The Dynamics of Child Poverty in the Kyrgyz Republic

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Childhood Poverty Research and Policy Centre

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Preface

This paper is one of a series of working papers, reports and policy briefings on different aspects of childhood poverty published by the Childhood Poverty Research and Policy Centre (CHIP). CHIP is a collaborative research and policy initiative involving academic institutions and Save the Children in China, India, Kyrgyzstan, Mongolia and the UK. It aims to:

- deepen understanding of the main causes of childhood poverty and poverty cycles, and increase knowledge of effective strategies to tackle it in different contexts
- inform effective policy to end childhood poverty, ensuring that research findings are widely communicated to policy-makers, practitioners and advocates
- raise the profile of childhood poverty issues and increase the urgency of tackling them through anti-poverty policy and action
- work globally to tackle chronic and childhood poverty in transition countries.

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The views in this paper are those of the authors and do not necessarily represent those of CHIP, CPRC, DFID or Save the Children.

Contents

Abbreviations and acronyms

CAR	Central Asian Republic
CIS	Commonwealth of Independent States
CPI	Consumer Price Index
DFID	Department for International Development
FSU	Former Soviet Union
HBS	Household Budget Survey
HES	Household Energy Survey
KHFS	Kyrgyz Health Financing Survey
KIHS	Kyrgyz Integrated Household Survey
KMPS	Kyrgyz Multi-purpose Poverty Survey
NatStatCom	National Statistical Committee
WHO	World Health Organisation

Executive summary

This paper examines trends in the prevalence and severity of child poverty in the Kyrgyz Republic since the mid-1990s. Poverty is a multi-dimensional phenomenon and trends in both monetary poverty, as measured by household expenditure, and capability poverty, as measured by education, health status and access to related social services, are discussed. Recent evidence on child food security is also presented. Using newly available panel data from the 1998-2001 Household Budget Survey, the paper also investigates the dynamics of childhood poverty, in particular the duration of material poverty and factors associated with movements in and out of poverty.

Material (or monetary) poverty

Changes in the way material poverty has been defined along with modifications to sample design and questionnaires mean that there are difficulties in compiling estimates of child poverty in the Kyrgyz Republic on a consistent basis over time. Nevertheless it is possible to reach some firm conclusions.

- Child poverty increased during the period 1996-98, reaching a peak in the period immediately following the Russian financial crisis in the summer of 1998.
- There was a steady decline in the proportion of children aged under 18 living in poverty between 1998 and 2001.
- There was little or no improvement in child poverty between 2001 and 2002, coinciding with the fact that the country experienced negative economic growth during 2002.
- The incidence of poverty amongst children aged under 18 is significantly higher than amongst the population in general; and poverty rates are higher amongst children aged under seven than amongst children aged seven and over.
- In 1998 just under eight out of ten children lived in a household where the per capita expenditure was below the poverty line.
- By 2002, around two out of three children lived in poor households.

There are clear spatial differences in the risk of living in poverty for Kyrgyz children, with poverty rates being higher in rural than urban areas. The risk of poverty is highest for children living in Naryn *oblast* (region), and lowest for children living in the capital city of Bishkek and the neighbouring *oblast* of Chui.

However, it appears that children living in urban areas have been hardest hit by the recent slowdown in economic growth, with urban child poverty rates worsening between 2001 and 2002 whilst those in rural areas continued to improve. Children in Bishkek suffered the greatest

rise in the proportion living in poverty, with rates increasing by a fifth from 38 per cent in 2001 to 45 per cent in 2002. In contrast, the proportion of children living in poverty in Naryn actually fell during the same period; there was also a marked improvement in child poverty in Issyk-kul and Osh *oblasts*.

Of every 100 children aged 0-17 in the Kyrgyz Republic in 2002:	**Of every 100 *poor* children aged 0-17 in the Kyrgyz Republic in 2002:**
• 71 lived in rural areas	• 74 lived in rural areas
• 11 lived in the capital city Bishkek	• 8 lived in the capital city Bishkek
• 6 resided in Naryn	• 8 resided in Naryn
• 80 lived in households with access to land	• 84 lived in households with access to land
• 1.2 lived in households where the head of household had no or just primary education	• 1.3 lived in households where the head of household had no or just primary education
• 59 lived in households with 3 or more children	• 70 lived in households with 3 or more children
• 23 had access to running water	• 17 had access to running water
• 23 had access to an indoor toilet	• 17 had access to an indoor toilet
• 15 had access to a private bath/shower	• 10 had access to a private bath/shower
• 19 had access to a telephone	• 12 had access to a telephone

The risk of poverty is higher for children living in households with three or more children. There is also a strong relationship between the risk of child poverty and the educational level of the head of household, with children living with heads who have no education, primary or incomplete secondary schooling being most at risk.

Movements in and out of child poverty over time

There was considerable economic mobility in the Kyrgyz Republic during the period 1998-2001. A purely cross-sectional analysis of poverty, therefore, will fail to capture the significant amount of movement in and out of poverty that is taking place in the country. Using the panel dataset it is possible to track children's experience of poverty over time.

Over the four-year period, just 23 per cent of children were *never* poor; 11 per cent were poor in one year; 13 per cent were poor in two years; 17 per cent were poor in three years; and 37 per cent were poor in all four years. This latter group may be thought of as suffering chronic poverty.

A number of factors are associated with the risk of a child being persistently, or chronically, poor:

- Children in Naryn are *35 times* more likely to be chronically poor than children living in Bishkek, holding everything else constant. Children in Talas and Jalal-Abad are three times

more likely, and children in Osh and Issyk-kul are twice as likely, to be chronically poor than those in Bishkek.

- Children living in households where the head had only primary education or less were nearly *eight times* more likely to be chronically poor than children living in households where the head had a higher education.
- Children living in households with three or more children were *four to five times* more likely to be chronically poor than those who live in households with no other children except themselves.
- The risk of chronic poverty was highest for children living in single-parent households and lowest for those living with three or more adults.
- Children living in female-headed households were also more at risk than those living in male-headed households.
- The risk of chronic poverty was positively associated with the age of the head.
- After controlling for all other factors, rural children are *less* likely to suffer chronic poverty than those living in urban areas. This is an important finding, highlighting that urban children should not be ignored in any strategy to reduce poverty.

Food security

In 1997, 11 per cent of children under the age of three were moderately or severely underweight, three per cent were moderately or severely wasted and 25 per cent were moderately or severely stunted.

There has been some improvement in food security between 2000 and 2003, both for children and the population as a whole. However, average levels of food consumption remain below the recommended minimum calorific values.

There are clear regional differentials, with child food consumption in calorific terms being higher in *oblasts* with a strong agricultural sector, such as Jalal-Abad and Batken. Nevertheless, in all regions, with the recent exception of Jalal-Abad, average child calorie intake remains below the recommended nutritional minimum. Nutritional standards are lowest in Bishkek, highlighting the fact that access to material resources is not necessarily translated into good nutritional intake. There was a sharp drop in nutritional intake amongst children aged 0-17 in Talas and Batken between 2002 and 2003.

Education

Enrolment amongst children of compulsory school age remains high. However, there are signs that non-attendance and school drop-out rates are increasing. Non-attendance is highest in areas with the greatest opportunities for paid work for children. The cost of education is also emerging as a barrier. Many parents report feeling ashamed that they cannot send their children to school in decent clothing, and this is exacerbated by the humiliation of children by teachers if fees or 'gifts' cannot be paid on time or in full. Cost was cited by one in six respondents as a reason why their child of school age was not attending school.

Health

According to official statistics from the Ministry of Health, infant mortality has been improving, from a high of 28.2 deaths per 1,000 live births in 1997 to 20.9 in 2003. However, it is expected that once the standard World Health Organisation (WHO) methodology of defining an infant death is implemented nationwide, infant mortality statistics may rise by a factor of three.

Rates of infant mortality vary considerably by region, being highest in Bishkek (27.2), Batken (25.6) and Osh (24.0) and lowest in Issyk-kul (16.8) and Chui (16.9) (UNDP 2003). The figures for Bishkek are in marked contrast to the position regarding material poverty, but tie in with those figures concerning nutritional status, and are further supported by evidence that living conditions in the newly constructed suburbs are relatively poor. They may, however, also reflect the fact that more complicated deliveries and serious childhood diseases tend to be treated in the capital, where medical facilities are more advanced.

The percentage of children reporting acute ill health has been relatively stable over time and utilisation of health services is also stable. Moreover, it appears that the reforms in health financing have reduced the number of people reporting that they did not seek healthcare due to its cost.

Conclusion

Despite recent economic growth, at the beginning of the twenty-first century nearly two-thirds of all children aged under 18 in the Kyrgyz Republic are living in poverty, and four in ten are chronically poor. These figures rise to 90 per cent in Naryn, where most poor children are also chronically poor and there appears little chance of them escaping material hardship during their childhood. Clearly Naryn is a special case deserving urgent attention, but it is important also to bear in mind that whilst 8 in every 100 poor children live in Naryn, a similar number lives in Bishkek. It is also important to bear in mind that greater material well-being does not necessarily translate into better nutritional status and that the average per capita calorific intake amongst children in Bishkek remains the lowest in the country.

A concentration on rural poverty is understandable, given the rural nature of the Kyrgyz Republic, but it is important to highlight that chronic poverty may actually be higher in urban areas once other factors are controlled for. The fact that poor urban households often lack access to land and the ability to produce food for home consumption means that they are more dependent on the monetary economy, and poor urban children may be more vulnerable to shocks that poor rural children, highlighting the need for specific policies to address their concerns.

Although child poverty rates remain high, there appears to be considerable mobility, with around one in ten children moving in or out of poverty each year. Factors associated with a reduction in the likelihood of chronic poverty include the education of the household head. This indicates that programmes which enhance the educational status of children may contribute to alleviating poverty in the longer term. Chronic poverty is highest amongst children living in households with many children and those in single-parent households, indicating that poverty alleviation efforts in the shorter term would benefit from targeting these groups.

There is some good news in the health sector as it appears that the reforms in health financing have reduced the number of people reporting that they did not seek healthcare due to its cost. However, infant mortality rates remain high. There is no room for complacency in the education sector either, as there is evidence that high levels of enrolment mask growing inequalities in school attendance.

Further in-depth analysis is needed concerning the factors associated with moving out of poverty. It is hoped that over time the new Kyrgyz Integrated Household Survey (KIHS) will generate the necessary data to support evidence-based policy to reduce child poverty. However we cannot wait until then and urgent action is required to tackle child poverty if the Kyrgyz Republic is not to lose the next generation.

1. Introduction

This paper is a contribution to a wider cross-country study examining childhood poverty in a number of Asian countries, being carried out by the Childhood Poverty Research and Policy Centre, CHIP.[1] The purpose of this study is to add to the knowledge of the different dimensions affecting children's well-being, with the aim of providing better information for policy-makers in constructing poverty alleviation programmes. There is a growing recognition that focusing on current measures of material poverty provides a limited, static picture of a child's well-being. For designing poverty reduction strategies it is important not only to alleviate poverty but also to prevent children from falling into poverty. Given this, it is essential to identify which children are at risk of becoming poor as well as those who are currently poor. This paper uses data from one of the few longitudinal data sources within the region, as well as recently available data on child food security, to examine the dynamics of childhood poverty.

In this paper, childhood poverty is examined in one of the poorer republics of the Former Soviet Union (FSU), the Kyrgyz Republic. The Kyrgyz Republic, as with other republics in the FSU, in the early 1990s embraced a programme of reforms that moved the country towards a market economy, as well as gaining independence from a Union which had previously supported relatively high levels of social investment. The loss of transfers from the Union coupled with the upheaval of reform had a negative impact on the population during the early 1990s. During the past two years, a number of publications have traced recent trends in poverty and well-being for the population in general (see for example, UNDP 2002, World Bank 2003 and Falkingham 2004a). However, the issue of *child* poverty has received relatively little attention, despite evidence that children, who constitute 37 per cent of the total population, are the group most at risk of poverty (Yarkova et al 2003). This paper aims to fill that gap in the literature, analysing the trends in, and attributes associated with, childhood poverty in the Kyrgyz Republic over the period 1996-2003, using a range of household survey data.

Section 2 provides an overview of the economic and social structure of the Kyrgyz Republic, furnishing the context within which to understand and interpret the results. What is interesting about the Kyrgyz Republic is that it is a highly agricultural economy with relatively high investments in human, social and physical capital compared to countries with similar levels of GDP. Section 3 introduces the data. Section 4 presents the results, mapping how the prevalence of material poverty has changed over time and investigating the factors associated with this change. The dynamics of child poverty are explored in Section 5. Other dimensions of children's well-being are also examined, specifically food security (Section 6), and education and health (Section 7). The implications for policy, and conclusions, are discussed in Section 8.

1 The Childhood Poverty Research and Policy Centre is a collaborative venture between Save the Children and the Chronic Poverty Research Centre (CPRC) with partners in China, India, Kyrgyzstan, Mongolia and the UK. See www.childhoodpoverty.org.

2. An overview of the Kyrgyz Republic

The Kyrgyz Republic is one of the smallest and least developed of the newly created independent states of the FSU. With a GDP per capita of $1,620 PPP[2] in 2002, it is the second poorest country in Central Asia, ranked 110 out of 177 countries on the UNDP Human Development Index (UNDP 2004). In the late 1990s, 88 per cent of people were thought to be living on less than $4 PPP a day.

Over a third of the GDP is derived from the agricultural sector. The country has a limited number of natural resources, including gold, minerals and hydro-electric power. It is physically divided into two by the Tien Shah mountains, as well as being divided into two federations: the more 'Russified', secular industrial North; and the Ick Kilik in the predominately agricultural, more Islamic South and Eastern Pamiers. There are also numerous tribes and clans within these divisions, reflecting the local heterogeneity of the population, as well as different ethnic groups from outside the country that have migrated or fallen within the official border (mainly ethnic Uzbeks). Subsequently the country is ethnically diverse, with around two-thirds Kyrgyz, one-sixth Russian, and a further sixth Uzbek.

Table 1: Selected macroeconomic indicators, Kyrgyz Republic 1992-2003

	1992	1996	1997	1998	1999	2000	2001	2002	2003
Population (millions)	4.5	4.6	4.6	4.7	4.7	4.7	4.8	4.8	4.8
Economic indicators									
Real GDP growth (%)	-19	7.1	9.9	2.1	3.7	5.4	5.3	-0.5	5.2
% industry/GDP	32	10	17	16	21	23	23	19	
% agriculture/GDP	37	42	41	36	34	34	35	37	
Industry (gross output)	26	3.9	40	5	-4	6	5	-13	
Agriculture (gross output)	-5	15	12	3	8	3	7	3	
General government expenditure (% of GDP)	34	33	33	36	37	29	26	28	
Unemployment rate (% of labour force)	0.1	15.8	15.6	16.7	15.5	16.7	17.4		
Consumer price inflation (end of year)	1259	34	15	18	40	10	4	2	3
Exchange rate* (end of year)	511.0	16.7	17.4	29.4	45.8	48.4	47.7	46.2	
Social indicators									
Expenditure on health (% of GDP)	3.4	3.1	3.2	2.6	2.1	1.9	2.3		
Expenditure on education (% of GDP)	5.0	4.8	4.9	4.9	4.0	3.5	4.0		
Life expectancy at birth (years)	69.3	66.5	66.9	67.1	67.0	68.5	68.8	68.1	
Earnings inequality (Gini coefficient)	30.0	42.8	43.1	42.9	46.6	47.0	51.2		

* roubles per $ until 1992: som per $ thereafter
Source: EBRD (2000, 2002, 2004)

2 PPP – purchasing power parity, where GDP has been adjusted to take into account differences in the costs of living between countries.

There is a vast literature on the effects of the collapse of the FSU which we do not attempt to summarise here. Instead we limit ourselves to an overview of the most important factors relevant to this study. Following independence, the Kyrgyz Government implemented a programme of reform consisting of five strands: liberalisation of prices and quantity of goods on all markets; macroeconomic stabilisation by constraining Central Bank lending to the government and the banking system; privatisation of the state-owned enterprises; the general opening of the economy to foreign trade; and the reform of the social protection system emphasising a targeted minimum social safety net. Accompanying economic reform, the Kyrgyz Republic suffered major de-industrialisation in the early 1990s. Falls in industrial output reached as high as 70 per cent over the first five years following independence and positive rates of growth emerged only in late 1995.

Despite the official non-existence of unemployment in the Soviet Union, the Kyrgyz Republic – in common with other Central Asian Republics (CARs) – experienced a surplus of labour with relatively high rates of youth unemployment prior to the collapse of the FSU. With the reforms, unemployment rose sharply to 16 per cent of the labour force by 1996. Unemployment remained around this level throughout the late 1990s despite positive rates of economic growth, and in 2001 just over 17 per cent of the labour force was out of work and actively seeking a job (Namazie 2003).

Amongst the FSU countries, the CARs were relatively underdeveloped and had higher incidences of poverty, with income levels comparable to some developing countries. However, the Soviet central planning legacy in Central Asia resulted in relatively high social investments, with education and health outcomes similar to those in industrialised countries (UNDP 1997). The Soviet system also ensured a minimum level of well-being through the provision of extensive welfare services. Enterprises were not just places of employment but provided many of the social sector facilities and benefits. The low income levels combined with high levels of human, social, and in urban areas physical, capital, makes the CARs distinctly different from many developing countries. In 1992 literacy rates were over 90 per cent and life expectancy at birth was 69.3 years.

The break-up of the Soviet Union saw the ending of substantial transfers from Moscow, which contributed to the reduction in GDP. Investments in education and health were greatly reduced and many of the facilities attached to enterprises were closed. Medical services and schooling that were formerly provided free at the point of delivery became subject to fees and unofficial charges. The impact of the reduced provision, or the inability to afford these services, has had a significant material and psychological impact on households (Moser and Holland 1997).

Furthermore, inflation and liberalisation of previously subsidised goods and services resulted in a decline in the real value of wages that had been sufficient for a minimum standard of living, given the costs of living under the Soviet system. Erosion of the purchasing power of wages has meant that even having a job is often not sufficient to avoid poverty (Bernabe and Kolev

2003). Furthermore, wages and benefits are often not paid on time, and arrears in payments over prolonged periods of time are common (Falkingham 1999). The low monetarisation of a highly rural economy combined with low wages and the eradication of savings has meant that households are often unable to cope with shocks to household income. The impact of ill health on a working member of the family often results in a drop in income to the household through the loss of wages, and may also affect the family through the high cost of the medical treatment that is needed (Falkingham 2001). Bearing these factors in mind, this paper adopts a multi-dimensional view of child well-being. The indicators discussed will include both economic measures of poverty based on household incomes and expenditures, and selected capability-based indicators reflecting the health and education of individuals. In addition the paper will also assess the nutritional intake of children.

3. Data issues and definitions of child poverty

Poverty is a multi-dimensional concept and accordingly there are a wide variety of approaches to its definition and measurement. Traditionally economists and policy analysts, including those of the World Bank, have focused on money-metric measures of poverty, based on the presumption that a person's material standard of living largely determines their well-being. The poor are identified as those with a material standard of living below a certain level – the so-called poverty line (Ravallion 1992). Over the past decade it has been increasingly recognised that measures of poverty based on money fail to capture other important aspects of individual well-being – such as community resources, social relations, culture, personal security and the natural environment – and a set of complementary indicators which aims to capture human capabilities has therefore been developed (Sen 1985, 1987; McKinley 1997; Micklewright and Stewart 2001).

Capability poverty focuses on an individual's capacity to live a healthy life, free of avoidable morbidity, with adequate nourishment, being informed and knowledgeable, being capable of reproduction, enjoying personal security, and being able to freely and actively participate in society. Material resources at some level are generally necessary for some of these activities, but they are not sufficient. Measures which focus on capability poverty thus incorporate access to public services, assets and employment, as well as money-metric measures which reflect the ability to 'purchase' food, clothing and shelter. Capability poverty can be measured directly in terms of capabilities themselves (eg, the percentage of children who are underweight), or indirectly in terms of access to opportunities, or the means of capabilities, such as access to a trained health professional at birth, and access to education and other public services (Falkingham 2000). These measures of capability poverty are reflected in the health- and education-related Millennium Development Goals.

Given the complex nature of child poverty, this paper examines a number of alternative and complementary indicators of child poverty including both monetary poverty, as measured by household expenditure, and capability poverty, as measured by education, health status and access to related social services. Recent evidence on child food security is also presented. The money-metric measures of child poverty presented here are based on a number of different data sources which are discussed below. Changes in the sample design, data collection method and definition of the welfare indicator and poverty line mean that comparisons over time do need to be treated with some caution.

3.1 Data sources

Between 1996 and 1998 the National Statistical Committee of the Kyrgyz Republic (NatStatCom) carried out three surveys based on the World Bank Living Standards Survey model. These are known as the Kyrgyz Multi-purpose Poverty Surveys (KMPS). The KMPS collected detailed information concerning households' income and expenditure along with other socio-economic data. The sample was based on a nationally representative stratified random sample. Funding for the KMPS ceased in 1998. In 1999, the NatStatCom conducted the Household Energy Survey (HES) with a similar sample design to the KMPS and thus this can be used to provide comparable estimates of welfare in that year.

Throughout the 1990s the NatStatCom continued to field the Household Budget Survey (HBS). The sample was based on the households that constituted the Kyrgyz portion of the old USSR HBS and as such the sample was not nationally representative (see Falkingham 1999, for a fuller discussion on this). In 2000, approximately 1,000 additional households were added to the HBS in order to make the sample more representative at the *oblast* level. Analysis showed that the new households enjoyed, on average, a lower per capita consumption than the original sample households. Although sample weights have been computed, these attempt to adjust for demographic characteristics and do not fully account for the fact that the added households were poorer on average than the original sample (World Bank 2003). Thus estimates using the complete HBS for 2000 show a worsening of overall headcount poverty between 1999 and 2000, which may be attributable in part to the change in the sample.

In order to control for changes over time in the sample characteristics due to sample expansion, two sets of poverty estimates from the HBS are presented: one using the full HBS sample and the second confined to the original panel members only. This is in line with the analysis carried out by the World Bank in the most recent poverty assessment update (World Bank 2003). Cross-sectional estimates for 1998-2001 using the confined sample are based on the 1,108 households in the World Bank/NatStatCom panel dataset, whilst cross-sectional estimates for 2002 are based on 1,038 surviving panel households.[3] Longitudinal analysis of the dynamics of poverty over the period 1998-2001 is based on the World Bank/NatStatCom panel dataset.

A new survey was introduced in 2003, the Kyrgyz Integrated Household Survey (KIHS). This new survey aims to replace the HBS. Unfortunately electronic data from the 2003 round were not available at the time of writing (October 2004).

[3] All analysis uses weighted data.

3.2 Differences in data collection and aggregation

The aggregation of expenditure items and frequency of data collection varies substantially between the KMPS, the HES and the HBS (and the new KIHS differs again!).

The HBS includes a monthly diary for each month over the entire year, whilst the 1996-98 KMPS and 1999 HES collected information on expenditures based on recall, using two reference periods of two weeks each for frequent purchases and an annual recall period for other purchases. These recall expenditures are then converted to annual expenditures. Given that the Kyrgyz Republic is a largely agrarian society and that there are seasonal fluctuations in expenditures and economic activity, it is likely that estimates of welfare will be affected by the frequency of data collection, particularly those using just two reference periods of two weeks.[4]

The estimation of expenditures from the KMPS and HES is further affected by being limited to those in predefined categories. The KMPS collected information on approximately 90 food items, whereas the HES included a more limited list of just 50 items. Evidence has shown that reported expenditure increases with a more detailed disaggregation of consumption items. Thus it is likely that the HES in particular will underestimate expenditures.

3.3 Welfare measures

Two different welfare measures are used in the official estimation of poverty within the Kyrgyz Republic – total household expenditure and total household consumption. The key difference between them is that the *expenditure* aggregate includes actual expenditures on all items, including gifts, the full purchase price of household durables, real estate and livestock as well as taxes and fees. In contrast, the *consumption* aggregate excludes expenditures on real estate, livestock and gifts given away by the household as these are not consumed by the household. However, it includes the value of gifts received. Consumption also includes the estimated 'use' value for consumer durables, reflecting the fact that utility from such goods is spread over a number of years.

There are also two approaches for adjusting welfare for differences in household size and composition. The simplest approach is to use a *per capita measure,* ie, dividing the welfare aggregate by household size. This approach assumes no economies of scale within the household and that the needs of individual members are the same, regardless of age, gender and other attributes. The second approach uses an *equivalence scale*. The equivalence scale currently in use in the Kyrgyz Republic is shown in Box 1.

[4] The KMPS were conducted during October and November, that is after the harvest and at a time when store cupboards might be expected to be relatively full. Thus annual estimates of food expenditures based on the imputed value of consumption of home production during this period may be overestimates of the true level and thus underestimate poverty.

Box 1: Equivalising welfare in the Kyrgyz Republic

Consumption and expenditure data used in the Kyrgyz poverty statistics are adjusted for the size and composition of the household, a process known as equivalisation, in order to be able to compare the living standards of households of different composition. The weightings used to make these adjustments are:

Men 18-59 years	1.00
Women 18-54 years	0.80
Pensioners (men 60+ years and women 55+ years)	0.78
Children 14-17 years	0.89
Children 7-13 years	0.78
Children 4-6 years	0.64
Children 0-3 years	0.49

The implication of these equivalence scales is that a child aged 0-3 years 'needs' expenditure of just 49 per cent that of a man aged 18-59 years to obtain the same level of welfare. These scales are based on calorific requirements and were derived using the pattern of consumptions found in the first KMPS in 1993 (see Popkin 1994).

The three welfare measures currently in use by the Kyrgyz Government are:

- per capita expenditure
- per capita consumption
- consumption per adult equivalent.

It should be noted that all the official money-metric welfare measures, including those employed in this paper, implicitly assume a unitary model of the household. The unitary model of the household[5] envisages the household as a single unit, implying the existence of a single household welfare function reflecting the preferences of *all* its members. However as Chiappori et al (1993) note, this is an assumption which is 'by no means an innocuous assumption' as individual household members are likely to have different preferences. A further fundamental assumption of the unitary model is that all the resources in the household are pooled, and that all members share in these pooled resources in equal measure. Poverty is thus defined at household level, and all people living in the same household are assumed to enjoy the same standard of living. However, sociological and anthropological studies show that total pooling of resources is rarely the case (Bruce and Dwyer 1988; Evans 1989; Moore 1992). In particular, men are found to retain part of their income and 'spend some of their income on goods for their personal consumption' (Haddad, Hoddinott and Alderman 1994). By contrast, women are believed to be more likely to purchase goods for children and for general household consumption. A study in Kerala in India suggested that a child's nutritional level is positively correlated with the size of his/her mother's income, whereas there were no significant effects with the increase of parental income (Kumar 1977). Increasing women's share of cash income in a household has been found to increase the share of the household budget allocated to food (Garcia 1990; Hoddinott and Haddad 1995; Ulph 1988) and reduces the amount allocated to items such as tobacco and alcohol.

5 It has also been called the 'common preferences' model or the 'altruism' model.

Recent research using data for the neighbouring country of Tajikistan has highlighted the fact that analyses of poverty which assume a unitary model of the household may significantly underestimate poverty amongst children and obscure gender differentials (Falkingham and Baschieri 2005). Given this, the estimates in this paper should be taken as indicators of the lower boundaries of child poverty.

3.4 The poverty line

The absolute poverty line used with the Kyrgyz Republic has recently been recalculated with assistance from the World Bank. The earlier poverty line was based on data from the 1996 KMPS and updated annually using the Consumer Price Index (CPI). The new poverty line follows the same methodology but reflects the consumption patterns from the 2001 HBS.

The poverty line is calculated using the basic needs approach. First, a food basket providing a minimal daily calorific intake of 2,100 calories per person per day is estimated using the consumption habits of the second to fourth deciles of the population. In 2001 the annual cost of this basket was 4,648 som. This 'food poverty line' is used as the threshold for identifying extreme poverty. Second, the cost of non-food items is estimated by using the share of food expenditures in total expenditure for households with a per capita food consumption in the region of the 'food poverty line'. In 2001, this food share was 66.6 per cent. Thus the overall absolute poverty line in 2001 was 6,975 som per person per year. The updated 1996-based poverty line was estimated to be 7,491 som per capita in 2001. The difference between the old and new lines reflects changes in the patterns of consumption over time and differential price changes.

The NatStatCom publishes an annual poverty report which includes three different measures of poverty:

- per capita expenditure, with 1996-based poverty line updated using the CPI
- per capita consumption, with 2001-based poverty line updated using the CPI
- consumption per adult equivalent, with 2001-based poverty line updated using the CPI.

In this report we base our main analysis on per capita consumption. Analysis based on the KMPS for the period 1996-98 uses the 1996-based poverty line updated using the CPI, whereas analysis based on the full HBS sample for the period 1998-2002 uses the 2001-based poverty line adjusted using the CPI. Additional analysis based on the HBS panel follows the approach in the recent World Bank poverty assessment and uses per capita consumption and the 2001-based poverty line. The impact of the expansion of the HBS sample on headcount poverty rates is clearly visible in the estimates of headcount poverty in Tables 2a and 2b below, with estimates using the HBS panel being considerably lower than those found using the full HBS survey.

4. Childhood poverty in the Kyrgyz Republic

4.1 Trends in child poverty since the mid-1990s

Despite difficulties in compiling estimates of child poverty on a consistent basis over time, several statements can be made with some degree of certainty.

1. Child poverty increased during the period 1996-98, reaching a peak in the period immediately following the Russian financial crisis in the summer of 1998.

2. There was a steady decline in the proportion of children aged under 18 living in poverty between 1998 and 2001.

3. There was little or no improvement in child poverty between 2001 and 2002, coinciding with the fact that the country experienced negative economic growth during 2002.

4. The incidence of poverty amongst children aged under 18 is significantly higher than amongst the population in general; and poverty rates are higher amongst children aged under seven than amongst children aged seven and over.

Table 2a: Proportion of children living in poverty* 1996-2002**

Age group	KMPS				HBS Full sample			
	1996	**1997**	**1998**	**1998**	**1999**	**2000**	**2001**	**2002**
A) Percentage in poverty (headcount rate, P0)								
0-3	57.5	59.2	74.4	84.9	77.7	73.8	70.7	65.7
4-6	58.5	58.2	71.4	82.1	76.7	74.9	69.3	65.6
7-13	56.3	59.0	71.3	77.4	73.1	70.7	65.2	64.9
14-17	56.3	55.0	65.4	73.9	66.0	66.1	57.4	62.5
All children 0-17	**56.9**	**58.1**	**70.6**	**78.4**	**72.8**	**70.7**	**64.6**	**64.5**
All ages (total pop)	**51.7**	**51.0**	**63.6**	**69.5**	**64.2**	**63.0**	**56.4**	**54.8**
B) Depth of poverty (poverty gap, P1)								
0-3	0.228	0.209	0.314	0.344	0.291	0.275	0.236	0.206
4-6	0.237	0.214	0.284	0.337	0.275	0.263	0.213	0.193
7-13	0.229	0.213	0.272	0.294	0.253	0.249	0.208	0.202
14-17	0.211	0.201	0.238	0.266	0.217	0.225	0.177	0.200
All children 0-17	**0.226**	**0.210**	**0.275**	**0.302**	**0.254**	**0.249**	**0.205**	**0.201**
All ages (total pop)	**0.202**	**0.182**	**0.246**	**0.256**	**0.216**	**0.214**	**0.172**	**0.166**
C) Severity of poverty (P2)								
0-3	0.118	0.099	0.164	167	0.135	0.126	0.102	0.088
4-6	0.123	0.104	0.143	167	0.122	0.118	0.087	0.078
7-13	0.122	0.100	0.134	139	0.112	0.112	0.088	0.086
14-17	0.108	0.097	0.116	121	0.090	0.100	0.073	0.085
All children 0-17	**0.119**	**0.100**	**0.137**	**143**	**0.112**	**0.112**	**0.086**	**0.085**
All ages (total pop)	**0.103**	**0.086**	**0.123**	**119**	**0.093**	**0.094**	**0.070**	**0.068**

* Living in poverty defined according to household poverty status, ie, table shows the proportion of children living in poor households

** There have been several changes in methodology that have affected comparisons of trends over time. The figures here are based upon per capita expenditure and the 1996 poverty line, updated using the CPI.

Source: Authors' own analysis of the KMPS and the HBS

According to estimates from the KMPS, child poverty rose from 57 per cent in 1996 to over 70 per cent in 1998 (Table 2a). As noted above, changes in sampling and survey instruments mean that data from the KMPS and HBS are not directly comparable. The KMPS were all conducted between October and November in the respective years. The Russian financial crisis occurred in August 1998 and its effects, in terms of decreased trade flows and reduced remittances, began to be felt throughout the FSU within a few weeks. Thus the data for the 1998 KMPS will, in part, reflect changes due to the Russian crisis. However as the recall data for some items of expenditure are based on an annual time period, the full effects of the crisis would not be expected to have fully fed through until the following year. In contrast, the HBS data are based on monthly returns. Thus the impact of the Russian fiscal crisis will be fully reflected in the returns for August to December. According to the estimates from the HBS, in 1998 nearly four out of every five children under 18 were living in poverty, and 35 per cent were living in extreme poverty (defined in relation to the minimum food basket). By 2002, the situation had improved somewhat, but just under two-thirds of children (64.5 per cent) remained living in poor households and 29 per cent were in extreme poverty.

As noted above, comparisons of poverty over time in the Kyrgyz Republic are seriously complicated by the expansion of the HBS sample by an additional 1,000 households in 2000. The 'new' households experienced an average level of per capita consumption around 70 per cent of the consumption level of the original sample households. Given that the additional sample households were on average poorer than the original sample members, it is perhaps surprising that comparisons using the full HBS sample show a fall in child poverty between 1999 and 2000, and certainly underestimate improvements over time. The HBS sample has a panel structure tracking the same households over time. As part of the technical work for the recent World Bank poverty assessment, a cleaned panel data was created in order to obtain consistent estimates of poverty over time. Thus a set of alternative estimates of child poverty based on the World Bank HBS panel data are presented in Table 2b.

Several caveats need to be noted. First, even with weights the HBS panel is not representative of the whole population; indeed the rationale for the addition of extra households in 2000 was to make the sample more representative of regions that are much poorer than average. Thus the poverty levels in the panel sample are likely to be lower than the true poverty levels for the population as a whole. Second, households which drop out of the panel sample are more likely to be those with higher incomes and expenditures,[6] with the result that the World Bank panel sample which is restricted to households who have remained in the panel for the full period is biased toward poorer households or towards households more likely to remain poor. With these qualifications in mind, Table 2b shows that child poverty actually deteriorated slightly between 1998 and 1999, despite an improvement in overall poverty rates. Child poverty then fell to a low of 53 per cent in 2001, but in 2002 headcount rates returned to the level of 2000. As Table 1 above showed, during 2002 the country as a whole experienced negative economic growth, and children as well as adults were adversely affected.

6 In other parts of the world, poorer households are amongst those *least* likely to remain in a panel as they are more likely to migrate, change residence or split households making them more difficult to trace. However, due to the unique nature of poverty in the Kyrgyz Republic and elsewhere in the Commonwealth of Independent States (CIS), where poverty is relatively recent and afflicts the majority of the population including groups traditionally seen as privileged (such as teachers, doctors and other government workers), it is the relatively better-off households that are more likely to drop out. Response rates generally remain high by international standards, a legacy of the Soviet past where participation in social surveys was seen as being part of the duty of a good citizen. The fact that households receive a small gratuity may also mean that poorer Kyrgyz households are more likely to feel that they have something to gain from taking the time to participate.

Table 2b: Proportion of children living in poverty 1996-2002***

Age group	HBS panel households only				
	1998	**1999**	**2000**	**2001**	**2002**
A) Percentage in poverty (headcount rate, P0)					
0-3	63.2	68.0	55.1	58.2	56.9
4-6	63.9	65.0	58.8	52.7	57.4
7-13	62.5	65.1	61.6	54.7	57.1
14-17	52.4	54.1	48.9	46.8	58.9
All children 0-17	**61.1**	**63.7**	**57.2**	**53.3**	**57.5**
All ages (total pop)	**55.3**	**54.8**	**48.2**	**42.6**	**48.7**
B) Depth of poverty (poverty gap, P1)					
0-3	0.194	0.218	0.155	0.152	0.187
4-6	0.213	0.203	0.166	0.133	0.159
7-13	0.195	0.197	0.174	0.146	0.171
14-17	0.149	0.162	0.134	0.115	0.180
All children 0-17	**0.190**	**0.196**	**0.160**	**0.138**	**0.173**
All ages (total pop)	**0.157**	**0.166**	**0.132**	**0.113**	**0.141**
C) Severity of poverty (P2)					
0-3	0.078	0.090	0.060	0.054	0.079
4-6	0.091	0.083	0.065	0.047	0.061
7-13	0.080	0.079	0.067	0.056	0.070
14-17	0.057	0.064	0.050	0.041	0.077
All children 0-17	**0.077**	**0.079**	**0.062**	**0.051**	**0.073**
All ages (total pop)	**0.063**	**0.066**	**0.050**	**0.040**	**0.058**

* Living in poverty defined according to household poverty status, ie, table shows the proportion of children living in poor households

** The figures here are based upon per capita consumption and the 2001 poverty line. Estimates for 1998-2001 are based on 1,108 households in the World Bank panel dataset. Estimates for 2002 are based on 1,038 surviving panel households

Source: Authors' own analysis of the Kyrgyz HBS

4.2 The spatial dimension of child poverty

There are clear spatial differences in the risk of living in poverty for Kyrgyz children, with headcount poverty rates being higher in rural than urban areas (Table 3). There is also a clear regional ranking, with children living in Naryn *oblast* having the highest risk of being poor, whilst children living in the capital city of Bishkek and the neighbouring *oblast* of Chui have the lowest risk. Interestingly, it seems that children living in urban areas have been hardest hit by the recent slowdown in economic growth, with urban child poverty rates worsening between 2001 and 2002 whilst those in rural areas continued to improve. Children in Bishkek suffered the greatest proportionate rise, with poverty rates increasing by a fifth from 38 per cent in 2001 to 45 per cent in 2002. In contrast, the proportion of children living in poverty in Naryn actually fell during the same period; there was also a marked improvement in child poverty in Issyk-kul and Osh *oblasts*.

Table 3: Proportion of children aged 0-17 living in poverty 1996-2002 by region

Region	KMPS			HBS Full sample				
	1996	1997	1998	1998	1999	2000	2001	2002
Urban	40.7	35.7	59.7	67.8	61.4	63.0	55.3	57.4
Rural	62.8	69.1	76.1	82.8	77.3	73.8	68.4	67.3
Bishkek	27.7	6.2	36.2	56.5	50.2	47.4	37.8	45.4
Issyk-kul	67.0	67.5	75.2	73.0	70.2	75.6	71.3	62.2
Jalal-Abad	57.4	75.2	74.5	90.3	85.9	78.8	71.9	70.8
Naryn	77.9	91.4	92.5	96.8	97.2	90.9	92.2	89.6
Batken	n/a	n/a	n/a	n/a	n/a	77.4	60.0	67.4
Talas	61.2	70.9	84.2	82.3	76.2	75.5	71.9	69.4
Osh	66.9	69.4	84.0	87.8	76.0	88.2	77.0	72.0
Chui	46.1	31.3	44.5	60.1	51.6	44.5	40.7	42.1
All children 0-17	56.9	58.1	70.6	78.4	72.8	70.7	64.6	64.5

Source: Authors' own analysis of the KMPS and the HBS

4.3 The correlates of child poverty – who are the poor children?

A summary of the profile of child poverty in 2002 is given in Table 4 below.

Table 4: The profile of child poverty in the Kyrgyz Republic in 2002

Of every 100 children aged 0-17 in the Kyrgyz Republic:	Of every 100 *poor* children aged 0-17 in the Kyrgyz Republic:
• 71 lived in rural areas	• 74 lived in rural areas
• 11 lived in the capital city Bishkek	• 8 lived in the capital city Bishkek
• 6 resided in Naryn	• 8 resided in Naryn
• 80 lived in households with access to land	• 84 lived in households with access to land
• 1.2 lived in households where the head of household had no or just primary education	• 1.3 lived in households where the head of household had no or just primary education
• 59 lived in households with 3 or more children	• 70 lived in households with 3 or more children
• 23 had access to running water	• 17 had access to running water
• 23 had access to an indoor toilet	• 17 had access to an indoor toilet
• 15 had access to a private bath/shower	• 10 had access to a private bath/shower
• 19 had access to a telephone	• 12 had access to a telephone

Source: Authors' own analysis of the 2002 Kyrgyz HBS

Three-quarters of poor children live in rural areas, while fewer than one-tenth live in Bishkek. The majority (70 per cent) live in households with three or more children. As most Kyrgyz children are poor, the position of poor children is not strikingly different to that of children as a whole, although poor children are less likely to live in households with access to running water and indoor toilets than children as a whole.

Tables 5 to 8 show how the relative risks of being poor amongst children aged under 18 have changed over time according to a number of different characteristics. By looking at changes in relative risks rather than absolute levels of child poverty, problems of comparability of data from different sources over time are minimised.

Children living in households with three or more children have a much higher risk of being poor than those living in households with two or less children. Moreover, it appears that the relative risk of poverty associated with high numbers of siblings has widened over time as overall rates of child poverty have fallen; the implication being that children living in households with smaller numbers of children are more likely to move out of poverty than those in families with more children (Table 5). Interestingly there is little difference in the relative risk of poverty between children according to the number of adults in the household, despite the fact that more adults potentially means more earners (Table 6). Moreover, what differences there are have narrowed over time, implying that child poverty rates have improved disproportionately amongst single-parent households.

Table 5: Relative risk of child poverty according to the number of children in the household, 1996-2002

No. of children in household	KMPS			HBS – full sample				
	1996	1997	1998	1998	1999	2000	2001	2002
One	0.65	0.54	0.57	0.69	0.68	0.70	0.62	0.62
Two	0.90	0.83	0.91	0.98	0.97	0.98	0.98	0.95
Three	1.20	1.15	1.16	1.14	1.18	1.15	1.20	1.39
Four	1.30	1.43	1.24	1.32	1.35	1.32	1.40	1.44
Five or more	1.29	1.66	1.49	1.28	1.27	1.24	1.46	1.42
All children 0-17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: Authors' own analysis of the KMPS and the HBS

Table 6: Relative risk of child poverty according to household type, 1996-2002

Household type	KMPS			HBS – full sample				
	1996	1997	1998	1998	1999	2000	2001	2002
Single-parent	1.00	0.58	0.82	0.57	0.78	0.75	0.73	0.77
Two adults (+ children)	0.97	0.93	0.88	1.05	1.03	1.00	1.05	1.00
Three or more adults (+ children)	1.04	1.12	1.12	1.08	1.01	1.04	1.00	1.05
All children 0-17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: Authors' own analysis of the KMPS and the HBS

There is a strong relationship between the risk of child poverty and the educational level of the head of household. Children living with household heads who have no education, primary or incomplete secondary schooling are most at risk (Table 7). The differentials by educational status of the head have remained comparatively stable over time, although the relative advantage of living with a head with higher education increased between 2001 and 2002. It may be that households with better educated heads were more able to protect themselves during periods of economic downturn. Surprisingly, there is no consistent or marked relationship between the risk of child poverty and the economic activity status of the household head (Table 8).

Table 7: Relative risk of child poverty according to highest educational qualification of head of household, 1996-2002

Education of household head	KMPS-based			HBS – full sample				
	1996	1997	1998	1998	1999	2000	2001	2002
Without education	1.05	1.23	1.31	1.25	1.23	1.08	1.25	1.22
Primary or less	1.02	1.20	1.14	0.88	1.09	1.16	1.35	1.13
Incomplete secondary	1.15	1.19	1.18	1.19	1.12	1.14	1.18	1.17
Secondary	n/a	n/a	n/a	0.93	1.04	1.00	0.89	0.95
Vocational/technical	0.96	0.84	0.84	0.96	0.94	0.92	0.90	0.93
University or above	0.57	0.61	0.56	0.75	0.76	0.77	0.68	0.64
All children 0-17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: Authors' own analysis of the KMPS and the HBS

Table 8: Relative risk of child poverty according to economic activity status of head of household, 1996-2002

Economic status of household head	KMPS-based			HBS – full sample				
	1996	1997	1998	1998	1999	2000	2001	2002
Employed	0.94	0.96	0.92	1.06	0.99	0.97	0.96	1.00
Unemployed	1.11	0.84	0.92	1.13	0.93	1.09	1.13	0.92
Out of the labour force: retired	1.06	1.20	1.24	0.85	1.04	1.14	1.18	1.03
Out of the labour force: other	1.10	0.95	1.07	0.60	1.53	n/a	n/a	n/a
All children 0-17	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: Authors' own analysis of the KMPS and the HBS

5. Dynamics of child poverty

5.1 Transitions in and out of child poverty

A key advantage of the Kyrgyz HBS is that data is collected from the *same* households over a number of different years. This *panel* element allows analysis of the dynamics of household welfare, looking at which households move in and out of poverty over time. Unfortunately electronic files of the HBS are not available for years earlier than 1998. However, as discussed above, a panel dataset containing 1,108 households who were observed every month during the 1998-2001 period has been constructed with technical assistance from the World Bank (World Bank 2003). This panel dataset is used here to examine the dynamics of child poverty.

Table 9 shows that during the period 1998-2001 there was considerable economic mobility in the Kyrgyz Republic, with the majority of individuals experiencing a change in their relative economic welfare over time.[7] Only 42 per cent of people were in the same quintile in 2001 as they were in 1998; 29 per cent experienced a fall in their relative position and a further 29 per cent an improvement. However, amongst those in the bottom (or poorest quintile) over half (54 per cent) were still there in 2001 and only seven per cent had made it to the top two quintiles.

Table 9: Changes in the relative welfare of the population, 1998-2001

Percentage of total		Quintile 2001					Total
		1	2	3	4	5	
Quintile 1998	1	10.9%	5.5%	2.3%	0.9%	0.4%	20.0%
	2	4.7%	5.2%	5.4%	3.6%	1.1%	20.0%
	3	2.1%	6.0%	6.4%	4.1%	1.4%	20.0%
	4	1.6%	2.5%	4.8%	7.0%	4.2%	20.0%
	5	0.8%	0.7%	1.2%	4.4%	12.9%	20.0%
Total		20.1%	19.9%	20.0%	19.9%	20.0%	100%

Source: Authors' own analysis of the 1998-2001 HBS panel dataset

As demonstrated above, children are more likely to live in the poorest households than the population in general. Thus in 2001, around a quarter of children aged 0-17 were in the poorest fifth of the overall population. Children are as likely to live in 'economically mobile' households as the population as a whole, but where their households do move, they tend to move up or down by just one quintile. For example, of those children living in the poorest quintile in 1998, only two per cent had made it to the top two quintiles by 2001.

7 Relative economic welfare is measured by the distribution of per capita household consumption in the population. It was calculated using the individual weights in the HBS panel dataset. The bottom quintile represents the poorest 20 per cent of individuals whilst the top quintile represents the richest 20 per cent of individuals in that year.

Table 10: Changes in the relative welfare of children aged 0-17, 1998-2001

Percentage of total		Quintile 2001					Total
		1	2	3	4	5	
Quintile 1998	1	14.6%	6.9%	2.6%	0.6%	0.6%	25.3%
	2	5.8%	6.1%	6.2%	3.7%	1.1%	22.8%
	3	2.1%	6.8%	6.5%	4.0%	1.4%	20.8%
	4	1.7%	2.7%	4.8%	5.9%	3.2%	18.3%
	5	0.6%	0.6%	1.2%	2.5%	7.9%	12.8%
Total		24.7%	23.1%	21.3%	16.7%	14.2%	100%

Source: Authors' own analysis of the 1998-2001 HBS panel dataset

The level of mobility in per capita consumption highlights that a purely cross-sectional analysis of poverty will fail to capture the significant amount of movement in and out of poverty that is taking place in the Kyrgyz Republic. Using the panel dataset is it possible to track children's experience of poverty over time.[8] Table 11 shows transitions in and out of poverty for all children aged under 18 in 2001. Between 1998 and 1999 overall child headcount poverty within the panel rose from 61 per cent to 64 per cent. However, this summary statement masks significant changes. Ten per cent of children fell into poverty and seven per cent were lifted out of poverty, resulting in a net rise of three per cent. Similarly, although child headcount poverty fell from 64 per cent to 57 per cent between 1999 and 2000, 6 per cent of children became poor over the year, whilst 13 per cent moved out of poverty.

Table 11: Transitions in and out of child poverty, all children aged 0-17 in 2001

(a) 1998-1999

	Non-poor in 1999	Poor in 1999	Total (1998)
Non-poor in 1998	29	10	39
Poor in 1998	7	54	61
Total (1999)	36	64	100

(b) 1999-2000

	Non-poor in 2000	Poor in 2000	Total (1999)
Non-poor in 1999	30	6	36
Poor in 1999	13	41	64
Total (2000)	43	47	100

(c) 2000-2001

	Non-poor in 2001	Poor in 2001	Total (2000)
Non-poor in 2000	34	8	43
Poor in 2000	13	45	57
Total (2001)	47	53	100

Source: Authors' own analysis of the 1998-2001 HBS panel dataset

8 Poverty is defined using per capita consumption and a poverty line of 6,785 som. Per capita consumption was adjusted to 2001 prices using the CPI. Price differences across regions by rural and urban location were also taken into account using the regional Laspeyres index.

With significant movement both in and out of poverty, it is useful to discriminate between children who are temporarily poor for just one year and those who are persistently or chronically poor. Over the four-year period, just 23 per cent of children were *never* poor; 11 per cent were poor in one year; 13 per cent poor in two years; 17 per cent poor in three years; and 37 per cent were poor in all four years. This latter group may be thought of as suffering chronic poverty. [9]

As Table 12 shows, the likelihood of being chronically poor is significantly higher for children than for the population in general. Nearly two in every five children aged 4-13 years in 2001 were chronically poor. Over a third of all children born in the four-year period (ie, aged 0-3 in 2001) had lived their entire lives in poverty and only a quarter had never experienced poverty.

Table 12: Chronic and transient child poverty by age, 1998-2001

Years living in poor household	Age in 2001				All children	Total pop
	0-3	4-6	7-13	14-17	0-17	
Never poor	25	20	19	30	23	32
1 year	14	10	11	10	11	11
2 years	11	15	12	13	13	13
3 years	15	18	18	16	17	15
4 years	35	38	41	32	37	30
Total	100%	100%	100%	100%	100%	100%

Source: Authors' own analysis of the 1998-2001 HBS panel dataset

Not surprisingly given the spatial dimensions of static child poverty discussed above, there are significant regional differences. The likelihood of experiencing chronic poverty is higher in rural than urban areas. A staggering 87 per cent of children aged under 17 in 2001 living in Naryn had lived in poverty for the entire four-year period compared to just 13 per cent of children in Bishkek and 12 per cent in Chui *oblast.*[10]

Table 13: Chronic and transient child poverty by region, 1998-2001 (%)

All children 0-17	**Years living in poor household**					
	None	1 year	2 years	3 years	4 years	Total
Urban	33	11	13	12	31	100%
Rural	18	11	12	18	40	100%
Bishkek	49	18	14	6	13	100%
Issyk-kul	31	10	6	25	28	100%
Jalal-Abad	9	11	16	22	42	100%
Naryn	1	3	6	3	87	100%
Talas	19	10	14	10	47	100%
Osh	19	10	13	21	36	100%
Chui	46	15	14	14	12	100%
All children 0-17	23	11	13	17	37	100%

Source: Authors' own analysis of the 1998-2001 HBS panel dataset

9 Chronic poverty is defined here as living in poverty throughout the four-year period for which we have data. This is a subjective judgement as it might be argued that two or three years of continuous poverty also constitutes being chronically poor. Moreover, this measure says nothing about the severity (or depth) of poverty being experienced. A household may be just 5-10 som below the poverty line each year whilst another may be 500 som below the poverty line in a single year but only 5-10 som above it in other years. Compared to other studies, being poor in all four years is a relatively strict definition and thus 37 per cent chronically poor is even more shockingly high.

10 Note that it is not possible to present separate analysis for Batken using the panel dataset as the *oblast* was only constituted as a separate administrative entity during the period in question.

5.2 The correlates of chronic child poverty

So far the analysis has concentrated on simple bivariate analysis of the association between the risk of child poverty and various characteristics. However, many of these characteristics may be associated with each other. For example the education of the household head may be thought to play a role in determining the head's labour market status. Similarly, there are well-known associations between the level of education and fertility, which in turn determines the number of children in the household. Table 14 therefore presents a multivariate analysis of the correlates of chronic child poverty, with the dependent variable being the likelihood that a child aged under 18 in 2001 will be in poverty for the entire period 1998-2001. Variables were entered stepwise into the logistic regression model according to their level of significance. A note on how to interpret odds ratios from a logistic regression model is presented in Box 2.

Table 14: Correlates of chronic child poverty

Characteristics	Odds ratio	95 per cent confidence interval	Unweighted (N) Total = 1,871 children aged 0-17
Region			
Bishkek (r)	1.00		(151)
Issyk-kul	1.98	1.94 - 2.03	(147)
Jalal-Abad	2.79	2.74 - 2.84	(406)
Naryn	35.10	34.32 - 35.90	(180)
Talas	2.99	2.93 - 3.05	(154)
Osh	1.79	1.76 - 1.82	(481)
Chui	0.92	0.90 - 0.94	(248)
Urban (r)	1.00	0.71 - 0.72	(465)
Rural	0.72		(1302)
Age of household head	1.005		(1871)
Sex of household head			
Male	1.00	1.17 - 1.19	(1418)
Female	1.18		(349)
Number of children in the household			
One (r)	1.00		(321)
Two	2.54	2.51 - 2.58	(478)
Three	4.09	4.03 - 4.15	(448)
Four	5.45	5.37 - 5.53	(312)
Five or more	4.18	4.11 - 4.24	(208)
Household type			
Two adults (+ children) (r)	1.00		(808)
Single parent	1.11	1.10 - 1.12	(123)
Three or more adults (+ children)	0.48	0.47 - 0.49	(836)
Education of household head			
Primary or less	7.75		(55)
Secondary	4.05	7.56 - 7.94	(917)
Incomplete secondary	3.84	3.99 - 4.11	(93)
Vocational/technical	1.91	3.77 - 3.91	(475)
University or above (r)	1.00	2.88 - 1.93	(227)
Economic status of household head			
Employed (r)	1.00		(1433)
Unemployed	1.10	1.09 - 1.12	(95)
Out of the labour force: retired	0.89	0.88 - 0.90	(239)

Note: The final model specification was determined using forward stepwise conditional logistic regression with the condition of variables for inclusion being significant at p<0.05. The order in which the variables were entered is: region, education of household head, number of children in the household, household type, urban/rural, sex of household head, economic status of household head and age of household head. All variables significant at p<0.001. (r) = Reference category.

Source: Authors' own analysis of the 1998-2001 HBS panel dataset

Box 2: Interpreting odds ratios from logistic regression models

Calculating the 'odds'
The 'odds' of an event happening are defined as the probability of the event occurring divided by the probability of it not occurring.
If the probability of a child being in chronic poverty is 0.4, then p = 0.4.
The probability of not being in chronic poverty is 0.6, ie, (1-p).
Thus the odds of a child being in chronic poverty are p/(1-p) = 0.4/0.6 = 0.67.

What is an odds ratio?
Suppose that one in ten children living in Bishkek are chronically poor compared to eight out of ten children living in Naryn.
The odds of a child in Naryn being chronically poor = 0.8/0.2 = 4.0.
The odds of a child in Bishkek being chronically poor = 0.1/0.9 = 0.11.
The odds ratio for being chronically poor = 4.00/0.11 = 36.36.
Thus the odds of being chronically poor are 36.36 times higher among children in Naryn than among children in Bishkek.

How do we interpret the odds ratios from binary logistic regression?
Logistic regression models the logarithm of the odds of an outcome as a linear combination of predictor (or independent) variables.
Logit = $\ln(p/(1-p)) = b_0 + b_1X_1 + b_2X_2 + \ldots$.
The coefficients obtained from the regression are the increase in the log odds ratio associated with a one unit increase in X. If the predictor variable is a categorical variable, then the coefficient represents the increase in the log odds ratio of achieving an outcome associated with that category of the predictor variable compared to the reference category of the predictor variable, taking account of all the other variables in the model. The odds ratios shown in Table 14 are computed by raising e to the power of the logistic coefficients (which are not shown).

An example
Taking a simple example of sex of head of household: the reference category is male; the odds ratio for children living in a household headed by a female is 1.18. Thus the odds of living in chronic poverty are 1.18 times higher for children living in female-headed households than for children living in male-headed households, taking account of all the other factors included in the model in Table 14.

Region was the most important explanatory factor; even after taking all other factors into account, children in Naryn were a shocking *35 times* more likely to be chronically poor than children living in Bishkek, holding everything else constant. Elsewhere regional differentials were not so stark. Nevertheless, children in Talas and Jalal-Abad were three times more likely, and children in Osh and Issyk-kul were twice as likely, to be chronically poor than those in Bishkek.

Perhaps somewhat surprisingly educational status of the household head was the second variable to be entered into the stepwise conditional model. In many of the analyses of the correlates of poverty conducted in the region 'early' on in the transition period, education was found not to play a major role (see, for example, Falkingham and Ackland 1997). However as labour markets

have been liberalised, the returns to education have increased and it is clear from this analysis that households with better educated heads are much more likely to be able to employ strategies to move their families out of poverty. Children living in households where the head had only primary education or less were nearly eight times more likely to be chronically poor than children living in households where the head had a higher education.

The number of children in the household and household type were also highly significant. Children living in households with three or more children were four to five times more likely to be chronically poor than those living in households with no other children except themselves. The risk of chronic poverty was highest for children living in single-parent households and lowest for those living with three or more adults. Children living in female-headed households were also more at risk than those living in male-headed households, and the risk of chronic poverty was positively associated with the age of the head. Interestingly there were only slight differences according to the economic status of the household head.

Finally, after controlling for all other factors (including region), the urban-rural differentials in chronic poverty found in Table 13 were reversed, with rural children less likely to suffer chronic poverty than those living in urban areas. This is an important finding, highlighting that urban children – particularly those living outside the capital Bishkek – should not be ignored in any strategy to reduce poverty. This is further reinforced by the evidence on food security and capability poverty presented in the following sections.

6. Food security and children

According to the 1997 Kyrgyz Demographic and Health Survey, 11 per cent of children under the age of three were moderately or severely underweight, three per cent were moderately or severely wasted and 25 per cent were moderately or severely stunted. These rates are much higher than the WHO norms and suggest that the nutritional status of children is a major cause for concern.

Unfortunately there are no recent nationally representative surveys of nutritional status. However, the Kyrgyz NatStatCom regularly collects data on children's actual food consumption over a nine-month period. This can be converted into calorific values and these compared against recommended minimum values. Overall, there has been an improvement in food security over the period 2000-03, both for children and the population as a whole. However, average levels of food consumption remain below the recommended minimum values. Moreover, there are signs that some groups of children experienced a slight decline in intake between 2002 and 2003.

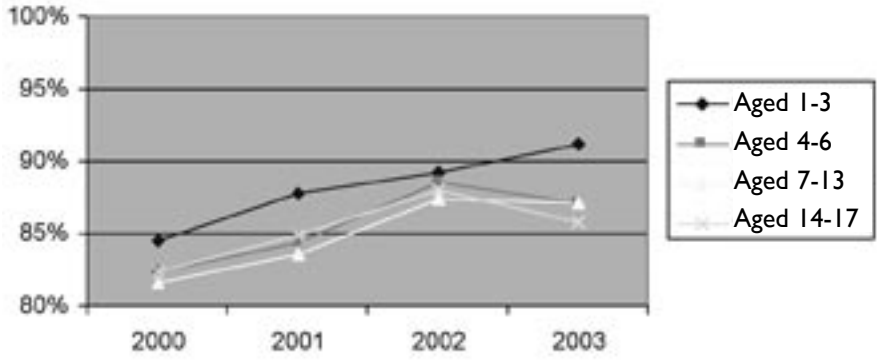
Table 15: Food consumption (levels and percentage of minimum recommended level) amongst children aged 1-17 in the Kyrgyz Republic, 2000-03

	Actual food consumption, Cal				Percentage of minimum recommended level			
	2000	2001	2002	2003	2000	2001	2002	2003
Age group								
1-3	1203	1251	1272	1300	84%	88%	89%	91%
4-6	1512	1548	1626	1599	82%	84%	89%	87%
7-13	1854	1900	1985	1981	82%	84%	87%	87%
14-17	2059	2121	2199	2144	82%	85%	88%	86%
All children 1-17	1731	1786	1901	1926	84%	87%	92%	93%
Total population	**2048**	**2092**	**2144**	**2130**	**91%**	**93%**	**95%**	**95%**

Note: Recommended daily calorific intakes within the Kyrgyz Republic are: children aged 1-3 years 1,435 Kcal; 4-6 years 1,835 Kcal; 7-13 years 2,273 Kcal; 14-17 years 2,498 Kcal.

Source: NatStatCom data

Figure 1: Trends in child nutritional status 2000-03, by age (mean calorie intake as a percentage of daily needs)



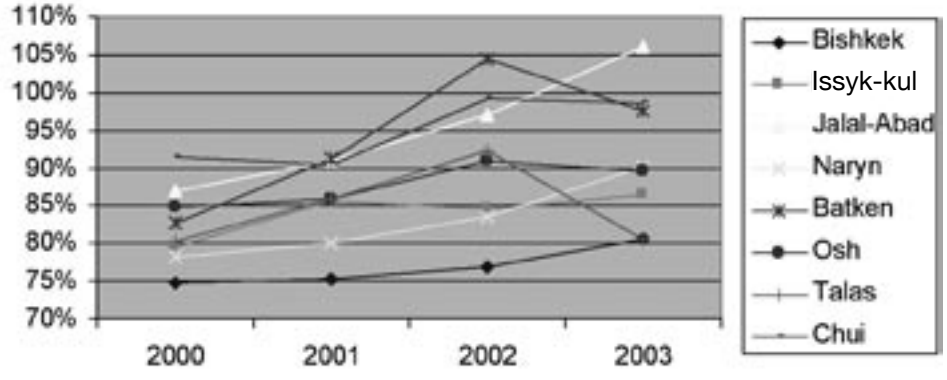
There are clear regional differentials. Child food consumption in calorific terms is higher in *oblasts* with a strong agricultural sector, such as Jalal-Abad and Batken. Nutritional standards are lowest in Bishkek, which provides an interesting contrast to the spatial picture of material poverty, where poverty is consistently found to be lowest in Bishkek. It is important to bear in mind that access to material resources is not necessarily translated into good nutritional intake. Moreover, in all regions, with the recent exception of Jalal-Abad, child calorie intake remains below the nutritional norm. There was a sharp drop in nutritional intake amongst children aged 0-17 in Talas and Batken between 2002 and 2003 (see Figure 2).

Table 16: Food consumption (levels and percentage of minimum recommended level) amongst children aged 1-17, by region, Kyrgyz Republic, 2000-03

	Actual food consumption, Cal				Percentage of minimum recommended level			
	2000	2001	2002	2003	2000	2001	2002	2003
Region								
Bishkek	1544	1550	1585	1660	75%	75%	77%	81%
Issyk-kul	1641	1765	1743	1782	80%	86%	85%	86%
Jalal-Abad	1795	1877	2000	2187	87%	91%	97%	106%
Naryn	1614	1649	1724	1859	78%	80%	84%	90%
Batken	1708	1879	2154	2012	83%	91%	104%	98%
Osh	1747	1769	1877	1849	85%	86%	91%	90%
Talas	1655	1773	1902	1660	80%	86%	92%	81%
Chui	1886	1865	2044	2032	91%	90%	99%	99%
All children 1-17	**1731**	**1786**	**1901**	**1926**	**84%**	**87%**	**92%**	**93%**

Source: NatStatCom data

Figure 2: Trends in child nutritional status 2000-03 by region (mean calorie intake as a percentage of daily needs)



7. Non-income dimensions of poverty

7.1 Education

As noted in a recent report to the Department for International Development (DFID), 'education statistics are some of the most strongly contested development statistics in Kyrgyzstan' (p.11, para 2.1.4 in Marcus 2004). Tables 17 and 18 present the proportion of children enrolled in school from both administrative statistics and survey data. Survey estimates are consistently higher than those from administrative data, but both sources reveal high levels of enrolment for children of compulsory school age.

Table 17: Proportion of children enrolled in education, estimates from survey data

Age group	KMPS			HBS – full sample				
	1996	1997	1998	1998	1999	2000	2001	2002
0-3	25.0	n/a	52.7	n/a	n/a	n/a	n/a	n/a
4-6	96.3	72.4	82.6	n/a	n/a	n/a	n/a	n/a
7-13	96.7	96.8	98.5	99.4	99.4	99.5	99.7	99.8
14-17	78.4	76.0	79.2	n/a	n/a	n/a	n/a	n/a
All children 0-17	90.5	88.5	91.2	n/a	n/a	n/a	n/a	n/a

Source: Authors' own analysis of the KMPS and the HBS

Table 18: Proportion of children enrolled in education, estimates from administrative data

	1996	1997	1998	1999	2000	2001
Pre-primary education enrolment (net rates, % of population aged 3-6)	8.2	8.3	8.7	8.0	8.7	9.0
Basic education enrolment (gross rates, % of population aged 6-14)	89.4	89.9	90.3	89.8	96.2	95.2
Total upper secondary education enrolment (gross rates, % of population aged 15-18)	41.3	44.2	48.3	50.1	36.0	36.4
Higher education enrolment (gross rates, % of population aged 19-24)	15.3	19.0	24.8	29.8	34.6	37.4

Source: UNICEF Transmonee database 2003

Of course, enrolment rates tell only part of the story. A UNICEF study of school attendance in 1999 found substantially higher rates of school non-enrolment and drop-out than the official figures based on administrative records (UNICEF 1999). The real costs of education faced by families have risen as the cost of textbooks, supplies, meals and transportation are increasingly being passed on to the student, with the result that many poor parents can no longer afford to send their children to school (Falkingham 2000). The UNICEF study found that non-attendance was highest in areas with the greatest opportunities for paid work for children, but the report also highlighted the stigma and shame many parents felt if they could not send their children to school in decent clothing. This was exacerbated by the humiliation of children by teachers if fees or 'gifts' could not be paid on time or in full. Analysis of survey data confirms this. When children were asked why they had discontinued their studies, the majority (68 per cent) reported that they had finished/graduated. However amongst those who gave other reasons, over half said they had to leave school to earn money to live and five per cent said it 'cost too much'. Thus clear barriers are emerging in educational access for the poorest children.

7.2 Health

Table 19: Trends in infant mortality and maternal mortality, Kyrgyz Republic 1996-2003

	1996	1997	1998	1999	2000	2001	2002	2003
Infant mortality rate (deaths per 1,000 births)	25.9	28.2	26.2	22.7	22.6	21.7	21.2	20.9
Maternal mortality rate (deaths per 100,000 births)	31.5	62.7	33.6	42.3	45.5	43.8	53.5	44.6

Source: NatStatCom data

According to official statistics from the Ministry of Health, infant mortality has been improving, from a high of 28.2 deaths per 1,000 live births in 1997 to 20.9 in 2003: a rate similar to Romania and below that of Saudi Arabia (UNDP 2004). However, international comparisons are complicated by the fact that the Kyrgyz Republic still uses the old Soviet methodology when determining what constitutes a live birth. With the introduction of the standard WHO methodology, it is expected that infant mortality statistics may rise by a factor of three (Letarte 2001), which would put the Kyrgyz Republic alongside its neighbour Mongolia and countries such as Bolivia and South Africa.

Rates of infant mortality vary considerably by region. They are highest in Bishkek (27.2), Batken (25.6) and Osh (24.0) and lowest in Issyk-kul (16.8) and Chui (16.9) (UNDP 2003). The figures for Bishkek are in marked contrast with the position regarding material poverty, but tie in with those concerning nutritional status presented above and are further supported by evidence that living conditions in the newly constructed suburbs are relatively poor. However, they may also reflect the fact that more complicated deliveries and serious childhood diseases tend to be treated in the capital where medical facilities are more advanced. Deaths of rural children bought to Bishkek for treatment are likely to be recorded there.

Rates of maternal mortality are also affected by the differences between the Soviet and WHO methodologies for defining a live birth. In 2003, the maternal mortality rate was officially estimated at 44.6 deaths per 100,000 live births. However, estimates by UNDP put it considerably higher at 110, similar to rates experienced by women in Tajikistan and Suriname (UNDP 2004). According to the 2003 Kyrgyz Republic Millennium Development Goals Progress Report, the relatively high maternal mortality rate is attributable to the rise in complicated deliveries alongside a fall in the use of modern contraceptives and a rise in unsafe abortions. It is estimated that ten per cent of all registered cases of maternal mortality are abortion related (UNDP 2003). Worryingly, the proportion of women of reproductive age using modern contraception has fallen from 40.3 per cent in 1999 to 33.1 per cent in 2001, primarily because of the contraction in the supply of contraceptives by international agencies. This has implications for future trends in both infant and maternal mortality.

Data on subjective measures of morbidity and health service utilisation amongst children in the Kyrgyz Republic are available from the 2001 Kyrgyz Health Financing Survey (KHFS), conducted by the NatStatCom on behalf of the Ministry of Finance and funded by DFID (Falkingham 2001) and the repeat survey included as a special module as part of the HBS in 2004 (Falkingham 2004b). The percentage of children reporting acute ill health has been relatively stable over time, although there appears to be a fall in chronic ill health.

Table 20: Percentage reporting chronic and acute ill health by age and sex

	Percentage reporting chronic illness		Percentage reporting acute illness	
	2001	2004	2001	2004
Boys				
0-3	1.7	0.4	17.4	16.2
4-6	1.9	2.1	12.1	20.0
7-13	4.1	1.3	12.8	14.5
14-17	4.6	3.8	12.9	12.8
All boys 0-17	3.5	1.9	13.4	15.2
Girls				
0-3	0.6	1.1	17.4	15.4
4-6	2.1	0.9	16.9	17.5
7-13	3.8	2.2	17.4	18.2
14-17	7.0	3.2	11.3	12.0
All girls 0-17	3.8	2.1	15.8	16.0

Source: Authors' own analysis of the 2001 and 2004 KHFS

Utilisation of healthcare services is also fairly stable over time, although there has been an increase in those reporting that they needed medical assistance in the past 30 days but did not seek help (Table 21). When probed on the reasons for *not* seeking help, the vast majority reported that they self-medicated using pharmaceuticals; and this had increased over time (Table 23). Reassuringly, the proportion reporting that they were deterred from using health services

because of the cost has fallen. This suggests that the recent reforms in the finance of the health system have improved the position regarding financial barriers to healthcare; a point confirmed by the fall in the value of out-of-pocket payments (see Falkingham 2004b).

The percentage of children using medical services for vaccinations, as a share of all child healthcare users, has fallen over time (Table 22). In 2001, a quarter of all child consultations were for vaccinations, and parents provided the syringes in 47 per cent of such cases. By 2004 vaccinations had fallen to just eight per cent of consultations; and to just 49 per cent and 34 per cent of consultations for boys and girls aged under three respectively. This point warrants further investigation.

Table 21: Utilisation of healthcare services by age and sex

	Percentage seeking medical assistance in last 30 days		Percentage reporting they needed, but did not seek, medical help	
	2001	2004	2001	2004
Boys				
0-3	18.3	14.8	13.4	12.3
4-6	6.6	7.5	8.0	17.5
7-13	5.1	6.6	9.7	12.7
14-17	7.2	6.3	7.1	8.6
All boys 0-17	7.9	7.9	9.3	12.4
Girls				
0-3	17.8	14.3	11.9	14.4
4-6	8.0	9.1	11.2	12.8
7-13	7.8	8.3	12.7	14.6
14-17	5.2	5.8	8.4	11.2
All girls 0-17	8.8	8.6	11.3	13.4

Source: Authors' own analysis of the 2001 and 2004 KHFS

Table 22: Percentage using healthcare services for illness/injury or vaccination by age and sex

	Percentage seeking medical assistance for injury or illness		Percentage seeking medical assistance for vaccination services	
	2001	2004	2001	2004
Boys				
0-3	38	41	58	49
4-6	63	80	30	11
7-13	80	74	8	2
14-17	76	81	-	-
All boys 0-17	64	69	27	16
Girls				
0-3	46	54	52	34
4-6	81	90	19	4
7-13	83	81	3	1
14-17	80	81	-	-
All girls 0-17	70	77	21	8

Source: Authors' own analysis of the 2001 and 2004 KHFS

Table 23: Reasons given for why respondents did not seek medical assistance by sex (%)

	2001		2004	
	Boys	Girls	Boys	Girls
Self-medicated using herbs	11	14	9	10
Self-medicated using pharmaceuticals	68	64	83	83
Believed problem would go away	11	12	2	4
Too far/poor service	1	1	1	1
Too expensive	8	7	4	2
No time	1	2	-	1
Other	2	-	-	-

Source: Authors' own analysis of the 2001 and 2004 KHFS

8. Concluding comments

Despite recent economic growth, at the beginning of the twenty-first century nearly two-thirds of all children aged under 18 in the Kyrgyz Republic are living in poverty and four in ten are chronically poor. These figures rise to 90 per cent in Naryn, where most poor children are also chronically poor and there appears little chance of them escaping material hardship during their childhood. Naryn is clearly a special case deserving urgent attention, but it is also important to bear in mind that whilst 8 in every 100 poor children live in Naryn, a similar number lives in Bishkek. It is also important to remember that higher material well-being does not necessarily translate into better nutritional status and that the average per capita calorific intake amongst children in Bishkek remains the lowest in the country. A concentration on rural poverty is understandable, given the rural nature of the Kyrgyz Republic, but it is important to highlight that chronic poverty may actually be higher in urban areas once other factors are controlled for. The fact that poor urban households often lack access to land and the ability to produce food for home consumption means that they are more dependent on the monetary economy, and poor urban children may be more vulnerable to shocks that poor rural children. This highlights the need for specific policies to address their concerns.

Although child poverty rates remain high, there appears to be considerable mobility with around one-in-ten children moving in or out of poverty each year. Factors associated with a reduction in the likelihood of chronic poverty include the education of the household head, indicating that programmes which enhance the educational status of children may contribute to alleviating poverty in the longer term. Chronic poverty is highest amongst children living in households with many children and those in single-parent households, indicating that poverty alleviation efforts in the shorter term would benefit from targeting these groups.

There is also good news in the health sector as it appears that the reforms in health financing have reduced the number of people reporting that they did not seek healthcare due to its cost. However, overall utilisation rates have fallen despite no evidence of a change in underlying morbidity, thus any complacency here may be premature. Nor should there be complacency in the educational sector as there is evidence that high levels of enrolment mask growing inequalities in school attendance.

This brief analysis has attempted to summarise the empirical evidence on child poverty data and present new analysis on the dynamics of poverty. Further in-depth analysis is needed concerning the factors associated with moving out of poverty. It is hoped that over time the new KIHS will generate the necessary data to support evidence-based policy to reduce child poverty. However, we cannot wait until then and urgent action is required to tackle child poverty if the Kyrgyz Republic is not to lose the next generation.

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Directors: Dr Caroline Harper and Professor David Hulme

This paper examines trends in the prevalence and severity of child poverty in the Kyrgyz Republic since the mid-1990s. Poverty is a multi-dimensional phenomenon and trends in both monetary poverty, as measured by household expenditure, and capability poverty, as measured by education, health status and access to related social services, are discussed. Recent evidence on child food security is also presented. Using newly available panel data from the 1998-2001 Household Budget Survey, the paper also investigates the dynamics of childhood poverty, in particular the duration of material poverty and factors associated with movements in and out of poverty.

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