Estimating Russia's Impact on the Economic Performance of the Commonwealth of Independent States since 1991: The Cases of the Kyrgyz Republic, Tajikistan, Armenia, Georgia and Ukraine

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Acronyms

ALI	Annual Liberalisation Index
BRO	Baltics, Russia and other countries of the former Soviet Union
CEEC	Central and Eastern European Countries
CIS	Commonwealth of Independent States
CLI	Cumulative Liberalisation Index
CMEA	Council for Mutual Economic Assistance
EBRD	European Bank for Reconstruction and Development
ECA	Europe and Central Asia
EU	European Union
FDI	Foreign Direct Investment
FSU	Former Soviet Union
GDF	Global Development Finance
GDP	Gross Domestic Product
GFCF	Gross Fixed Capital Formation
GCF	Gross Capital Formation
GNI	Gross National Income
ICVs	Initial Condition Variables
IFI	International Financial Institution
IMF	International Monetary Fund
IOM	International Organisation for Migration
LCU	Local Currency Units
RFC	Russia Financial Crisis
TFP	Total Factor Productivity

Executive Summary

Context of Research

The assumption that the economic policy and performance of Russia have a strong impact on economic growth and development in the rest of the Commonwealth of Independent States* (CIS) is widely made. However, justification for this assumption is often simplistic, mainly based on comparable periods of economic contraction and recovery across the region since the fall of the Soviet Union. Empirical analysis of the origins, relative importance and evolution of the transmission mechanisms linking Russia's economic policy and performance to those of the CIS is lacking. The aim of this paper therefore is to provide an empirical assessment of 'Russia's influence' on CIS economic growth since the collapse of the Soviet Union in 1991 and the onset of transition.

It is clear that the transmission mechanisms linking Russia's economic policy and performance to CIS growth evolved considerably during the 1990s. Whereas prior to 1991 the Soviet satellites were tightly bound to the centrally planned economy, the dissolution of the Soviet system and the gradual integration of the CIS into the global economy have changed the structure and strength of CIS economic ties with Russia. It appears that the clearest impact of Russia's economic performance and policy on CIS growth occurred in the immediate aftermath of the break-up of the Soviet Union when the collapse of the trade and payments system and the cessation of fiscal transfers from Moscow led to substantial decline in output throughout the region. Variations in economic performance across the CIS suggest that some countries and sub-regions have been more successful in overcoming inherited economic distortions than others. In many cases, the traditional strength of Russia's influence on CIS economic performance appears to be declining, whilst new linkages (such as economic migration and remittances and political gains through CIS dependence on Russian energy supply and transit) are emerging. New growth hubs, such as the EU and China are becoming, or are already, important trading partners for many CIS countries. Hence the perception of 'Russia's regional economic influence' should become more nuanced in order to reflect these new realities.

Research Questions

The question of the extent to which Russia's economic policy and performance impact on CIS growth is very broad and the analysis requires a set of key research questions and tight methodology in order to produce clear and robust conclusions. As it is difficult to generalise for the whole of the CIS, the analysis in this paper is centred on five case-study countries (the Kyrgyz Republic, Tajikistan, Georgia, Armenia and Ukraine). The research questions are as follows:

- What were the main economic pillars of the Soviet system prior to its collapse and how and to what extent did they foster economic dependence of the Soviet satellites?

- How has the economic performance of the five case-study countries evolved since 1991, including the extent to which inherited Soviet structures have been overcome?

- What have been the key determinants of growth in the case-study countries since 1991?

* The CIS includes Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

- What has Russia's contribution been to these determinants? Specifically:
  i. What was the impact of the collapse of the command economy on the key growth determinants?
  ii. How has Russia's contribution to the determinants changed over time?

- To what extent is the persistence of strong economic linkages to Russia a cause or a consequence of economic performance in the case-study countries?

Methodology for the empirical assessment

A growth simulation model for each country case study is suggested to assess the statistical significance by country of the key determinants of economic growth. The independent variables in the linear formation are: investment, export performance, the terms of trade, remittances and various forms of external finance (including short-term and long-term concessional and non-concessional flows).

The approach is to observe actual GDP (1995$) outcomes during the 1990s for the five case studies and compare this with GDP simulated through a linear relationship in which the coefficients on the determinants of growth are 'retro-fitted' to the growth performance actually observed. This calibration is done by trial and error as there are not enough data to estimate them econometrically. Only those models that produce a correlation coefficient above 90% are used. Robustness is tested by means of varying parameter estimates, including testing at extreme values.

Russia's influence is then calculated by identifying and quantifying Russia's contribution to the key determinants concluded via the simulation exercise, and is then measured by undertaking two counter-factual simulations, the first simulating a scenario in which the economic linkages with Russia are removed entirely from 1990 onwards, the second a scenario in which the economic pillars of the Soviet system (including trade and external finance) are assumed to remain unchanged throughout the 1990s.

Key Findings

1. Economic dependence during the Soviet era: Prior to 1991, economic dependence between Moscow and the Soviet satellites was fostered by means of several measures, the most notable of which were: the central economy-wide plan which geared production in the satellites towards the Soviet market; the construction of infrastructure primarily to transport goods, services and factors of production within the Soviet space; dependence on inter-republic fiscal transfers for investment and consumption in the satellites; trade diversion to serve the CMEA; price distortion to maintain exports above and imports below world prices; dependence on a mono-bank system and wide circulation of Russian currency. Overall, these measures meant that the institutions and structures of statehood across much of the CIS were underdeveloped at the time of the collapse of the Soviet system.

2. Economic performance since 1991: All the case-study countries experienced strong economic contraction at the outset of transition, with negative growth rates for some persisting until late in the 1990s. From 1991 these countries endured rising external imbalance (as the volume and value of trade within the CIS declined before new markets opened up), a decline in domestic investment and internal imbalance (as the gap between domestic investment and savings widened). During the 1990s, their economic structures shifted away from industry and towards services and agriculture. Trade performance started to pick up and there has been some export diversification to non-CIS partners. However,

FDI inflows remain disappointingly low outside strategic sector investments. Concentration of exports in primary commodities raises questions about vulnerability to external shocks such as fluctuations in global prices. There is also a question over whether these countries are in fact moving towards realising their comparative advantage by focusing on primary commodities as their main exports, or whether this represents a failure to diversify successfully through the transition process. Furthermore, concentration on primary commodities makes diversification, which is required for employment creation and poverty reduction, more of an uphill struggle. From 2000 onwards, growth performance across the region has strengthened, although from a narrow export base and limited domestic diversification. Informal economic activity remains prevalent, particularly in cross-border activity such as shuttle trade and migration (reflecting regional disparities in income-earning opportunities). Most of the case-study countries remain dependent on flows of concessional external finance from bilateral and multilateral providers, with a sizeable part of external bilateral debt still owed to CIS creditors.

3. Key determinants of growth: The factors influencing CIS growth determinants appear to have changed radically from the end of the 1980s to the present. The case-study countries underwent transition from a planning system, in which investment and trade were essentially politically determined, to a system based on market signals. The respective importance of key growth determinants was found, through the methodology outlined above, to vary between the country case studies. Investment and exports were the key determinants for all the case-study countries, but other variables were found to be significant in varying degrees for each case study. Remittances were a significant growth driver for Tajikistan and the South Caucasus, long-term counter-cyclical concessional finance for the South Caucasus and Central Asia, FDI for Armenia and Georgia and short-term bilateral flows for the Kyrgyz Republic and the South Caucasus.

4. Russia's contribution determined: For all case-study countries, with the notable exception of Tajikistan, Russia's contribution to the key growth determinants has declined over time. Following the methodology outlined above, simulated GDP under the assumption that 1990 linkages with Russia remained constant produced an estimated cumulative difference with actual GDP as follows: Kyrgyz Republic 13.57%, Tajikistan 12.9%, Armenia 27.69%, Georgia 7.7% and Ukraine 7.6%. In contrast, simulated GDP under the assumption of no economic linkages with Russia produced an estimated cumulative difference with actual GDP as follows: Kyrgyz Republic 7.27%, Tajikistan 19.8%, Armenia 14.8%, Georgia 2.4% and Ukraine 6.5%. Those countries inheriting stronger economic ties with Russia at the outset of transition (namely the Kyrgyz Republic, Tajikistan and Armenia) accordingly experienced the highest proportion of economic contraction attributable to Russia. Conversely, those that have undertaken robust policy and structural reforms and/or received large inflows of external finance from non-CIS sources, have reduced their dependence on traditional economic linkages with Russia.

Conclusion

The impact of the break-up of the command economy system appears to represent the clearest and strongest example of 'Russia's influence' on case study country growth, resulting in fiscal and terms-of-trade shocks that drove down domestic investment rates and export volume at the start of the transition period. The impact was most severely felt in those countries that were previously more tightly bound to the command economy through fiscal transfers, domestic production and export links (notably the Kyrgyz Republic and Tajikistan) and those sectors that were previously upheld by the command economy (such as military-related industrial production). Although the economic linkage through inter-republic fiscal transfers was relatively weaker in the other case-study countries, they still

remained tightly bound to the Soviet economy through the inter-republic trade system. Their economic contraction was also exacerbated by civil conflict (in the South Caucasus) and absence of supportive institutions to manage the transition to a market economy.

The methodology used in this paper suggests that, on the whole, Russia's influence on case-study country growth appears to have declined over time, with the exception of Tajikistan. This appears to have been mainly the result of their trade diversification, the structural break in external finance from Russia, and their domestic investment, plus the declining proportion of debt to Russia in their total external debt. The ability of the case-study countries to overcome inherited economic ties with Russia has depended on two main factors: first, domestic policy, structural reforms and institutional strengthening in enabling them to achieve stabilisation and begin the transition to becoming market economies, and second, their ability to access non-CIS export markets, finance and technology. Those countries that are relatively more geographically isolated, have weaker infrastructure links and limited access to the outside world have been less successful in diversifying away from Russia than others.

New forms of economic linkage have evolved, particularly within the informal sector (economic migration, remittances and shuttle trade). Political economy levers have become a more mainstream form of Russia's influence, including through strategic investment in key sectors (particularly energy), debt-for-equity swaps or manipulation of energy pricing and supply. Russia would be able to influence case-study country growth significantly through these channels if it so chooses.

Overall, the methodology suggests that the strength and nature of the economic linkages between Russia and the case-study countries are still greater than might be expected in functioning market economies. The final question is whether this is a cause or a consequence of case-study country economic performance. The analysis suggests that there is no clear answer. On the one hand, the growth process in the case-study countries depends on the pace and nature of their domestic structural and policy reforms. On the other hand, Russia appears to influence the pace and nature of their reform process both directly and indirectly, particularly in those sectors of strategic importance.

In summary, traditional forms of Russia's influence on case-study country growth have generally declined during the transition. As a result, current economic policy and performance in Russia matter less, on the whole, than they did in the early transition phase. Those countries that have integrated into the global economy and have undertaken robust domestic policy and structural reforms have overcome inherited economic distortions and reduced their ties with the CIS and Russia to a greater degree than the slower reformers. However, for all the case-study countries new forms of economic linkage with Russia are emerging, most of which could have a significant impact on the key determinants of their economic growth.

Chapter 1: Introduction and objectives of research

The assumption is widely made that the economic policy and performance of Russia have a strong impact on economic growth and development in the rest of the Commonwealth of Independent States[1] (CIS). However, justification for this assumption is often simplistic, mainly based on comparable periods of economic contraction and recovery across the region since the fall of the Soviet Union. Empirical analysis of the origins, relative importance and evolution of the transmission mechanisms linking Russia's economic policy and performance to those of the CIS is lacking. The aim of this paper therefore is to provide an empirical assessment of 'Russia's influence' on CIS economic growth since the collapse of the Soviet Union in 1991 and the onset of transition.

It is clear that the transmission mechanisms linking Russia's economic policy and performance to CIS growth evolved considerably during the 1990s. Whereas prior to 1991 the Soviet satellites were tightly bound to the centrally planned economy, the dissolution of the Soviet system and the gradual integration of the CIS into the global economy have changed the structure and strength of CIS economic ties with Russia. In general, this appears to have meant that Russia's influence on CIS economic growth has declined over time. Whereas the outcome of the collapse of the Soviet system in terms of CIS economic performance was disastrous (with negative growth rates continuing in most CIS countries until the late 1990s), by the time of the Russian financial crisis (RFC) in 1998, economic ties with Russia had loosened to the extent that the regional knock-on effect of negative Russian growth was relatively short-lived. Surprisingly, as noted above, empirical analysis of the transmission mechanisms between Russian policy and performance and CIS economic growth is sparse. Although variations in economic recovery and growth across the CIS sparked academic interest in the role of 'initial conditions' vis-à-vis policy and structural reforms in explaining growth patterns, the nature and evolution of economic linkages with Russia were largely left out of the equation. Hence, the relative significance of Russia's economic performance versus other determinants of growth remains only partially understood and empirically undetermined.

At the outset of this study, it appears that the clearest impact of Russia's economic performance and policy on CIS growth occurred in the immediate aftermath of the break-up of the Soviet Union when the collapse of the trade and payments system and the cessation of fiscal transfers from Moscow led to substantial decline in investment and output throughout the region. Variations in economic performance across the CIS, (and the comparable economic success of the Central and Eastern European countries), suggest that some countries and sub-regions have been more successful in overcoming inherited economic distortions. In many cases, the traditional strength of Russia's influence on CIS economic performance appears to be declining, whilst new linkages (such as economic migration and remittances and political gains through CIS dependence on Russian energy supply and transit) are emerging. Moreover, the varied pace of integration into the global economy raises new challenges for CIS economic growth. Global commodity price fluctuations, for example, appear as an increasingly important factor affecting the terms of trade and hence external balance of the CIS economies. New growth hubs, such as the European Union and China, are becoming, or are already, important trading partners for many CIS countries. Hence the perception of 'Russia's regional economic influence' needs to become more nuanced in order to reflect these new realities.

[1] The CIS includes Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan.

The analysis in this study proceeds in the following stages. The first stage includes a basic assessment of the main economic pillars of the Soviet system prior to its collapse at the start of the 1990s and the manner in which this system fostered economic dependence between the centre and the Soviet satellites. This is important in providing the context for economic collapse at the outset of the transition and evolving linkages with Russia during the transition phase. The second stage is to summarise the economic performance (through the use of descriptive statistics) across five country case studies (the Kyrgyz Republic, Tajikistan, Armenia, Georgia and Ukraine)[2] and evaluate (through a review of the empirical literature) the key factors underpinning that performance. Drawing on the previous steps, the third stage is to suggest a simulation model for each country case study in order to assess the statistical significance by country of the key factors affecting economic growth. Russia's economic influence is then measured by undertaking two counter-factual simulations. The first simulates a scenario in which the economic linkages with Russia are removed entirely from the simulation from 1990 onwards. The second simulates a scenario in which the economic pillars of the Soviet system (including trade and external finance) are assumed to remain unchanged throughout the 1990s. The final stage is to summarise the main conclusions of the study.

The paper is structured as follows. Chapter 2 presents the foundations of economic dependence between Moscow and the Soviet satellites established through the Soviet system prior to its break-up. Chapter 3 presents a brief analysis of economic developments in the five case-study countries during the 1990s in order to establish the context for evaluating the role of Russia-CIS linkages in explaining CIS economic performance. Chapter 4 presents a brief review of the empirical literature to gain an understanding of the main determinants of CIS growth performance since the outset of transition, focusing on those factors where Russia-CIS economic linkages appear most germane. The review suggests that inherited economic distortions, structural and economic policy reforms, export performance, terms-of-trade shocks, official and private capital flows and economic migration to and remittances from the Europe/Central Asia (ECA) region all play a role in explaining economic outcomes in the case-study countries. (A discussion of the methodologies used in the literature review is presented in Annex 1). Chapter 5 develops the methodology for evaluating the role of economic linkages with Russia vis-à-vis other factors in explaining CIS economic performance, by developing the functional forms for a series of growth simulations. Chapter 6 presents the results of the growth simulations for the five country case studies, including the counter-factual simulations. (Annexes 2-6 present fuller descriptions of the circumstances and events affecting individual countries). Chapter 7 summarises the findings of the analysis and draws conclusions.

Two caveats should be noted. First, the data for the CIS are generally incomplete and not of good quality. The capacity of statistical offices was geared towards measuring certain variables central to the success of the planning system rather than data for a functioning market economy. Also, there was an incentive for over- or under-reporting key trends. This means that comprehensive data on the range of growth factors of interest are not always available for each country case study. Where they are available, accuracy should not be assumed. This limits the extent to which the true importance of the factors underpinning CIS growth can be measured and implies that the results of the model used in this paper should not be interpreted literally. Second, this approach to explaining growth outcomes does not take into account the role of the informal sector, which is not included in official measures of GDP. This is particularly important for transition countries, where the informal

[2] These case-study countries have primarily been chosen on the basis of their relevance to the bilateral aid programme of DFID (the institution funding this research) in Europe and Central Asia. This selection provides a varied sample in terms of the economic outcomes of transition, ranging from low-income weak performers to middle-income countries that are better integrated into the global economic system.

sector (particularly through intra-regional economic migration) increased dramatically in the early transition years and is understood to make up a sizeable proportion of GDP.

Chapter 2: Foundations of economic dependence during the Soviet era

2.1 Overview

The starting point for an evaluation of the determinants of growth performance in transition, and Russia's economic influence therein, should be an account of the economic pillars of the Soviet system. This is important for two reasons. First, the nature and strength of economic ties established during the Soviet era explain the vulnerability to economic collapse of the CIS economies at the start of the 1990s. Second, Russia's economic influence during the transition phase is likely to depend, at least in part, on the ability of the CIS economies to overcome inherited economic distortions which may have become embedded as a result of economic dependence during the Soviet era. However, it is beyond the scope of this paper to provide a full assessment of the economic pillars of the Soviet system. The purpose of this chapter is therefore to present a simplified account of the foundations of economic dependence between Moscow and the satellites during the Soviet era. It focuses on those aspects of the economic relationship that appear germane to structural distortions, and hence to economic performance, in the post-Soviet context.

2.2 Main features of the Soviet system

The imposition of full-scale central planning in the early 1920s marked the outset of a period of centrally defined economic activity that lasted until the early 1990s. Between 1928 and World War II, Stalin followed a strategy of industrialisation aimed, among other things, at the self-sufficiency of the Soviet bloc as it then existed. After the war, pro-Soviet governments in Eastern Europe also became integrated into the Soviet system. This Soviet-centred economic zone was known as the Council for Mutual Economic Assistance (CMEA).

The Soviet system was at odds with the principles of a normally functioning market economy, with the goal of efficiency of resource allocation and production coming second to the achievement of centrally defined economic goals for the whole of the Soviet space. All economic activity was based on an annual, central, economy-wide plan (defined by Gosplan, the state bank), which led to a series of directives handed to government agencies for the production of goods and services and the allocation of factors of production (such as the investment plan, the manpower plan, the credit plan and the plan for material products). These plans were intended to define permissible economic activity for a medium-term period to support consumption and production targets. Social welfare objectives were met by securing entitlement to basic necessities rather than allowing the free market to enable optimal resource allocation. The pricing of 'essential products' such as housing, energy, transport, education and medical care were kept low and land prices was virtually zero.

The Soviet planners favoured specialisation to achieve economies of scale, resulting in the geographical concentration of production to serve vast market areas. Thus, although production decisions in the satellites were ostensibly made on the basis of a rudimentary assessment of comparative advantage, all satellites experienced some level of industrialisation, sometimes regardless of its appropriateness to context. Heavy industry, particularly military-related production, formed a large part of the industrial base in many of the satellites.

Within this system, there was a high degree of planning at the level of enterprises and factories. Producers were given plans to meet production targets, within which a pattern of trade flows with the rest of the Soviet Union was implicit. Efficiency was objectified by pressure to minimise input-output ratios, thus releasing reserves hidden from the planners. Prices of goods, services and factors of production were largely administered and inflation was repressed.[3] Gosbank provided much of the required credit to enterprises against these plans. General government subsidies and tax exemptions provided further financial support to enterprise targets. However, the planning system proved much less efficient in practice than on paper, resulting in a complex pattern of trade between enterprises and across the Soviet space. Enterprises would often be spatially dislocated, necessitating trade across large distances. Moreover, when enterprises could not achieve self-sufficiency they would often negotiate barter deals with each other.

Within the Soviet Union, the plan was administered by means of Moscow's tight control over the satellites. Institutional, economic and transport infrastructures in the satellites were largely geared to supporting directives from the centre and a harmonised Soviet-wide economy. Russian currency was circulated and used throughout the system. The line ministry budget in the satellites was a key tool for planning and processing the main forms of financial support to local economic activity, with revenue allocation from the Central Union budget becoming the key economic linkage with Moscow. The Soviet central bank (Gosbank) had subsidiaries in most of the satellites (including for industry, agriculture, savings, etc.), lending from which was processed through the central government budget against production targets.

Outside the immediate Soviet space, trade among the CMEA nations was in theory conducted through the process of central planning. The CMEA traded little with the outside world although extensively with one another. As a result of the policy of specialisation, trade as a share of national income was fairly large for much of the CMEA. Trade flows were, in principle, decided on the basis of the co-ordinated central planning process. However, this mainly worked within the Soviet Union itself, and trade within the wider CMEA became a process of barter deals negotiated among national governments. Moreover, the standards and terms of trade were highly politicised, largely as a result of the Soviet Union wishing to maintain good relations with its East European counterparts. The result in economic terms was a high degree of trade flow and price distortion, with reduced incentives both within the Soviet Union and the wider CMEA to produce competitively and towards world standards.

2.3 Economic dependence between Moscow and the Soviet satellites

Within the Soviet system there was a considerable degree of income flow between Moscow and the Republics, fostering economic dependence between them (Orlowski, 1997). These flows took two main forms. First, there were direct transfers to and from the Republics via payments to the Central Union budget and the revenues received from it under the rules of inter-governmental budget relations that prevailed until 1990. Under this system the republican budgets retained most of their revenues from turnover taxes, personal taxes and the profit tax from locally reported enterprises. Around 60% of the tax on profits of enterprises reporting to the central government was collected by the Union budget.[4]

If tax collection was insufficient to cover republican spending (according to central rules) the republics were entitled to compensation subsidies under three main headings: (i) grants

[3] Price-lists of transitions between state enterprises and for retail sales were changed at lengthy intervals (for the former these were 1949,1952, 1955, 1967 and 1982) - see Kaser, 1999.
[4] The share of enterprise falling under local jurisdiction varied substantially between the Republics, from 27% in Russia to 73% in Kazakhstan.

in aid, to cover operating expenses and fiscal deficits, (ii) grants aimed at financing specific, mostly infrastructure, projects, and (iii) so-called 'means' (*sredstva*) aimed at financing joint projects of the centre and the republics. The poorer Central Asian republics were also allowed to retain special regional grants. Although the size of these grants was essentially politically determined, Orlowksi (1993) notes that two possible objectives included the preservation of inefficient enterprises and jobs in economically depressed areas, and compensation for enterprise losses stemming from administratively fixed prices. In practice, this system led to the growing fiscal dependence of a number of republics.

Tables 2.1 and 2.2 present several separate measures of the degree of net support or drainage of republic funds via the Union budget for the five country case studies. The first table calculates the fiscal dependence of republican budgets on the Union budget based on 1989 data; the second calculates these transfers as a proportion of GNP. It can be seen that Russia was a net contributor to inter-republic fiscal transfers through the Union budget. The Kyrgyz Republic and Tajikistan received proportionally the largest support from the Union budget. This is also reflected in the share of fiscal transfers in GDP. Orlowski (1997) notes that the transfers to Armenia in 1989 were bloated, due to fiscal compensation for an earthquake that year. Otherwise, Armenia and Georgia received comparable levels of fiscal support. Ukraine receives the smallest income flow of the country case studies in terms of both absolute transfers and share of GDP.

Table 2.1 Republic transfers to and from the Union budget, 1989 (%)

Country	Share of Union budget in republic revenue	Transfers to Union budget	Difference
Russia	2.1	3.8	-1.7
Kyrgyz Republic	20.1	2.4	17.8
Tajikistan	20.2	2.7	17.5
Armenia	46.2[a]	1.0	45.2
Georgia	7.7	1.6	6.1
Ukraine	4.3	3.4	0.9

Note: a) Armenia received larger than normal inflows from the Union budget in 1989 on account of the earthquake.
Source: Orlowski (1997)

Table 2.2 Republic transfers to and from the Union, 1989 (% GNP)

Country	Transfers to the Union budget % GNP	Transfers from the Union budget as a share of GNP	Difference
Russia	0.9	0.5	-0.4
Kyrgyz Republic	0.9	7.8	6.9
Tajikistan	1.1	8.2	7.1
Armenia	0.5	23.8	23.3
Georgia	0.5	2.5	2.0
Ukraine	0.9	1.2	0.3

Source: ibid.

The second form of income flow occurred through indirect transfers wherever actual prices for trade in goods and services diverged from the world level. Within the CMEA imports and exports were transacted at domestic prices administered by specialist foreign-trade agencies that absorbed price differentials. Russia's exports were generally below world prices (particularly for oil and gas), whereas imports from the republics (mainly agriculture, processed foods and industry products) were priced above world levels at the official exchange rate. Within this system, Russia was the largest net contributor to the republics with a net direct transfer of 22.4 billion rubles in 1990 (or 3.7% of GDP) via export pricing and 9.8 billion rubles (around 1.2% of GDP) from over-priced imports.

The extent of trade pricing distortion can be assessed by examining the terms-of-trade shocks at the outset of the economic transition. Tarr (1993) undertakes this exercise by calculating how moving to world prices affects the terms of trade in 15 countries of the former Soviet Union under a 105-sector aggregation.[5] The terms of trade follow the standard definition of the ratio of the price of exports to the price of imports. The change in the terms of trade at the outset of the transition period is defined as the ratio of the terms of trade between a base year (pre-transition prices) and international prices in 1989 and 1990. The terms-of-trade ratio is interpreted as a ratio of the average price in US dollars on world markets for the product to the price received in rubles in inter-republic trade.

The top half of Table 2.3 presents Tarr's (1993) calculations of the terms-of-trade shift at the outset of the transition period based on 1990 prices and quantities (when oil prices were higher relative to 1989). The bottom half of the table presents the calculations of the impact of the terms of trade on GDP. Impact on GDP is measured by means of the average trade intensity as a ratio of GDP times the percentage change in the terms of trade. The case-study countries, as non-energy exporters, generally lose in the inter-republic category from the rise in energy prices to world levels. Interestingly, all gain from price liberalisation in the extra-republic category. The estimates for total trade take account of the intensity of different trading partners. All countries appear to suffer from a negative terms-of-trade shock on the whole, apart from the Kyrgyz Republic. Similarly, all countries would suffer a decline in GDP from liberalisation of inter-republic trade.

Table 2.3 Terms-of-trade shifts and impact on GDP

	Kyrgyz Republic	Tajikistan	Armenia	Georgia	Ukraine
105 - sector aggregation					
Inter-republic	-3.7	-17.0	-30.2	-33.8	-6.3
Extra-republic	38.6	113.7	54.5	167.9	49.9
Total	1.2	-6.8	-23.8	-20.6	-3.1
% Change in GDP due to change in ToT					
Inter-republic	-1.3	-6.9	-11.1	-12.1	-6.4
Extra-republic	2.6	8.6	3.5	12.1	3.8
Total	1.4	1.7	-7.8	0.0	-2.6

Source: Tarr (1993)

2.4 Conclusion

Prior to 1991, economic dependence between the centre and the satellites was fostered through several measures, the most notable of which were as follows:

- the central economy-wide plan which geared production in the satellites towards the Soviet market,
- the construction of infrastructure primarily to transport goods, services and factors of production within the Soviet space,
- dependence on inter-republic fiscal transfers and financing for investment and consumption in the satellites,
- trade diversion to serve the CMEA and trade price distortion to maintain exports above and imports below world prices,
- dependence on the mono-bank system (Gosbank), with branches in the satellites geared towards processing central financing, and

[5] Tarr (1993) uses data of trade flows by commodity for 1989 and 1990 produced by Goskomstat.

- wide circulation of Russian currency.

Overall, these measures meant that the institutions and structures of statehood across much of the CIS were underdeveloped at the time of the collapse of the Soviet system.

Chapter 3:Post-Soviet economic developments in the case-study countries

3.1 Overview

The purpose of this chapter is to present briefly, by the use of descriptive statistics, economic performance since the onset of transition in the Kyrgyz Republic, Armenia, Georgia, Tajikistan and Ukraine. Trends in economic growth, trade performance, changes in economic structure, the balance between savings and investment, the external position, FDI inflows and remittances are presented. Explanations for this performance, together with an account of Russia's influence, are assessed in later chapters.

3.2 Economic developments

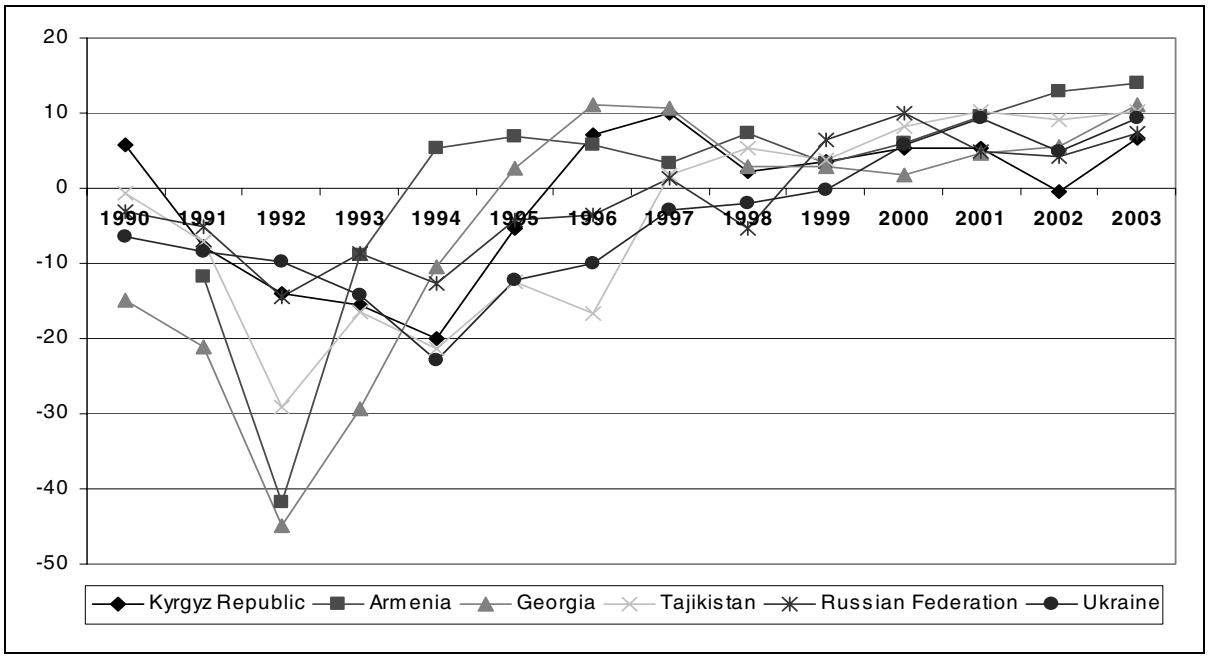
Growth performance

At the start of the 1990s, all the countries experienced a sharp decline in GDP growth. The origin of this decline was the significant economic shock endured as a result of the break-up of the Soviet Union, which led to the cessation of fiscal transfers from Moscow to the republics and the dismantling of the inter-republic trade and payments system on which the Soviet bloc had previously relied. This shock was felt more acutely by those smaller, more geographically isolated and resource-poor countries of the CIS which had previously been more dependent on Russia. After a prolonged period of economic contraction, the rate of decline slowed and growth resumed towards the end of the 1990s. However, the pace of the decline and the subsequent recovery varies noticeably between countries.

Fig. 3.1 indicates different 'transition experiences' between the case-study countries. Armenia's rate of economic decline slowed rapidly after 1992, with positive growth rates resuming by the start of 1994. Georgia and the Kyrgyz Republic saw a longer period of decline with positive growth rates only resuming in 1995. Tajikistan and Ukraine experienced more protracted decline, with positive growth only resuming in 1997 and 1999 respectively. Russia's economic growth turned positive in 1997, although it reversed temporarily due to the impact of the financial crisis (RFC) in 1998 when there was an actual decline in output of 5.3%. The impact of the RFC is discernible from the slow-down in the rate of growth or recovery on the part of all countries between 1997 and 1999. However, no other country apart from Russia actually experienced negative growth rates, suggesting that the other case-study countries proved relatively resilient. Since 2000, all countries have experienced a positive rate of growth (with the exception of the Kyrgyz Republic which experienced negative growth in 2002). The international financial institutions (IFIs) have commented favourably on the performance of the CIS-7,[6] noting that the average annual GDP growth between 1998 and 2002 for this group was 5.4%.

[6] Armenia, Azerbaijan, Georgia, Kyrgyz Republic, Moldova, Tajikistan and Uzbekistan.

Fig. 3.1 GDP growth (annual %)



Source: World Bank, *World Development Indicators*

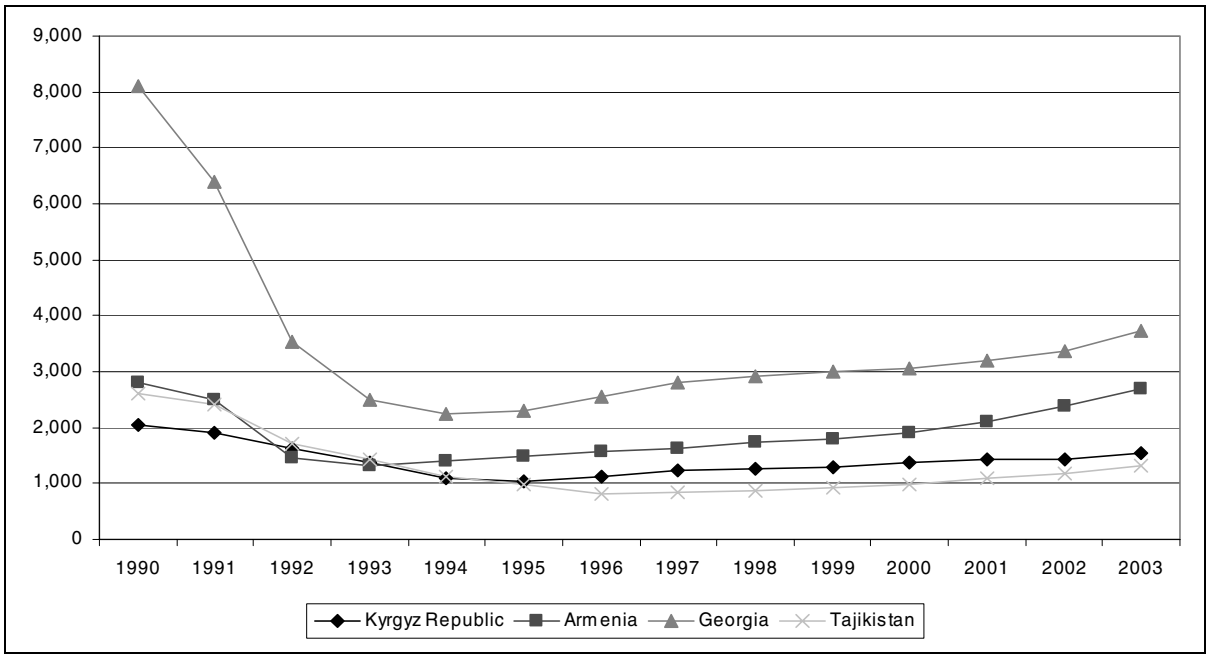
Table 3.1 GDP annual average growth, 1990-2003

Russian Federation	-1.6
Kyrgyz Republic	-1.2
Tajikistan	-3.9
Armenia	0.9
Georgia	-4.8
Ukraine	-4.3

Source: ibid.

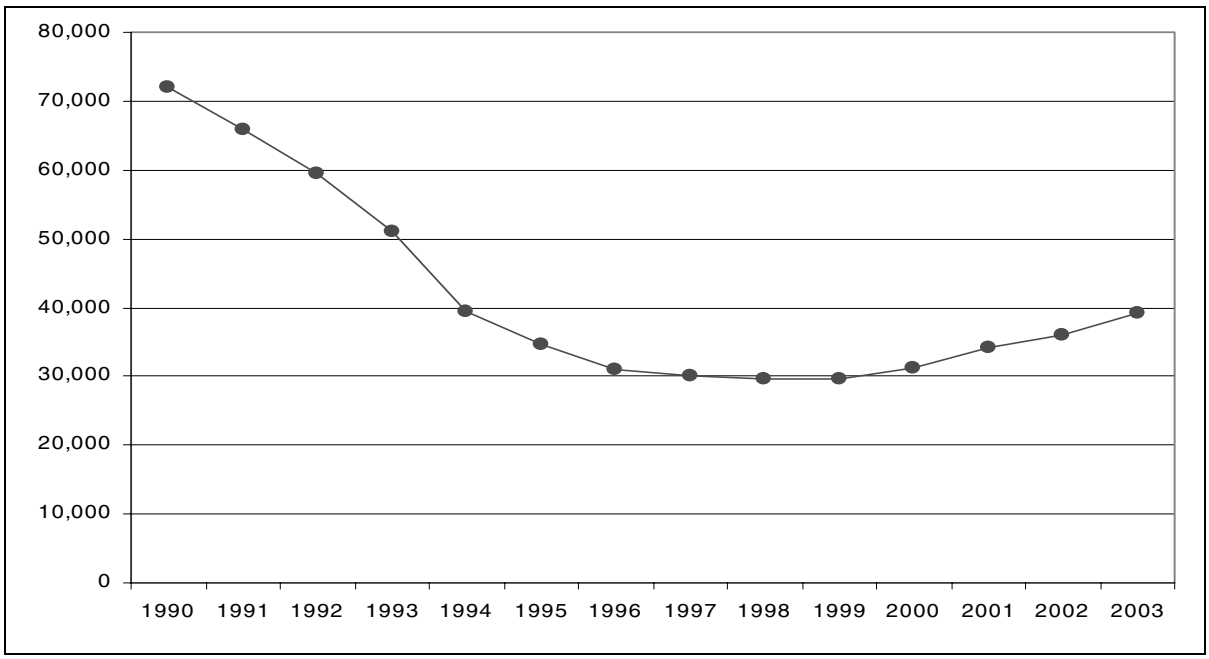
Trends in GDP 2000 US$ (Figs. 3.2 and 3.3) illustrate the dramatic decline in output during the early years of economic transition. Georgia saw the most significant contraction between 1990 and 1994 of almost 80%, with a modest recovery thereafter. The Kyrgyz Republic and Armenia followed a similar, although less severe, pattern of output decline. Tajikistan's decline lasted until 1997, since when there have been only modest increases. Ukraine suffered the longest period of output contraction between 1990 and 1999, when GDP (1995$) fell by around 60%.

Fig. 3.2 GDP (constant 2000 US$m.)



Source: ibid.

Fig. 3.3 Ukraine GDP (constant 2000 US$m.)

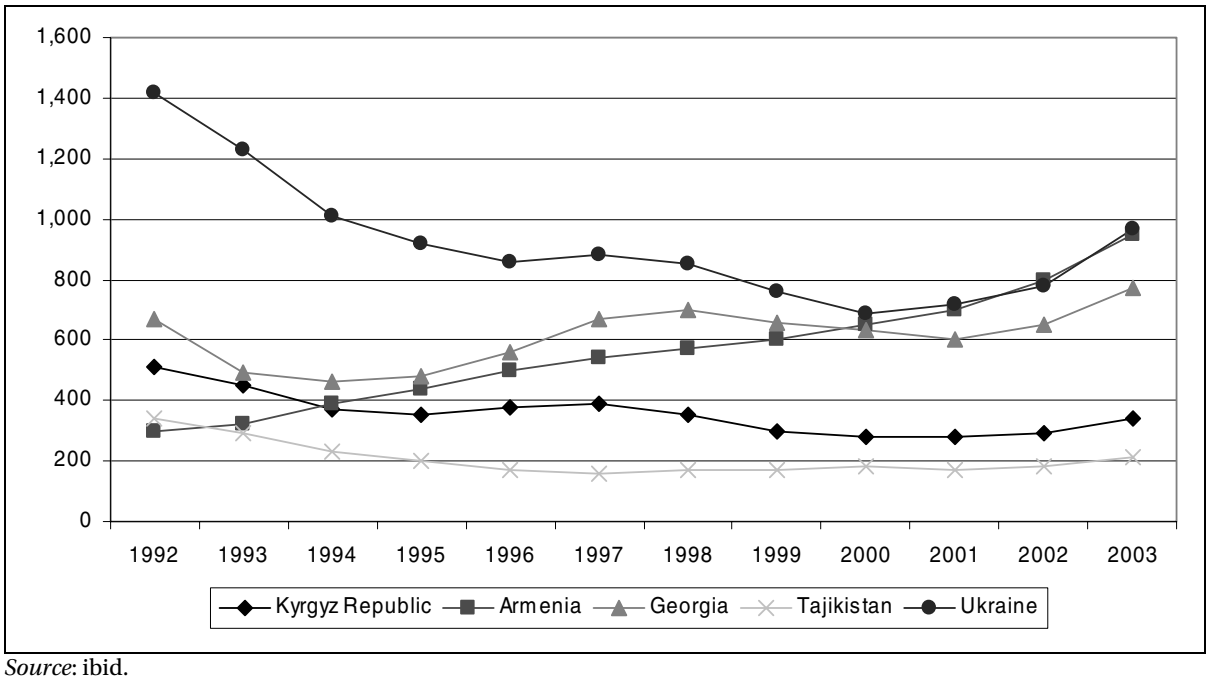


Source: ibid.

Trends in GNI per capita (Fig. 3.4) reflect a similar process of decline for the Kyrgyz Republic and Tajikistan, followed by a levelling off around 1997. Ukraine saw the sharpest decline in GNI per capita over the 1990s, falling from US$1420 in 1999 to US$690 in 2000. Georgia's GNI per capita decline was relatively short, with stabilisation and recovery around 1994. Armenia is the sole exception, where GNI per capita has seen a stable and gradual increase over the period. In the aftermath of the RFC, all countries (other than Armenia) experienced some decline in terms of GNI per capita. Currently, GNI per capita levels remain fairly widespread within the group. Ukraine, Georgia and Armenia are fast moving into the

middle-income country category, whilst the Kyrgyz Republic and Tajikistan remain firmly low-income.

Fig. 3.4 GNI per capita (current US$)



Source: ibid.

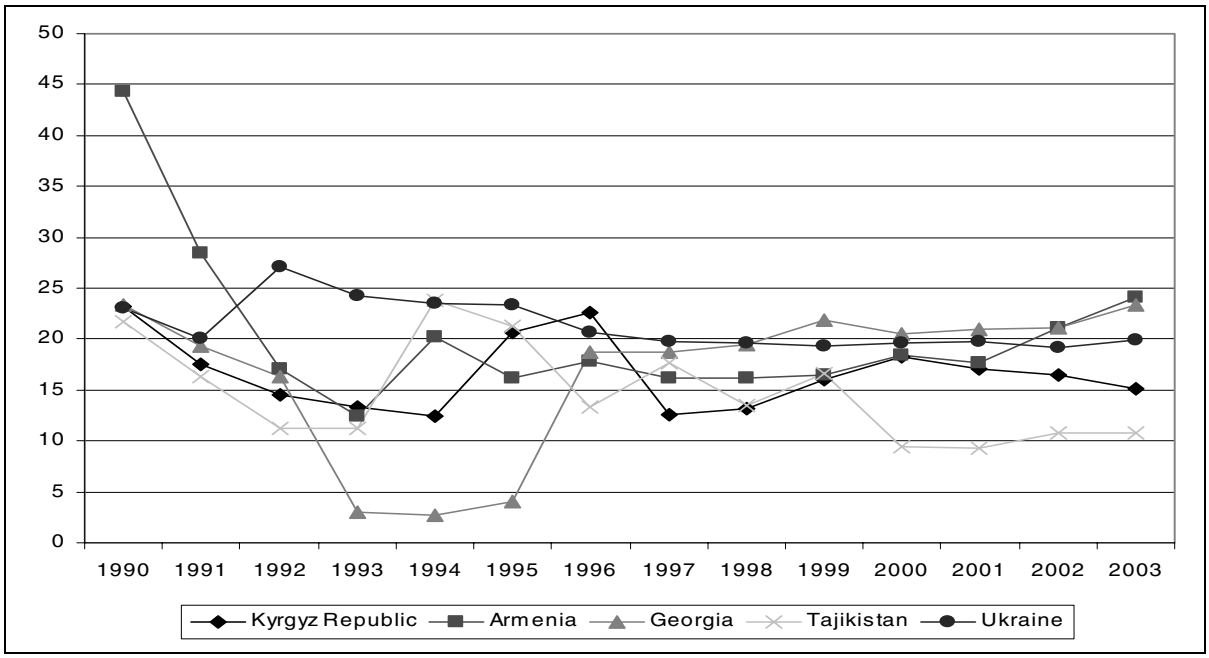
Gross fixed capital formation

At the start of the transition all the case-study countries experienced a decline in gross fixed capital formation (GFCF) as a percentage of GDP (Fig. 3.5), reflecting the effect of market forces on investment choices. The decline was particularly stark in Armenia and Georgia between 1990 and 1993. A less severe decline occurred in the Kyrgyz Republic and Tajikistan and investment rates began to pick up again around 1993 and 1994. Ukraine's domestic investment contracted continually from 1992 to 2000, when it settled at around 20% of GDP. The trends seem to converge within the group after 2000 at around 15-20% of GDP.

Domestic savings

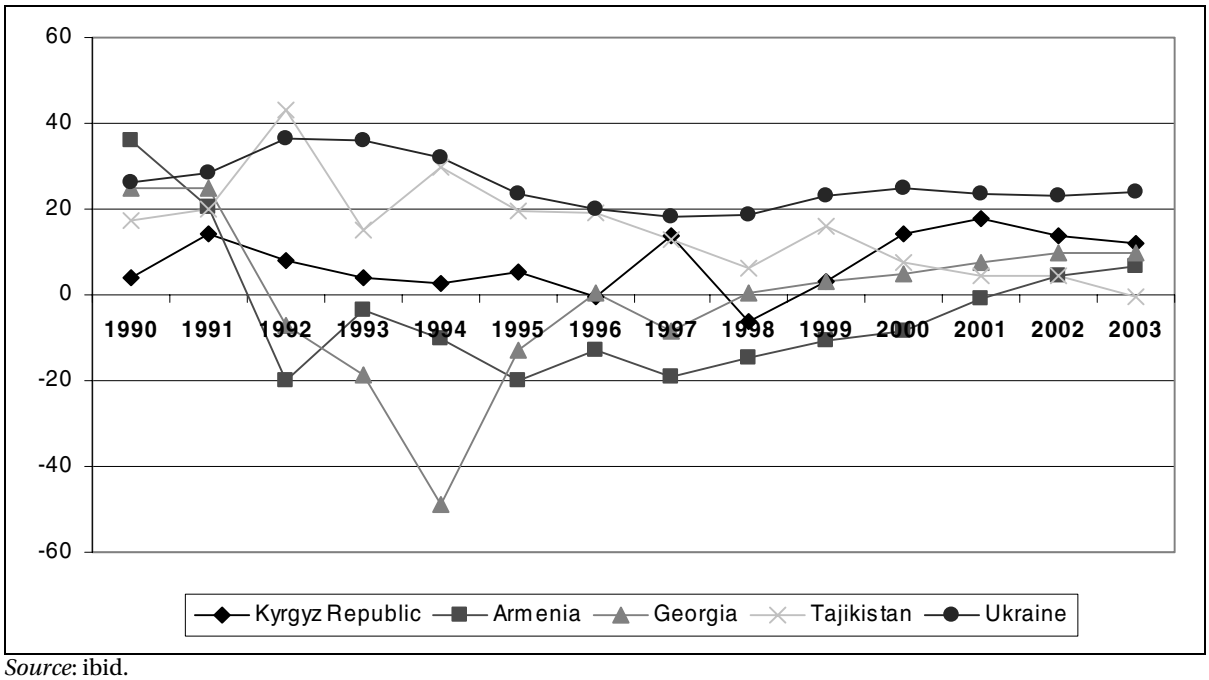
Fig. 3.6 shows the destabilising impact of economic transition on domestic savings as a percentage of GDP. The savings rate was negative throughout the 1990s for Georgia and Armenia, below 20% for the Kyrgyz Republic and on a downward trend from 40% to around 8% for Tajikistan. Ukraine records more stable rates of domestic savings although these also declined during the 1990s. At the end of 2002, all countries' domestic savings rates were below 20% of GDP (apart from Ukraine). As savings rates were mostly below the rate of investment for much of the transition period, a domestic resource gap emerged in the case-study countries. However, this gap has narrowed in more recent years as domestic savings appeared to stabilise and gradually increase.

Fig. 3.5 Gross Fixed Capital Formation (% GDP)



Source: ibid.

Fig. 3.6 Gross domestic savings (% GDP)



Source: ibid.

Export performance

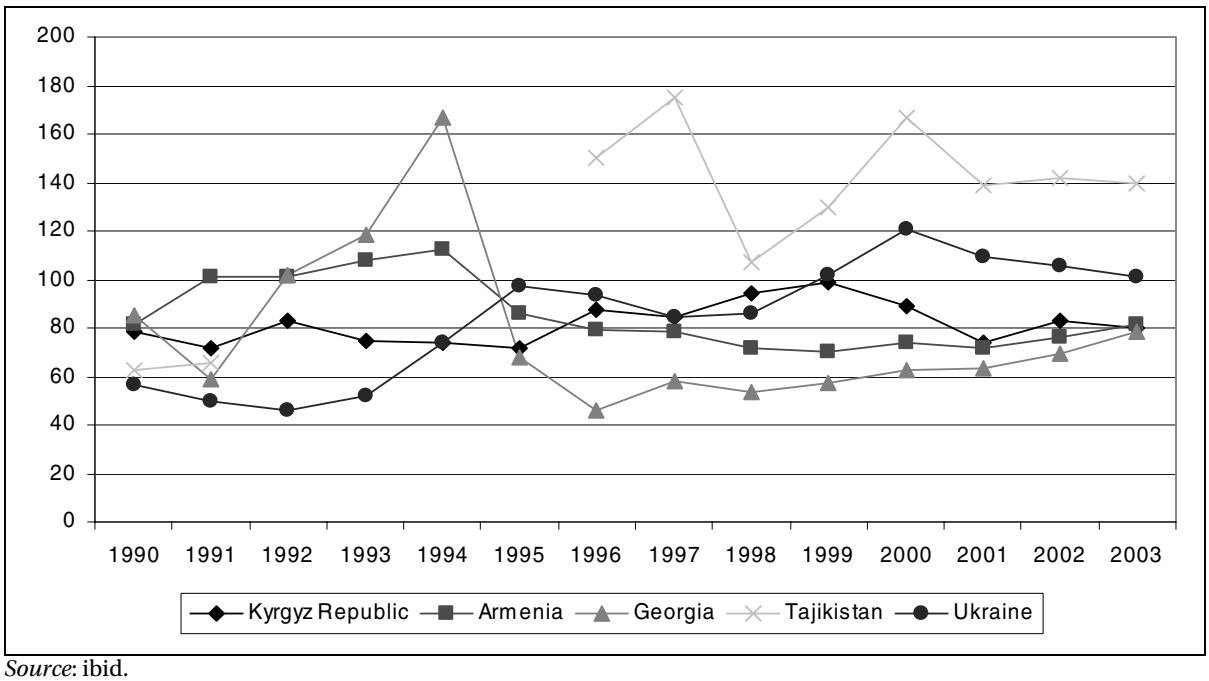
At the start of the transition, many CIS countries had open economies,[7] although the share of international trade in total trade was small. A key transition challenge was therefore the

[7] Trade openness is measured as the share of trade as a percentage of GDP. The fact that many CIS countries had open economies according to this definition reflects the structure of the Council of Mutual Economic Assistance (CMEA.)

external liberalisation and diversification of trade to non-CIS markets. Figs. 3.7 to 3.9 show the extent to which this has occurred.

Firstly, Fig. 3.7 shows trade to GDP ratios[8] between 1992 and 2004 in order to evaluate how trade openness has changed over the period. It can be seen from this figure that experience is mixed across the region, suggesting that the countries pursued different external trade policies. Ukraine experienced two periods of increasing trade openness between 1992 and 1995 and between 1998 and 2000, ending the period with trade at above 100% of GDP. Georgia, on the other hand, seems to have experienced a dramatic decline in trade as a percentage of GDP, falling from over 160% of GDP in 1994 to just over 40% of GDP in 1996. The Kyrgyz Republic, Georgia and Armenia all ended the period with trade accounting for around 80% of GDP.

Fig. 3.7 Trade (% GDP)



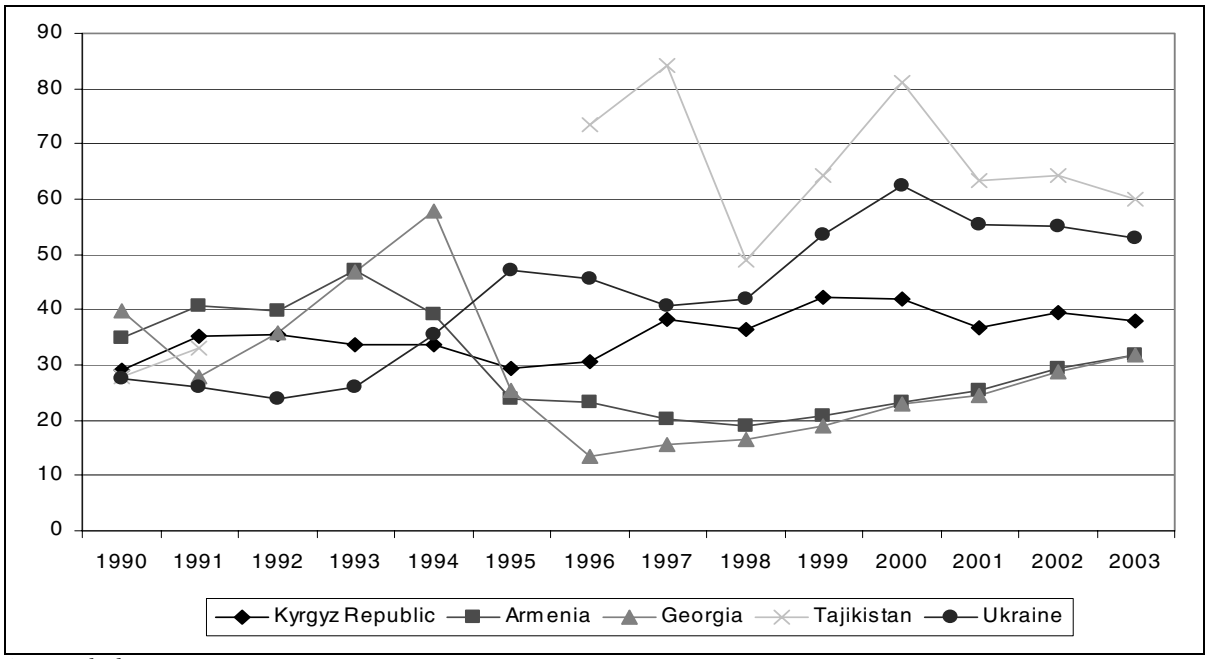
Source: ibid.

In order to establish a more detailed picture of export performance, Figs. 3.8 to 3.10 compare trends in constant and current prices. Fig. 3.8 shows exports of goods and services as a share of GDP in current prices.[9] Tajikistan, the Kyrgyz Republic and Armenia all experienced a rise in the share of exports to GDP between 1990 and 1992, whereas Georgia and Ukraine began the period with a decline in this measure. Trends continued to diverge over the 1990s. Armenia and Georgia ended the period with a lower export:GDP ratio compared with the start of the transition. The Kyrgyz Republic and Ukraine ended slightly higher. The data for Tajikistan show only part of the cycle, although they suggest that the export:GDP ratio ended significantly higher in 2003 compared with the early 1990s.

[8] This measure is calculated as the sum of exports and imports of goods and non-factor services measured as a share of gross domestic product.

[9] This measure is sensitive to current GDP and exchange-rate fluctuations and prices of exports and so should only serve as an initial illustration of export performance.

Fig. 3.8 Exports of goods/services (% GDP, current prices)



Source: ibid.

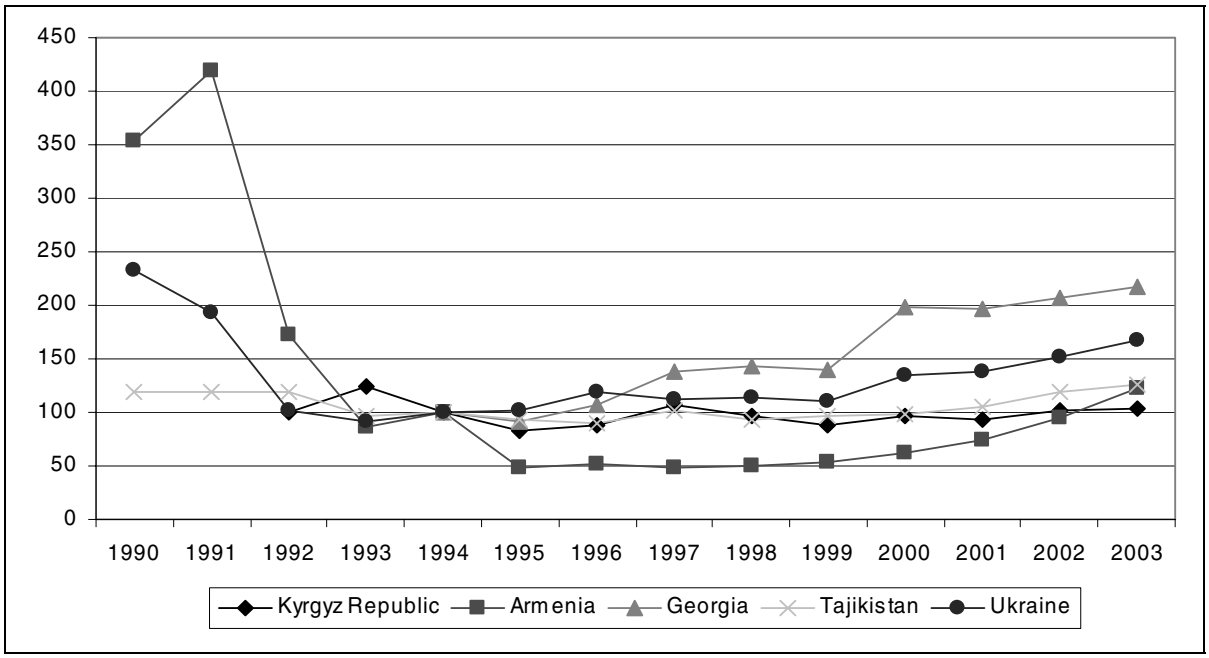
Fig. 3.9 shows trends in export volume in order to distinguish the extent to which trade performance may have been driven by higher export prices. The decline in export volumes in the first part of the 1990s is particularly notable for Ukraine and Armenia, but data are not available in this early period for the other case-study countries. Since 1995 all countries increased their export volumes, although varying between Georgia's strong performance and only marginal increases in Tajikistan and the Kyrgyz Republic. The period between 1997 and 1999 saw temporary dips in export volume, although the recovery soon afterwards reflects the restructuring instigated by the Russian financial crisis (owing to the significant real depreciation of most local currencies).

Export diversification

Fig. 3.10 shows progress in export diversification[10] to non-CIS markets. The rate of diversification was rapid for Armenia, the Kyrgyz Republic (after 1996), Ukraine (after 1994) and Georgia (although the share of CIS exports in total exports rose again after 1999). Tajikistan's exports to CIS markets increased between 1996 and 2000 and then declined to below pre-transition levels. By the end of the period, all the case-study countries had succeeded in diversifying their trade away from the CIS bloc to some extent. However, the World Bank (1994) and others conclude that on the whole the CIS countries continue to over-trade with one another and under-trade with the rest of the world.

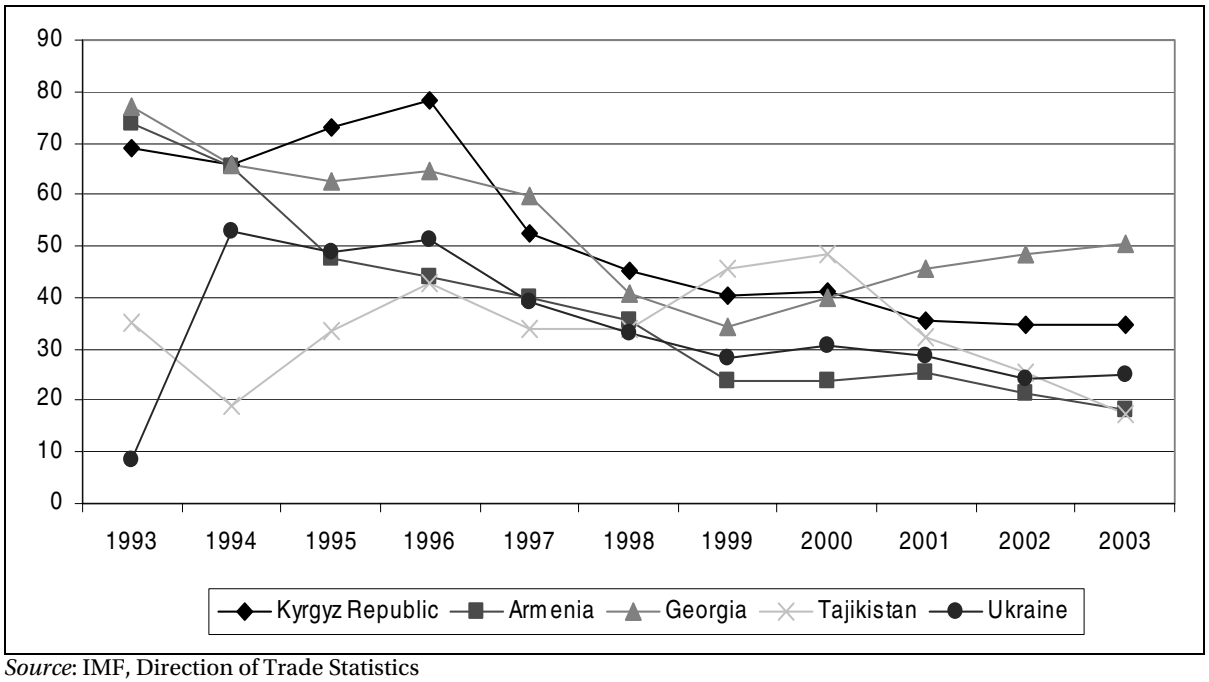
[10] Some diversification occurred to parts of the EU hub, including to Turkey (for Tajikistan), Israel and Belgium (for Armenia), and Switzerland and Germany (for the Kyrgyz Republic and Georgia). This will be discussed in more detail in subsequent chapters.

Fig. 3.9 Exports (constant 2000 US$) 1994=100



Source: ibid.

Fig. 3.10 CIS exports as a % of total exports (current prices)



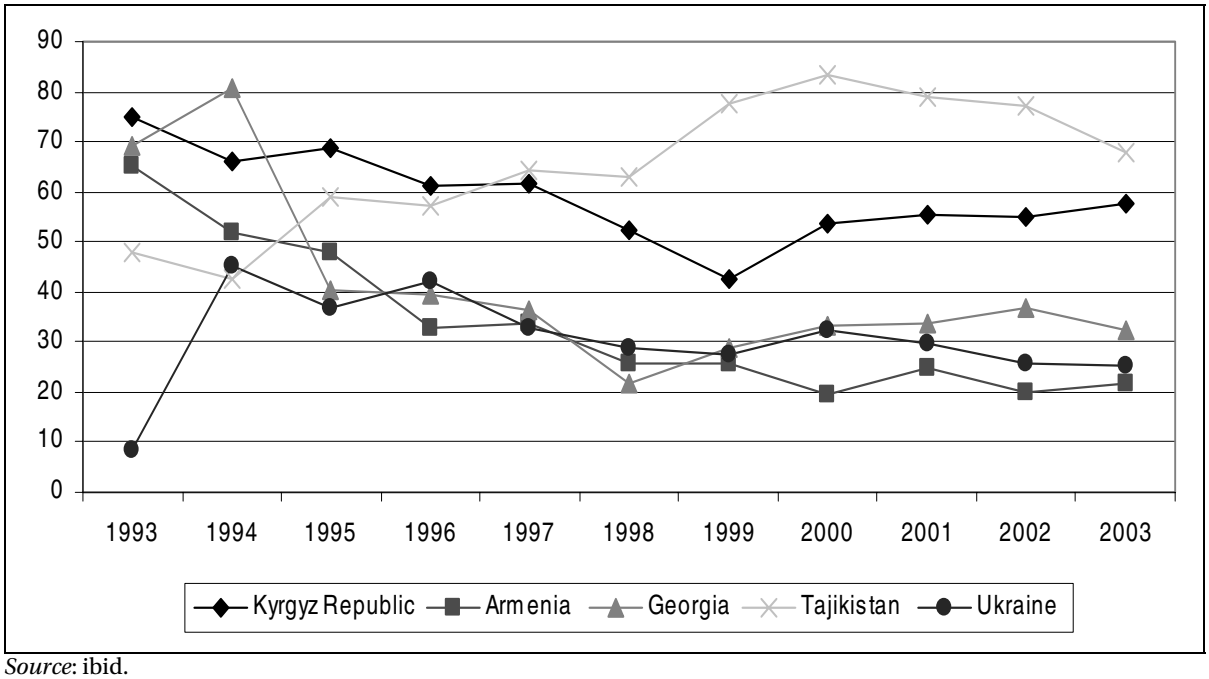
Source: IMF, Direction of Trade Statistics

Asymmetric trade diversification

In contrast to progress on export diversification, imports for some of the case-study countries have concentrated in CIS markets. Fig. 3.11 demonstrates that imports from the CIS have increased on the whole as a proportion of total imports for Tajikistan and Ukraine, and have declined only marginally for the Kyrgyz Republic. A key explanation is the

continued strength of intra-CIS energy links, particularly between CIS energy importers[11] and the key energy exporters (Russia and Turkmenistan). The increase in the value of energy imports is due to both volume and price effects, as energy price subsidies declined during the early transition phase. Only Georgia and Armenia have substantially reduced the value of their CIS imports over the transition period.

Fig. 3.11 CIS imports as a % of total imports (current prices)



Source: ibid.

Shuttle trade

A further feature of country case-study trade in the post-Soviet context is the emergence of shuttle trade, which has come to warrant separate treatment in the balance of payments. The phenomenon of shuttle trade is a form of unrecorded international transactions on the edge of formal trade. It tends to be associated with travellers moving goods across borders or from individuals living within the border areas. Reasons for the rise in shuttle trade focus on the absence of import administrative procedures by the trading agencies. The asymmetry between the latter's focus on exports in the early transition phase and the need for imports led to a pent-up industrial demand for imports, particularly in the retail sector. This led to a substantial rise in shuttle trade between Russia and the FSU and across Soviet boundaries during the early transition phase before imports were formally facilitated. In 1993, shuttle trade was estimated at US$1.5 to US$2 million in Russia (IMF) although the true size of shuttle trade is difficult to determine.

Commodity concentration

The reliance of most of the case-study countries on inherited commodity structures and basic primary commodities as the main export earners is apparent in Table 3.2, which shows

[11] Although some of the case-study countries export energy (including Armenia, Tajikistan and Georgia) or are key transit routes for CIS net energy exports (particularly Georgia), all the case-study countries are net energy importers.

the main commodities exported in the most recent year available. It is clear that for most of the case-study countries there is a significant reliance on primary commodities as the main exports. Whilst some of these commodity-trading structures were inherited from Soviet times, the specialisation in new commodities reflects at least some shift away from inherited production patterns. However, there is clearly a concentration on low value-added exports rather than a process of diversification. The concentration on primary commodities as the main exports raises a question about vulnerability to global commodity price shocks.

Table 3.2 Commodity exports

Country	Year	Commodity group	% of total exports
Kyrgyz Republic	2003	Precious and semi precious stones (mainly gold)	45.1
Tajikistan	2000	Aluminium Cotton	53.8 14.5
Armenia	2003	Precious and semi- precious stones (mainly diamond processing)	52.3
Georgia	2004	Scrap metals Beverages	21.7 15.6
Ukraine	2002	Iron and steel	29.8

Source: World Bank and United Nations Conference on Trade and Development (UNCTAD) World Integrated Trade Solution (WITS): United Nation Statistical Division (UNSD) Commodity Trade (COMTRADE).

Economic structure

To what extent does the structure of the economy reflect patterns inherited from the Soviet era? Table 3.3 presents sector value-added as a percentage of GDP from 1990 to 2002. Trends differ for each country but the decline in industry is apparent throughout, mainly as a result of the collapse in Soviet era military-related industrial production (and a possible explanation of the shift to primary commodities as the main exports). Just as industry was a key pillar of economic development and employment during the Soviet era, so the post-Soviet period saw shifts in the sectoral composition of growth towards agriculture and services and with large gains in the informal sector (as a cushion against unemployment). Armenia experienced a contraction in industry relative to gains in the agriculture sector until 1996 and more sustained gains in services. Georgia, Tajikistan and the Kyrgyz Republic, on the other hand, generally experienced a relatively consistent decline in industry as a percentage of GDP relative to a rise in the service sector and some gains in agriculture. Finally, Ukraine experienced an overall decline in industry and agriculture relative to strong gains in services.

Table 3.3 Sector value-added (% GDP)

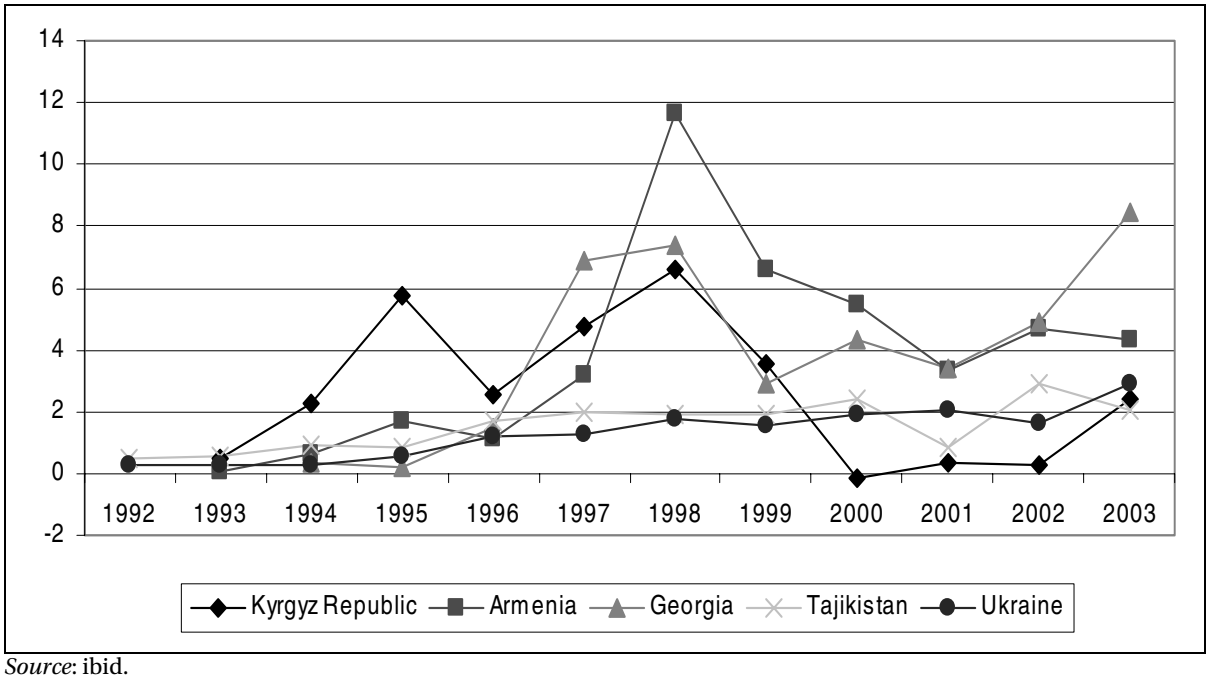
Country		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Kyrgyz Republic	Agriculture	34.2	37.0	39.0	41.0	40.9	43.9	49.7	44.6	39.5	37.7	36.8	37.3	38.6
	Industry	35.8	35.5	37.8	32.0	25.5	19.5	18.3	22.8	22.8	26.7	29.2	28.3	26.2
	Services	30.0	27.57	23.16	27.0	33.7	36.56	32.0	32.6	37.7	35.6	34.0	34.4	35.2
Tajikistan	Agriculture	33.3	37.9	27.1	23.3	24.0	38.4	39.0	31.8	26.9	27.4	29.5	29.2	24.3
	Industry	37.6	37.5	45.3	46.4	40.8	39.0	30.6	25.6	26.0	29.2	29.7	29.2	24.0
	Services	29.1	24.59	27.61	30.4	35.3	22.56	30.4	42.6	47.1	43.4	40.8	41.6	51.7
Armenia	Agriculture	17.4	25.0	31.0	51.4	44.9	42.3	36.8	32.0	34.0	29.5	25.5	28.3	26.2
	Industry	52.0	49.2	39.4	26.9	37.0	32.0	32.6	33.2	30.8	32.2	35.4	33.0	36.8
	Services	30.7	25.78	29.56	21.7	18.2	25.76	30.6	34.8	35.25	38.3	39.0	38.7	37.0
Georgia	Agriculture	31.5	28.7	52.9	58.6	51.7	52.5	34.2	30.8	28.0	26.3	21.6	22.1	20.6
	Industry	33.5	37.2	23.9	22.0	19.7	15.9	23.5	23.1	22.8	22.5	22.5	22.0	23.0
	Services	35.0	34.08	23.16	19.4	28.6	31.68	42.2	46.1	49.22	51.2	56.0	55.8	56.4
Ukraine	Agriculture	25.6	22.8	20.4	21.7	16.2	15.4	13.8	14.4	14.2	14.3	17.1	16.4	15.3
	Industry	44.6	50.5	50.9	37.7	47.5	42.7	38.2	35.1	36.1	38.5	36.3	34.7	38.2
	Services	29.9	26.73	28.73	40.6	36.2	41.92	48.0	50.5	49.63	47.2	46.6	48.9	46.5

Source: World Bank, *World Development Indicators*

Foreign direct investment

The impact of transition on domestic savings rates raised expectations of FDI filling the gap between available domestic resources and the investment needs of restructuring economies. Although official statistics on FDI inflows vary, *World Development Indicators* data illustrate that FDI as a percentage of GDP has remained low over the period for all the case-study countries, with inflows mainly relating to strategic investment in the energy sector or in primary production (Fig. 3.12). The small inflow of foreign investment is attributed to the weak investment climate, corruption and a perception of political risk and instability in most of the case-study countries.

Fig. 3.12 FDI (% GDP)



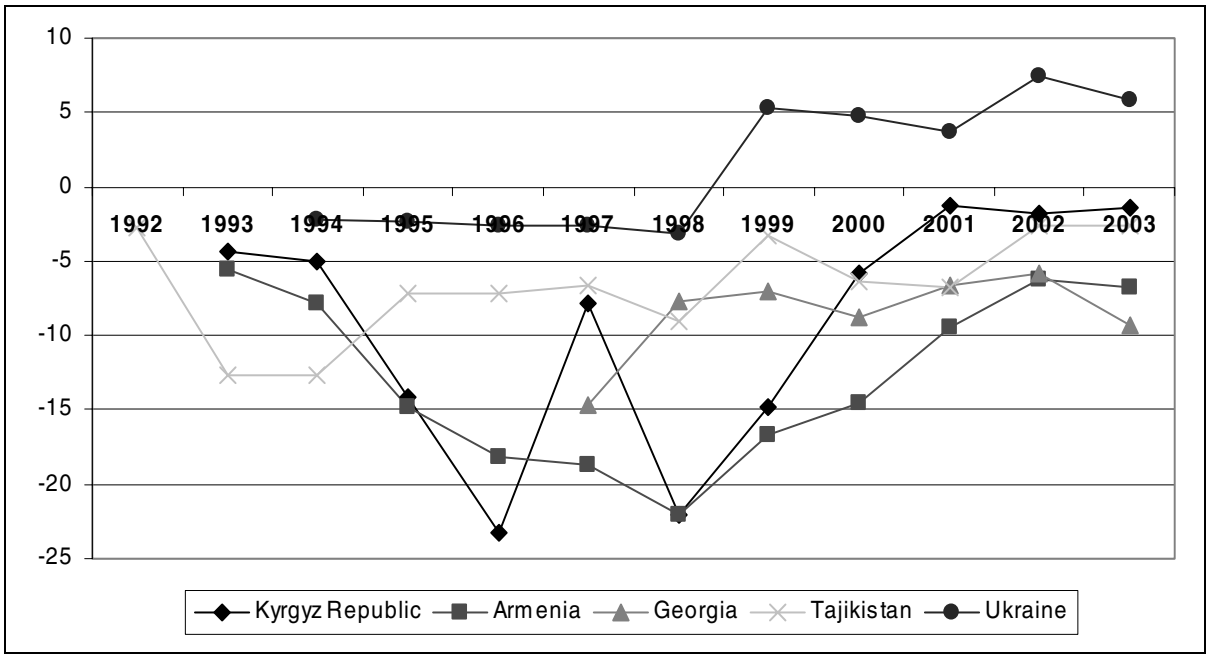
Source: ibid.

Current account

In terms of the external balance, export performance has been insufficient to offset substantial current account deficits (Fig. 3.13) All countries have seen persistent negative current account balances between 1992 and 2003, between 20% and 25% of GDP for the Kyrgyz Republic and Armenia around 1997, precipitating severe balance-of-payments problems requiring support through external finance. The situation on the current account has improved since 2000, and is now between 0% and around 5%-7% of GDP for all countries. Ukraine was the only country to post a current account surplus from 1998 to 2003 when the surplus was around 8% of GDP. However, this masked a persistent current account deficit with CIS countries due to large CIS energy imports. As a result of persistent imbalance on the current account, most countries rapidly accumulated significant external debt, initially on non-concessional terms and then increasingly on concessional terms since the mid-1990s (see country Annexes).[12]

[12] The proportion of concessional assistance in total net flows on debt reached 88% in Georgia in 1995 and 90% in Armenia, 93% in the Kyrgyz Republic and 83% in Tajikistan in 1996.

Fig. 3.13 Current account balance (% GDP)



Source: ibid.

The rising importance of economic migration and remittances

During the 1990s, there was a steep increase in migration both within and among CIS and European countries and between them and the rest of the world.[13] Reasons for migration have changed over the period, from permanent migration flows (due to population movements for ethnic reasons) to rising mobility on a temporary basis, much of which is not officially recorded (mainly seasonal economic migrants). However, due to measurement difficulties estimates of the size of CIS migration are difficult to quantify.[14] The extent of out-migration (measured by population change attributed to migration) was significant for some of the case-study countries – Armenia (-18.4%), Georgia (-20.4%), the Kyrgyz Republic (-9.2%), Tajikistan (-15.1%) – but only -1.5% in Ukraine (World Bank, 2005b). The official Russian estimate of the size of international migration to Russia between 1992 and 2003 is over 6.2 million.[15] According to the International Organisation for Migration (IOM), there are currently around 3.5-5 million illegal labour migrants in Russia (mainly in Moscow and at the oil wells in Siberia), around 2 million of whom are from Central Asia.

According to World Bank (2005b), remittance flows in 2003 to the Europe/Central Asia region amounted to US$10 billion. However, the precise size of remittances flows is difficult to estimate, as not all remittances are formally declared or transferred through domestic financial institutions. Balance-of-payments data on remittances are available for all the

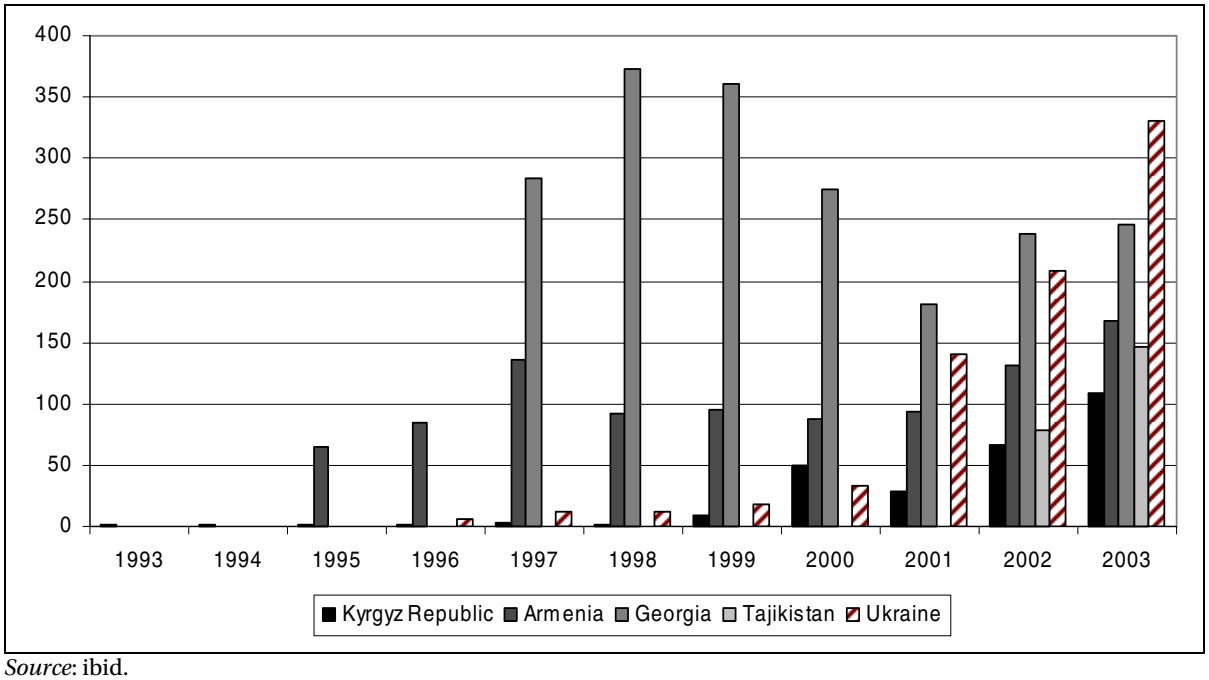
[13] Migration occurs for different reasons, including (but not limited to) long-term labour migration, temporary migration, shuttle migration, transit migration, asylum and inter-firm corporate personnel transfers.

[14] Migration flows in ECA are difficult to capture for three reasons: (i) data are only available for some years and because (ii) definitions, under-lying concepts and reporting systems differ significantly between countries (whilst the boundaries between extended travel and seasonal and economic migration are blurred, and (iii) much migration remains undocumented (World Bank, 2004.) The problem of migration measurement is particularly acute in the FSU. According to World Bank (2005b), only some of the countries have been able to erect the necessary administration procedures and institutions to quantify migration flows.

[15] Federal Service of Statistics, 2004.

case-study countries, although this is only partial for the period under investigation (Fig. 3.14). The true size of remittance flows is likely to be substantially more than the official estimates. According to the World Bank (2005b), in 2003 remittances as a share of GDP were as high as 6% in Armenia, 6.1% in Georgia, 6.2% in the Kyrgyz Republic and over 11% in Tajikistan. Other estimates place these proportions even higher.

Fig. 3.14 Workers remittances and compensation of employees (US$m.)



Source: ibid.

3.3 Summary

All the case-study countries experienced strong economic contraction at the outset of the transition. During this period these countries endured a rising external imbalance (as the volume and value of trade within the CIS declined before new markets for trade opened up), a decline in domestic investment and an internal imbalance (as the gap between domestic investment and savings widened). Over the 1990s, their economic structures shifted away from industry and towards services and agriculture. Trade performance started to pick up and there has been some export diversification to non-CIS partners. However, FDI inflows remain disappointingly low, outside strategic sector investments. Moreover, the concentration of export receipts on primary commodities raises questions about vulnerability to external shocks such as fluctuations in global commodity prices. There is also a critical question over whether these countries are in fact moving towards a situation of realising their comparative advantage by focusing on primary commodities as the main exports, or whether this concentration represents a failure to diversify successfully through the transition process. Furthermore, concentration on primary commodities makes diversification, which is required for employment creation and poverty reduction, more of an uphill struggle.

From 2000 onwards, growth performance across the region has strengthened, although from a narrow export base and with limited domestic diversification. Informal economic activity remains prevalent, particularly in cross-border activity such as shuttle trade and migration (reflecting regional disparities in income-earning opportunities). Most of the case-study countries remain dependent on flows of concessional external finance from bilateral and

multilateral providers, with a sizeable part of external bilateral debt still owed to CIS creditors.

Chapter 4: Review of the empirical literature on the determinants of FSU economic performance during transition

4.1 Introduction

The purpose of this chapter is to summarise the main points of consensus in the literature on the determinants of growth in the CIS during transition, focusing on those explanations where economic linkages between Russia and the CIS appear to be germane.[16] The main approaches used in the literature for explaining the causal factors of CIS growth in transition are as follows: (i) theoretical approaches to explaining the initial collapse of output, (ii) evidence from growth accounting, (iii) empirical approaches to assess the significance of key factors underpinning economic growth during transition, (iv) gravity models deriving the extent to which the CIS under-trades with the rest of the world, and (v) analysis of the interface between debt, external finance and growth in supporting CIS economic performance. The results of the main studies within each category are summarised below. Annex 1 presents the methodologies referred to in this chapter in further detail.

4.2 Theoretical approaches to explaining output collapse

Theoretical approaches lie at the heart of much of the empirical work on growth in transition. Such approaches aim to relate what is commonly understood as the 'transition process' to economic theories of growth and transformation. The theoretical literature is extensive and diverse, with a range of approaches to defining 'the transition process', on the one hand, and adapting theories to fit the evidence, on the other.

The point of departure for much of the theoretical literature is an attempt to define the fundamental elements of the transition process. Havrylyshyn (2001) provides a useful definition, noting that the 'core concept of transformation' can be pulled together from selected studies. This core concept includes the forced move from a sellers' to a buyers' market (via price liberalisation), dismantling of trade barriers and enforcing a hard budget constraint (via privatisation and elimination of government support mechanisms such as subsidies, tax exemptions and low-cost credits). The changes instigated by transformation include the reallocation of resources from old to new activities and restructuring within surviving firms.

There are competing views in the literature, however, on the implications of this core concept of transformation for growth during transition. Campos and Coricelli (2002) point out that the sharp fall in output is a puzzle for economic theory, given that the transition process should have brought efficiency gains. Havrylyshyn (2001), on the other hand, notes that output collapse logically follows the 'core concept of transformation'. First, output will necessarily decline initially under new buyers' markets and hard budget constraints, since unsaleable goods accumulate and signal the need for production cutbacks. Second, growth will not occur until new incentives are in place and made credible. The earlier the reforms are in place, the sooner restructuring can begin. And third, in the early recovery period a variety of improvements in efficiency are more likely to be effective in raising output than an increase in factor inputs. The full employment of labour and the inefficient accumulation of

[16] The theme of 'Russia's regional economic influence' does not stand alone as a distinct strand of the growth literature.

capital stock mean that growth in factor expansion would be limited in the early transition phase.

Whether the initial collapse of output was inevitable on a theoretical basis or not, many observers looked retrospectively for theoretical approaches to explain economic performance in the early transition phase. Campos and Coricelli (2002) distinguish between four theoretical approaches: credit market imperfections, disorganisation, creative destruction and optimal speed of transition. The first two approaches focus essentially on the institutional limbo between the collapse of the central planning system and the establishment of market-oriented institutions. In the first, the absence of credit markets in the early transition phase (having been made irrelevant by the planning system) led to a liquidity crunch which constrained the resources available to enterprises. In the second, the institutional relationships between firms embedded during the Soviet era, described as 'specificity' on account of vertical integration and restricted markets, led to 'inefficient bargaining' and restriction of supply in the early transition phase. The theory of creative destruction focuses on the impact of adjustment, or 'search costs', on output as resources move from former unproductive to more efficient use. Finally, the 'optimal speed' of transition theory aims to establish a relationship between speed of transition and output trends, on the basis of a notion of "optimal speed". Campos and Coricelli (2002) note that at the root of many of these theories lies the importance of institutions enabling a functioning market economy to evolve during the transition process.

A final branch of the theoretical literature aims to explain output collapse in terms of 'economic shocks' resulting from the break-up of the Soviet system. The focus of this branch of the literature is more an attempt to provide a credible account of what actually happened to the various Soviet institutions during transition and their impact on growth. Åslund (2001), Pomfret and Anderson (2001), Kaser (1998) and Orlowski (1995, 1997) produce similar conclusions on this issue, summarised as follows. First, the FSU faced significant initial shocks in the disruption of the inter-republican flow of income. The cessation of transfers from the Union budget led to a severe fiscal shock (particularly in the Kyrgyz Republic and Tajikistan), a rising domestic deficit and the need to restructure the tax base. Second, the decontrol of retail and wholesale prices, and the rapid expansion of the money supply to monetise fiscal deficits (occasioned by the withdrawal of fiscal transfers and the time-lag before access to external credit became feasible), led to spiralling inflation. Third, the liberalisation of trade prices led to significant terms-of-trade shocks, particularly for energy importers. Fourth, the disintegration of the ruble common currency area led to rising external debt to Russia. In the early transition phase, the CIS was not able to rely on development aid, and the absence of any domestic capital market meant public borrowing was not a feasible option. Hence, these external shocks led to a prolonged period of economic recession across the CIS.

4.3 Evidence from growth accounting

Growth accounting postulates that output performance is explained by the rate of factor accumulation, on the one hand, and improvement in the efficiency with which factors of production (capital, labour) are used, on the other. The general conclusion of this approach in the CIS context is that factor inputs explain only a small proportion of growth variations, suggesting that changes in factor productivity (calculated as the residual) are the key contributor to changes in economic output over time. These conclusions resonate well with Havrylyshyn's theoretical framework of economic transition described above.

De Broeck and Koen (2000) use a growth-accounting approach for the pre- and early transition phase. The first notable conclusion is that output growth between 1971 and 1990

is largely explained by capital growth, consistent with the economic model of the Soviet system. The second key conclusion is that output decline between 1991 and 1997 was mainly accounted for by losses in total factor productivity (TFP) (at an average ranging from 6.5% in Armenia to 13% in Tajikistan) and labour productivity, suggesting negative returns to factor accumulation (Table 4.1). Substantial TFP losses were particularly felt in construction, trade, transport and industry (those sectors traditionally upheld by the command economy). The services and agricultural sectors, on the other hand, performed relatively well. The declines in capital accumulation and labour growth were only around half that in TFP, illustrated by a comparison of factor contribution and productivity. The decline in factor contribution reflects reductions in employment (including both shifts between sectors and an absolute decline) and investment (accelerating the aging process of capital stock).[17]

Table 4.1 Accounting for output growth 1971-97(%)

Country	Period average	Output growth	Capital growth	Labour growth	Factor contribution	TFP growth	Labour productivity
Kyrgyz Republic	1971-97	-0.1	3.9	1.6	2.2	-2.4	-1.7
	1971-90	3.2	4.9	2.3	3.1	0.1	0.8
	1991-97	**-9.5**	**0.8**	**-0.5**	**-0.1**	**-9.4**	**-9.0**
Tajikistan	1971-97	-1.7	3.8	1.9	2.5	-4.2	-3.6
	1971-90	2.6	5.2	3.0	3.7	-1.1	-0.5
	1991-97	**-13.8**	**-0.3**	**-1.1**	**-0.9**	**-12.9**	**-12.6**
Armenia	1971-97	0.6	3.2	1.1	1.7	-1.1	-0.4
	1971-90	3.9	5.0	2.3	3.1	0.8	1.6
	1991-97	**-8.8**	**-1.7**	**-2.5**	**-2.2**	**-6.5**	**-6.3**
Georgia	1971-97	-1.4	2.3	0.2	0.8	-2.3	-1.6
	1971-90	2.6	4.0	1.3	2.1	0.5	1.3
	1991-97	**-13.1**	**-2.5**	-3.0	**-2.9**	**-10.2**	**-10.0**
Ukraine	1971-97	-1.1	2.9	-0.1	0.8	-1.9	-10.7
	1971-90	2.1	4.1	0.5	1.6	0.5	-1.0
	1991-97	**-10.2**	**-0.3**	**-1.7**	**-1.3**	**-8.9**	**-8.5**
Average across all FSU countries							
Agriculture	**1991-97**	-6.1	-3.1	0.0	-0.9	-5.2	-6.1
Construction		-17.6	-1.2	-8.1	-6.1	-11.6	-9.5
Industry		-10.5	1.1	-6.2	-4.0	-6.5	-4.3
Services		-1.8	-0.3	0.0	-0.1	-1.7	-1.8
Trade		-4.2	-0.2	3.1	2.1	-6.3	-7.4
Transport		-11.4	0.9	-2.5	-1.5	-9.9	-8.9

Source: De Broeck and Koen (2000)

Loukoianova and Unigovskaya (2004) use an updated growth-accounting framework to explain the origins of CIS growth from 1998 to 2001. Their results suggest that positive TFP played a supportive role in economic growth over the more recent period, making a significant contribution to output growth in the period of economic recovery.

4.4 Empirical approaches to explaining growth in transition

The empirical literature on growth in transition has mainly been concerned with the relative importance of various factors underpinning the growth process, including initial conditions and stabilisation, structural and policy reforms.

[17] De Broeck and Koen (2000) argue that the slow-down in investment spending in the second half of the 1980s meant that capital obsolescence had already begun to settle in before transition.

Stabilisation and economic recovery

A relatively uncontested conclusion of the growth literature is that stabilisation is a necessary condition for recovery of output. Most studies conclude that some measure of stabilisation (of fiscal deficit and inflation, plus an exchange-rate anchor) always has a significant impact on growth (Havrylyshyn, 2001). However, the separate effects of fiscal deficits and inflation are not distinguished. Furthermore, the different time-lags observed between successful stabilisation and recovery across the CIS (Fischer et al., 1996) also raise questions about the microeconomic effects of stabilisation on growth patterns.

Policy and structural reforms

Variations in growth and output performance between transition economies became the subject of extensive empirical analysis during the 1990s. De Melo et al. (1996) were the first to study and quantify the role of structural reforms and policy performance in transition. They analysed 26 countries in Central and Eastern Europe and the FSU plus Mongolia from 1989 to 1994, using cross-sectional data, and defined a composite index which took into account three dimensions of liberalisation: (i) internal markets, (ii) external trade, and (iii) the facilitation of private sector entry, to construct an annual liberalisation index (ALI) and cumulative liberalisation index (CLI) from 1989 to 1994.[18] The values of the liberalisation for each case-study country are shown in Table 4.2, indicating a very low level of reforms in 1989 followed by a range of subsequent reform paths pursued by each country.

Table 4.2 Annual and cumulative liberalisation indices

Country	Weighted Index							
	1989	1990	1991	1992	1993	1994	Total	CLI
Kyrgyz Republic	0.04	0.04	0.04	0.33	0.60	0.76	1.81	2.19
Tajikistan	0.04	0.04	0.11	0.20	0.26	0.30	0.95	1.15
Armenia	0.04	0.04	0.13	0.39	0.42	0.42	1.44	1.74
Georgia	0.04	0.04	0.22	0.32	0.35	0.35	1.32	1.59
Ukraine	0.04	0.04	0.10	0.23	0.13	0.26	0.80	0.97

Source: De Melo et al. (1996)

On the basis of the ALI and CLI scores, the authors examined the interactions between liberalisation and economic growth and liberalisation and inflation in all 26 countries between 1989 and 1994. The findings are presented in Table 4.3. They suggest a good linear fit in the relationship between liberalisation and growth. In a similar vein, Fischer et al. (1996) find that growth is positively and significantly associated with fiscal surplus, foreign aid and the extent of liberalisation, and is negatively associated with inflation.

[18] The ALI is the weighted average of 0 to 1 rankings of liberalisation in three areas: internal markets (liberalisation of domestic prices and abolition of state trading monopolies), external markets (liberalisation of foreign trade regime, currency convertibility), and, private sector entry (privatisation of small-scale and large-scale enterprises and banking reform.) The weights used in aggregating the components of the index are notional estimates of the relative impact of I and E (representing liberalisation through the introduction of competitive, flexible-price markets) and P (representing liberalisation through changing ownership of assets).

Table 4.3 De Melo et al. (1996) regression results

	Dependent variable	
	Average growth R^2= 0.65	Average inflation R^2 = 0.76
Intercept	-9.1 (5.4)[a]	3.4 *(2.4)*
Cumulative liberalisation index	2.6 (4.7)	-0.88 *(2.3)*
Per capita income	-0.54 (1.9)	
Average growth	6.5 (4.8)	
Log of the maximum drop in the annual index of real GDP for each country (1989=100)		0.64 *(1.5)*
Repressed inflation[b]		0.036 *(2.1)*
War (dummy variable)		1.2 *(2.8)*

Source: ibid.
Notes: a) *t*- ratios are in parentheses; b) RINFL is defined as the increase in deflated wages less the change in real GDP during 1987-9.

Initial conditions versus policy and structural reforms

As variations in CIS economic growth widened during the 1990s, economic analysis turned to the role of 'initial conditions' in determining economic outcomes for a given set of structural and policy reforms. De Melo et al. (1996) produce a set of initial condition variables (ICVs) for all transition economies as a basis for modelling the relationship between growth, structural and policy reforms and initial conditions. These ICVs were subsequently widely used in the empirical literature. The ICVs for the case-study countries are presented in Table 4.4.[19]

Berg et al. (1999) provide one of the most widely acclaimed analyses of the impact of structural and policy reforms and initial conditions in explaining variations in economic performance across transition countries. Their sample spans 10 CEE countries, 3 Baltic republics, 12 CIS countries and Mongolia, covering the period 1990-6 for the CEE and 1992-6 for the Baltic countries and the CIS. The authors show actual and fitted growth for two final model specifications and the decomposition of fitted values into the major groups of variables, presenting the following conclusions for the Baltic countries, Russia and other countries of the former Soviet Union BRO (Table 4.5). First, the decline in output over the five years is overwhelmingly driven by initial conditions, although these effects taper off towards the end of the period. Trade dependency and over-industrialisation play the most prominent role in this decline. Second, macro-economic variables make a relatively small overall impact on growth, with the positive effects of inflation on the state sector offset by the negative impact of fiscal balance. Third, structural reforms have a strong and positive impact on growth throughout the period, with a negative impact on the state sector (although less prominent in model gA) and a significant positive impact on the private sector.

[19] The ICVs for the five country case studies are noticeably similar, although they are markedly different from initial conditions in other transition economies, which explains their significance in accounting for variations in growth and output performance across a sample which includes all transition countries.

Table 4.4 Initial Condition Variables for the country case studies

	Kyrgyz Republic	Tajikistan	Armenia	Georgia	Ukraine
Initial income	3180	3010	5530	5590	5680
Urbanisation	38	32	68	56	67
Industry	0.40	0.34	0.55	0.43	0.44
Services	0.33	0.27	0.11	0.22	0.21
Agriculture	0.27	0.39	0.34	0.35	0.35
Predicted share of industry	0.34	0.34	0.35	0.35	0.40
Natural resources	Poor	Poor	Poor	Moderate	Moderate
Location	0	0	0	0	0
Average % growth 1985-9	5.2	1.9	2.7	2.4	2.4
Initial distortions	25.7	25.7	25.7	25.7	25.7
Trade dependence	27.7	31.0	25.6	24.8	23.8
CMEA in total exports 1990 (%)	96	87	97	93	86
Black market exchange-rate premium	1828	1828	1828	1828	1828
State	0	0	0	0	0
Market memory	71	71	71	70	74

Source: De Melo et al. (1996)

Table 4.5 Average contribution to output growth across BRO countries

	Model gA (% per year)					Model gB (% per year)				
Transition time	0	1	2	3	4	0	1	2	3	4
Growth, actual	-24.8	-13.3	-12.7	-3.8	-0.2	-24.8	-13.3	-12.7	-3.8	-0.2
Growth, fitted	-24.0	-24.0	-12.7	-4.1	0.1	-24.1	-14.9	-11.7	-3.3	-1.0
Macro-economic variables	-2.7	0.9	-0.9	0.3	0.7	-0.1	0.0	1.5	1.5	2.0
Fiscal balance	-4.3	0.0	-1.7	-1.5	-0.5	-6.1	-1.2	0.9	1.2	1.5
Structural reform	**3.5**	**3.7**	**5.2**	**9.3**	**10.3**	**4.3**	**4.2**	**6.3**	**10.2**	**15.2**
State sector effect	1.5	-1.4	-1.8	5.2	12.5	-0.6	-7.1	-16.3	-14.1	-13.6
Private sector effect	11.9	19.4	20.9	17.5	10.7	24.6	34.2	46	42.1	44
Initial conditions	**-22.1**	**-15.9**	**-16.4**	**-13.6**	**-10.7**	**-25.3**	**-16.1**	**-18.8**	**-14.8**	**-17.9**
o/w										
Trade dependence	-8.2	-5.5	-2.9	-0.2	2.4	-10.5	-7.0	-3.5	0.0	0.0
Over-industrialisation	-7.7	-5.1	0.0	0.0	0.0	-8.3	-4.5	3.1	0.0	0.0
War dummy	-2.8	-2.8	-0.7	-0.2	-0.2	-3.0	-3.0	-0.7	-0.2	-0.2

Source: Berg et al. (1999)

4.5 Explaining trade performance

The empirical literature on the diversification of trade and production across the CIS considers whether diversification has occurred to the extent that might be expected as a result of the transition process. Gravity models are commonly used to assess the actual and expected trade patterns, taking into account influential factors such as the similarities in language and culture, the high complementarities of the CIS economies, the similarities in the accumulated stock of technology and the common experience of transition. Such approaches have been used by Elborgh-Woytek (2003), Havrylyshyn and Al-Atrash (1998), and Freinkman et al. (2004).

Freinkman et al. (2004) provide one of the most recent and probably most comprehensive reviews of trade performance in the CIS based on a gravity model approach, and come to the following conclusions. First, as a result of political, legislative and business upheaval in the early 1990s, Russia re-oriented its supply chain towards domestic production. However, the

production and transport infrastructure across the CIS had been exclusively geared to the Soviet market. As a result, CIS manufacturing trade declined during the 1990s and was replaced by trade in primary commodities. Trade in energy and raw materials increased, compensating for the decline in resource-rich countries such as Azerbaijan, Kazakhstan, Russia and Turkmenistan, while the smaller CIS countries relied on gold, cotton, agricultural and internal processing exports. Table 4.6 presents the export composition by sector for the country case studies.

Table 4.6 Export composition by sector (%)

	Kyrgyz Republic		**Tajikistan**		**Armenia**		**Georgia**		**Ukraine**	
	1988	2000	1988	2000	1988	2000	1988	2000	1988	2000
Electric power	3	11	3	13	1	7	0	2	1	1
Oil and gas	0	0	1	0	0	0	2	4	2	1
Metals										
- Ferrous	0	0	0	0	1	4	6	17	17	41
- Non-ferrous	6	5	17	54	3	14	1	16	2	8
Chemical and petrochemicals	1	4	4	1	11	4	5	13	8	13
Machinery	37	10	10	8	22	11	14	13	37	13
Light industry	26	7	49	16	40	5	22	1	6	5
Food industry	20	3	10	1	16	8	41	16	15	4
Wood and paper	0	0	0	0	1	0	1	3	1	3
Other industry	5	4	2	4	6	39	2	4	6	4
Agriculture	5	13	4	4	0	1	5	11	4	5
Other sectors	0	40	64	28	0	6	0	1	1	3

Source: Freinkman et al. (2004)

Second, the CIS-7 have not been able to redirect their exports away from the CIS in any meaningful way and continue to over-trade with one another and to rely structurally on CIS imports (particularly energy supplies). This is in spite of the persistence of severe bottlenecks to regional trade (particularly high transport and transit costs) and the persistent ineffectiveness of the numerous regional trade arrangements. The gravity model used in this analysis produces a set of realisation ratios (Table 4.7), from which this conclusion is derived (with Armenia and Georgia providing the noticeable exceptions, although failing to realise trade opportunities elsewhere). The model also suggests that in 2001 the five case-study countries traded closely in line with their export potential with the EU, and substantially over-traded with the Middle East, particularly Iran and Turkey. Finally, the degree of under-trading with China is also noticeable for Tajikistan, Armenia and Georgia.

Third, the CIS-7 operate in general a lower level of intra-industry trade outside their CIS partners, which suggests limited opportunity to integrate into global production chains and increase productivity. The authors calculate a Grubel-Lloyd index to measure the magnitude of intra-industry flows in total manufacturing. The results are presented in Table 4.8. Overall, the CIS countries remain much more integrated with their traditional CIS partners and the levels of integration with non-CIS markets are very low. There are few cases of progress between 1996 and 2000, suggesting that, for much of the CIS-7, traditional intra-industry trading structures remain key features of domestic developments in manufacturing.

Table 4.7 Realisation ratios

	Kyrgyz Republic		Tajikistan		Armenia		Georgia		Ukraine		Russia	
	1994	2001	1994	2001	1994	2001	1994	2001	1994	2001	1994	2001
Total	1.76	1.33	0.78	3.23	0.63	0.97	0.40	1.00	0.58	1.13	0.78	1.08
CIS	2.14	1.53	0.79	5.35	0.99	0.87	0.52	0.62	0.75	1.14	0.77	1.06
CIS-7	**2.68**	**4.34**	**0.73**	**10.30**	**0.30**	**0.75**	**0.62**	**2.53**	**1.01**	**2.39**	**0.82**	**0.80**
Other CIS	2.01	1.20	0.81	4.11	1.12	0.89	0.51	0.41	0.74	1.10	0.77	1.11
Russia	**1.63**	**1.10**	**0.70**	**2.74**	**0.86**	**0.92**	**0.17**	**0.29**	**0.77**	**0.96**	-	-
EU	0.68	1.09	0.86	1.69	0.17	0.95	0.12	1.05	0.25	1.02	0.73	1.10
CEE	0.58	1.00	1.22	7.13	0.24	0.53	0.37	2.46	1.07	2.09	2.31	2.30
Other	2.35	1.24	0.57	1.40	0.86	1.19	0.62	1.50	0.53	0.90	0.64	0.79
China	9.67	3.57	0.22	0.34	0.30	0.35	0.13	0.28	4.43	3.47	2.36	2.07
Iran	12.40	3.98	1.05	12.90	4.26	6.12	0.67	0.81	0.48	1.28	0.76	1.59
Turkey	9.63	8.13	2.46	2.73	0.02	0.94	4.60	15.40	1.77	6.19	1.77	4.01
USA	0.50	0.32	0.52	0.29	0.71	0.74	0.26	0.62	0.21	0.35	0.37	0.41

Source: ibid.

Table 4.8 Intra-industry trade index

Country	Total trade		CIS		Non-CIS	
	1996	2000	1996	2000	1996	2000
Armenia	51.7	54.0	42.3	38.6	40.8	51.0
Georgia	n/a	36.9	n/a	54.2	n/a	20.2
Kyrgyz Republic	40.2	42.4	47.8	55.6	25.0	22.3
Tajikistan	n/a	11.8	n/a	11.3	n/a	5.5
Ukraine	42.5	44.9	58.2	60.0	27.7	28.7
Russia	47.6	54.7	75.1	71.5	36.3	44.5
Avg CIS-7			**62.4**	**55.3**	**32.8**	**33.3**

Source: ibid.

4.6 External finance

The importance of external finance in cushioning CIS economic decline and supporting growth is widely inferred in the empirical growth literature. The three main themes are: (i) the role of short-term bilateral and non-concessional finance in supporting the early transition phase (and hence rising external debt) and the gradual switch to medium-term concessional finance, (ii) the determinants of FDI inflows and their role in supporting growth, and (iii) the rising importance of remittances for economic growth.

Short-term finance and rising external debt

From a position of virtually no external debt in 1990, CIS debt burdens increased rapidly during the 1990s.[20] IMF and World Bank (2001) analysis suggests that the key contributing factors to the rapid rise in external debt in the early transition phase were energy-related arrears and primary current account deficits. Due to the absence of hard budget constraints and an expansionary fiscal policy in the early transition phase, the CIS continued to purchase energy from CIS providers (particularly Russia and Turkmenistan), mainly to finance consumption. Together with the terms-of-trade shock, this led to increases in the

[20] By the end of 1999, the stock of external government and government-guaranteed external debt of Armenia, Georgia, the Kyrgyz Republic, Moldova and Tajikistan had reached US$5.7 billion (IMF and World Bank, 2001.)

current account deficits and rising external debt (on non-concessional terms) mainly to CIS energy providers. The decomposition of debt into its main contributory factors is presented in Table 4.9, illustrating that primary current account deficits played the largest single role in rising external debt, followed by the cumulative effect of other flows. These conclusions are also supported by a later study, Helbling et al. (2004), which derives the same conclusions using a balance-of-payments identity.

Table 4.9 Factors contributing to growth of external debt (% of GDP)

Country	Total change in debt/GDP ratio	O/w cumulative effect of initial debt, interest and growth rates	O/w cumulative effect of primary current account deficits	O/w cumulative effect of FDI	O/w cumulative effect of other flows
Kyrgyz Republic					
1993-1998	51.4	-23.3	67.3	-24.4	31.8
1999-2000	-5.2	0.7	48.8	-52.8	-1.9
Tajikistan					
1993-1998	17.7	-30.0	30.0	-7.9	25.6
1999-2000	-5.6	-11.8	39.6	-22.2	-11.2
Armenia					
1993-1998	26.9	-7.3	55.2	-16.4	-4.5
1999-2005	5.6	-11.0	59.1	-39.0	-3.6
Georgia					
1993-1998	0.9	-28.3	10.6	-15.3	34.0
1999-2005	0.0	-6.0	27.1	-30.7	9.7

Source: IMF and World Bank (2001)

Medium-term concessional finance and debt relief

Ballooning current account deficits, rising external debt and debt-servicing requirements presented a clear challenge to debt sustainability for CIS governments during the 1990s. Concessional finance from bilateral and multilateral provides came on-stream from the mid-1990s onwards, increasing the concessionality of official assistance to the CIS-7 (see the individual country case studies). In addition, debt relief and restructuring from the Paris Club creditors helped smooth debt repayments. The IMF and World Bank (2004) study notes that debt relief and debt restructuring, mobilisation of grant resources and strong macro-economic performance in the CIS have played a major role in reducing the debt burden and dampening the potential impact on growth of high levels of debt service. Nonetheless, significant external liabilities from the stock of arrears in the energy sector pose risks for future debt sustainability and growth potential, particularly in Georgia and the Kyrgyz Republic.

FDI performance and determinants

It was widely expected at the outset of the transition that CIS growth would benefit from FDI inflows into key strategic sectors. Shiells (2003) captures this consensus, noting that FDI was to play an important role in filling the gap between low domestic savings and the high levels of investment required to support growth in the CIS, as well as being an important source of technology and management expertise. However, FDI inflows have remained disappointingly low for much of the CIS, even in the 'reforming energy importers' (which categorises the case-study countries). Where FDI inflows into the CIS have occurred they have tended to be 'resource-seeking', whereas more advanced transition economies have received 'efficiency-seeking' investment. Whilst the former may still support growth through

forward and backward linkages with the domestic economy, the full realisation of FDI in the CIS has been constrained by a number of inhibiting factors, such as trade and transport impediments, public sector interference in private sector activities, and excessive government regulation.

Remittances

The rise in economic migration across the CIS has given rise to increasing interest in the size and role of remittances in supporting economic growth. From a theoretical perspective, remittances can contribute positively to growth by providing a stable source of foreign exchange (relative to official and private capital inflows) and supporting household income and hence domestic consumption (with potential poverty-reducing effects) and domestic savings and investment in the medium term. Evidence suggests that remittances tend to have stronger growth effects when domestic policies favour savings and investment (World Bank, 2005b). At the same time, however, they may be a source of moral hazard to the individual, if they reduce incentives to work in the receiving household (hence reducing labour participation rates), or to the government (if they reduce incentives for implementing sound macro-economic policy). Measuring remittances is notoriously difficult as they are often transmitted through informal channels or are remittances in kind. The true size of remittance flows in the CIS region and their impact on growth remain undetermined. However, the volume of migration within the CIS region, due to regional disparity in employment opportunities, and of the resulting remittance flows is of increasing interest from a growth perspective.

4.7 Towards a methodology for evaluating causal growth factors and Russia's influence

What insights should be drawn from the growth literature and the evidence in previous chapters in constructing country-level growth simulation models? The overarching point to note is that the factors influencing the determinants of CIS growth have changed radically from the end of the 1980s to the present. The Soviet growth model was essentially founded on a planning structure within which investment was guided by political decisions rather than market signals. The withdrawal of Russian support to the CIS in 1991 meant that the factors underpinning the growth process completely changed over a period of a few years. This limits the accuracy of any generalised assessment of key growth determinants over the medium term. Similarly, the strength and nature of economic linkages with Russia also changed considerably. Bearing this caveat in mind, the following causal linkages might be explored empirically, given that they appear to be driving the transition and the growth process at various stages.

First, there is a case for exploring the linkage between investment and growth during the transition phase. In any economy, it is generally considered that sustained investment in productive assets is supportive of medium-term growth. This is equally true of the transition world, although it would be expected that the marginal productivity of investment would increase as a result of the transition process. Prior to transition, capital accumulation was decided by means of a planning process (i.e. exogenously determined), which yielded increasingly inefficient outcomes over time. The rapid decline in investment in the early phases of transition suggested that the supportive mechanisms behind capital investment had quickly evaporated. It may also suggest that investment choices became endogenous to the growth process (i.e. responsive to expectations about low returns and the availability of finance in the immediate post-Soviet context), although the 'planning mentality' took time to unwind. Russia's influence on CIS growth through the channel of domestic investment

also changed considerably, from the direct provision of fiscal transfers in support of public investment to strategic FDI and mergers.

Second, there is a case for exploring the linkages between export performance and growth. Strong export performance is a stimulus for economic activity, particularly if it is underpinned by commodity specialisation in sectors of comparative advantage. Export performance in the early transition phase was clearly affected by the collapse of the command economy system and the number of border blockades put in place as the result of rising regional tensions. This led to a steep decline in both export volume and export value for most of the CIS, within which Russia's influence was particularly notable through declining demand for CIS exports. Diversification of export partners during the 1990s and a general shift away from traditional exports suggest that Russia's influence on CIS growth through this channel has probably declined overall. Global commodity prices and demand in non-CIS growth hubs, on the other hand, are likely to be exerting a stronger influence on CIS growth through this channel.

Third, the various forms of external financing appear possibly to underpin or affect the CIS growth process in a variety of ways. Short-term flows in the early transition phase helped cushion the full impact of economic decline, although they seemingly delayed external adjustment and contributed to the build-up of external debt. Long-term net flows and transfers on debt, on the other hand, particularly from official providers, played a counter-cyclical role from the mid-1990s onwards. Remittances appear potentially to play an increasing, although complex, role in supporting growth, probably mainly by supporting household income. Finally FDI, although a relatively small flow in comparison with official flows, nonetheless may have played a role in supporting economic recovery, by generating forward and backward linkages and technology spill-over in certain sectors.

Fourth, evidence on the role of initial conditions, as compared with structural and policy reforms, in supporting economic performance appears to suggest strongly that initial conditions matter increasingly less over time. Moreover, the similarity of initial conditions in the case-study countries means that variations in economic performance within the group are unlikely to be explained by these factors alone. The evolution of policy and structural reforms, on the other hand, is more differentiated by country and therefore offers some potential explanation as to why growth rates differ within the group.

A general assessment of the factors underpinning CIS growth since 1991 therefore needs to take these transition-specific issues into account. The elasticity of growth with respect to its key causal factors is likely to have changed significantly over time, as a result of structural and policy reforms gradually introducing the principles and signals of a functioning market economy. Equally, account needs to be taken of the changing nature of Russia's influence on CIS growth, from being a central planner and provider of substantial fiscal resources to being a source of strategic investment, a regional trade partner, a bilateral creditor and a key destination of economic migrations.

Chapter 5: Methodology

The purpose of this chapter is to outline the hypothesis and methodological approach for evaluating the impact of Russia's economic influence on CIS economic growth during transition. The *hypothesis* to be investigated is that economic linkages with Russia make a significant impact on economic growth in the five case-study countries in the post-Soviet context. The *premise* for this hypothesis is drawn from the general understanding outlined at the outset of this paper that the economic legacy of the Soviet system and the resulting economic linkages with Russia are considered to have at least some impact on CIS economic performance in the post-Soviet context. Underlying this premise is the critical issue of whether Russia, through its historical significance and the strength of its current economic linkages, still has a strong relative importance for the economic performance of the CIS as compared with the rest of the world. Embedded in this issue is a concern as to the extent to which Russia's strong relative importance exceeds what might be expected under an economic relationship determined by fully functioning market economies. With these questions in mind, the *methodology* for investigating whether Russia has an important economic influence over the case-study countries is to assess quantitatively the main factors underpinning their economic performance during the 1990s on a country-by-country basis and to identify and quantify Russia's contribution.

The analysis proceeds in the following stages:

In the first stage, reduced form equations are suggested, with GDP 1995$ on the left-hand side and explanatory variables on the right-hand side. The right-hand side variables are drawn from the empirical literature reviewed in Chapter 4. The variables chosen are those which the literature suggests explain most of the CIS growth story since 1991. The objective of these equations is therefore to test the significance of the key hypothesised causal factors (investment and exports) and the number of other potential explanatory variables suggested[21] (including export trends in 1995$, terms of trade, investment in 1995$, remittances, inflation and aggregate net resource flows and transfers on external debt).[22] The explanatory variables are, in varying degrees, endogenous to growth, although not wholly so in that in a linear combination they do not fully constitute a national accounts GDP identity.

These explanatory variables are assessed for their order of magnitude in explaining growth outcomes during transition. The approach is to observe actual real GDP[23] outcomes during the 1990s for the five country case studies and compare these with GDP simulated via a linear relationship in which the coefficients on the growth-contributing factors are 'retro-fitted' to the growth performance actually observed. Parameter values are selected which produce the best fit correlation coefficients between the simulated growth path and the actual one. This calibration is done by trial and error, given that there are not enough data to

[21] This methodology does not make it possible to assess the institutional, governance and policy influence of Russia, or initial conditions, which the empirical literature also suggests has a bearing on economic outcomes.

[22] Net transfers = aggregate net resource flows minus interest payments and interest payments on FDI. Aggregate net resource flows = sum (net resource flows on long-term debt (= loan disbursements minus principal repayments, excluding IMF) + non-debt-creating flows (= FDI, portfolio flows and official grants)).

[23] The main caveat to note is that by definition GDP measures do not include estimates for the size of the informal sector and shifts between the formal and informal sectors. Hence it is likely that a sizeable part of economic activity could be missed from this analysis, although the best interpretation will be made on the basis of the available information.

estimate them econometrically.[24] The process involves testing a series of alternative coefficients for each variable in the simulation. Initially, plausible coefficient values are selected and tested for goodness of fit of the simulation. Those models that produce a correlation coefficient above 90% are preserved. Then, in order to test robustness, alternative coefficients for each variable are introduced, both individually and in combination, including at the extremes of parameterisation. This is important, firstly, to confirm that each individual variable is significant for the goodness of fit of the preserved model. Secondly, it is also an informative procedure for testing the relative sensitivity of the preserved model to changes in the values of individual coefficients, and hence which variable (or set of variables) appears to be explaining most of the growth story. The results of the procedure for testing robustness are reported for each country.

In the second stage, the objective is to identify and try to quantify Russia's contribution. This is taken forward in two steps. First, the model displaying the best goodness of fit is selected as the base simulation. For each country study, this typically includes investment, exports, remittances and FDI (to varying degrees). Then, the proportion of the independent variables attributable to Russia is calculated over the 1990s. This is carried out, for example, by considering the following (which the empirical literature suggests are the main aspects of Russia's impact):[25]

- the impact on the level of investment of withdrawal of Moscow's fiscal transfers in the early 1990s
- the proportion of external finance attributed to Russia underpinning enterprise and government investment post-1990
- the proportion of exports of goods and services to Russia since 1990
- the proportion of total worker remittances attributed to remittances from economic migrants to Russia since 1990, and
- Russia's foreign direct investment as a proportion of total investment since 1990.

Calculating Russia's share of exports, workers' remittances, external finance and FDI over time is fairly straightforward and can be lifted directly from the available data (see below). Calculating Russia's contribution to domestic investment, on the other hand, both before and after 1990, requires making assumptions about the linkages between the external finance provided by Russia and government and enterprise investment decisions. The assumptions are as follows:

- Prior to 1990, all investment is assumed to be public investment, resourced by fiscal transfers from the Union budget, finance from Gosbank and domestic revenue, in line with the description of the command economy in Chapter 2. The fiscal transfers from Moscow are of particular interest for this exercise, as they are the closest representation of 'Russia's share' in domestic investment. The percentage of domestic revenue and GNP made up by fiscal transfers from the Union budget is already known. It is assumed that 50% of these transfers were allocated to government and enterprise investment in 1990 (i.e. prior to transition). It is then straightforward to calculate the proportion of GFCF attributed to fiscal transfers from Moscow prior to transition.

[24] As only 5country case studies are being considered for this analysis, the absence of sufficient data since the 1990s constrains the sample size.

[25] It is important to note that these are not the only possible economic linkages between Russia and the case-study countries that might be plausibly assumed. Nor do they exhaust the list of possible economic linkages that impact on the FSU. Alternative forms of influence include the policy demonstration effect of reforms in Russia during the transition process. The role of Russian military basis in supporting local economic development is a further possible linkage.

- During transition, the determinants of investment changed dramatically as a result of the breakdown of the command economy system and the cessation of fiscal transfers from Moscow. To simplify, external finance is assumed to be the key determinant of both public and private investment from 1991 onwards, given the generally low levels of domestic savings and the weak domestic banking sectors in most of the case-study countries. Russia's contribution to domestic investment through external finance is assumed to be most accurately measured by the proportion of external debt outstanding to Russia, rather than by net flows. This assumption reflects the early transition period, when government and firms rapidly accumulated external debt to Russia to finance both investment and consumption.[26] The proportion of outstanding debt to Russia during the 1990s can be lifted from the available data. It is assumed that the proportion of outstanding bilateral debt to Russia supporting domestic investment (public and private) is 50% in 1990, falling proportionally year on year to 10% in 2002. This decline is assumed to be the result of the rising relative importance of concessional flows in support of domestic investment as the transition phase progressed.

Once Russia's contribution to key growth variables has been identified empirically, the base simulation is redone counter-factually, assuming a) that Russia ceased entirely to be a market for exports, a contributor of external finance[27] and a source of remittances from 1990 onwards, and b) that 1990 levels of exports to Russia and Russia's contribution to GFCF through fiscal transfers continued.[28] The difference between the base simulation and variant (a) would give a measure of the continuing importance of economic linkages with Russia to CIS economic performance. The difference between the base simulation and variant (b) would provide a measure of the impact of Russia's economic collapse on the case-study countries as a result of the break-up of the Soviet Union.

In the third stage, conclusions are summarised and comparisons drawn between the country simulation results. This stage helps to illustrate the different forms of influence Russia has in different contexts, to explain why linkages might vary and to assess whether linkages are stronger than might be expected under functioning market economies. It will also attempt to answer the question of whether Russia's economic influence is a cause or a symptom of economic performance and to draw conclusions as to whether domestic reforms or regional economic relations hold the key to improving domestic economic performance.

It is important to note at the outset that there are clear limits to the extent to which these growth-contributing factors can be tested by empirical means. Statistical analysis cannot capture the full range of potential causal factors or explain the process through which these affect outcomes. Fuller descriptions of country circumstances and the nature and evolution of economic linkages with Russia are therefore described in Annexes 2-6.

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[26] In the early stages of transition, CIS enterprise built up significant arrears to Russia on account of increases in the price of energy imports, which Russia effectively began to treat as loans to the newly independent states. Once energy-related arrears appeared on central government balance sheets later on in the 1990s, they were classified as outstanding external debt to Russia. Interest and amortisation payments of these loans were, in many cases, not made.

[27] In line with the explanation of the assumptions for post-Soviet influence over domestic investment outlined above, this counter-factual simulation assumes zero outstanding external debt to Russia from 1990 onwards.

[28] This simulation excludes new forms of external finance, such as FDI and remittances.

5.1 Data

The data used for the growth simulations are drawn from the following sources: World Bank *World Development Indicators* (2004) and *Global Development Finance* (2004), and IMF *Balance of Payments Statistics* (2004), *Direction of Trade Statistics* (2004) and *International Financial Statistics* (2004). All variables, unless otherwise stated, are measured in current US dollars. The variables include GDP deflator, exports (1995$), export price inflation (current price exports minus 1995$ exports), gross fixed capital formation (1995$), remittances, FDI, official aid, balance-of-payments data external liabilities, total private and public net resources flows and transfers on external debt. Russia's contribution is estimated by country for exports, GFCF and remittances in order to undertake the counter-factual simulations.

As discussed in the Introduction, data availability is generally poor for much of the CIS over the sample period, in terms of both completeness and accuracy. This clearly means that the empirical results should not be interpreted literally. Rather, this methodology provides a suggestion of the magnitude of the Russian effect. The methodology employs two procedures for overcoming the data constraints. Firstly, the full set of data between 1990 and 2002 were available only for the Kyrgyz Republic and Ukraine. Data for Tajikistan, Georgia and Armenia were incomplete for the sample period. The results are therefore based on plausible estimates for years where data are lacking. The assumptions for these estimates are footnoted. Second, a proxy is used in the simulations where data for certain important variables are missing altogether. For example, gross fixed capital (GFC) is used in place of GFCF for Tajikistan. Also, where variables are not attributed 1995$ values for the Tajikistan study, trends in constant local currency units are used.

Chapter 6: Simulation models and results

6.1 Overview

This chapter presents the growth simulation models and results for each of the five country case studies, analysing the main similarities and differences. Each country case-study section draws on the statistics and analysis in its fuller counterpart Annex.

6.2 Kyrgyz Republic: Simulation results

Seven simulations run for the Kyrgyz Republic produced a correlation coefficient above 90%. Table 6.1 provides the simulation formations and results. All variables are in current US$ unless otherwise stated.

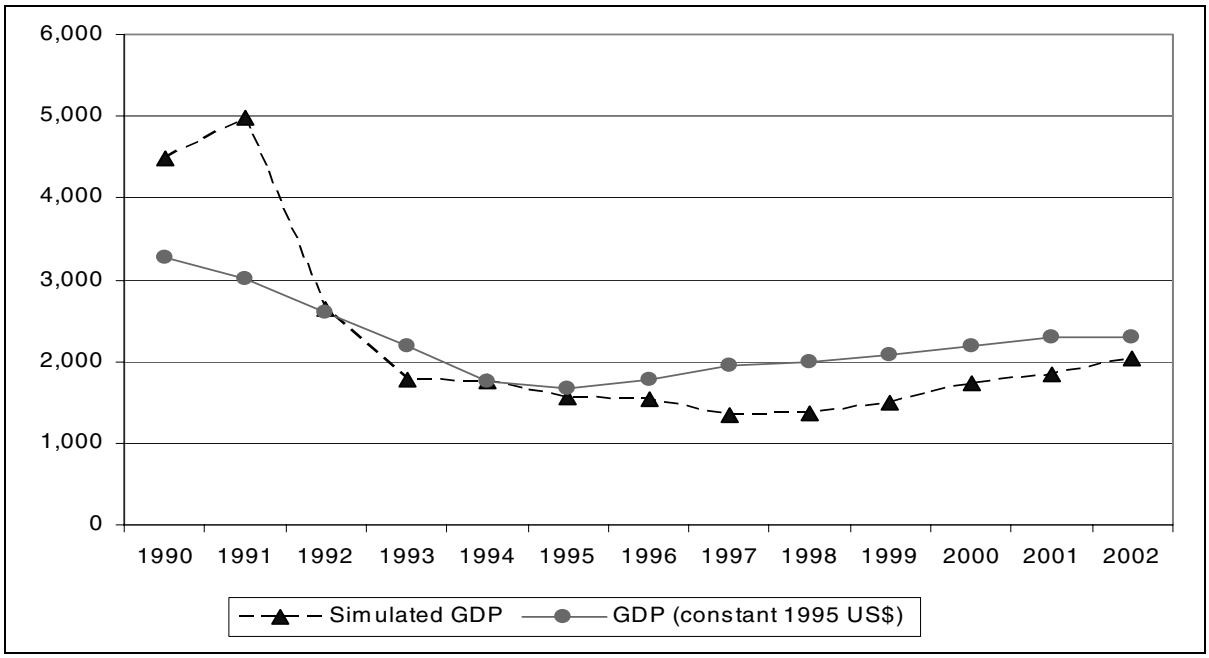
Table 6.1 Kyrgyz Republic: Simulation results (1990-2002)

RHS: GDP 1995$	**Calibrated coefficient values**						
LHS: Variable	Sim 1	Sim 2	Sim 3	Sim 4	Sim 5	Sim 6	Sim 7
GDP deflator	1500	1500	1500	1500	1500	1500	1500
Exports 1995$		0.2					
GFCF 1995$	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Import price adjustment							0.1
Remittances		3.5	3.5	3.5	3.5	3.5	3.5
Official aid			0.5				
Official aid (-1)				0.5			
Trade credits					1.5		0.3
Long-term loans					0.5		
Other liabilities					0.6		0.8
Private non guaranteed net flows						0.1	
Public and publicly guaranteed net flows						0.1	
Simulation correlation coefficient (%)	**90.37**	**90.78**	**90.54**	**90.85**	**91.19**	**90.89**	**91.47**

Notes: a) Balance-of-payments estimates.
b) between 1992 and 1997 trade credits were mainly short-term finance. From 1997 onwards, however, the majority of trade credits were long-term.
c) other liabilities are not specifically defined in the balance-of-payments statistics.

For all simulations, the values of the correlation coefficients were most sensitive to marginal changes in the coefficient value of GFCF (1995$) and exports (1995$). In simulation 1, reducing the coefficient for GFCF from 1.9 to 1.7 reduced the corresponding simulation correlation to 90.29%. Simulations 6 and 7 also show some sensitivity of the correlation coefficients to trade credits and 'other liabilities'. The results of simulation 7 are shown in Fig. 6.1. It can be seen that simulated GDP follows the same decline as GDP (1995$) between 1991 and 1994, diverging slightly between 1995 and 1997 and then narrowing again between 1998 and 2002.

Fig. 6.1 Kyrgyz Republic: Simulation 7 (GDP 1995 US$m. and simulated GDP)



Second, correlation coefficients for individual explanatory variables and GDP growth were also calculated to assess individual explanatory power. The variables with the most significant explanatory power are GFCF (88.8%) and exports (89.1%). The correlation coefficients for price adjustment to imports (26.01%), price adjustments to exports (1.8%) and workers' remittances (3.7%) have a relatively lower individual correlation coefficient. Official finance appears to be counter-cyclical, with a correlation coefficient for ODA/OA of –71.1%, long-term loans –41.3%, short-term liabilities 56.9%, trade credits 17.1%, net flows on external debt -66.9% and net transfers on debt –65.7%.

Third, Russia's contribution to the key explanatory variables during the 1990s is presented in Table 6.2.

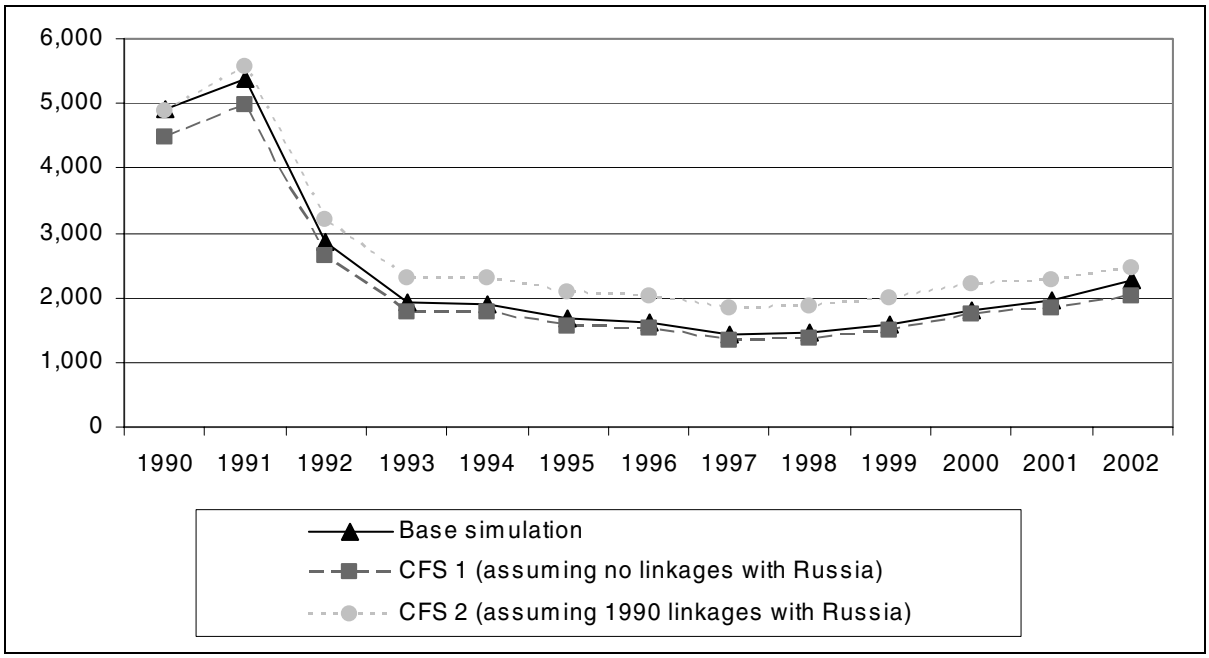
Table 6.2 Kyrgyz Republic: Russia's contribution to key explanatory variables

Explanatory variable	**%**
Exports to Russia in 1990[a] as a proportion of total exports	45
GFCF attributable to fiscal transfers from Russia in 1990[b]	16
Annual average external official debt to Russia as a proportion of total external debt (1994-2003)[c]	19
Annual average exports to Russia as a proportion of total exports (1992-2003)	19.7
Remittances from economic migrants in Russia in 2002[d] as a proportion of total remittances	75
FDI from Russia as a proportion of total FDI (1995-2003)	4

Notes: a) The earliest data for exports are 1992 (30%). The statistic here assumes exports to Russia in 1990 were 50% higher than in 1992.
b) Fiscal transfers from the Union budget were 6.9% of GNP in 1990. This figure assumes that 50% of fiscal transfers directly upheld public investment in 1990, which is equivalent to 16.05% of the total investment budget in that year;
c) Due to the lack of disaggregated data on CIS debt, it is assumed that 100% of CIS non-concessional debt was provided by Russia.
d) IOM estimates (2002).

The figures in Table 6.2 are used as the basis for the two further counter-factual simulations[29] (CFS 1 and 2) assuming simulation 2 in Table 6.1 as the base simulation. The results are presented in Fig. 6.2.

Fig. 6.2 Kyrgyz Republic: Base simulation, CFS 1 and 2



Simulated GDP in CFS 1 is cumulatively 7.27% lower than simulated GDP in the base case. The main divergence between CFS 1 and the base case arises between 1990 and 1992 during the initial period of economic transition. From 1992 onwards, there is a close convergence between the first and second simulated GDP trends, suggesting the significance of economic linkages with Russia decreased soon after the early transition phase. Simulated GDP in CFS 2 is cumulatively 13.57% higher than simulated GDP in the base case. The divergence is most clearly visible between 1993 and 2000.

In summary, this methodology suggests that the significance of economic linkages with Russia in supporting Kyrgyz growth has declined over the transition period. This suggestion is supported by evidence of the decreasing significance of traditional Soviet ties as the Kyrgyz Republic pursued a policy of stabilisation, structural reforms and integration into the global economy as well as being supported by counter-cyclical inflows of official assistance. The overall measure of economic collapse, on the other hand, is noticeably higher. This is probably explained mainly by the relatively high proportion of fiscal transfers from Moscow in Kyrgyz revenues (reflecting the need to subsidise development in the Central Asian economies).

6.3 Tajikistan: Simulation results

Five simulations run for Tajikistan produced a correlation coefficient above 90%. All variables are in US$ unless otherwise stated. As GFCF (1995$) and exports (1995$) were not available for the period 1990-2002, measures of GFC (gross capital formation) and exports

[29] Estimates are made for external debt to Russia between 1990 and 1994 and exports to Russia between 1990 and 1992 drawing on the assumptions in Table 6.2.

(local currency units) have been included as the nearest equivalent. Table 6.3 provides the simulation formations and results.

Table 6.3 Tajikistan: Simulation results (1993-2002)

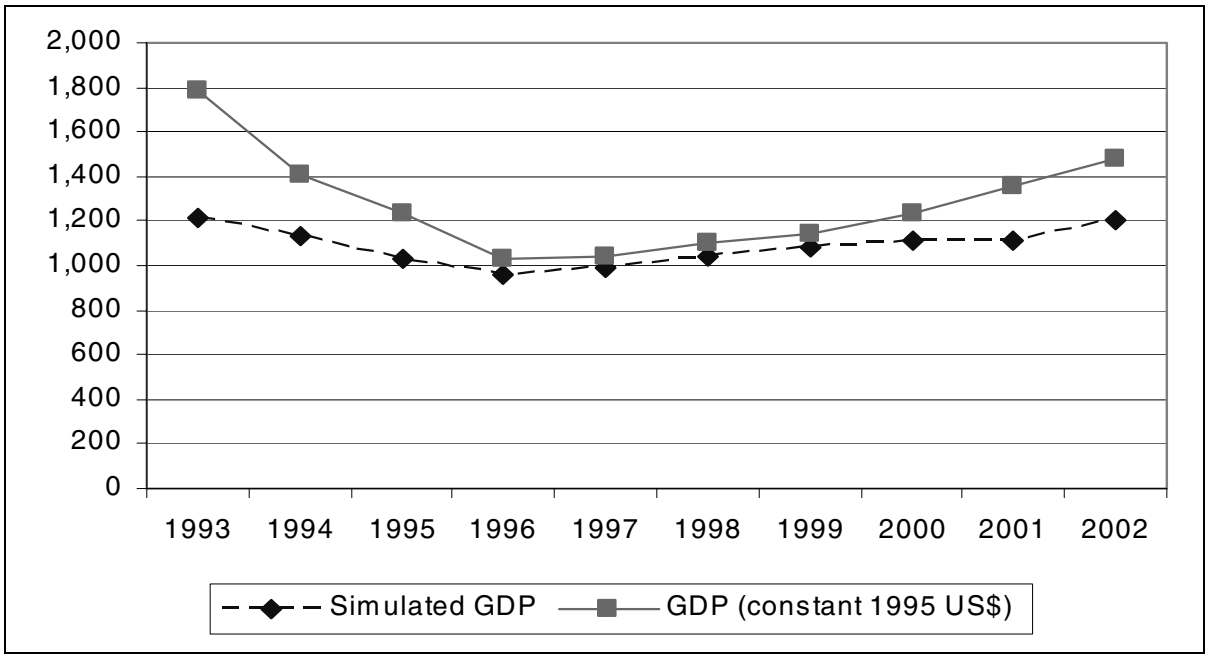
RHS: GDP 1995$	**Calibrated coefficient values**					
LHS: Variable	Sim 1	Sim 2	Sim 3	Sim 4	Sim 5	Sim 6
GDP deflator	1500	1500	1500	1500	1500	1500
Exports LCU	1.95	1.95	1.95	1.95	1.95	1.95
GFCF	0.5	0.5	0.5	0.5	0.5	0.5
Export price adjustment		0.2				
Remittances[a]						0.9
Official aid			0.7			
Net flows on long-term debt				0.1		
Net flows on short-term debt					0.7	0.7
Simulation correlation coefficient (%)	**93.82**	**93.17**	**96.42**	**93.50**	**95.50**	**97.82**

Note: a) Balance-of-payments data for workers remittances were only available from 2000 onwards. Due to findings in the Annex about the possible size of remittance unreported, remittance statistics are multiplied by two. The simulation data then complete the range by assuming a 7.4% increase from 1993 to 1999, consistent with the trend 2000 to 2003.

For all simulations, the values of the correlation coefficients were most sensitive to marginal changes in the coefficient for gross capital formation (1995$) and for external finance (aid, net flows on long- and short-term debt). For example, in simulation 1, reducing the coefficient on GFC from 0.5 to 0.3 reduces the corresponding correlation coefficient to 93.38%. In simulation 2, setting the coefficient on aid 0.1 increases the corresponding correlation coefficient to 94.49%, and increasing the aid coefficient to 0.2 increases the corresponding correlation coefficient to 95.09%. Setting the coefficient on long-term finance to 0.1 reduces the correlation coefficient to 93.50%. However, setting the coefficient on short-term finance in simulation 6 to 0.1 increases the corresponding correlation coefficient to 94.26%. Changes in the coefficient on exports of goods and services (constant LCU) have a less significant impact. Reducing the coefficient on exports of goods and services from 1.95 to 1.8 in simulation 1 reduces the corresponding coefficient to 93.72%. The results of simulation 5 are shown in Fig. 6.3. Simulated GDP follows a flatter path between 1993 and 2002. Between 1993 and 1996 the two trends converge and then gradually widen out again over the remainder of the period.

Second, correlation coefficients for individual explanatory variables and GDP were also calculated to assess individual explanatory power. The variables with the most significant explanatory power appear to be: price adjustment to exports (86.49%), remittances (98%) and aid (63.27%). GFC has a relatively low correlation coefficient of 18.26%. Net flows and net transfers on long-term debt have correlation coefficients of –38.68% and –50.70% respectively. The measure of exports of goods and services (constant LCU) has a correlation coefficient of –46.71%. The correlation coefficient on flows of short-term debt is –37.68%.

Fig. 6.3 Tajikistan: Simulation 5 (GDP 1995 US$m. and simulated GDP)



Third, Russia's contribution to the key explanatory variables over the 1990s is presented in Table 6.4.

Table 6.4 Tajikistan: Russia's contribution to key explanatory variables

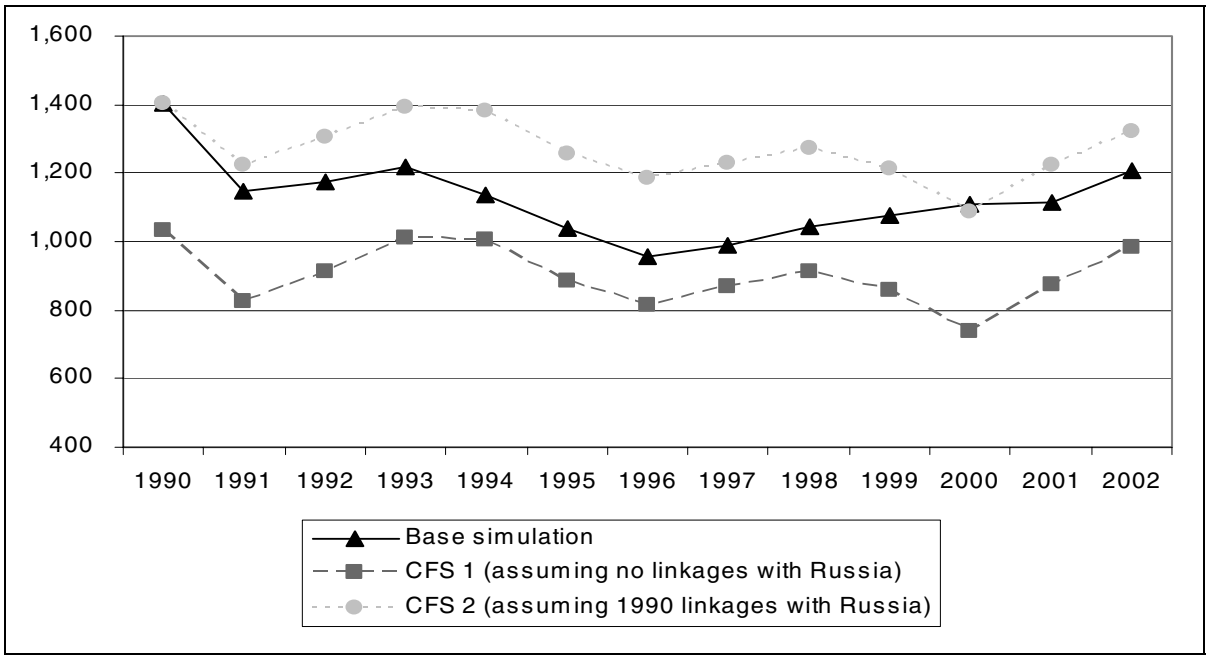
Explanatory variable	**%**
Exports to Russia in 1990[a] as a proportion of total exports	27
GFCF attributable to fiscal transfers from Russia in 1990[b]	24
Annual average external official debt to Russia as a proportion of total external debt (1995-2003)	29
Annual average exports to Russia as a proportion of total exports (1993-2003)	13.7
Remittances from economic migrants in Russia in 2002[c] as a proportion of total remittances	90

Notes: a) The earliest data for exports are 1993 (17.8%). The statistic here assumes exports in 1990 were 50% higher than in 1993.
b) This estimate is made on the basis that the fiscal transfers made up 8.2% of GDP in 1989. This figure assumes that 50% of fiscal transfers directly upheld public investment in 1990, which is equivalent to 24% of the total investment budget in that year.
c) This estimate follows the IOM figures in Annex 3.

The figures in Table 6.4 are used as the basis for the two further counter-factual simulations[30] (CFS 1 and 2) using simulation 6 in Table 6.3 as the base simulation. The results are presented in Fig. 6.4.

[30] The counter-factual simulation extent includes estimates of both GFC (1995$) and exports (1995$) between 1990 and 1993 based on the assumptions in Table 6.4.

Fig. 6.4 Tajikistan: Base simulation, CFS 1 and 2



Simulated GDP in CFS 1 is cumulatively 19.8% lower than simulated GDP in the base case. This reflects Tajikistan's high proportion of exports to Russia, remittances from Russia and the relatively high ratio of outstanding external debt to Russia as a proportion of total external debt. Overall, therefore, Russia continues to play an important role in Tajikistan's economic performance. Simulated GDP in CFS 2 is cumulatively 12.9% higher than simulated GDP in the base case. It is interesting to note that GDP in CFS 2 is actually lower than the base case in 2000, as a result of a higher proportion of exports going to Russia in 2000 compared with 1990.

Overall, this methodology suggests that the significance of economic linkages with Russia in explaining Tajikistan's growth appears to have strengthened during the 1990s, largely reflecting the high proportion of external debt to Russia and the rising importance of remittances from Russia. It is interesting to note that Tajikistan's measure of economic collapse resulting from the break-up of the command economy system is lower than that of the Kyrgyz Republic, probably reflecting weaker export links with Russia at the outset of the transition period. Unlike the Kyrgyz Republic, however, Tajikistan has proved less able to diversify its export partners or to pursue equally vigorous reforms and liberalisation, resulting in less ability to distance itself from Russia economically.

6.4 Armenia: Simulation Results

Seven simulations run for Armenia produced a correlation coefficient above 90%. Table 6.5 provides the simulation formations and results. All variables are in current US$ unless otherwise stated.

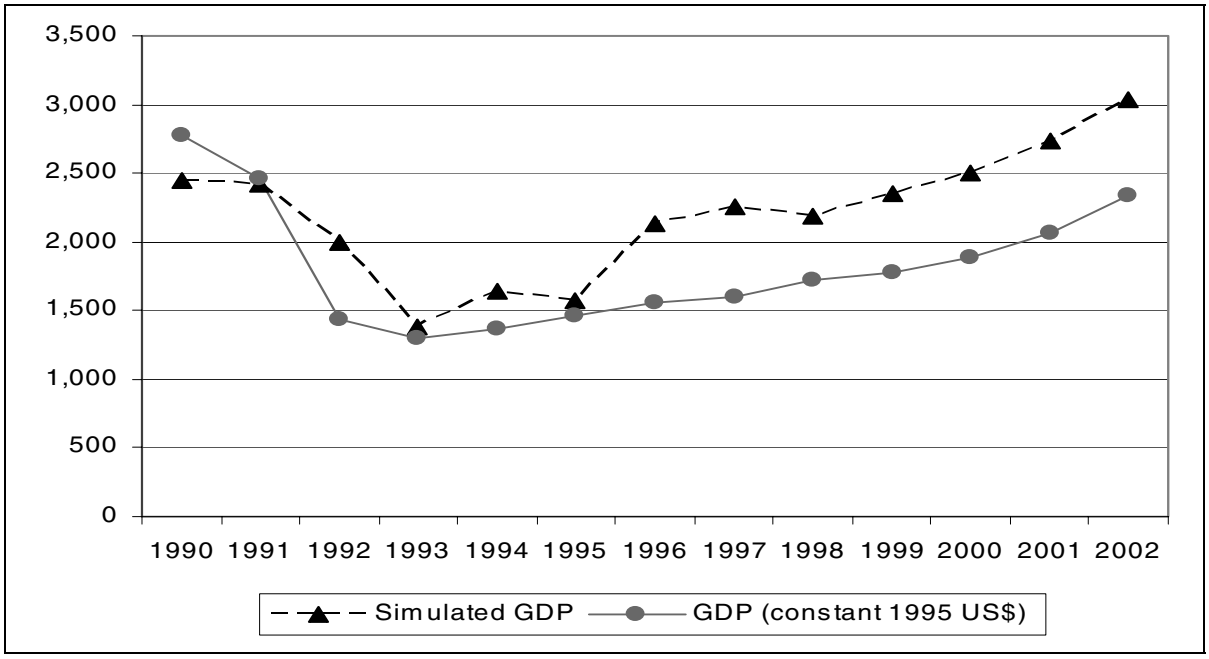
For all simulations, the values of the correlation coefficients were most sensitive to marginal changes in the coefficient for gross fixed capital formation (1995$) and exports of goods and services (1995$). For example, in simulation 1, reducing the coefficient on exports of goods and services from 0.7 to 0.6 reduces the corresponding correlation coefficient to 93.93%. Reducing the coefficient on GFCF to 0.2 reduces the corresponding correlation coefficient to 92.52%. The other key explanatory variable is found to be 'net other transfers'. Reducing the coefficient below 8.0 reduces the corresponding correlation coefficients below 90% in all

simulations. The results of simulation 7 are shown in Fig. 6.5. Simulated GDP follows a similar path between 1990 and 1992, diverging significantly between 1992 and 1996. The two converge again between 1998 and 2002.

Table 6.5 Armenia: Simulation results (1992-2002)

RHS: GDP 1995$	**Calibrated coefficient values**						
LHS: Variable	Sim 1	Sim 2	Sim 3	Sim 4	Sim 5	Sim 6	Sim 7
GDP deflator	1500	1500	1500	1500	1500	1500	1500
Exports 1995$	0.7	0.7	0.7	0.7	0.7	0.7	0.7
GFCF 1995$	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Export price adjustment	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Remittances		5.0					
Net government transfers	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Net other transfers	12.5	12.5	12.5	12.5	12.5	12.5	12.5
FDI/portfolio					0.3	0.3	
Short-term loans				0.5			
Trade credits						0.5	
Long-term debt (net transfer)			0.8				
IMF non-concessional finance							6.0
Simulation correlation coefficient (%)	**94.01**	**93.99**	**94.07**	**93.95**	**93.90**	**93.75**	**95.18**

Fig. 6.5 Armenia: Simulation 7 (GDP 1995 US$m. and simulated GDP)



Second, correlation coefficients between the dependent variables and GDP were also calculated to assess the individual explanatory power of the dependent variables. The variables with the most significant explanatory power appear to be 'other current transfers'[31]

[31] 'Other current transfers', recorded in the balance-of-payments statistics, are current transfers excluding workers remittances and general government transfers, recorded by the Ministry of Finance, foreign embassies and international organisations. There is no specific explanation as to what 'other current

(94%), exports of goods and services (68%), gross fixed capital formation (61%) and foreign direct/portfolio investment (55%). Net remittances appear strongly counter-cyclical (-87%), as are various measures of external finance, including short-term loans[32] (-80%), net transfers on long-term debt (-55%), IMF non-concessional loans (-56%), trade credits (-44%) and net general government transfers (-39%). Export price adjustments also appear counter-cyclical (-64%).

Third, Russia's contribution to the key explanatory variables over the 1990s is presented in Table 6.6.

Table 6.6 Armenia: Russia's contribution to key explanatory variables

Explanatory variable	**%**
Exports to Russia in 1990[a] as a proportion of total exports	49.0
GFCF attributable to fiscal transfers from Russia in 1990[b]	1.8
Annual average external official debt to Russia as a proportion of total external debt (1995-2001)	14.8
Annual average exports to Russia as a proportion of total exports	22.4
Remittances from economic migrants in Russia in 2002[c] as a proportion of total remittances	80.0

Notes: a) The earliest data for exports are 1993 (34.2%). The statistic here assumes exports in 1990 were 50% higher than 1993 levels.
b) This estimate is made on the assumption that fiscal transfers made up 3.3% of GDP in 1990. Transfers made up 23.3% of GNP in 1989. However, this was because of an earthquake that year. It might be assumed that in normal years, the proportion of fiscal transfers in GDP was roughly equivalent to that of Georgia. This figure assumes that 50% of fiscal transfers directly upheld public investment in 1990, which is equivalent to 3.7% of the total investment budget in that year.
c) This estimate follows the IOM figures.

The figures in Table 6.6 are used as the basis for the two further counter-factual simulations[33] (CFS 1 and 2) using simulation 2 in Table 6.5 as the base simulation. The results are presented in Fig. 6.6.

Simulated GDP in CFS 1 is cumulatively 14.8% lower than simulated GDP in the base case. However, the bulk of this difference is accounted for between 1990 and 1993, after which GDP trends clearly converge. Simulated GDP in CFS 2 is cumulatively 27.69% higher than simulated GDP in the base case. Most of the difference is explained by the loss of exports to Russia after 1991, however, rather than the loss of fiscal transfers which only made up a relatively small proportion of Armenia's GDP prior to transition.

In summary, this methodology suggests that the importance of economic linkages with Russia to Armenia's growth appears strong overall, relative to the other case-study countries. However, there is a clear difference between the early transition phase, in which economic linkages with Russia accounted for a high share of GDP, and the period from 1995 onwards when their significance declines, appearing to be replaced by official aid flows. These results are probably mainly explained by the sensitivity of simulated GDP to exports (0.7) and remittances (5.0), coupled with the relative importance of linkages with Russia for both these variables (although declining over time in the case of exports). The measure of economic collapse as a result of the breakdown of the command economy system is the highest of all the case-study countries according to this methodology. Again, this is probably

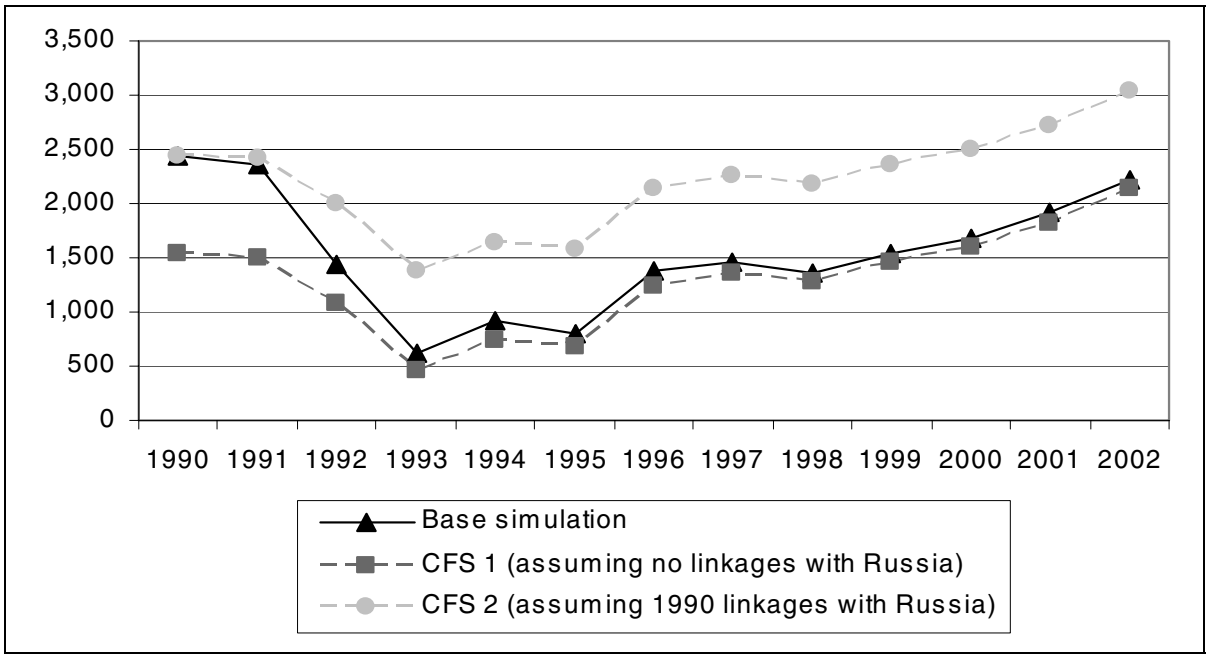
transfers' covers specifically and why it differs from grants and technical assistance. One possibility is that it might cover grants in kind.

[32] Trade credits represent the bulk of short-term liabilities in the balance of payments. Short-term loans are mainly to banks and other sectors.

[33] This includes estimates on external debt between 1990 and 1994 and exports between 1990 and 1993 based on the assumptions in Table 6.6.

due to the sensitivity of simulated GDP to export value and the high proportion of exports to Russia in 1990.

Fig. 6.6 Armenia: Base simulation, CFS 1 and 2



6.5 Georgia: Simulation results

Of the simulations run for Georgia, seven produced a correlation coefficient above 90%. The results are presented in Table 6.7. All variables are in current US$ unless otherwise stated.

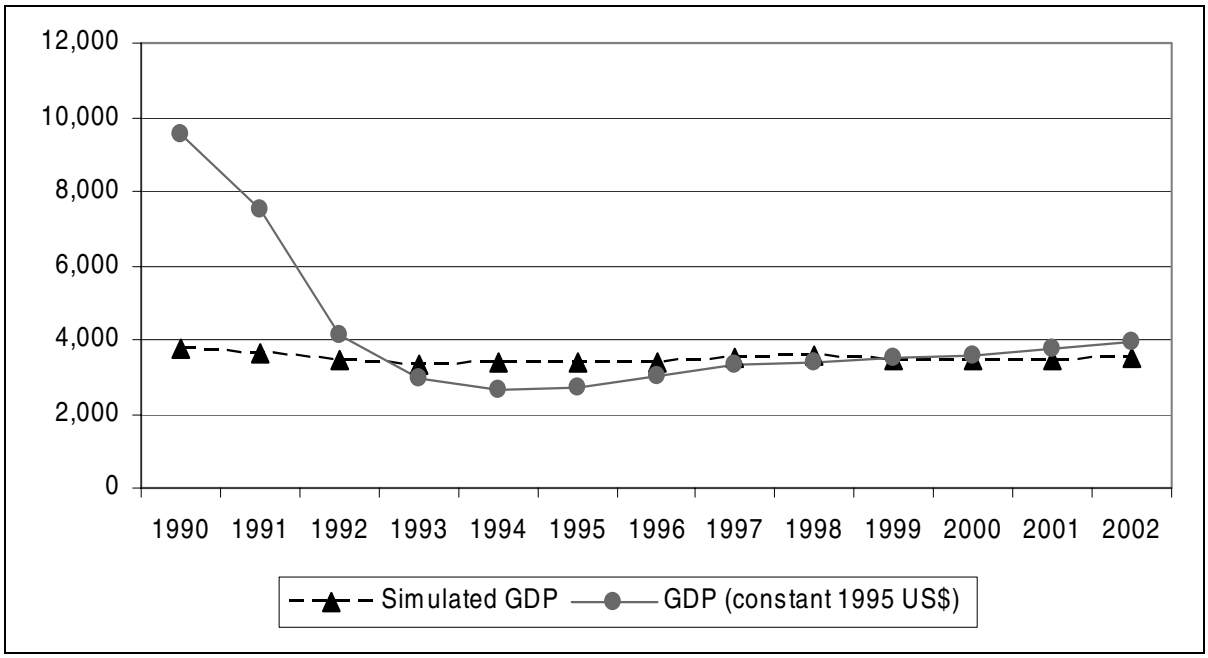
Table 6.7 Georgia: Simulation results (1992-2002)

RHS: GDP 1995$	**Calibrated coefficient values**						
LHS: Variable	Sim 1	Sim 2	Sim 3	Sim 4	Sim 5	Sim 6	Sim 7
Constant	3000000000						
GDP deflator	1500	1500	1500	1500	1500	1500	1500
Exports 1995$	0.1	0.1	0.1	0.1	0.1	0.1	0.1
GFCF 1995$	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Net flows long-term		0.1		0.1	0.1		
Net flow PNG			0.7				0.7
Net flow PPG			0.1				
Net flows short-term				0.2			
Remittances	0.2				0.2		
FDI/portfolio							
ODA/OA (-1)						0.2	
Simulation correlation coefficient (%)	**93.45**	**93.87**	**94.05**	**91.68**	**92.85**	**91.81**	**94.59**

For all simulations, the values of the correlation coefficients were most sensitive to marginal changes in the coefficient for gross fixed capital formation (1995$) and exports of goods and services (1995$). For example, in simulation 1, increasing the coefficient on exports of goods and services from 0.1 to 0.2 reduces the corresponding correlation coefficient to 92.83%. Reducing the coefficient on GFCF to 0.5 reduces the corresponding correlation coefficient to 93.77%. Changes in the coefficients on all other explanatory variables have only a small

impact by comparison. It is also interesting to note that the introduction of 0.1* export price adjustment in simulation 1 reduces the corresponding correlation coefficient to –47.52%. The results of simulation 7 are shown in Fig. 6.7. It can be seen that simulated and actual GDP differ between 1990 and 1993, suggesting that the components of simulated GDP do not capture the extent of the output decline during that period. From 1993 onwards, however, actual and simulated GDP converge, although simulated GDP follows a relatively flat trend.

Fig. 6.7 Georgia: Simulation 7 (GDP 1995 US$m. and simulated GDP)



Second, correlation coefficients for individual explanatory variables and GDP were also calculated to assess individual explanatory power. The variables with the most significant explanatory power appear to be exports of goods and services (85.04%), GFCF (78.74%) and short-term flows on external debt (69.36%). Other variables for external finance are counter-cyclical: net flows on total long-term debt (-77.24%), total public and publicly guaranteed debt (-70.87%) and total aid (-56.37%). Remittances are also counter-cyclical (-76.03%). Other variables have relatively less explanatory power: FDI (47.18%) and net flows on private non-guaranteed debt (4.05%). The individual correlated coefficient for export price adjustment is strongly counter-cyclical (-96.51%), suggesting a decline in export prices at the start of the transition period.

Third, Russia's contribution to the key variables of interest over the 1990s is presented in Table 6.8.

The figures in Table 6.8 are used as the basis for further counter -factual simulations[34] (CFS 1 and 2) using simulation 1 in Table 6.7 as the base. The results are presented in Fig. 6.8.

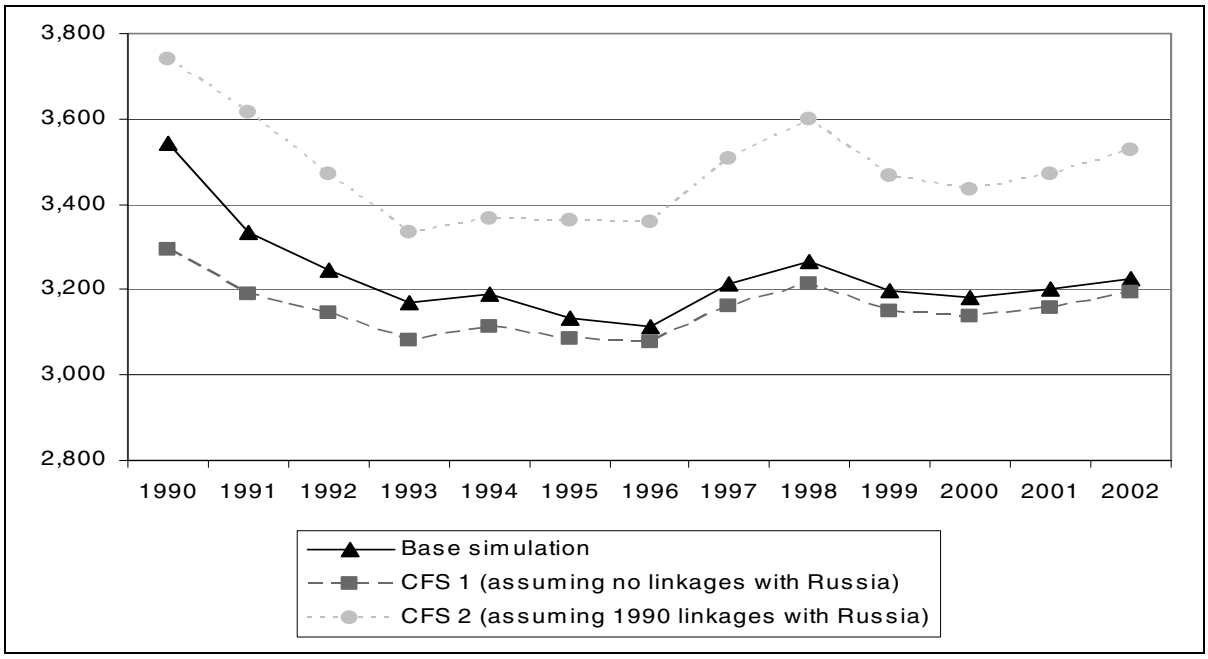
[34] Estimates are included for external debt and exports of goods and services (1990-3) based on assumptions in Table 6.8.

Table 6.8 Georgia: Russia's contribution to key explanatory variables

Explanatory variable	%
Exports to Russia in 1990[a] as a proportion of total exports	68.0
GFCF attributable to fiscal transfers from Russia in 1990[b]	24.4
Annual average external official debt to Russia as a proportion of total external debt (1994-2002)	11.4
Annual average exports to Russia as a proportion of total exports (1993-2003)	25.3
Remittances from economic migrants in Russia in 2002[c] as a proportion of total remittances	78.0

Notes: a) The earliest data for exports are 1993 (45.5%). The statistic here assumes exports in 1990 were 50% higher than 1993 levels.
b) This estimate is made on the basis that external finance made up 2% of Georgia's GNP and 6.1% of Georgia's revenue in 1990. This figure assumes that 50% of fiscal transfers directly upheld public investment in 1990, which is equivalent to 24.4% of the investment budget that year.
c) This estimate follows the World Bank (2005b) figures in Annex 5.

Fig. 6.8 Georgia: Base simulation, CFS 1 and 2



Simulated GDP in CFS 1 is cumulatively 2.4% lower than simulated GDP in the base case, suggesting that economic linkages with Russia play a relatively small role in Georgia's economic performance. Their importance was most evident between 1990 and 1996; from 1997 onwards, however, their significance has declined. Simulated GDP in CFS 2 is cumulatively 7.7% higher than simulated GDP in the base case, significantly smaller than that of Armenia and amongst the lowest of the case-study countries.

These are surprising results, given the high proportion of exports to Russia and of fiscal transfers from Moscow in GFCF in 1990 relative to the other case-study countries. The main explanation probably lies in the mutually reinforcing significance of the collapse of the command economy system and the onset of civil conflict on investment between 1990 and 1994 (during which time GFCF trends fell to around one-fifth of their previous value). In other words, even if fiscal transfers from Moscow had continued into the 1990s, investment trends would still have declined substantially. A second explanation is probably that the fitted correlation coefficient on exports in the growth simulation (0.1) allows for only a marginal influence of changing export value on simulated GDP. In Georgia's post-conflict

context, growth appears to have been mainly driven by investment and various forms of external finance rather than by exports. Hence, the decline in exports to Russia does not appear to affect simulated GDP as significantly as other key variables.

6.6 Ukraine: Simulation results

Seven simulations run for Ukraine produced a correlation coefficient above 90%. The results are presented in Table 6.9.

Table 6.9 Ukraine: Simulation results (1990-2002)

RHS: GDP 1995$	**Calibrated coefficient values**						
LHS: Variable	Sim 1	Sim 2	Sim 3	Sim 4	Sim 5	Sim 6	Sim 7
Constant	2000000000						
GDP deflator	1500	1500	1500	1500	1500	1500	1500
Exports 1995$	0.3	0.3	0.3	0.3	0.3	0.3	0.3
GFCF 1995$	1.2	1.2	1.2	1.2	1.2	1.2	1.2
Export price adjustment		0.6	0.6	0.6	0.6	0.6	
Net flow long-term debt			0.2	0.2			
Net flow short-term debt				0.1			
FDI/portfolio					0.3		
Government short-term liability						0.8	0.8
Other sector liability						0.7	0.7
ODA/OA						0.5	
Simulation correlation coefficient (%)	**97.62**	**99.12**	**99.11**	**99.12**	**99.04**	**99.25**	**99.27**

For all simulations, the values of the correlation coefficients were most sensitive to marginal changes in the coefficient for exports of goods and services (1995$) and price adjustment to exports. In simulation 2, reducing the coefficient for exports (1995$) from 0.3 to 0.2 reduces the corresponding simulation correlation to 99.00%. Reducing the correlation coefficient on the price adjustment to exports to 0.5 reduces the corresponding simulation correlation to 99.08%. The correlation coefficient for GFCF is relatively less sensitive to marginal changes. Reducing the correlation coefficient from 1.2 to 1.1 in simulation 2 reduces the corresponding simulation correlation to 99.11%. Changes in the coefficients on all other explanatory variables have only a small impact by comparison. The results of simulation 7 are shown in Fig. 6.9. It can be seen that simulated GDP follows a close parallel path with actual GDP throughout, converging particularly noticeably between 1995 and 2002.

Second, correlation coefficients for individual explanatory variables and GDP were also calculated to assess individual explanatory power. The variables with the most significant explanatory power appear to be gross fixed capital formation (98.78%) and exports (61.71%). Net flows on long- and short-term debt were not found to have individually strong correlations (5.56% and 6.10% respectively). Similarly, general government short-term liabilities were not found to have any significant explanatory power (-3.76%), neither were other sector liabilities (37.78%). Foreign direct and portfolio investment was found to be counter-cyclical (-58.12%), as were aid (-26.59%) and the price adjustment to exports (-66.84%).

Third, Russia's contribution to the key variables of interest over the 1990s is presented in Table 6.10.

Fig. 6.9 Ukraine: Simulation 7 (GDP 1995 US$m. and simulated GDP)

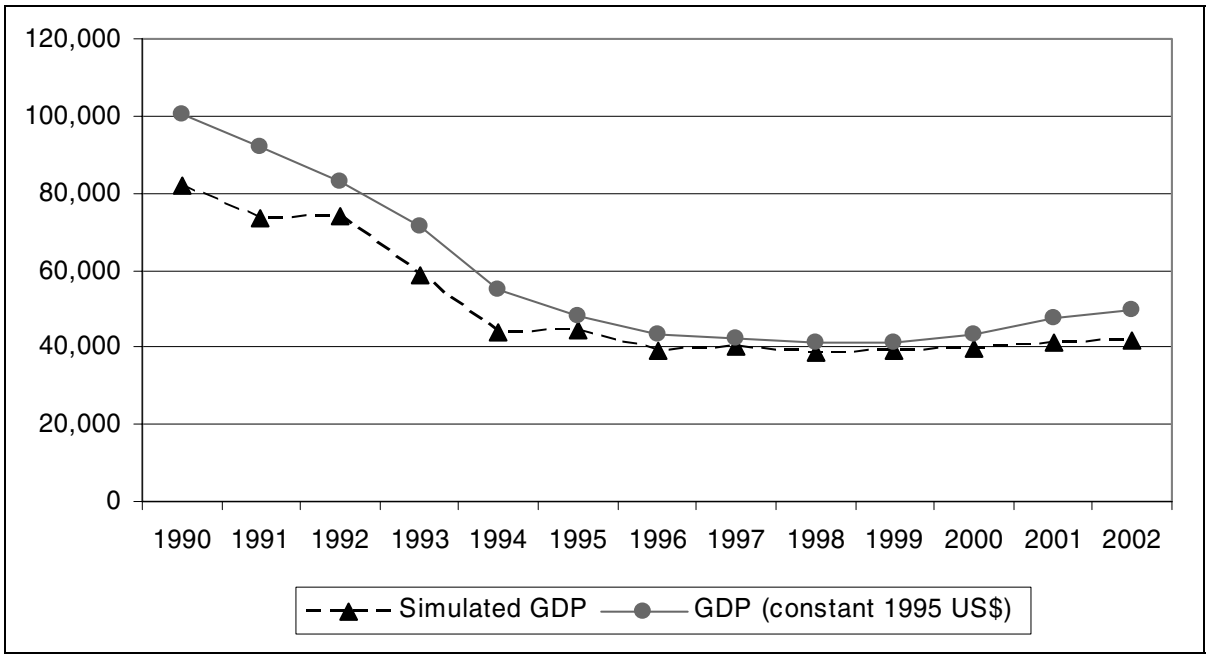


Table 6.10 Ukraine: Russia's contribution to key explanatory variables

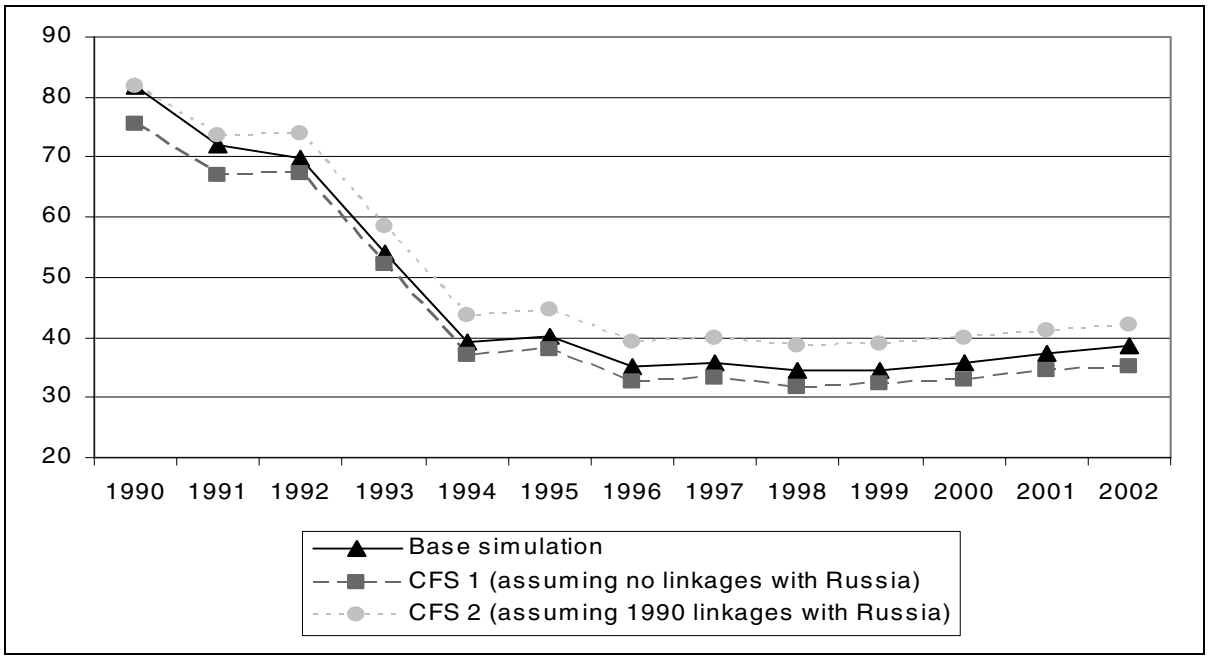
Explanatory variable	**%**
Exports to Russia in 1990[a] as a proportion of total exports	40.0
GFCF attributable to fiscal transfers from Russia in 1990[b]	0.28
Annual average external official debt to Russia as a proportion of total external debt (1994-2004)	22.6
Annual average exports to Russia as a proportion of total exports (1992-2003)	30.6
Remittances from economic migrants in Russia in 2002[c] as a proportion of total remittances	98.0
Russian FDI as a proportion of total FDI (1995-2003)	1.0-2.0

Notes: a) The earliest data for exports are 1993 (36%) after which there was a slow decline relative to other case-study countries. The statistic here therefore assumes exports in 1990 were only around 10% higher than 1993 levels.
b) This estimate is made on the basis that external finance made up 1.3% of Ukraine's GNP in 1990. This figure assumes that 50% of fiscal transfers directly upheld public investment in 1990, which is equivalent to 0.3% of the investment budget that year.
c) This estimate follows the World Bank (2005b) figures in Annex 6.

The figures in Table 6.10 are used as the basis for two further counter-factual simulations[35] (CFS 1 and 2) using simulation 2 in Table 6.9 as the base. The results of these simulations are presented in Fig. 6.10.

[35] These include estimates for exports (1990-3) and external official debt (1990-4) based on the assumption in Table 6.10.

Fig. 6.10 Ukraine: Base simulation, CFS 1 and 2



Simulated GDP in CFS 1 is cumulatively 6.5% lower than simulated GDP in the base case, suggesting that the significance of economic linkages with Russia is small relative to the other case-study countries. Most of this difference is accounted for between 1990 and 1992, after which simulation 2 and the base simulation follow almost parallel paths. Simulated GDP in CFS 2 is cumulatively 7.6% higher than simulated GDP in the base case, the smallest of all the country case studies, reflecting the fact that Ukraine's investment and export ties with Russia were the lowest of all the case-study countries.

These results follow logically from the finding that the significance of economic linkages with Russia prior to 1991 was smaller in Ukraine than the other case-study countries. Although the growth simulations are sensitive to GFCF (with a fitted correlation coefficient of 1.2), Russia's contribution to this variable via external finance was low relative to other sources, both prior to the transition and subsequently via official debt and FDI. The proportion of Ukraine's exports to Russia declined only slowly over time, settling at around 30% towards the end of the 1990s. However, Ukraine's strong export performance has been supported by its diversification to non-CIS partners and favourable external conditions (particularly export prices), neither of which are immediately dependent on Russia.

Chapter 7: Conclusions

Since 1991, there have been three key phases of economic performance in the case-study countries. These are broadly: (i) economic decline in the early transition phase, (ii) stabilisation and economic recovery in the mid-transition phase, and (iii) an increased rate of economic growth since the turn of the millennium.

The factors underpinning economic growth have also differed between each of these phases. In the early transition phase, the analysis in this paper suggests that economic decline resulted from the collapse of the Soviet system, particularly its planning structure and inherent inter-republic income flows. Economic stabilisation and recovery appear to be underpinned by a process of domestic liberalisation and structural reforms, which generally reined in the role of the state and facilitated the gradual transition to a market economy. Finally, the recent relatively strong economic performance across most of the case-study countries seems partly driven by favourable external conditions, as well as the benefits of structural and policy reforms.

The simulation exercises aim firstly to assess the influence of various growth-contributing factors on the country case studies' economic performance. The results suggest both similarities and differences in each case-study country, both within and between the growth phases. A common factor appears to be the high correlation between trends in domestic investment, export volume and growth. Although the values of the investment and export coefficients vary by country simulation, the sensitivity of simulated GDP to changes in coefficient values is the highest of all the independent variables for each case study. This suggests that investment and export performance have been the key explanatory factors of growth trends throughout the sample period.

There is less uniformity in the significance of the various forms of external finance in case-study country growth. Short-term bilateral flows are closely correlated with economic performance in the early transition phase for the Kyrgyz Republic, whereas counter-cyclical official aid and concessional flows are relatively more important for medium-term growth in the other case-study countries. Private flows appear closely correlated with growth for Armenia and Georgia, reflecting their relative success in attracting FDI following stabilisation and recovery. The high correlation between remittances and growth for Tajikistan suggests that economic migration and remittances are a key supportive factor in Tajik growth. Similarly, the counter-cyclical role played by remittances in Armenia and Georgia suggests that remittances have been important for reconstruction.

Finally, the impact of terms-of-trade fluctuations is difficult to determine by means of this methodology, as short-term terms-of-trade fluctuations appear only weakly correlated with the medium-term growth cycle. However, the increasing concentration of exports on primary commodities, particularly in the Kyrgyz Republic, Tajikistan and Ukraine, suggests a rising vulnerability of export performance to global commodity price fluctuations and resulting terms-of-trade shifts.

The simulation exercises aim secondly to assess Russia's contribution to those factors determined by the methodology as key to each individual case-study country's economic performance. At the outset, it is inferred from the literature review and the descriptive statistics in earlier chapters that Russia's influence on CIS economic performance evolved considerably during the 1990s from traditionally strong economic ties inherited from the command economy to looser forms of integration. The hypothesis to be tested is that Russia continues to have a significant impact on country case-study economic performance since 1991.

Table 7.1 pulls together key statistics from the simulation exercises and other statistics in this paper to summarise the significance of Russia's influence on case-study country growth and to assess whether and why this may have changed over the transition phase. The first observation is that the significance of Russia's influence appears to matter most for Tajikistan's growth, and relatively less for Armenia, the Kyrgyz Republic, Ukraine and Georgia in declining order. The second observation is that Russia's influence on growth appears to have increased only for Tajikistan over the sample period. For all other countries, it has declined, particularly for Armenia, Georgia and the Kyrgyz Republic and less so for Ukraine.

Table 7.1 Comparative statistics

Country	**Simulated GDP difference**		**Investment ratios associated with Russia**		**Exports to CIS % total**		**Cumulative liberalisation index 1989-94**
	Zero links with Russia CFS 1	1990 links with Russia CFS 2	Fiscal transfer % GFCF 1990	External debt annual average %	1993	2003	
Kyrgyz Republic	7.27	13.6	16.0	19.0	68.9	34.6	2.19
Tajikistan	19.9	12.9	24.0	29.0	35.1	17.5	1.15
Armenia	14.8	27.7	1.8	14.8	73.8	18.1	1.74
Georgia	2.4	7.7	24.4	11.4	77.2	50.3	1.59
Ukraine	6.5	7.6	0.28	22.6	52.7[a]	24.9	0.97

Note: a) 1994 statistic

Why has Russia's influence over case-study country growth generally declined over the sample period? The analysis in this paper suggests that 'Russia's influence' depends on a combination of factors, including the initial strength of economic ties and inherited structural distortions, on the one hand, and the nature of policy regimes and structural reforms, on the other. Whilst it appears that Russia's impact on case-study economic performance at the outset of the transition was, to an extent, 'exogenously determined' according to the strength of inherited Soviet ties, Russia's economic influence becomes increasingly determined by policy and structural reforms. In other words, all countries suffered at the outset of the transition from the collapse of the command economy system, which resulted in fiscal and terms-of-trade shocks driving down domestic investment rates and export volume at the start of the transition period. The extent of 'Russia's influence' was directly related to the extent to which the case-study countries were bound to the Soviet system. Over time, however, domestic policy choices became increasingly important for their economic performance.

What remains unclear is the extent to which the pace of structural and policy reforms is determined by inherited distortions and inherited economic ties with Russia. The methodology in this paper does not allow an in-depth analysis of the interaction between structural reforms, economic linkages with Russia and economic performance. However, there is an informative comparison to be made between the Kyrgyz Republic and Tajikistan in this regard, the influence of Russia on GDP having apparently fallen for the former and increased for the latter. Both countries were tightly bound to the command economy through fiscal transfers, vertical integration between firms and export links. Table 7.1 shows that fiscal transfers from Moscow and export linkages with Russia were high relative to the other case-study countries[36]. During the 1990s, export diversification occurred for both

[36] The proportion of fiscal transfers to domestic investment was also high for Georgia in 1990 given Georgia had the lowest absolute level of investment that year of any of the case study countries. However, Georgia's trade and debt linkages with Russia were weaker than its central Asian counterparts.

countries. However, the notable difference between the Kyrgyz Republic and Tajikistan is between policy and structural reforms (cumulative liberalisation index) and external debt to Russia. The Kyrgyz Republic seems to have undertaken progressive policy and structural reforms in the early transition phase. It also has a notably lower proportion of external debt to Russia. Whilst this analysis does not allow for any literal conclusions about Russia's influence on growth and why it might decline over time, it does imply that policy and structural reforms probably do play an important role.

Armenia, Georgia and Ukraine also make an interesting study group. They received relatively less in fiscal transfers than the Central Asian countries prior to 1990 (with the exception of Georgia in 1989); however, they were tightly integrated through the CMEA. Hence the collapse of the command economy system also had strong negative effects on their growth in the early transition stages. Since 1991, increased distance from Russia's economic influence again appears to be a result of the relative strength of structural and policy reforms. According to the CLI, Armenia and Georgia appear to be strong reformers relative to Ukraine. This coincides with a proportionally larger reduction of 'Russia's influence' on their growth since 1991 relative to Ukraine, according to this methodology. For Armenia, cumulative GDP under CFS 1 is around half that under CFS 2. For Georgia, GDP under CFS 1 is around one-third that of CFS 2. Export dependence on the CIS has significantly reduced over time and the proportion of external debt to Russia is low relative to the other case-study countries. For Ukraine, on the other hand, the difference between CFS 1 and CFS 2 is relatively small, despite the fact that Ukraine appeared to be more loosely integrated into the command economy system relative to the other case-study countries. The proportion of Ukraine's external debt to Russia is relatively high.

What might be concluded about the significance of Russia's influence on case-study country growth since 1991? The analysis in this paper suggests that, on the whole, Russia's influence appears to have declined over time, with the notable exception of Tajikistan. This decline appears to coincide with the liberalisation, the trade diversification away from CIS markets, the structural break in external finance from Russia in domestic investment, and the declining proportion of debt to Russia in total external debt. Intuitively, the transition process itself would has helped this outcome, through policy and structural reforms, supported by large inflows of multilateral and bilateral concessional finance. However, it appears that the pace of domestic policy and structural reforms has been important in enabling the case-study countries to achieve stabilisation and begin the transition to becoming market economies.

A further question is whether Russia's stronger relative influence over some case study countries is a cause or a consequence of their economic performance? The analysis in this paper suggests that there is no clear answer. On the one hand, the growth process in the case-study countries depends on the pace and nature of their domestic structural and policy reforms. On the other hand, Russia appears to influence these both directly and indirectly, particularly in those sectors of strategic importance to it. However, there are clearly other determining factors explaining the ability to increase 'economic distance' from Russia. Those countries that are more geographically isolated, that have suffered domestic or regional conflict, that have weaker infrastructure links, that face bottlenecks to regional trade and whose domestic production is still reliant on Soviet structures have been less successful in diversifying away from Russia than the others. This is often offered as an explanation of why the CIS generally continue to over-trade with one another and under-trade with the rest of the world.

A final question is what new forms of influence over case-study country growth Russia might have in the future. The analysis in this paper suggests that new forms of economic linkage have evolved, particularly within the informal sector (economic migration and remittances

and shuttle trade) and that these are important for case-study country growth. Furthermore, political economy levers have become a more mainstream form of Russia's influence, including via strategic investment in key sectors (particularly in the energy sector) or debt-for-equity swaps. It is undoubtedly the case that these new forms of economic interdependence could strengthen Russia's influence.

In summary, the analysis in this paper suggests that the traditional forms of Russia's influence on case-study country growth have generally declined during the transition. As a result, current economic policy and performance in Russia matter less, on the whole, for case-study country growth than they did in the pre- or early transition phase. Those countries that have integrated into the global economy and undertaken robust domestic policy and structural reforms appear to have overcome inherited economic distortions and reduced their ties with the CIS and Russia to a greater degree than the slower reformers. However, for all the case-study countries new forms of economic linkage with Russia are emerging, such as migration and energy supply, most of which could have a significant impact on the key determinants of their economic growth.

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Annex 1: Sample of empirical approaches to explaining growth in transition

A1.1 Evidence from growth accounting

De Broek and Koen (2000) conduct a growth accounting exercise for each case-study country, between 1971 and 1997, according to the neo-classical production function:

(1) $$Y(t) = A(t)\, F\{K(t), L(t)\}$$

where: A = index of total factor productivity, K = capital stock, and L = labour inputs.

Constant returns to scale are assumed (elasticity of output with respect to capital and labour is constant and sums to one over time). The values chosen are 0.3 for capital and 0.7 for labour. The results of this exercise are presented in Chapter 4.

Loukoianova and Unigovskaya (2004) use an updated growth accounting framework along the same lines as De Broek and Koen (2000) to explain the origins of CIS growth from 1998 to 2001. Table A1.1 presents their results.

Disaggregating real GDP growth by expenditure components, Loukoianova and Unigovskaya (2004) also show that exports emerged during the late 1990s as a key driver of growth, although consumption continues to make the main contribution in most countries. Table A1.2 presents their results.

Table A1.2 Sector decomposition of GDP growth

Country	**% of total GDP growth**		
	Average 1996-7	Average 1998-2000	Average 2001-2
Kyrgyz Republic			
Consumption	57.6	68.6	116.3
Investment	-11.8	52.4	-18.4
Net export	54.1	-21.0	2.1
Armenia			
Consumption	117.4	96.2	48.9
Investment	28.3	15.9	15.2
Net export	-45.7	-12.1	35.9
Georgia			
Consumption	111.6	108.4	47.4
Investment	27.5	43.3	31.2
Net export	24.6	-51.7	21.4

Source: Loukoianova and Unigovskaya (2004)

Table A1.1 Growth accounting framework 1998-2001

Country	Period average	Output growth	Capital growth	Labour growth	TFP growth	Labour productivity	Average TFP by sector 1998-2000				
							Agriculture	Industry	Transport and communications	Trade and procurement	Construction
Kyrgyz Republic	1998-2002	3.2	2.0	1.8	1.3	1.4	4.05	0.18	10.70	5.28	11.10
Tajikistan	1998-2001	6.9	-1.5	0.6	6.9	6.3	6.69	12.20		-16.00	
Armenia	1998-2000	5.5	-2.6	-2.3	8.0	8.1	5.06	11.20	-8.60	32.60	22.50
Georgia	1998-2002	3.5	-1.9	-3.1	6.3	7.8	6.47	17.50		16.00	

Source: Loukoianova and Unigovskaya (2004)

A1.2 Initial conditions versus policy and structural reforms

De Melo et al. (1997) were the first to examine the interaction between initial conditions, structural reforms and policy in explaining economic performance.[37] Their study includes CEEC, FSU, Vietnam and China and uses panel data between 1990 and 1996.[38] Initial conditions (see Chapter 4) are measured as a set of fixed and variable factors considered *a priori* to be the most likely to explain variations in output performance. The authors group the variables into two principal components and form two composite indices: the first group (PRIN 1) comprises macroeconomic distortions (trade dependence, repressed inflation and black market exchange-rate premium) and the second (PRIN 2) comprises structural issues (per capita income, urbanisation and over-industrialisation). The equations for the regression analysis take the following form, where '*i*' represents country and '*t*' represents the year.

(2) **LIBit = A + b0LIBit-1 + b1PRIN1i + b2PRIN2i + b3FREEDOM + b4RTit + e**

(3) **PERFORMit = Z + yoPRIN1i + y1PRIN2i + y2LIBit + y3LIBit -1 + y4RTit + e**

(4) **LOGINF = Z + yoLIB + y1LIBit-1 + y2PRIN1i + y3PRIN2i + y4Rtit + e** **(iii)**

where: LIB = liberalisation index, PERFORM= performance, FREEDOM = index of political freedom, RT = regional tensions or conflict, and e = error term.

The results are presented in Table A1.3. PRIN 1 and PRIN 2 have a negative and significant impact on LIB. FREEDOM is positively associated with LIB and is highly significant. Both PRIN 1 and PRIN 2 also have a negative and statistically significant impact on performance. RT (included as a year dummy) has a strong negative effect on both growth and liberalisation. The coefficients for LIB and LIB (-1) suggest that performance depends positively on the 'accumulated stock' of reforms, even if negatively associated in the short term. The authors then test the relative importance of initial conditions versus policy reforms by means of a model developed to set the plausible bounds for the variance explained by different groups of coefficients. They find that policies have the highest explanatory power amongst all sets of factors in growth equations, accounting for 35-40% of the variation in the growth rate. Initial conditions, on the other hand, explain between 19% and 30%, with PRIN 1 being particularly important. Finally, the influence of initial conditions over time is tested through interacting PRIN 1 and PRIN 2 with year dummies. The size and magnitude of the resulting coefficients suggest convergence over time, with less developed transition economies and those with severe macroeconomic distortions starting slowly and then beginning to catch up.

Berg et al. (1999) build on the above approach to analyse the role of structural and policy reforms and initial conditions in explaining variations in economic performance across transition countries. Their analysis benefits from the use of panel data with three additional years to De Melo et al. (1997) and a methodology which explicitly tackles the endogeneity problems encountered in previous studies. The results of their study are presented in Chapter 4.

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[37] The questions at the heart of this study are: (i) how important are initial conditions in determining policy choices, (ii) through what channels do initial conditions affect policies, and (iii) what is the impact of initial conditions on performance.

[38] The regressions use observations from five years for all 28 countries.

Table A1.3 Coefficients for ICV and PRIN regressions

	Dependent variable		
	Growth R^2=0.43	Liberalisation R^2=0.86	Log inflation R^2=0.39
Intercept	-10.41 *(-4.37)*	0.182 *(8.69)*	4.80 *(11.31)*
PRIN 1	-2.95 *(-3.71)*	-0.022 *(-2.64)*	0.97 *(6.89)*
PRIN 2	-3.37 *(-3.73)*	0.021 *(2.02)*	0.17 *(1.08)*
LIB (-1)	32.6 *(5.19)*	0.641 *(16.93)*	-3.4 *(-3.05)*
LIB	-17.54 *(-2.31)*		2.5 *(1.86)*
FREEDOM		0.015 *(4.33)*	
RT	-11.16 *(-5.34)*	0.026 *(-1.15)*	1.69 (4.56)

Source: De Melo et al. (1997)
Note: a) *t*-ratios reported in parentheses.

A1.3 Gravity model approaches

The gravity model approach postulates that trade between two countries should correlate positively with the size of the economies and negatively with the distance between them. The model takes the regression equation:

(5) $$T_{ij} = \beta o + \beta 1A + \beta 2Y_iY_j + \beta 3D_{ij} + \varepsilon$$

where: T_{ij} = exports from country *i* to country *j*, Y_i,Y_j = national incomes, D_{ij} = distance between countries *i* and *j*, A = a constant (reflecting country-specific circumstances), and ε = error term.

Distance between the two countries is used as a proxy for transport costs and is usually measured between the two capitals. In the regression results, any trade flows above the prediction of the gravity model are considered attributable to country-specific or historical factors.

Freinkman et al. (2004) use a gravity equation where the variables include distance, GNP, adjacency and language dummy variables plus a 'bloc' dummy variable. In this model the authors calculate two sets of estimates by borrowing coefficients from a gravity model with a maximum and minimum bloc effect (drawing from the EU, NAFTA and ASEAN respectively) to obtain a range of point estimates for potential trade flows within and outside the CIS group. The model takes the form:

(6) $$\log(T_{ij}) = \log(GNP_i, GNP_j) + \log(GmP/pop_i, GMP/pop_j) - \log(DIST_{ij}) + ADJ_{ij} + Lang_{ij} - Bloc_{ij} + u(i)$$

where: T_{ij} = trade turnover between *i* and *j*, GMP/pop = nominal per capita GNP, DIST = distance between commercial entities, ADJ = an adjacency dummy, and Bloc = Bloc dummy. The results of this exercise are reported in Chapter 4.

A1.4 External debt and external finance

Helbling et al. (2004) use a balance-of-payments identity to decompose external debt into its main contributory factors in order to assess the relative significance of these factors. The approach implies that the change in the stock of external debt between *t* and *t*+1 equals the sum of interest payments on existing external debt (r*F) and the change in foreign-exchange reserves (ΔR), minus the sum of the current account balance excluding interest payments on external debt (C), and non-debt-creating capital flows (K). The identity is written:

(7) $$F_{t+1} - F = -C_t + r_t{*}F_t + \Delta R_{t+1} - K_t + Z_t$$

where: r = interest payments, F = external debt, R = foreign-exchange reserves, C = current account balance excluding 'r' on external debt , and K = non-debt-creating capital flows.

The authors use a multiple regression analysis with a cross-section sample of 25 countries to explore the origins of the slow pace of external adjustment in the CIS-7 during the 1990s. The model takes into account the role of the initial current account deficit, the general government balance, the level of GDP, disbursements by multilateral financial institutions, foreign demand for exports, the terms of trade, domestic price liberalisation, and the EBRD index of foreign-exchange and trade liberalisation. The model takes the form:

(8) $$Ca_{t,t+3} = \alpha + \beta 1caini + \beta 2\Delta gb_{t,t+3} + \beta 3\Delta y_{t,t+3} + \beta 4of_{t,t+3}, \beta 5\Delta X_{t,t+3} + \beta 6\Delta TT_{t,t+3} + \beta 7PL_{t,t+4} + \beta 8FTL_{t,t+3} + \varepsilon_{t,t+3}$$

where: caini = initial current account deficit, gb = general government balance, y = level of GDP, of = disbursements by multilateral institutions, X = foreign demand for exports, TT = terms of trade, PL = domestic price liberalisation, and FTL = EBRD index of foreign-exchange and trade liberalisation.

The results as presented in Table A1.4 show that slow external adjustment in the transition period is negatively related to high current accounts in the pre-transition phase and official financing (slowing the incentives to adjust). Fiscal imbalances, the terms of trade and foreign demand are also associated with external adjustment during the early transition phase.

Table A1.4 Helbling et al. (2004) results

OLS	**Cat-2,*t*-1**	**Δgb*t*,*t*+3**	**Of*t*,*t*+3**	**ΔY*t*,*t*+3**	**ΔX*t*,*t*+3**	**ΔTT*t*,*t*+3**	**R^2**
Δcat+2,*t*+5	-0.64 (0.060)	0.40 (0.100)	-1.04 (0.547)	0.12 (0.051)	7.87 (3.461)	156.17 (59.008)	0.936

Annex 2: Kyrgyz Republic

A2.1 Overview

The Kyrgyz Republic is a low-income Central Asian country with a population of around 4.9 million and a GNI per capita of around US$330 (2003), bordering Kazakhstan to the north, Uzbekistan and Tajikistan to the south-west, and China to the east. After more than 70 years of central planning, the Kyrgyz Republic achieved independence from Russia in 1991 (having been annexed to Russia in 1864). The prospect of market reforms and trade liberalisation was challenging at the start of the transition era.[39] Years of trading within the CMEA left the Kyrgyz Republic highly exposed to CIS markets (in 1990 around 95% of its total trade was with the CMEA). The strong economic contraction at the start of the 1990s gradually eased off, and growth resumed in 1995. The Russian financial crisis (RFC) of 1998 led to a significant contraction in exports and a 60% depreciation of the Som against the US$, producing severe macroeconomic imbalances. However, positive growth rates resumed towards the end of the 1990s and in 2003 GDP growth was 5.3% (World Bank, 2005a). Kyrgyzstan became characterised by the IFIs as one of the most progressive reformers of the FSU.

A2.2 The impact of the break-up of the Soviet system

Investment in the Kyrgyz Republic fell substantially in the early phases of transition, recovering afterwards to only half its pre-transition levels (Fig. A2.1). The sharp decline in investment trends between 1990 and 1994 parallels the Republic's period of negative growth prior to stabilisation and recovery. During this early period, GFCF declined from 23.14% to 12.42% of GDP in current price terms.

What were the four factors behind these investment trends in the Kyrgyz Republic?

- First, the cessation of fiscal transfers from the Central Union budget (estimated to be around 7.8% of GDP in 1989) sizeably reduced government revenue and led to cutbacks in public investment and subsidies to enterprises. Between 1991 and 1992, the loss in transfers almost halved government revenues - from 39.7% to 20.5% of GDP.

- Second, economic contraction also reduced domestic tax revenues, from 17.5% of GDP in 1991 to 14.5% in 1992, leading to a rising fiscal imbalance (the fiscal deficit was around 17% of GDP between 1990 and 1994). Between 1992 and 1994 the Kyrgyz government eliminated the bulk of its subsidies, reduced net lending to enterprises and farms and embarked on a widespread privatisation programme (World Bank, 2005a).

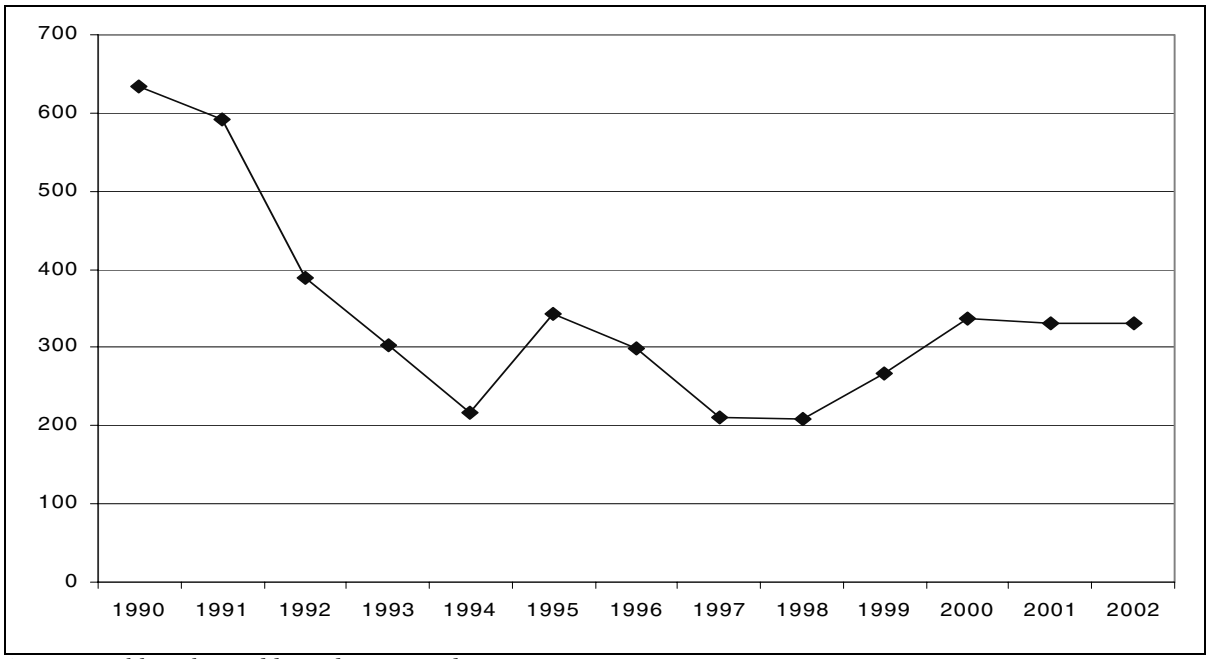
- Third, price liberalisation and the monetisation of the fiscal deficit contributed to an average annual consumer price inflation rate of 228.7% in 1994, rising from 85% in 1991.

- Fourth, the state-owned banking sector underwent a period of instability, leading to a rise in lending from emerging private sector institutions. The Kyrgyz Republic inherited a monobank system reliant on Gosbank, with a number of specialised banks (including

[39] The Kyrgyz economy was tightly linked to that of the Soviet Union and therefore suffered substantially from the break-up as demand and supply chains broke down. The largest single enterprise in 1991, a sugar refinery that accounted for over 3% of GNI, lost its supply of raw sugar cane from Cuba. The other large industrial enterprises were part of the Soviet military-industrial complex and encountered breakdown in demand after 1990 (Pomfret, 2003).

industrial, agricultural and savings) and a Central Bank. The state banks' proportion of total assets fell from 98.4% in 1990 to 45.9% in 1995, reflecting the rise in unregulated private sector lending activities.

Fig. A2.1 Kyrgyz Republic: GFCF (1995 US$m.)



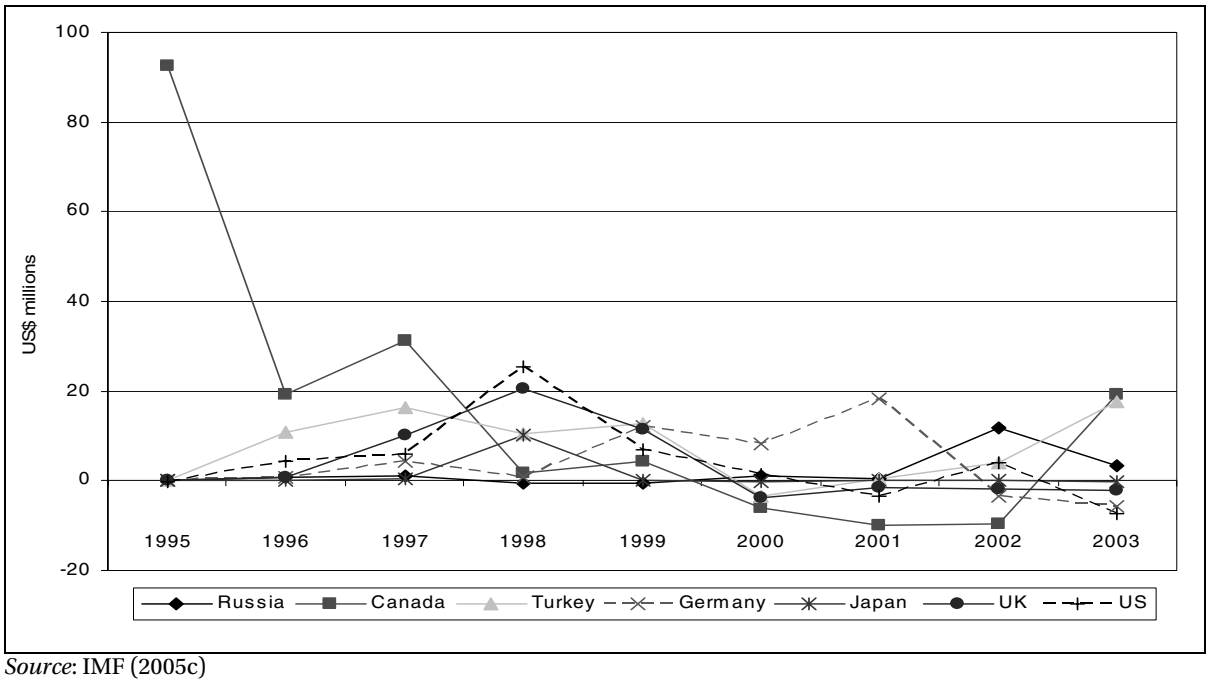
Source: World Bank, *World Development Indicators*

During the mid-transition phase (1995-6), investment levels picked up. GFCF accelerated to above 20% of GDP between 1995 and 1996, mainly reflecting investment in the Kumtor gold mine, a key government project to enable the productive use of Kyrgyz natural resources and the diversification of export markets. The completion of this project in 1997 brought a sharp drop in GFCF that year. The more recent period (1997-2002) started with a sharp decline in GFCF to 12% of GDP, followed by a steady rise since that time to around 17-18% of GDP.

FDI trends over the period were disappointing until 2004 and 2005, when inflows were 2.3% and 5.8% of GDP respectively. Fig. A2.2 shows the key investors in the Kyrgyz Republic between 1995 and 2003. FDI inflows are mainly accounted for by strategic net direct investment from industrialised countries, particularly Canada, Germany and the US.[40] Inflows from the CIS have been relatively small in comparison and inflows from Russia have been very small. Overall, Russian FDI to the Kyrgyz Republic between 1995 and 2004 comprises less than 0.1% of total Russian flows to the CIS.[41]

[40] Related to the Canadian firm Cameco's investment in the Kumtor gold mine, US investment in the Hyatt regency hotel, and German investment in the Bishkek tobacco factory.
[41] Author's calculations from Russtat, *Russia in Figures*, 2004.

Fig. A2.2 Kyrgyz Republic: FDI by country of origin (US$m. current prices)



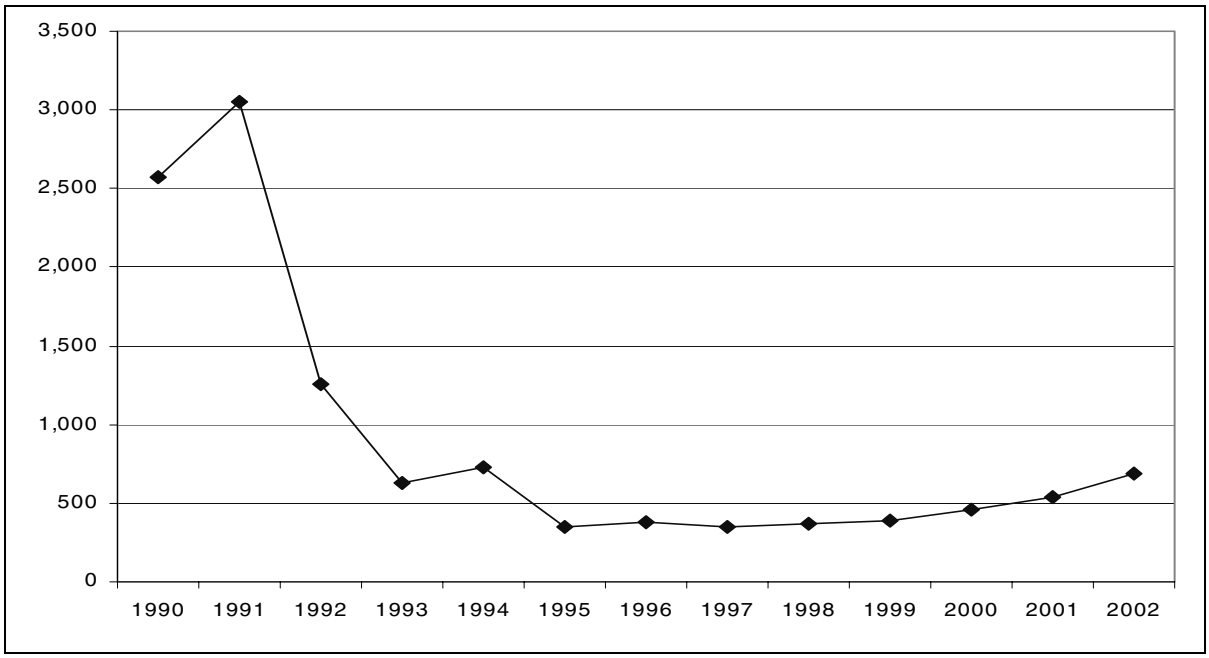
Source: IMF (2005c)

A2.3 Export performance

Export volumes declined dramatically from 1991 to 1995, recovering only slowly thereafter to a mere fraction of pre-transition levels (Fig. A2.3). Between 1991 and 1995, exports as a share of GDP fell from around 101% to 21% in 1995$ terms. This was largely due to the decline in inter-republic industrial/military-related product trade following the collapse of the command economy.[42]

[42] In 1990, machinery made up over 56% of total inter-republic trade and over 55% of total trade.

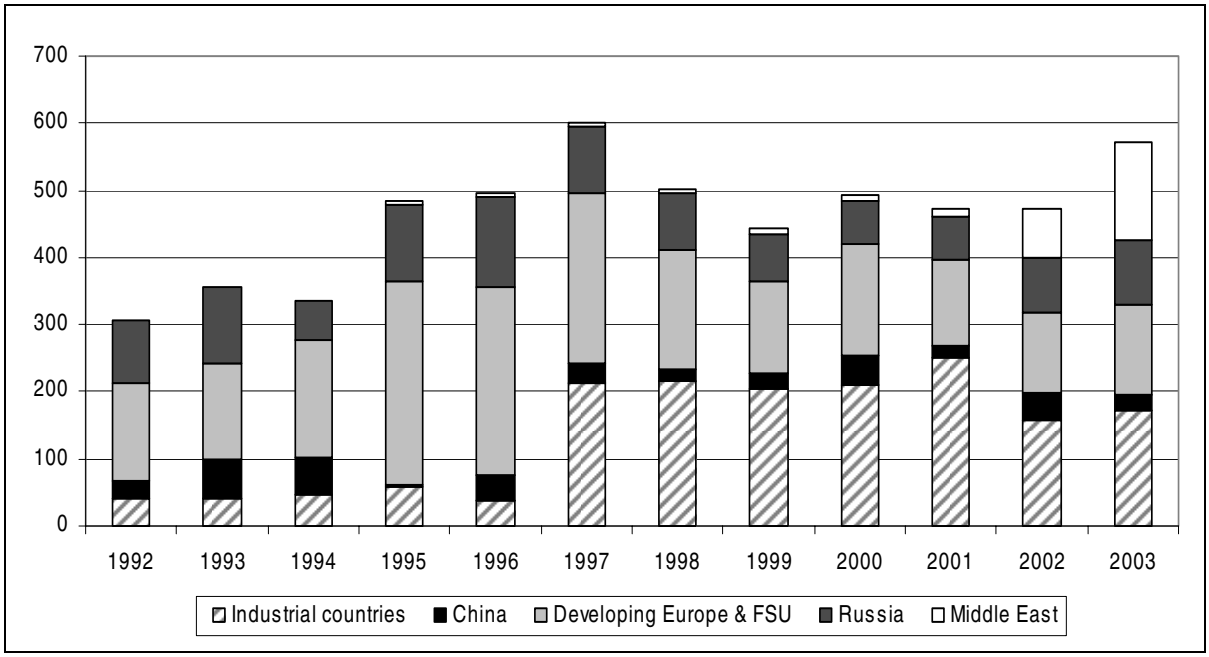
Fig. A2.3 Kyrgyz Republic: Exports of goods and services (constant 1995 US$m.)



Source: World Bank, *World Development Indicators*

The value of exports, on the other hand, increased by around 100% between 1992 and 1997, suggesting that export price liberalisation during the transition benefited the Kyrgyz Republic (Fig. A2.4). Export performance deteriorated notably between 1997 and 1999, although it recovered thereafter.

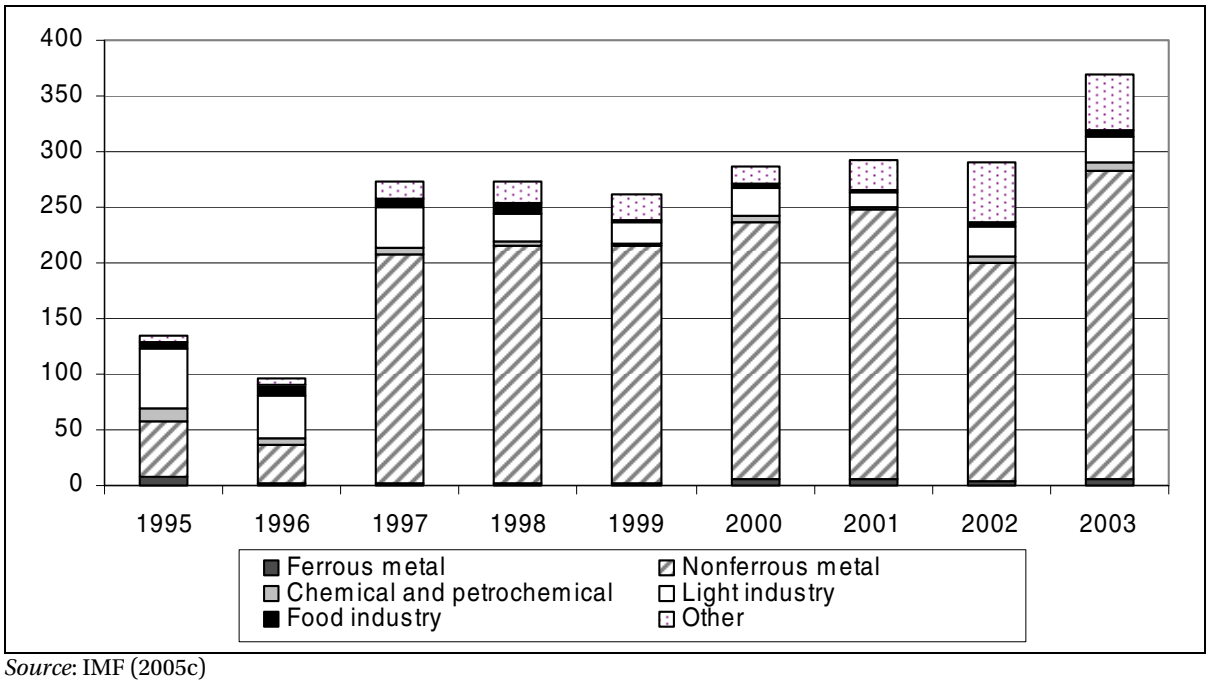
Fig. A2.4 Kyrgyz Republic: Exports of goods and services (US$m. current prices)



Source: IMF, *Direction of Trade Statistics*, 2005

Two further key factors underpin export performance in value terms between 1992 and 2003. First, diversification away from traditional intra-CIS exports[43] towards specialisation in higher value-added products led to an increase in the average unit value of Kyrgyz exports. Second, and partly explained by the diversification of commodity exports, the Kyrgyz Republic broadened its export partners to include non-CIS countries, including Europe and the Middle East[44] (Figs. A2.4 and A2.5). These two factors meant that, although the RFC led to a notable decline in export value between 1997 and 1999, exports have subsequently recovered to pre-RFC levels. However, the concentration of exports in primary commodities suggests that the Kyrgyz economy is increasingly vulnerable to fluctuations in gold prices, which although currently high,[45] could threaten future growth.

Fig. A2.5 Kyrgyz Republic: Exports to non-CIS countries (US$m. current prices)



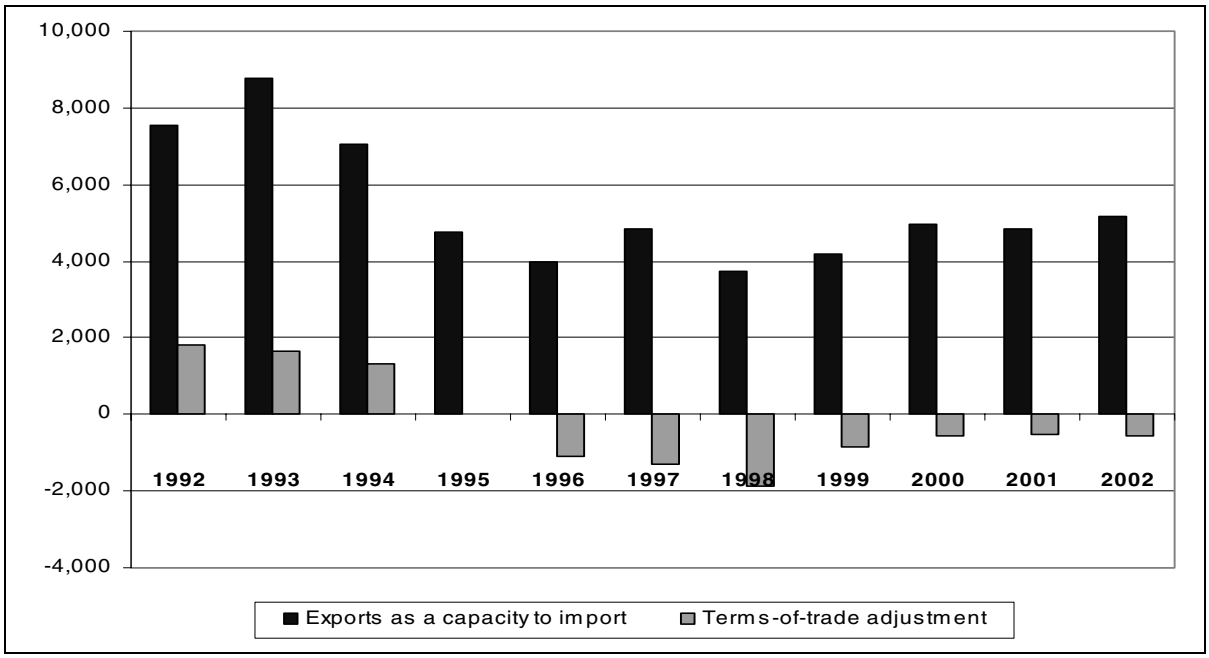
Source: IMF (2005c)

A2.4 Terms of trade

Fig. A2.6 provides two indications of terms-of-trade changes during the 1990s.[46] It shows that the Kyrgyz Republic suffered a deterioration in its terms of trade between 1993 and 1996, with only modest gains between 1998 and 2002. These figures suggest that, despite the increase in export prices following price liberalisation, the net impact of trade price liberalisation was a terms-of-trade deterioration as a result of rising import prices.

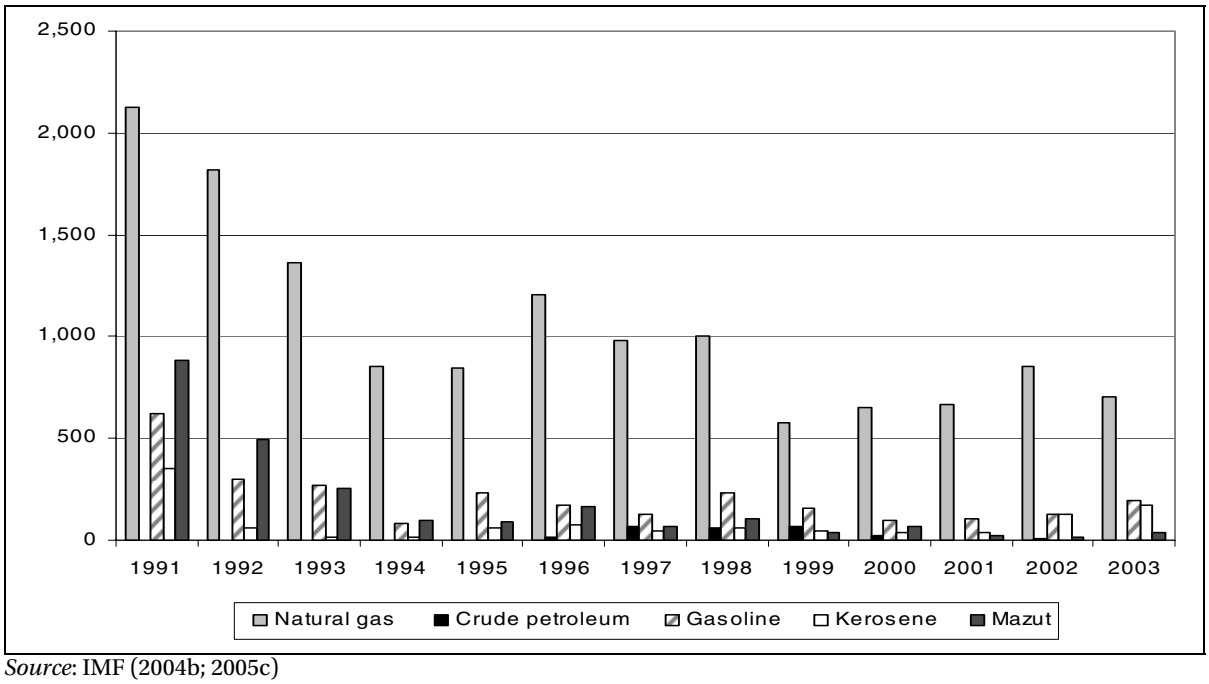
[43] Products exported to the CIS mainly comprise agricultural products, light industry, machine building equipment and industrial construction materials.
[44] In contrast, exports to Russia as a percentage of total exports declined from 29.9% in 1992 to 16.7% in 2003. The contraction in regional demand between 1997 and 1999 appears to explain a sizeable part of the overall decline in export value in those years, although the reduced value of exports to Russia is mainly discernible in 1997 (explaining around 56% of the decline that year.)
[45] Since 2000, gold prices have experienced an upswing from 100 to 130 index points (2000=100.)
[46] Exports, as the capacity to import, equal the current price values of exports of goods and services deflated by the import price (expressed in constant local currency units.) A terms-of-trade adjustment equals capacity to import less exports in goods and services in constant prices (expressed in constant local currency units.)

Fig. A2.6 Kyrgyz Republic: Terms of trade (constant LCU, millions)



Source: World Bank, *World Development Indicators*

Fig. A2.7 Kyrgyz Republic: Volume of energy imports (current prices)[a]



Source: IMF (2004b; 2005c)
Note: a) Natural gas = million m^3; petroleum products = thousand tons

The terms-of-trade deterioration over the early part of the 1990s is largely explained by rising energy prices. In 1990, the three main imports were oil and gas, mainly from Russia and Turkmenistan (21% of total inter-republic imports and 17% of total imports), food products (63% of extra-republic imports and 16% of total imports) and machinery for domestic industry (31% of inter-republic imports and 27% of total imports). Of these three product categories, the margin between regional and international prices for oil and gas was

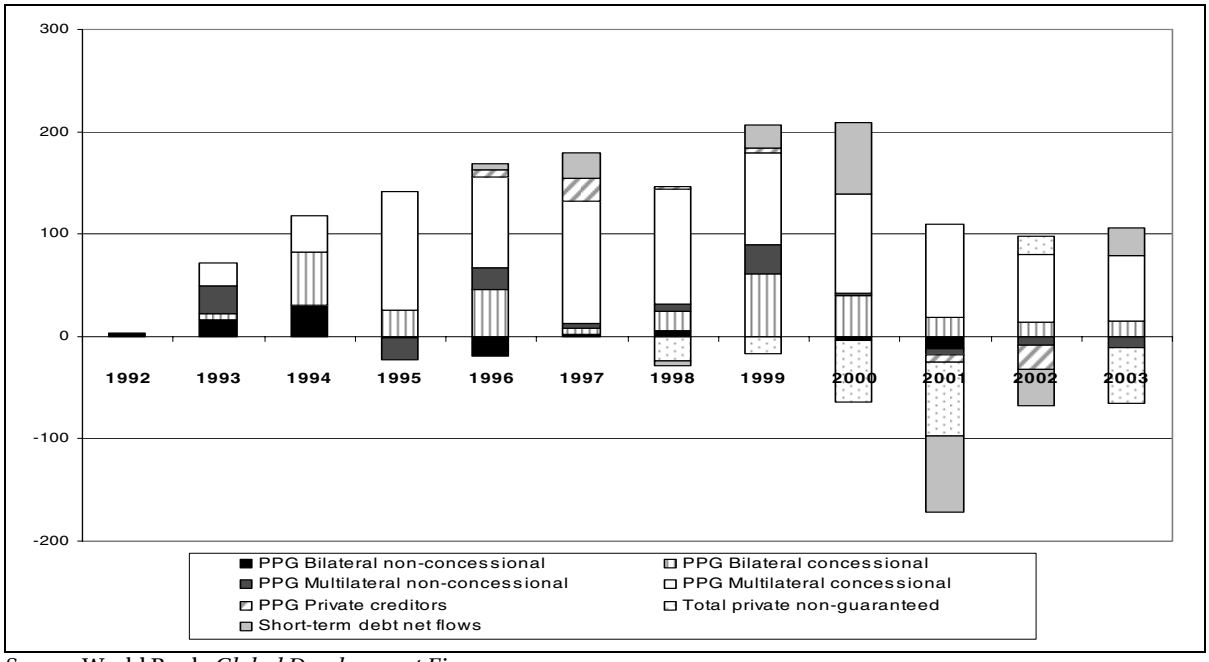
the largest, with a foreign to domestic price ratio of 2.254.[47] Machinery and food price imports, on the other hand, were roughly comparable with world prices, or below.

Liberalisation of energy prices led to a decline in energy imports during the 1990s (Fig. A2.7). Natural gas is now mainly procured from Uzbekistan (in a gas-for-water barter arrangement).

A2.5 Net resource flows and external debt

Fig. A2.8 shows the main trends in external finance during the 1990s. First, non-concessional bilateral flows were a key source of external finance between 1992 and 1994. Second, from 1995 onwards concessional and non-concessional multilateral flows provided a significant part of total flows.

Fig. A2.8 Kyrgyz Republic: Long- and short-term net resources flows on external debt (US$m.)



Source: World Bank, *Global Development Finance*

External debt accumulated rapidly throughout the 1990s. According to the IMF, by 2003 external debt amounted to 104.2% of GDP, 94.1% of it public and publicly guaranteed private debt. Table A2.1 shows the outstanding external public debt between 1994 and 2003. In the early transition phase, the bulk of bilateral external debt was CIS non-concessional (mainly Russian). However, this is reversed in 1997, with concessional bilateral finance making up the majority of inflows.

[47] The foreign to domestic price ratio is foreign-trade prices divided by domestic prices, where domestic prices are those received in rubles and foreign trade prices are Goskomstat-estimated world prices for comparable products (Tarr, 1993: p. 96).

Table A2.1 Kyrgyz Republic: Outstanding external public debt (US$m.)

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Total	413.8	594.1	742.0	904.9	1,177.5	1,358.6	1,520.3	1,441.5	1,578.7	1,789.8
Bilateral	252.3	293.2	315.4	320.7	434.3	510.4	577.5	494.4	510.3	567.5
CIS (non-concessional)	**181.0**	**176.9**	**150.0**	**180.5**	**208.2**	**207.8**	**160.9**	**178.1**	**182.7**	**187.6**
Non-CIS	71.3	116.3	165.4	140.2	226.0	302.6	416.6	316.3	327.5	379.9
Concessional	41.0	78.9	113.6	96.8	133.3	211.1	247.6	255.3	262.6	316.3
Non-concessional	30.3	37.4	51.8	43.4	92.7	91.5	169.0	61.0	65.0	72.4

Source: IMF (2000b), (2003b), (2005a)

By 2003, around 68% of external debt was owed to the IFIs and 32% to bilateral creditors (Japan and Russia accounting for 71% of the total). The relatively high proportion of concessionality in IFI loans reduced the present value of multilateral debt relative to bilateral debt (to 56.5% and 43.5% respectively). In present value terms, Russia holds 14.2% of total Kyrgyz external debt, second to Japan at 18.8%.

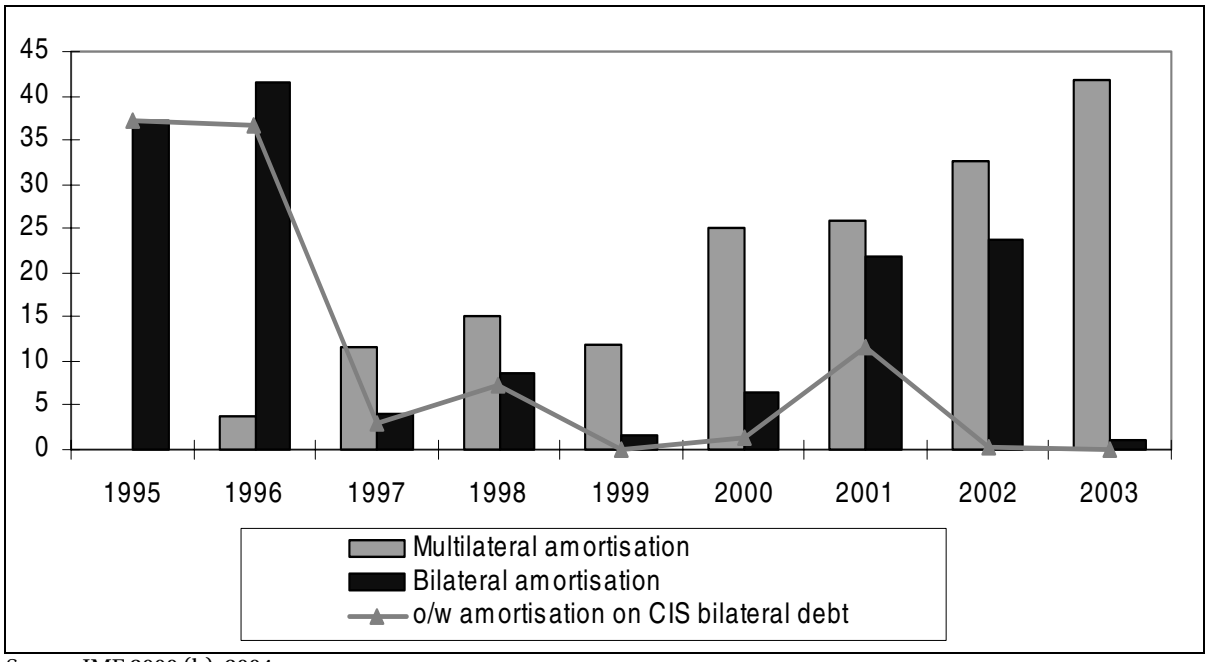
Table A2.2 Kyrgyz Republic: Stock of external debt in 2003 (US$m.)

	Stock of debt		**Present value**	
	US$	% of public debt	US$	% of public debt
Total external debt	1990.3		1518.0	
Public and publicly guaranteed debt	1792.2		1330.5	
Multilateral	1222.4	68.0	751.2	56.5
Bilateral	574.9	32.0	579.4	43.5
o/w Paris Club	461.5	25.7	479.1	36.0
Japan	230.7	12.8	250.3	18.8
Russia	**176.2**	**9.8**	**188.4**	**14.2**
Non-Paris Club	113.4	6.3	100.2	7.5
Private non-guaranteed	193.1	n/a	187.5	n/a
o/w Kumtor	98.1	n/a	107.2	n/a

Source: IMF (2005c)

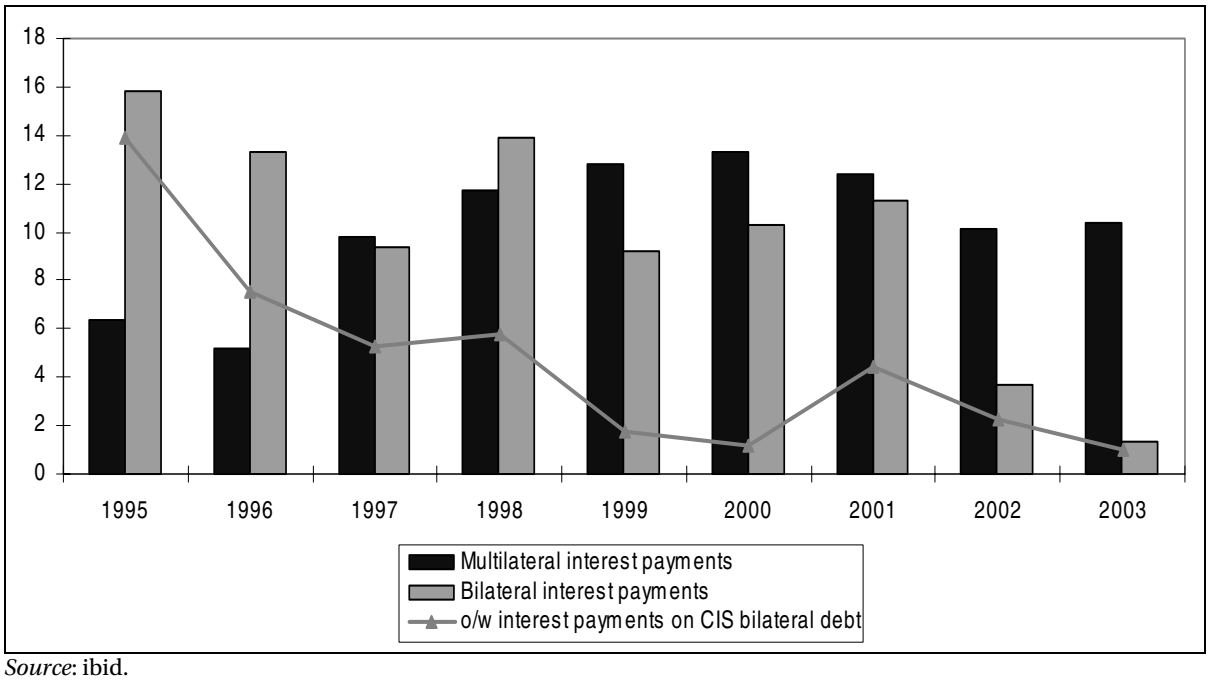
Figs. A2.9 and A2.10 show the amortisation and servicing of external debt attributable to the CIS vis-à-vis total external debt, providing an indication of the claims Russia has on Kyrgyz fiscal resources. Overall, both amortisation and servicing associated with CIS finance fell markedly between 1995 and 2003.

Fig. A2.9 Kyrgyz Republic: Amortisation of external public debt (US$m. current prices)



Source: IMF 2000 (b), 2004

Fig. A2.10 Kyrgyz Republic: Interest payments on external public debt (US$m. current prices)



Source: ibid.

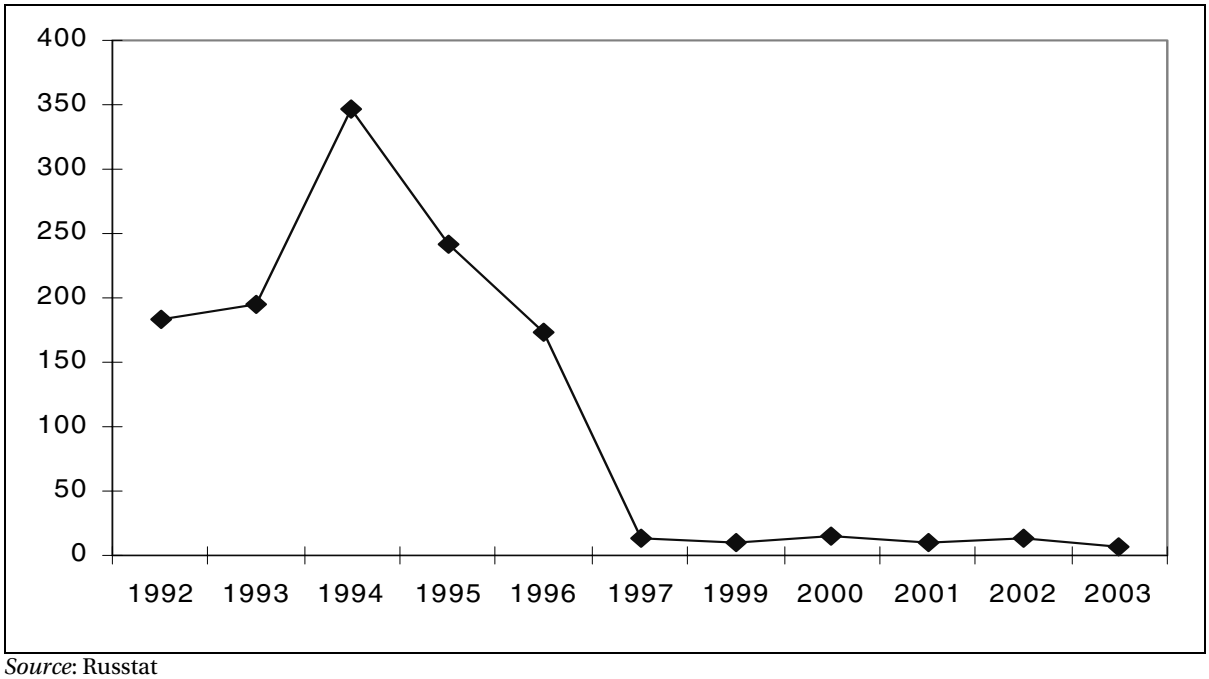
A2.6 Economic migration and remittances

According to the World Bank (2005b), the proportion of population change in the Kyrgyz Republic attributed to migration between 1989 and 2003 was –9.2%. Total out-migration was around 394,000, of whom around 279,000 went to Russia, 22,000 to Uzbekistan and 93,000 to Germany. There are several explanations for migration trends in the Kyrgyz Republic. The

International Organisation for Migration (2002), for example, attributes migration flows to ethnicity, temporary labour and medium-term economic migration.

Fig. A2.11 shows total migration to Russia since 1992, recorded by the Federal Service of State Statistics. The actual numbers are presented in Table A2.3 below, together with the numbers of Kyrgyz citizens recruited to work in Russia. These statistics seem to represent a peak in migration from the Kyrgyz Republic to Russia in 1994, followed by a consistent decline since then. This follows the overall trend in integration/migration to Russia from both CIS and non-CIS countries.

Fig. A2.11 Kyrgyz Republic: Emigration to Russia (thousands)



Source: Russtat

Table A2.3 Kyrgyz Republic: Migration to and numbers recruited to work in Russia (thousands)

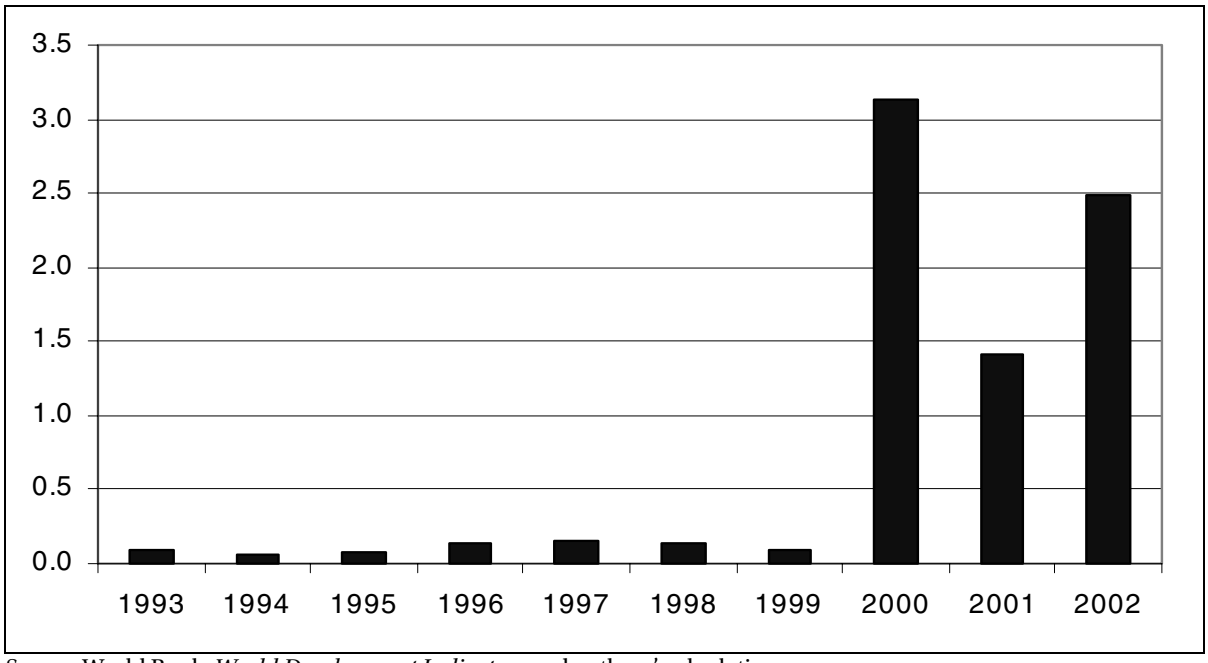
	1992	1993	1994	1995	1996	1997	1999	2000	2001	2002	2003
Total	926.0	923.1	114.7	842.1	631.6	597.7	379.7	359.3	193.5	184.6	129.1
o/w Kyrgyz Republic	183.9	195.7	346.3	241.4	172.9	13.8	10.4	15.5	10.7	13.1	6.9
Recruited	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.9	1.7	4.6	4.8

Source: IOM (2002)

It is likely that the official statistics do not capture the true number of Kyrgyz economic migrants working in Russia. Unofficial sources suggest that the number of economic migrants to Russia has in fact been far higher than the figures reported. The IOM notes a significant rise in the number of Kyrgyz migrants to Russia at the end of the 1990s, from 8,714 in 1998, to 10,111 in 1999 and 20,793 in 2000, together making up the second largest group of Central Asian migrants in Russia. Mogilevsky (2004) notes that most of these migrants work illegally in Russia, quoting unofficial estimates of the stock of Kyrgyz economic migrants living and working in Russia as high as 700,000 (up to 14% of the population).

Balance-of-payments data for worker remittances suggest that during the 1990s, remittances became an increasingly important source of foreign exchange. Fig. A2.12 shows the amount of worker remittances to the Kyrgyz Republic as a percentage of GDP, suggesting a rapid increase from 2000. Given that the true size of remittances is often under-reported (as a sizeable proportion is not transferred through financial intermediaries), the importance of remittances is probably far higher.

Fig. A2.12 Kyrgyz Republic: Workers remittances (% GDP)



Source: World Bank, *World Development Indicators* and authors' calculations

A2.7 Summary

The evidence presented in this Annex suggests the following conclusions about Russia's impact on Kyrgyz economic performance. First, the break-up of the command economy was by far the most important aspect of Russia's influence on Kyrgyz growth during the 1990s, affecting investment levels, export volumes and the terms of trade. However, Russia's influence via these channels has decreased over the transition period. In terms of export performance, the Russian effect has declined considerably, particularly as a result of the diversification of export partners.

Second, although external finance from Russia cushioned the economic decline in the early transition phase, concessional official inflows are now a more important source of external finance for Kyrgyz economic recovery and future growth prospects. It is not apparent that debt service and amortisation on bilateral CIS debt constitute a current constraint on economic growth by draining fiscal resources. Finally, turning to economic migration and remittances, the analysis suggests an increasing importance of remittances for GDP. Although the transmission mechanisms for growth are difficult to determine, economic migration to Russia could act as an increasingly important mechanism.

Annex 3: Tajikistan

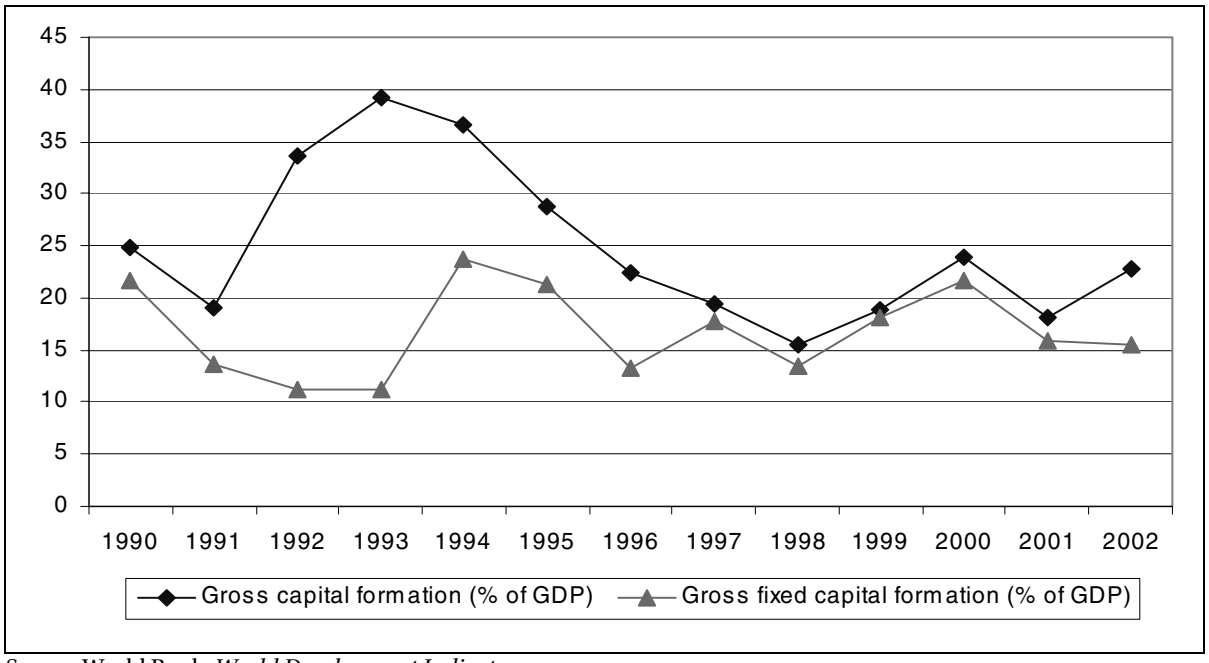
A3.1 Overview

Tajikistan is a low-income country with an annual GDP per capita of US$210 (2003) and a population of around 6.2 million. It borders the Kyrgyz Republic to the north, Afghanistan to the south, China to the east and Uzbekistan to the west. Achieving independence in 1990, Tajikistan faced similar adverse initial conditions to those of the Kyrgyz Republic at the outset of transition, compounded by civil war in the first year after independence in which thousands of people were displaced, infrastructure was destroyed, political institutions deteriorated and civil society became increasingly fragmented. As a result, economic performance has been very weak. Output fell by two-thirds in the early to mid-1990s. In the period 1990-2002, the decline in industry from 37.6% to 24% of GDP and in agriculture from 33.3% to 24.3%, enabled the service sector to increase its share to 51.7% of GDP (the largest share in all the case-study countries). Positive economic growth rates resumed in 1997; but, this is likely to represent a low base rather than strong economic progress. Economic reforms have been slow and the central government retains weak control over the national territory. The lack of economic opportunity led to migration from Tajikistan to the wider ECA region in search of new opportunities, mainly in Russia.

A3.2 Impact of the break-up of the Soviet system

GFCF as a percentage of GDP (current prices) fell significantly between 1990 and 1993, fluctuating thereafter at around 17% of GDP. Trends in GFC as a percentage of GDP (current prices) follow a different path, with a substantial and prolonged decline, in 1995$ terms, between 1993 and 1998, recovering thereafter only marginally (Fig. A3.1).

Fig. A3.1 Tajikistan: GFCF and GFC (% GDP, current prices)



Source: World Bank, *World Development Indicators*

How did the factors producing investment decline at the start of the transition period affect Tajikistan?

- In the pre-transition phase, investment expenditure was relatively high (17% of GDP) in comparison with other Republics of the FSU, due to the capital-intensive nature of Tajikistan's economy, which was focused on hydroelectric power, aluminium manufacturing and large-scale industry. The dominant share of investment resources came from Central Union transfers, which made up 8.2% of GNP (whereas transfers from Tajikistan to the Union budget were only 1.1% of GNP) and over half of total revenue (World Bank, 1994). At the outset of the transition, the proportion of capital expenditure in the budget declined from 17% in 1990 to 2.6% in 1991 and 2.3% in 1992 (World Bank, 1994). This decline might be attributed to a number of inter-related factors. First, the cessation of fiscal transfers from the Union budget resulted in an immediate tightening of government expenditures and a significant decline in subsidies to enterprises. The central government balance fell from -16.4% of GDP in 1991 to -23.6% of GDP in 1993, necessitating widespread cuts in expenditure.[48]

- Second, Tajikistan inherited a monobank system reliant on Gosbank, with a specialised banking structure similar to that of the Kyrgyz Republic (industrial, agricultural and savings). By 1995, these state banks held only around 5.3% of total assets, suggesting disruption in financial flows from the centre and a compensating rise in the role of private banks.

- Inflation rocketed to an annual average of 2,195% in 1993 from 112% in 1991, illustrating the severe economic instability during the transition from plan to market. Producer price inflation also increased from an annual average of 163% in 1991 to 1,080% in 1993.

- Finally, the onset of civil war, which lasted throughout the early 1990s, exacerbated the economic and institutional disruption and uncertainty.

In 1993, GFCF as a percentage of GDP recovered to pre-transition levels, reflecting the end of armed conflict and the onset of reconstruction. Although trends fluctuated for the remainder of the period, GFCF generally remained above 15% of GDP. GFC, on the other hand, entered a period of prolonged contraction up to 1998, recovering thereafter. Unlike the Kyrgyz Republic and the South Caucasus countries, Tajikistan domestic savings rates remained above 20% of GDP until 1997, providing a resource base for reconstruction.

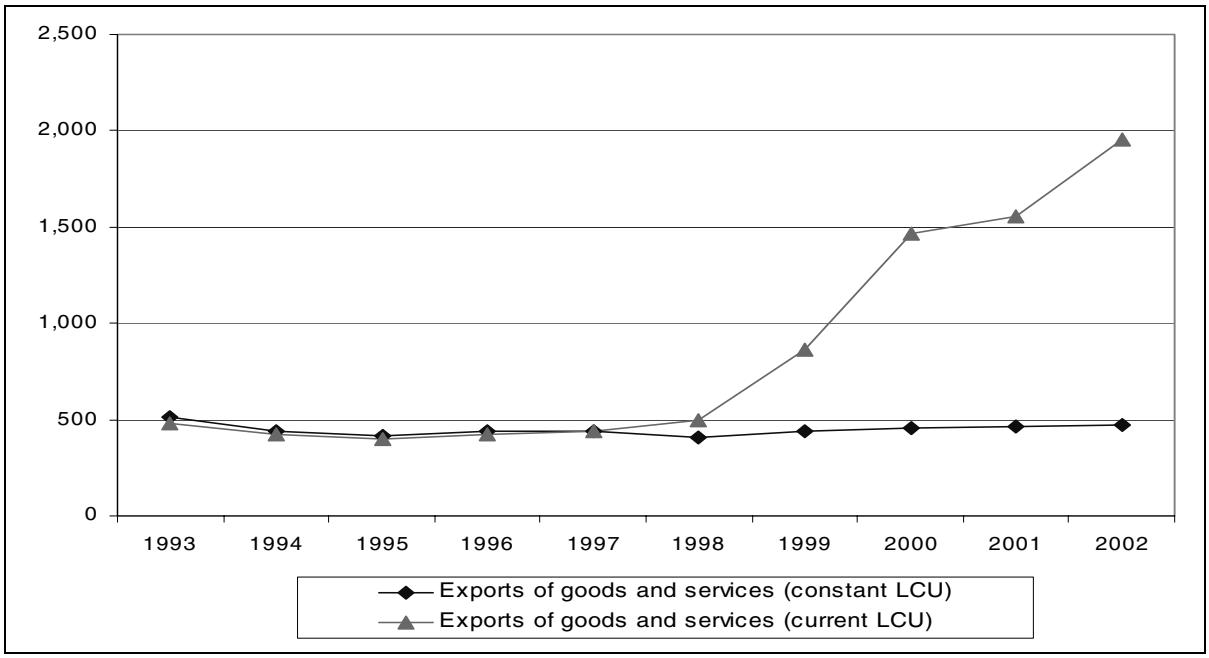
FDI inflows, on the other hand, were disappointing. Tajikistan received the lowest share of FDI of all the CIS-7 countries between 1992 and 2002. The average annual FDI inflow over the period was 1.2% of GDP, peaking between 1998 and 2000 at between 1.8% and 2.2% of GDP. The main investor during this period was the United Kingdom (Shiells, 2003). According to Russtat, Russia's contributions were only US$71,000 in 2002 and US$18,000 in 2003 (0.4% and 0.2% respectively of Russia's total investment in the CIS in those years).

A3.3 Export prices

The divergence between export value and volume is evident in Fig. A3.2, which suggests rising export prices from 1998 onwards leading to an overall increase in export value.

[48] The central government balance excludes transfers from the State budget to the Pension Fund and Employment Funds.

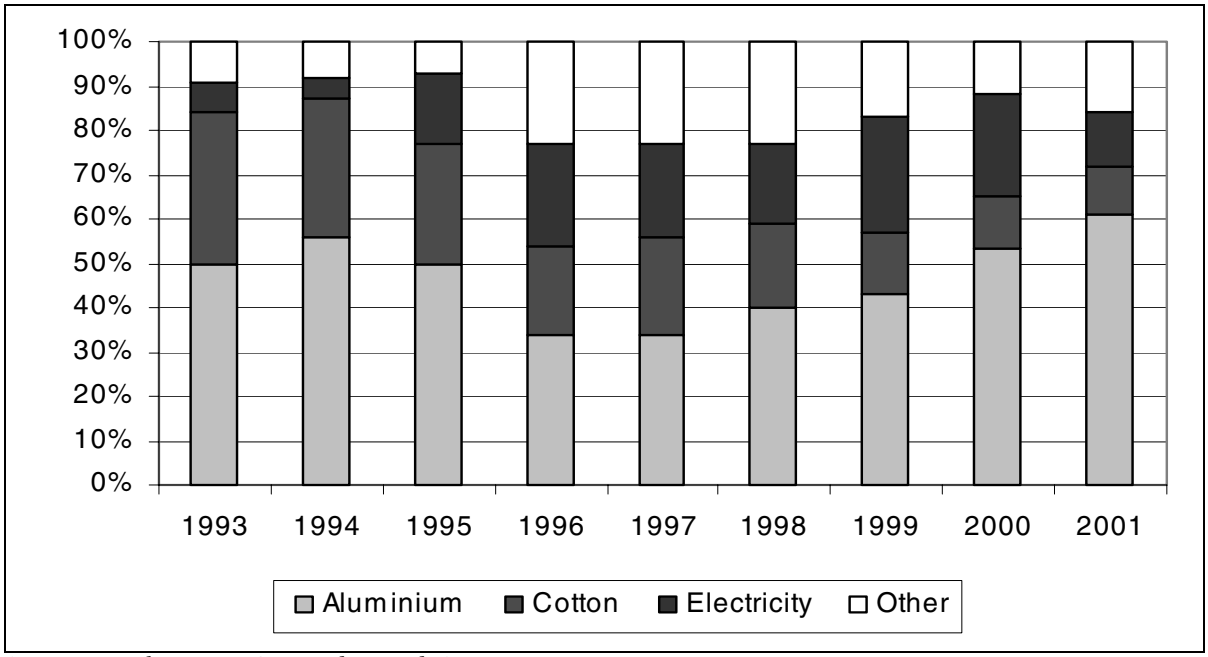
Fig. A3.2 Tajikistan: Exports of goods and services (constant LCU, million)



Source: ibid.

The evolution in the commodity structure of exports helps explain the rising export value. From 1997 onwards, the proportion of aluminium in total exports rose from 34% to just over 60%, suggesting that rising export prices for aluminium have been the main explanatory factor in the rising export value. Cotton and electricity make up the next two important export categories (Fig. A3.3).

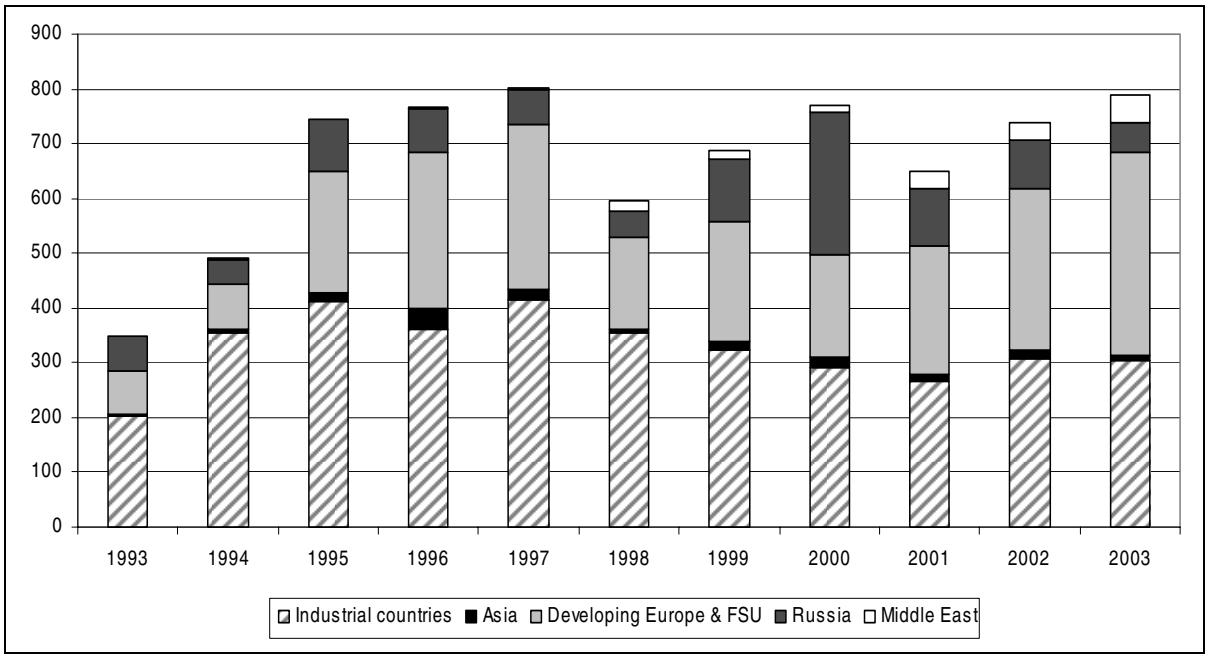
Fig. A3.3 Tajikistan: Exports by commodity (current prices)



Source: United Nations, *Commodity Trade Statistics*

However, it is clear that inherited patterns of Soviet production still define the pattern of commodity trade,[49] which has shifted only to the extent that these commodities are now mainly traded outside the FSU (World Bank, 2001). Moreover, Russia and the FSU are still key export partners, despite some diversification to industrial countries in the early part of the 1990s (Fig. A3.4). The proportion of exports to the FSU (mainly Uzbekistan, Ukraine and Azerbaijan) and developing Europe (particularly Turkey) increased from around 40% to 50% of the total between 2000 and 2003, suggesting that Tajikistan's dependence on regional demand has risen. Exports to Russia fluctuated over the period, rising from around 3% of GDP in 1993 to 19% in 2000 and then declining to 5.5% of GDP in 2002. The impact of the Russian financial crisis on export value in 1998 is clear, particularly affecting exports to Russia and developing Europe.

Fig. A3.4 Tajikistan: Exports of goods and services (US$m. current prices)



Source: IMF, *Direction of Trade Statistics*

A3.4 Terms of trade

Table A3.1 presents terms-of-trade fluctuations for Tajikistan since 1993, showing fluctuations between 1994 and 1998 followed by a deterioration from 1998 to 2004. According to the World Bank (2001), global commodity prices for cotton and aluminium have played a significant role in terms of trade fluctuations and export performance, sometimes offsetting volatility in export production and the price of imports (of which alumina is the key commodity).

[49] A strong emphasis was placed during the Soviet era on extreme specialisation in cotton and aluminium production to serve Russian processing industries.

Table A3.1 Tajikistan: Terms of trade

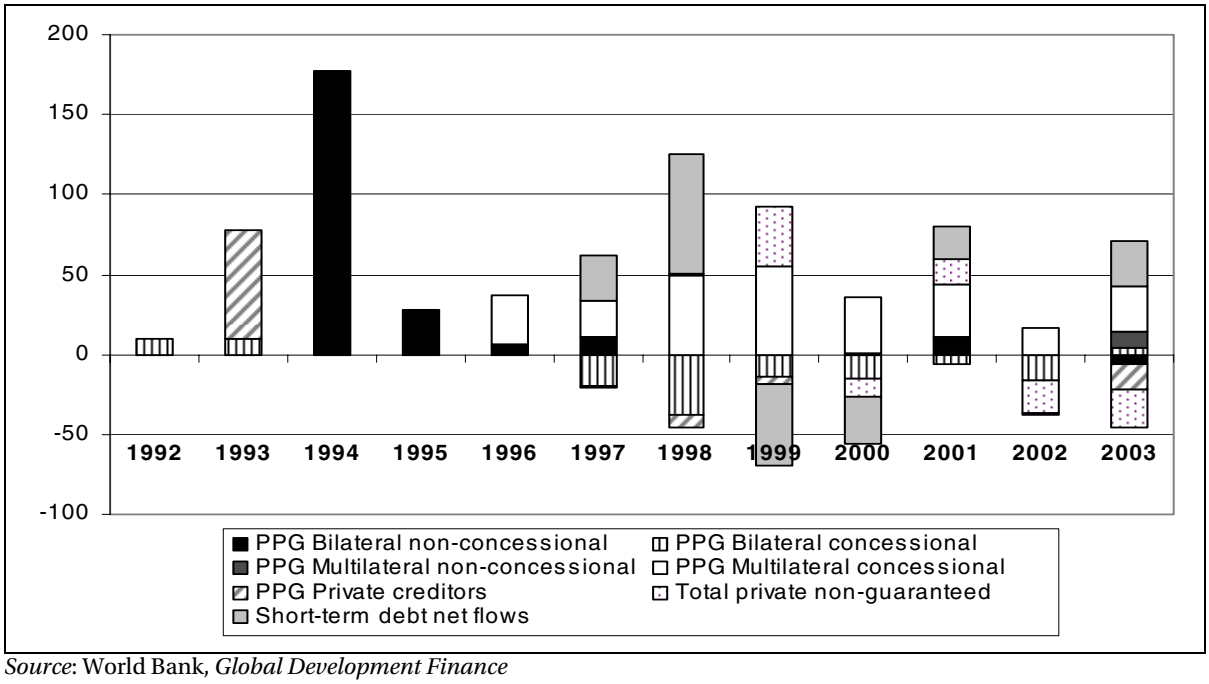
	Index: 1993=100											
	1993	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**
Terms of trade	100.0	88.0	115.0	89.0	94.0	103.0	81.4	77.2	70.2	61.2	64.3	63.4
% change		-12.0	31.0	-23.0	5.0	10.0	-21.6	-4.2	-9.1	-12.8	5.1	-1.4

Source: ibid.

A3.5 Net resource flows and external debt

Net flows on both short- and long-term debt are shown in Fig. A3.5. Although bilateral non-concessional flows cushioned the early transition impact between 1992 and 1994, multilateral concessional flows (IDA and concessional IMF) and non-concessional IMF flows provided the bulk of external finance from 1996 onwards. Short-term net flows also provided a significant share of external finance in 1998, although they turned quickly negative thereafter.

Fig. A3.5 Tajikistan: Long- and short-term net resources flows on external debt (US$m.)



Source: World Bank, *Global Development Finance*

Table A3.2 provides a breakdown of bilateral debt by country and in proportion of GDP and exports. Bilateral debt made up around 72% of total debt in 1995, although this proportion has fallen to around one quarter according to 2004 estimates. The rest (around 75%) is made up of debt owed to multilaterals.

The bulk of external bilateral debt is owed to Russia and Uzbekistan (for arrears on trade payments). Bilateral debt to Uzbekistan has declined from 1996 onwards as a result of debt relief. However, the proportion of bilateral debt held by Russia increased up to 2001, when

non-payment of interest was capitalised to total outstanding debt.[50] 2004 estimates show a significant decline in Russian bilateral debt.

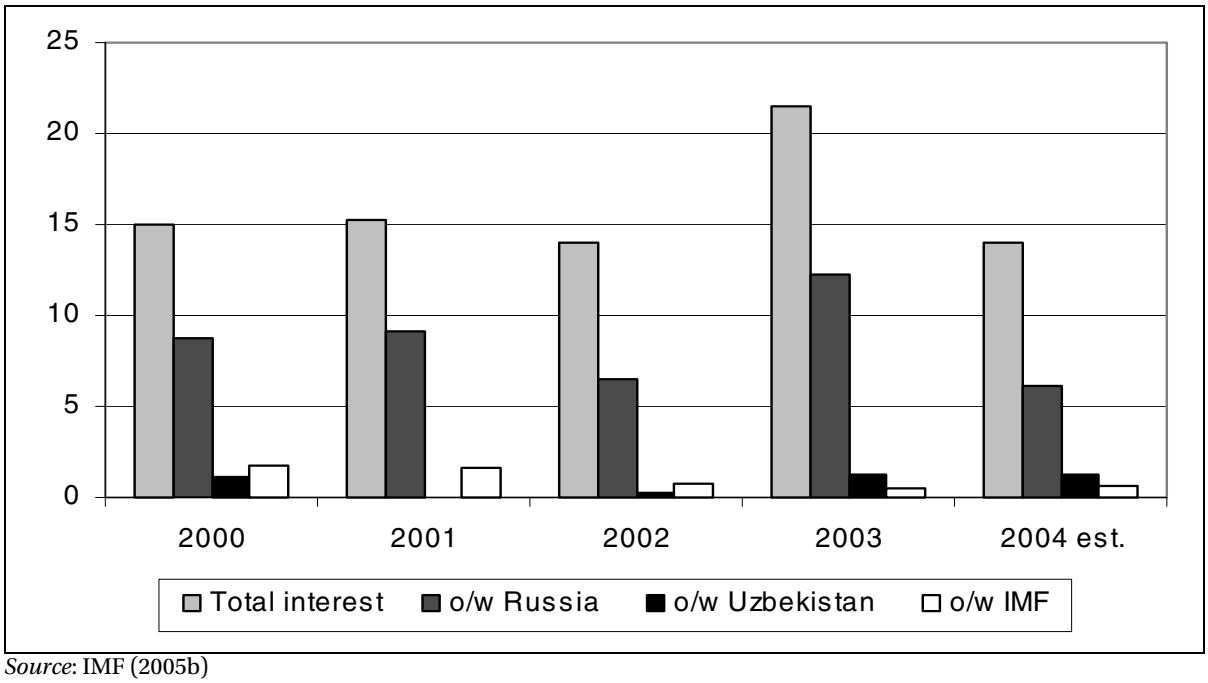
Table A3.2 Tajikistan: External public debt (US$m.)

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004 est.
Total debt	817	867	1,106	1,179	1,233	1,226	1,017	1,010	1,031	822
Bilateral debt	587.0	594.0	581.0	543.0	551.0	532.0	530.4	484.7	467.7	213.0
Uzbekistan	**200.0**	**200.0**	**171.0**	**153.0**	**142.0**	**130.0**	**117.2[a]**	**104.4**	**94.0**	**94.0**
Russia	**292.0**	**288.0**	**291.0**	**288.0**	**288.0**	**312.5**	**323.3[b]**	**299.7**	**299.7**	**50.0**
U.S.	25.0	31.0	32.0	30.0	30.0	22.0	21.2	20.2	19.3	18.3
Turkey	23.0	23.0	26.0	26.0	26.0	26.0	23.1	20.5	18.0	15.4
Kazakhstan	19.0	19.0	19.0	18.0	18.0	19.0	18.8	12.1	12.1	12.1
Pakistan	6.0	12.0	14.0	14.0	13.0	13.0	13.0	13.0	13.0	0.0
Bilateral debt in % of total	72.0	68.0	53.0	46.0	45.0	43.4	52.1	48.0	45.4	25.9
Bilateral debt in % of exports[c]	269.0	106.0	115.0	130.0	138.0	118.0	113.4	98.1	76.4	31.2

Source: IMF (1998d), (2000c), (2005b)
Notes: a) Stocks of debt to Kazakhstan and Uzbekistan were reduced during debt restructuring negotiations;
b) includes capitalised interest payments;
c) exports of goods and services excluding barter trade in alumina and electricity.

Accordingly, total debt servicing is largely made up of interest payments on external debt to Russia (Fig. A3.6). However, this proportion has declined overall since 2000. Moreover, Tajikistan's interest arrears to official creditors decreased from more than US$27 million in 2001 to only US$700,000 in 2003 (World Bank, *Global Development Finance*). Principal arrears to official creditors also declined from over US$77 million in 2001 to US$56 million in 2002, suggesting some amortisation of long-term official debt.

Fig. A3.6 Tajikistan: Interest payments on external public debt (US$m.)



Source: IMF (2005b)

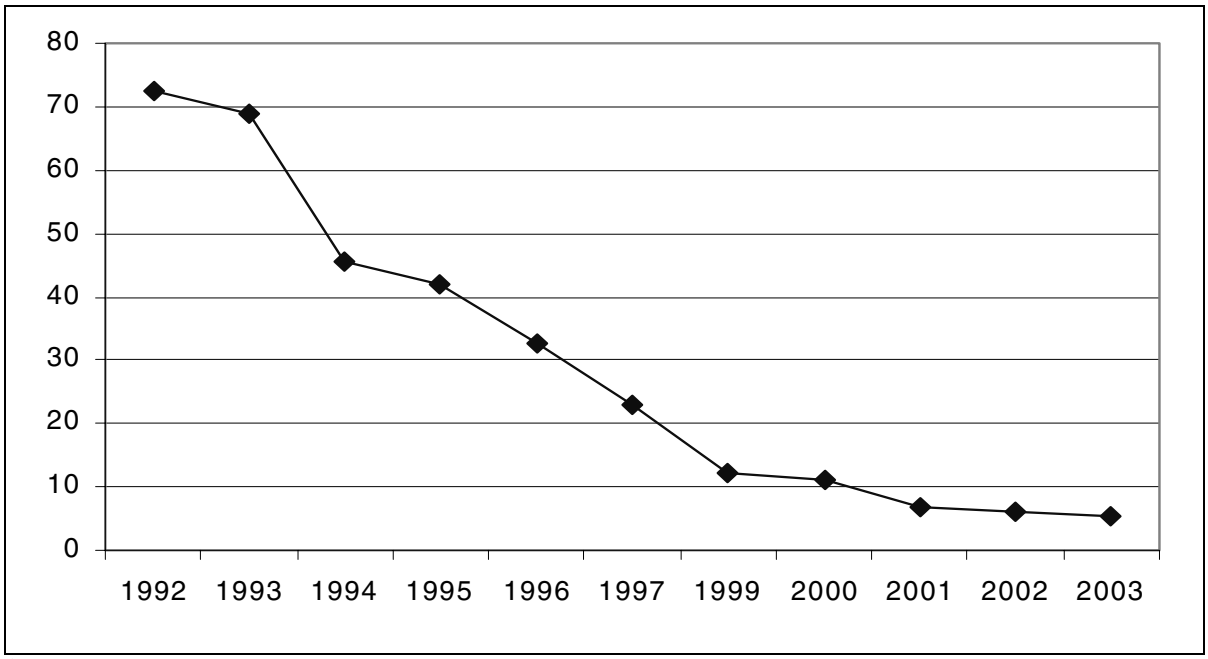
[50] According to the IMF, between 1993 and 2000 only concessional bilateral debt was serviced. Non-concessional debt was mainly serviced from 2000 onwards.

A3.6 Migration and remittances

According to the World Bank (2005b), the population change in Tajikistan between 1989 and 2004 attributed to migration is -15.1%. Total out-migration between 1989 and 2003 was 357,100, of whom 258,300 went to Russia, 30,800 to Uzbekistan and around 20,000 to Germany. According to the IOM (2002), a large part of this migration was due to lack of employment opportunities in Tajikistan. Current estimates of the numbers of Tajik migrants working in ECA countries range from 250,000 to 800,000.[51] According to the IOM (2002), around 90% of Tajik labour migrants are living (legally and illegally) in Russia and 5% in Uzbekistan, half of them employed in housing and industrial construction, a third in trade and services and the remainder in gas, oil development, manufacturing, catering and agriculture.

Fig. A3.7 shows total migration from Tajikistan to Russia since 1992, recorded by the Federal Service of State Statistics. The total numbers of migrants are presented in Table A3.3 below, together with the actual numbers of Tajik citizens officially recruited to work in Russia. These statistics appear to represent a peak in migration to Russia in 1992, followed by a decline since then.

Fig. A3.7 Tajikistan: Emigration to Russia (thousands)



Source: Russtat

Table A3.3 Tajikistan: Migration to and numbers recruited to work in Russia

	1992	1993	1994	1995	1996	1997	1999	2000	2001	2002	2003
Total	926.0	923.1	114.7	842.1	631.6	597.7	379.7	359.3	193.5	184.6	129.1
o/w Tajikistan	75.50	68.80	45.60	41.80	32.50	23.10	12.10	11.00	6.70	5.97	5.34
Recruited	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.9	1.7	4.6	4.8

Source: Russtat 1997 and 2002

[51] The figure of 250,000 persons is an estimate from the Department for External migration at the Ministry of Labour and Social Protection. The figure of 800,000 is from the Security Council under the President.

In 2001, net remittances amounted to around 4.5% of GDP, rising to 6% of GDP by 2003. Gross remittances made up 11% of GDP in 2003. Taking into account the likely size of remittances which are unrecorded, the IMF (2005b) estimates that remittances varied between US$433 million and US$1 billion in 2004 (or between 21% and 50% of GDP), around 92.3% of which came from Russia.

A3.7 Summary

The evidence presented in this Annex suggests the following conclusions about the evolution of Russia's influence on Tajikistan's economic performance. First, perhaps Russia's most significant influence occurred as a result of the break-up of the command economy, as subsidies and finance were withdrawn and traditional linkages with Soviet-related trade and manufacturing unwound. This caused a prolonged period of economic contraction in Tajikistan at the outset of the transition, exacerbated by the civil war in the early 1990s.

Second, 'Russia's influence' is still strongly felt in the export sector. Soviet-inherited commodity specialisation (aluminium and cotton) continues to be the backbone of Tajik exports, and there is continued dependence on CIS export partners. Tajikistan's main import partners also continue to be concentrated in the CIS, particularly for electricity, gas and petroleum products. Uzbekistan remains the sole supplier of electricity and natural gas to Tajikistan, with the potential to disrupt economic development through volatility of energy import pricing and supply.

Third, Russia retains the highest proportion of Tajikistan's outstanding external debt. Although Tajikistan's debt indicators have improved since the late 1990s, the remaining stock of debt to Russia could present future problems, particularly if the pressure to repay Russian debt intensifies whilst the factors affecting the overall sustainability of debt deteriorate.

Fourth, economic migration and remittances are emerging as key economic linkages between Russia and Tajikistan. Although official statistics on the size of remittances are not complete, the various estimates suggest that remittances, the bulk of which come from economic migrants in Russia, could be a significant future factor in Tajikistan's growth.

Annex 4: Armenia

A4.1 Overview

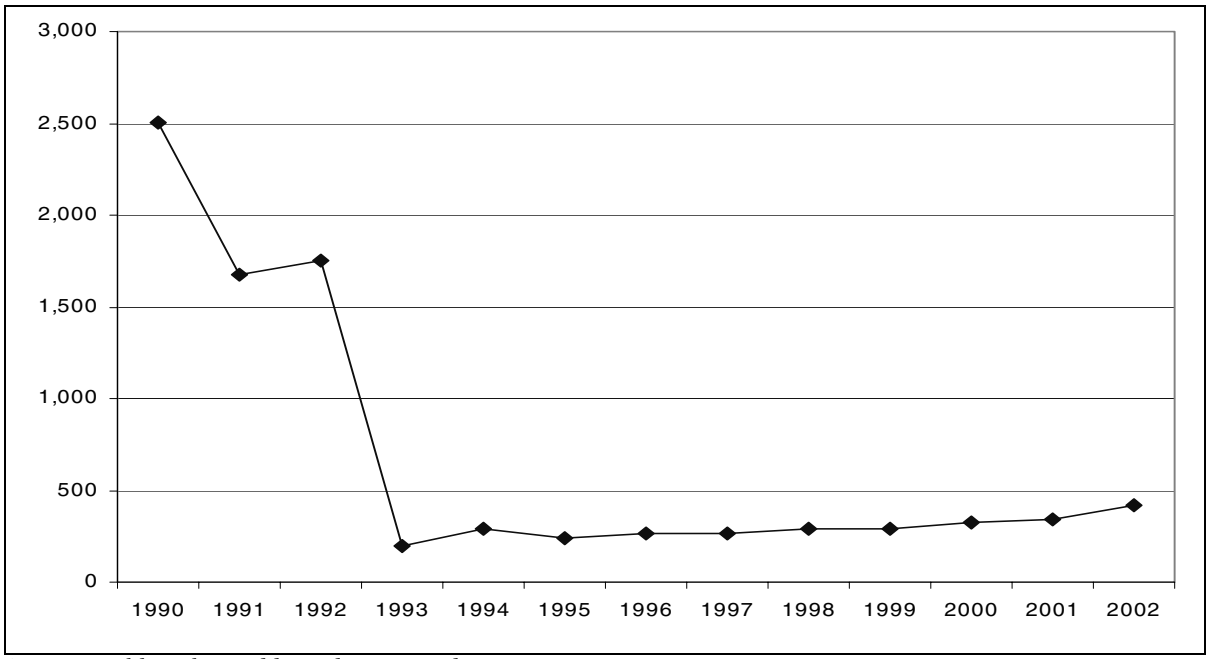
In 1992, Armenia had the lowest GNI per capita (US$ 300) and suffered one of the strongest economic contractions (with GDP declining by over 40%) of the case-study countries. However, steady economic recovery and output growth since that time has brought Armenia into the middle-income country classification in 2003, with a GNI per capita of US$950. In 2003, its GDP growth rate was the highest of all the case-study countries, at 31.91%. GDP at 1995$, on the other hand, has remained sluggish, rising only slowly since 1993.

Armenia's relatively strong economic performance since transition occurred despite a range of political conflicts on its borders following the break-up of the Soviet Union, which resulted in internal disruption and border closures. A decade-old dispute between Armenia and Azerbaijan over the Nagorny Karabakh region led to conflict between the two countries and continuing border closures (despite the 1994 armistice). Strained relationships with Turkey have also led to the closure of the Turkish-Armenian border, with trade taking an alternative route via Georgia. The difficult socio-economic situation in Armenia stemming from conflict also led to a mass exodus of migrants to neighbouring countries and beyond. The Armenian Diaspora currently numbers 5.5 million, around one and a half times the size of the national population.

A4.2 The impact of the break-up of the Soviet system

Armenia's early transition period involved a sharp contraction in GFCF from 44.32% of GDP in 1990 to 12.46% in 1993. Since then, GFCF has fluctuated between 15% and 20%. GFCF in 1995$ is presented in Fig. A4.1.

Fig. A4.1 Armenia: GFCF (1995 US$m.)



Source: World Bank, *World Development Indicators*

How did the factors driving investment decline at the start of the transition period affect Armenia?

- The level of dependence on Russia for investment increased immediately prior to the early transition phase as a result of the earthquake in 1989, when fiscal transfers from the Union budget reached around 23.3% of GNP. The cut-off of fiscal transfers from Moscow therefore dealt a severe blow to the economy, leading to a rise in the fiscal deficit to accommodate Armenia's previously expansionary fiscal policy and low revenue base.[52] The general government deficit[53] rose to -54.7% of GDP in 1993 from -1.9% in 1991. This led to an urgent restructuring of public expenditure, including subsidies to enterprises. In 1993, public expenditures and net lending constituted 85% of GDP, of which 16.7% was subsidies. By 1995, expenditures and net lending had fallen to 29.8% of GDP, of which 0.9% was subsidy to enterprise, reflecting across-the-board cuts and privatisation.

- The collapse of the regional trade and payments system, coupled with regional tensions and trade blockades, dealt a severe blow to the economy, including obstacles to cross-border trade (particularly with Azerbaijan and Turkey). Exports at constant prices plummeted between 1991 and 1995 to around only one-seventh of their value prior to transition. There were also substantial terms-of-trade shocks. Tarr (1993) estimates the implicit transfer in trade pricing distortions for Armenia prior to the economic transition at 11.1% of GDP, whilst Orlowski (1997) estimates 9.2% of GDP on the basis of Armenia's trading patterns during the CMEA.[54]

- Inflation rates rose significantly in the early transition period. Annual average consumer price inflation rose from 3,500% in 1993 to 5.273% in 1994, creating significant uncertainty in the investment climate. Consumer price inflation declined subsequently in 1995 to 176.7% as a result of the stabilisation policies. Linked to this, savings rates fell from 35.82% of GDP in 1990 to around –20% of GDP in 1995, as dis-saving occurred in order to cope with high levels of inflation and to cushion the impact of economic transition.

The ceasefire in 1994 enabled the government to focus on macroeconomic stabilisation between 1994 and 1996, underpinning the stabilisation of investment rates. This period of stabilisation involved tightening fiscal and monetary policies and instituting broader structural reforms. The budget (accrual) deficit declined from 56.1% of GDP in 1993 to 8.6% of GDP in 1996, mainly as a result of across-the-board expenditure cuts and a decline in defence-related expenditure. In 1996, the share of current and capital expenditures in GDP stood at one-third and one-quarter of their 1993 levels respectively. This process of stabilisation also involved a change in the composition of budget financing. In 1993, domestic revenues amounted to 33.6% of GDP, whilst external financing was 20.7% of GDP. By 1996, these figures had fallen to 2.8% and 6.5% of GDP respectively (IMF, 1998a). In parallel, foreign grants fell from 12% of GDP in 1994 to 4% of GDP by 1995.

The period of stabilisation also saw a major restructuring of the former state-owned banks in 1996. Armenia inherited all five state-owned banks operating on its territory before the break-up of the Soviet Union.[55] Although all these banks (except Sberbank[56]) became incorporated as joint stock companies in 1992, the majority of their shares remained in the

[52] Between 1990 and 1995, revenues decreased from 28.9% of GDP to 19.9%.
[53] Consolidated accounts of the central government and the municipal authorities.
[54] Statistics taken from Åslund (2001).
[55] These included the specialised banks for Industry and Reconstruction, Agriculture, Export and Imports, Econombank and the state savings bank.
[56] Sberbank was established as the Savings Bank of the Russian Federation in 1841.

hands of the state or were sold to state-owned enterprises and thus indirectly controlled by the state. In 1993, the state owned banks still accounted for more than 70% of the banking system's balance sheet figures, although they remained unprofitable and weak. Hence, a major restructuring of the former state banks was initiated in 1996 to enable the banking sector to support the transition to a market economy.

A4.3 Foreign direct investment

Shiells (2003) notes that Armenia has been one of the most successful of the 'reforming energy importers' of the CIS in attracting FDI inflows during the transition period. FDI inflows climbed from 0.1% of GDP in 1993 to 1.7% of GDP in 1995 and to 11.7% of GDP in 1998. Between 1998 and 2001, they were nearly 7% of GDP on average. This suggests that FDI played an important role in filling the gap between domestic savings and the investment rate observed during the end of the 1990s.

The main sectors receiving FDI since 1889 were energy, telecommunications and food, with the principal sources of FDI being Russia, Greece, the United States and France. In 2001, 41% of total Russian FDI flows to the CIS were to Armenia alone (around US$127 million). Russia's investments have been strategically oriented towards the energy sector. In 1998, Gazprom acquired shares in an Armenian gas company Armgas. In 2002, the Armenian and Russian governments agreed a debt/equity swap involving the cancellation of US$94 million in debt for 100% of the equity in the Hrazdan thermal power plant, the Mars control systems plant and three research institutes (Shiells, 2003).

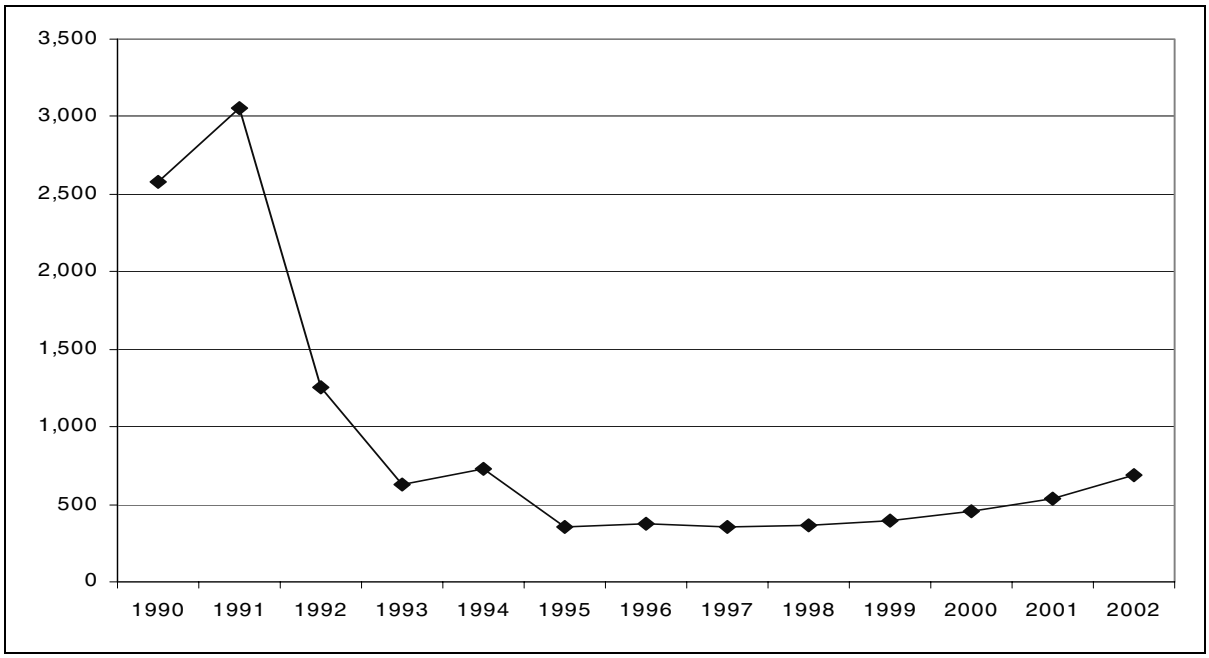
A4.4 Export performance

Armenia traditionally had an open economy, with trade as a percentage of GDP rising to over 110% in the early part of the 1990s and settling at around 75-80% for the remainder of the transition period.[57] Armenia's export performance, although strong between 1993 and 1995, suffered a period of contraction between 1995 and 1998. Since 1999, exports have increased markedly, with the most significant increase being between 2002 and 2003 (an increase of over 63% year on year). Export volume, on the other hand, saw a significant decline between 1990 and 1995 with only a sluggish rise thereafter (Fig. A4.2), suggesting that export prices have been a supporting factor in Armenia's export performance.

What were the factors driving Armenia's export performance and what was Russia's contribution? First, the decline in exports to traditional partners, particularly Russia and Turkmenistan,[58] explains much of the contraction in exports between 1995 and 1998 (Fig. A4.3). This decline reflects a loss in market share to those traditional export partners and a focus on penetrating new markets. From 1996 onwards, the contraction in exports to the traditional CIS partners began to be offset by rising exports to industrial countries, particularly the EU hub and the Middle East (notably Iran), with particularly strong shifts between 2000 and 2003.

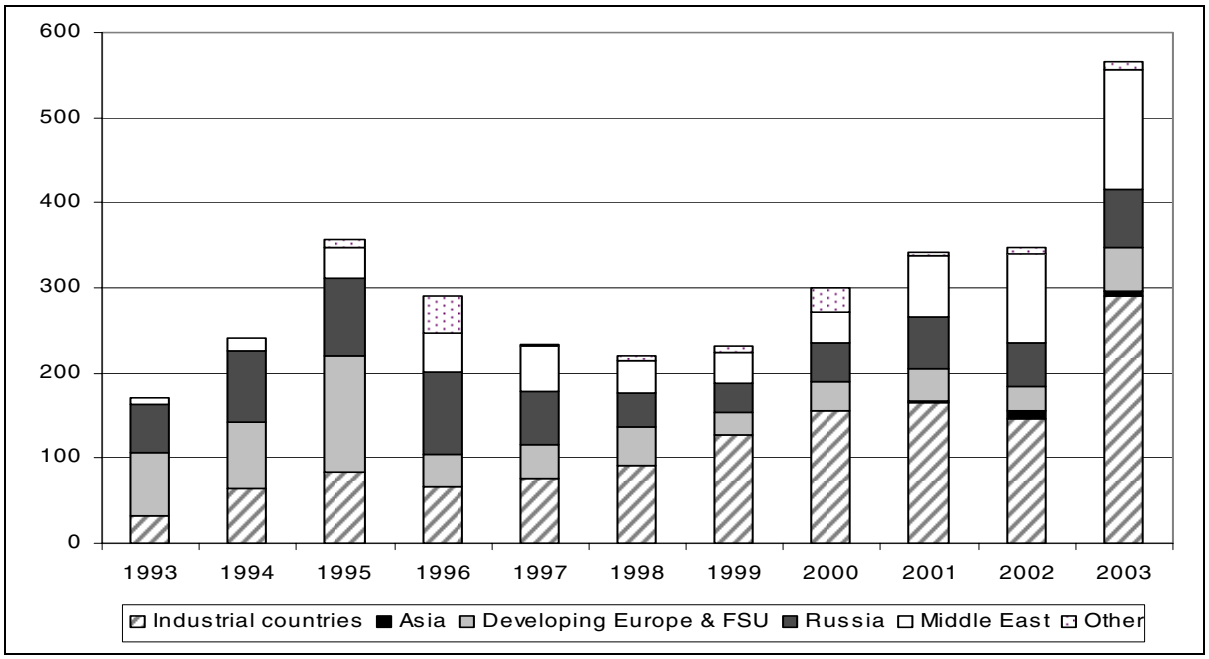
[57] Armenia's trading regime is considered to be fairly liberal, with a low uniform tariff and avoidance of restrictions on imports and exports.
[58] Exports to Turkmenistan make up the largest share of exports to the FSU/developing Europe group.

Fig. A4.2 Armenia: Exports of goods and services (constant 1995 US$m.)



Source: ibid.

Fig. A4.3 Armenia: Exports of goods and services (US$m. current prices)



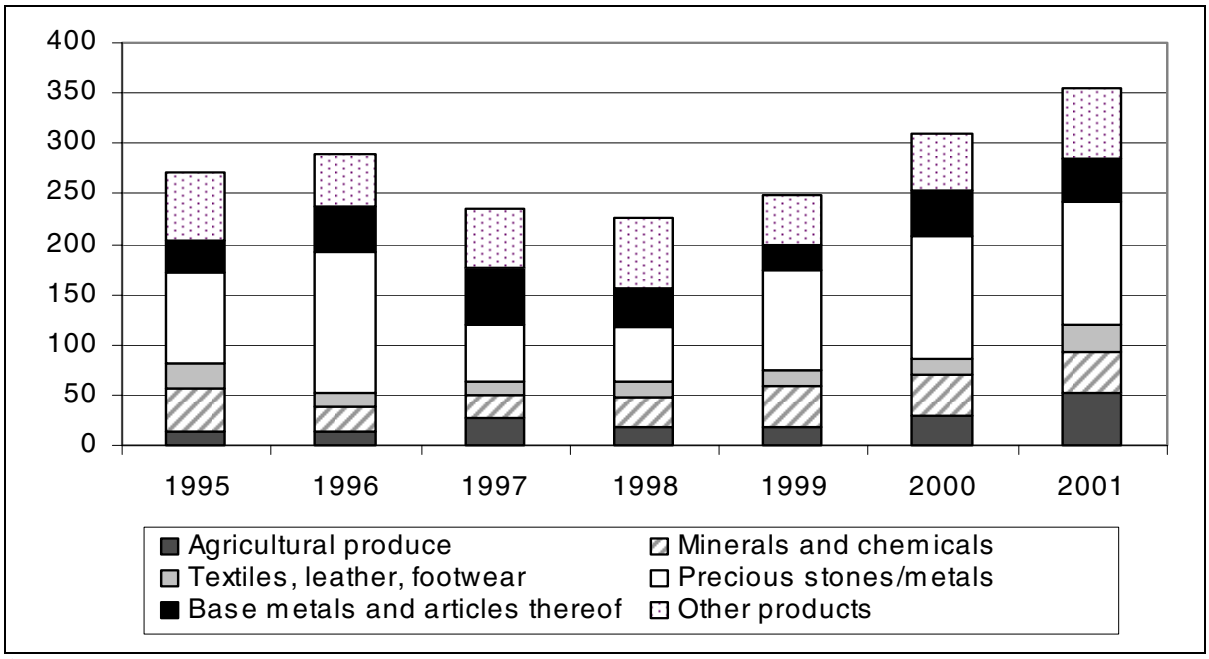
Source: IMF, *Direction of Trade Statistics*

Second, changes in the commodity concentration of trade explain much of the progress in diversification (Fig. A4.4). Armenia's increasing presence in the EU reflects a focus on the diamond processing industry[59] (with high import content), whilst Iran buys scrap metal, copper concentrates and electric power (on a swap basis). Exports to Russia and the CIS, on

[59] The decline in diamond exports in 1997 reflects the loss of the Shugakan (Armenia's diamond polishing enterprise) supply contract with de Beers, following a dispute over the processing and marketing of diamonds obtained elsewhere.

the other hand, mainly comprise machinery equipment, food products, textiles, chemicals, industrial components and non-precious metals.

Fig. A4.4 Armenia: Commodity concentration of exports (US$m. current prices)



Source: IMF 2002

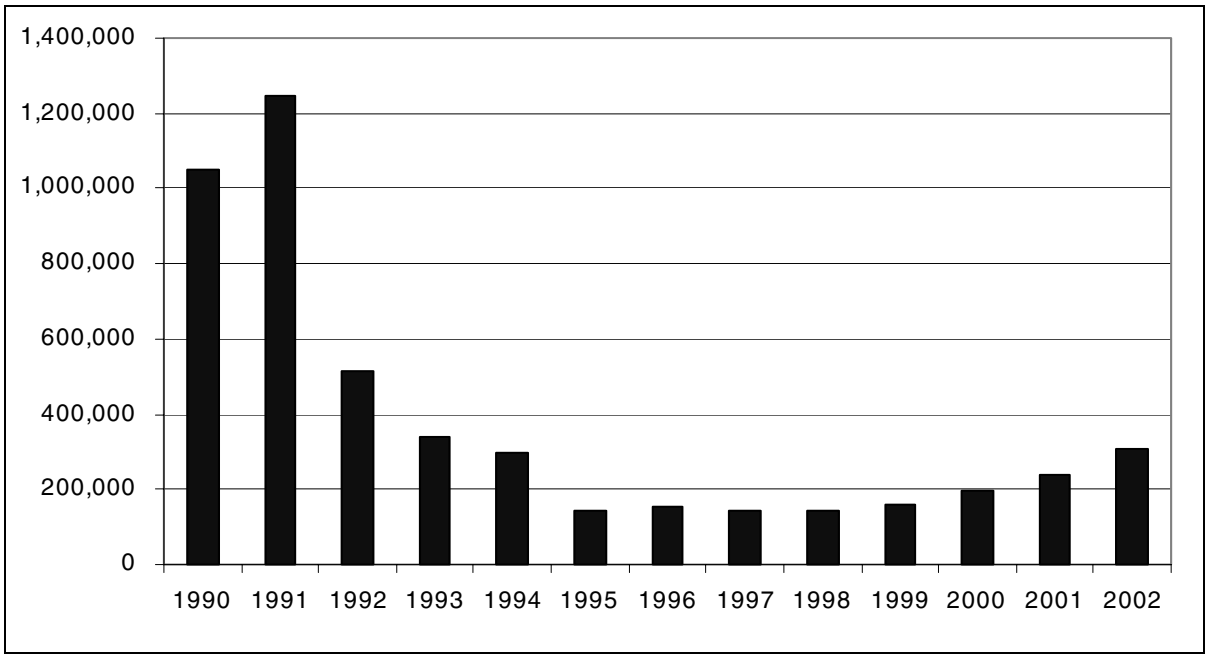
Third, and partly related to diversification patterns, Polyakov (2004) attributes some of the disruption in FSU trade between 1995 and 1998 to regional tensions, which have constrained regional trade and obstructed trade flows to non-FSU destinations. Armenia is the most geographically isolated country of the South Caucasus and has also suffered most from regional blockades. Partly as a result of this, Armenia's freight factor (the ratio of freight costs to the value of merchandise) was the highest of the countries in the South Caucasus, around 12% in 1995 and 10% in 1998.[60] However, the easing of blockades over the last five years, particularly with stability in Georgia and increased co-operation with Iran as a trade route, has reduced the cost of transport and facilitated trade to the EU and the Middle East.

A4.5 Terms of trade

Armenia's terms-of-trade changes are shown in Fig. A4.5. A strong and negative terms-of-trade shock is apparent in the early stages of transition. Since 1998, there appears to be a slight improvement in the terms of trade, albeit at a slow rate.

[60] Other contributing factors include the high cost of transporting goods due to inefficient transport systems.

Fig. A4.5 Armenia: Terms of trade (constant LCU, millions)



Source: World Bank, *World Development Indicators*

A4.6 Net resource flows and external debt

Fig. A4.6 shows both short- and long-term net resource flows between 1993 and 2003. In 1993 and 1994 non-concessional flows from bilateral (mainly Russia) and multilateral providers played a key role in cushioning the economic decline. Following the ceasefire, economic recovery began in 1994 and appears to be supported by a significant injection of multilateral concessional finance, which remained by far the highest inflow throughout the recovery period.

Armenia's indebtedness rose rapidly from US$200 million at the end of 1994 to over US$1182.9 million in 2004.[61] A breakdown of external debt is presented in Table A4.1, illustrating the proportion of debt to Russia compared with other external creditors. By the end of 2001, Russia held 11% of Armenia's total debt, whereas the World Bank and IMF held 48% and 19% respectively. The high proportion of concessional debt suggests a lower debt burden compared with its face value. By the end of 2001, the present value of debt was US$587 million, around two-thirds of the nominal total. The World Bank held 36% of the debt in present value terms, whereas the IMF held 25% and Russia held 16%.

Armenia remains current in its obligations to multilateral and bilateral creditors, and debt relief granted by official creditors (crucially Russia[62]) has played a key role in reducing the debt burden. By 2001, bilateral debt-service payments as a percentage of exports had declined to around 5% in comparison with around 20% in 1995, and around 8% of exports on multilateral debt. In 2004, the IMF concluded that, despite high risks to Armenia's growth (from export commodity concentration), further debt relief seemed unnecessary for Armenia.

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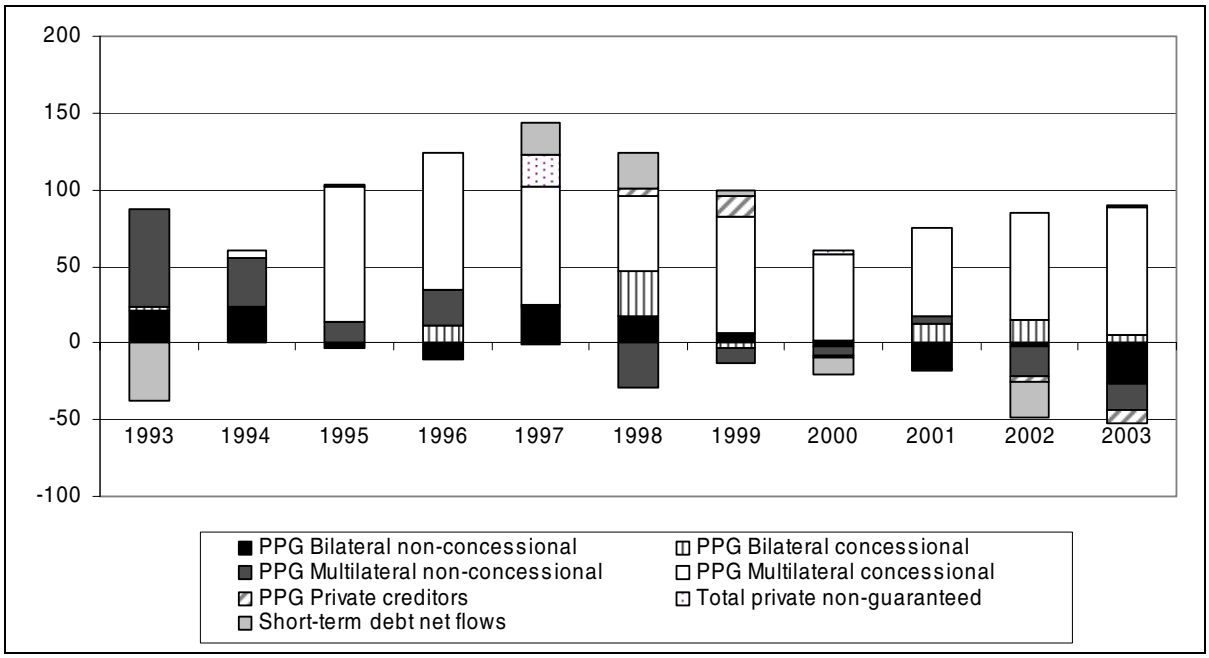
[61] Ministry of Finance and Economy, Armenia.

[62] In 1997, a debt-restructuring agreement was concluded with Russia on loans contracted in 1993 and 1994, with outstanding balances amounting to US$73.7 million and interest rates ranging from zero to libor plus one. The outstanding amount was converted into a new loan with a maturity of 10 ½ years and a fixed interest of 5%.

Fig. A4.6 Armenia: Long- and short-term net resources flows on external debt (US$m.)



Source: GDF

Table A4.1 Armenia: Public sector nominal debt (US$m.)

	1995	1996	1997	1998	1999	2000	2001
Total nominal debt	382	568	700	787	855	862	905
Multilaterals	291	426	500	578	642	647	683
World Bank	99	191	267	309	363	397	438
IMF	70	117	134	189	201	175	173
Bilateral	87	121	153	169	178	193	194
Russia	**87**	**74**	**92**	**98**	**109**	**115**	**99**
USA	0	14	29	44	50	57	64
Commercial credits	4	21	47	39	34	22	28

Source: IMF 2002

A4.7 Migration and remittances

The difficult socio-economic situation in Armenia as a result of regional tension and conflict continued to generate mass emigration, mainly for labour purposes. According to the World Bank (2005b), the proportion of population decline in Armenia between 1989 and 2004 attributed to out-migration is -18.4%. Over 125,000 migrated to Russia; however, this was offset by an inflow of over 60,000 from Azerbaijan and 10,000 and Georgia. The Armenian Diaspora is currently around 5.5 million (one and a half times Armenia's population). Roughly half are settled in ECA and the Baltic states, while the rest live in the United States (1.2 million), France (450,000), the Middle East, Turkey and Iran (472,000), Argentina (130,000) and Poland (100,000).

Russtat figures suggest that migration flows to Russia have generally declined during the 1990s. Table A4.2 shows total migration from Armenia since 1992, recorded by the Federal Service of State Statistics, together with the numbers of Armenian citizens recruited to work in Russia. These statistics seem to represent a peak in migration from Armenia to Russia in 1994 (when the ceasefire was agreed), followed by a consistent decline since then. Armenians recruited to work in Russia, on the other hand, have doubled since 2000.

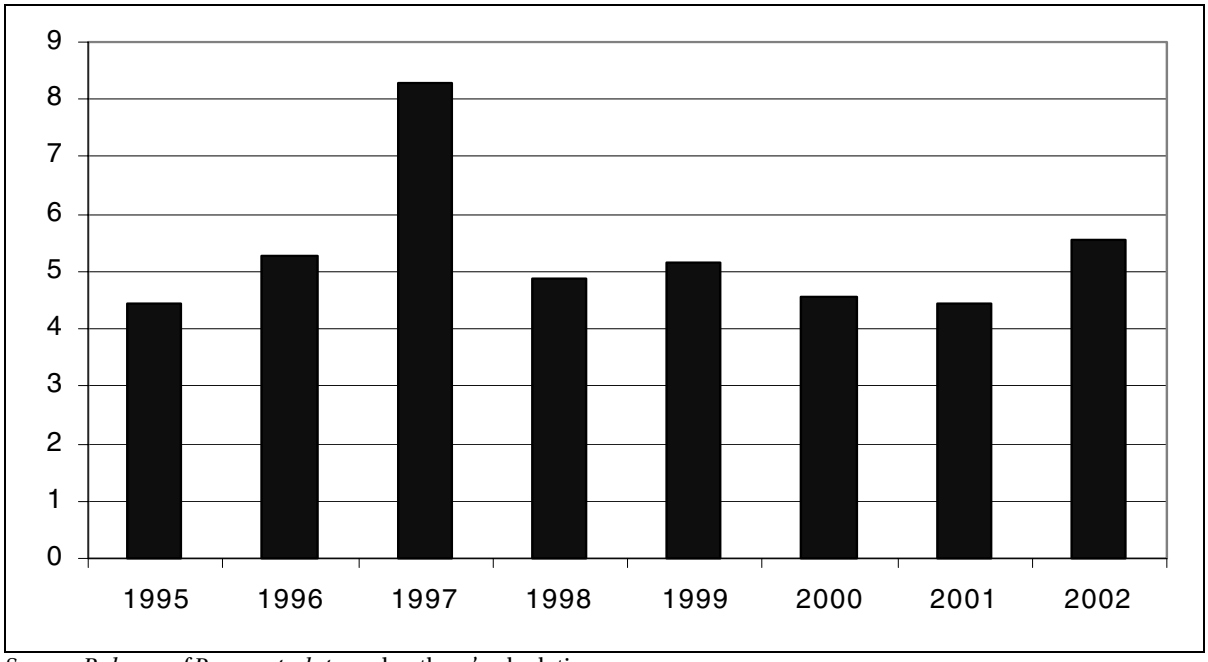
Table A4.2 Armenia: Migration to and numbers recruited to work in Russia (thousands)

	1992	1993	1994	1995	1996	1997	1999	2000	2001	2002	2003
Armenian arrivals in Russia	15.8	29.8	46.5	4.1	25.4	19.1	14.7	16.0	5.8	6.8	5.1
Recruited	n/a	n/a	n/a	6.1	n/a	n/a	n/a	5.5	8.5	13.6	10.0

Source: Russtat

Despite the high proportion of Armenians living and working overseas, and the increased number recruited to work in Russia since 2000, remittances as a proportion of GDP appear to have only slightly increased since 1995 (Fig. A4.7).

Fig. A4.7 Armenia: Workers remittances (% GDP)



Source: *Balance of Payments data* and authors' calculations

A4.8 Conclusions

The evidence presented in this Annex suggests the following conclusions about Russia's impact on Armenia's economic performance. First, Russia's influence is perhaps most intensely defined by the break-up of the command economy, which affected investment levels, export volumes and the terms of trade. However, Russia's influence via all these channels has decreased over the transition period as a result of export diversification and the inflow of external finance from non-Russian sources. Regional tension had an important effect on economic performance during the early transition phase, particularly as a result of regional trade blockades.

Second, multilateral concessional finance has been the key source of external finance since 1995, reducing Armenia's dependence on fiscal transfers from Moscow. Although Russia remains the key bilateral creditor, there appears to be no suggestion that the terms and volume of this debt have had a detrimental effect on Armenia's economic development. Armenia remains current on its debt obligations, and its debt burden has not translated into net negative flows or transfers on debt.

Finally, despite the size of the Armenian Diaspora, it appears that the significance of remittances in GDP has declined since 1995. Remittances from Russia make up around 80% of the total recorded remittances. FDI inflows from the Armenian Diaspora are also understood to be an important source of external finance for Armenia, although the proportion of FDI inflows attributable to Armenians living in Russia appears to have not been calculated.

Annex 5: Georgia

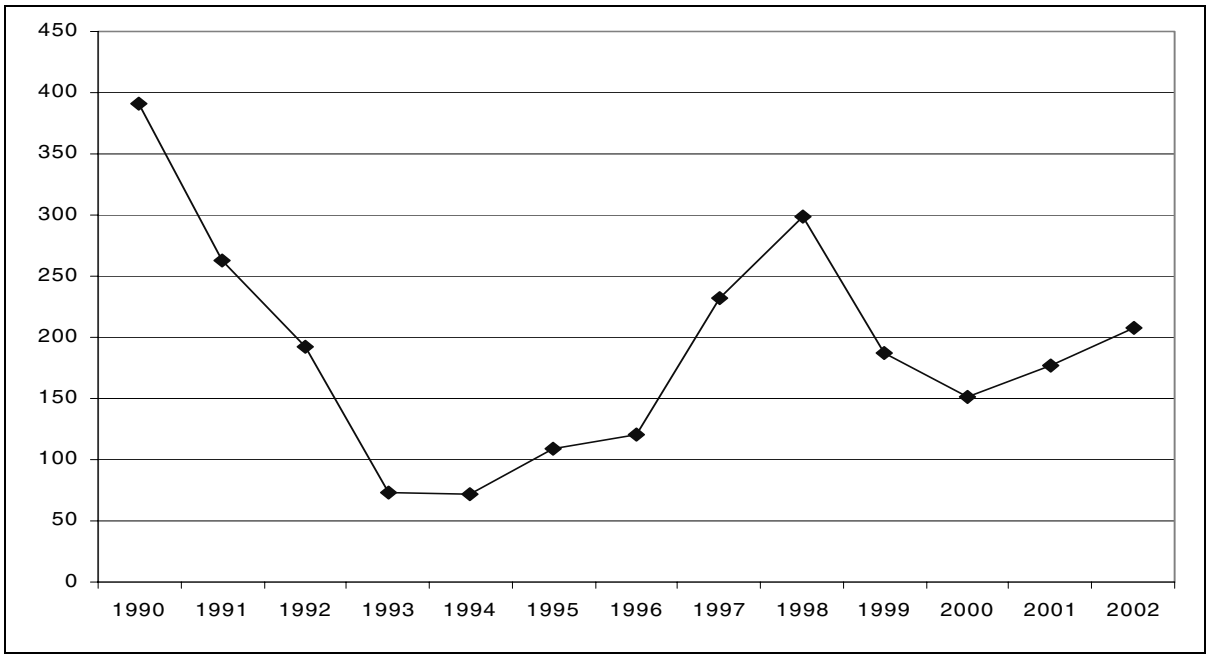
A5.1 Overview

Georgia inherited an economy that was tightly linked to the CIS, including for energy, production and trade. At the outset of the transition, Georgia experienced the severest economic contraction of all the case-study countries (GDP fell by 44.9% in 1992) and unparalleled hyperinflation causing extensive currency substitution and a detrimental impact on public finances and the banking system. This was compounded by internal civil conflict, regional tensions and trade blockades during the early 1990s. The extent of output decline in the early 1990s was unprecedented amongst transition economies. Despite these events, the government's stabilisation programme introduced in 1994 succeeded relatively quickly in halting the economic decline, and by 1995 Georgia was recording positive growth. In 2003, it was clearly on the path towards achieving middle-income country status, with GNI per capita of US$770.

A5.2 Investment decline and economic contraction

The decline in GFCF as a percentage of GDP was the most substantial of all the case-study countries, falling from 23.38% of GDP in 1990 to 2.65% of GDP in 1994. However, investment rates rose steadily from 1994 to 21.86% of GDP by 1999, supporting a period of economic recovery. The proportion of investment in GDP then fell thereafter. GFCF in 1995$ is shown in Fig. A5.1.

Fig. A5.1 Georgia: GFCF (1995 US$m.)



Source: IMF, *International Finance Statistics*

How did the factors driving investment decline at the start of the transition period affect Georgia?

- Georgia entered a period of civil conflict and political turmoil following independence from the Soviet Union in 1991. This presented a significant shock to the economy, disrupting both internal resource mobilisation and regional trade.

- The cut-off of fiscal transfers from Moscow led to a decline in the resource base for public investment in enterprise. Prior to the break-up of the command economy, Georgia received around 2% of its GNP from the Central Union budget (around 6.1% of Georgia's revenue). The loss of these transfers led to a decline in domestic resources available for public investment. On top of this, the revenue base from domestic taxes suffered as a result of output contraction (dropping from 22% of GDP in 1991 to 2% in 1993). As a result, the general government balance[63] fell from -3% of GDP in 1991 to -26.2% in 1993. Expenditures and net lending reduced from 35.9% of GDP in 1993 to 24.3% in 1994 and 12.3% in 1995.

- Georgia's hyperinflation was the most severe of the case-study countries. Consumer prices increased year on year by 887% in 1992, 3,125% in 1993, and 15,606% in 1994, eroding the value of public finances and incomes. The rate of dis-saving in Georgia in 1994 was the highest of all the transition countries (-48.71% of GDP). These factors brought Georgia to a situation of near economic collapse in 1994, evident in the dramatic decline in output and investment during the early transition phase.

- Georgia inherited an economy that was highly vulnerable to shocks in the trade and payments arrangements of the FSU, being highly integrated into production, energy consumption[64] and trade with other FSU countries, particularly Russia. The collapse of the regional trade and payments system and transition to world prices led to a terms-of-trade shock, largely as the result of a rise in the price of energy imports, gas and refined oil products between 1992 and 1996.[65]

In 1994, the government introduced stabilisation policies followed by structural reforms intended to improve macroeconomic stability and manage the transition from plan to market more effectively. These policies included tight financial policies to bring down inflation, the liberalisation of prices, trade and exchange and a programme of structural reforms,[66] banking sector reforms[67] and privatisation of enterprises, agricultural reforms, and much needed reforms of the power sector. These reform efforts led to an expansion of private sector activity and a reduced role for the public sector. By 1997, over 10,000 enterprises had been privatised and agricultural reforms were also well under way. The budget deficit fell to 7.2% of GDP in 1995, whilst consumer price inflation fell to 163% that year. Domestic revenue also picked up from 2.3% of GDP in 1993 to 8.1% in 1996. These factors enabled investment rates to recover and stabilise between 1994 and 1998.

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[63] Includes state, municipalities and extra-budgetary funds.
[64] Imports of energy accounted for almost 80% of total available resources in 1990, and this proportion rose in 1991 and 1992 as domestic production contracted (IMF, 1998a).
[65] Gas (US$/1,000m^3) rose from 16.1 in 1992 to 80 in 1995. Refined oil products (US$/ton) rose from 3.6 in 1992 to 206.3 in 1995.
[66] The stabilisation programme comprised curtailment of bank financing of the budget deficit, removal of generalised consumer subsidies on bread, electricity and gas consumption, expenditure cuts (including elimination of nearly all budgetary subsidies to state-owned enterprises) and removal of foreign-exchange restrictions.
[67] Georgia inherited a Soviet banking system, including specialised banks for industry, agriculture and savings.

A5.2 Foreign direct investment

Georgia's success in terms of attracting FDI is second to that of Armenia amongst the case-study countries. In 1998, FDI into Georgia reached 7.3% of GDP, helping to fill the gap between domestic dis-saving (-5.6% in 1998) and investment. On average, FDI levels fluctuated between US$80 million and US$320 million between 1997 and 2002, or an average of 4.5% of annual GDP. However, this mainly reflected large oil pipeline construction as well as transactions related to the privatisation of the power sector. In particular, high FDI inflows in 1997 and 1998 were related to the construction of the Baku-Supsa oil pipeline and terminal at Supsa. In the power sector, the sale of a 75% stake in Telasi (the Tbilisi electricity distribution company) to the US firm AES also contributed to the high FDI inflows in 1998. AES also contributed to FDI inflows in 2000 through the purchase of the Gardabani thermal power station.

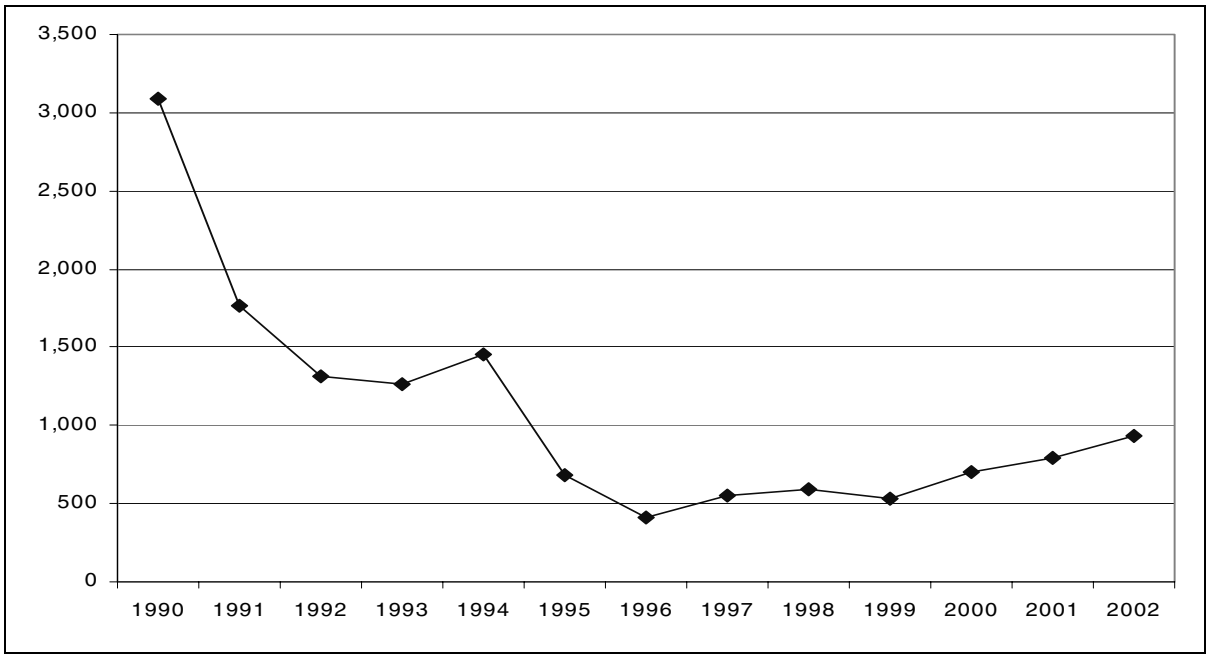
Russian FDI was significant in 1997 (US$16.8 million out of a total US$189.3 million), although it remained below inflows from other key strategic investors such as the US, the UK, Turkey and Bermuda during much of the period. According to Russtat, Russia's FDI has been negligible since 2000. Georgia received 0.1% of Russia's FDI to the FSU in 2000 (US$133,000), 0% in 2001 and 0.2% in 2003 (US$1.2 million). However, since 2000 Russian firms have expanded their ownership of Georgian transmission and distribution networks as well as the main energy consumers (see section A5.5). However, these 'ownership deals' signed by the Shevardnadze government in 2003 for key strategic energy assets may not necessarily show up in the official FDI statistics.

A5.3 Export performance

Export volume fell significantly at the start of the transition period (Fig. A5.2) to around 50% of its pre-transition level by 1994, and then to below one-sixth of its pre-transition level by 1996. Between 1992 and 1996, trade decreased from 101.9% of GDP to 46%, while exports fell from 40% of GDP to 13%. Since 1996, export volumes recovered only gradually. This can probably be attributed to the collapse of the trade and payments system at the start of the 1990s and the onset of civil conflict and regional tensions, together with the imposition of regional trade blockades.

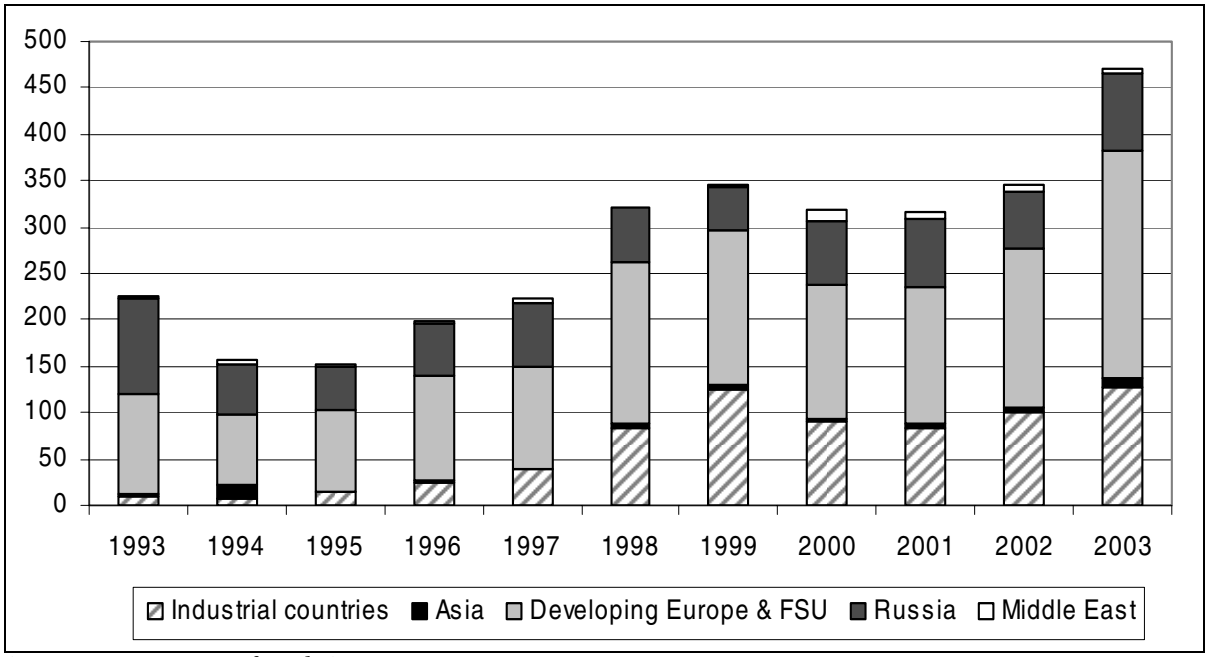
The value of Georgian exports, on the other hand, increased between 1995 and 1999, suggesting that prices may have played a role in the recovery of the export sector (Fig. A5.3). Since 1997, exports to both the FSU and industrial countries (and some small penetration of Middle East and Asian markets) have led the rise in export value. Despite the limited process of diversification, Russia still retains a 17% share in the value of Georgia's exports. Exports to other CIS countries (mainly Turkmenistan, Ukraine and Armenia) remained at least 50% of the total during the 1990s.

Fig. A5.2 Georgia: Exports of goods and services (constant 995 US$m.)



Source: ibid.

Fig. A5.3 Georgia: Exports of goods and services (US$m. current prices)



Source: IMF, *Direction of Trade Statistics*

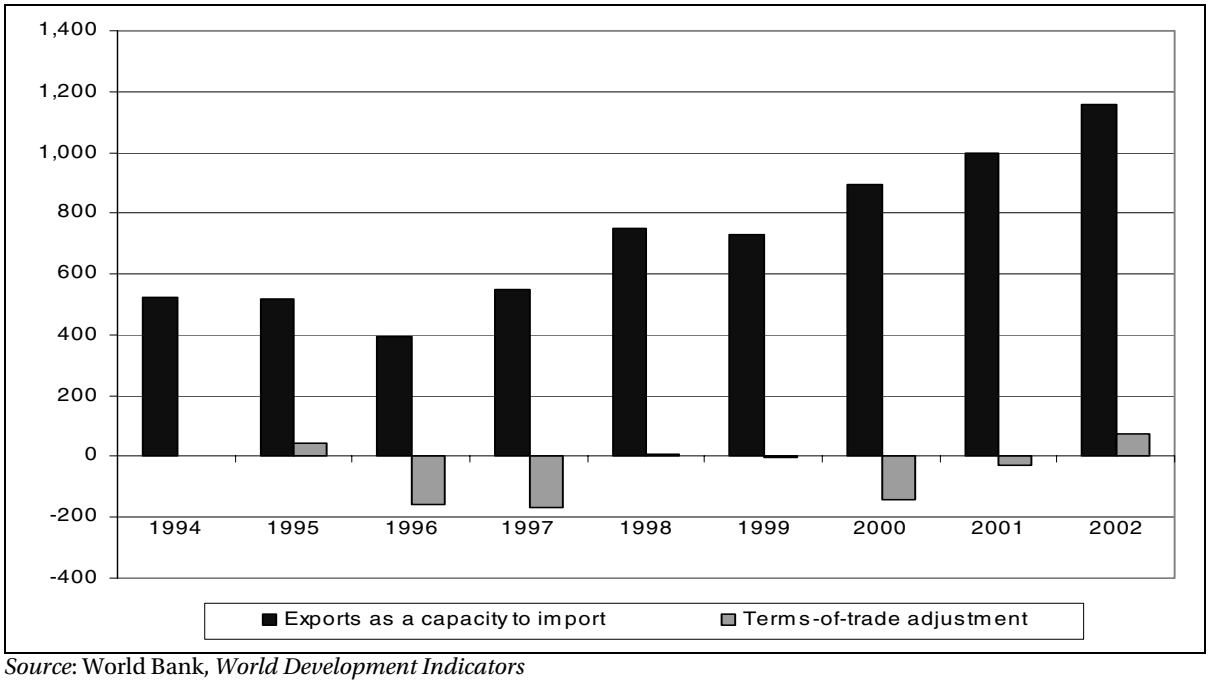
Georgia's exports have not become specialised in a particular commodity pattern to the same extent as the other case-study countries. The main export commodities in 1995 were ferro alloys, followed by oil and oil-related products, tea, fertiliser and citrus fruits. In 2002, the two largest exports were wine (and related products) and scrap metals, which each account for around one-seventh of total exports. Other exports, such as ferro alloys, copper and fertiliser were secondary items. This suggests that Georgia has not specialised in pre-transition production as the basis for export diversification during the 1990s, but has rather focused on moving into new commodity categories such as beverages and metals.

On the one hand, this means that Georgia is not reliant on primary commodities as its main exports and thus avoids some vulnerability to global price fluctuations. However, it also suggests that the absence of specialisation and exploitation of comparative advantage has reduced its ability to penetrate industrial country markets. As a result, Georgia's reliance on the FSU as a key export market is greater than for the other case-study countries.

A5.4 Terms of trade

Fig. A5.4 provides a measure of the terms-of-trade fluctuations between 1994 and 2002. This illustrates the decline in the terms of trade between 1994 and 1996/7, followed by a gradual increase in export capacity. These trends roughly parallel trends in export value, suggesting that prices have played an important role in export performance since 1996.

Fig. A5.4 Georgia: Terms of trade (constant LCU, millions)



Source: World Bank, *World Development Indicators*

A5.5 The energy sector

Georgia's energy sector provides an interesting example of the impact on current growth rates of its Soviet inheritance. The energy sector could become an important source of foreign exchange for the budget (IMF, 2001b). Georgia's geographic location means that it is well placed to become an important player in the transit trade of Caspian Sea oil reserves and the transit of electricity from Russia to Turkey. However, the realisation of the energy sector's potential to support the economy faces a number of challenges.

First, Georgia has encountered many structural problems in reforming its energy sector (electricity, gas and oil). Reforms have proved difficult, given its inheritance of a distorted and low price system following the break-up of the Soviet Union.[68] The energy price shock at

[68] Much of the energy sector consisted of vertically integrated companies, which were part of the FSU's energy sector that offered primary sources of energy at a very low cost.

the outset of transition led to severe cutbacks in domestic consumption of energy. The civil war that followed independence also disrupted the fuel and energy network.

Second, although energy sector reforms have been taken forward (e.g. strengthening the regulatory framework and privatisation), the pace of reform has varied across the sector. There have also been difficulties in achieving cost recovery (particularly in the state-owned elements of the power sector) and the electricity and gas sectors have accumulated significant debt.[69] Power shortages and cuts continue to hamper economic growth.

Third, Georgia's gas transit[70] fees have been low by international standards. However, the transit fees expected from two new pipelines from 2005 onwards should increase government revenue by 1% of GDP per year over the medium term. However, the persistent tendency of payment in kind for the transit of Russian gas to Armenia has posed problems for the efficiency and transparency of Georgia's energy sector (Billmeier et al, 2004).

Fourth, Russia's continued involvement in the Georgia energy sector might be considered to have complicated the reform process and reduced transparency in the sector. Georgia depends on natural gas for around one-third of its total energy consumption and Russian and Turkmen gas accounts for almost the entire supply.[71] During the 1990s, there were two successive takeovers by Russian energy monopolies, mainly occurring as a result of accumulated debts to Russian suppliers,[72] political influence and ownership deals.[73] In addition, in 2003 Gazprom signed a 25-year 'Co-operation Pact' on natural gas with the International Gas Corporation of Georgia. This means that Russian companies own the existing distribution and transmission mechanisms in Georgia, as well as the main gas consumers.[74] Whilst the effect on growth through ownership is not necessarily negative (unless the gas supply is cut off), this means that Russian firms are in a position to influence transit routes and the primary energy supply, thus reducing the transparency of energy sector management and sending negative signals to potential foreign investors in the sector.

A5.6 Net resource flows and external debt

Fig. A5.5 shows both short- and long-term net resource flows between 1992 and 2003. At the start of the transition period (1993-4) the main form of external finance was multilateral and bilateral non-concessional assistance (mainly from Russia). From 1995 to 1999, however, concessional multilateral and bilateral flows were the main forms of assistance, with negative non-concessional bilateral flows from 1998 onwards. Private non-guaranteed lending made up a relatively small proportion of total flows from 1998 onwards.

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[69] In 2000, accumulated debt of the gas sector was US$75 million and US$481 million for the electricity sector.

[70] In addition to maintaining the north-south transit of natural gas from Russia to Armenia, Georgia could create an energy transit corridor through which oil and gas could be transported from the Caspian Sea region to Western markets.

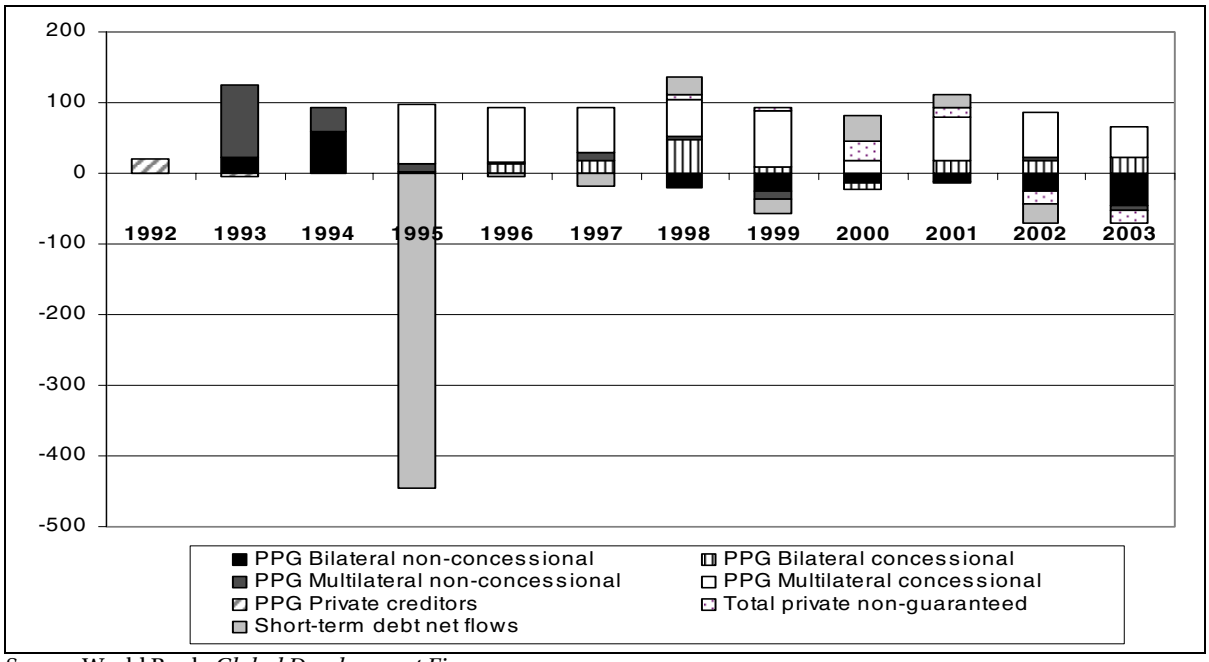
[71] Since 1994, Itera supplied gas to both Georgia and Armenia.

[72] The economic crisis in the early transition period led to an accumulated debt of US$100 million to Itera. The debt issue was cited by the authorities in Moscow when cutting off gas during political tensions with the Georgian authorities (including Georgia's possible withdrawal from the CIS and interest in NATO membership.)

[73] In 2003, Shevardnadze awarded the ownership of the Georgian gas distribution company to Gazprom. It also approved the purchase of Tblisi's distribution company and hydropower generation assets by UES's (a giant Russian electricity firm) from the American company AES (for US$ 83 million.) The new owners of the Georgian power plant signed a supply contract with Gazprom in 2003.

[74] Gazprom now owns the existing distribution and transmission networks in Georgia. The main gas consumers (Gardabani power plant and Azoti fertiliser plant) are owned by UES and Itera respectively.

Fig. A5.5 Georgia: Long- and short-term net resources flows on external debt (US$m.)



Source: World Bank, *Global Development Finance*

A breakdown of external public debt outstanding is given in Table A5.1, showing the proportion of debt to Turkmenistan and Russia as compared with other external creditors. In 1994, bilateral debt to these two countries made up over half of Georgia's outstanding debt. The increase in multilateral flows from 1995 onwards is reflected in the debt outstanding to the multilaterals. In 2002, outstanding debt to Russia was only 8.4% of the total, whereas outstanding debt to Turkmenistan was over 17% of the total. Hence debt to Russia and the FSU has decreased in relative significance over the transition phase, suggesting that concessional resources have played the supportive role in economic recovery. Net flows and net transfers on debt have remained positive during the transition period, turning negative only in 2003, mainly as a result of negative net bilateral non-concessional flows.

Table A5.1 Georgia: Outstanding external public debt, 1994 to 2002 (US$m.)

	1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
Total	1,003.9	1,216.7	1,357.2	1,512.4	1,634.4	1,706.3	1,612.5	1,712.4	1,858.1
PPG	1,003.9	1,216.7	1,357.2	1,512.4	1,629.4	1,676.1	1,509.2	1,654.7	1,776.1
Multilateral	193.2	364.5	520.3	655.5	764.7	829.2	788.7	859.4	942.7
Bilateral	810.7	852.2	836.9	856.9	864.7	846.9	801.4	795.3	833.4
Russia	**156.3**	**167.1**	**175.4**	**179.3**	**179.3**	**179.3**	**156.9**	**156.9**	**156.9**
Turkmenistan[a]	**440.3**	**453.2**	**393.6**	**393.6**	**373.9**	**348.9**	**336.9**	**324.9**	**324.1**
Non-BRO	154.8	167.9	202.4	218.6	246.1	253.2	242.0	248.2	287.8
PNG[b]	0.0	0.0	0.0	0.0	0.0	30.2	22.3	57.7	82.0

Source: IMF
Notes: a) Includes arrears; b) excludes short-term.

A5.7 Economic migration and remittances

According to the World Bank (2005b), total population change in Georgia between 1998 and 2004 attributable to out-migration was -20.4%, or a total of 1.1 million people. Within the period 1990-2 alone, net emigration was 109,600, with a net migration to Russia of 85,200,

13,700 to Azerbaijan and 6,000 to Armenia. According to Russtat, Georgian emigration to Russia declined from 1997 onwards (Table A5.2)

Table A5.2 Georgia: Migration to and numbers recruited to work in Russia (thousands)

	1992	1993	1994	1995	1997	1999	2000	2001	2002	2003
Georgian arrivals in Russia	n/a	n/a	n/a	n/a	24.5	19.6	20.2	9.7	7.1	5.5
Recruited	n/a	n/a	n/a	7.0	n/a	n/a	5.2	4.9	5.8	3.2

Source: Russtat

Remittances peaked around 1998/9 at levels over US$350 million per annum. In 2002-3, however, they were only US$200-250 million. This decline probably reflects the peak in out-migration in the early 1990s as a result of civil conflict, when the sizeable majority of economic migrants left for Russia. However, as with all the case-study countries, the true value of remittances is difficult to quantify as the majority are probably unreported.

A5.8 Summary

The evidence in this Annex suggests the following conclusions about the evolution of Russia's influence on Georgia's growth patterns during the 1990s.

Georgia's early transition period was turbulent, partly as a result of civil conflict and also due to the collapse of the command economy system. Its period of hyperinflation was unprecedented among the transition economies, leading its economy to near collapse in 1994. However, domestic policies and structural reforms have played a positive role since 1994 in enabling the economy to overcome the inherited distortions, suggesting that Russia's influence via this channel has declined.

Georgia's export diversification has been less successful than that of the other case-study countries, mainly because of the lack of specialisation in a particular commodity pattern that might enable it to sell to new markets. As a result, the importance of exports to Russia and the rest of the FSU has intensified rather than declined during the transition period.

Russia's influence via the channel of investment has evolved, and took on new forms during the 1990s. The energy sector is an interesting example. The political economy relationship and covert deals have served to gradually strengthen Russia's hold over the sector. Whilst the immediate impact on Georgia's growth is not evident from the above analysis, such 'channels of influence' have a potential impact on future reforms and the achievement of international standards.

External finance, mainly from bilateral and multilateral concessional sources, has played an important counter-cyclical role during the transition phase. Outstanding debt to Russia has not significantly declined over the transition period, although its proportion of total outstanding debt has reduced. External debt to Turkmenistan, on the other hand, including arrears, has been successfully managed downwards over time.

Annex 6: Ukraine

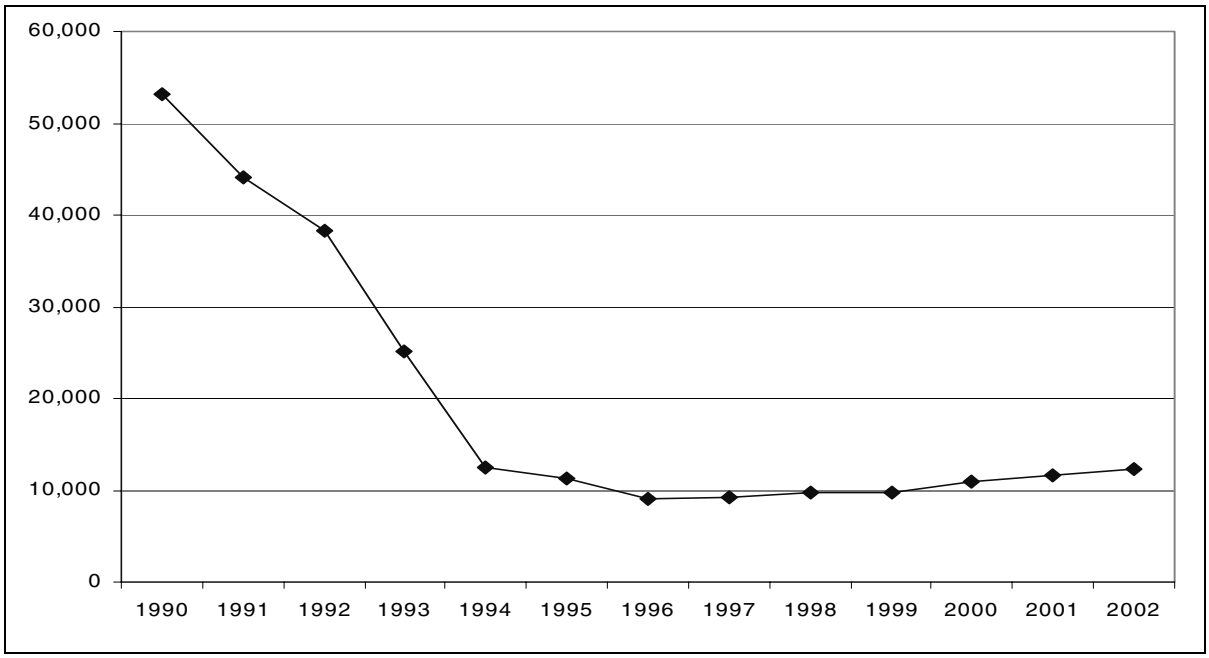
A6.1 Overview

Ukraine emerged from the Soviet era with an economy based on heavy industry and reliant on technology that had been largely superseded in the West. A key development challenge for Ukraine during the transition period was diversification away from the traditional export base, including steel, chemicals, ship-building, coal, machine tools and armaments, which had previously relied heavily on government subsidies. Ukraine's product diversification and structural reforms have been gradual, although export performance has nonetheless been strong in recent years based on a favourable external environment and domestic reforms. In 2004, Ukraine emerged as one of the fastest growing economies of the case-study countries, with a growth rate above 12%. However, there is a question mark over the sustainability of this growth, once the external environment becomes less favourable and if domestic structural and policy reforms do not push ahead.

A6.2 The impact of the break-up of the Soviet system

Domestic investment in Ukraine fell rapidly between 1990 and 1994 and more gradually between 1994 and 1996. In 1996, GFCF (1995$) was less than one-fifth of its pre-transition level (Fig. A6.1). Trends in GFCF (current prices) as a percentage of GDP, on the other hand, do not reflect this rapid decline to the same extent. In 1990, GFCF was 23.04% of GDP and at its lowest point in 1998 it had fallen only marginally to 19.83% of GDP.

Fig. A6.1 Ukraine: GFCF (1995 US$m.)



Source: World Bank, *World Development Indicators*

How did the factors driving investment decline at the start of the transition period affect Ukraine?

- Prior to the break-up of the command economy system, net fiscal transfers from Moscow accounted for only 1.3% of GNP. Although Ukraine received 1.2% of its GNP in transfers from the Union budget, it contributed 0.9% of its GNP. This meant that fiscal transfers did not support Ukraine's budget, and hence investment and net lending, to the same extent as the other case-study countries. Nonetheless, the immediate post-independence period (1990-4) saw a general government deficit[75] of 25.4% of GDP at its peak. This was mainly due to the decline in domestic revenue at the start of the transition period and the rising payments arrears on pensions, wages and other benefits. General government expenditures remained high prior to economic stabilisation (58.4% and 54.5% of GDP in 1991 and 1992 respectively).

- Consumer prices rose by 1,210% (annual average) in 1992 and 4,735% (annual average) in 1993 year as Soviet-style repressed inflation became an open process. Similarly, producer prices rose by 2,384% in 1992 and 4,619% in 1993 (annual average).

- Finally, the banking sector underwent a fairly rapid transition from state dominance prior to transition (when the banking system consisted of Ukrainian branches of Gosbank) to a predominantly private system characterised by low entry cost and limited banking supervision. However, in the immediate transition phase, Ukraine's experience of hyperinflation eroded confidence in the banking sector, leading many to hold savings in the form of cash rather than bank deposits.

The government launched a stabilisation programme in 1994 leading to macroeconomic stability by 1996, when the budget deficit fell to 3.2% of GDP and consumer price inflation to 40%. According to the IMF (1999a), fiscal stabilisation was achieved largely on the basis of a reduction in expenditure (partly reflecting the withdrawal of government from financing agriculture, the replacement of budget subsidies to the coal industry by a system of intra-industry transfers, and the curtailment of budget lending). Other stabilisation measures included a strict wage policy in the budgetary sphere, cash limits in other areas and an increase in public utility charges, housing rents and household energy prices to in order to contain subsidies. Structural reforms included the removal of administrative controls and the provision of incentives for enterprises to innovate, enter new markets and reduce costs. The plan also included a programme to privatise around 1,000 medium and large-scale enterprises in 1995 and a further 3,260 in 1996. Finally, reforms to the trade system were intended to remove all impediments to the promotion of exports. The successful outcome of the stabilisation plan might partly explain the gradual pick-up in GFCF from 1996 onwards.

Agricultural reform was a key objective of the transition process in Ukraine because of the sector's size and ability to generate private sector activity. The experience provides reasons for the prolonged decline in output and investment throughout the 1990s. Despite some early reforms, the agriculture sector remained a drain on the budget owing to the continuation of agricultural subsidisation via *ad hoc* government schemes. The debts of agricultural enterprises were routinely cancelled or restructured. Inter-enterprise arrears remained larger than in any other sector, including industry, with lenders sometimes being asked to absorb losses. The weak performance of the sector could be traced to the Soviet legacy, in particular the outdated infrastructure geared to the needs of large producers and the dominance of government ownership in processing activities. Moreover, whereas central government made progress in liberalising the agricultural sector during the late 1990s, local governments continued to regulate and interfere with agricultural activities.

[75] General government includes the state, municipalities and extra-budgetary funds, excluding the pension fund from 1994.

A6.3 Foreign direct investment

On the whole, FDI inflows have remained weak in Ukraine. Following macroeconomic stabilisation, inward FDI increased from US$267 million in 1995 to a peak of US$743 million in 1998. The following year it dropped to US$496 million partly as a result of the Russian financial crisis. There was a partial recovery to US$595 million and US$792 million in 2000 and 2001 respectively. However, this only accounted for 2.1% of GDP and 4% of domestic fixed capital investment in 2001 (Shiells, 2003). The five leading investors were the US, Cyprus (probably reflecting Russian investment activity), the UK, the Netherlands and Russia. According to Russtat, Ukraine's proportion of total Russian investment in the CIS was 11.5% in 2000, 2.2% in 2001, 52.7% in 2002 and 47.9% in 2003, peaking in absolute terms that year at nearly US$261 million.

A6.4 Export performance

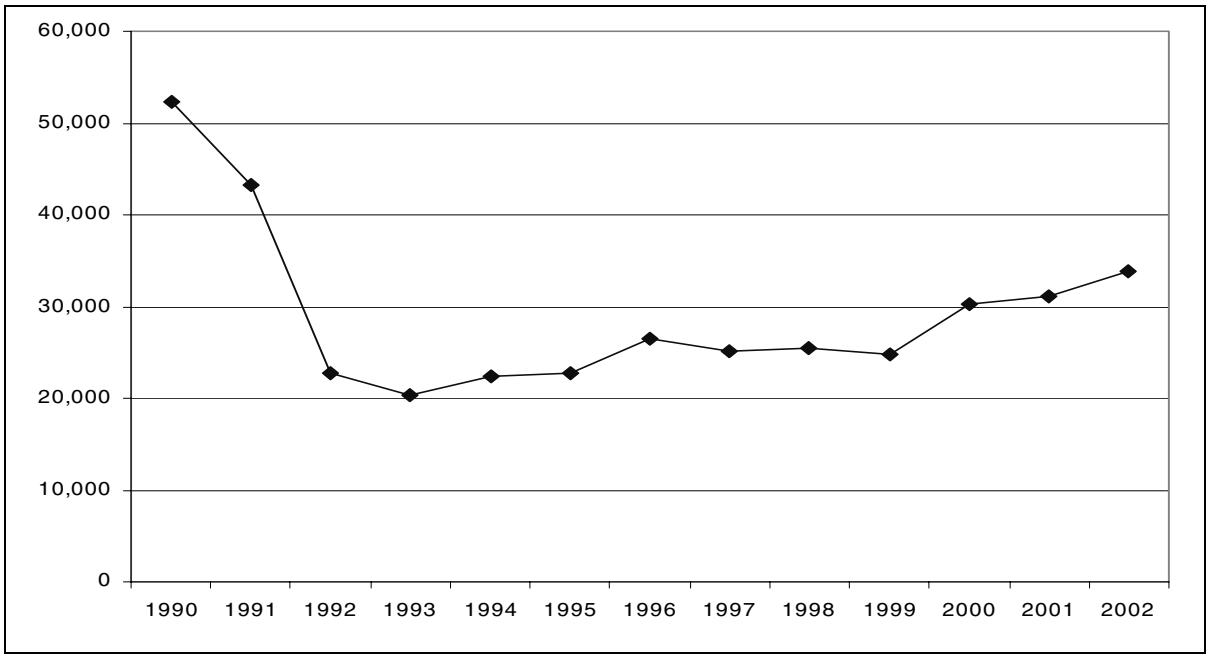
Ukraine had the least open economy of the transition countries at the start of the transition period, with trade accounting for only 46% of GDP in 1992. In contrast to the other case-study countries, trade openness increased consistently during the 1990s to 102% of GDP in 1999 and 108.1% in 2002. Nonetheless, Ukraine was equally tightly bound to the CMEA in terms of its trading partners, with 86% of its exports going to the CMEA in 1990. Hence the impact of the breakdown of the command economy had a strong impact on exports of goods and services (Fig. A6.2). Since 1993, however, Ukraine's export performance has been relatively strong, compared with most other case-study countries, picking up notably since 1999.

The main factor leading to poor export performance both to the CIS and the rest of the world in the early transition phase was the collapse of the trade and payments system. The recovery since 1993 and the strong export performance since 1999 are due to a number of factors. First, during the mid-1990s considerable change took place in the Ukrainian economy, in response to the collapse of the command system, in terms of enterprise restructuring and correction of major 'undershooting' in terms of lost CIS contracts in the early years of transition (World Bank, 2004: 2).

Second, Ukraine used its inherited industrial base to its advantage during the early 1990s. A dominant share of Ukrainian exports is heavily concentrated in a handful of post-Soviet producers (e.g. metallurgy, oil products and chemicals), which have been able to export relatively competitively to non-CIS markets. At the same time, Ukraine has built on some traditional high-value market niches (including arms and nuclear technology) and has also managed to preserve co-operation with Russia.

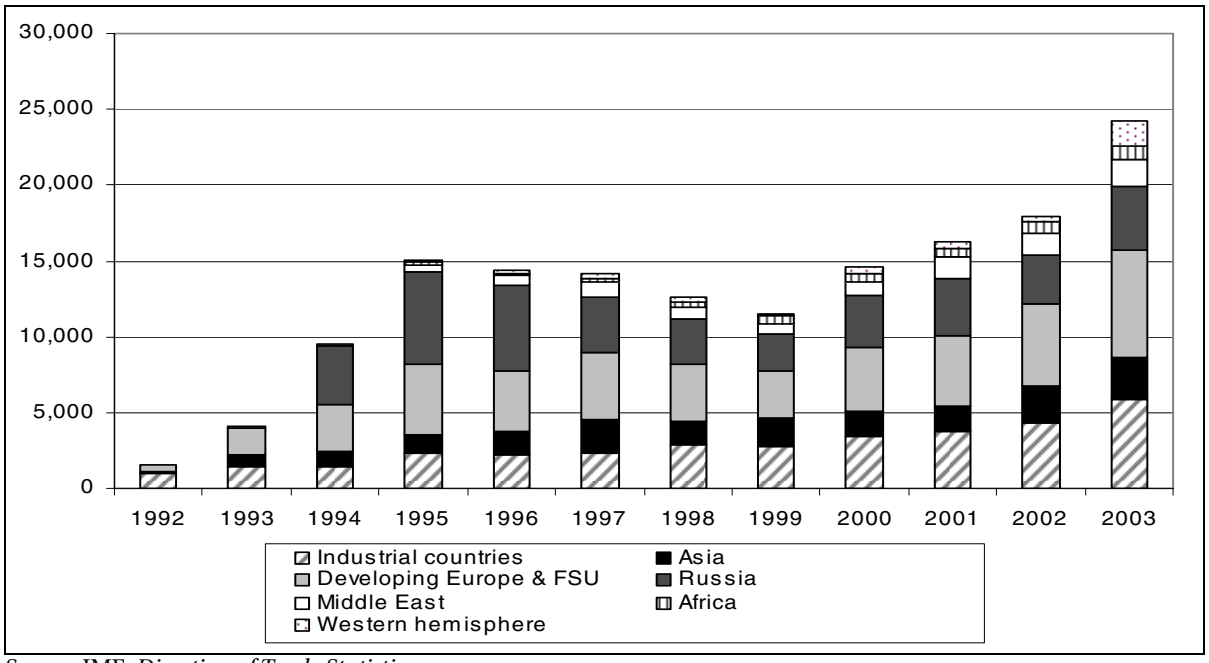
Third, Ukraine underwent a strong diversification process in terms of export partners. Particularly noteworthy is the slow but progressing increase in exports to Asia, the Middle East and the Western hemisphere (Fig. A6.3) as well as to industrial markets (mainly the EU). This process of diversification was probably aided by its location (relative proximity to Western markets) and the relatively strong growth in the non-FSU as compared with FSU export partners. Ukraine also diversified to South-East Asia and Africa in response to the imposition of protectionist measures (anti-dumping duties) by the EU and the US. However, the extent of its trade with Europe still lags behind the new EU member countries, such as Poland and Hungary.

Fig. A6.2 Ukraine: Exports of goods and services (constant 1995 US$m.)



Source: IMF, *International Financial Statistics*

Fig. A6.3 Ukraine: Exports of goods and services (US$m. current prices)



Source: IMF, *Direction of Trade Statistics*

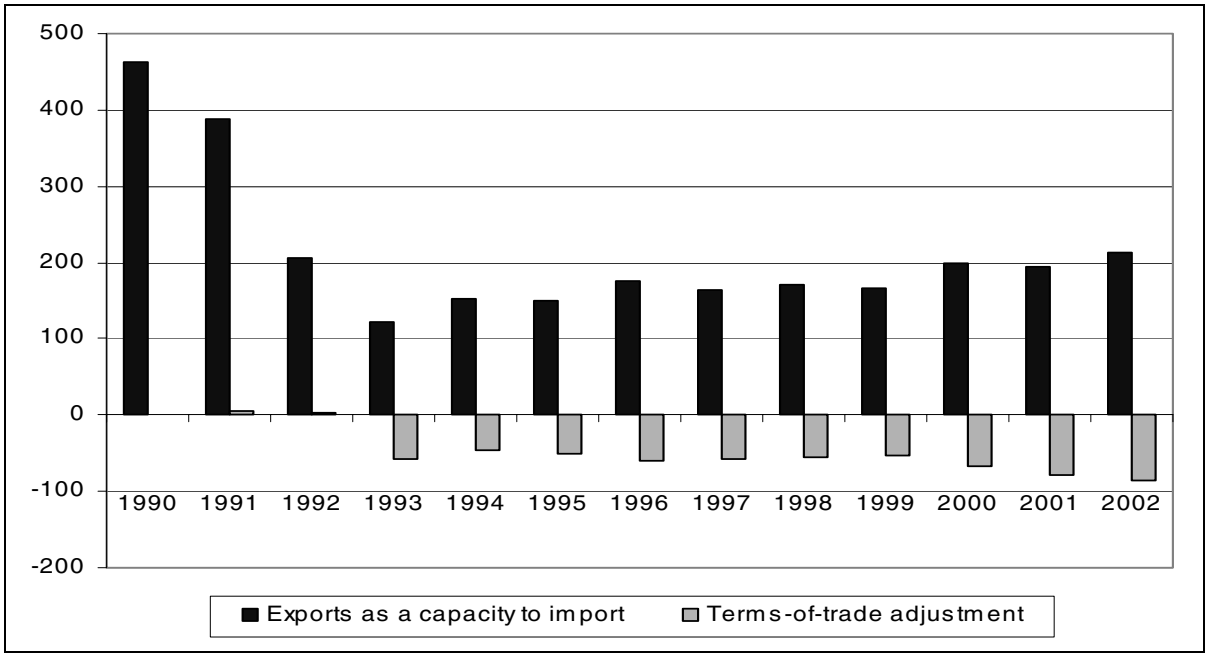
The export contraction between 1996 and 1999 was due to a number of factors, including declining demand in the CIS. The Russian financial crisis in 1998 had a temporary effect, resulting in an immediate decline in export value in the latter part of the year. However, the structural changes resulting from the RFC and the real depreciation of the Ukrainian hryvina (25% in real terms between 1998 and 2003) relative to Western currencies, coupled with the economic growth of key trading partners, positioned Ukrainian exports for strong recovery from 1999 onwards.

In terms of diversification, Ukraine's exports have moved away from the dominant machinery, hard coal and food products of the early 1990s[76] to an export structure based mainly on iron, steel and mineral products, which, between 1996 and 1999, contributed 72% of total export growth. Since then growth has become more evenly balanced across sectors, with the main products accounting for only 45% of export growth between 1999 and 2003. In 2003, iron and steel made up around one-third of Ukraine's exports (60% together with mineral products and chemicals), machinery, equipment and vehicles accounted for around 15% of exports, whereas agro-food exports barely exceeded 10% (World Bank, 2004). However, there is an ongoing concern that Ukraine's exports are insufficiently diversified and that recent growth has been too dependent on temporary factors such as high prices for key exports.

A6.5 Terms of trade

Fig. A6.4 presents terms-of-trade fluctuations from 1990 onwards, illustrating a clear deterioration between 1990 and 1993 followed by a gradual improvement during the rest of the 1990s. From 1999 onwards the terms-of-trade improvement probably reflects rising prices for Ukraine's main exports.

Fig. A6.4 Ukraine: Terms of trade (constant LCU, thousands)



Source: World Bank, *World Development Indicators*

A6.6 The energy sector

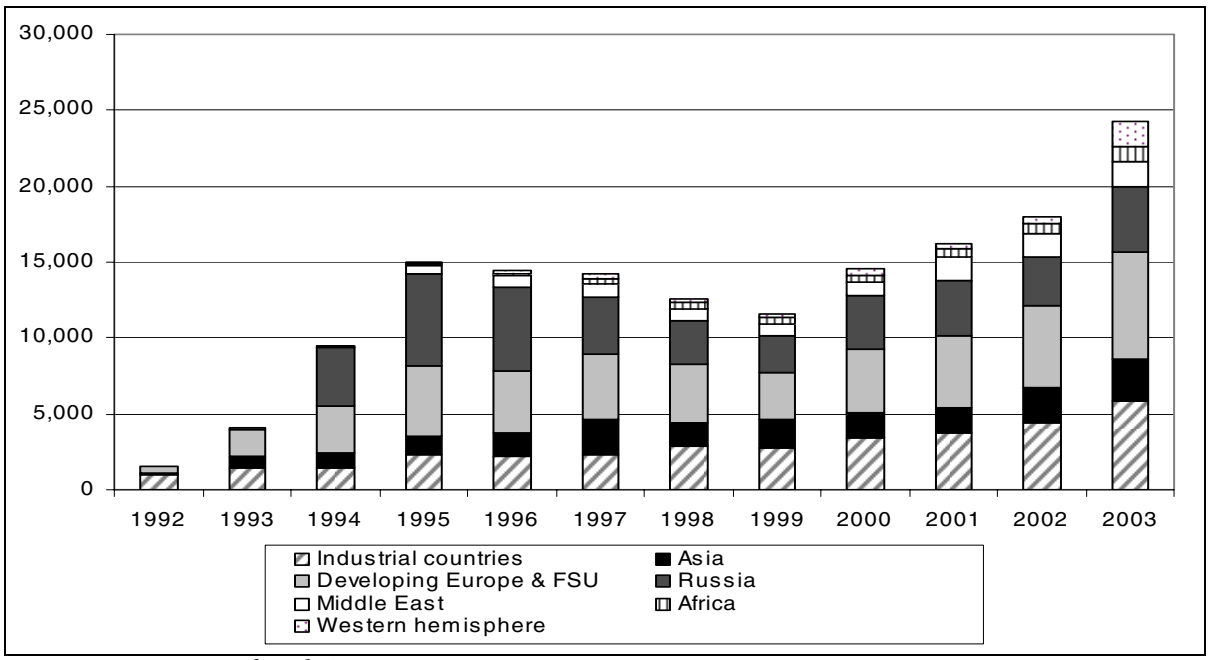
Ukraine's energy sector is an interesting case-study, given the influence exerted by Russia through energy supply and transit. Ukraine is highly dependent on natural gas imports (75% of domestic consumption) and gas accounts for the bulk of imports from Russia and the

[76] In 1990 Ukraine's exports to other FSU republics were mainly machinery (39%), food (16%), and iron and steel (15%), whereas the structure of imports was dominated by machinery and equipment (36%), light industrial products (14%), chemicals (12%) and oil and gas (11%). Exports to the rest of the world on the other hand comprised mainly hard coal (28% of ROW exports), metal products (18%) and chemicals (8%).

FSU. Fig. A6.5 shows import trends since 1992, illustrating a strong increase in imports from Russia and the FSU from 1999 onwards.

Russia's influence on Ukraine's gas concerns is exerted through three main channels. First, Gazprom is the only customer for Ukraine's gas transit services. Second, it provides Ukraine with around one-third of its gas in terms of domestic consumption.[77] Third, in 2004 Ukraine had an outstanding debt to Gazprom of US$1.4 billion as a result of persistent payment indiscipline. As a result of Gazprom's strategic position in Ukraine and the extent of debt Ukraine owes to Gazprom, the organisation has lobbied hard in recent years to gain control over the Ukrainian gas transportation system. Thus, similar to the situation in Georgia, political economy links between Russia and Ukraine in the energy sector are evolving, with Russia's influence evidently increasing during the transition phase.

Fig. A6.5 Ukraine: Imports (US$m.)



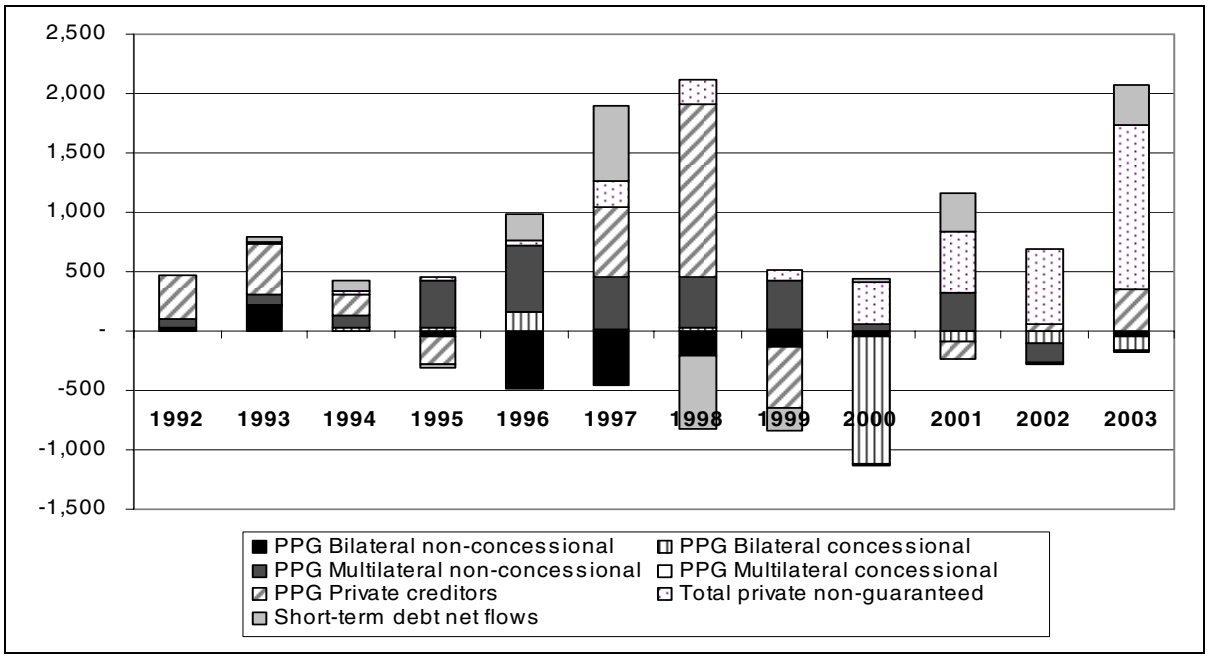
Source: IMF, *Direction of Trade Statistics*

A6.7 Net resource flows and external debt

The inflow of concessional resources was erratic during the transition phase, suggesting no clear strategic rationale amongst the donor community for aiding Ukraine. It is also due to fluctuations in private non-concessional inflows during the early phase of transition and following the Russian financial crisis. Fig. A6.6 shows net flows on short- and long-term publicly guaranteed and total private non-guaranteed debt.

[77] Ukraine aims to diversify its gas supplies to non-Russian partners, including via a five-year supply contract with Turkmenistan for almost half its total gas consumption, which could potentially offer a lower price of US$39-45 per tcm, below the US$50 per tcm paid to Gazprom.

Fig. A6.6 Ukraine: Long- and short-term net resources flows on external debt (US$m.)



Source: GDF

In contrast to the situation in the other case-study countries, multilateral and bilateral non-concessional finance does not appear to have played a key role in supporting growth during the 1990s. These official forms of external finance were much smaller than private guaranteed and non-guaranteed finance, suggesting that Ukraine proved relatively more able to approach international capital markets to finance its economic recovery and growth. These latter sources of external finance have, however, proved more volatile than concessional assistance.

A breakdown of total external debt is provided in Table A6.1, including official and commercial debt. It can be seen that the Russian proportion of debt in total outstanding debt decreased dramatically over the transition period from around 50% in 1994 to less than one-fifth by 2004. Multilateral and commercial debt increased in significance, particularly Eurobonds. On the other hand, outstanding debt to Gazprom, as a result of energy-related repayment arrears, took longer to unwind and is illustrative of the persistent significance of energy-related economic ties (Bagratian and Gürgen, 1997) (see above).

Table A6.1 Ukraine: Outstanding external debt (1994-2004)

	1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004[a]**
Total official debt	4,445	8,013	8,839	9,634	11,091	12,482	10,349	10,118	10,191	10,693	10,706
Bilateral	1,996	4,444	4,319	4,091	4,861	5,315	4,614	4,723	4,596	4,599	4,393
o/w Russia	**2,083**	**2,755**	**2,140**	**1,896**	**1,480**	**3,074**	**1,974**	**1,877**	**1,779**	**1,681**	**1,583**
Multilateral	n/a	2,211	3,492	4,091	4,861	5,315	4,614	4,723	4,596	4,599	4,393
Commercial o/w	n/a	n/a	n/a	1,888	3,156	2,855	2,563	2,309	2,560	3,178	3,570
Eurobonds	n/a	242	122	628	n/a	n/a	2,183	2,030	2,349	2,989	3,283
Gazprom[b]	n/a	1,200	1,120	1,120	1,155	1,048	179	179	162	150	150

Source: IMF
Notes: a) 2004 = End May estimate; b) Gazprom = data are for bonds issued in 1995.

A6.8 Economic migration and remittances

According to the World Bank (2005b), population change between 1989 and 2004 resulting from out-migration was -1.5% (or a total of 782,000 persons). Over the years 1990, 1993-6 and 2000, around 229,300 migrated to Russia, 157,500 to Israel and 58,500 to the United States. Inward migration mainly occurred from the South Caucasus, Uzbekistan, Kazakhstan and Uzbekistan. Table A6.2 sets out the number of emigrants from Ukraine to Russia according to Russtat, illustrating a clear declining trend from 1997 onwards. The numbers recruited to work in Russia are negligible in comparison with the other case-study countries.

Table A6.2 Ukraine: Migration to and numbers recruited to work in Russia (thousands)

	1992	1993	1994	1995	1997	1999	2000	2001	2002	2003
Ukrainian arrivals in Russia	n/a	n/a	n/a	n/a	138.2	81.2	74.7	36.5	36.8	23.4
Recruited	n/a	n/a	n/a	2.2	n/a	n/a	0.1	0.05	0.03	0.02

Source: Russtat

Balance-of-payments statistics for remittances are available only for 2001 and 2002, when total remittances were 0.20% and 0.30% of GDP respectively. This suggests that officially recorded remittances were not a significant factor affecting growth during the transition.

A6.9 Summary

The evidence presented in this Annex suggests that Russia's traditional economic influence over Ukraine has diminished over time. Although Ukraine was not as tightly linked to Russia (in terms of trade and fiscal transfers) as the other case-study countries, the break-up of the Soviet system nonetheless represented a systemic shock to its economy. As a result, the decline in GFCF at the outset of the transition period and the macroeconomic instability were severe. However, the gradual process of structural adjustment from 1994 onwards meant that stabilisation was eventually achieved and the foundations for strong economic growth have been in place since 2000.

Ukraine's export performance has been particularly strong. It has proved capable of maintaining strong economic ties with Russia whilst achieving very good outcomes in terms of diversification of trading partners. A variety of factors underpinned this process, including structural reforms, the real depreciation of the currency in the aftermath of the RFC, the country's geographic location and its forced diversification of exports to non-industrial countries as a result of EU protectionist measures. More worrying, however, is its dependence on a small export base (some of which still retains the features of Soviet-era production and associated inefficiencies) and temporarily favourable external conditions. This is not necessarily a sustainable basis for continued strong export performance in the future and suggests that further restructuring is important.

The energy sector is perhaps the clearest example of Soviet-era inherited economic ties that have proved difficult to untangle. Payments arrears to Gazprom, as well as emerging political pressure over the ownership of energy transit networks to Europe, have become a structural feature of the political economy of Ukraine's transition. Whilst such forms of Soviet influence do not necessarily constrain economic growth (indeed payments arrears have essentially subsidised domestic production), they do represent a clear obstacle to key reform in Ukraine.

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