor is in the possession of a refrigerator and an automatic washing machine, 14 and 10 percent, respectively. Another interesting observation is that among many durables (household appliances) the highest penetration rate is for mobile phones and a television, while lowest is for air conditioners.

Table 23: Asset holding by poverty status

	National	Urban	Rural	Poor	Non-poor
Color television	80%	85%	76%	74%	82%
Personal computer	5%	7%	3%	2%	6%
Automatic washing machine	11%	19%	6%	4%	14%
Car	11%	10%	11%	9%	11%
Refrigerator	38%	48%	30%	27%	41%
Furniture for the guest room	14%	17%	12%	11%	15%
Mobile phone	82%	79%	83%	82%	81%
Electrical vacuum cleaner	18%	25%	12%	8%	22%
Air conditioner	0.3%	0.5%	0.1%	0.0%	0.4%

Source: World Bank's staff calculations based on KIHS 2011

81.   In rural areas, the possession of livestock is an important asset for a household. Contrary to expectations, in this respect the differences between the poor and non-poor are not significant.

Both poor and non-poor report a similar rate of possession of major livestock, perhaps reflecting a similar saving behavior. Not just the rate of possession is similar, but also the average number of livestock per household is close across the poverty groups.

Table 24: Livestock holding by poverty status

	All RURAL	Poor	Non-poor		All RURAL	Poor	Non-poor
Cows	43%	42%	44%	Cows	0.62	0.59	0.63
Sheep > 1 year	23%	23%	24%	Sheep > 1 year	2.71	2.80	2.66
Horses	9%	8%	10%	Horses	0.13	0.09	0.15
Calves < 1 year	41%	39%	42%	Calves < 1 year	0.53	0.50	0.54
Poultry	40%	37%	41%	Poultry	3.87	3.51	4.04

Source: World Bank's staff calculations based on KIHS 2011

Labor market indicators

82.   Because the labor force module of the Kyrgyz Integrated Household Survey is not designed to capture information about international labor migrants and does not provide any information on the duration of the stay abroad, official statistics on employment and unemployment include in the labor force people who are employed abroad. In this report, two sets of labor market indicators are presented. The first set considers the workers abroad as members of the labor force (following the official methodology). The second set does not consider the workers abroad as members of the labor force. This helps create a more accurate picture of the labor market.

Box 2: Definitions of the Labor Market Indicators

The working age population is defined as the population aged 15 and above.

The labor force is the active working population, that is, the number of people who engage actively in the labor market either by working or by looking for work (unemployed).

The inactive population is the residual of the labor force, that is, people who are of working age, but are neither employed nor looking for work.

The labor force participation rate is the share of the working-age population that is active in the labor market.

The employment rate gives the share of employed people as a percentage of the total working-age population.

The unemployment rate is the percentage share of unemployed people among all people who are active. It is based on the strict definition of the International Labor Organization, that is, those who are (a) without work, (b) available for work within the next two weeks, and (c) have been seeking work for the preceding two weeks.

---

83.   Among the working-age population (aged above 15 years), 2,489 thousand people were in the labor force, of which 2,276 thousand were employed, and 212,410 were unemployed. More than 1.3 million people of working age were inactive. In relative terms, about 64.9 percent of the working-age population was active in the labor market; 59.3 percent were employed. Of the labor force, 8.5 percent were unemployed. Labor force participation and employment rates are higher in rural areas than in urban areas, while the unemployment is higher in urban areas compared to the rural. In gender terms, men have higher participation and employment rates for all age categories while women have higher unemployment rates.

84.   If one is to exclude individuals working abroad, this increases unemployment and decreases the labor force participation and employment rates. This occurs because exclusion of workers abroad lowers the overall number of the employed and the size of the labor force, while keeping the number of the unemployed the same. The changes are not large, and they are more pronounced for males and in rural areas, which provide the majority of those who are working abroad. Thus, the unemployment rate increases by 0.6 percentage points in urban areas and by 1 percentage point in rural areas if one does not count workers abroad. Nonetheless, excluding international migrants does not change the overall picture and observed differences in employment, unemployment, and labor force participation between urban and rural areas and between men and women.

Table 25: Labor market indicators by poverty status

		Participation rate	Employment rate	Unemployment rate
Including Employed abroad				
Total		**64.90%**	**59.30%**	**8.50%**
Location	Urban	62.90%	56.40%	10.40%
	Rural	65.90%	61.00%	7.50%
Gender	Male	77.50%	71.60%	7.60%
	Female	52.80%	47.60%	9.90%
Excluding Employed abroad				
Total		**62.60%**	**56.70%**	**9.40%**
Location	Urban	61.60%	54.80%	11.00%
	Rural	63.20%	57.90%	8.50%
Gender	Male	75.30%	68.90%	8.60%
	Female	51.20%	45.80%	10.50%

Figure 52: Employment rates by age and gender

Source: World Bank's staff calculations based on KIHS 2011
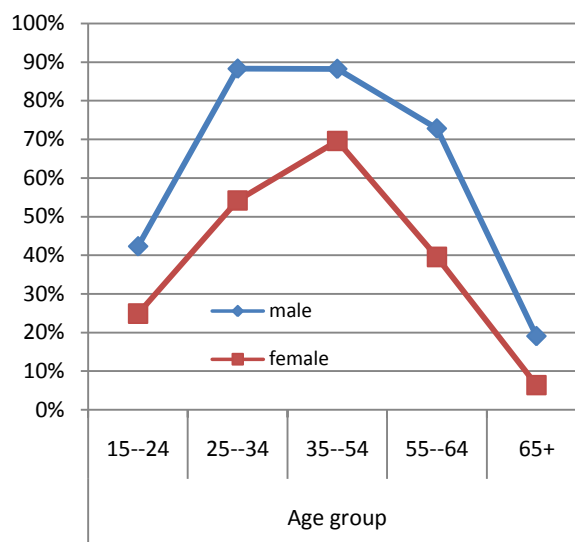
85.   Labor force participation and employment rates are higher among individuals from wealthier quintiles, while the poor are less involved in the labor market. This pattern is very distinctive in the urban areas while in rural areas the indicator differences between the poor and non-poor in labor market are blurred. The rural poor and non-poor are almost equally likely to be unemployed and do not show significant variations in employment and labor force participation rates. The large number of working poor is typical for countries in which farm activities with low productivity employ substantial shares of the rural population.

Table 26: Labor market indicators by rural -urban

		Including Employed abroad			Excluding Employed abroad		
		Participation rate	Employment rate	Unemployment rate	Participation rate	Employment rate	Unemployment rate
Urban	Quintiles of PCC						
	1	59.0%	50.7%	14.1%	58.2%	49.7%	14.6%
	2	60.3%	52.3%	13.2%	58.8%	50.5%	14.1%
	3	61.9%	55.5%	10.4%	60.3%	53.6%	11.1%
	4	62.3%	56.1%	10.0%	60.8%	54.4%	10.6%
	5	65.8%	60.0%	8.8%	64.5%	58.5%	9.3%
Rural	Quintiles of PCC						
	1	66.4%	61.8%	7.0%	64.7%	59.8%	7.6%
	2	67.0%	61.7%	7.8%	64.6%	59.0%	8.6%
	3	66.8%	61.9%	7.4%	63.5%	58.1%	8.5%
	4	64.6%	59.5%	8.0%	61.1%	55.4%	9.3%
	5	64.7%	59.9%	7.4%	62.1%	56.9%	8.3%

Source: World Bank's staff calculations based on KIHS 2011

86.   Unemployment rates vary only slightly across oblasts. Unemployment rates below the national average of 8.5 percent were observed in the Jalal-Abad, Osh, and Talas oblasts. The lowest unemployment rate was observed in the Talas oblast. Exclusion of workers abroad considerably changes unemployment rates in the southern oblasts, which provide the absolute majority of migrant workers. Thus, unemployment rates increased from 8.2 to 9.4 percent in the Jalal-Abad oblast, from 10.6 to 12.9 percent in Batken, and from 6.6 to 8.1 percent in Osh if the workers abroad are excluded from the calculation.

Figure 53: Unemployment rates by oblasts

Including employed abroad   Excluding employed abroad
National average
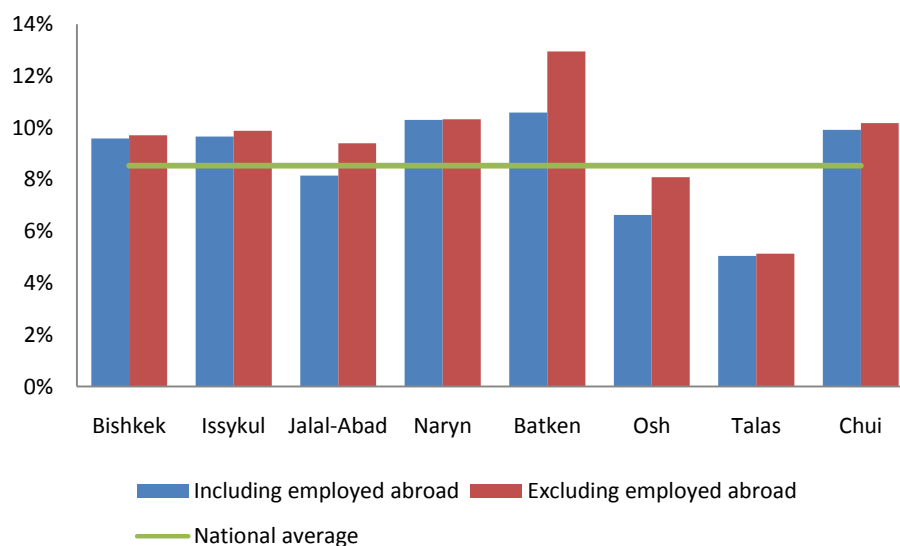
87.   Unemployment rates show a strong correlation with age and education attainment of an individual. Unemployment rates generally decline with age and a higher level of educational attainment. Young people face more difficulties in the labor market: the highest unemployment rates affect mainly people in the 15–24 year age-group. There are also differences in the level of unemployment if one includes or excludes those working abroad. As migrants are predominantly young people, exclusion of migrants results in a higher level of unemployment for the 15-34 age groups.

Figure 54: Unemployment rates and age group including (top) and excluding (bottom) workers abroad
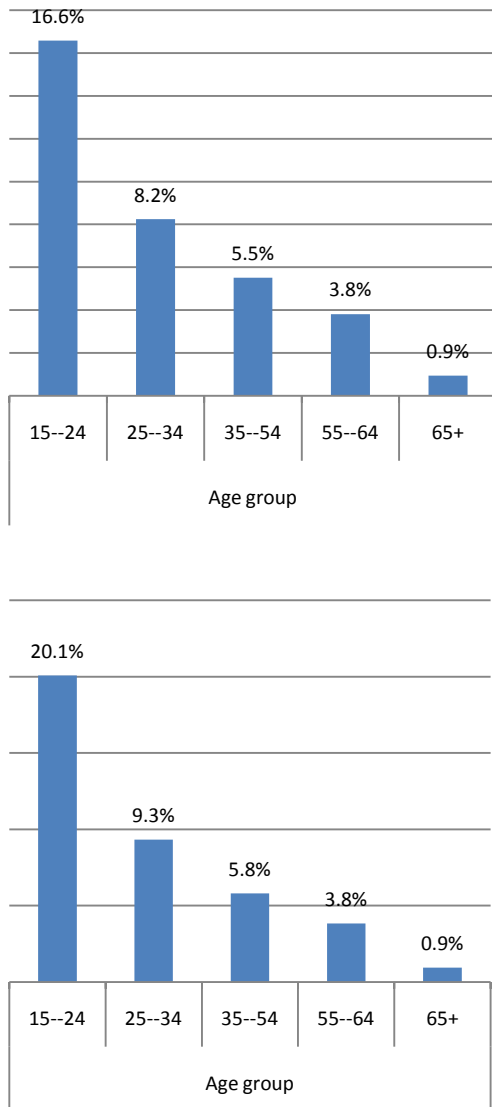
Figure 55: Unemployment rates and education including (top) and excluding (bottom) workers abroad
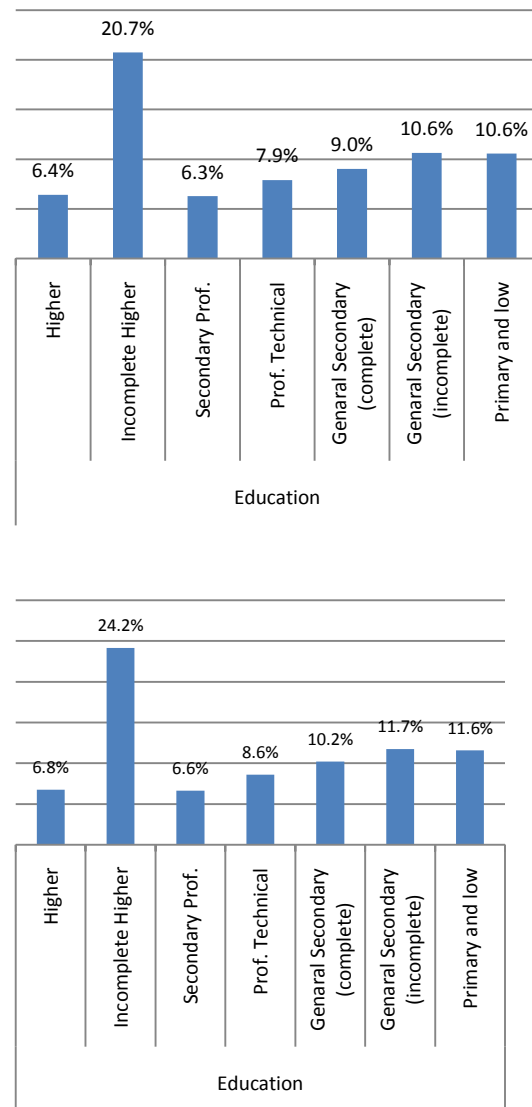
Source: World Bank's staff calculations based on KIHS 2011

88.   The majority of the employed work as hired workers at enterprise, institutions, or by an individual; this is followed up by self employment. The non-poor have a higher share in being a hired worker at an enterprise while the poor are more self-employed. Interestingly, around 9-10

47

percent of those who work report working as unpaid family members, likely in a family business. The poor relative to the non-poor have a higher level of employment as an unpaid family member. Overall, the statistics tend to suggest that more than a quarter of working people own a business as a main employment type. From the gender point of view, women appear to find employment as hired staff rather than self employed, which would suggest the presence of occupational segregation. The location perspective on employment shows that self employment is mostly a rural phenomenon while in urban areas the majority works as employees for enterprises and institutions. Exclusion of people working abroad does not change the overall picture for the employment type of those who work (omitted here).

Table 27: Employment type by groups

	Total	Urban	Rural	Male	Female	Poor	Non-poor
Hired worker at enterprise, institution	31.0%	47.5%	22.3%	26.6%	37.3%	19.1%	36.4%
Worker hired by individuals	26.0%	31.3%	23.1%	29.7%	20.7%	28.4%	24.9%
Hired worker on peasant farms	0.2%	0.1%	0.2%	0.3%	0.1%	0.4%	0.1%
Employer	0.7%	1.2%	0.5%	0.9%	0.5%	0.6%	0.8%
Self-employed	26.2%	18.1%	30.5%	31.8%	18.3%	30.4%	24.4%
Members of cooperatives	0.3%	0.2%	0.4%	0.3%	0.3%	0.4%	0.3%
Unpaid family members	9.0%	0.5%	13.6%	5.7%	13.8%	15.2%	6.2%
Employed on personal subsidiary plot	6.5%	1.1%	9.3%	4.8%	8.9%	5.4%	7.0%

Source: World Bank's staff calculations based on KIHS 2011

Concluding remarks

89.   The analysis of this report is based on data from the Kyrgyz Integrated Household Survey (KIHS) for 2011, which was collected and made available to the World Bank by the National Statistical Committee (NSC) of the Kyrgyz Republic. The report represents the continuation of the efforts to monitor poverty, provide analytical insights, and identify the main dimensions of poverty in the Kyrgyz Republic based on new analysis and the most recently available data.

90.   The report describes and discusses the main features and correlates of poverty in the context of the Kyrgyz Republic, by considering the poverty incidence among households and individuals differentiated by such characteristics as age, household size, employment status, educational attainment, geographic location, gender of the household head, and internal migration status of the household head. The goal is to provide a brief overview of poverty in the country and describe the characteristics of the poor households. The idea is to aid policy making in finding out if economic growth is associated with the equitable (among different groups of the population) income-generation process, which would imply shared prosperity as a policy objective.

91.   Over the past four years, the country has been hit by various shocks, both internal and external. These included food price increase, political unrest, trade interruptions due to the custom union, economic instability which resulted in very volatile macro and income dynamics. As data from the KIHS shows, the poverty symmetrically reflected macro trends, but the regional

picture of poverty reduction and stagnation is heterogeneous. However, recent economic growth seems to fail in generating further poverty reduction, especially in urban areas.

92.   The gap in poverty rates between urban and rural areas narrowed due to an increase in urban poverty. The economic crisis, particularly the hike in food prices, impacted urban areas. During the subject period, the country experienced a modest decrease in inequality, reflecting a pro-poor impact of growth and crises episodes. This report also notes that while income poverty changed in response to economic conditions, non-income dimensions of living standards remained relatively constant. A significant portion of the population continues to suffer from the lack of access to basic infrastructure services that have an immediate impact on living conditions

Table 28: Dynamics of MDG-related indicators

	1993	1998	2002	2005	2007	2009	2010	2011
Goal 1: Eradicate extreme poverty and hunger								
Employment to population ratio, 15+, female (%)	51.6	50.7	47.4	49.2	49.7	49.9	50.0	
Employment to population ratio, 15+, male (%)	67.4	67.5	65.6	70.3	71.6	71.7	71.6	
Employment to population ratio, 15+, total (%)	59.2	58.9	56.3	59.5	60.4	60.5	60.5	
Employment to population ratio, ages 15-24, female (%)	36.9	35.3	32.0	30.3	30.6	30.8	30.8	
Employment to population ratio, ages 15-24, male (%)	44.4	46.2	44.2	48.2	49.8	50.1	49.2	
Employment to population ratio, ages 15-24, total (%)	40.6	40.7	38.1	39.3	40.2	40.5	40.1	
GDP per person employed (constant 1990 PPP $)	6300	5643	6127	6096	6581	7131	6883	7216
Income share held by lowest 20%	2.5	7.2	8.4	6.0	8.8	6.8		
Poverty gap at $1.25 a day (PPP) (%)	8.6	9.0	8.8	6.5	0.1	1.4		
Poverty gap at $2 a day (PPP) (%)	14.6	23.3	24.9	17.1	5.5	6.0		
Poverty headcount ratio at $1.25 a day (PPP) (% of population)	18.6	31.8	34.0	22.9	1.9	6.2		
Poverty headcount ratio at $2 a day (PPP) (% of population)	30.1	60.8	66.7	45.8	29.4	21.7		
Prevalence of undernourishment (% of population)				9.4				6.4
Goal 2: Achieve universal primary education								
Persistence to last grade of primary, female (% of cohort)			94.9	99.5	98.4	97.3	95.9	
Persistence to last grade of primary, male (% of cohort)			92.1	96.7	98.3	98.0	94.7	
Persistence to last grade of primary, total (% of cohort)			93.5	98.1	98.3	97.6	95.3	
Primary completion rate, total (% of relevant age group)			93.5	98.4	96.9	97.2	96.6	95.8
School enrollment, primary (% net)			86.2	87.6	86.7	86.3	87.5	88.4
Total enrollment, primary (% net)			93.2	95.5	94.9	93.9	95.3	96.1
Goal 3: Promote gender equality and empower women								
Proportion of seats held by women in national parliaments (%)		1.4	10.0	0.0	25.6	25.6	23.3	23.3
Ratio of female to male primary enrollment (%)	101.1		98.3	98.7	99.4	100.0	99.1	98.7
Ratio of female to male secondary enrollment (%)			100.2	100.0	100.0	100.0	98.8	99.6
Ratio of female to male tertiary enrollment (%)	133.1	115.9	113.8	124.2	128.6	129.8		124.1
Ratio of girls to boys in primary and secondary education (%)			99.4	99.5	99.7	99.9	98.9	99.2
Share of women employed in the nonagricultural sector (% of total nonagricultural employment)		49.0	44.9	51.9	50.8	50.6		
Goal 4: Reduce child mortality								
Immunization, measles (% of children ages 12-23 months)	93.0	98.0	98.0	99.0	99.0	99.0	99.0	97.0
Mortality rate, infant (per 1,000 live births)	52.0	43.6	37.5	33.6	31.3	29.2	27.9	27.0
Mortality rate, under-5 (per 1,000)	62.3	51.2	43.5	38.7	35.8	33.3	31.7	30.6
Goal 5: Improve maternal health								
Adolescent fertility rate (births per 1,000 women ages 15-19)		36.4	31.5	33.0	34.1	33.6	33.4	33.2
Births attended by skilled health staff (% of total)	98.3	98.5	98.8	97.9	98.4	98.5		
Maternal mortality ratio (modeled estimate, per 100,000 live births)				77			71	

	1993	1998	2002	2005	2007	2009	2010	2011
Goal 6: Combat HIV, AIDS, malaria and other diseases								
AIDS estimated deaths (UNAIDS estimates)	100	100	100	100	200	500	500	500
Incidence of tuberculosis (per 100,000 people)	135	221	246	208	178	151	139	128
Prevalence of HIV, total (% of population ages 15-49)	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.4
Tuberculosis case detection rate (%, all forms)	40.0	53.0	54.0	60.0	67.0	72.0	76.0	80.0
Tuberculosis death rate (per 100,000 people)	13.0	22.0	24.0	20.0	17.0	15.0	14.0	12.0
Tuberculosis treatment success rate (% of registered cases)		82.0	82.0	85.0	85.0	82.0		
Goal 7: Ensure environmental sustainability								
CO_2 emissions (kt)	8306	5823	4848	5222	6425	6722		
CO_2 emissions (metric tons per capita)	1.8	1.2	1.0	1.0	1.2	1.2		
Energy use (kg of oil equivalent) per $1,000 GDP (constant 2005 PPP)	520.7	408.8	321.1	299.1	293.0	271.3	264.3	
Forest area (sq. km)				8690.0			9540.0	
GDP per unit of energy use (constant 2005 PPP $ per kg of oil equivalent)	1.9	2.4	3.1	3.3	3.4	3.7	3.8	
Improved sanitation facilities (% of population with access)	93.0	93.0	93.0	93.0	93.0	93.0	93.0	
Improved water source (% of population with access)	78.0	80.0	84.0	87.0	89.0	90.0	90.0	
Renewable internal freshwater resources per capita (cubic meters)			9804		9287			8885
Terrestrial protected areas (% of total surface area)	6.4	6.9	6.9	6.9	6.9	6.9	6.9	
Goal 8: Develop a global partnership for development								
Debt service (PPG and IMF only, % of exports, excluding workers' remittances)	0.4	8.9	10.9	6.3	3.2	3.3	3.3	
Internet users (per 100 people)		0.1	3.0	10.3	13.7	16.6	18.0	19.6
Mobile cellular subscriptions (per 100 people)	0.0	0.0	1.1	10.7	42.2	85.1	98.9	104.8
Net ODA received (% of GNI)	4.7	15.3	12.0	11.3	7.3	7.0	8.5	
Net ODA received per capita (current US$)	21.0	50.2	37.2	51.9	52.1	58.2	69.8	
Net official development assistance received (current US$, mil.)	95	239	186	268	275	313	380	
Telephone lines (per 100 people)	8.2	7.6	7.9	8.7	9.4	9.5	9.2	8.9
Total debt service (% of exports of goods, services and income)	0.4	18.8	20.5	14.8	9.4	10.4	21.9	11.8

Source: World Bank's Millennium Development Goals Database, accessed on 20th January 2013

Table 29: International and national measures of poverty in the Kyrgyz Republic

	2002	2004	2005	2006	2007	2008	2009	2010	2011
Poverty headcount ratio at $1.25 a day (PPP) (% of population)	34.03	14.22	22.94	5.94	1.9	6.39	6.23	6.7	5.03
Poverty headcount ratio at $2 a day (PPP) (% of population)	66.65	38.81	45.8	32.11	29.4	20.74	21.69	22.9	21.64
Poverty headcount ratio at $2.5 a day (PPP) (% of population)	79.1	53.2	58.1	47.9	46.06	31.03	32.6	34.29	34.43
Poverty headcount ratio at $4 a day (PPP) (% of population)	93.69	79.24	80.43	76.64	75.73	58.21	61.49	63.23	66.77
Poverty headcount ratio at $5 a day (PPP) (% of population)	96.76	87.15	87.51	85.18	84.68	71.25	74.2	75.71	79.5
Poverty headcount ratio at national poverty line (% of population)					61	54.6	31.7	31.7	33.7	36.8

Source: WB's Poverty & Equity Databank and PovcalNet

BOX 3: EXPLAINING REGIONAL WELFARE DISPARITIES IN THE KYRGYZ REPUBLIC (using 2011 KIHS)

Regional disparities in poverty rates still remain an important issue in the Kyrgyz Republic due to a large gap between the capital and other areas. Welfare disparities in poverty rates were declining in the Kyrgyz Republic since 2004 mainly because of the sharp poverty decline in the rural areas and the slight increase in poverty in Bishkek. Nevertheless, the striking difference exists between the capital Bishkek and other areas in the country. Thus, 18 percent of the population was below the poverty line in Bishkek versus 40 percent in the urban and rural areas in 2011.

The analysis shows that household characteristics associated with better demographics, and the type of occupation and education are found to play a more important role in explaining welfare disparities between Bishkek, rural, and urban areas than the returns to them. This analysis means that urban and rural areas of the Kyrgyz Republic lag behind the capital due to the concentration of people with better characteristics in Bishkek. The same picture is observed if the rural areas of the most prosperous Chui region are compared with the rural areas of other regions. The concentration of people with better endowments in Bishkek and Chui can be a result of internal migration when people move to Bishkek where their skills are most rewarded and because of the inherently different economic structure.

Nevertheless, besides the concentration of people with more favorable characteristics in Bishkek and in the Chui region, people there are more productive as shown by a substantial unexplained gap in the log welfare ratio. An existing gap in the productivity between Bishkek, Chui, and the other areas may be related to the presence of the agglomeration effect when a high density of economic activity and better infrastructure keep wages increasing in the metropolitan area in spite of the migration inflow.

In contrast to welfare disparities between the wealthiest and the lagging regions, significant welfare differences between urban and rural areas within regions are found only in the Chui, Batken, and Naryn regions. Moreover, welfare disparities are fully explained by the endowments, meaning that there is a concentration of people with better characteristics in urban areas. The effect of coefficients is not significant in any of the regions which may reflect the fact that migration from rural to urban areas within regions could equalize returns to characteristics. Welfare disparities are not constant across the distribution. The gap either decreases between the residents in Bishkek and the urban areas or increases between the residents of Bishkek and the rural areas across deciles. Nevertheless, the communality is that the poor in Bishkek benefit disproportionally more than the rich from geographic factors. Secondly, possession of favorable characteristics tends to explain a larger part of the gap among the rich households in Bishkek and the other areas than the returns to them.

BOX 4: RESULTS OF POVERY MAPPING AND MARKET- ACCESSIBILITY EXERCISE (using census and KIHS for 2009)

Figure 56: Poverty Map, 2009: incidence and distribution
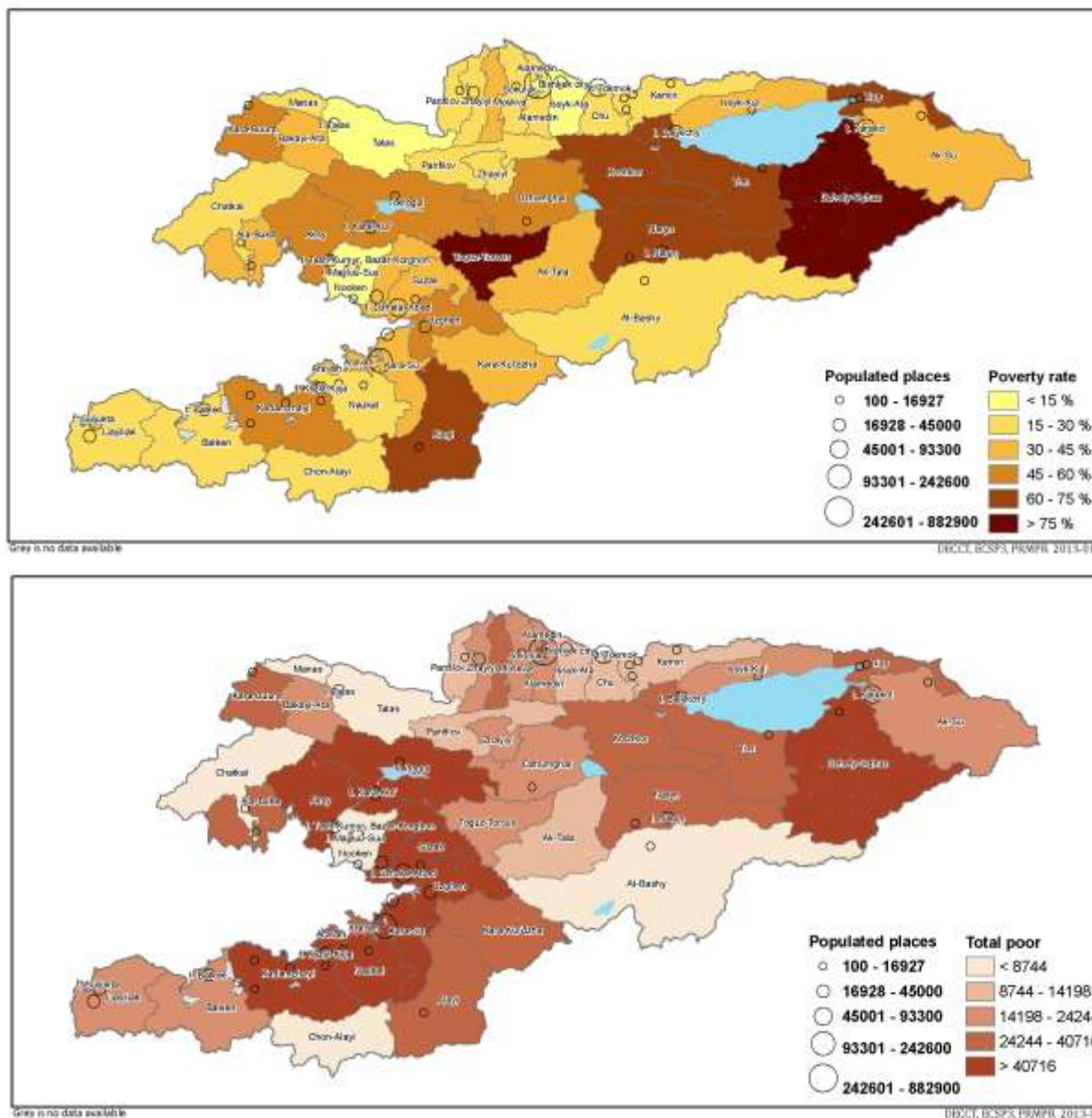
The visual representation of the rayon-level poverty incidence shows the poorer areas appear to be in the central parts of Kyrgyzstan. The border areas of Kyrgyzstan have a lower incidence of poverty, probably due to their access and connectivity with surrounding countries and markets. The circles in the map identify populated areas–most notably the capital city of Bishkek, which predictably has a high population along with a low incidence of poverty.

The distribution of the poor population shows that while a few districts (rayons) to the east have poverty rates lower that 30 percent, they do have a sizeable share of the poor population. The opposite may also be true, such as in the rayon Toguz-Torous, the poverty rate is greater than 75 percent, but the actual poor population in absolute terms is moderate.

A comparison between the poverty incidence and the poor population reveals that big cities like Osh or Bishkek exhibit a low incidence of poverty, but a high concentration of the poor population. This indicates that a low incidence of poverty does not necessarily imply that poverty alleviation policies are not needed, but rather when formulating policy, the details about pockets of poverty are worth noting for effective targeting. A reasonably high correlation between market accessibility and poverty incidence is seen near Bishkek and Osh which exhibit high-market accessibility and a very low incidence of poverty. In contrast, central areas farthest from these cities have the lowest market accessibility and high-poverty incidence. Some mid-size cities (according to their being population centers) in the eastern areas (also due to Lake Issyk-Kul) also have high-market accessibility.

Figure 57: Market-Accessibility Index for the Kyrgyz Republic, 2009