



OECD DEVELOPMENT CENTRE

Working Paper No. 212

(Formerly Technical Paper No. 212)

CENTRAL ASIA SINCE 1991:
THE EXPERIENCE
OF THE NEW INDEPENDENT STATES

by

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Research programme on:
Market Access, Capacity Building and Competitiveness



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PREFACE

Plotting the transition of poor developing countries towards market economies is instructive in understanding the relationship between resource management, good governance, growth and development. The Central Asian former Soviet republics thus present an opportunity to observe the transition. The five countries in question present an additional interest in that they have each chosen a different path towards development and towards transition, particularly in their political regimes. Moreover, they represent a counter current in the sense that, whereas, elsewhere, regionalism and regional alliances are seen as key to efficient participation in the world economy, these five countries are becoming more differentiated in a context of intra-regional tension.

This paper was written while the author was spending his second period as a visiting scholar at the Development Centre. Aware of the Centre's interest in the transition issue, especially as it pertains to the poorer countries, Richard Pomfret brings his particular expertise in Central Asia to bear on this major topic. In so doing, he is following in a line of studies written for the Centre under the general title of *The Economics and Politics of the Transition to an Open Market Economy*, completed in 2001. This paper complements that series.

Tackling the politico-economic challenges associated with transition is essential, not only to an understanding of the dynamics at work in the process, but also to devise the most efficient and least costly means of making that transition. In poorer countries, the problems are magnified, and even more so in resource-poor countries. The conclusions reached in this paper, insofar as they relate to the political and economic choices made by the leadership of the five countries under review, have an important bearing on the options available to countries in similar situations. In particular, they will impact on the capacity of governments to influence the success or failure of the transition process and, with it, the potential for development.

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29 July 2003

RÉSUMÉ

Les cinq ex-Républiques soviétiques sont devenues des États distincts, dotés de régimes politiques et économiques différents, et dont la croissance s'effectue dans des directions et à des rythmes également différents. En conséquence, la région a perdu en cohérence et le développement économique est freiné par des troubles politiques internes et régionaux. La pauvreté s'est accrue dans des proportions considérables et les problèmes de gouvernance empêchent l'exploitation efficace des ressources naturelles dans certains pays. La transition vers l'économie de marché a toutefois bien avancé, même si les marchés eux-mêmes sont imparfaits. L'avenir à long terme de la région peut donc être envisagé avec une certaine confiance.

SUMMARY

The five former Soviet republics have become separate states, developing at different rates and in different directions, and with different political and economic regimes. As a result, the cohesion of the region has broken down and economic development is hampered by internal and regional political troubles. Poverty has risen dramatically and bad governance is inhibiting efficient exploitation of natural resources in some countries. The transition to market economies, however, has been largely completed, even if the markets themselves are imperfect. This raises hopes for the long-term future of the region.

EXECUTIVE SUMMARY

This paper analyses the economic experience of the five Central Asian countries which became independent following the dissolution of the Soviet Union in December 1991. The countries contain about 56 million people: 25 million in Uzbekistan, 15 million in Kazakhstan (which has a larger GDP than Uzbekistan), and 5-6 million each in the Kyrgyz Republic, Tajikistan and Turkmenistan. The importance of the region was accentuated in the early 21st century, with fear of political instability following the events of September 2001 and regime change in Afghanistan, and with increasing oil prices and concerns about future oil supplies. Kazakhstan has large oil reserves, augmented by recent discoveries, and the Caspian Basin has become a centre of interest for oil companies with growing concerns about stability in the Gulf region and in Venezuela. Turkmenistan with the fourth largest natural gas reserves in the world is also a potential important energy supplier.

Most of Central Asia was incorporated into the Russian Empire in the 1860s and 1870s, and was subsequently developed as a supplier of cotton to mills in Russia. In the Soviet era, the Central Asian republics were open economies, supplying raw materials (cotton, oil, gas and minerals) to the rest of the USSR, but insulated from the global economy. The Soviet economy was planned as a single unit, in which republics' borders mattered little and links from Central Asia were overwhelmingly to the north. Other initial conditions in 1991 included the lowest incomes in the USSR (the Kyrgyz, Tajik, Turkmen and Uzbek republics, together with Azerbaijan, had the highest poverty rates), but relatively equal income distribution and high social indicators such as literacy rates or life expectancy.

The dissolution of the USSR was unexpected in Central Asia and the new independent states were unprepared. Apart from the difficult process of building a nation state, the new governments faced three large and interconnected negative economic shocks. The end of central planning in the late 1980s led to a transitional recession, as in Eastern Europe. The dissolution of the USSR exacerbated the recession as the new national borders disrupted demand and supply links inherited from the integrated Soviet economy. The high inflation of 1999 was turned into hyperinflation in 1992 because of the inappropriate institutions of the rouble zone.

In this difficult situation, the five countries moved at differing speeds to stabilise their economies and establish market-based systems. The Kyrgyz Republic moved fastest, bringing annual inflation below 50 per cent in 1995, and also introduced the most liberal reforms, reflected in 1998 in it becoming the first Soviet successor state to join the World Trade Organization. Kazakhstan was initially also a rapid reformer, but the process stalled in the mid-1990s, as large-scale privatisation was characterised by insiders and other well-connected people gaining the lion's share of the most valuable assets. Uzbekistan was a more gradual reformer, completing small-scale privatisation

and housing, but retaining state orders for key agricultural products and delaying large-scale privatisation. In October 1996, Uzbekistan took a backward step, introducing foreign exchange controls. Turkmenistan has also had foreign exchange controls since 1998, but in the context of minimal economic reform and a personalised government, which retains tight political and economic control. Tajikistan experienced civil war for much of the 1990s and, even since the 1997 peace agreement, the government has not exercised full control over the national territory.

Macroeconomic performance since independence has been disappointing, but with great variation. Kazakhstan and the Kyrgyz Republic both experienced deep recessions in the first half of the 1990s, recovered slightly in 1995-97, before being hit by the 1998 Russian crisis. Since 2000, Kazakhstan's economy has been growing rapidly, led by exports stimulated by currency depreciation and, especially, by booming oil revenues. Turkmenistan had a slower initial decline, but the recession continued for longer and went deeper; despite official data showing rapid growth since 1999, the economy does not appear to be in good health. Tajikistan experienced the biggest decline in incomes and even with some recovery since 1997, living standards have fallen to levels associated with the least-developed countries.

The biggest puzzle in the former Soviet Union is Uzbekistan, whose transitional recession was relatively shallow and whose economic performance (measured by real GDP) has been the best of all Soviet successor states. The Uzbekistan economy has been well-managed, in the narrow sense of, for example, maintaining infrastructure, collecting taxes and keeping up expenditure on education and social security. The economy may have performed even better with better policies, but slow reform plus good management has produced reasonable outcomes.

Poor output performance has been accompanied by increased inequality in the new market-based economies of Central Asia, and poverty has risen. This has been especially wrenching for people who were living in a superpower a dozen years ago and were unaccustomed to poverty. Increased poverty has not been simply a matter of everybody becoming poorer. There have been large movements in the income distribution. Survey evidence indicates three very clear patterns. Large families, especially families with many children, have been the most vulnerable. Pensioners have had a less negative impact than children on household living standards, implying that the collapse of public services has been more harmful to parents than to the elderly. Secondly, households with college-educated heads are better off than otherwise similar households whose heads did not attend college. This educational advantage does not apply to vocational training, which suggests that general-purpose education better prepared people to deal with the huge shocks of the early 1990s and to identify new opportunities. Thirdly, even allowing for a large number of household characteristics, location is an important independent determinant of living standards. This is not just a rural-urban divide. Households in some regions, e.g. the northern parts of Kazakhstan or the Kyrgyz Republic, are significantly better off than similar households elsewhere in the country, implying that national labour markets have not yet developed. Two implications are that transition has been slow and that regional inequality could fuel ethnic grievances.

With independence, the five countries have had to establish international economic policies. There has been a huge gap between rhetoric and reality. A large number of regional arrangements has been agreed upon — the CIS and the Eurasian Union within the former Soviet Union, ECO with southern neighbours, SCO includes China, and various groups such as SACO are restricted to Central Asia. None of these regional arrangements has had much economic impact, and trade has been on a multilateral basis. This is beneficial insofar as the countries have not become tied into trade-diverting regionalism. On the other hand, there is pressing need for regional co-operation on water and energy issues and to facilitate intraregional and transit trade.

Events in 2001-02 brought the region into greater prominence and the expectation among some observers was that increased inflows of economic and military aid into the frontline states bordering Afghanistan and of direct foreign investment into the energy-rich countries would kick-start the Central Asian economies. As it turned out, the main developments in 2002 were domestic, as incumbent presidents faced outbreaks of dissent or personal attacks. Perhaps more ominously, intra-state tensions increased, with border disputes leading to violence in the Ferghana Valley. Domestic political situations and regional peace will be critical determinants of economic performance in the second decade since independence.

In conclusion, it is important to recognise the longer-term developments that have become clearer after a decade of independence. The Central Asian countries are now market-based economies, although specifics such as the degree of government intervention and the national institutions are diverging. The transition from central planning has been a difficult process, especially because it was unanticipated and people were unprepared for the awful poverty that struck many regions, and transition has been slow and incomplete. Participation in the global economy has been as primary product exporters and, although substantial market diversification has occurred, commodity diversification remains to be achieved. The economies have become more different from one another to the extent that, despite many initial similarities in 1991, the five countries must for many purposes now be treated as separate entities rather than as a single region. Tajikistan and the Kyrgyz Republic stand out as disadvantaged land-locked countries, with limited economic prospects and many of the problems of low-income countries. Turkmenistan is potentially energy-rich, but hamstrung until the regime changes. Kazakhstan and Uzbekistan, in different ways, have the best economic prospects for the next decade.

I. INTRODUCTION

The five new independent states in Central Asia have had a dramatic economic history. From being part of one of the two superpowers and believing themselves to be living in an economically developed country, their citizens have suffered traumatic declines in living standards, increased economic uncertainty, and growing inequality and poverty. By 2000, Tajikistan with a national income per capita of \$180 was poorer than most of sub-Saharan Africa or the poorest countries of Asia¹.

During the 1990s, this dramatic story was followed only by a few outside observers, but after the events of September 2001 and the overthrow of the Taliban regime in neighbouring Afghanistan, Central Asia has been thrust into the world's consciousness. Moreover, rising oil prices and uncertainty about oil supplies from the Middle East and Venezuela have focused attention on other potential energy suppliers. Exploitation of the Caspian Basin has been hampered by failure to construct new pipelines to supplement existing routes through Russia, but recent reports suggest that Kazakhstan could become a major oil exporter².

This paper examines the nature of the countries' economic development since the dissolution of the USSR in December 1991 and attempts to forecast potential scenarios. Following a brief review of the historical background and an overview of the five countries' macroeconomic performance during the period 1991-2001, sections IV and V analyse their post-independence economic development in greater detail. Despite the similarities in initial conditions, national economic policies have differed substantially since independence. Economic performance has also differed markedly, and section IV attempts to explain differences in macroeconomic outcomes. Although all of the countries experienced declining incomes and increased inequality after independence, there was substantial movement within the income distribution and section V uses microeconomic data to identify the characteristics of winners and losers from the shift to more market-oriented economies. All five countries specialise in primary products and have open economies. Section VI traces developments in the countries' international economic relations, focusing on the choice between various regional options and multilateralism. Section VII examines the situation since September 2001, when Central Asia assumed a higher profile on the world stage. The final section draws conclusions.

II. BACKGROUND

The five Central Asian republics were, with Azerbaijan, the poorest Soviet republics (Table 1) and they all played a similar role in the Soviet economy as producers of primary products, mainly, cotton, energy products and minerals. The Central Asian countries' historical and cultural backgrounds have many similarities, although a distinction is sometimes made between the nomadic heritage of the Kazakhs and the Kyrgyz and the more sedentary history of the region covered by Uzbekistan and neighbouring parts of Tajikistan and the Kyrgyz Republic. For example, the influence of Islam is stronger in the latter areas and European cultural influence is weaker than in Kazakhstan or the northern part of the Kyrgyz Republic.

The territory of the five Central Asian nations was absorbed into the Russian Empire in the 18th and 19th centuries. During both the Tsarist and Soviet eras, the Central Asian region was effectively treated as a single economic unit. The southern area became specialised in cotton production after the 1860s, and subsequent railway construction integrated the region into the Russian imperial economy. After the 1917 Revolution, the Central Asian region became part of the Soviet Union, and by the 1930s was divided into five republics whose boundaries are the basis for today's five countries. The economic role of the Central Asian republics was primarily as a supplier of raw materials to the more industrialised areas of the Soviet Union. The focus on cotton was strengthened, especially after construction began on the Karakum Canal in the 1950s, but it was complemented by the exploitation of energy and mineral resources and by some industrial development. The social sectors were also expanded, leading to universal literacy and increased life expectancy.

The Soviet economy was planned as a single unit in which goods and services moved without attention to republic borders. At the same time as being open to intra-USSR trade, the republics were closed to external trade. Thus, although their ratio of trade to output was comparable to that of similar-sized Canadian provinces, the share of international trade in the Central Asian republics' total trade was small (10-15 per cent, compared to 34-61 per cent for Canadian provinces)³.

The inward-oriented trade patterns within the centrally planned Soviet economy were reinforced by transport, pipeline, and other communications facilities. The railways and pipelines led to Russia, and most air services and international phone lines passed through a Moscow hub. The first rail connection between the Central Asian republics and China only opened in 1990, and no rail link to their southern neighbours existed before the 1990s. Even the road crossings between Central Asia and China were poorly maintained and subject to several lengthy periods of closure. Due to its poor state of

repair, the transport and pipeline infrastructure has been a major impediment to intra-regional trade since 1991, as well as to trade between the new independent Central Asian countries and neighbours such as Xinjiang Autonomous Region of China or Iran.

After the dissolution of the USSR, the Central Asian countries were among the Soviet successor states most subject to a severe negative economic shock. None had anticipated the dissolution of the Soviet Union before its final months, and all were totally unprepared for the severing of Soviet ties⁴. Demand and supply networks based on uncosted transport inputs quickly collapsed in the early 1990s. The shift to world prices notionally benefited the energy exporters, Kazakhstan and Turkmenistan, but in the short term the two countries were unable to realise these gains due to their dependence on Russian pipelines. All five countries suffered from disrupted supply chains and higher prices for imports. Imminent economic collapse was signalled in falling output and rising prices in 1991, but it would become much worse after formal dissolution of the USSR removed residual central control over the Soviet economic space.

After independence, political and economic reform followed different patterns in each of the five countries of Central Asia⁵. The Kyrgyz Republic was one of the most liberal and rapidly reforming transition economies; one indicator is that, in July 1998, it became the first Soviet successor state to accede to the World Trade Organization. Kazakhstan is also considered a reformist regime, although this oil-rich country has many similarities to Russia in the way that privatisation created powerful private interests that distorted the reform process (Kalyuzhnova, 1998; Olcott, 2002). The other three Central Asian countries were slower to stabilise the macroeconomy, and still had triple-digit inflation in 1996 (Table 1a, final column). Uzbekistan has been more cautious in reforming but has been the most successful of all Soviet successor states in terms of output performance (Pomfret, 2000*b*; Spechler, 2000). Turkmenistan's regime has become increasingly personalised and autocratic, pursuing a policy based on neutrality and economic independence, with minimal economic reform (Ochs, 1997; Lubin, 1999*b*; Pomfret, 2001). Tajikistan was in a state of civil war for most of the 1990s but is considered to be a delayed reformer since the 1997 peace agreement.

III. MACROECONOMIC PERFORMANCE DURING THE FIRST DECADE AFTER INDEPENDENCE

There is little doubt that the people of Central Asia experienced a huge economic shock in the early 1990s. Measuring the size of the economic decline both across countries and over time is, however, problematic⁶. The issues are especially pressing for the first half of the 1990s, but they affect our assessment of the entire post-independence period because measures of, say, GDP which relate a year to a stable base year, usually 1989 or 1991, are more useful than the volatile annual growth rates (Table 2).

The most used aggregate measures are the real GDP estimates reported by international agencies. Even if these capture output trends, they may fail to capture the decline in living standards in the early 1990s when resource flows from the rest of the USSR were cut off, perhaps starting in 1990 and definitively over by the end of 1993. Later in the 1990s, the Kyrgyz Republic benefited from substantial capital inflows from multilateral and bilateral official sources, but the other Central Asian countries received little net capital inflow, apart from military assistance to Tajikistan and some direct foreign investment in Kazakhstan. In sum, gross national expenditure probably fell by far more than GDP in the early 1990s⁷.

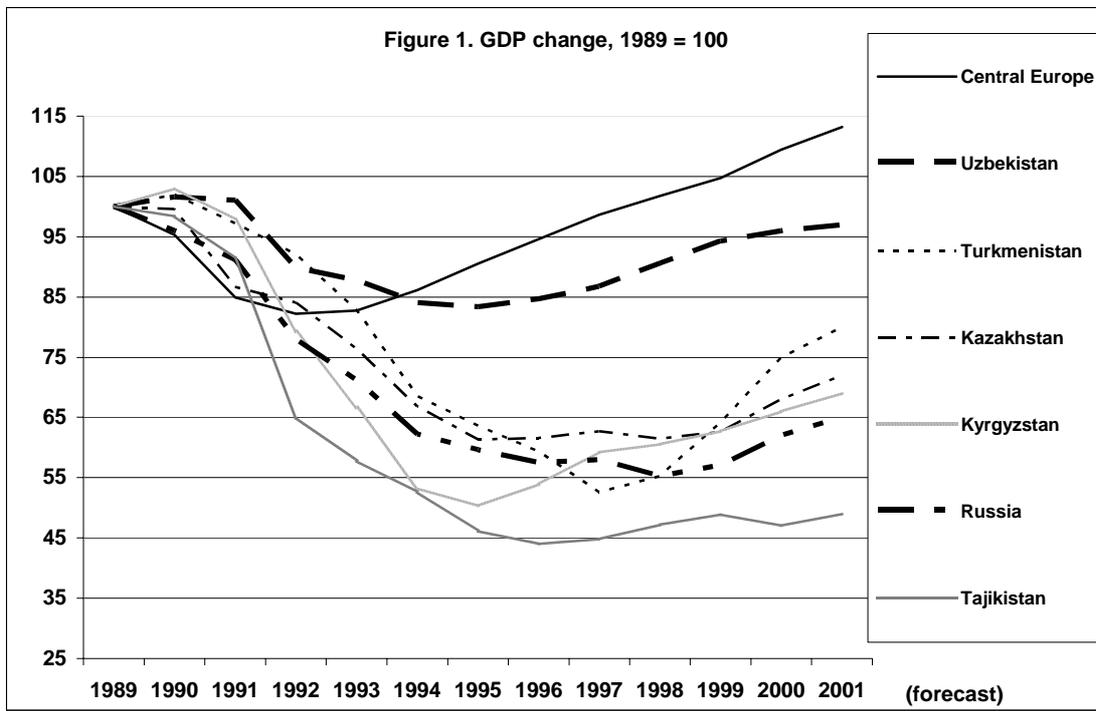
The output figures are subject to a number of serious conceptual problems. The output mix was substantially transformed after the end of central planning, as major producers collapsed and new goods and services appeared, raising index number issues including the extreme problem of valuing new or obsolete goods and services. Apart from the issue of choosing appropriate relative prices, there is also a practical problem of using aggregate price indices during the years of hyperinflation. Nobody would claim that the numbers for 1991-95 in Table 3 are in any sense precise and whether annual inflation is 1 500 per cent or 2 000 per cent makes little economic difference, but it affects calculations of real GDP.

On the quantity side, data collection problems reflect the low priority given to statistical offices during the initial period of nation-building⁸, and the changing incentives to reporting. During the Soviet era, managers pressed to meet plan targets often over-reported output and included in output some items which were of no practical value⁹. In a market economy, the latter, what Balcerowitz has called "pure socialist goods", should have zero weight in GDP. After the transition to a market-based economy, the incentives shifted towards under-reporting in order to avoid taxes or other unwanted attention from the government.

There was, of course, under-reporting in the Soviet era, especially of production on household plots, and services were not included in the net material product. The difficulty is not just that the extent of under-reporting is higher now, but that it is non-random. The more market-oriented economies are likely to have larger service sectors. The shadow economy has expanded throughout the region and by its nature is difficult to measure, but all available estimates suggest a dichotomy between the large shadow economies of the Kyrgyz Republic, Tajikistan and Kazakhstan and the smaller shadow economies in Uzbekistan and Turkmenistan. An extreme published estimate has the shadow economy of the Kyrgyz Republic producing twice as much as the official economy (Eilat and Zinnes, 2002), which, if true, would imply that Kyrgyz GDP in 2000 had more than doubled since 1991 rather than being four-fifths of its 1991 level.

On top of these general data problems are country-specific issues. Tajikistan was devastated by a civil war, which lasted for much of the 1990s. Even since the 1997 peace agreement, the central government does not control all of the national territory. In Turkmenistan, and to a lesser extent in Uzbekistan, old attitudes about information being power, and associated practices of data manipulation or secrecy, persist. The Turkmenistan data have often been queried by the multilateral agencies and are the least reliable in the CIS.

Despite this catalogue of problems, the data in Table 2 continue to be used. This is primarily because the general patterns correspond with other evidence, including casual observation¹⁰. Figure 1 illustrates the patterns. The economic decline in Tajikistan has been traumatic, and living standards have fallen to the levels of the least-developed countries. Turkmenistan has also suffered palpable economic decline, but energy revenues and political stability have contributed to it being less dramatic than in Tajikistan. Kazakhstan and the Kyrgyz Republic both suffered substantial setbacks during the first half of the 1990s, although the extent is debatable, and both economies have been growing since then, with the Kazakh economy especially buoyant with the higher oil prices of the early 2000s. Uzbekistan is the main economic puzzle. Its relatively good GDP performance since 1991 may in part be a statistical artefact due to fewer under-reported unofficial activities and some overvaluation of the official economy, but even the regime's critics acknowledge that this is not the whole explanation (Taube and Zettelmeyer, 1998). The Uzbek economy genuinely suffered a smaller transitional recession than other former Soviet republics and, contrary to some predictions, it has experienced positive economic growth since the mid-1990s.



Source: Popov (2001, 6).

IV. EXPLAINING PERFORMANCE: INITIAL CONDITIONS VERSUS NATIONAL POLICIES

The phenomenon of over two dozen countries in Eastern Europe and the former USSR abandoning central planning within a few years of one another raised the question of what separated the more successful from the less successful transition economies. The initial debate was over the speed and extent of reform. The econometric evidence has been inconclusive over whether performance has been related to reform. Some have argued that initial conditions were crucial, but here too the evidence is inconclusive because quantitative indices of initial conditions are contentious. The eastern European countries as a group outperformed the CIS countries, but whether that reflects superior policies or better initial conditions is difficult to identify¹¹.

That is not to say that we have learned nothing from the econometric studies. Conflict has been bad for growth, and much of the econometric debate over the impact of reform has depended upon how conflict enters the estimating equation. Countries with civil or interstate wars have been slow reformers and had a poor growth record. High inflation is bad for growth, although moderate inflation is less clearly harmful¹². Although there are debates about the threshold, all transition economies quickly recognised the costs of hyperinflation and, whether they were committed to structural reform or not, they all sooner rather than later attacked hyperinflation with standard monetary policy weapons. This was responsible for the fading away of debates over the need for “shock therapy”, as all new market economies acknowledged the desirability of the macroeconomic policy component of Washington Consensus policies — at least when they had three- or four-digit annual inflation.

A complement to the econometric work is national case studies. The Central Asian countries offer a fascinating natural experiment, with their fairly similar initial conditions and radically different approaches to creating market-based economies. On more detailed investigation, the situation is less clear than this simplified characterisation suggests. Initial conditions did vary, ranking by degree of reform is not as straightforward as simple transition indices suggest, and policymaking has not always been consistent over time. Nevertheless, it is still illuminating to examine each of the five countries' performance since independence.

IV.1. Kazakhstan

At independence, Kazakhstan appeared to be the best placed among the Central Asian countries. Per capita incomes were substantially higher than those of the four southern countries, and this was reflected in higher education and other human capital

indicators. Moreover, the resource endowment, with substantial energy and mineral resources which were under-priced in the USSR, held great potential. Indeed, the oil reserves were about to be tapped by the Chevron-Tengiz project which was the largest foreign investment agreement signed in the Soviet Union. In 1992, Kazakhstan took the lead in economic reform, following Russia's price reform with fewer exceptions than other Central Asian countries.

Kazakhstan did, however, face two serious obstacles. It was the only Central Asian country where the titular nationality was not in the majority. In the 1989 census, the population was approximately two-fifths Kazakh, two-fifths Russian and one-fifth other ethnic groups. Following the dissolution of the USSR, Kazakhstan experienced a brain drain as the substantial German population sought to take advantage of Germany's blood-related citizenship law. Many of the Russian population, fearing Kazakhisation, also chose to emigrate. The emigrants were not randomly drawn, as they tended to come from among the better educated, thus eroding Kazakhstan's human capital advantage. The large remaining Russian population was heavily concentrated in the north and east, close to the Russian border, and posing a potential secessionist threat, which has had a powerful political influence. Kazakhstan's president has been the major advocate of retaining some form or common economic space with Russian and, domestically, the national capital was relocated from Almaty in the southeast to Astana in the centre north at large cost.

The second obstacle to fulfilling Kazakhstan's economic potential was connected to the oil sector. The only outlets for Kazakhstan's oil were pipelines through Russia, and Russia has exploited its monopoly position by regulating flows and levying high tariffs. Despite many plans for alternative pipelines, the position a decade after independence was essentially unchanged with small amounts of oil being shipped across the Caspian Sea but most still being exported by Russia.

Oil has played a key role in the country's economic and political development. The privatisation programme of the mid-1990s had similarities to that of Russia, with insiders and politically well-connected people gaining control over the valuable assets. The regime became more autocratic and the system more corrupt. In 1995, Kazakhstan ranked behind both the Kyrgyz Republic and Uzbekistan according to the EBRD transition indices.

Explanation of Kazakhstan's disappointing economic performance over the period 1992-95, when estimated GDP fell by almost half, is over-determined. The initial conditions in terms of resource abundance proved to be negative, because the resources could not be exported at world prices and because of the associated political economy factors. The limited extent of economic reform and crony capitalism also inhibited healthy economic development in the mid-1990s. In 1996-97, Kazakhstan's economy began to grow, but it was hard-hit by the 1998 Russian crisis. Although the crisis itself was exogenous, the contagion effect reflected a relative failure to diversify Kazakhstan's international economic relations away from Russia.

Since 1999, the economic situation in Kazakhstan has looked brighter. The recovery from the 1998 crisis was driven by market forces and by good fortune. The sharp real depreciation of the currency stimulated exports and helped to validate policy makers' understanding of market mechanisms. At the same time, buoyant world oil

prices in the early 2000s reinforced the positive trade developments. The booming economy has been accompanied by harbingers of a civil society, reflecting Kazakhstan's relatively high human capital. Although the regime remains autocratic and dissent is punished, the president is facing growing pressures for accountability of himself and his entourage¹³.

IV.2. The Kyrgyz Republic

The Kyrgyz Republic, like Tajikistan, was a poor mountainous Soviet republic with few natural resources. Its economy was tightly linked to the Union economy and suffered substantially from the dissolution of the USSR¹⁴. Although the Kyrgyz were in the majority there was a large Slav minority in the north and a large Uzbek population in the south of the country. In the Soviet era, the republic was associated with economic backwardness and conservatism, although an idiosyncratic development was the appointment in 1990 of a physics professor as First Secretary.

From 1993 to 1998, the Kyrgyz Republic was by far the most reformist of the Central Asian republics. Whether this was because its president was the most liberal or whether he had fewest options is debated. In May 1993, the Kyrgyz Republic was the first Central Asian country to replace the rouble by a national currency and, unlike the other countries, this was explicitly part of an economic reform programme. The Kyrgyz Republic received the most support from the international financial institutions, and following their standard policy recommendations brought annual inflation down below 50 per cent in 1995 (compared to 1996 for Kazakhstan, and later elsewhere in Central Asia). Prices were liberalised, the currency made convertible and tariffs reduced. In July 1998, the Kyrgyz Republic became the first Soviet successor state to accede to the WTO.

Small-scale privatisation also progressed rapidly. In other areas, however, reform was less smooth. Land privatisation was delayed until 1998 and, even when accepted in principle, a five-year moratorium on transfer of ownership was imposed. Large-scale privatisation also proved difficult in practice, partly due to unrealistic pricing of assets. The only large productive enterprise with a positive output record was the Kumtor goldmine operated as a joint venture with a Canadian company. The Kumtor mine was accounting for a sixth of GDP by the early 2000s, but front-loading of returns to the foreign investor meant that few benefits accrued to Kyrgyz residents¹⁵. Institutional reforms were often impressive on paper, but implementation was poor¹⁶.

Economic performance was similar to that of Kazakhstan, with a substantial output decline followed by economic growth in 1996 and 1997. Whether this was a better achievement depends on a comparison of the initial conditions, which many saw as less favourable in the Kyrgyz Republic, and on evaluation of the role of foreign assistance. The Kyrgyz Republic was successful in cutting inflation, and yet it ran large fiscal deficits as tax revenues fell and public expenditures were not reduced in line. The situation was sustained by substantial IMF and World Bank financial aid, which enabled the central bank to limit inflationary financing of the budget deficit, but which led to a rapid build-up of external debt.

The fragility of the Kyrgyz economy was exposed by the 1998 Russian crisis. Although the Kyrgyz economy was less closely linked to Russia than Kazakhstan's economy was, the contagion effects were strong because the Kyrgyz financial sector was weak. Three of the country's four largest banks were liquidated in 1998-99 and banking sector assets fell from \$160 million to \$90 million at the end of 2000, i.e. from 10 per cent of GDP to 7 per cent. The apparently extensive financial reforms of the mid-1990s were revealed to be fragile, and this was symbolic of much of the reform structure (Pomfret, 2003).

One consequence of the financial crisis was to stimulate a re-thinking of economic policies. Concerns over the country's rising debt burden also contributed to rethinking of the adherence to the policies recommended by the international financial institutions, whose adoption was now seen as having been costly. Since 1998, economic reforms have been more or less on hold.

Economic performance in the Kyrgyz Republic has been difficult to evaluate. Its role as the reform leader in Central Asia led many to anticipate healthy growth. That this was not realised could be ascribed to poor initial conditions, poor implementation of reforms, or not staying the course after 1998. It may also be the case that the GDP figures understate actual performance. Certainly in the north, there is some economic vibrancy in Bishkek and in the resort areas of Lake Issykul, which cater to rich Kazakhs as well as the better-off domestic population.

IV.3. Tajikistan

Tajikistan shared many of the Kyrgyz Republic's disadvantages, but these were compounded by a civil war in which tens of thousands were killed and half a million people were displaced in the first year after independence. The war fluctuated hot and cold over the next five years until the 1997 peace agreement brought opposition parties into the government. During the war period, roads, bridges and other infrastructure were destroyed, and much has still not been repaired. Many men left the country either for economic reasons or to avoid the draft¹⁷.

Since 1997, government policies appear to be fairly liberal. The government has courted the international financial institutions and has largely followed their policy recommendation. Implementation has, however, been poor, and the central government does not have full control over the national territory¹⁸. The years of war and the burgeoning narcotics trade have hampered the emergence of civil society.

Economic performance has been disastrous. Output fell by two thirds in the early and mid-1990s. Lack of economic opportunity led many men to migrate to Russia in search of work and, because their remittances were largely brought back as cash and unreported, it is difficult to estimate how much this contributed to incomes¹⁹. Foreign assistance, mainly from Russia, was primarily military aid, which contributed little to the economy apart from leaving Tajikistan with the highest debt/GDP ratio of any Soviet successor state. Although some recent years have seen some high annual growth rates, this is indicative of the low base rather than of real economic achievement.

IV.4. Turkmenistan

The Turkmenistan economy, although historically one of the poorest republics in the USSR, was experiencing rapid growth in the final Soviet decades. The construction of the Karakum Canal, begun in the 1950s, greatly increased the land area under cotton, and in the 1980s natural gas production had been greatly increased. The shift from Soviet to world prices offered larger terms of trade gains to Turkmenistan than to any other Soviet successor state (Table 1).

Turkmenistan has the most personalised and autocratic regime in Central Asia. The president's absolute power is supported by control over the cotton and energy rents. Soon after independence, he adopted a populist strategy of providing free water, electricity, gas, heating, salt and other necessities up to certain limits intended to include most household consumption. He pursued a development strategy of import-substituting industrialisation, centred on increasing value-added in the energy and cotton sectors.

The economic strategy was however undermined by the inherited infrastructure, which directed energy exports exclusively to the CIS. The monopsonistic buyers quickly ran up substantial arrears²⁰, which Turkmenistan eventually addressed by the drastic measure of ceasing supply between 1997 and 1999. This is reflected in the pattern of GDP growth, but Turkmenistan's economic problems run deeper than a simple strategic blip in the late 1990s.

The economy is essentially unreformed. The central planning mechanisms were formally ended by Gorbachev and in any case broke down in the early 1990s, but a functioning market economy has not been created. As far as possible, the president retains control over resource allocation decisions, which is relatively easy given the simple structure of the economy with its high dependence on energy and cotton exports, but is very inefficient. Repressive agricultural policies (Pastor and van Rooden, 2000) and poor management have led to cotton yields falling by much more than in neighbouring Uzbekistan. The import substitution projects probably have negative value added (Pomfret, 2001). The energy sector is more opaque; despite continuing to attract foreign interest, it is hardly flourishing.

The data for Turkmenistan are the least reliable of any economy in transition and are manipulated for political impact. Nevertheless, it is clear to any observer that economic conditions have deteriorated substantially since independence, especially outside the capital city. Turkmenistan provides the strongest evidence that non-reform, autocracy and poor economic management is a recipe for economic decline.

IV.5. Uzbekistan

Uzbekistan is, with 25 five million people, the most populous of the Central Asian countries and its record since independence is the most controversial. Initial conditions were at first seen as neutral and its economic reforms have been cautious, but its economic performance by the usual measures has been the best of all former Soviet republics, including the rapidly reforming and geographically advantaged Baltic countries (Figure 1). The Uzbek government has had frosty relations with the international financial institutions, and this may have clouded judgments of what has become known as the Uzbek puzzle.

Uzbekistan illustrates the difficulty of *ex ante* determination of what are favourable initial conditions. Its major export, cotton, was not under-priced in the USSR, so Uzbekistan did not have the expected terms of trade gains that energy producers like Kazakhstan or Turkmenistan anticipated. On the other hand, cotton was not restricted to fixed transport modes and it could be exported to new markets. Up to 1995, this advantage was enhanced by buoyant world prices for cotton. Uzbekistan's second most valuable export, gold, was even easier to export at world prices.

Another favourable initial condition whose value is clearer *ex post* was Tashkent's position as the regional capital of Soviet Central Asia. At a physical level, the principle that the Soviet successor states inherited assets in their territory meant that Uzbekistan gained the biggest air fleet and most military equipment in Central Asia. After some initial hiccups, Uzbekistan Airways emerged as the only competitive international airline in Central Asia and remains one of the few state enterprises to have been successful in the new economic environment. Less tangibly, but perhaps more important, Uzbekistan inherited the most effective administrators in the region. Whether truly an initial condition or a result of technocratic leadership, good economic management is reflected in several features distinguishing Uzbekistan from its neighbours. The physical infrastructure has been relatively well kept up, both in the domestic transport network and in the irrigation canals that are crucial to the cotton economy. Corruption is widespread in all of Central Asia, but available evidence suggests lower levels in Uzbekistan than in the other four countries²¹, implying more effective central control and (admittedly by the low standards of the region) a relatively high sense of public service.

The history of regional administration has contributed to a stronger sense of independence in policy making. Uzbekistan has been sceptical of foreign advice, and unwilling to accumulate foreign debt, so its relations with the international financial institutions have been frosty. Uzbekistan has, however, not been a non-reformer. Small-scale privatisation and housing reform were undertaken quickly. Macroeconomic stabilisation was not an initial priority but, after the collapse of the rouble zone at the end of 1993, Uzbekistan moved purposefully to reduce inflation. Macroeconomic policy in the two and a half years after January 1994 followed standard IMF advice, and relations with the international financial institutions improved over this period. In October 1996, however, despite having made commitments to the IMF to adopt current account convertibility, Uzbekistan responded to a balance of payments crisis by introducing forex controls.

The forex controls have been the major economic issue since 1996. Although the government had recognised their cost by the end of the decade and took steps toward liberalisation, the controls remain in place²². The forex controls have been a major, but not the only, stumbling block to improved relations with the international financial institutions. Since 1996 Uzbekistan has been, by the EBRD transition indicators, a slow reformer, but this characterisation is determined by its low score on price liberalisation (reflecting ongoing state orders for cotton and wheat) and on trade (reflecting the forex controls).

Uzbekistan has been becoming a gradually more market-oriented economy, albeit with substantial government direction. Government intervention, apart from the controls on cotton and wheat, tends to follow a version of the Asian developmental state model rather than the crude controls of Turkmenistan. Uzbekistan's financial sector remains dominated by a state-owned bank and financial repression is severe. Elsewhere,

however, the government is bringing market forces to operate, e.g. in rail transport and in some utilities (Pomfret, 2003). A key distinction between Uzbekistan and the Kyrgyz Republic or Tajikistan is that Uzbekistan's legislative record is less reformist, but its implementation is more effective.

The Uzbek puzzle is how to explain the good economic performance of a lagging economic reformer. It may be partly a matter of over-estimating performance, but for me it has much more to do with under-estimating reform progress and, especially, failure to recognise the key importance of infrastructure and the institutional setting in which markets function. Uzbekistan is not an open society and this may eventually stifle economic progress, but it has a relatively well-managed economy and this feature helped to minimise the extent of the transitional recession. Without reform that may have just delayed rather than avoided decline, but gradual reform has been sufficient to provide the basis for modest but reasonably steady growth since the mid-1990s.

This is, of course, not to defend some of Uzbekistan's clearly misguided policies. The forex controls are hindering desirable resource reallocation to actual and potential export sectors. In part the controls are retained because, together with the state order system, they underpin a non transparent but large taxation of the farm sector. That in turn has allowed Uzbekistan to maintain public revenues, and hence public expenditures without inflationary financing, and has been instrumental in retaining a credible social safety net and the highest ratio of education spending to GDP in the CIS. Nevertheless, these benefits come at substantial long-term resource misallocation costs, which are familiar from other countries that have relied on similar agricultural taxes (Pomfret, 2000a).

IV.6. Conclusions

How far have the Central Asian countries moved in creating market-based economies? Institutions have long been recognised as critical determinants of how well a market economy performs (North, 1994), but in the transition context they were initially viewed in a mechanical way: how to replicate the institutional features of established developed market economies? This mechanical approach and simple norm is reflected in the pervasive use of the transition indicators reported by the European Bank for Reconstruction and Development in its annual *Transition Report*.

The EBRD's transition indicators have eight components: three measures of privatisation and restructuring, three of market liberalisation and competition, and two of financial markets reform. For each component a country is allocated a mark of 1 to 4+ where 1 indicates no change from the centrally planned economy and 4+ indicates that the structural characteristic is comparable to those prevailing on average in developed market economies. The aggregate transition indicator (listed in Table 4a for 1999) is a simple average of the eight component indicators²³. This is by far the preferred measure of extent of reform used in the econometric studies reviewed at the beginning of this section.

The disaggregated indicators (Table 4b) illustrate the difficulties in quantifying institutional change in this way. One problem is whether the indicators can be summed; for example, should large-scale privatisation and enterprise restructuring scores be added or is the former meaningless without restructuring? A second problem is whether

they deserve equal weight. Uzbekistan's experience implies that infrastructure is important, but whether railways are more important than roads depends upon the country — and, anyway, should transport be a single category?

A precursor of the EBRD transition indicator was the liberalisation index devised by de Melo *et al.* (1996; 1997). This index is a weighted average of three separate indices of domestic market liberalisation, foreign trade liberalisation, and enterprise privatisation and banking reform, with a range from zero to one. The authors constructed the liberalisation index annually for 1989-97, and some studies have made use of the cumulative liberalisation index, which sums the annual figures for each country²⁴.

More recently Beatrice Weder, in an unpublished paper for the International Monetary Fund, has developed an index of institutional quality by aggregating five of the six indicators of governance developed by Kaufmann *et al.* (1999a; 1999b); the extent of democracy, government effectiveness, extent of regulation, rule of law, and graft²⁵. Weder's index takes values from +25 to -25 with the average for developed market economies being 12.6. Because Weder computed the Institutional Quality Index for about 170 countries for the period 1997-98, it can be used to gain some idea of how the Central Asian economies compare with other economies by this class of measure (Table 4c). The leading European transition economies had not yet replicated the economic institutions of the OECD countries, but were not far behind. What is surprising is how poorly the CIS and Asian transition countries rank by this index, with Moldova (the CIS member with the best institutional quality, surprisingly) and China just below the median and the others in the bottom two quintiles — below the officially unreformed planned economy of Cuba. Uzbekistan, Turkmenistan and Tajikistan rank especially poorly by Weder's index, falling in the bottom decile, among the world's poorest and least developed countries.

Each of these indices can be criticised for the specifics of its calculation. Nevertheless, they all provide a similar picture. The EBRD Transition Index for 1997 and the Liberalisation Index are highly correlated (0.95), and both of these indices are highly correlated (0.90 and 0.85 respectively) with the Institutional Quality Index (*IMF World Outlook*, September 2000, 184). This could mean that countries which have proceeded fastest with structural reforms and liberalisation have also created the best quality institutions, or it could reflect a narrow view of institutions. The European transition economies rank highest by all indices and they are trying to emulate western European economic institutions in order to facilitate accession to the European Union. The Asian transition economies have different institutions, but ones that in some respects work as substitutes for the western model, e.g. the network of family connections in China and Vietnam is, at least for small businesses, a reasonable substitute for western-style contract enforcement by litigation.

It is important to acknowledge the ethnocentricity of these commonly used indicators of institutional change when analysing the whole set of transition economies. If a country sees its post-Communist future in terms of becoming like Sweden or Austria, then these measures are valuable guideposts to progress. The Central Asian transition economies, however, have other role models. Many of them would prefer to emulate the institutions and economic performance of South Korea, which does not make the top fifty in institutional quality in Table 4c, or Malaysia, which is ranked 91st by Weder²⁶.

V. WINNERS AND LOSERS: EVIDENCE FROM HOUSEHOLD SURVEYS

The aggregate performance indicators must be supplemented by survey data if we are to understand the distributional impact within the new Central Asian nations of the end of central planning and dissolution of the Soviet Union²⁷. In all formerly centrally planned economies of Eastern Europe and the Soviet Union, the shift to a more market-based economy was associated with substantial increases in inequality and, combined with the decline in average living standards, this led to increased poverty²⁸. The increase in poverty was especially great in the relatively poor Central Asian countries. Milanovic's widely cited comparative study reported a poverty rate of 88 per cent in the Kyrgyz Republic in 1993 (Table 5), and later poverty rates for Tajikistan were even higher. Of course, such headline figures are susceptible to arbitrary decisions about poverty lines as well as data problems (Deaton, 2001), but there can be no doubt that these two countries experienced massive increases in poverty, while the other Central Asian countries also experienced widespread poverty for the first time in living memory²⁹.

In Eastern Europe and Russia, although inequality and poverty increased, considerable mobility occurred within the income distribution (Jovanovic, 2001; Rutkowski, 2001). In this section, household survey data from Central Asia are used to address the question of who were the winners and who were the losers from the establishment of market-based economies?³⁰

The household budget survey (HBS) inherited from the Soviet era has been the butt of severe criticism by western statisticians for its unrepresentative samples (Atkinson and Micklewright, 1992; Marnie and Micklewright, 1994). Falkingham and Micklewright (in Falkingham *et al.*, 1997, 48) characterise the HBS as "a survey with a long history and terrible reputation". Far superior surveys were conducted in many transition countries under the aegis of the World Bank's Living Standards Measurement Study (LSMS). Within Central Asia, this dataset is especially rich because we have for the Kyrgyz Republic what is arguably the only before and after transition LSMS surveys (for 1993 as well as for 1996 and later years)³¹.

The data for the analysis in this section are obtained from five household surveys. Four of these are LSMS household surveys, namely, the 1993 and 1997 Kyrgyzstan LSMS surveys, the 1996 Kazakhstan LSMS, and the 1999 Tajikistan LSMS³². For Uzbekistan, we use data on households collected in the Fergana oblast in 1999 as a pilot study for redesign of the national Household Budget Survey³³. The household sample sizes are, for the Kyrgyz Republic, 1 926 in 1993 and 2 618 in 1997, for Kazakhstan 1 890, for Tajikistan 1 983, and for Uzbekistan 542. Table 6 provides summary statistics for each survey. Despite the four countries' historical, cultural and geographical

similarities, differences in the samples reflect the higher incomes and more European culture of Kazakhstan, and the more traditionally Central Asian society in Tajikistan and the Fergana oblast of Uzbekistan³⁴.

Households are smaller in Kazakhstan than in Tajikistan, Uzbekistan or the Kyrgyz Republic³⁵. The average number of children in a household in Kazakhstan is 1.3, which is fewer than in the Kyrgyz Republic (1.8 in 1993 and 2.2 in 1997), Uzbekistan (2.7) or Tajikistan (3.5), while the average number of elderly household members is similar in each country (0.4-0.5). The number of children is substantially higher than in European transition economies or elsewhere in the CIS.

The education variables indicate the high education level, relative to income levels, of these countries. Over two-fifths of household heads in each country have post-secondary education. In Kazakhstan the proportion with university education is slightly higher than in the Kyrgyz Republic, Tajikistan or the Fergana oblast of Uzbekistan³⁶. The other human capital variable, reported health of the household head, has some implausible variations with much worse health reported in Kazakhstan and much better in the Kyrgyz Republic.

The LSMS data have provided the basis for poverty analyses by the World Bank and other researchers. The picture of poverty presented by descriptive analysis is that poverty is higher in rural areas, varies across regions, and is related to ethnicity, education and dependency. However, many of these characteristics are inter-related. Multivariate analysis of household poverty isolates the impact of the different household characteristics on poverty, holding other things constant, and probit models identify the overwhelming role of location in the capital city, the household head's education, and the number of dependents as key determinants of the probability of a household being above or below the poverty line³⁷.

Poverty is one measure of the well-being of households; however, by focusing on poverty, much information about households is lost because poverty analysis depends on arbitrary poverty lines to classify households as poor or non-poor. It is also difficult to compare poverty across countries in which poverty lines may represent different consumption standards. A preferable approach to the analysis of material well-being is to examine the distribution of household income or expenditures.

Anderson and Pomfret (2002) estimate a human capital model in which the per capita expenditure of households is affected by the level of human capital, the number of household members, the location of the household, and demographic characteristics of the household. The dependent variable is household expenditures per capita, based on a headcount of household members and the reported expenditures on goods (excluding vehicles), food, health, education and other services, housing, utilities, communication, and transportation³⁸. This measure of household welfare assigns equal expenditure weight to all children and adults in the household³⁹.

Household human capital is captured by measures of the education and health of the household head. The head's education level is assumed to be indicative of the household's human capital, and is proxied by dummy variables for college education, Teknikum education, vocational or other technical training, and completed secondary education, with incomplete secondary schooling as the omitted education category.

Health is measured by a dummy variable equal to one if the head reports good or very good health and equal to zero if health is reported to be average, poor, or very poor.

Household composition is measured by three variables describing the number of children under the age of 18, the number of elderly, and the number of non-elderly adults in the household⁴⁰. Other demographic characteristics include the age, gender, and marital status of the head of household.

Location of the household is measured by a rural-urban dummy variable, and by region-specific variables. In the Kyrgyz Republic, households are classified into four geographical regions: resident of Bishkek, resident of Chui but not living in Bishkek, resident in the southern oblasts of Osh or Djalalabad, and resident in the mountain oblasts of Issyk-kul, Narun and Talas. Kazakhstan is divided into six regions: Almaty, southern oblasts other than Almaty, northern oblasts, central oblasts, western oblasts, and eastern oblasts. Tajikistan is divided into five regions: Dushanbe, Gorna-Badakhshan in the east, Rayons of Republican Subordination (RRS) in the central western area, Leninabad (Sugd) in the northwest, and Khatlon in the southwest. In the regression equations for each of these three countries, the omitted category for regional location is the largest city, Bishkek, Almaty, and Dushanbe respectively. For Uzbekistan, only the rural-urban variable is included, because a single oblast was sampled.

In addition to the national level analysis, Anderson and Pomfret make two attempts to compare similar locations in different countries. They compare the Fergana oblast of Uzbekistan in 1999 to the parts of the Kyrgyz Republic in 1997 and Tajikistan in 1999 also located in the Ferghana Valley⁴¹. The Ferghana region of the Kyrgyz Republic is defined as the Osh and Djalalabad oblasts while the Ferghana region of Tajikistan is the Leninabad oblast. They also compare the experience of households in the three capital cities: Almaty, Kazakhstan's capital in 1996, Bishkek, the Kyrgyz Republic in 1997, and Dushanbe, Tajikistan in 1999⁴².

The results of the ordinary least squares regressions are presented in the Appendix: Table A1 for Kazakhstan, Table A2 for the Kyrgyz Republic, and Table A3 for Tajikistan. The first and second columns in the tables for Kazakhstan and Tajikistan include the results from estimation of the model including regional variables and a rural-urban variable, while the third and fourth columns contain results from estimation of the model with region interacted with rural-urban residence. Table A2 contains results for the Kyrgyz Republic with a rural-urban variable and regional variables in 1993 and 1997 and using pooled data. The pooled model for the Kyrgyz Republic regresses the log of real per capita expenditures on the explanatory variables, with 1993 as the base year and a price index for 1997 equal to 369. Table A4 presents results from expenditure models for the Fergana oblast of Uzbekistan and for the Ferghana Valley regions of the Kyrgyz Republic and Tajikistan. Table A5 presents the estimates for Almaty, Bishkek, and Dushanbe.

Three variables, namely location, children, and university education, are consistently significant across all four countries studied and play the largest role in determining household expenditure. First, the failure to establish national labour markets even by the late 1990s in Central Asia highlights the lengthy process of institution building required for the effective functioning of a market economy. Second, the higher cost of children reflects the good record of the USSR in satisfying basic needs, but,

unlike the elderly whose living standards have by and large been protected during the transition, children suffered from the decline in many social services, which pushed the costs of providing them onto their family. Third, higher returns to education were expected in a market economy, but few observers distinguish between types of education. Our findings support the view that, in a market economy, general purpose education is most valuable, while vocational training is relatively less valuable than in centrally planned economies. The loss in value of vocational training was exacerbated by the specificity of Soviet training.

V.1. Household Location

Location is an important factor in determining per capita household expenditure. Urban-rural differences in per capita expenditure are significant in Kazakhstan, the Kyrgyz Republic and the Fergana oblast of Uzbekistan, although not in Tajikistan. Within each country for which we have a national survey, some regions are significantly wealthier than others and the estimated coefficients are large.

In the Kyrgyz Republic, rural households' per capita expenditures are, other things equal, on average 26 per cent lower than those of urban households, although the gap did narrow between 1993 and 1997. Households in the northern oblast of Chui and the capital city of Bishkek are significantly wealthier than those in other regions of the country. The regional differences widen over the transition period. In 1997, a mountain region household is estimated to have 93 per cent lower per capita expenditure than an identical household in Bishkek. The gap is smaller for the other regions, but still 73 per cent for the south and 26 per cent for Chui, even though the latter is contiguous with Bishkek⁴³.

In Kazakhstan, living standards are highest in the north and lowest in the south and, within both the north and the south, rural households are better off than those in the cities. Per capita expenditure is also relatively high in the rural eastern region and the urban west. As in the Kyrgyz Republic, the estimated coefficients on location variables are large. The size of the regional gaps is perhaps masked by the fact that the omitted location (Almaty) is not an outlier. A household in the south has 45 per cent lower and a household in the north 30 per cent higher per capita expenditures than a similar household in Almaty, which implies a more than 100 per cent gap between the best and the worst location.

Tajikistan is distinctive insofar as rural-urban differences are insignificant, but regional differences are substantial. Households in Dushanbe and the surrounding Rayons of Republican Subordination (RRS) are significantly wealthier than identical households in the other areas of the country. Per capita household expenditure in Gorna-Badakhshan is 60 per cent lower than in Dushanbe *ceteris paribus* and, in Leninabad and Khatlon, 34 per cent lower than in Dushanbe.

In the Fergana oblast of Uzbekistan, per capita expenditure is 52 per cent lower in rural areas than in urban locations (Table A4). This is much larger than the effect of rural residence on expenditures in the Ferghana regions of Tajikistan and the Kyrgyz Republic⁴⁴. There is no difference in average expenditures in the urban and rural areas

of Ferghana in Tajikistan, but rural expenditures are 23 per cent lower than urban expenditures in the Ferghana area of the Kyrgyz Republic.

V.2. Household Composition

In all four countries, household composition is an important determinant of per capita household expenditures. The costs of large households are substantial. A recurring result is that additional children lower per capita household expenditure by a larger amount than additional elderly or non-elderly adults do. Not surprisingly, the costs of additional children, in terms of the negative impact on per capita household expenditure, are larger in the cities.

In Kazakhstan, an additional child reduces per capita household expenditure by 17 per cent, an elderly adult reduces per capita expenditure by 12 per cent, and a non-elderly adult reduces per capita expenditure by 6 per cent. In the Kyrgyz Republic, extra children reduce per capita household consumption by 12 and 14 per cent in 1993 and 1997 respectively. An extra adult also reduces per capita household expenditure, but the pattern differs in 1993 and 1997. While elderly adults reduce it by 8 per cent in 1993 and non-elderly adults have no significant impact, it is non-elderly adults who reduce per capita household expenditure in 1997, by 7 per cent, while the elderly have no effect. In Tajikistan, each additional child reduces per capita household expenditure by 9 per cent, and each additional elderly adult reduces it by 5 per cent, but additional non-elderly adults do not affect per capita expenditure.

Comparing the Ferghana regions of Uzbekistan, Tajikistan and the Kyrgyz Republic reveals similarities and differences. In all three countries, an additional child lowers per capita household expenditure by between 10.5 and 12 per cent. The presence of a pensioner has no effect on per capita household expenditure in the Ferghana region of Tajikistan or the Kyrgyz Republic, but in the Fergana oblast of Uzbekistan the presence of a pensioner increases per capita household expenditure by 11 per cent⁴⁵. In contrast, non-elderly adults have no impact on per capita household expenditures in the Fergana oblast of Uzbekistan, but an additional non-elderly adult in the household lowers per capita expenditure by 3 per cent in the Ferghana region of Tajikistan and by 6 per cent in the Ferghana region of the Kyrgyz Republic. This suggests that, in the Ferghana Valley, the labour market provides enough income to cover the average expenditures of adults in Uzbekistan, but cannot cover expenditure needs of adults in the poorer countries of Tajikistan and the Kyrgyz Republic.

The effects of household composition on expenditures in the capital cities of Almaty, Bishkek and Dushanbe are reported in Table A5. In all three cities, an additional child substantially lowers per capita household expenditure, *ceteris paribus*, by 21 per cent in Almaty, by 18 per cent in Bishkek, and by 15 per cent in Dushanbe. The negative impact of children on material well-being is stronger in the cities than in the poorer and rural Ferghana Valley. Additional elderly adults have no effect on per capita household expenditure in Bishkek or Dushanbe, which is similar to the result for the Ferghana Valley, but the presence of a pensioner lowers per capita household expenditure significantly in Almaty. In Almaty, the effect of an additional elderly adult on expenditures is 29 per cent and, uniquely, it is larger than the effect of an additional child. An

additional working-age adult lowers per capita household expenditure in Bishkek by 18 per cent and in Almaty by 14 per cent, but has no effect in Dushanbe.

V.3. Education and Health

In all four countries, having a college-educated head positively affects household well-being. In Kazakhstan and in the Kyrgyz Republic, per capita expenditure is 27 to 29 per cent higher in households with a college-educated head than in households whose heads failed to complete secondary school. In the Kyrgyz Republic, the effect of college education drops significantly during the transition period, from 32 per cent in 1993 to 22 per cent in 1997. The effect of a college-educated head is large in Tajikistan (33 per cent higher per capita household expenditure than in households whose head failed to complete secondary education), and larger still in the Fergana oblast of Uzbekistan (43 per cent)⁴⁶. Overall, general high-skilled training has helped household heads substantially to improve their families' standard of living.

In Kazakhstan, having a head with Teknikum training is associated with 17 per cent higher expenditures than a household whose head failed to complete secondary school, while vocational training has a lower return and secondary training has no significant impact. Having a head with non-college, post-secondary training has no effect on per capita household expenditure in the Kyrgyz Republic in 1993 or 1997, although Teknikum education yields a 20 per cent return in the early transition year of 1993. In Tajikistan having a head with Teknikum training raises per capita household expenditure by 26 per cent, while a head with vocational education raises expenditures by 10 per cent.

In the Ferghana Valley, university education has large returns in all countries, and Teknikum education has large returns in Uzbekistan and Tajikistan. There is no difference among the effects of other education categories. The largest returns are in Uzbekistan at 43 per cent for university education and 35 per cent for Teknikum education. In Tajikistan, returns to university and to Teknikum education are similar, 22 and 26 per cent. In the Kyrgyz Republic, the return to university education is 27 per cent, but the return to Teknikum education is insignificant and the point estimate is only 11 per cent.

Completion of secondary education appears to have no benefits in terms of a head's ability to increase household expenditures relative to those of a household headed by somebody with only primary or incomplete secondary education. The second measure of human capital, self-reported health of the head, also has no impact on expenditures.

V.4. Demographic Traits and Year

The demographic traits of age, gender and marital status of the head are generally not significant determinants of household expenditures. The age coefficient is positive and significant for the Kyrgyz Republic in 1997, but elsewhere it does not differ significantly from zero. In the Kyrgyz Republic in 1997, expenditures are 9 per cent lower if the head is male, and the negative effect is even more pronounced in Bishkek, but this variable is never significant in any other country or with the 1993 Kyrgyz data. Having a

married head is positive and significant in Dushanbe and in the Ferghana region of the Kyrgyz Republic, but not in Almaty or Bishkek; nor is marital status significant in any of the national or other Ferghana Valley samples.

In the pooled expenditure regression results for the Kyrgyz Republic in 1993 and 1997 (Table A2), real per capita expenditure is 48 per cent higher in 1997 than in 1993, holding other determinants of household expenditure constant. The fit of the human capital model is substantially better in 1997 than in 1993; the R-square increases from 0.15 to 0.55. The interpretation by Anderson and Pomfret (2000) is that the Kyrgyz economy is becoming more similar to established market economies in which human capital variables provide an accepted explanation of differences in living standards⁴⁷.

V.5. Summary and Relations to Other Research

In summary, the most important explanations for the variation in expenditures per capita in the region are household location, household composition and education. Variations in per capita expenditure by location within each country are large and go beyond the simple rural-urban distinction. Previous analysis of the Kyrgyz Republic over the transition period (Anderson and Pomfret, 2000) found that the costs of large families increased during transition, and the results reported here reinforce that conclusion as an increase in the number of children in a household reduces household expenditure and the cost of a child to the household exceeds the cost of an extra working or non-working adult. In all of the countries, having a university-educated household head improves household welfare significantly and, in all countries except the Kyrgyz Republic in 1997, having a Teknikum-educated household head also improves household welfare but by a lesser amount. Expenditures are higher in these households than in households with less educated heads. Other levels of education, relative to the benchmark of incomplete secondary schooling, do not have a consistent positive impact on material well-being.

These findings about the importance of location, household composition, and education as explanations for variation in household expenditures per capita are consistent with other empirical work on formerly centrally planned economies, but their implications have not been explored fully.

The literature on earnings in Eastern Europe has focused on labour market institutions, and the relationship between more or less regulated labour markets and the responsiveness of labour demand to changes in sales and of labour supply to changes in wages (Svejnar, 1999). The strength of the regional variables in Central Asia suggests that national labour markets scarcely exist in these countries or that people respond poorly to financial incentives to relocate. In either case, the Central Asian countries are much further from having a well-functioning market economy than are eastern European countries. This may reflect cultural factors such as the strength of the extended family (Buckley, 1998). Jovanovic (2001), however, reports similar results for Russia, which suggests a common problem in the former Soviet Union due to economic obstacles such as poor infrastructure⁴⁸ or undeveloped housing markets, rather than features specific to Central Asian culture.

Analysis of changes over time in the Kyrgyz Republic suggests that, despite gradual improvement in the standard of living of households as the market economy

developed, poverty reduction and improvement in household well-being may take many years. This could reflect the deep institutional obstacles to establishment of a market economy or the extremely poor physical infrastructure that sharply separates the regions of individual countries⁴⁹. Applying human capital models over time indicates that market forces are taking firmer hold (Anderson and Pomfret, 2000), but the fragmentation of national labour markets suggests that the process still has a long way to go in Central Asia.

The rural-urban division, while strongly related to poverty in simple cross-tabulations, is much subtler. In Kazakhstan, distinctions exist between the disadvantaged rural south and relatively affluent rural areas in other regions with differing agrarian bases, i.e. cereals and livestock rather than cotton. In the Kyrgyz Republic, the rural disadvantage applies to all regions but, in Tajikistan, rural locations in the south and north do relatively better. The Ferghana Valley comparison highlights a possible explanation for these variations; in very poor areas experiencing severe economic decline, as in the south of the Kyrgyz Republic and much of Tajikistan, a retreat to the rural economy is a coping mechanism because self-sufficiency is preferable to destitution in economically decaying towns.

The increased cost of large households, and especially households with many children, is a recurring finding in the empirical literature on transition. In part, this is explained by cutbacks in the real value of social assistance. However, pensioners have generally succeeded in maintaining their relative living standards, even when pension payments became large proportions of government budgets (Cangiano *et al.*, 1998; Anderson and Becker, 1999). The Soviet pension scheme related payments to the minimum wage and had generous coverage. During the early and mid-1990s, many transition economies actually eased eligibility before the normal age of 60 for males and 55 for females to cushion the effects of increased unemployment and other economic pressures, although the prevalence of payments arrears makes it difficult to assess the net impact⁵⁰. One consequence was severe budget pressure as state pensions came to account for a large share of GDP, e.g. 15 per cent in Poland from 1992 to 1994 (Cangiano *et al.*, 1998, 14) and over 10 per cent in Uzbekistan. Budgetary pressure contributed to the need for reform and major reforms were introduced, including in Kazakhstan in 1997, but these changes occurred only after the surveys on which our results are based.

The cost of children is more complex than the cost of pensioners, who are more or less non-working adults receiving a state subsidy. The cost of children is more than simply their consumption minus child support payments (Falkingham, 2000*b*). In particular, parents face a sharp reduction in kindergarten availability and increased private costs of schooling⁵¹. Cultural pressures not to send children to school in poor clothing or old shoes have added to these costs⁵². Reduction in freely available health services may also have impinged more on families with children.

The existing literature on education in transition deals mainly with estimating returns to years of education, without distinguishing between types of education. Market returns to human capital are well-established, but there has been little attempt to identify which types of skills are rewarded most. An exception is the comparative study by Newell and Reilly (1999), who use data from nine transition economies to estimate rates of

return to an extra year of post-secondary schooling. They distinguish between university and technical training, and the returns are generally higher to the former, but the evidence is spotty and the distinction between the two types of post-secondary education is not pursued.

At the national level, estimates of Mincerian earnings functions have shown increases in the returns to education during transition to a market-oriented economy⁵³. In Estonia, employment of university-educated workers rose absolutely, even as overall employment declined substantially, and the skill premium for university-educated workers relative to workers with only primary education increased from 11 per cent in 1989 to 69 per cent in 1995. Noorkiov *et al.* (1997) suggest this change can be attributed to especially drastic labour market liberalisation in Estonia, but they do not focus on the specific qualities of university education. Rutkowski (2001) observes that, in Hungary, skilled manual workers were the hardest hit as their wages fell by 14 per cent between 1992 and 1997, but he does not discuss the redundant nature of skills acquired in pre-transition vocational training. Jovanovic (2001) finds a larger and more consistently significant impact of university, as opposed to technical education, on household expenditure in Russia, but does not comment on it.

The clearest finding from Central Asian poverty studies and the cross-country household expenditure analysis concerns the importance of college education and the lack of evidence of positive returns to other forms of education. In a more detailed analysis of the Kyrgyz Republic, Anderson and Pomfret (2000) find that the return to university education increased while the returns to vocational training declined, and they interpret this result as support for the idea that general purpose education becomes particularly valuable in disequilibrium situations (Schultz, 1975). The benefits of a non-specialised higher education would be especially apparent in dealing with the huge unanticipated shocks associated with the dissolution of the USSR. However, the benefits are also likely to be important in the uncertain world of a market economy, in contrast to Soviet planning in which rules of thumb were useful, initiative was not encouraged and education was undervalued. In three of the Central Asian countries, prospects exist to benefit from the identification of profitable opportunities. The relatively unchanged, and desperately poor, economy of Tajikistan is the exception to this general finding. On the other hand, the fairly narrow vocational training offered in non-university post-secondary institutions in the USSR had very little economic value after the demise of central planning.

One corollary of these findings is that increased returns to education have benefited female at least as much as male workers so that the gender wage gap has generally narrowed since the end of central planning. Hunt (1998) has argued that, in East Germany where women's wages rose by ten percentage points relative to men's wages, four-fifths of the reduction in the gap was due to a selection process whereby poorly qualified women withdrew from the labour force. In other transition countries, however, little difference is found between the decline in male and female labour force participation rates⁵⁴. Anderson and Pomfret (2001) find that better-educated female workers have benefited most from transition in the Kyrgyz Republic, despite fears that the position of women would decline in the Islamic countries of Central Asia⁵⁵.

Analysis of the determinants of household living standards in the Central Asian transition economies during the second half of the 1990s indicates three strong relationships. First, location is very important; however, whether this reflects specific cultural factors of the region or the time needed to create national labour markets in these economically least-developed parts of the former USSR is uncertain. Second, the costs of large families and in particular the higher private cost of children in a market economy than in a planned economy that provided cradle to grave support are also significant. Third, education brings greater material reward in the market economy but, in the shift from central planning, people with high-level general education have been best able to take advantage of new opportunities. By contrast, narrower technical education has left many with obsolete skills yielding no returns in the market. These results are consistent with evidence from other formerly centrally planned economies, although they have not been emphasised in the transition literature. The first two may be of special significance to Central Asia, with its relative economic backwardness and high birth rate, but the importance of high-level general-purpose education appears to be a general, but under-appreciated, factor.

The findings have implications for inter-group distribution. Within Central Asia, regional inequality could be critical for internal social and political stability in light of the ethnic distribution of these countries' population. In the first post-Soviet decade, ethnic tensions were muted, but more recently there have been clashes in the Ferghana Valley and along the Turkmenistan-Uzbekistan border (see section VII below). These clashes have often involved minorities living in economically disadvantaged regions (e.g. Uzbeks in the Dashoguz region of Turkmenistan or the Leninabad region of Tajikistan or in southern parts of the Kyrgyz Republic).

VI. INTERNATIONAL ECONOMIC POLICIES: REGIONALISM AND INTEGRATION INTO THE WORLD ECONOMY

The five Central Asian countries have all remained open economies with high trade/GDP ratios, despite adoption, especially in Turkmenistan and Uzbekistan, of import-substitution policies. Initially their trade was heavily oriented towards CIS markets as a result of inherited links and infrastructure, but by 1996 over half of their foreign trade was outside the old Soviet area. The early expectation was of a struggle for influence among the region's neighbours and outside powers, reminiscent of the Great Game of the nineteenth century, but that expectation has only been realised in the area of oil and gas pipelines, with the consequence of blocking any major new pipelines during the 1990s. Otherwise trade has been on a multilateral basis with non-energy exports being sold on world markets and imports being purchased from least-cost suppliers. Nevertheless, there have been a huge number of regional agreements, both among the Central Asian countries, and between Central Asian countries and their neighbours — Russia to the north, China to the east, and Iran and Turkey to the south.

The leaders of the five Central Asian countries have all recognised the desirability of some degree of regional co-operation, notably on the Aral Sea, and all have formally joined at least one regional organisation, but their attitudes towards regional co-operation and towards membership in regional organisations vary considerably. President Nazarbayev of Kazakhstan has been the most positive and most active, and he has been the leading proponent of forging deeper economic arrangements among Soviet successor states. President Akayev of the Kyrgyz Republic has had the most global outlook among the five leaders, collaborating with the international financial institutions and being the first to take his country into the World Trade Organization, although the Kyrgyz Republic has also followed Kazakhstan's lead in joining regional organisations. Tajikistan too has joined the same organisations as Kazakhstan, although its actions have often been determined by the government's security ties with Russia. Uzbekistan has been wary of ceding authority to regional organisations, although on occasion President Karimov has tried to assert leadership in Central Asia. President Niyazov (Turkmenbashi) of Turkmenistan has been the most sensitive about sovereignty, and consequently the most reluctant to become seriously involved in regional organisations. The national leaders' attitudes have, however, varied and evolved. Recent signs are of widening fissures, in particular between Uzbekistan and its neighbours, so that while regional co-operation initiatives are being pursued by some of the five countries, there is currently little political will for regional co-operation involving all five countries.

When the leaders of Russia, Belarus and Ukraine met in early December 1991 to discuss the end of the Soviet Union, the Central Asian leaders reacted quickly to maintain some degree of continuity. This became embodied in the Commonwealth of Independent States (CIS), which replaced the Soviet Union on December 25th. President Nazarbayev of Kazakhstan in particular was a key mover in ensuring that the successor to the Soviet Union would include all the non-Baltic republics rather than just the three Slavic republics.

During 1992, the Central Asian leaders were primarily concerned with nation-building. Accession to the United Nations, the International Monetary Fund and the World Bank provided an external dimension to national sovereignty. The five countries also joined the Economic Cooperation Organization⁵⁶ and various non-economic regional organisations in 1992, largely as a statement of their independence from the Soviet Union and as an assertion of their distinctive non-Russian Islamic culture. However, they made no substantive concessions of national policy autonomy in participating in any regional organisation.

The main economic issue in 1992-93 concerned the currency. The Kyrgyz Republic adopted a national currency in May 1993 in order to implement macroeconomic stabilisation and economic reforms. Turkmenistan, Kazakhstan and Uzbekistan were among the final group of CIS countries to abandon the rouble and issue national currencies in November 1993⁵⁷. Tajikistan was distracted by civil war but came to have an independent currency by default, as no other country used the old Soviet rouble after 1993. The CIS as an organisation floundered in 1992-94 as Russia chose to act unilaterally in regional conflicts in the Caucasus and Moldova, and more or less unilaterally in Tajikistan, and as economic issues were pushed into the background.

During the mid-1990s, Russia attempted to re-establish its influence over Central Asia. Faced with a delicate ethnic balance between Kazakhs and Russians, President Nazarbayev of Kazakhstan tried to deflect the impending Russian dominance into a more co-operative structure by promoting the Eurasian customs union. The Kyrgyz Republic had the most reformist government in Central Asia and it received the most support from western governments and from multilateral agencies such as the IMF and World Bank. Uzbekistan and Turkmenistan were more overtly resistant both to Russian regional designs and to falling too much under the influence of the multilateral organisations⁵⁸. Turkmenistan, with substantial (but declining) export earnings from natural gas and cotton, adopted an autarchic political position, seeking United Nations guarantees of its neutrality⁵⁹. Uzbekistan, after adopting a macroeconomic stabilisation programme in January 1994, by contrast became more prominent on the international stage as President Karimov sought to portray himself as the region's leader⁶⁰. Concerns about potential Uzbek hegemony tended to push Kazakhstan and the Kyrgyz Republic, which also fears Uzbek irredentist claims to its territory, closer to Russia. Kazakhstan, the Kyrgyz Republic and Tajikistan became members of the Union of Five (with Russia and Belarus) and the Shanghai Forum (with Russia and China).

The August 1998 Russian crisis had strong contagion effects on Kazakhstan and, to a lesser extent, on the Kyrgyz Republic. Combined with rising external debt and doubts over the returns from economic reform, this led to a halt or even reversal of economic reform in the Kyrgyz Republic. Uzbekistan was relatively insulated from the

Russian crisis. Failing to make much progress in establishing a Central Asian community under its leadership, Uzbekistan formally aligned itself with the GUAM (Georgia, Ukraine, Azerbaijan, and Moldova) countries, whose *raison d'être* was collective resistance to Russian influence. The years 1998-99 saw the division of Central Asia into two opposing camps.

This division eased in 2000 and 2001 in part due to the incursion of Islamic fighters into the Fergana Valley, presenting a common problem to the three countries whose territory was involved. China played a catalytic role in bringing the Central Asian countries together. In 1997-98, China had been an economic anchor in East Asia and had sought closer relations with the USA, but it gradually came to resent a perceived asymmetry in this *rapprochement*, which brought little gain to China. After the US bombing of the Chinese embassy in Belgrade in spring 1999, China pursued a more anti-US course, embracing Japanese proposals for Asian monetary co-operation (which were opposed by the USA) and promoting the Shanghai Cooperation Organization (SCO — a more formal successor to the Shanghai Forum). Although Russia saw the SCO as a vehicle for its leadership in Central Asia, for the Central Asian leaders, especially Uzbekistan, the SCO was palatable because of China's counterweight. Nevertheless, the regional faultline persisted as Kazakhstan, the Kyrgyz Republic and Tajikistan participated in the Russian-led Collective Security Treaty and Uzbekistan did not.

The history of regional organisations involving the five Central Asian countries has been driven by political considerations and has been lacking in economic achievements. In terms of formal trade policies, such as tariffs, this has been a benevolent outcome, because the countries have avoided becoming locked into second-best institutional arrangements, and are moving towards first-best non-discriminatory low tariffs. The multilateral trading system is often seen as an alternative to the regionalism option. The Kyrgyz Republic is already a member of the World Trade Organization and, especially with the recent accession of China and anticipated accession of Russia, the WTO provides the best framework for trade policy in Central Asia⁶¹.

There are other reasons for regional co-operation besides trade policies, and three of these are of particular significance for Central Asia: water resource management (including the desiccation of the Aral Sea and related energy supply issues), security and trade facilitation. The failure to take any common action on the desiccation of the Aral Sea is symptomatic of the inability of Central Asia's leaders to co-operate on a pressing regional issue. Security matters have been dominant, as the above account highlights, and have entered the international spotlight since September 2001. Trade facilitation, while more mundane, is an area in which stepwise progress could be made to reduce foregone opportunities for mutually beneficial trade, due to impediments such as unnecessary delays or bureaucracy at border crossings or in transit, and official or unofficial taxes on traders⁶².

VII. A NEW SITUATION SINCE SEPTEMBER 2001? PROSPECTS FOR THE SECOND DECADE

The events of September 2001 and the overthrow of the Taliban government in Afghanistan provide a major milestone. All of the Central Asian leaders, along with those of Russia and China, gave verbal support to the US-led war on terrorism. Uzbekistan and the Kyrgyz Republic went further by providing material assistance such as making airbases available to the US military. These developments upped the international perceptions of Central Asia's strategic significance. Russia, although officially supporting the USA, attempted to reassert its own influence. Especially after the expansion of NATO in Eastern Europe at the November 2002 Prague summit, President Putin tried to obtain recognition of Russian hegemony over Central Asia and the Caucasus as a *quid pro quo* for his acquiescence in the NATO enlargement. President Karimov of Uzbekistan, however, had a fairly high profile at Prague, meeting President Jacques Chirac and Secretary of State Colin Powell, who praised "the practical actions of Uzbekistan in the international fight against terrorism"⁶³.

Within Central Asia, however, the most striking developments since 1991 have been in domestic rather than in international politics. Apart from in Tajikistan, the presidents are all men who were appointed as First Secretary of their Soviet republic by Mikhail Gorbachev and who have remained in power by more or less undemocratic means. Opposition has been fairly ruthlessly crushed and civil society has been slow to emerge. Nevertheless, in all of the countries, apart perhaps from the confused situation in Tajikistan, there are signs of a more threatening opposition to the incumbents⁶⁴. Policy statements emphasise co-ordinated action against terrorism, but since 1999 border closures and international incidents have become more frequent.

The establishment of new border posts was a consequence of the creation of the new independent states in 1991, but their role as a major source of tension was exacerbated by the 1999 explosions in Tashkent and the increased activity of the Islamic Movement of Uzbekistan (IMU). Uzbekistan subsequently introduced visa requirements which were followed by its neighbours, and took steps such as laying mines to deter IMU fighters from entering Uzbekistan through Tajikistan and the Kyrgyz Republic. Since November 1999, according to local media reports, at least twelve civilians have been killed by the landmines.

A further twist to the border issue arose after Uzbekistan introduced high taxes on private imports in July 2002 in a poorly articulated attempt to reduce the black market premium on the currency and to regulate the informal trading sector⁶⁵. One consequence was a large increase in the number of Uzbeks shopping in nearby towns in Kazakhstan or the Kyrgyz Republic⁶⁶. The Uzbekistan government responded by tightening border

controls in order to regulate the inflow of “substandard consumption goods” and to enforce tax collection. In late December, Uzbekistan began to close border crossings, even going so far in mid-January 2003 of blowing up a bridge into the Kyrgyz Republic near the Kyrgyz town of Kara Su.

In the Ferghana Valley, the situation is complicated by the arbitrariness of borders, which were meaningless until 1991 but are now national boundaries, and by the presence of enclaves. In October 2002, Tajikistan established two new border posts in the Isfara region, which according to the Kyrgyz authorities violated an agreement prohibiting establishment of new checkpoints on disputed territories. The Kyrgyz Republic retaliated by establishing a border post at Kok-Terek. In December 2002, an inter-governmental commission on border issues met in Bishkek and identified about 71 land plots, totalling about 21 km², that are claimed by both the Kyrgyz Republic and Tajikistan. On 4th January 2003, residents of Tajikistan’s Vorukh enclave destroyed a Kyrgyz border post and residents of the surrounding Batken province of the Kyrgyz Republic responded by destroying a Tajik border post. The economic base to these actions is that the new border posts, staffed by ill-trained and corrupt customs officials, disrupt local trade networks that have existed in the valley for centuries⁶⁷. The added economic hardship in an already poverty-stricken area provides a fertile ground for populist agitators to channel anger into ethnic hatred.

The presence of enclaves is a particularly tough problem to resolve. Residents of the two Tajikistan enclaves, Vorukh and western Kalacha, which are both surrounded by Batken province of the Kyrgyz Republic have long complained about their isolation from the rest of Tajikistan, but the increasing inconvenience of border checkpoints has exacerbated their dissatisfaction. Tajikistan has informally sought land corridors, but the Kyrgyz Republic opposes such proposals as interfering with the movement of Kyrgyz citizens. Uzbekistan has formally proposed establishment of corridors to its enclaves, which are surrounded by Kyrgyz Republic territory. In 2002 and 2003, Uzbekistan has been perceived in the Kyrgyz Republic as seeking to use its military superiority to enforce border adjustments linking its enclaves to the contiguous section of Uzbekistan.

Border relations between Uzbekistan and Turkmenistan have also had tense episodes. Parts of both the Khorezm province of Uzbekistan and Dashgouz province of Turkmenistan, in which a substantial Uzbek minority lives, lie in the historically integrated Khorezm oasis. The introduction of border posts and of visa restrictions and charges fuelled local protests in the early 2000s. At the national level, the long-strained relations between the two countries’ presidents were exacerbated by accusations that Uzbekistan facilitated the entry of Boris Shikhmuradov into Turkmenistan before the November 25th assassination attempt on Turkmenistan’s president. Uzbekistan denies the accusation, but tensions between the two countries remain high as Turkmenistan’s president continues to blame Uzbekistan for aiding those plotting to kill him.

What are the prospects for improved international relations in Central Asia during the first decade of the 21st century? At the institutional level, existing regional organisations have been strengthened, at least on paper, as the Union of Five became the Eurasian Community, the Shanghai Forum became the Shanghai Cooperation Organization and the Central Asian Economic Community was succeeded by the Central Asian Cooperation Organization⁶⁸. Whether the implementation ability of the new

organisations will exceed that of their predecessors is still uncertain. The events of September 2001 stimulated declarations of concerted action against terrorism, but the actual consequence has been to widen the fissure between the Eurasian Community members and the countries which are more sceptical about Russia's role in the region. Moreover, recent developments within the region, especially increased territorial disputes, are creating a climate which is inimical to co-operation. Whether justified on security grounds or not, new border control measures are unpopular among the local populations who have no history of such restrictions, and as assertions of the new states' territorial rights they augur poorly for inter-state co-operation.

Yet, there are benefits from regional co-operation, and if these could be realised that would help to defuse political tensions. The costs to Central Asia of foregoing benefits from international specialisation and trade arise from the tragedy of the anti-commons, where people promoting self-interested goals are choking off trade that would be mutually beneficial. This tragedy can be mitigated by government actions to discourage or regulate anti-social behaviour by local authorities, customs officials and others under their jurisdiction. The national governments can also benefit by implementing policies to reduce other impediments to trade such as cumbersome visa regulations, poorly developed financial systems, and capricious changes in border crossings, but that requires an appreciation that many of the foregone trade opportunities represent win-win situations.

VIII. CONCLUSIONS

When the five Central Asian countries became unexpectedly independent during the second half of 1991, they faced three large negative shocks: the end of central planning, the dissolution of the Soviet Union, and hyperinflation. All experienced a transitional recession; output fell, inequality widened and poverty increased. Their national experiences, however, diverged during the first decade after independence, both with respect to the type of economic system created and with respect to economic performance.

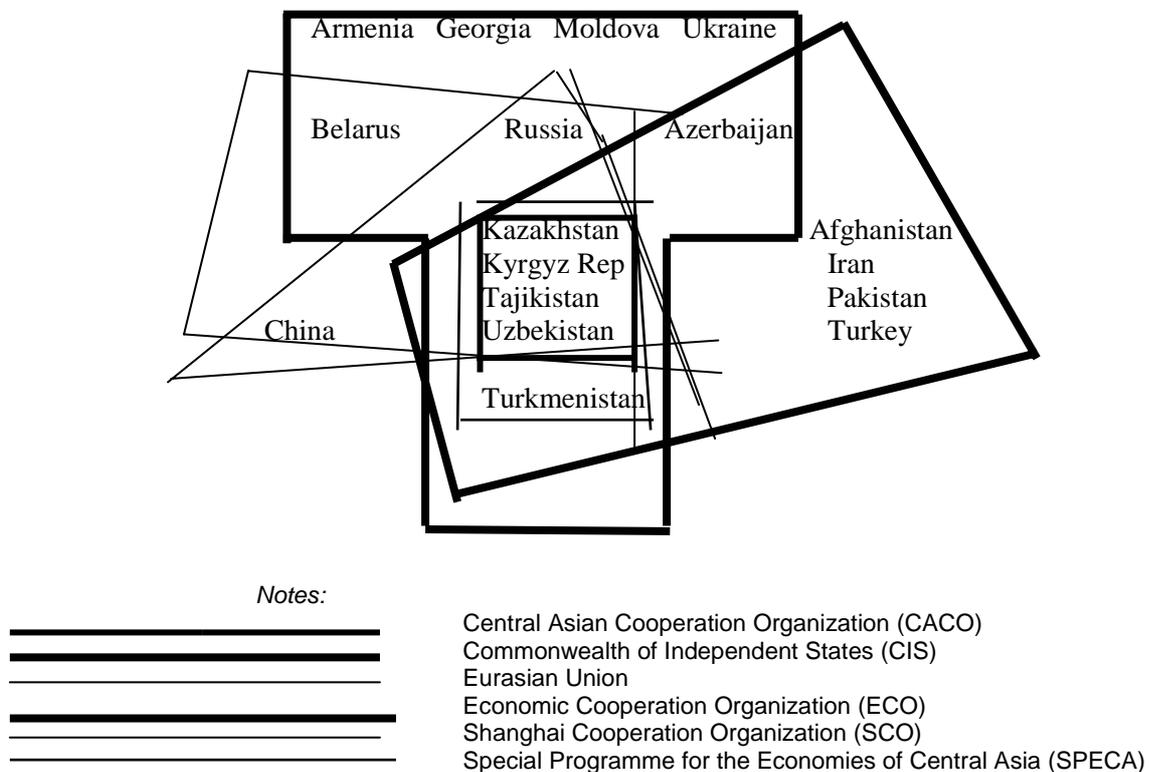
On the international stage, the countries remained fairly insignificant despite their combined population of over fifty million and their resource abundance. Individual economies were hampered by the inherited infrastructure, which prevented especially Kazakhstan and Turkmenistan from realising potential energy exports, but also (again especially in the two energy-rich countries) by poor economic policies. The Kyrgyz Republic and Tajikistan had much less favourable initial conditions and have remained small poor countries, especially Tajikistan which had the added burden of a long civil war. Uzbekistan has been the most successful in terms of economic performance, but major policy errors limit both its international economic influence and future prospects. Moreover, any scenarios of the Central Asian countries' acting as a group have foundered on intra-regional rivalries.

By the turn of the century, the national economies, with the possible exception of Turkmenistan's, had changed substantially from the centrally planned economy of the Soviet era and all were in one form or another a market-based economy. Kazakhstan, despite false steps in the 1990s, remains the most likely to succeed. Its new elite, based on an unfair and distorted privatisation process, is now keen to establish a rule of law in order to protect its economic gains, and favourable institutional developments are likely. Meanwhile, the hard infrastructure of oil pipelines will eventually improve and provide Kazakhstan with alternative outlets for its dominant exports. At the other extreme, Turkmenistan faces the grimmest immediate prospects with a regime that is resistant to change; the long-term prospects depend upon the timing and the nature of the political succession. Political factors are also critical in Tajikistan, where establishment of effective public administration is a necessary precondition for progress. Even with that condition met, the economic prospects are not good for Tajikistan or for the Kyrgyz Republic, both poor landlocked countries. Uzbekistan is the most complex situation to forecast. In the 1990s, it was economically the most successful of all Soviet successor states and in day-to-day matters the economy remains well-managed, but bedevilled by poor economic policies in key areas. If the inter-related issues of currency convertibility, farmgate prices and government revenues can be addressed, the economic prospects

should be reasonably good, but if they are not addressed Uzbekistan’s economy could easily slip into the state familiar from many import-substituting countries of the 1950s and 1960s.

How to sum up the prospects for Central Asia as a whole? The main conclusion of this paper is that, despite much shared background and common initial conditions, the five countries, and especially the two larger economies, Kazakhstan and Uzbekistan, have been moving along differing trajectories and that is likely to continue. While the three smaller countries will remain minor players in the global economy, both of the larger countries could become significant middle-sized economies, but in their own right rather than as part of Central Asia.

Figure 2. **Regional Arrangements Involving the Central Asian Countries**



The figure excludes cultural groupings and other arrangements with no trade content. Turkmenistan’s neutrality status means that it is generally inactive in regional organisation such as the CIS, but pursues bilateral relations with CIS countries.

Table 1. Republics of the USSR
a) Initial Conditions and Performance Indicators

Republic	Population (million) mid-1990	Per capita GNP ^a (1990)	Gini coefficient (1989)	Poverty (% of pop) ^b (1989)	Terms of trade ^c	Real GDP (1999 - as % of 1989)	Inflation ^d (1996)
USSR	289.3	2 870	0.289	11.1			
Kazakh	16.8	2 600	0.289	15.5	+19	59	29
Kyrgyz	4.4	1 570	0.287	32.9	+1	62	23
Tajik	5.3	1 130	0.308	51.2	-7	43	100
Turkmen	3.7	1 690	0.307	35.0	+50	53	130
Uzbek	20.5	1 340	0.304	43.6	-3	89	100
Armenia	3.3	2 380	0.259	14.3	-24	42	9
Azerbaijan	7.2	1 640	0.328	33.6	-7	46	12
Georgia	5.5	2 120	0.292	14.3	-21	33	9
Belarus	10.3	3 110	0.238	3.3	-20	75	102
Moldova	4.4	2 390	0.258	11.8	-38	30	11
Russia	148.3	3 430	0.278	5.0	+79	53	17
Ukraine	51.9	2 500	0.235	6.0	-18	35	30
Estonia	1.6	4 170	0.299	1.9	-32	79	12
Latvia	2.7	3 590	0.274	2.4	-24	60	10
Lithuania	3.7	3 110	0.278	2.3	-31	65	13

Notes:

- a) GNP per capita in dollars, computed by the World Bank's synthetic Atlas method.
b) Poverty is defined as individuals in households with gross per capita income less than 75 roubles.
c) Impact on the terms of trade of moving to world prices, calculated at a 105-sector level of aggregation using 1990 weights.
d) The annual increase in the consumer price index, end of year.

Sources: columns 1 and 2, World Bank; columns 3 and 4, Atkinson and Micklewright (1992, Table U13), which is based on Goskomstat household budget survey data; column 5, Tarr (1994); columns 6 and 7 European Bank for Reconstruction and Development.

b) Maddison's Estimates of Per Capita GDP at PPP

Republic	1973			1990			1998		
	Pop. (million)	GDP (billion)	GDP p.c.	Pop. (million)	GDP (billion)	GDP p.c.	Pop. (million)	GDP (billion)	GDP p.c.
USSR	249.7	1.513	6 058	289.4	1.988	6 871	290.9	1.132	3 893
Kazakh	13.8	105	7 593	16.7	122	7 305	15.6	75	4 809
Kyrgyz	3.2	12	3 702	4.4	16	3 592	4.7	10	2 042
Tajik	3.2	13	4 105	5.3	16	2 995	6.1	5	830
Turkmen	2.4	11	4 795	3.7	13	3 626	4.8	8	1 723
Uzbek	13.1	67	5 118	20.5	87	4 264	24.1	79	3 296
Armenia	2.7	17	6 189	3.3	20	6 142	3.8	13	3 341
Azerbaijan	5.5	24	4 458	7.1	33	4 681	7.7	16	2 135
Georgia	4.9	29	5 894	5.5	41	7 569	5.4	15	2 737
Belarus	9.2	48	5 234	10.3	73	7 153	10.2	59	5 743
Moldova	3.7	20	5 379	4.4	27	6 211	3.6	9	2 497
Russia	132.7	872	6 577	148.3	1.151	7 762	146.9	664	4 523
Ukraine	48.3	238	4 933	51.9	311	5 995	50.3	127	2 528
Estonia	1.4	12	8 656	1.6	17	10 733	1.5	15	10 118
Latvia	2.4	19	7 780	2.7	26	9 841	2.4	15	6 216
Lithuania	3.2	25	7 589	3.7	32	8 591	3.7	22	5 918

Notes: Pop = mid-year population in millions; GDP = gross domestic product in billion 1990 international dollars; GDP p.c. = gross domestic product per capita in 1990 international dollars.

Source: Maddison (2001, 183-5).

Table 2. **Growth in Real GDP 1989-2000 (%)**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	1999: 1989=100
Kazakhstan	0	0	-13	-3	-9	-13	-8	1	2	-2	2	10	63
Kyrgyz Rep.	8	3	-5	-19	-16	-20	-5	7	10	2	4	5	63
Tajikistan	-3	-2	-7	-29	-11	-19	-13	-4	2	5	4	8	44
Turkmenistan	-7	2	-5	-5	-10	-17	-7	-7	-11	5	16	18	64
Uzbekistan	4	2	-1	-11	-2	-4	-1	2	3	4	4	2	94

Notes: 2000 = preliminary actual figures from official government sources. Blanks indicate that data are not given in the source.

Source: European Bank for Reconstruction and Development *Transition Update*, April 2001, 15.

Table 3. **Inflation (change in consumer price index) 1991-2000 (%)**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Kazakhstan	79	1 381	1 662	1 892	176	39	17	8	7	13
Kyrgyz Republic	85	855	772	229	41	31	26	36	12	19
Tajikistan	112	1 157	2 195	350	609	418	88	28	43	34
Turkmenistan	103	493	3 102	1 748	1 005	992	84	24	17	8
Uzbekistan	82	645	534	1 568	305	54	59	29	18	50

Notes: 2000 = estimate.

Source: European Bank for Reconstruction and Development *Transition Update*, April 2001, 16.

Table 4. **Transition Indicators, 2001**

a) Summary Transition Indicators

	EBRD Transition Indicator 1999	Liberalisation Index 1997	Liberalisation Index Cumulative	Index of Institutional Quality 1997-98
Kyrgyz Republic	2.8	0.75	3.39	-6.5
Kazakhstan	2.7	0.86	4.35	-7.9
Uzbekistan	2.1	0.57	2.83	-13.8
Tajikistan	2.0	0.45	2.21	-17.3
Turkmenistan	1.4	0.36	1.53	-16.1

Notes: The Cumulative Liberalization Index sums the annual values from 1989 to 1997.

Source: IMF *World Economic Outlook*, September 2000, 180-3.

b) Disaggregated EBRD Indicators

	KAZ	KR	TAJ	TKM	UZB
Price liberalisation		3	3		2
Trade & forex system		4	3+		2-
Private sector share of GDP (%)		60	45		45
Small-scale privatisation		4	4-		3
Large-scale privatisation		3	2+		3-
Governance & enterprise restructuring		2	2-		2-
Competition policy		2	2-		2
Financial reform					
Banking and interest rates		2+	1		2-
Securities and NBFIs		2	1		2
Infrastructure					
Telecoms		2+	2+		2
Electric power		2+	1		2
Railways		1	1		3
Roads		1	1		1
Water & waste water		1	1		1

Note: the measurement scale is from 1, indicating little or no change from the centrally planned economy to 4+, representing the standards of an industrialised market economy.

Source: EBRD Transition Report 2002.

c) Institutional Quality 1997-98

Highest quintile	Second quintile	Third quintile	Fourth quintile	Fifth quintile
Switzerland	Costa Rica	Fiji	Senegal	Albania
Netherlands	Poland	W.Samoa	Ecuador	N. Korea
Finland	Malawi	Comoros	Macedonia	Cameroon
New Zealand	Czech Rep.	Bahrain	Turkey	Syria
Denmark	Israel	Croatia	Uganda	Chad
Norway	Bahamas	Cape Verde	Venezuela	Belarus
Sweden	Greece	Bolivia	Cuba	Indonesia
UK	Estonia	Bulgaria	PNG	Azerbaijan
Luxembourg	Trinidad & T	India	Sri Lanka	Kenya
Singapore	Uruguay	Brazil	Madagascar	Mauritius
Canada	Botswana	El Salvador	Vietnam	Yemen
Australia	Qatar	Jamaica	Bangladesh	Guinea-Bissau
Ireland	Belize	Gambia	Cambodia	Maldives
Austria	Oman	Mexico	CAR	Sierra Leone
Germany	Namibia	Romania	Colombia	B&H
Iceland	S.Korea	Lebanon	Nicaragua	Nigeria
USA	N Caledonia	Mali	Kyrgyz Rep	Burundi
Portugal	Kuwait	Dom Rep	Honduras	Niger
Solomon Isl.	Jordan	Ethiopia	Armenia	Congo
Spain	Argentina	Tanzania	Swaziland	Uzbekistan
France	Tunisia	Ghana	Djibouti	Liberia
Cyprus	Slovak Rep.	Egypt	Mozambique	Yugoslavia
Hong Kong	Brunei	Malaysia	Guatemala	Haiti
Puerto Rico	Latvia	Peru	Zimbabwe	Turkmenistan
Japan	Lithuania	Côte d'Ivoire	Kazakhstan	Angola
Italy	UAE	Moldova	Gabon	Rwanda
Belgium	Palestine	China	Iran	Bhutan
Chinese Taipei	Mongolia	Zambia	Russia	Equatorial Guinea
Chile	Philippines	Suriname	Guinea	Algeria
Hungary	Morocco	Saudi Arabia	Paraguay	Sudan
Malta	Thailand	Lesotho	Ukraine	Laos
Slovenia	Guyana	Burkina Faso	Pakistan	Tajikistan
Barbados	Panama	Benin	Georgia	Somalia
São Tomé	South Africa	Nepal	Togo	Zaire

Note: Highlighted countries have had centrally planned economies.

Source: IMF *World Economic Outlook*, September 2000, 155.

Table 5. Poverty Measures for 1987-88 and 1993

Country	1987-88		1993	
	Number (millions)	Share of population (%)	Number (millions)	Share of population (%)
Kazakhstan	0.8	5	11.0	65
Kyrgyz Republic	0.5	12	4.0	88
Turkmenistan	0.4	12	2.4	61
Uzbekistan	4.8	24	13.3	63

Notes: The poverty line is 120 international dollars per capita per month. Tajikistan is not included in the source, presumably because of the civil war in 1993, but poverty would have been at least as high as in the other four countries.

Source: Milanovic (1998, Table 5.1), based on Household Budget Survey income measures.

Table 6. Summary Statistics from Central Asian LSMS Surveys

Variables	Kazakhstan (1996)	Kyrgyz Rep (1993)	Kyrgyz Rep (1997)	Tajikistan (1999)	Fergana (Uzbekistan)
Per capita expenditure	4 963.76 (3 515.27)	144.61 (140.26)	641.16 (752.00)	15 636 (13 095)	4 115.554 (3 888.75)
Per capita expenditure - adult Equivalent	5 980.43 (4 113.47)	176.85 (168.47)	782.77 (921.51)	19 504 (16 457)	5 060.62 (4 738.77)
Demographic traits					
Male head (%)	61.6	81.8	86.8	91.3	93.9
Head is married (%)	72.1	77.5	77.3	85.5	90.8
Age of head (years)	46.326 (14.218)	41.337 (13.722)	39.713 (12.668)	39.850 (11.047)	38.760 (10.444)
Health of head					
Head in good health (%)	28.9	90.7	90.5	69.3	
Education of head					
College graduate (%)	18.2	16.3	15.8	14.8	14.4
Tecnikum (%)	23.2	18.5	16.9	12.0	14.6
Vocational-technical (%)	32.2	38.0	10.7	22.6	14.8
Completed secondary (%)	11.5	16.9	44.4	35.6	45.3
Incomplete secondary (%)	14.9	10.3	12.2	15.0	10.9
Education of MHE:					
College graduate (%)	26.8	22.6	25.4	20.2	19.6
Tecnikum (%)	33.1	30.0	22.9	15.1	24.8
Vocational-technical (%)	26.6	31.9	9.9	23.4	18.3
Completed secondary (%)	7.8	12.7	36.2	35.0	34.0
Incomplete secondary (%)	5.7	2.8	5.6	6.3	3.3
Location of household					
Rural community (%)	43.6	57.1	62.4	72.8	71.5
Capital city (%)	9.4	16.5	15.2	8.9	
Region 1 (%)	20.7	24.6	13.8	4.0	
Region 2 (%)	18.1	39.1	35.1	21.5	
Region 3 (%)	8.5	19.8	35.9	30.4	
Region 4 (%)	22.3			35.2	
Region 5 (%)	21.0				
Household composition					
Number of children	1.263 (1.228)	1.822 (1.691)	2.234 (1.739)	3.515 (2.071)	2.638 (1.533)
Number of elderly	0.414 (0.676)	0.511 (0.731)	0.509 (0.733)	0.492 (0.733)	0.490 (0.739)
Number of non-elderly adults	1.914 (1.119)	2.603 (1.800)	2.845 (1.472)	3.065 (1.812)	2.843 (1.580)
Sample size (households)	1 890	1 926	2 618	1 983	541

Notes: Standard deviations of continuous variables are in parentheses. Expenditures are in national currency units. MHE = most highly educated household member. The regions are: Kazakhstan 1 = Central, 2 = South, 3 = West, 4 = North, 5 = East (excluding Almaty); Kyrgyz Republic 1 = Chui, 2 = South, 3 = Mountain; Tajikistan 1 = Gorna Badakhshan, 2 = RSS, 3 = Leninabad, 4 = Khatlon.

Table A1. Regression Results: Kazakhstan, 1996

Variables	Ln Expenditures		Ln Expenditures	
	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	8.542*	89.60	8.519*	89.31
Demographic traits				
Head is male	0.033	0.95	0.028	0.81
Age of head	-0.002	-1.12	-0.001	-0.92
Head is married	0.046	1.16	0.044	1.11
Education/health of head				
College graduate	0.272*	5.62	0.268*	5.55
Tecnikum	0.167*	3.63	0.165*	3.60
Vocational-technical training	0.114*	2.56	0.112*	2.54
Completed secondary	-0.001	-0.02	0.006	0.11
Head in good health	-0.032	-1.06	-0.029	-0.94
Location of household				
Rural community	0.117*	4.10		
Central	-0.036	-0.70		
Southern	-0.447*	-8.38		
Western	0.089	1.43		
Northern	0.295*	5.67		
Other Eastern (not Almaty)	0.038	0.74		
Rural*Central			0.095	1.56
Urban*Central			-0.045	-0.81
Rural*South			-0.353*	-5.66
Urban*South			-0.432*	-7.32
Rural*West			0.029	0.36
Urban*West			0.218*	3.04
Rural*North			0.427*	7.47
Urban*North			0.284*	4.99
Rural*East			0.198*	3.43
Urban*East			-0.009	-0.16
Household composition				
Number of children	-0.174*	-14.04	-0.170*	-13.61
Number of elderly	-0.116*	-3.82	-0.108*	-3.56
Number of non-elderly adults	-0.058*	-4.18	-0.055*	-3.94
<hr/>				
R-square	0.300		0.306	
F-statistic	47.14*		39.12*	
Sample size	1 890		1 890	

Note: An asterisk indicates significant at the 5 per cent level.

Table A2. Regression Results: Kyrgyz Republic, 1993 and 1997

Variables	Log Expenditure		Log Expenditure, 1993		Log Expenditure, 1997	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	5.248*	58.26	4.887*	28.55	7.348*	89.94
Demographic traits						
Head is male	0.015	0.34	0.113	1.41	-0.089*	-2.09
Age of head	0.0005	0.45	-0.0005	-0.24	0.002*	1.99
Head is married	0.012	0.31	0.066	0.089	0.005	0.14
Education/health of head						
College graduate	0.285*	6.50	0.321*	4.04	0.215*	4.93
Tecnikum	0.144*	3.38	0.199*	2.60	0.074	1.74
Vocational-technical	0.081	1.90	0.120	1.69	-0.060	-1.26
Completed secondary	-0.056	-1.36	-0.105	-1.19	-0.063	-1.62
Head in good health	0.015	0.33	0.097	1.07	-0.011	-0.27
Household location						
Rural community	-0.264*	-8.63	-0.365*	-6.10	-0.177*	-6.42
Chui	-0.184*	-3.90	-0.083	-0.94	-0.256*	-5.74
South	-0.547*	-12.80	-0.373*	-4.51	-0.733*	-18.81
Mountain	-0.728*	-16.53	-0.459*	-5.08	-0.928*	-23.96
Household composition						
Number of children	-0.137*	-16.09	-0.118*	-6.78	-0.139*	-18.68
Number of elderly	-0.068*	-3.86	-0.077*	-2.16	-0.014	-0.84
Number of adults	-0.024*	-2.82	0.002	0.11	-0.073*	-8.37
Year						
1997	0.482*	17.90				
R-square	0.309		0.151		0.553	
F-statistic	125.95*		22.47*		214.50*	
Sample size	4 531		1 913		2 618	

Note: An asterisk indicates significant at the 5 per cent level.

Table A3. Regression Results: Tajikistan, 1999

Variables	Ln Expenditure		Ln Expenditure	
	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	9.927*	114.43	9.920*	114.16
Demographic traits				
Head is male	0.020	0.35	0.021	0.36
Age of head	-0.001	-1.04	-0.001	-1.05
Head is married	0.070	1.51	0.072	1.55
Education/health of head				
College graduate	0.327*	6.97	0.329*	7.01
Tecnikum	0.260*	5.26	0.263*	5.31
Vocational-technical training	0.097*	2.25	0.097*	2.25
Completed secondary	0.023	0.57	0.026	0.64
Head in good health	-0.007	-0.26	-0.006	-0.23
Household location				
Rural community	0.027	0.79		
Gorna-Badakhshan	-0.603*	-7.65	-0.583*	-7.82
RRS	-0.061	-1.06		
Leninabad	-0.335*	-6.36		
Khatlon	-0.344*	-6.38		
Rural RRS			-0.052	-0.98
Urban RRS			0.059	0.66
Rural Leninabad			-0.309*	-6.11
Urban Leninabad			-0.337*	-5.74
Rural Khatlon			-0.312*	-6.29
Urban Khatlon			-0.377*	-5.83
Household composition				
Number of children	-0.088*	-12.80	-0.087*	-12.77
Number of elderly	-0.047*	-2.69	-0.047*	-2.68
Number of non-elderly adults	-0.006	-0.81	-0.005	-0.69
R-square	0.182		0.183	
F-statistic	27.30*		24.43*	
Sample size	1 983		1 983	

Note: An asterisk indicates significant at the 5 per cent level.

**Table A4. Regression Results:
Ferghana Region of Uzbekistan, Kyrgyz Republic and Tajikistan**

Variables	Uzbekistan		Kyrgyz Republic		Tajikistan	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	8.183*	33.08	6.496*	50.12	9.744*	68.06
Demographic traits						
Head is male	-0.033	-0.18	0.082	1.15	-0.097	-0.89
Age of head	0.007	1.92	0.003	1.81	0.0009	0.45
Head is married	0.092	0.62	-0.142*	-2.41	-0.009	-0.10
Education of head						
College graduate	0.430*	3.09	0.273*	3.69	0.223*	2.50
Tecnikum	0.351*	2.50	0.106	1.48	0.261*	3.12
Vocational-technical	-0.050	-0.34	-0.114	-1.47	0.085	1.06
Completed secondary	0.115	0.93	-0.002	-0.03	0.018	0.25
Head in good health			-0.074	-1.06	0.064	1.28
Household location						
Rural community	-0.521*	-6.60	-0.229*	-6.10	0.063	1.19
Household composition						
Number of children	-0.123*	-4.99	-0.124*	-12.33	-0.105*	-7.22
Number of elderly	0.105*	2.23	0.033	1.22	-0.054	-1.77
Number of non-elderly adults	-0.021	-0.86	-0.059*	-4.64	-0.031*	-2.07
R-square	0.207		0.357		0.147	
F-statistic	12.53*		41.66*		8.50*	
Sample size	541		915		603	

Note: An asterisk indicates significant at the 5 per cent level.

Table A5. Regression Results: Capital Cities of Kazakhstan, Kyrgyz Republic and Tajikistan

Variables	Almaty (Kaz)		Bishkek (Kyrg.)		Dushanbe (Taj)	
	Coefficient	t-statistic	Coefficient	t-statistic	Coefficient	t-statistic
Intercept	8.848*	33.90	7.584*	38.27	10.170*	41.77
Demographic traits						
Head is male	0.133	1.45	-0.200*	-2.23	-0.120	-0.64
Age of head	-0.003	-0.62	0.0003	0.11	-0.005	-1.23
Head is married	0.010	0.11	0.117	1.38	0.330*	2.05
Education of head						
College graduate	0.245*	2.05	0.073	0.67	0.243	1.67
Tecnikum	0.055	0.43	0.069	0.61	0.019	0.11
Vocational-technical	0.078	0.58	0.048	0.38	0.004	0.02
Completed secondary	0.005	0.03	0.126	1.08	-0.240	-1.59
Head in good health	0.037	0.40	0.163	1.78	0.138	1.39
Household composition						
Number of children	-0.214*	-4.44	-0.183*	-7.32	-0.145*	-4.87
Number of elderly	-0.294*	-3.23	-0.035	-0.77	-0.129	-1.59
Number of other adults	-0.136*	-3.37	-0.177*	-6.73	0.003	0.09
R-square	0.247		0.305		0.220	
F-statistic	4.96*		15.39*		4.16*	
Sample size	178		397		174	

Note: An asterisk indicates significant at the 5 per cent level.

NOTES

1. At purchasing power parity, the Central Asian countries' incomes are higher. Tajikistan's 2000 GNI per capita at PPP is \$1 090. Corresponding figures for the Kyrgyz Republic are \$270 and \$2 540 (PPP), for Uzbekistan \$360 and \$2 360 (PPP), for Turkmenistan \$750 and \$3 820 (PPP), and for Kazakhstan \$1 260 and \$5 490 (PPP). These figures are from the World Bank's *World Development Indicators 2002*. As emphasised below, care needs to be taken in interpreting the national accounts data, and PPP conversions are even less firmly based. By Maddison's PPP estimates, Tajikistan's 1998 per capita GDP of \$830 (Table 1b) was about the same as that of Haiti or Bangladesh. Only Afghanistan had lower per capita GDP in Asia, and in Africa only 13 of the 42 countries for which Maddison provides estimates had lower per capita GDP than Tajikistan.
2. With 20 billion barrels, Kazakhstan currently has the world's twelfth largest proven oil reserves. The Caspian Basin and Russia are forecast to be the only non-OPEC members with increasing oil reserves over the medium term, and by 2030 they will be the largest net oil exporting region outside the Middle East (IEA, 2002, 98-9 and 108). British Petroleum's \$6.75 billion investment in Russia's Tyumen Oil, announced in February 2003, is indicative of the oil majors' willingness, or desperation, to deal with non-OPEC oil companies even in countries where institutions are weak.
3. International Monetary Fund (1992, 37).
4. Although protests had taken place in Almaty in 1986 against the appointment of a non-Kazakh as First Secretary of Kazakhstan and ethnic conflicts had occurred in the Fergana Valley, neither was a serious harbinger of secession. In the March 1991 referendum on the future of the USSR, the Central Asian republics had voted overwhelming for retention of the Soviet Union. The Central Asian leaders responded cautiously to the August 1991 coup against Mikhail Gorbachev. Several of the Central Asian countries date their independence from the autumn of 1991, but the declarations of "sovereignty" in September 1991 were attempts to gain greater local control over the republics' natural resources, and in no case envisaged withdrawal from the Soviet Union. For more details, see Pomfret (1995).
5. On the economies and recent economic history of the Central Asian countries, see Pomfret (1995), Pomfret and Anderson (2001) and Islamov (2001).
6. Reviewing the measurement issues Bloem *et al.* (1998) conclude that there is no reason to expect the biases to cancel out and that in most transition economies the under-reporting effect is dominant, so that post-transition output is under-estimated. International comparisons for the years up to 1993 are plagued by the problem of which exchange rate to use to convert rouble amounts into a convertible currency (Pomfret, 1995, 171-2).
7. The interrepublic flows in the USSR are difficult to measure because the Soviet economy was treated as a single unit and large flows took place within all-Union enterprises. Outsiders have estimated the net flow to the Kyrgyz Republic in the late 1980s at around a seventh of the republic's gross product (Pomfret, 1995, 72; Griffin, 1996, 19), but Central Asian economists have argued that the net inflow was much smaller or even that Central Asia subsidised the rest of the USSR through Moscow-manipulated transfer pricing (Islamov, 2001).

8. Filer and Hanousek (2002) emphasise the improved capabilities of national statistical offices, but these have improved at varying speeds and to varying degrees so that cross-country comparisons are distorted by the stage which statistical office upgrading has reached in each country at each point in time.
9. The Uzbek Republic was notorious for over-reporting, and the first target of Mikhail Gorbachev's anti-corruption drive was the Uzbek elite which had channelled into the republic billions of roubles in payment for non-existent cotton. After independence, the disgraced First Secretary, Sharof Rashidov, became a national hero. Not all over-reporting was dishonest; between 1958 and 1991, around \$1 billion worth of mechanical cotton harvesters, at 1960 prices, were produced in Central Asia, whose real value to the farms receiving them was close to zero because under Central Asian conditions hand-picking was the most efficient technique (Pomfret, 2002a), but Soviet planners believed in the superiority of mechanical picking.
10. The household survey data are discussed in section V below. Rapid surveys were used to assess immediate needs in the early 1990s (e.g. Howell, 1996, on the southern districts of the Kyrgyz Republic) and more recently qualitative methods have been used to conceptualise interactions between social, economic and psychological elements of changes in living standards (see, for example, the chapters by Kuehnast on the Kyrgyz Republic and by Gomart on Tajikistan and Uzbekistan in Dudwick *et al.*, 2003), but both of these approaches rely on small and possibly unrepresentative samples which make generalisation of the results difficult. Nevertheless, the patterns of traumatic economic decline during the first half of the 1990s, especially outside the capital cities, are incontrovertible.
11. The econometric literature is reviewed in Pomfret (2002c, 90-3) and in World Bank (2002). Among the studies finding a primary role for reform policies are a series of papers by IMF economists (e.g. Fischer *et al.*, 1998; Fischer and Sahay, 2001). Initial conditions are the strongest determinants in the econometric work of EBRD economists Falchetti *et al.* (2000), although they find that some countries defied the odds by performing better, or worse, than initial conditions suggested and that the effect of initial conditions diminishes over time.
12. The idea of a threshold value beyond which inflation is harmful to growth was popularised by Bruno and Easterly (1998), although their threshold of 40 per cent now appears too high. Focusing only on transition economies, Christoffersen and Doyle (1998) estimated a threshold of 13 per cent.
13. The opposition has been led by powerful political figures who have defected from the government, often in response to the centralisation of power in the President's family, and by businessmen, who gained from the 1990s privatisation and now want to strengthen the rule of law in order to protect their gains. The "New Kazakhs" opposition became more open in late 2001, and the government responded harshly in 2002, but the subsequent stand-off reflected the strength of the opposition. Corruption scandals undermine the government, especially the "Kazakhgate" affair associated with a concealed Swiss bank account into which President Nazarbayev has reportedly deposited over a billion dollars in oil revenues and which is the subject of inquiries by US prosecutors.
14. The largest single enterprise, a sugar refinery which accounted for 3 per cent of GNP in 1991, used cane sugar from Cuba as the raw material and this supply link broke down completely. The other large industrial enterprises were part of the Soviet military-industrial complex and also encountered breakdown of their demand and supply chains after 1990.
15. Kumtor accounted for over two-fifths of industrial output and its share of GDP was 16 per cent in the first quarter of 2001; Centre for Social and Economic Research in Kyrgyzstan, *Kyrgyz Economic Outlook 2/2001*, 9.

16. The Kyrgyz Republic's image as an "island of democracy" in Central Asia became tarnished in 1994-96 when President Akayev ruled by decree in order to push through what he considered necessary legislation. Opponents were intimidated and opposition media suppressed. The October 2000 election, in which Akayev was returned to power, was viewed by outside observers as flawed. Nevertheless, the media appears to be more open than elsewhere in Central Asia, and the feeling of oppression is less than in some of the Kyrgyz Republic's neighbours. Since autumn 2001, when the government ceded 95 000 hectares of territory to China, and March 2002, when demonstrations in the south were forcibly suppressed with six deaths, opposition to the regime has become more pronounced.
17. Gomart (in Dudwick *et al.*, 2003, 68) reports an estimated 70 per cent of men from some towns were working in Russia or Iran in spring 1996.
18. The two key clauses of the 1997 peace agreement involved demobilisation of the opposition military forces and a 30 per cent share of government posts being given to opposition nominees. From 1997-2001 ongoing disputes arose over whether the opposition was receiving its fair share of positions, and whether dismissals were for incompetence or politically motivated. After September 2001, President Rahmonov became more assertive in cleansing the government of opposition figures, with the tacit support of the west which approved of his secular position and mistrusted the Islamic parties. Local warlords, outside the formal structure of the government or the pre-1997 opposition, continue to operate on their own account.
19. Many of the temporary emigrants have not sent remittances and appear to be establishing permanent residence in Russia, further complicating the impact on per capita income in Tajikistan.
20. The arrears complicate Turkmenistan's national accounts because gas sales are recorded as exports valued at the contract price. The arrears appear in the capital account of the balance of payments as capital outflows from Turkmenistan, even though the foreign assets being accumulated were worth far less than their face value. The actual accounts are extremely opaque because revenues received from energy and cotton exports go into off-budget funds under the president's personal control.
21. See, for example, the results of the Business Environment and Enterprise Performance survey reported in the European Bank for Reconstruction and Development's *Transition Report 1999*. Among the 20 transition economies covered by the BEEPS, Uzbekistan ranked about fourth for lack of corruption, ahead of several eastern European countries generally considered to be transition leaders.
22. Rosenberg and de Zeeuw (2000) analyse the forex regime. The existence of forex controls has been a stumbling block to reform, even as the government professes a desire to abolish them. In 2001, temporary import duties were imposed ostensibly to reduce the black market premium prior to establishing currency convertibility, but the main effects were to put small traders (a dynamic and pro-reform group) out of business and to encourage cross-border shopping and smuggling.
23. The common practice is to linearise scores by adding .3 for a plus and subtracting .3 for a minus, so that Russia's average score on these two measures is 2.5 and Mongolia's 2.15. This section draws on Pomfret (2000a); all measures referred to in this section are taken from the table in the IMF *World Economic Outlook*, September 2000, 180.
24. The 1989 scores for all Soviet republics were 0.04; other 1989 scores include Vietnam 0.53, China 0.46, all Yugoslav republics 0.41, Hungary 0.34, and Albania, Czechoslovakia and Mongolia zero. The argument for using the cumulative measure is to capture the duration of liberalisation rather than its current intensity (Åslund *et al.*, 1996), although Barry Ickes in his Comments on that paper convincingly argues that it is inappropriate.
25. The underlying data sources are: *i*) commercial risk rating agencies and other organisations reflecting expert opinions; and *ii*) surveys of firms and households.

26. Malaysia is an especially attractive role model for the six Islamic Soviet successor states, who seek an alternative to the Iranian (or even worse, the Taliban) model of an Islamic economy. Their leadership is also impressed by Mahathir Mohamed's longevity as a national leader.
27. Substantial job losses in the formal economy were a prime reason for growing inequality and poverty, but the extent of unemployment is difficult to assess. Registered unemployment remains low (3-4 per cent in Kazakhstan, the Kyrgyz Republic and Tajikistan in 2000) because people do not register. Widespread coping mechanisms included turning to subsistence agriculture or the informal sector, in which many people are underemployed with very low incomes.
28. Our comparative knowledge is mainly due to the work of Milanovic (1998), who relied primarily on the Soviet-era household budget survey (HBS) which continued to be carried out in Central Asia through the 1990s. The HBS is useful for comparisons because of its common origins, but it was based on an unrepresentative sample, which became more distorted over time as households dropped out by attrition and were generally not replaced.
29. The qualitative studies of poverty in Dudwick *et al.* (2003) repeatedly illustrate the novelty aspect. In the early post-Soviet years, poverty was seen as an aberration and bearing a stigma because only slackers or moral reprobates could be poor. By the second half of the 1990s, however, it was becoming an accepted state for many people who were, with difficulty, coming to terms with long-term poverty.
30. The research on which the remainder of this section is based was conducted jointly with Kathryn Anderson of Vanderbilt University. For more detailed information on the data sources and methods see Anderson and Pomfret (2000; 2002; forthcoming).
31. The Kyrgyz surveys are not a panel. The sampled households differ, although the technique of random sampling, stratified by community, is constant. Updating of the national household registration files in 1996 led to more households from the mountain region being included in the 1997 sample than in 1993, but the impact of this change is unclear.
32. Turkmenistan is not considered because, although an LSMS survey was conducted in 1998, the results have not been publicised and the data are not available for analysis. Grosh and Glewwe (1998) describe the LSMS methodology. On the weaknesses of the Central Asian LSMS surveys see Falkingham (1999) and Kandiyoti (1999). Kandiyoti emphasises conceptual problems arising from the differing understanding by Central Asian respondents and western analysts of terms such as household or employment. While acknowledging this point, we try to minimise its impact by focusing on more concrete variables and by ignoring potentially usefully explanatory variables such as employment status. Although these are relatively high quality household surveys, they still suffer from inevitable weaknesses, such as the exclusion of homeless people.
33. The administrative unit, equivalent to counties or provinces, in the USSR was the oblast. After independence, the structure was maintained and, although new nomenclatures were adopted, oblast remains a universally recognised term. Although technically not an LSMS survey, the Fergana pilot study followed LSMS methodology.
34. The Kazakhstan sample is the most urban, with 44 per cent of households living in rural communities, which is fewer than in the Kyrgyz Republic (57 per cent in 1993 and 62 per cent in 1997), the Fergana oblast of Uzbekistan (72 per cent) or Tajikistan (73 per cent). Households in Kazakhstan are less likely to be headed by a man, and the head is less likely to be married than in households in the Kyrgyz Republic, Tajikistan or the Fergana oblast of Uzbekistan. Household heads in Kazakhstan are older on average (46 years), than heads in the Kyrgyz Republic (40-41), Tajikistan (40), and Uzbekistan (39).
35. The average household in Kazakhstan contained 3.6 members, which is less than in the Kyrgyz Republic (4.9 in 1993 and 5.5 in 1997), Uzbekistan (6) or Tajikistan (7).

36. The Kyrgyz surveys report a large drop between 1993 and 1997 in the proportion of household heads with vocational education and a consequent increase in the proportion of heads classified with completed secondary education and no additional training. In the Soviet system, vocational-technical programmes were often linked to state enterprises, which provided the training to employees who were still completing their secondary education. The precipitous decline in state-enterprise employment during the mid-1990s was associated with the collapse of many of these programmes, and people were reclassified as secondary school graduates rather than having vocational training.
37. See the probit analysis by Ackland and Falkingham (1997), by Pomfret and Anderson (1999), and by Falkingham (2000c), and additional references in Pomfret and Anderson (2001). In general, ethnicity proves to be a poor explanatory variable once education, location and household size are considered, so that ethnic variables are not included in the present paper.
38. Expenditure is preferred to income because the arrears problem in former Soviet republics during the 1990s meant that income often came in lumps so that many households reported zero income during the two-week survey period. We also expect under-reporting to avoid tax or other impositions to be less prevalent for expenditure. Non-purchased items, such as food grown on household plots, are valued and included in expenditure. Ravallion (2001) provides evidence from developing countries of the superiority of using expenditure, rather than income, and of the extent to which expenditure measures in household surveys track consumption as measured in the national accounts.
39. In Anderson and Pomfret (2002) we test the sensitivity of our results to this assumption by estimating the model with an alternative dependent variable in which children, women and the elderly are assigned lower expenditure weights than prime-working-age adult men. This affects the numerical results, but not the qualitative conclusions. The numerical results are also sensitive to the implicit assumption of no scale economies in the provision of household services; adjusting for economies of size with a scaling such as $E^* = E/n^\theta$, where E is household expenditure and n is family size, would soften the main conclusion, but it is uncertain which equivalence scale would be appropriate. These size economies were small in the Soviet economy where housing costs were low, although they increased during the 1990s (Lanjouw *et al.*, 1998). Lanjouw and Ravallion (1995) argue that household size matters for poverty studies because there are public goods in households and scale economies in housing, although studies of transition economies have found that the qualitative results are not sensitive to assumptions about size economies, e.g. Jovanovic (2001) reports that varying θ within a plausible range did not alter his results for Russia in any significant way.
40. An adult is defined as elderly if he or she is eligible for a state pension, normally at age 60 for a man and age 55 for a woman.
41. The Ferghana Valley is the most fertile and most densely populated area of Central Asia. In the 1920s and 1930s, the Ferghana Valley was divided between the Kyrgyz, Tajik and Uzbek Republics of the USSR with economically meaningless borders.
42. Kazakhstan's capital was officially relocated to Astana in the following year. Almaty remains the country's largest city and financial centre.
43. All of these percentage differences are relative to an identical household in the omitted category, assuming a constant conditioning set. For all of the regressions the constant term is positive, large and significantly different from zero, i.e. omitted variables account for a positive household expenditure.
44. This may reflect national policies that have been especially harmful to cotton farmers in Uzbekistan (Pomfret, 2000a). It could also reflect the superior economic performance of Uzbekistan during the 1990s having resulted in relatively higher urban living standards. Anecdotal evidence from the southern Kyrgyz Republic indicates a return to the land by poor townfolk due to depressed urban labour market conditions (Howell, 1996), while Tajikistan experienced universally high poverty.

45. This is consistent with the evidence that Uzbekistan has been relatively successful in maintaining its social policies during the transition from central planning (Pomfret, 2000b).
46. The Uzbekistan estimate is especially striking in light of the smaller than national average impact in the Ferghana region of Tajikistan and the absence of any significant effect of college education on household expenditure in the Ferghana region of the Kyrgyz Republic.
47. Other R^2 values also track the degree of marketisation. The R^2 for Kazakhstan (0.30) is higher than that for Tajikistan (0.18). In the Ferghana Valley, the R^2 for the Kyrgyz Republic (0.36) is higher than for Uzbekistan (0.21) or Tajikistan (0.15); the Kyrgyz Republic has had the most extensive transition from central planning, while in Tajikistan the ongoing political problems have impeded establishment of institutions needed for well-functioning markets.
48. In the product market context, Aghion and Schankerman (1999) emphasise the role of improved infrastructure in reducing transactions costs and hence increasing competition. Their argument is supported by the convergence of infrastructure in Poland, Hungary and the Czech Republic towards western European standards. In all three countries, the degree of competition appears to have been increasing. Similar causality works in labour markets; an oft-cited example is the impact of US road-building in eastern Thailand during the 1960s in creating a national labour market and contributing to the rapid economic growth in Thailand during the final quarter of the 20th century.
49. The Soviet economy was planned without regard to republican borders. Train lines in the four southern republics converged on Tashkent and then went to Russia so that national networks were not established. Even the roads between Bishkek and Osh, the two largest cities in the Kyrgyz Republic, or between Dushanbe and northern Tajikistan, and hence to the country's main export markets, are shockingly poor and generally impassable in winter.
50. In Kazakhstan in the mid-1990s, according to de Castello Branca (1998), half of those receiving pensions were below the normal retirement age.
51. Kindergartens were often provided by enterprises and were one of the first non-core activities to be divested during transition (Klugman *et al.*, 1997). This is especially important in view of the relatively late age for starting formal schooling in the Soviet education system, normally seven. Many state schools introduced unofficial fees during the 1990s to help provide even basic education.
52. Howell (1996) reports evidence from the south of the Kyrgyz Republic of the high costs that poor parents are willing to incur in order to send their children to school in decent dress.
53. In, for example, the Czech Republic (Vecernik, 1995; Chase, 1998), East Germany (Krueger and Pischke, 1995), Hungary and Poland (Rutkowski, 2001 and 1996), Slovenia (Orazem and Vodopivec, 1995), Russia (Newell and Reilly, 1996; Brainerd, 1998) and Estonia (Noorkiov *et al.*, 1997).
54. Newell and Reilly (2001) report evidence from six eastern European economies and five former Soviet republics. See also Ham *et al.* (1999) on the Czech and Slovak Republics.
55. This is not to deny that some Kyrgyz women have suffered during the transition from central planning, but the labour market evidence contradicts generalisations about the deteriorating relative position of women, as reported in Falkingham (2000a), Bauer, Boschmann and Green (1997), and Bauer, Green and Kuehnast (1997). Paci (2002) surveying the literature on the gender impact of transition, concludes that there is no overall pattern but that some groups of women and of men have been big losers, and the pattern is country-specific. The most shocking statistic, the huge decline in male life expectancy in Russia and Ukraine, is also evident in Kazakhstan where in 1998 male life expectancy had fallen to 59 years compared to 66 in neighbouring Uzbekistan (World Bank, *World Development Report 2000/2001*, 274-9).

56. The Economic Cooperation Organization (ECO), consisting of three founding members, Iran, Pakistan and Turkey, plus Afghanistan and Azerbaijan which joined with the Central Asian countries in 1992, includes all of the non-Arab Islamic countries west of India (Pomfret, 1999).
57. Both Kazakhstan and Uzbekistan tried to maintain the rouble zone until late in 1993, when Russia's conditions eventually became unacceptable. Uzbekistan in particular was ill-prepared for the end of the rouble zone. In November 1993, it issued a temporary currency, the sum coupon, whose banknotes looked unimpressive and in which people had little trust (reflected in huge buy-sell spreads on the black market). Banknotes of the formal national currency, the sum, were not issued until July 1994.
58. Turkmenistan has not sought financial support from the IMF, but maintains a dialogue through Article IV consultations. The IMF and World Bank have provided technical assistance. World Bank loans approved between 1994 and 1997 were frozen between 1997 and 1999 due to misprocurement, and in 2000 new loans were frozen until specific transparency and collateral issues were resolved. A November 2000 IMF mission was denied access to information needed for an Article IV consultation. Uzbekistan's relations with the IMF have also been frosty.
59. The UN General Assembly formally recognised Turkmenistan's neutrality in a resolution of 12 December 1995 (Freitag-Wirminghaus, 1998; Werner, 2001).
60. In 1995-96, Uzbekistan became the most prominent regional ally of the USA. On occasion only Israel and Uzbekistan voted with the USA at the United Nations, and at the May 1996 ECO summit, Uzbekistan's denunciation of Iran was so vitriolic that the summit ended a day earlier than planned. In July 1996, President Karimov was warmly received by President Clinton in Washington D.C. For more details of Uzbekistan's evolving foreign economic policies, see Bohr (1998), Pomfret (2000*b*) and Spechler (1999).
61. Kazakhstan, Uzbekistan and Tajikistan have formally applied for WTO membership. It is expected that Kazakhstan's accession will follow soon after that of Russia. The other two countries' negotiations are at a more preliminary stage.
62. There are some counter-examples to this negative overall assessment of regional co-operation, but they are disappointingly minor relative to proclaimed goals. Annual inter-state agreements are reached on use of water from the mountains of Tajikistan and the Kyrgyz Republic and, although these regularly lead to acrimonious disputes, they do provide a legal framework. There are also examples of trade facilitation, e.g. on the Bishkek-Almaty road in the context of an ADB-brokered agreement, and border closures although common are temporary.
63. Quoted at http://www.press-service.uz/eng/vizits_eng/ve21112002.htm by the press service of the President of Uzbekistan. President Rahmonov of Tajikistan also publicised improved ties with France and the USA, making visits to the two countries in December 2002 as a signal of displeasure with Russia's deportation of Tajik guestworkers. By contrast, on 18-19 February 2003 President Nazarbayev of Kazakhstan, facing US and EU criticisms of his regime's corruption and human rights record, made an official visit to Russia, where he is not criticised for such things.
64. After a series of assassinations of public officials in 1997, the Uzbekistan government arrested hundreds of people in a 1998 crackdown (Lubin, 1999*a*). In February 1999, five bombs exploded in downtown Tashkent, killing several people and injuring over a hundred; the biggest one outside the Cabinet of Ministers building was apparently targeted at the President. In August 1999, some 650 gunmen from the Islamic Movement of Uzbekistan (IMU) were caught entering Uzbekistan. Attempts to bomb the insurgents' bases hit the wrong targets, killing several Kyrgyz civilians and Tajik cows and undermining Uzbekistan's reputation for military effectiveness. In the Kyrgyz Republic, dissension has had a regional dimension as opposition has been centred in the south, objecting to a perceived northern bias of President Akayev's government. In Kazakhstan, opposition has focused on the behaviour of President Nazarbayev's family and close associates, who have been forced to

respond to accusations of malfeasance and corrupt self-enrichment. Both Kazakhstan and the Kyrgyz Republic are relatively open societies, where domestic opposition is vociferous even if it is under duress. In Turkmenistan, all domestic opposition has been muzzled, but an opposition in exile has emerged in recent years. In November 2002, an assassination attempt on President Niyazov (Turkmenbashi) was followed by a domestic crackdown on suspects.

65. The taxes were imposed by presidential decree, under which legal entities had to pay a 40 per cent surcharge on consumer-goods imports and shuttle traders were subject to a 90 per cent surcharge. Open-air markets for clothing and household items were closed down, sometimes using water cannon. In December 2002, the taxes were abolished by decree, but the implementation situation remained unclear.
66. In the less-regulated Kyrgyz and Kazakhstan economies, prices of consumer goods were often a third of those in Uzbekistan and, although the Uzbek authorities claimed this was due to the shoddy nature of the goods available in those countries' markets, the number of Uzbek cross-border shoppers grew. By late 2002, guards at the Chirchik border crossing into Kazakhstan reported a daily flow of 3 000 Uzbeks on weekdays and 6 000 at the weekend, with each person carrying \$100 of their own cash and \$200-300 for friends. In Chimkent, traders reportedly praise President Karimov for making them rich, and in January 2003 media reports in Kazakhstan referred to 50 000 Uzbeks visiting Chimkent every day and spending around \$4 million.
67. They also add to the cost of long-distance trade by increasing the number of delays and tolls.
68. Figure 2 provides a visual representation of the complex of regional arrangements involving the Central Asian countries.

BIBLIOGRAPHY

- ACKLAND, R. and J. FALKINGHAM (1997), "A Profile of Poverty in Kyrgyzstan", in J. FALKINGHAM, J. KLUGMAN, S. MARNIE and J. MICKLEWRIGHT (eds.), *Household Welfare in Central Asia*, Macmillan, Basingstoke/London, pp. 81-99.
- AGHION, P. and M. SCHANKERMAN (1999), "Competition, Entry and the Social Returns to Infrastructure in Transition Economies", *Economics of Transition*, 7(1), pp. 79-101.
- ANDERSON, K.H. and C. BECKER (1999), "Post-Soviet Pension Systems, Retirement and Elderly Poverty: Findings from the Kyrgyz Republic", *MOCT-MOST: Economic Policy in Transitional Economies*, 9(4), pp. 459-78.
- ANDERSON, K.H. and R. POMFRET (forthcoming), *Consequences of Creating a Market Economy: Evidence from Household Surveys in Central Asia*, Edward Elgar, Cheltenham, UK.
- ANDERSON, K.H. and R. POMFRET (2002), "Relative Living Standards in New Market Economies: Evidence from Central Asian Household Surveys", *Journal of Comparative Economics*, 30(4).
- ANDERSON, K.H. and R. POMFRET (2001), "Gender Effects of Transition: The Kyrgyz Republic", paper presented at the American Economics Association conference in New Orleans, 5-7 January, available as *Adelaide University School of Economics Working Paper 00-8*.
- ANDERSON, K.H. and R. POMFRET (2000), "Living Standards during Transition to a Market Economy: The Kyrgyz Republic in 1993 and 1996", *Journal of Comparative Economics*, 28(3), pp. 502-23.
- ÅSLUND, A., P. BOONE and S. JOHNSON (1996), "How to Stabilize: Lessons from Post-Communist Countries", *Brookings Papers on Economic Activity*, 1, pp. 217-313.
- ATKINSON, A. and J. MICKLEWRIGHT (1992), *Economic Transformation in Eastern Europe and the Distribution of Income*, Cambridge University Press, Cambridge, UK.
- BAUER, A., N. BOSCHMANN and D. GREEN (1997), *Women and Gender Relations in Kazakstan: The Social Cost*, Asian Development Bank, Manila.
- BAUER, A., D. GREEN and K. KUEHNAST (1997), *Women and Gender Relations: The Kyrgyz Republic in Transition*, Asian Development Bank, Manila.
- BLOEM, A., P. COTTRELL and T. GIGANTES (1998), "National Accounts in the Transition Countries: Balancing the Biases", *Review of Income and Wealth*, 44(1), pp. 1-24.
- BOHR, A. (1998), *Uzbekistan: Politics and Foreign Policy*, Royal Institute of International Affairs, London; The Brookings Institution, Washington, D.C.
- BRAINERD, E. (1998), "Winners and Losers in Russia's Economic Transition", *American Economic Review*, 88(5), pp. 1094-1115.
- BRUNO, M. and W. EASTERLY (1998), "Inflation Crises and Long-Run Growth", *Journal of Monetary Economics*, 41(1), pp. 3-26.

- BUCKLEY, C. (1998), "Rural/Urban Differentials in Demographic Processes: The Central Asian States", *Population Research and Policy Review*, 17(1), pp. 71-89.
- CANGIANO, M., C. COTTARELLI and L. CUBEDDU (1998), "Pension Developments and Reforms in Transition Economies", *IMF Working Paper WP/98/151*, International Monetary Fund, Washington, D.C.
- CHASE, R. (1998), "Markets for Communist Human Capital: Returns to Education and Experience in the Czech Republic and Slovakia", *Industrial and Labor Relations Review*, 51(3), pp. 401-23.
- CHRISTOFFERSEN, P. and P. DOYLE (1998), "From Inflation to Growth: Eight Years of Transition", *IMF Working Paper WP/98/100*, International Monetary Fund, Washington, D.C.
- DE CASTELLO BRANCA, M. (1998), "Pension Reform in the Baltics, Russia and Other Countries of the Former Soviet Union", *IMF Working Paper WP/98/11*, International Monetary Fund, Washington, D.C.
- DE MELO, M., C. DENIZER and A. GELB (1997), "From Plan to Market: Patterns of Transition", in M. BLEJER and M. SKREB (eds.), *Macroeconomic Stabilization in Transition Economies*, Cambridge University Press, Cambridge, UK.
- DE MELO, M., C. DENIZER and A. GELB (1996), "Patterns of Transition from Plan to Market", *World Bank Economic Review*, 10(3), pp. 397-424.
- DEATON, A. (2001), "Counting the World's Poor: Problems and Possible Solutions", *World Bank Research Observer*, 16(2), pp. 125-47.
- DUDWICK, N., E. GOMART and A. MARC, with K. KUEHNAST (2003), *When Things Fall Apart: Qualitative Studies of Poverty in the Former Soviet Union*, World Bank, Washington, D.C.
- EILAT, Y. and C. ZINNES (2002), "The Shadow Economy in Transition Countries: Friend or Foe? A Policy Perspective", *World Development*, 30(7), pp. 1233-54.
- FALCETTI, E., M. RAISER and P. SANFEY (2000), "Defying the Odds: Initial Conditions, Reforms and Growth in the First Decade of Transition", *EBRD Working Paper No.55*, European Bank for Reconstruction and Development, London, UK.
- FALKINGHAM, J. (2000a), *Women in Tajikistan*, Asian Development Bank, Manila.
- FALKINGHAM, J. (2000b), "From Security to Uncertainty: The Impact of Economic Change on Child Welfare in Central Asia", *Innocenti Working Paper 76*, United Nations Children's Fund Innocenti Research Centre, Florence.
- FALKINGHAM, J. (2000c), "A Profile of Poverty in Tajikistan", *CASE Paper 39*, London School of Economics Centre for Analysis of Social Exclusion, London.
- FALKINGHAM, J. (1999), "Measuring Household Welfare: Problems and Pitfalls with Household Surveys in Central Asia", *MOCT-MOST: Economic Policy in Transitional Economies*, 9(4), pp. 379-93.
- FALKINGHAM, J. and J. MICKLEWRIGHT (1997), "Surveying Households in Central Asia: Problems and Progress", in J. FALKINGHAM, J. KLUGMAN, S. MARNIE and J. MICKLEWRIGHT (eds.), *Household Welfare in Central Asia*, Macmillan, Basingstoke/London, pp. 42-60.
- FILER, R. and J. HANOUSEK (2002), "Data Watch: Research Data from Transition Economies", *Journal of Economic Perspectives*.
- FISCHER, S. and R. SAHAY (2001), "The Transition Economies after Ten Years", *IMF Working Paper WP/00/30*, International Monetary Fund, Washington, D.C.
- FISCHER, S., R. SAHAY and C. VÉGH (1998), "From Transition to Market: Evidence and Growth Prospects", *IMF Working Paper WP/98/52*, International Monetary Fund, Washington, D.C.

- FREITAG-WIRTINGHAUS, R. (1998), "Turkmenistan's Place in Central Asia and the World", in TOURAJ ATABAKI and J. O'KANE (eds.), *Post-Soviet Central Asia*, Tauris Academic Studies, London, pp. 157-76.
- GRIFFIN, K. (ed.) (1996), *Social Policy and Economic Transformation in Uzbekistan*, International Labour Organization, Geneva.
- GROSH, M. and P. GLEWWE (1998), "Data Watch: The World Bank's Living Standards Measurement Study Household Surveys", *Journal of Economic Perspectives*, 12(1), pp. 187-96.
- HAM, J., J. SVEJNAR and K. TERRELL (1999), "Women's Unemployment during Transition: Evidence from Czech and Slovak Micro-Data", *Economics of Transition*, 7(1), pp. 47-78.
- HOWELL, J. (1996), "Poverty and Transition in Kyrgyzstan: How Some Households Cope", *Central Asian Survey*, 15(1), pp. 59-73.
- HUNT, J. (1998), "The Transition in East Germany: When is a Ten Point Fall in the Gender Pay Gap Bad News?", *CEPR Discussion Paper Series in Transition Economies* No.1805, Centre for Economic Policy Research, London.
- INTERNATIONAL ENERGY AGENCY (2002), *World Energy Outlook 2002*, IEA/OECD, Paris.
- INTERNATIONAL MONETARY FUND (1992), *Common Issues and Interrepublic Relations in the Former USSR*, International Monetary Fund, Washington, D.C.
- ISLAMOV, B. (2001), *The Central Asian States Ten Years After: How to Overcome Traps of Development, Transformation and Globalisation?*, Maruzen, Tokyo.
- JOVANOVIĆ, B. (2001), "Russian Roller Coaster: Expenditure Inequality and Instability in Russia, 1994-98", *Review of Income and Wealth*, 47(2), pp. 251-71.
- KALYUZHNOVA, Y. (1998), *The Kazakstani Economy: Independence and Transition*, Macmillan, Basingstoke/London.
- KANDIYOTI, D. (1999), "Poverty in Transition: An Ethnographic Critique of Household Survey in Post-Soviet Central Asia", *Development and Change*, 30(3), pp. 499-524.
- KAUFMANN, D., A. KRAY and P. ZOIDO-LOBATÓN (1999a), "Aggregating Governance Indicators", *World Bank Policy Research Working Paper* 2195, Washington, D.C.
- KAUFMANN, D., A. KRAY and P. ZOIDO-LOBATÓN (1999b), "Governance Matters", *World Bank Policy Research Working Paper* 2196, Washington, D.C.
- KLUGMAN, J., S. MARNIE, J. MICKLEWRIGHT and P. O'KEEFE (1997), "The Impact of Kindergarten Divestiture on Household Welfare in Central Asia", in J. FALKINGHAM, J. KLUGMAN, S. MARNIE and J. MICKLEWRIGHT (eds.), *Household Welfare in Central Asia*, Macmillan, Basingstoke/London, pp. 183-201.
- KRUEGER, A. and J.-S. PISCHKE (1995), "A Comparative Analysis of East and West German Labor Markets: Before and After Unification", in R. FREEMAN and L. KATZ (eds.), *Differences and Changes in Wage Structure*, University of Chicago Press, Chicago, IL.
- LANJOUW, P., B. MILANOVIC and S. PATERNOSTRO (1998), "Poverty and Economic Transition: How do Changes in Economies of Scale Affect Poverty Rates of Different Households?", *Policy Research Working Paper* WPS2009, World Bank, Washington, D.C.
- LANJOUW, P. and M. RAVALLION (1995), "Poverty and Household Size", *Economic Journal*, 105(433), pp. 1415-34.
- LUBIN, N. (1999a), "Calming the Ferghana Valley: Development and Dialogue in the Heart of Central Asia", *Preventive Action Reports: Volume 4*, The Century Foundation Press, New York, NY.

- LUBIN, N. (1999b), "Energy Wealth, Development, and Stability in Turkmenistan", *NBR Analysis* (National Bureau of Asian Research, Seattle WA), 10(3), 61-78.
- MADDISON, A. (2001), *The World Economy: A Millennial Perspective*, Development Centre Studies, OECD, Paris.
- MARNIE, S. and J. MICKLEWRIGHT (1994), "Poverty in Pre-Reform Uzbekistan: What do Official Data Really Reveal?", *Review of Income and Wealth*, 40, pp. 395-414.
- MILANOVIC, B. (1998), *Income, Inequality, and Poverty during the Transition from Planned to Market Economy*, World Bank, Washington, D.C.
- NEWELL, A. and B. REILLY (2001), "The Gender Pay Gap in the Transition from Communism: Some Empirical Evidence", *Economic Systems*, 25(4), pp. 287-304.
- NEWELL, A. and B. REILLY (1999), "Rates of Return to Educational Qualifications in the Transitional Economies", *Education Economics*, 7(1), pp. 67-84.
- NEWELL, A. and B. REILLY (1996), "The Gender Wage Gap in Russia: Some Empirical Evidence", *Labour Economics*, 3(3), pp. 337-56.
- NOORKIOV, R., P. ORAZEM, A. PUUR and M. VODOPEVIC (1997), "How Estonia's Economic Transition affected Employment and Wages", *Policy Research Working Paper 1837*, World Bank, Washington, D.C.
- NORTH, D. (1994), "Economic Performance through Time", *American Economic Review*, 84(3), pp. 359-68.
- OCHS, M. (1997), "Turkmenistan: The Quest for Stability and Control", in K. DAWISHA and B. PARROTT (eds.), *Conflict, Cleavage and Change: Central Asia and the Caucasus*, Cambridge University Press, Cambridge, UK, pp. 312-59.
- OLCOTT, M.B. (2002), *Kazakhstan: A Faint-hearted Democracy*, Carnegie Endowment for International Peace, Washington, D.C.
- ORAZEM, P. and M. VODOPEVIC (1995), "Winners and Losers in Transition: Returns to Education, Experience and Gender in Slovenia", *World Bank Economic Review*, 9(2), pp. 201-30.
- PACI, P. (2002), *Gender in Transition*, World Bank, Washington, D.C.
- PASTOR, G. and R. VAN ROODEN (2000), "Turkmenistan: The Burden of Current Agricultural Policies", *IMF Working Paper WP/00/98*, International Monetary Fund, Washington, D.C.
- POMFRET, R. (2003), *Structural Reform in the CIS7*, paper presented at the Lucerne Conference of the CIS7 Initiative, 20-22 January, available at www.cis7.org.
- POMFRET, R. (2002a), "State-Directed Diffusion of Technology: The Mechanization of Cotton-Harvesting in Soviet Central Asia", *Journal of Economic History*, 62(1), pp. 170-88.
- POMFRET, R. (2002b), "The IMF and the Ruble Zone", *Comparative Economic Studies*, 44(4), winter.
- POMFRET, R. (2002c), *Constructing a Market Economy: Diverse Paths from Central Planning in Asia and Europe*, Edward Elgar, Cheltenham, UK.
- POMFRET, R. (2001), "Turkmenistan: From Communism to Nationalism by Gradual Economic Reform", *MOCT-MOST: Economic Policy in Transitional Economies*, 11(2), pp. 165-76.
- POMFRET, R. (2000a), "Agrarian Reform in Uzbekistan: Why has the Chinese Model Failed to Deliver?", *Economic Development and Cultural Change*, 48(2), pp. 269-84.
- POMFRET, R. (2000b), "The Uzbek Model of Economic Development 1991-99", *Economics of Transition*, 8(3), pp. 733-48.

- POMFRET, R. (1999), *Central Asia Turns South? Trade Relations in Transition*, The Royal Institute of International Affairs, London, UK and The Brookings Institution, Washington, D.C.
- POMFRET, R. (1995), *The Economies of Central Asia*, Princeton University Press, Princeton, NJ.
- POMFRET, R. and K.H. Anderson (2001), "Economic Development Strategies in Central Asia since 1991", *Asian Studies Review*, 25(2), pp. 185-200.
- POMFRET, R. and K.H. Anderson (1999), "Poverty in Kyrgyzstan", *Asia-Pacific Development Journal*, 6(1), pp. 73-88.
- POPOV, V. (2001), "Where do We Stand a Decade after the Collapse of the USSR?", WIDER Angle No. 2, 6-8, launching G.A. CORNIA and V. POPOV (eds.), *Transition and Institutions: The Experience of Gradual and Late Reformers*, UNU/WIDER Studies in Development Economics, Oxford University Press, Oxford, UK.
- RAVALLION, M. (2001), "Measuring Aggregate Welfare in Developing Countries: How Well do National Accounts and Surveys Agree?", *World Bank Working Paper No.2665*, World Bank, Washington, D.C.
- ROSENBERG, C. and M. DE ZEEUW (2000), "Welfare Effects of Uzbekistan's Foreign Exchange Regime", *IMF Working Paper WP/00/61*, International Monetary Fund, Washington, D.C.
- RUTKOWSKI, J. (2001), "Earnings Mobility during the Transition: The Case of Hungary: 1992-1997", *MOCT-MOST: Economic Policy in Transitional Economies*, 11(1), pp. 69-89.
- RUTKOWSKI, J. (1996), "High Skills Pay Off: The Changing Wage Structure during Economic Transition in Poland", *Economics of Transition*, 4(1), pp. 89-112.
- SCHULTZ, T.W. (1975), "The Value of Ability to Deal with Disequilibria", *Journal of Economic Literature*, 13(3), pp. 827-46.
- SPECHLER, M. (2000), "Hunting the Central Asian Tiger", *Comparative Economic Studies*, 42(3), pp. 101-20.
- SPECHLER, M. (1999), "Uzbekistan: The Silk Road to Nowhere?", *Contemporary Economic Policy*, 18(3), pp. 295-303.
- SVEJNAR, J. (1999), "Labor Markets in the Transitional Central and East European Economies", in O. ASHENFELTER and D. CARD (eds.), *Handbook of Labor Economics*, Vol. 3, Elsevier, Amsterdam, pp. 2809-57.
- TARR, D. (1994), "The Terms-of-Trade Effects of Moving to World Prices on Countries of the Former Soviet Union", *Journal of Comparative Economics*, 18(1), pp. 1-24.
- TAUBE, G. and J. ZETTELMEYER (1998), "Output Decline and Recovery in Uzbekistan: Past Performance and Future Prospects", *IMF Working Paper WP/98/11*, International Monetary Fund, Washington, D.C.
- VECERNIK, J. (1995), "Changing Earnings Distributions in the Czech Republic: Survey Evidence from 1988-1994", *Economics of Transition*, 3(3), pp. 333-53.
- WERNER, M. (2001), "Im Reich des grossen Führers: Turkmenistan: eine zentralasiatische Despotie", *Osteuropa*, 51(2), pp. 127-34.
- WORLD BANK (2002), *Transition: The First Ten Years*, World Bank, Washington, D.C.

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