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LIVING STANDARDS IN CENTRAL ASIA

by

Richard Pomfret

Professor of Economics
University of Adelaide,
Adelaide SA 5005, Australia

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This paper examines living standards in the five new independent states of Central Asia since the dissolution of the Soviet Union at the end of 1991. As well as assessing the decline in average living standards and changes in the distribution, the paper analyses the determinants of household living standards and how these determinants have changed during the transition from central planning to more market-oriented economies. Finally, the paper considers the implications of the evidence on living standards for the design of social welfare programs in the Central Asian countries.

At the time of the dissolution of the USSR the Central Asian republics were, together with Azerbaijan, the poorest Soviet republics and the ones with the largest percentage of the population living in poverty (Table 1). Since becoming independent, Kazakstan, the Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan have followed divergent national development strategies, attracting some interest in the debate over policies and performance in transition economies. A key issue is how to measure performance. The drawbacks of using standard national accounting aggregates during periods of rapid structural change are well-known. As measures of living standards these are further undermined by the inability of per capita national income to capture changes in living standards when inequality and poverty are increasing.

Following a review in the first section of the evidence on living standards and of the welfare system in Soviet Central Asia, section 2 summarises the national development strategies of each of the five new independent Central Asian states and standard measures of their economic performance. The third section reports evidence on living standards during the transition to a market economy in the Kyrgyz Republic, a country for which household survey data are relatively rich, and section 4 reviews evidence from the other Central Asian countries. Section 5 considers some implications of the evidence on living standards for the social welfare system. The final section draws some conclusions.

1. Poverty and the Welfare System in Soviet Central Asia

The Kyrgyz, Tajik, Turkmen and Uzbek republics had, together with Azerbaijan, the lowest per capita incomes in the USSR. The last four of these also had the most unequal income distribution, although the Gini coefficients, while high by Soviet standards, were still low relative to most lower and middle income countries.¹ The 1989 poverty rates for the Central Asian and Caucasus republics were substantially higher than in other Soviet republics (Table 1).

Within the USSR neither poverty nor unemployment officially existed. Until the mid-1960s, the official position was that with full employment poverty was impossible and only the wilfully idle could be poor (McAuley, 1994, 188-9). There was thus not only no unemployment insurance, but also no general means-tested program of social assistance. The position was softened during the late 1960s and early 1970s, by raising the minimum wage and extending the

¹ The elite benefited from important non-pecuniary privileges. On the other hand, public services reinforced the egalitarian outcome; Buckley and Gurenko (1997) show that imputed income from subsidized housing (including maintenance and utilities) played a major role in reducing economic inequality in the USSR. Atkinson and Micklewright (1992) compare income distributions in the USSR and eastern Europe. Milanovic (1998) reviews the distributional evidence from the 1990s.

child allowance system, but the general design of the welfare system was unchanged. A 1974 decree defined underprovisioned households as those with less than fifty rubles per person, and provided a monthly supplement to them.² During the 1980s hidden unemployment and the proportion of families receiving less than the minimum consumption basket increased. These trends were exacerbated by the abolition of central planning in 1987, the disintegration of the USSR in 1991, and the major price reform of January 1992.

The correlates of poverty in the USSR are debated, in large part due to the inadequate data base with various researchers using differing sources to reach conflicting conclusions. McAuley (1979, 88) concluded that among non-agricultural state employees the minimum wage in the 1970s was sufficient to ensure that employed individuals lived above the poverty line, so that deprivation depended on having a non-working spouse and the number of dependents. Ofer and Vinokur (1992) challenged this conclusion, claiming that poverty existed among all kinds of Soviet households, including where both husband and wife worked. Household budget data for the Uzbek republic showed a significant relationship between household income and number of children (Marnie and Micklewright, 1997).

The status of women in the USSR is also a matter of interpretation, especially in Central Asia where the starting point was low. Positive views emphasise the emancipation of women, improved educational opportunities for girls and the incorporation of women into the labour force (Patnaik, 1989; Ubaidullaeva, 1982). In the USSR as a whole, women worked slightly fewer hours than men in paid employment, but at much lower wages than men, and spent twice as much time as men on household chores; the wage differentials cannot be fully explained by differences in human capital (Swafford, 1978; Ofer and Vinokur, 1992, 229-70). Independence was widely forecast to exacerbate gender discrimination in Central Asia, and reduce female participation in paid employment as traditional pre-Soviet gender roles were re-established.

The study by Lubin (1984), based on a year spent in Tashkent in 1978/9 and a brief return visit in 1981, mainly addresses the role of ethnicity, questioning that Central Asians were discriminated against in Soviet Central Asia. Although their incomes were lower than the incomes of Slavs or other nationalities, the Central Asians accepted this by choice due to cultural preferences (eg. unwillingness to leave the extended family) or to preferring positions with potential for informal economic activity over higher-paying jobs which provided fewer opportunities to benefit from the shadow economy.³

The Soviet welfare system was strongly influenced by characteristics of the central planning system (McAuley, 1994). Because virtually all productive enterprises were owned by the state the distinction between state and enterprise was blurred. Taxation and tax administration were poorly developed because there was little need to distinguish between what belonged to enterprises and what belonged to the state. There was also a confusion of function as many enterprises provided an array of services ranging from pre-school child care to housing. With physical allocation of goods and services, the welfare system functioned reasonably well (although shortages engendered

² This followed calculations by Soviet economists Sarkisyan and Kuznetsova who established a minimum material satisfaction budget for a family of four in the mid-1960s of 205.60 rubles per month. Among western scholars, McAuley (1979) used the 50 ruble level as his primary criterion of poverty, while Matthews (1986) used 70 rubles per month as his poverty line and consequently produced a much gloomier picture of poverty in the USSR. Matthews' study identifies the USSR with the non-Islamic republics, apart from appending a brief unofficial report on "Poverty in Central Asia" which is impressionistic and not very helpful, and, although McAuley has three chapters on inequality among Soviet republics (and personal experience of Central Asia), he says nothing about intra-republic inequality.

³ In dealing with ethnicity there are serious multicollinearity problems because Turkic and Tajik groups have bigger families and other characteristics which may separately affect household living standards.

corruption and inefficient allocation by queuing), but it was a poor starting point for the provision of welfare services during the transition to a market economy.

Pension eligibility was generous in the USSR. After twenty years of employment, men were eligible for a state pension at sixty and women at fifty-five, and in many circumstances earlier retirement was possible, eg. military personnel, miners and, especially important for Central Asia, women who had borne many children. Pensions could frequently be drawn while continuing to work for wages. After independence these pension entitlements were difficult to change and ate up a large part of government budgets; even when the value of pensions was eroded, the sheer numbers made for a large aggregate bill. Universal pension rights were well-suited to economies with flat income distributions, but the absence of administrative capacity to target needy old people created a serious problem after independence.⁴ With large numbers of eligible pensioners, fiscal constraints led to the pension budget being spread thinly, so that poor pensioners were insufficiently provided for or payments delayed.⁵

In sum, although living standards in Soviet Central Asia were low by the standards of the USSR, income distribution was not perceived as a major problem either nationally or within individual republics. Although “underprovisioned households” were assisted after 1974, poverty was neither explicitly recognized nor extensively analysed during the Soviet era. Correspondingly, the welfare system was designed for an egalitarian society in which universal entitlement to pensions, child support, health, education and other social services was the norm, and in the centrally planned economy it mattered little whether delivery was through the government or the enterprise.

2. Development Strategies and Economic Performance since Independence⁶

Until the dissolution of the USSR, the Central Asian republics’ development strategies were determined in Moscow. The Central Asian republics were open economies, integrated into the Soviet Union's division of labour but isolated from the global economy. Their main role was as producers of primary products, especially cotton, but also energy and minerals, and grain in northern Kazakstan. Whether they benefited from being in the USSR is controversial because of their colonial status and major environmental damage, but residents of Soviet Central Asia enjoyed higher material living standards and better social services than their southern neighbours, and were supported by substantial intra-USSR transfers which ceased in 1991-3.

Given the pre-existing specialization in primary products, the national development strategies have been outward-oriented. Although there have been measures to encourage greater food and energy self-sufficiency, to protect domestic industries and to tax exports, trade policies have generally been liberal with low formal trade barriers. Trade performance has, however, been disappointing, especially the ability to find new export markets (Pomfret, 1999). Turkmenistan and Kazakstan, which had been expected to benefit substantially from the shift to world prices for their exports (Table 2, final column), found themselves tied to old Soviet pipelines for their oil and gas exports, and Turkmenistan had great difficulty in collecting payment for its gas exports to Ukraine and Georgia. Uzbekistan turned out to have more favourable initial conditions insofar as its cotton and gold exports could be transported and sold for hard currency (Taube and Zettelmeyer, 1998).

⁴ In Uzbekistan, maintenance of the entitlements after independence imposed a severe budgetary burden, which was exacerbated by an unsustainable indexation policy in 1993 when pension payments amounted to 11.4% of GDP (Griffin, 1996, 155-7). After a change of indexation rules, however, expenditures halved in 1994.

⁵ Delayed pension payments became serious in Kazakstan, whose government initiated a reform in 1996 based on a Chilean-type system of mandatory, privately-managed, competitively-funded pensions (Baldrige, 1999).

⁶ This section draws on Pomfret (1995) and Pomfret and Anderson (1999b).

In 1992 and 1993, policy debates were dominated by the currency issue. Continuing use of the ruble simplified trade relations and allowed continuation of indirect subsidies from Russia through access to oil, grain and other primary products at prices which were still below world market prices. The situation was, however, unstable as the ruble zone was inherently inflationary (Pomfret, 1996, 118-29). The Kyrgyz Republic introduced a national currency in May 1993 in order to regain macroeconomic stability, and Turkmenistan, Kazakstan and Uzbekistan left the ruble zone in November 1993. Tajikistan was the last country left in the old ruble zone - even Russia was using new ruble banknotes, which were not supplied to Tajikistan.

The Kyrgyz Republic has been the most successful in taming the hyperinflation of the early 1990s (Table 2). Inflation was brought down below 50% per year in the Kyrgyz Republic in 1995, in Kazakstan in 1996, and in Uzbekistan only in 1997. Tajikistan has had hyperinflation associated with the civil war, but is now reducing inflation. Turkmenistan, like Uzbekistan, relied on controls to limit the peaks of price increases in the early and mid-1990s, but has been slower than Uzbekistan in addressing the underlying monetary causes.

Speed in addressing hyperinflation is closely correlated with the speed with which the transition to a more market-oriented economy has been pursued. In the Kyrgyz Republic, state orders were eliminated in 1993 and practically all prices liberalized by 1994. Enterprise reform has been less dramatic than in Central or Eastern Europe or the Russian Federation, but more extensive than elsewhere in Central Asia. The financial sector has also been transformed, so that both the exchange rate and interest rates are market-determined, although thin markets have limited allocative efficiency. In July 1998 the Kyrgyz Republic became the first successor state to the USSR to join the World Trade Organization, reflecting the country's liberal trade regime.

Kazakstan has generally been considered the more committed reformer of the two large Central Asian countries. After independence, Kazakstan moved faster than Uzbekistan in price and enterprise reform. In the second half of the 1990s, however, concerns have increased over the government's failure to establish a suitable framework for a well-functioning market economy (Kalyuzhnova, 1998; Olcott, 1998). Agents of the government are frequently seen to be benefiting from their position rather than enforcing law and order or maintaining public services, and privatization largely benefited insiders without obvious efficiency gains. Nevertheless, since 1996 Kazakstan has, like the Kyrgyz Republic and unlike Uzbekistan or Turkmenistan, accepted currency convertibility on current account, and prices in Kazakstan are essentially market-determined and subject to world market forces.

Uzbekistan has followed an explicitly gradual approach to economic transition. Price and enterprise reform proceeded slowly, although practically all prices had been liberalized by 1996 and housing and small enterprises have been privatized. Trade policy is liberal as export taxes imposed in the early 1990s have been removed, but its impact is negated by stringent foreign exchange controls which were reintroduced in the second half of 1996. The government exerts more overt control than in Kazakstan, which creates a more stable environment but not one which has favoured the emergence of new private enterprises or entrepreneurial behaviour in general.

The various synthetic measures of the speed and extent of liberalization in transition economies typically divide the Central Asian transition economies into two groups (Pomfret and Anderson, 1997, Table 1). The Kyrgyz Republic and Kazakstan are somewhere in the middle, and Uzbekistan, Turkmenistan and Tajikistan at the bottom of the list. Tajikistan is sometimes put in a separate category of those countries affected by regional tensions, and is making a delayed attempt

at reform since the mid-1990s.⁷ Turkmenistan has been committed to minimizing economic change.

Economic performance is related to initial conditions and other exogenous forces, as well as to policies. The Kyrgyz Republic and Tajikistan are favoured neither by geography nor resource endowment. The gas wealth of Turkmenistan and the minerals and oil of Kazakstan were initially seen as major pluses, but realization of their benefits has been slow and at least in the short-term Uzbekistan's resource endowment may have been more favourable. External assistance has varied and is not independent of economic policies. In the early post-independence era, the main source of external funds was the Bretton Woods institutions, which had a strong predilection for rapid reform and especially for macroeconomic stabilization and open trade and exchange policies. The Kyrgyz Republic has benefited most from World Bank and IMF assistance, while Uzbekistan's relations with these institutions have been frosty. Cumulative World Bank loan commitments up until the end of the 1996 fiscal year amounted to \$70 per head for the Kyrgyz Republic, \$49 for Kazakstan, \$11 for Uzbekistan, \$6 for Turkmenistan and \$1 for Tajikistan.⁸

How have the Central Asian countries' economies performed since independence? Table 2 presents a striking picture in terms of real output. Uzbekistan had the smallest decline in real GDP of any former Soviet republic, and by a substantial amount. This is in striking contrast to the maintained hypothesis, claimed to be an empirical regularity by the World Bank (1996) and independent analysts, that more rapidly reforming transition economies have had superior output performance records. The anomaly might be explained as a time-frame problem of transition, following Blanchard's U-shaped output path, with the slow reformers still on the initial downward part of the U and the fast reformers beginning to climb up on the far side. The 1999 figures in Table 2 suggest that the argument may have applied to Turkmenistan in 1996, but not to Uzbekistan which has passed the trough of the U. There are also well-known measurement problems due to reporting biases, the growth of the informal economy and index number problems (Pomfret, 1995, 171-6; Falkingham et al., 1997, 21-41). Taking all reservations into account, Uzbekistan's relative output performance in the 1990s still appears to be good (Taube and Zettelmeyer, 1998).

Unemployment is a less useful guide to macroeconomic performance in partially reformed economies without incentives to sign-on as unemployed,. Hidden unemployment certainly increased in Central Asia and the phenomenon of unpaid work became commonplace as wage payments were delayed and erratic, but unemployment figures are inconsistent and difficult to interpret. In the Kyrgyz Republic reported unemployment was low in the 1993 household survey (the KMPS), although by the spring 1996 LSMS survey it had risen to 17% in rural areas and 21% in urban areas.⁹ The depth of the decline in employment is better reflected in

⁷ Attempts to accelerate reforms and establish macroeconomic stability after the introduction of the Tajik ruble in May 1995 were disrupted by renewed civil war in late 1996, and only revived after the June 1997 peace agreement.

⁸ Calculated from data reported in *Transition*, 8, February 1997. The Kyrgyz Republic also received concessional financing from the IMF, and by 1996 had the second-highest debt/GDP ratio (43%) of any former Soviet republic; the debt/GDP ratio for Tajikistan was 84% (mainly war-related concessional loans from Russia), Turkmenistan 32%, Kazakstan 19% and Uzbekistan 17%, with the last three having acquired most of their debt on commercial terms (Kapur and van der Mensbrughe, 1997).

⁹ Falkingham (1999, 6) reports open unemployment rates of 30% in Tajikistan, 20% in the Kyrgyz Republic, 11% for men and 6% for women in Uzbekistan, and around 6% for Kazakstan. These numbers come from differing 1998 sources and, although they all presumably refer to 1996 or 1997, it is not clear whether they are seasonally adjusted or based on comparable concepts of unemployment; the low rate for Kazakstan, in particular, is at odds with casual observation.

the number of registered employed, which fell in Kazakhstan from 6.5 million in 1990 to 4.3 million at the end of 1995, when registered unemployment was reported at 4% (Bauer et al., 1997, 3), and 2.6 million in February 1998 (*Kazakhstan Economic Trends*, January-March 1998, 102). In Tajikistan the labour force participation rate declined from 74% in 1991 to 64% in 1996.¹⁰ Uzbekistan is the odd one out with total employment, according to official figures, increasing by about four percent between 1990 and 1995, although these data are problematic due to the widespread hidden unemployment (Klugman, 1998, 99-109).¹¹

Apart from the conceptual problems associated with the usual macroeconomic aggregates during times of rapid changes in the output mix and in relative prices and quality, further problems arise in assessing living standards. The USSR had a relatively egalitarian income distribution, which was also true of the Central Asian republics even though they had the highest poverty rates in the USSR. The move to a more market-oriented economy has everywhere increased inequality (Cornia, 1996; Milanovic, 1998). If poverty has increased in these already poor countries, this has serious implications for living standards; we want to know not only what happened to average living standards but also how the changes in living standards have varied both across and within countries.

The major source on living standards in the Soviet Union was the annual household budget surveys (HBS). These samples were biased, since they concentrated on households with earners in state factories or on collective farms and, to a lesser extent, on pensioners. Both tails of the income distribution were underrepresented, as households whose main employee worked in the private sector or was not working were absent and certain occupations were excluded (eg. party officials, high level bureaucrats, KGB and military officers). Rural households were undersampled, which is especially important for the Central Asian republics, which were the most rural of the Soviet economies. Furthermore, the samples were not rotated; once the sample was established in the early 1950s, households were only removed by attrition. Falkingham et al. (1997, 48) characterize the HBS as "a survey with a long history and a terrible reputation". After independence the new national statistical authorities continued to follow the methodology of the HBS. The practices and standards diverged more than previously, but the HBS remains the sole source for intertemporal comparisons.¹² The HBS can provide some guide to average (or, more precisely, median) household consumption levels, but the nature of the sample makes the HBS data a poor guide to changes in income distribution or in the number of people in poverty.

A potentially better data set for analyzing living standards is the surveys supported by the

¹⁰ Republic of Tajikistan: Recent Economic Developments, *IMF Staff Country Report No.98/16* (International Monetary Fund, Washington DC, February 1998, 18).

¹¹ On the basis of the 1995 European University Institute and University of Essex Survey of Uzbekistan (EESU), Klugman estimates that as many as a quarter of the labour force might be included in "hidden unemployment", in the sense of not having been paid over the previous month. Before and after transition comparisons are, however, fraught, because before 1991 many people were on enterprises' or farms' books as employed, but were not working. Allowing for all the measurement problems, Klugman (1998, 115) concludes that Uzbekistan's employment record during transition has been less adverse than in other former Soviet republics.

¹² Before independence completed questionnaires were sent to Moscow for processing, so that local analytical capacity was not developed (Falkingham et al., 1997, 43), and deliberate attempts were made to falsify published results (Dmitrieva, 1996, 100). Atkinson and Micklewright (1992, 265-9) review the methodology of the HBS. Marnie and Micklewright (1997) assess the 1989 HBS results for the Uzbek republic.

World Bank as part of the Living Standards Measurement Study (LSMS).¹³ The first such survey in Central Asia was the Kyrgyzstan Multipurpose Poverty Survey (KMPS) conducted in October and November 1993 with a sample of about 2000 households, ie. twice the size of the HBS sample and with much greater care taken to ensure a representative sample. The KMPS is distinguished from the LSMS by its extensive additional questions, especially on nutrition. A survey conducted in February and March 1996 in the Kyrgyz Republic used a similar questionnaire to that used in 1993, as did a 1997 LSMS in Kazakhstan and a LSMS begun but not completed in Uzbekistan in 1997. A series of annual LSMS surveys in the Kyrgyz Republic began in October/November 1996 with a new sampling frame, which yielded 1951 completed household interviews, and a shorter questionnaire focussing on the changing environment brought about by transition to a market economy and omitting the nutrition questions of the KMPS. The LSMS surveys are clearly superior to the HBS in sampling methodology and coverage, but so far have been little analysed.

There have also been a number of household surveys focussing on specific issues which cast some light on living standards, as well as studies of limited geographic areas or rapid appraisal methods. As the most open of the Central Asian countries the Kyrgyz Republic has benefited most from external assistance, some of which has included finance for surveys, as well as being the country most willing to permit independent studies. The next section will review the evidence on living standards in the Kyrgyz Republic, and the following section will examine the less complete evidence from the other Central Asian countries.

3. Living Standards in the Kyrgyz Republic

The Kyrgyz Republic was one of the poorest Soviet republics, and during the early 1990s it suffered a deep decline in income levels with real per capita income falling by almost half and a large increase in inequality. The Gini coefficient increased from 0.29 in 1989 to 0.54 in 1993, before falling to 0.46 in spring 1996 and 0.41 in the winter 1996 LSMS survey.¹⁴ Milanovic (1998) quotes a poverty headcount of 86 percent for the Kyrgyz Republic in 1993, the highest for any transition economy.¹⁵ The expenditure-based headcount measure of poverty increased from 45% in 1993 to 69% of individuals in 1996.¹⁶ The numbers must be treated with caution, but the direction of change is undeniable. The combination of extensive poverty, rapid transition and relatively good survey data makes the Kyrgyz Republic an interesting country for which to analyse the determinants of household living standards before and during transition.

¹³ Deaton (1997) and Grosh and Glewwe (1998) describe the LSMS surveys. The core questions of the Central Asian surveys are based on Russian surveys initiated in 1992, which facilitates eventual comparability with other Soviet successor states. Klugman and Braithwaite (1998) review the Russian surveys.

¹⁴ These are based on household expenditure (Atkinson and Micklewright, 1992; Research Triangle Institute, 1996). The Gini coefficient for income rose to 0.68 in 1993, and a still high 0.51 in 1996 (Falkingham, 1999, 11).

¹⁵ The IMF's *World Economic Outlook* (Washington DC, May 1998, 110) provides a comparative list.

¹⁶ These figures calculated from the 1993 and spring 1996 surveys are comparable to the figure in the final column of Table 1. Using households rather than individuals as the unit, the headcount, poverty gap and FGT P2 measures of poverty (Foster, Greer and Thorbecke, 1984) increased from 40% to 49%, 20% to 24% and 13% to 15% respectively, indicating that the depth of poverty increased as well as the number of poor. The poverty line used in these World-Bank-sponsored exercises has been criticized by Peter Lanjouw (in Falkingham et al., 1997, 61-77) for being non-transparent and based on nutrition in a country where the poor are often obese. The World Bank *World Development Indicators 1997* estimate that 19% of the Kyrgyz Republic's population was below the international poverty line of US\$1 per day at 1985 prices, with a poverty gap of 5.0%, ie. lower figures than most but not all African, Latin American or South Asian countries (Tanzania and Mexico, for example, have fewer poor and a smaller poverty gap than the Kyrgyz Republic).

The Kyrgyz Republic clearly suffered a substantial drop in consumption levels during the first half of the 1990s. Roberts (1997) has analysed the Kyrgyz HBS data, and estimates that private household consumption fell by 33% during 1990-3 and rose by 7% in 1995.¹⁷ This is substantially smaller than the fall in consumption implied by GDP estimates (Table 2), or official estimates of a 44% decline in 1990-3 followed by a further 5% drop in 1995. The main reason for the discrepancy is the rapid growth of the private sector, especially in 1991, to the extent that by 1995 the shadow economy was supplying between a quarter and a half of household consumption. Although Roberts presents a less gloomy picture than official figures, his estimates still represent a large drop in consumption during the first half of the 1990s.

The aggregate picture is supported by anecdotal evidence. In June 1995 the World Bank surveyed 150 households in Bishkek to appraise capacity and willingness to pay for heating and hot water. The responses to the income and expenditure questions revealed that households spent on average 70% of their income on food and 10% on energy, but the lowest quartile spent 78% of income on food and 22% on energy (Finkel and Garcia, 1997, 194). Such figures paint a grim picture of a substantial part of the population of the capital city having inadequate incomes to cover basic needs and being vulnerable to even minor policy shifts with respect to provision of subsidized services such as district heating.¹⁸

Even more vivid pictures of people living on the brink emerge from the report on interviews of adults in 154 poor households in the southern oblasts of Osh and Djalalabad in September and October 1994 (Howell, 1996). Howell highlights the variety of coping strategies, but the overwhelming impression is of choices having to be made among satisfaction of basic needs, and often at the expense of future income. Should an animal be sold to buy supplies for schoolchildren or should the children be kept at home on the farm? Should a fruit tree be chopped down to save expenditure on coal? Non-essential items such as furniture or sheets or towels were being sold by urban dwellers who had no plot of land to fall back on for food.

The 1993 KMPS and more frequent LSMS surveys since 1996 have been used to make more firmly based generalizations about the evolution of poverty during transition in the Kyrgyz Republic. The World Bank (1995) provided the initial poverty assessment. Simple cross-tabulations show that the poor in the Kyrgyz Republic in 1993 tended to be rural, with the poverty rate lowest in the capital city, Bishkek, and highest in the south of the country. Poverty was associated with large families, and with ethnicity; Slav households are less likely to be poor than Turkic households. Education, gender or pensioner effects were not strong. This accords with common perceptions about poverty in the southern republics of the Soviet Union (see section 1 above) and suggests that, although there had been a sharp increase in the level of poverty after the dissolution of the USSR, the determinants of poverty had not changed by autumn 1993.

In 1993 poverty was greater in rural areas. By the expenditure measure 56% of the rural population lived in households with an average expenditure below the poverty line, and 31% were very poor (ie. per capita household expenditure was less than half of the poverty line); the comparable figures for urban areas were 34% and 13% (Pomfret and Anderson, 1999a).¹⁹ Green

¹⁷ According to Roberts, a substantial change in methodology in 1994 invalidates comparisons between before and after 1994.

¹⁸ District heating is a central system of providing heating to a community. About a quarter of households in the Kyrgyz Republic have access to the district heating network; 80% of these are in Bishkek.

¹⁹ The rural-urban comparison is sensitive to assumptions about consumption of non-marketed produce, which was

and Vokes (1997, 265-6), referring to Asian Development Bank field studies, argue that rural-urban wage differentials in the Kyrgyz Republic widened markedly during the first half of the 1990s. Farmers suffered from the near collapse of input supplies (no fertiliser, pesticide or herbicide, inferior seeds, disrupted supply of fuel and spare parts), large adverse relative price changes and mushrooming rural debt. Ackland and Falkingham (in Falkingham et al., 1997) also claim that non-payment of farm wages and lack of rural credit widened the rural-urban gap after 1993, although net increases in livestock during 1993 suggest that people were not yet running down productive assets to maintain current consumption.²⁰

Multivariate analyses of the 1993 survey data have aimed to identify more clearly the underlying determinants of poverty, but in general come up with weak results. Ackland and Falkingham (in Falkingham et al., 1997) and Pomfret and Anderson (1999a; 1999b) used probit analysis to identify partial correlations with rural and urban poverty, although these results are sensitive to the choice of poverty line.²¹ In the probit analysis the strongest associations are that residence in the capital and having a college-educated household head reduce the probability of a household being poor. Households in Bishkek are least likely to be poor, and urban poverty appears to be most likely in Osh, the second largest city, located in the south. Ackland and Falkingham argue that the regional differential may be exacerbated by the slowness of transfers from Bishkek, the capital in the north, to southern jurisdictions such as Djalalabad. The regional dimension supports Howell's decision to focus on Djalalabad and Osh when studying coping strategies.

Simple cross-tabulations from the KMPS show Turkic-headed households to be more likely than Slav-headed households to be below the poverty line, but this ethnic relationship is not supported in the multivariate probit models. In rural areas, all ethnic groups are less likely to be poor than Kyrgyz-headed households, but the negative coefficient is rarely statistically significant, and in urban areas, none of the ethnicity coefficients differ significantly from zero.²² Although the crosstabs reflect widespread perceptions of the ethnic dimension of poverty in Central Asia, the probit results are consistent with the conclusions of Lubin (1984), who found that Slavs in Uzbekistan had higher-wage jobs because they were better educated; Central Asians often chose not to pursue educational opportunities and gravitated to occupations offering opportunities for unofficial income.

A surprising result from the probit models is that, although urban female-headed households are more likely to be poor than urban male-headed households, the same is not true for rural households. The lack of evidence of gender effects in rural areas may be due to inability to identify intra-household allocations of effort and consumption. The evidence on family size is also

large but likely to have been misreported even in the KMPS where 43% of urban and 71% of rural households reported having had access to a private plot of land during the preceding twelve months.

²⁰ The net increases are at the national level and hide regional variations. The two poor pastoral areas included in Howell's 1994 survey recorded high rates of selling livestock (55% of households in one and 79% in the other) in order to buy food, coal, medicine, bus tickets and clothes, especially to enable children to continue attending school.

²¹ The poverty line used is a nutrition-based measure compiled by the World Bank (1995) for seven demographic groups and roughly adjusted for non-food expenditures. Lanjouw (in Falkingham et al., 1997, 61-77) has criticized the published description of the line's construction. Because number and gender effects are built into the poverty line, it is difficult to separate out analytically the impact of family size and composition when using the definition of poor households in World Bank (1995).

²² Pomfret and Anderson (1999a), with other specifications of the probit analysis, identify some ethnic patterns. In Kyrgyz and Uzbek households large numbers of children are associated with poverty, but having a female head is not. In Russian households family size is not a problem, but not having a working age male is.

inconclusive. The relationship between large families and poverty is complex; having more children over six is positively associated with being poor, but having more children under six is not, and in urban households having more adults is associated with a lower probability of being very poor.

The negative relationship between the household head's education level and the probability of being poor is as expected. Other labour market status variables exhibit no clear pattern, even including being out of the labour force due to old age or unemployment. Pensioners were generously treated in the old system, although that began to change during the mid-1990s. Unemployment was still very low in 1993, when many workers were not being paid but few were officially unemployed. A late 1994 labour force survey for Kazakhstan (reported by Klugman and Scott in Falkingham et al., 1997, 118-40) found the newly poor included unemployed, unpaid workers and those suffering from steep falls in real wages. Similar forces were at work in the Kyrgyz Republic, but were still embryonic in autumn 1993, when unemployment was only 6% of the labour force; by the time of the 1996 LSMS unemployment had increased to 20% overall, and to 37.5% for 16-25 year-old males.

Probit analysis of household survey data can help to identify the correlates of poverty and thus provide some guidance to poverty alleviation strategies. Poverty is highest in rural areas, especially those far from the capital. Female-headed households are more likely to be poor than male-headed households, but this relationship is only significant in urban locations and appears to apply particularly to Russian households. Households with a large number of children are more likely to be poor, although this applies particularly to Kyrgyz and Uzbek households. Variations in the education level of the household head are generally not significant below the tertiary level, but having a household head with higher education is negatively related to the probability of being poor. The marginal effects of the explanatory variables (eg. in Pomfret and Anderson 1999b, Table 3) are small, apart from location in Bishkek and higher education; at mean values the marginal effect of residence in Bishkek is -0.25 (ie. reduces by 25% the probability of a household being poor) and of a household head having higher education is -0.14, while no other marginal effect has an absolute value above 0.1.

Other studies have analysed the entire expenditure distribution, avoiding the need to draw a poverty line. Grootaert and Braithwaite (1998) apply ordinary least squares to a reduced form equation with real household expenditure per equivalent adult in 1993 as the dependent variable and various household and environmental characteristics as the independent variables. This model, by imposing constant parameters over the entire distribution, assumes that the underlying structural equations do not differ across income groups. The explanatory power of the OLS equation is low (adjusted $R^2=0.10$), and again the sharpest change in household welfare is implied by moving to the capital (Grootaert and Braithwaite, 1998, 72). Although age and gender effects are believed to be related to poverty, the quantitative studies provide little supporting evidence of such effects in the Kyrgyz Republic in 1993.

Between the 1993 and 1996 surveys poverty levels stabilized, but it is to be expected that the determinants of poverty changed. Education was undervalued in the steady state of Soviet planning where rules of thumb held good and initiative was not desired, but the shocks associated with the dissolution of the USSR created disequilibria, to deal with which education would become more valuable. Pressures on the social security system after independence increase the likelihood of pensioners and large families being poor in 1996.²³ The social and

²³ Pensioners also suffered from the high inflation of 1992-5 and from housing privatization. Imputed income from subsidized housing, including maintenance and utilities, played a major role in reducing inequality in the

economic status of women was widely expected to deteriorate in the Islamic successor states of the former Soviet South, although casual observation suggests that the Kyrgyz Republic has remained a predominantly secular society. The regional incidence of poverty during transition could change in any direction. Liberalization of labour markets and increased labour mobility should reduce regional income variations, but despite large-scale international migration since independence internal migration has been limited.²⁴ There may also be virtuous or vicious circles as better-off regions more vigorously pursue economic change that will stimulate growth, while poorer regions engage in short-term behaviour detrimental to long-term economic growth.²⁵

Anderson and Pomfret (1999) apply quantile regression analysis to the household surveys of 1993 and fall 1996. Quantile regressions avoid the sensitivity to the choice of poverty line inherent in probit analysis and utilize the entire expenditure distribution, without imposing the condition from OLS regression that all income groups have the same underlying structural equations; ie. quantile regressions allow the determinants of expenditure to differ between rich and poor households. The results from the quantile regressions of total expenditures reveal differences in consumption across groups and by quantile that are potentially of importance when policies are developed that may affect a household's standard of living. The results also differ from findings based on a simple division between poor and non-poor households, where the only strong results show negative relationships between poverty and residence in Bishkek and between poverty and the head having a tertiary education.

Anderson and Pomfret (1999) find that region, education and family size are important determinants of household consumption and the incidence of poverty in the Kyrgyz

USSR (Buckley and Gurenko, 1997). Privatization of housing shifted the burden of maintenance on to householders, and the gradual shift towards user-pay systems for heating, hot water and other utilities impinged heavily on poor households (Finkel and Garcia, 1997). After any financial savings had been wiped out by hyperinflation, pensioners were poorly placed to deal with the shift to payment for maintenance and services.

²⁴ Net emigration between 1989 and 1996 was, by World Bank estimates, 370,000 (8.6% of the 1989 population, and the largest proportion of any former Soviet republic), of which 200,000 were Russian (Heleniak, 1997). The Kyrgyz Republic's German population dropped from 102,000 in 1989 to 38,000 by early 1995 (Olcott, 1996, 550). The 1997 *Human Development Report* for the Kyrgyz Republic reports the ethnic composition having changed from 52% Kyrgyz, 22% Russian and 13% Uzbek in 1989 to 60% Kyrgyz, 16% Russian and 14% Uzbek in 1996. The limited internal migration in the Kyrgyz Republic, as in the rest of Central Asia, is usually explained by strong extended kinship networks and culturally prescribed preferences for kin proximity (Buckley, 1998, 72).

²⁵ Howell (1996) reports cases of poverty forcing poor families in rural areas of the south to slaughter or sell livestock which they need for breeding or to cut down fruit trees for firewood. Klugman (forthcoming) cites Asian Development Bank field reports that almost two-thirds of children in the Bel-Adei district of Djalalabad oblast did not attend school in winter 1994 for lack of winter clothing and shoes. Poor parents are under financial pressure to skimp on providing basic school supplies which are no longer free; Klugman reports a decline in real educational expenditure of over 60% between 1990 and 1996 while the number of teachers remained constant, implying a huge squeeze on material supplies. The serious decline in kindergarten places has been more pronounced in rural areas (Jeni Klugman, Sheila Marnie, John Micklewright and Philip O'Keefe in Falkingham et al. (1997), 183-201). On the other hand, the better-off farmers in Chu oblast have pushed agrarian reform fastest; by the end of 1996 three fifths of farms in Chu were individually owned, while in Osh and Djalalabad oblasts restructuring had mainly created agricultural cooperatives (Mudahar, 1998). The cooperatives, often conservatively run by former state farm managers, could inhibit progress in the south, while the northern farmers pursue more dynamic strategies. The mountain regions have a distinctive economic base with emphasis on pastoral activities.

Republic following transition, and also find significant changes in the relative impact of the variables over time, across regions, and among households. Over time regional disparities increased; residence in Bishkek yielded higher returns in 1996 than in 1993, the South replaced the Mountain region as the most depressed region of the country,²⁶ and the north-south gap widened. Because region is so closely linked to ethnicity, these results suggest widening ethnic inequality over time.²⁷ Households at the bottom of the expenditure distribution experience larger regional disparity than other households.

High skill training, particularly at the tertiary level, is a very important factor in household well-being. Anderson and Pomfret (1999) find that, although the marginal return to education fell over time, tertiary education seems to have become a more important determinant of household consumption and poverty in 1996 than in 1993, as returns to lower levels of education fell to zero. There was a sharp decline in the percentage of household heads with tertiary education between 1993 and 1996 particularly in the lower quantiles,²⁸ but education does appear to have a larger impact on expenditures in the lower half of the distribution. The results suggest that households, particularly the poorest, have significantly benefited from having a head with post-secondary training.

Finally, Anderson and Pomfret (1999) find that additional children lower per capita expenditure and significantly increase the probability that a household is poor, and that these negative effects were larger in 1996 than in 1993. By 1996, the number of adults and the elderly are significant predictors of lower household per capita expenditure, although the quantile regressions suggest that pensioners reduce per capita expenditure across the entire income spectrum with smaller effects at the bottom end of the distribution. Neither age nor gender shows up strongly as being associated with poverty either before or, more surprisingly, during the transition. On the other hand, the quantile regression results suggest that the cost of children, measured as foregone household consumption, increased during the transition to a market economy and that the income contributed by elderly and non-elderly adults was less likely to cover their additional consumption in 1996. The pay-off to smaller families was higher in 1996 than in 1993.

The various approaches to poverty and living standards in the Kyrgyz Republic during the transition to a market-oriented economy shed considerable light on the transition process. Most of all, it is a slow process. In the early 1990s the Kyrgyz economy suffered from a huge negative shock and those best able to shelter their households from the shock were residents of the capital city and household heads with tertiary education, ie. a small part of the population incorporating many of the old elite. The strong regional effects in analyses based on 1993 data indicate low levels of internal labour mobility. Applying standard human capital models to the determination of household living standards works much better with 1996 data than with 1993 data,²⁹ but still less well than in developed market economies, suggesting that

²⁶ The greater resilience of pastoral to crop agriculture during transition is also evident in Mongolia and Kazakstan (Pomfret, forthcoming). Moreover, the largest foreign investment project in the Kyrgyz Republic, the Kumtor goldmine, located in Issyk-kul oblast in the Mountain region, had begun to play a significant role in the national economy by 1996 due to construction work, although output only began to flow in 1997.

²⁷ Ethnic variables yielded statistically weak results as in most other analyses, but this may largely reflect the concentration of the Uzbek minority in the south and of the Slav minority in the north.

²⁸ The aggregate decline is related to the large-scale net emigration from the Kyrgyz Republic; emigrants consisted disproportionately of college-educated Slavs and Germans. The differential impact across quantiles probably reflects a sorting effect which would itself be the strongest evidence in support of Schultz's (1975) hypothesis about the value of education for dealing with disequilibria.

²⁹ The pseudo- R^2 in the regressions run by Anderson and Pomfret (1999) is much larger in 1996 (0.347) than in 1993 (0.114); the low 1993 value is similar to the R^2 reported in Grootaert and Braithwaite (1998, 72).

the shift to a functioning market economy has been slow, and almost a decade after the abolition of central planning remains incomplete.

4. Living Standards in Other Central Asian Countries

The Kyrgyz Republic has been the most ambitious of the Central Asian countries in the speed and extent of its transition to a market-oriented economy. This strategy has been associated with a serious decline in living standards and widening of income inequalities, with those most at risk being the rural poor in the south of the country and the less well-educated. Kazakhstan has also been a relatively rapid reformer and has experienced a similar decline in real output, but because of its higher initial income levels the consequences for living standards and the increase in poverty have been less severe than in the Kyrgyz Republic. Uzbekistan has adopted a more gradual transition strategy than the Kyrgyz Republic or Kazakhstan and appears to have experienced a smaller decline in living standards. The experiences of Turkmenistan and Tajikistan are more difficult to interpret in a comparative setting, because for most of the post-independence era the former has attempted to maintain the economic status quo while the latter has been disrupted by armed conflict.

Evidence on poverty and inequality in Central Asia is difficult to assess for countries other than the Kyrgyz Republic due to the poorer raw data. Kazakhstan and Uzbekistan have been relatively extensively studied but the basic data are much poorer than in the Kyrgyz Republic with continuing reliance on the HBS, apart from the 1996 LSMS in Kazakhstan and a 1995 household survey of three oblasts in Uzbekistan conducted under the auspices of the European University Institute and the University of Essex.³⁰ For Turkmenistan household data are significantly poorer, and for Tajikistan due to the civil unrest they are virtually non-existent; in both countries, however, the limited evidence points to increasingly severe poverty (Falkingham, 1999, 19).

The most quoted comparative figures on inequality and poverty are those assembled by Milanovic (1998). Milanovic has done heroic work in bringing together household survey data from most transition economies on a roughly comparable basis. For Central Asia he reports estimates for all countries except Tajikistan (Table 3a). The striking feature is the huge increase in poverty using a common measuring rod of I\$120 per month; for the four countries together the poverty headcount increased from 15 percent of the population in 1987/8 to 66 percent in 1993/5, representing an increase from 6.5 million to 30.7 million people. Inequality also increased during the early years of transition. According to Milanovic, the Kyrgyz Republic suffered the largest changes in both poverty and inequality. The ranking is plausible given the initial conditions and rapid reform in the Kyrgyz Republic, but the absolute numbers in Table 3a are of dubious value given that all data apart from the Kyrgyz 1993 data are from the HBS. The three non-Kyrgyz observations for 1993/5 are remarkably similar with respect to both poverty rates and inequality, which is surprising in view of the diverging policies of Kazakhstan, Turkmenistan and Uzbekistan.³¹

Kazakhstan was less vulnerable than the other four new independent Central Asian countries to increased poverty because of its higher initial living standards. The National Statistics Committee paints a much less negative picture from HBS data than that provided by Milanovic's data in Table 3a; using a poverty line intended to match in real terms the 75 rubles per month in

³⁰ The EESU data are described in Coudouel (1998, 78-115).

³¹ The adjustments in brackets suggest that changes in assumptions can make big differences to the calculated incidence of poverty. Such doubts are also relevant for Milanovic's Gini coefficients, which differ in detail from other Ginis calculated from similar sources, reflecting the sensitivity of Gini coefficients to the method of calculation from household data.

1989 used in Table 1, the poverty rate increased from 15.5% in 1989 to 22.6% in 1995, although the rate was higher in rural areas (35% in 1995) and other quality of life indicators had also declined during the first half of the 1990s (Akanov and Suzhikova, 1998, 235-6). Since independence birth rates have declined, although this continues a trend from the 1980s, and death rates have risen.³² Deteriorating health standards are also evidenced in anthropometric data, anaemia levels and so forth, but many of these indicators reflect pre-existing social and cultural values or arise from environmental consequences of Soviet policies.³³ Without wishing to down-play the severe health problems in many part of Kazakhstan, the mortality situation is far less severe than in, say, Russia, and direct links between transition and increased morbidity are uncertain.

The Kazakhstan government is, however, widely believed to have failed to provide the framework of good governance necessary for a successful market economy. Moreover, widening inequality (Table 3)³⁴ and severe reductions in public spending on education and health undermine future growth prospects.³⁵ A special problem in Kazakhstan is the phenomenon of one company towns, usually related to minerals and processing activities, whose economic collapse after the dissolution of the USSR led to severe localized deprivation.

Uzbekistan has pursued a more gradual transition strategy, which can be directly linked to the smaller fall in GDP and less severe inequality than in the Kyrgyz Republic (Falkingham et al., 1997, 114). Milanovic's Gini coefficient of 0.28 in 1987-8 was the highest among the eighteen countries in his study, while the 0.33 in 1993-5 is higher lower than for any former Soviet republic except Latvia. Table 3a points to an increase in inequality in Uzbekistan during the first half of the 1990s which was much lower than in neighbouring countries. Milanovic's poverty measures indicate an increase in the headcount measure from 24% in 1987-8 to 63% in 1993-5, which is severe, but smaller than the increase in the other Central Asian countries - from 5% to 65% in Kazakhstan, from 12% to 88% in the Kyrgyz Republic and from 12% to 61% in Turkmenistan.

Alternative poverty measures for Uzbekistan have been estimated by the Centre on Economic Research in Tashkent using HBS data. With a nutrition-based poverty line, CER (1997) reports a crude headcount measure of 58% in December 1996. Home production is, however, negatively correlated with money income and inclusion of home production in household resources, reduces the poverty rate to 46%. Adjustment for household size and composition, because larger families have lower per capita consumption but benefit from scale economies and because children consume less than adults, reduces the poverty count to 22%. The CER numbers are lower than those of Milanovic, which reflects primarily a lower poverty line, but the adjustments are difficult to assess. Marnie and Micklewright (1997) discounted the importance of scale economies before transition, but since housing privatization their

³² Akanov and Suzhikova (1998, 238) quote Asian Development Bank data on crude birth and death rates per thousand population: the CBR fell from 24.9 in 1985 to 21.0 in 1991 and 16.7 in 1995, while the CDR increased from 8.0 in 1985 and 1991 to 10.2 in 1995.

³³ Ismail and Hill (in Falkingham et al., 1997, 141-60) report on nutritional status, primarily using 1994 survey data from the Kzyl-Orda area. They find some negative impacts of transition (eg. through changes in child care behaviour), but conclude that the links between socioeconomic indicators and nutritional status are not as strong in Kazakhstan as those found in other regions of the world.

³⁴ The expenditure Gini from the 1996 LSMS survey is 0.35, which is less than the comparable 0.46 from the Kyrgyz Republic's 1996 LSMS. Income-based Kyrgyz Ginis are substantially higher than expenditure Ginis, so that the 0.35 figure suggests that the HBS-based Gini of 0.33 in Table 3a is far too low. Wealth inequality has widened more than income or expenditure inequality after privatization; in the rural areas this has been especially apparent as entrepreneurs who gained control over key resources such as pastures or hay fields have been accumulating an ever increasing share of the livestock.

³⁵ The problem was exacerbated by the priority given to wage payments, which in the health sector crowded out spending on drugs and medical equipment almost to zero (Akanov and Suzhikova, 1998, 236-7).

argument holds to a lesser degree and it also seems plausible that home production has become relatively more important since independence, but how much to allow for these two factors is unclear.³⁶

Despite these reservations about the quantitative results, it seems incontrovertible that there have been shifts in the income distribution and increases in poverty during Uzbekistan's transition. Although economic change has been limited by gradual policies and a small decline in output, the forces for increased income disparities inherent in a market economy are present in Uzbekistan, as in all transition economies. In sum, the direction if not the extent of distributional changes is predictable. The relatively stable output-mix and heavy government hand on the economy suggest that the emergence of *nouveaux riches* in the private sector may be a lesser phenomenon in Uzbekistan than in other transition economies. The new poor may also be less numerous and less suddenly impoverished than elsewhere. Pomfret and Anderson (1997) review the mechanisms by which the government has restricted the extent of welfare changes and in particular how prudent government policies have softened the decline in key social services and provided an effective social safety net.

Who have been the winners and losers? Coudouel's analysis of data from the EESU 1995 survey of three oblasts reveals patterns common to many transition economies (Coudouel, 1998; summarized in CER, 1997, 21-5). Large families have lower per capita incomes and expenditures; households with seven members or more account for 30% of poor households and half of the individuals in poverty. As elsewhere in the former USSR, gender and age are not strong determinants of poverty in the early transition years. There is an ethnic dimension to poverty, at least based on simple cross-tabulations; Central Asians make up 79% of the population and 92% of those in poverty, while Slavs make up 16% of the population and only 4% of the poor. Regional differences between the three oblasts are large, ranging from a 10% poverty rate in Tashkent to 60% in Karakalpakstan. Rural-urban differences are large, but not robust when output measures are used; other measures suggest large rural-urban differences in living standards, eg. washing machine ownership is highest in Tashkent and higher in other urban locations than in rural households.³⁷ Poverty among the elderly remains limited in Uzbekistan; old people still receive some protection through the pension system and, especially when they are living in an extended family household, old people are not a major group in poverty, although single pensioners in urban areas are emerging as a group in poverty.

Education has played a role in Uzbekistan as in other transition economies, with tertiary education being a significant determinant of individual economic performance. While the returns to education have declined during the 1990s, individuals with tertiary qualifications have moved up the income distribution; Klugman (1998) describes this as a cohort effect, and it is similar to the sorting effect identified from more extensive data in the Kyrgyz Republic (Anderson and Pomfret, 1999). Klugman (1998, 298 and 203-33) estimates that the returns to education are higher for women than for men, although women's subsequent returns to experience in the labour force are significantly reduced by breaks in employment.

³⁶Housing privatization is especially difficult to assess in Uzbekistan because rural housing was privately owned before independence and utilities remain free or heavily subsidized, so that the change in costs actually born by households as a result of transition is unclear.

³⁷ In Tashkent 71% of households have washing machines. In Fergana oblast, 53% of urban households and 22% of rural households have washing machines. In Karakalpakstan, 29% of urban households and 14% of rural households have washing machines (CER, 1997, 24).

Ethnic effects continue to exist. Smith (1995) on the basis of a small survey in Tashkent reported that Uzbeks had lower educational qualifications than Russians, and had lower average incomes. Holding sex, age, education and occupation constant, Smith found that being Russian had a significant positive effect on income. This is consistent with the results of Lubin's work conducted fifteen years earlier. Klugman (1998, 281) found similar results on the basis of her larger sample covering three oblasts in 1995. Klugman explains the persistence of ethnic effects in the face of independence and large Slavic emigration by self-selection as less well-paid Slavs would leave first, by the earnings premium capturing skills not measured in the formal modelling, and by the emigration being based on expectations rather than on current discrimination or falling relative incomes for Slavs.

In part, the relative success in protecting those most threatened by transition may be due to policy innovations such as decentralization of social assistance through the *mahallah* system (analysed in greater depth in the paper by Coudouel, Micklewright and Marnie in this Special Issue) or to private transfers (Coudouel et al., in Falkingham et al., 1997, 202-20), but quantitative assessments of these relationships is difficult. What can be more readily documented is that Uzbekistan has been the most successful of the new independent states in Central Asia in protecting the level of government spending and minimizing cuts in health and education spending, which could augur well for the future. In Uzbekistan, however, the government still keeps a heavy hand on the allocative mechanism which discourages entrepreneurship and, especially, the creation of new private enterprises.

Turkmenistan is the least reformed of the Central Asian economies in transition. After independence a highly personalized regime, courted public support by maintaining an extensive array of free or highly subsidized consumption goods and services. These, and some high prestige construction projects (eg. the presidential palace and the airport) were funded out of the earnings from natural gas exports, whose price in the USSR had been kept far below world prices (see the final column of Table 2). The gas could, however, only be sold to a limited number of countries which were linked by the Soviet pipeline system. Payments were difficult to enforce and Turkmenistan eventually cut off supplies in the first half of 1997. The decline in GDP in 1997 was exacerbated by a poor 1996 cotton harvest.³⁸ In this context, Turkmenistan moved to a more serious economic reform. Prices of important consumer goods such as meat, vegetable oil, tea and sugar were gradually freed during 1997, and price subsidies on these goods were largely removed in January 1998, leaving subsidies only on bread and flour, utilities and communal services, petrol, transportation and building materials.

The impact of Turkmenistan's economic policies on living standards is difficult to assess with any accuracy because reliable data are hard to find.³⁹ Until 1996 the absence of reform possibly helped to reduce the negative impact on living standards by moderating both the decline in GDP and the increase in inequality, but this strategy stored up future problems which became apparent in 1997. Thus, Turkmenistan's GDP had fallen by less than that of Kazakstan and the Kyrgyz Republic between 1989 and 1996, but whereas the latter two countries were enjoying some economic recovery by 1996-9 Turkmenistan's GDP continued to decline (Table 2). The

³⁸ In 1993 natural gas and cotton had accounted for three fifths of Turkmenistan's GDP (Turkmenistan: Recent Economic Developments, *IMF Staff Country Report No.98/81*, International Monetary Fund, Washington DC, August 1998, 8).

³⁹ The poor quality of Turkmenistan's statistics has frequently been noted. The World Bank stopped reporting the country's national accounts data in the mid 1990s, and the International Monetary Fund has also warned of the poor underlying data (Turkmenistan: Recent Economic Developments, *IMF Staff Country Report No.98/81*, International Monetary Fund, Washington DC, August 1998, 15).

conservative economic policy with generous provisions for basic needs helped to avoid the rapid increase in poverty seen in the Kyrgyz Republic in the early 1990s (Table 3b), but average wages were low (Table 3c) and living standards have further deteriorated, possibly rapidly, in the second half of the 1990s.

Living standards in Tajikistan during the 1990s are also difficult to assess, mainly due to the ongoing civil strife. The government has tried to implement economic reforms, especially in 1996 and since June 1997, but its success has been mixed, in part because the central government has not controlled all of the national territory. The output performance since independence has been the worst in Central Asia, and the demands of war finance have constantly disrupted attempts at macroeconomic stabilization. A 1995-6 survey by CARE International of 1848 households at risk (reported in the UNDP's *Tajikistan Human Development Report 1997*, 51-2) painted a grim picture of almost universal poverty and malnutrition. The civil war has created 20,000 widows and over 55,000 orphans; female-headed households appear to be more likely to be poor, and there is an obvious problem of increased child labour (visible, for example, in the car windscreen washers on the streets of the capital city, Dushanbe) whose absence from school has repercussions for human capital formation and future living standards.

A few generalizations about the region can be made. Everywhere, transition was accompanied by an initial decline in living standards, as GDP fell and inequality increased. There is some evidence of a U-shaped pattern whose depth and length before the trough is passed are related to the speed and intensity of reform. As the transition process progresses the determinants of living standards evolve, in line with expectations from established market economies. Human capital becomes a more important determinant of living standards, although the quantitative evidence for Central Asia is so far only strong with respect to tertiary education.⁴⁰ There is evidence that the distribution of human capital is becoming less egalitarian with changes in the delivery of education and healthcare. Particularly worrying for long-term growth is the drop in kindergarten enrolments (in the Kyrgyz Republic from about a third of the age group in 1990 to below 10% in 1994, and in Kazakhstan from half to less than 30% in the same period), as state enterprises and collective farms came under pressure to impose charges or reduce quality or divest themselves of kindergartens (Klugman, Marnie, Micklewright and O'Keefe in Falkingham et al., 1997, 183-201). Such asset inequality reinforces the likelihood that under-privileged children will grow up to be poor and reduces the prospects for long-term growth.

5. Implications for the Welfare System

In the context of pre-existing universal entitlements and poor administrative capacity for targeting welfare programs, a first step for transition economies could be to use easily measurable indicators of poverty, rather than income, to tag deserving recipients (Akerlof, 1978; Barr, forthcoming). Where indicators are highly correlated with poverty and easily observable, tagging is accurate and administratively undemanding and, as long as the indicator is exogenous, disincentive effects are weakened. Thus, targeting age or number of children could be an appropriate strategy, although simple indicators may be flawed insofar as they fail to take into account household circumstances, eg. single pensioners may be more at risk than old people in extended families. Decentralization could also help if tags can vary geographically, and in general local authorities may be more adept at identifying the poor, but distribution across regions is difficult.

The analysis of Kyrgyz households' income reported in section 3 suggests that region and number of children are easy tagging criteria. Thus, poverty relief should be targeted on the

⁴⁰ A similar conclusion is reached by Brainerd (1998, 1105), although her data set on wages of individuals appears inferior to the Kyrgyz Republic living standards data used in Section 3 above.

southern parts of the country. Similar regional patterns appear in other Central Asian countries,⁴¹ or in the company town phenomenon in Kazakhstan. Targeting poor regions is a way to reach those most hurt by transition, but it risks discouraging the labour mobility which must emerge as part of a healthier market economy. The Kyrgyz data also reveal a dynamic problem, illustrated by the mountain region's displacement in the mid-1990s by the south as the poorest part of the country; poverty relief targeted at mountain pastoralists in the early years of independence may have been inappropriate as such groups were better placed to weather the changing conditions than the southern sedentary farmers. Any targeting based on analysis of past household survey data risks being outdated. One message of the regional results may be that the appropriate policy response should focus less on targeting poor regions than on improving mobility through investment in transport infrastructure, information spreading about jobs, creation of a well-functioning housing market, and so forth.

A general finding about formerly centrally planned economies is that the (private) cost of large families, and especially the cost of having many children, has increased during the transition to a more market-oriented system (Cornia, 1995; Milanovic, 1998, 101-4). However, in their empirical study of seven transition economies, including Kazakhstan and the Kyrgyz Republic, Lanjouw et al. (1998) show that the relative importance of the number of children and of pensioners is highly sensitive to assumptions about economies of scale in household size. During transition these scale economies have increased with housing privatization and diminishing public support for maintenance and utilities, although some countervailing forces (eg. the reduced provision of kindergarten services) have increased the marginal cost of children. Greater economies of scale make it less likely that additional dependents will reduce household living standards significantly, but economies of scale in the household increase the relative deprivation of pensioners who live alone or in small households.⁴² The treatment of economies of scale in the household is rather opaque in the empirical studies cited in the previous two sections, so that although the balance of the evidence leans towards large numbers of children being the major correlate of poverty in Central Asia a question mark remains over the robustness of this conclusion.

The Kyrgyz data suggest that age in itself is a poor tagging variable, even though some groups of old people, such as single women living in the capital are high-risk groups when it comes to poverty. This is a classic example of the need to recognize household circumstances rather than simply tagging age. If household circumstances are recognized, however, perverse incentives may be created, because key attributes are not exogenous. For example, if pensioners living alone are targeted for special assistance, old people may be encouraged to leave the more caring environment of the extended family in response to the financial incentives to be a single pensioner.⁴³

6. Conclusions

All of the new independent Central Asian countries suffered a large negative economic shock with the end of central planning and the dissolution of the USSR. Traditional supply chains and guarantees of economic security suddenly became unreliable, and national expenditure dropped sharply as intra-USSR transfers dried up between 1991 and 1993 and real GDP fell. The extent of the shock varied from country to country, but in none of the five countries had real GDP returned to its 1989 level by the end of the 1990s.

⁴¹ For evidence on Uzbekistan see Falkingham et al. (1997, 100-17).

⁴² Female-headed households also appear much more likely to be among the poorest when significant scale economies are assumed, because female-headed households are typically small.

⁴³ Child benefits could also create perverse incentives if parents had more children in order to receive child support payments, but there is a longer time lag and the decision to bring an extra child into the household is less readily reversible than moving an elderly person out of the household.

Living standards declined, but changes in average living standard were accompanied everywhere by increasing inequality and shifts in households' positions within the distribution. The evidence is most plentiful for the Kyrgyz Republic, which moved most rapidly to establish a market-oriented economy and experienced a sharp increase in inequality and in the number of people in poverty by 1993. During those initial years, however, the determinants of households' place in the income distribution appear to have changed little, with households in the capital city and with well-educated heads faring best; the only positive correlates of poverty reflected pre-existing rural-urban and regional distinctions. Between 1993 and 1996 the aggregate picture stabilized somewhat, but the determinants of household living standards changed, with the variables entering in the human capital model usually fitted to market economies' earnings distributions assuming greater explanatory power. Tertiary education, in particular, became more important as a positive determinant of household expenditures, while the number of dependents (especially children) became increasingly closely related, negatively, to a household's position in the distribution.

The data are less satisfactory for the other Central Asian countries but similar trends appear to be at work. Kazakhstan has followed a similar strategy to the Kyrgyz Republic, and living standards appear to have followed a similar path, although the incidence of poverty is much less in view of the higher initial living standards. Uzbekistan has pursued a more gradual transition strategy which seem to have mitigated the increase in inequality and poverty, but many of the changes in the determinants of households' place in the distribution are similar to those observed in the Kyrgyz Republic. Turkmenistan resisted economic change, at least until the disastrous economic performance of 1997-8, and although living standards declined their determinants may have changed little. Tajikistan has been disrupted by civil war.

The main implications for the welfare system are that a social safety net needs to be erected to protect those hurt by transition, but the old universal policies are poorly suited to the new environment. In view of the limited administrative capacity in the new independent states, detailed means testing is scarcely feasible and simpler targeting methods are needed. The evidence on living standards suggests that a prime target for assistance should be household with many dependents, especially children and possibly the elderly, although, especially with the elderly, simple tagging may lead to support going to the non-poor or lead to perverse incentive effects. Some combination of tagging and local administration may be an appropriate approach to this dilemma. Given the importance of human capital formation, it may also be a most effective means of assisting families with many children for the state to subsidize education and health-care for children.

**Table 1: Income per head, income distribution and poverty
Republics of the USSR 1989/90**

	Population (million) mid-1990	Per cap GNP^a (1990)	Gini coeff (1989)	Poverty (% of pop)^b (1989)
USSR	289.3	2870	0.289	11.1
Kazak	16.8	2600	0.289	15.5
Kyrgyz	4.4	1570	0.287	32.9
Tajik	5.3	1130	0.308	51.2
Turkmen	3.7	1690	0.307	35.0
Uzbek	20.5	1340	0.304	43.6
Armenia	3.3	2380	0.259	14.3
Azerbaijan	7.2	1640	0.328	33.6
Georgia	5.5	2120	0.292	14.3
Belarus	10.3	3110	0.238	3.3
Moldova	4.4	2390	0.258	11.8
Russia	148.3	3430	0.278	5.0
Ukraine	51.9	2500	0.235	6.0
Estonia	1.6	4170	0.299	1.9
Latvia	2.7	3590	0.274	2.4
Lithuania	3.7	3110	0.278	2.3

Note: (a) GNP per capita in US dollars computed by the World Bank's synthetic *Atlas* method.
(b) poverty = individuals in households with gross per capita income less than 75 rubles.

Sources: columns 1-2, World Bank (1992, 3-4); columns 3-4, Atkinson and Micklewright (1992, Table U13) - based on Goskomstat data (HBS).

**Table 2: Performance and Initial Conditions Indicators
USSR in 1989 and Successor States in 1996 and 1999**

	Real GDP (as % of 1989)		Inflation ^a	Terms of trade ^b
	1996	1999	(1996)	
Kazakstan	45	59	29	+19
Kyrgyz Rep.	52	62	23	+1
Tajikistan	37	43	100	-7
Turkmenistan	57	53	130	+50
Uzbekistan	84	89	100	-3
Armenia	39	42	9	-24
Azerbaijan	38	46	12	-7
Georgia	31	33	9	-21
Belarus	63	75	102	-20
Moldova	35	30	11	-38
Russia	51	53	17	+79
Ukraine	42	35	30	-18
Estonia	69	79	12	-32
Latvia	52	60	10	-24
Lithuania	42	65	13	-31

Note: (a) annual increase in consumer price index (end of year)

(b) impact on terms of trade of moving to world prices, calculated at 105-sector level of aggregation using 1990 weights.

Sources: European Bank for Reconstruction and Development *Transition Report Update, April 1997*(pages 7 and 9), and *Transition Report 1999* (Table 1.1); Tarr (1994).

Table 3: Poverty and Inequality in Central Asia

(a) Milanovic Data for 1987/8 and 1993/5

	Poverty headcount (%)		Gini coefficient (income)	
	1987/8	1993/5	1987/8	1993/5
Kazakstan	5	65 (62)	26	33
Kyrgyz Republic	12	88 (86)	26	55
Turkmenistan	12	61 (57)	26	36
Uzbekistan	24	63 (39)	28	33

Source: Milanovic (1998), pages 41, 68-9 and 75.

Notes: data are household income taken from HBS, apart from Kyrgyz 1993 (KPMS); the poverty line is \$120 per month in “international” (purchasing power parity) dollars at 1990 prices, which was equal to 54 rubles in 1987/8; figures in brackets are adjusted to allow for differences between HBS income levels and income levels from macroeconomic data sources; Turkmenistan’s Gini coefficient is from 1989 not 1987/8.

(b) Share of population living on less than \$1 per day, 1993

	Poverty share
Kazakstan	<2%
Kyrgyz Republic	18.9%
Turkmenistan	4.9%

Source: *World Development Indicators 1998* (World Bank, Washington DC, 1998), pages 65-6.

Notes: the poverty line is \$1 per day at purchasing power parity prices; figures for Tajikistan and Uzbekistan are not reported.

(c) Average monthly wage in US dollars, 1997

	Average wage
Kazakstan	\$120
Kyrgyz Republic	\$40
Tajikistan	\$6
Turkmenistan	\$35
Uzbekistan	\$53

Source: Turkmenistan: Recent Economic Developments, *IMF Staff Country Report No.98/81* (International Monetary Fund, Washington DC, August 1998), page 19; Republic of Tajikistan: Recent Economic Developments, *IMF Staff Country Report No.98/16* (International Monetary Fund, Washington DC, February 1998), page 21.

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