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Restructuring Large Scale State Enterprises in the Republics of Azerbaijan, Kazakhstan, the Kyrgyz Republic and Uzbekistan: The Challenge for Technical Assistance

by

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CENTRE OF PLANNING AND ECONOMIC RESEARCH

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JOHN HENLEY

CONTENTS

Page

Introduction 13
The General Consequences for Enterprises of the Collapse of the Economic System of the Former Soviet Union 13
The dissolution of the economic planning system 13
The shift from trade dependency on the former Soviet Union 14
The impact of fiscal and monetary autonomy 15
Transport and communications 15
Technology 16
Prices, inflation and output contraction in the four Republics 17
Implications of the transition process for restructuring large state enterprises in Central Asia 19
Examples of State Enterprises in the Four Republics 20
Mining and ore processing 20
Metallurgical industries 21
Aluminium smelting 21
Steel production 22
Textile and garment production 24
Military conversion 26
The challenges for industrial restructuring in the Central Asian Republics . . . 27
Enterprise restructuring approach and methodology 28
The role of foreign investment 30
The role of technical assistance 31
BIBLIOGRAPHY 41

Introduction

The process of dissolution of the former Soviet Union (FSU) and the progression to independence of the Newly Independent States (NIS) of central Asia has been punctuated by a series of trade shocks to the fledgling economies of unprecedented severity even by the standards of eastern Europe. The major shocks occurred in 1991 with the collapse of the USSR, in 1992 with the expulsion of the Ukraine from the rouble zone, in 1993 with the complete collapse of the rouble zone, and in 1994 as a result of the massive output decline in Russia and the NIS countries generally (the main source of supplies and markets for the countries of the region). These trade shocks have had major repercussions for large state enterprises many of which were hitherto tightly integrated through the all-Union central planning mechanism with suppliers of raw materials, intermediate inputs and downstream endusers. Suppliers and customers were often deliberately geographically dispersed throughout the USSR by the central planners.

While the short to medium term prospects of the region appear to be discouraging, many of the countries have enormous natural and agricultural resources which, if they are exploited efficiently, should provide the means to finance wider economic development. For example, Kazakhstan has already proven oil reserves equivalent to 17 per cent of those of Saudi Arabia and a large portion of the country's better prospects have not yet been evaluated. In the mean time, one of the major challenges facing the region's governments is reforming the existing industrial sector so that it is adjusted to the new economic situation and is able to compete effectively with the volume of imports that may be expected to begin to expand rapidly once the foreign exchange constraint is loosened.

This paper will first examine the general consequences of the collapse of the USSR and the all-Union trade system for larger state enterprises in four of the Newly Independent State of central Asia: Azerbaijan, Kazakhstan, the Kyrgyz Republic and Uzbekistan. Following on from this analysis, the paper will then consider the specific impact of the transition process on the operations of seven large state-owned enterprises drawn from four industrial subsectors, namely, mining and ore processing, metal refining, textiles and garments, and military conversion..[1] The case studies are necessarily brief and are presented to illustrate a small portion of the problems facing enterprise management and government agencies responsible for the industrial sector in the four republics. Inevitably, they cannot do full justice to the enormous complexities of the situation. In the last section, implications will be drawn for industrial restructuring exercises in the region using the lessons from Polish experience as a reference point.

The General Consequences for Enterprises of the Collapse of the Economic System of the Former Soviet Union

The dissolution of the economic planning system

Prior to the break up of the Soviet Union in 1991, governments of the region had little or no influence over economic or industrial policy. Generally, all-Union, vertically-organised industrial ministries controlled the development of particular sectors in accordance with the

dictates of the central planning mechanism with scant reference to the authorities of each republic. For example, the Kazakhstan government claims that before 1991, 90 per cent of its industry was controlled from Moscow via all-Union ministries so that, at independence, there were no national institutions with experience of developing and managing industrial policy or of supervising state-owned enterprises. The same situation prevailed in the other republics of central Asia. Unsurprisingly, the authorities have found it difficult to develop a strategic vision for the industrial sector. At a more prosaic level, it has proved very difficult to establish effective mechanisms for supervising the vast portfolio of enterprises inherited from the former Soviet Union. The international donor community has urged privatisation on governments in the region as a way of escaping from budgetary obligations to state enterprises, but this is at best a long term solution for the major state enterprises that consume most of the credit available to the state sector.

Overlaid on the central plan was the Stalinist preoccupation with heavy industries and the expansion and dispersion (for security reasons) of the military-industrial complex (MIC). During the invasion of western Russia by Germany in the 1940s many strategic industries were moved east and with the onset of the Cold War there was a further impetus towards dispersal of the MIC which 'benefited' the central Asian republics. For example, torpedo manufacture and assembly in the Kyrgyz Republic, heavy-lift transport aircraft in Uzbekistan, military electronics assembly (guidance computers) in several countries, the Baikonur Cosmodrome in Kazakhstan.[2] The unexpected collapse of demand for military hardware has resulted in a particularly urgent need for military conversion programmes. Many military electronics assembly plants are already probably beyond salvation because of the remoteness of central Asia as an export platform for foreign investors, and the small size of the domestic market for consumer electronic goods.

The shift from trade dependency on the former Soviet Union

In the late 1980s, the former Soviet Union accounted for more than 90 per cent of external trade transactions with Kazakhstan, with Russia alone accounting for 60 per cent of total exports, while imports from Russia accounted for a slightly larger share of total imports. [3] A more extreme example was the Kyrgyz Republic which , in 1991, depended on markets in the USSR for about 98 per cent of its exports. Azerbaijan's export dependency was only slightly less marked at around 94 per cent in 1991 compared to Uzbekistan where export dependency stood at 89 cent . Import dependency was no less marked. In the case of Azerbaijan, 65 per cent of imports were sourced from the USSR in 1991, while in the case of the Kyrgyz Republic the proportion was 73 per cent of total imports. Uzebekistan was the most import dependent with 89 per cent originating from the former Soviet Union. (EIU, 1995, pp. 63, 94 and 159). Moreover trade with non-Union countries was not organised at enterprise level but through foreign trade organisations head-quartered in Moscow. Even inter-Union trade was managed by branches of all-Union ministries (light industry, metallurgical industries, etc.).

After the collapse of the rouble zone, all-Union foreign trade organisations (FTOs) were unable to function. Republican FTO branches suddenly became autonomous and of national importance in the struggle to diversify markets though they were ill-equipped to do so. The introduction of national currencies from 1993 and the failure to develop an inter-republican settlement scheme meant that, de facto, trade with the countries of the former Soviet Union rapidly moved towards balance as most transactions became based on barter. Thus, for example, by 1993, trade with the former Soviet Union in the case of Azerbaijan had declined to 60 per cent of exports and 47 per cent of total imports.[4]

The impact of fiscal and monetary autonomy

As was normal practice under the central planning mechanism, financial transfers to state enterprises was handled as an administrative matter between the all-Union Gosbank, its branches located in each republic and enterprise management. Lending at republic level was entirely passive. Credit management such as it was, was directed from Moscow including substantial fiscal transfers to the republics. When the Soviet Union was dissolved in 1991 there was an immediate and severe financial shock to government finances which filtered through to enterprises as a tightening of credit, rapid price inflation and, by 1994, real interest rates.[5] Thus, for example, Kazakhstan which had been increasing its budgetary dependence on Moscow, from 15.6 per cent of revenues in 1985 to 32.9 per cent in 1990 suddenly faced a loss of fiscal transfers from Moscow equivalent to about 13.1 per cent of GDP. In the case of the Kyrgyz Republic the loss of transfers was estimated at 35.9 per cent of the government's budget in 1991, equivalent to about 11 per cent of GDP. In Uzbekistan loss of budget support from the centre amounted to nearly 43 per cent of government revenues in 1991.

After 1991 and before the collapse of the rouble zone in 1993, credit control was haphazard. Responsibility for monetary policy was split between the Russian central bank which issued cash roubles and the new republican central banks which had no cash but issued credit. While the rather erratic manner in which tighter credit controls were imposed on state enterprises gave some respite to management during the first four years of the reform programme, much the greatest immediate threat to enterprise viability was the collapse of the rouble zone in 1993 and the introduction of national currencies, with varying degrees of efficiency. Almost overnight, the complex enterprise supply chains so carefully interwoven across the USSR by Soviet planners were dislocated by the disappearance of an inter-country settlement scheme. A switch to convertibility based on dollars was not an option since the overwhelming majority of transactions were inter-Union and between enterprises that rarely had access to convertible currency. Indeed all governments had export earnings retention schemes in place (usually 30-40 per cent), which under conditions of high inflation and rapid depreciation of the new domestic currency, operated as a substantial tax on exports.[6]

Barter trade rapidly became the basis of inter-enterprise transactions. Despite the inherent transaction problems associated with achieving a coincidence of wants between supply chain members, with little or no hard currency to hand there was no alternative. When conducted off the balance sheet barter trade also enables tax avoidance and makes credit control by the supervisory authorities beyond simple rationing impossible. It also represents continuity with the old central planning system where inter-enterprise bartering was endemic and the origin of much of the corruption in the Soviet economy.

Transport and communications

One of the features of the of the industrial geography of the former Soviet Union that appears most bizarre to the Western observer is the vast distances that raw materials and intermediates travel before being used in the final production process. Over the last twenty years transportation costs have fallen world-wide so that it is now possible to exploit comparative advantage where previously this was impossible, when a sufficiently flexible, reliable and economic mode of transport is available. In the former Soviet Union, freight charges were heavily subsidised so that it was apparently possible to justify, for example, shipping to the Kyrgyz Republic raw sugar cane from Cuba for refining and 'champagne' bottles from the Ukraine for filling with sparkling wine. In Azerbaijan, bauxite is imported from Sierra Leone in West Africa for refining and smelting using 'cheap' electricity to produce 25 tonne ingots

which are in turn shipped 1300 km to western Russia for rolling into 9 mm sheet.[7] This sheet is then returned to a manufacturing facility 400 meters from the aluminium smelter for final processing into refrigerator evaporators. Before the dissolution of the Soviet Union, production of these evaporators satisfied about 70 per cent of demand from refrigerator manufacturers throughout the Union.

In addition to the problems caused by the inherited industrial geography of the FSU, enterprises usually have to order materials direct from the producer in volumes convenient for the producer. The central planning system had no role for commercial stockholders so that minimum consignments were dictated by the size of freight wagons. As a result, a great deal of working capital was tied up in raw material stock which in turn was prone to damage, pilferage and deterioration due to inadequate storage facilities. If one customer's order was insufficient to fill a railcar, it was consolidated with other shipments. The railcar was then delivered to the most convenient customer for the railway company and everybody was then responsible for retrieving from there. This system still predominates today though gradual improvements in road transport are beginning to make some impact in major conurbations.

The introduction of realistic rail freight charges in combination with the inflexibility of the prepayment or barter-based ordering system has been particularly damaging to the economic viability of many enterprises in central Asia because of their remoteness from suppliers and markets. For example, standard fasteners such as nuts and bolts sometimes have to be made 'in-house' because of shortages, using considerable ingenuity but very inefficiently. In one case, an enterprise had no nails to hold a packing case together for a consignment so the engineers specially altered a machine to make the required nails.

Russia has also not hesitated to use its present control of rail, road and, perhaps most crucially of all, pipeline transportation systems to remind the Republics of their continuing dependence on Russia. Economic development in Azerbaijan has arguably been most adversely affected by transport 'politics'. The debate about new oil pipeline routes from Azerbaijan (and Kazakhstan) oil fields is as much as about regional politics as it is about economics. It is likely that at least two pipeline routes will be necessary, one through Russia and one through Georgia and Turkey, in order to satisfy regional political and economic interests and assuage foreign investors concerns about political risk.

Technology

Industrialisation in all four countries has been driven by the requirements and objectives of the central planning system in Moscow for over seventy years. This system was designed to maintain the central authorities' control over industrial development in the Republics. Many enterprises were essentially branch plants concerned with final assembly of products designed and engineered in Russia. With their limited in-house technological capability these enterprises have found it very difficult to adapt to the new conditions, none more so than those engaged in military equipment and weapons manufacture.

Although academies of science and universities were well-established in the Republics, scientific research was carried out compartmentalised from industrial enterprises and was invariably not market-oriented. A few substantial Union research institutes focused on the concerns of strategic regional industries, such as the mining research institute in Kazakhstan, and the cotton research institute in Uzbekistan. However, manufacturing facilities mostly used technology developed in Russia , the Ukraine or central and eastern Europe. A result of

the collapse of the Soviet Union has been the severing of most of the Republics' traditional scientific and engineering links with the Russian Federation. The development of new links with the global system of scientific discourse has hardly begun because lack of foreign exchange has usually prevented participation in normal channels of scientific communication. Nevertheless, with the opening up of the region to Western engineering consultants and capital equipment suppliers, some new technology transfer networks are beginning to be established.

Prices, inflation and output contraction in the four Republics

All the Republics began to liberalise prices after the dissolution of the Soviet Union, some more rapidly than others. All have suffered from high rates of price inflation and sharp declines in output, though patterns have by no means been uniformed (see Table 1). Underlying structural characteristics of each economy and specific socio-political factors have contributed to wide variations in the path followed towards a market-oriented economy. Even after less than five years differences in performance are considerable.[8]

The Kyrgyz Republic is generally credited with being the first country in central Asia to adopt a comprehensive reform programme in 1991, which given the previous decade of more or less stable prices, administered a substantial shock to enterprises and the populace at large. The benefits of the economic reform programme have been slow to appear in an economy at the distant end of the former Soviet Union's supply lines and with few natural resources to attract foreign investment. Early claims by the government to be converting the Kyrgyz Republic into 'the Switzerland of central Asia' have a hollow ring in 1995.

By the end of 1993, according to the IMF, retail price inflation had risen to an annual average of 1209 per cent. By December 1994, inflation had abated to an annualised rate of 87.2 per cent mainly as result of a collapse in domestic demand. At the same time as domestic price liberalisation was being introduced, the terms of trade deteriorated by about 40 per cent over two years, primarily as a result of the import price of oil and natural gas from other NIS republics being adjusted upwards to approximate with world market prices. Since 1990, real output has declined by 45 per cent in agriculture and by more than 60 per cent in industry. Output fell by 26.5 per cent in 1994 alone. Real wages fell by 15.2 per cent in 1991, 31.3 per cent in 1992 and 53.1 per cent in 1993.

Azerbaijan has also had difficulties with bringing inflation under control. It has also experienced the sharpest output declines of the four countries. Apart from the consequences of the collapse of trade among the republics of the former Soviet Union, it has suffered from a major conflict with Armenia over Nagorno - Karabakh. This war, in which a cease fire was agreed in May 1994, caused considerable destruction of property and productive capacity and generated around one million refugees. Another of Azerbaijan's neighbours, Georgia, has been afflicted with civil war which disrupted rail links to the Black Sea ports of Poti and Batumi. Mostly recently, in December 1994, Azerbaijan has had to endure the blockading of its northern transport links through Dagestan to markets in Russia and beyond, as a result of fighting in Chechnya. An uneasy peace now prevails and the border was reopened to road traffic in May 1995, but restrictions remain on the important rail link and traders remain nervous of hijacking of their consignments. The government estimates that Russia's share of Azerbaijan's trade has dropped from 60 per cent to under 10 per cent as a result of the blockade.

Price liberalisation was largely complete by 1993, apart from bread (subsidies removed in February 1995), domestic energy and administrative prices (housing rents, utilities, fares etc.). There have been several changes in the remaining controlled prices to bring them into line with world prices but continued depreciation of the manat has slowed progress in closing the gap with world prices. Annualised consumer price inflation was about 1100 per cent in 1993 rising to 1660 per cent in 1994. Real wages declined about 60 per cent and the national currency, the manat, lost 90 cent of its value against the dollar in 1994.

Output has declined for seven years in a row. GDP in 1994 was estimated by the Economist Intelligence Unit to be 45 per cent of the 1989 GDP (EIU, 1995b, p 32). The rate of decline in GDP over the previous year is apparently slowing, from 23 per cent in 1993 to 22 per cent in 1994 to an estimated decline for 1995 of 10 per cent.

Kazakhstan officially started its reform programme in 1991 but little substantial progress was achieved. A major subversive factor was the very rapid expansion of credit to Russian enterprises granted by the Russian Central Bank from mid-1992 which was then used to buy goods from Kazakh enterprises, mostly with cash roubles, thereby expanding credit in Kazakhstan. This inflationary factor came to an abrupt end with the introduction of a national currency in November 1993. However this left an accumulation of inter-enterprise debt and inter-republican arrears which the inexperienced Kazakh central bank was in no position to control effectively. With assistance from the IMF, the World Bank and other donors a more soundly based and comprehensive structural reform programme was adopted in mid-1993.

By October 1994 virtually all administered prices and related consumer subsidies had been abolished apart from tariffs charged by public utilities. For a short but nearly disastrous period after the collapse of the rouble zone credit expansion, particularly to the enterprise and agricultural sectors, was not brought under control. Price inflation became severe, reaching hyper inflation levels at the end of 1993, a monthly peak rate of 57 per cent in March 1994, and a year-on-year peak rate of 4120 per cent in July 1994. An Anti-Crisis Programme was then adopted with a revised package of reform measures in July 1994. By December 1994, the monthly consumer price inflation rate had subsided to 10 per cent.

A consequence of the rapid tightening of monetary and fiscal policies from April 1994, was a precipitous decline in GDP. By the end of 1994, GDP was less than half of its official 1989 level and the annualised rate of decline between 1990 and 1994 was nearly 13 per cent. The contraction in the economy in 1994 alone is estimated at 25 per cent. This sharp decline in output was partially attributed to a pronounced shortfall in agricultural production brought about by bad weather, but shortages of equipment, fertilisers and fuel reflecting the effect of the tightening credit squeeze on agricultural supply chains also played a major part in disrupting agricultural production. Real average wages at the end of 1994 were about 45 per cent of those prevailing in December 1991.

Uzbekistan's inflation record has been poor partly reflecting the government's pursuit of a policy of sustaining production and employment at any cost. Consumer price inflation averaged 700 per cent in 1992, 915 per cent in 1993 and about 1300 per cent in 1994. The payoff has been a relatively modest cumulative decline in real GDP of around 15 per cent between 1992-94.[9] The government's adoption of a cautious approach to economic reform, reflected first and foremost the high priority it assigned to maintaining political stability in a

multi-ethnic society sheltering large numbers of refugees from two warring neighbouring states, Afghanistan and Tadjikistan.[10]

Very little in the way of economic reforms had been introduced by the time of the collapse of the rouble zone in November 1993. Domestic credit to enterprises was expanding rapidly, interest rates were highly negative in real terms and the budgetary deficit was about 12 per cent of GDP in 1993. A presidential decree in January 1994 presaged a change in policy which gradually came into effect in 1994 including cuts in consumer subsidies (9 per cent of GDP by 1993), an increase in interest rates, and the introduction of tight controls on credits to the state-owned sector. This change in policy stance was formalised when the government accepted an IMF Systemic Transformation Facility programme on 25 January 1995.

Implications of the transition process for restructuring large state enterprises in Central Asia

A number of implications can be drawn for enterprise reform from the structural adjustment process that has been underway in central Asia since 1991. First, the industrial policy environment in each of Azerbaijan, Kazakhstan, the Kyrgyz Republic and Uzbekistan has remained unstable and uneven in its impact but is evolving rapidly. The loss of centralised direction from Moscow and the largely unexpected devolution of policy responsibility to the Newly Independent States (NIS) of central Asia left a policy vacuum and sometimes chaotic conditions. The governments and administrations of the NIS, prior to 1991, had very little experience or expertise in industrial policy development, planning or implementation. Perhaps more critically, there was no established expertise in supervising the very considerable portfolio of state-owned enterprises inherited from the former Soviet Union. Moreover, policy makers were not supported by a rigorous and professional statistical service used to conducting censuses of production and employment. Indeed, statistical data collected during the Soviet Union's existence was bedevilled with fraud. There are today, therefore, few reliable benchmarks against which to measure the progress of reform.

Second, the economic structure of the economies of Central Asia were severely distorted by the operation of the central planning mechanism with its biases in favour of heavy industry and industrial location decisions determined according to the political priorities of the all-Union government. The independent but parallel power structures of the military-industrial complex added an additional distorting factor to the industrial heritage of the region. For a long period, the countries of central Asia were closed to outside influence during which time the administration in Moscow systematically fostered inter-republican manufacturing networks in order to encourage mutual trade dependence and political integration. Technological development and technology transfer were also Moscow-driven, according to the 'logic' of central planning and administered prices. With the dissolution of the USSR and the final collapse of the rouble zone in November 1993, the fundamental political logic and basic mechanisms of inter-Union trade disappeared.

Third, in the absence of convertible currencies, there was a sudden lurch towards balanced trade primarily based on barter transactions. Demonetised transactions have a number of advantages in the highly inflationary and chaotic regulatory environment that still prevails in the region. Both parties are usually able to avoid, or at least substantially reduce exposure to payment default, foreign exchange risk and government retention requirements, export taxes and, where the transaction is off the balance sheet, credit controls and producer taxes.[11] Of

course, a whole new set of risks (and opportunities for arbitrage) are also created by the reliance on trading physical product.

Four, the transportation system of the region which is still centred on Russia, has become an important element of regional geopolitics and source of political risk for investors, domestic and foreign alike. Turkey and Iran are also significant players in the regional transportation system and are eager to increase their influence (and revenues). Because it takes a considerable amount of time and money to construct new transport links over the considerable distances and harsh terrain of the region, transport politics can be expected to play a critical role in the economic development of the region for the foreseeable future.

Five, rapid price inflation, rising interest rates and domestic currency depreciation, widespread demonetisation of trade and loss of fiscal subsidy from Moscow have all weakened the credibility and stability of the political regimes of the region. However, unlike in central Europe, the reforming regimes are all direct successors of the communist party. As a consequence, political disputes tend to be between leaders of political factions over the distribution of power and the state's largesse, rather than over differences in policy.[12] This variety of clientelist, personality-based politics tends to foster an opaque policy environment and corruption, despite the best efforts of reformers to write progressive commercial law and administrative codes. The chronic shortages of professionally competent and experienced officials to implement the various policy instruments, laws and codes that have been introduced since 1991 also impedes progress; and the continuing budget crisis of all governments in the region makes it difficult to pay professionals appropriately, even if they were available.

In the next section are presented brief case studies of the operational challenges facing typical examples of large state-owned enterprises in the four Republics. They are intended to illustrate the difficulties facing any attempt to undertake enterprise restructuring to facilitate progress towards commercialisation and marketisation in the region.

Examples of State Enterprises in the Four Republics

Mining and ore processing

The mining and ore processing enterprise described here is located in a remote self-contained community in Kazakhstan. The mine was originally opened using prison labour in 1953 (the prison is now closed). The facilities consisted of a pit mine 200 meters deep which was about 80 per cent exhausted, ore grinding mills and a froth flotation plant for producing heavy metal ore concentrates of copper, lead, zinc and barium. The barium ore was supplied from another mine. In 1991, the complex employed 2600 people; by 1994, the number had dropped to 1700. Most of those leaving were skilled and non-Kazakh. In the summer of 1994, the enterprise was confronting a rapidly deteriorating situation and was on the verge of collapse to the extent that management had been unable to pay the work force for two months.

The enterprise faced numerous technical problems in the plant: the equipment was obsolete; and if still operational, the equipment lacked proper maintenance and spare parts. The plant had also generated enormous environmental damage in the locality through pollution of air, water and soil. For example, ore tailings that have been accumulated over decades of aggressive exploitation of the mine are stored in an open lagoon with a surface area of 38 hectares with little attention paid to long term consequences.

While old economic ties and structures had broken down, the mining company was economically too weak to negotiate viable new ones. In the transition to a market-oriented economy, the company had been left to fend for itself, theoretically an operating subsidiary of a state holding company, but in reality surrounded by rigid financial constraints and a paralysing lack of working capital. With no money with which to pay for necessary inputs, including energy, it was subject to major periodic work stoppages. Its customers were little better off and so frequently did not pay for ore concentrates on time. The potential human tragedy waiting at the end of this particular inter-firm debt chain was the welfare of the mining town which was almost entirely dependent on the mining complex for its survival, not least when winter temperatures fall to - 40^{o} Celsius.

Metallurgical Industries

Two examples are provided to highlight the challenges facing capital intensive enterprises producing basic commodities, namely aluminium and steel as they reorient their activities to reflect the new economic conditions in the region. Both plants are major regional producers, established to exploit local ore deposits and energy sources, and have operated Russian metal refining and smelting technology for forty years. While there have been some incremental improvements in process technology in the past, the core process has remain the same. With the opening up of the region to Western engineering consultants, strategic metallurgical industries have received many proposals for modernising plant. The difficulty for government officials and enterprise management is that the proposals rarely involve injections of new foreign capital. Rather the foreign partner expects to receive the capital invested back in full within five years.

Aluminium smelting

The smelter was completed in the 1950s to a 1940s Russian design to exploit Azeri alunite deposits and the then surplus electricity. The alunite, (now supplemented with imported African bauxite in the ratio of 30 : 70, alunite : bauxite) is processed into alumina in a plant 300 km away from the smelter. The rated capacity of the smelter was 55,000 tonnes per year but by 1994 output was around 10,000 tonnes, from about a quarter of the cells which still remained operational. Air and ground water pollution from fluorides and alumina dust was severe: exhaust air scrubbers from the smelter had been disconnected some years ago due to a design fault and not replaced. Had the smelter been operating at full capacity it would have taken 120MW from the electricity supply but was actually using around 50MW which was fortunate since the plant was subject to load shedding in winter due to power shortages. In addition to the aluminium smelter, the enterprise owned a brass smelter of 10,000 tonnes per year capacity but this was shutdown since production was based on processing non-ferrous scrap form the former Soviet Union which was no longer available at an economic price. There were also two continuous casting lines for zinc and aluminium bar which were operated occasionally when a firm order was in hand. By 1994, it was clear to management that the aluminium smelter, the core business of the enterprise, was gradually losing productive capacity due to lack of investment and spare parts and was close to the point at which it would be no longer economic to operate. The enterprise employed 2,600 people.

The proposal from Western consulting engineers was to completely replace the existing Russian technology with modern process technology that was technically, environmentally and commercially sound. A number of problems faced the government and the enterprise management in evaluating the proposals. Standard investment appraisal techniques were of only limited use in the operational environment of Azerbaijan because of the political risks

attached to a large, capital-intensive, export-oriented investment. While commercial risk could be reduced to an acceptable level for foreign financial institutions by denominating loan payments in aluminium ingots tradable on the London Metal Exchange, political risk could only be covered by government guarantees, which in turn had long run implications for future industrial policy. If the government chose to do nothing, the smelter would close.

External political risk in the Caucasus region (discussed above), was particularly difficult to estimate. Domestic political risk (sensitivity of the investment to changes in policy environment) was also hazardous to estimate in a situation where economic reform was both incomplete and evolving in response to unpredictable pressures, both exogenous and endogenous. For example, any new smelter would only be economically viable operating at a higher capacity than the existing plant, (though more efficient in terms of energy used per kilo of aluminium produced). Any new plant, therefore, required more electricity and larger quantities of alumina. The state electricity utility needed to build a new power station and transmission lines because existing plant was already of insufficient installed capacity and was long over due for replacement. Western aluminium smelting technology has developed on the basis of sandy alumina extracted from bauxite, while Russian designed smelters use floury alumina extracted from local alunite.[13] Unsurprisingly, Western consultants were proposing that the new smelter should switch entirely to imported bauxite and recommended that the locally produced floury alumina be exported to Russian aluminium smelters.

The viability of the investment depends critically on three factors: first, the government's medium to long term energy pricing policy; second, whether the security and cost of rail transport for imported bauxite, exported aluminium ingots and floury alumina can be negotiated with the Russian authorities at an acceptable price; and third, the likely demand and price for floury alumina exports to Russian smelters. A fourth factor, the introduction of modern management systems and procedures and training the management team to use them and run the new smelter efficiently is also vital, if the easiest to control.

Steel production

The second case concerns an integrated steel plant located in Kazakhstan. The enterprise and its associated companies employed around 30,000 people. The adjoining town with a population of a quarter of a million people was almost totally dependent on the steel works for its economic well-being. The town was also the major direct recipient of substantial air and water borne pollution from the plant. In addition to steel making, the company had accumulated fairly substantial sideline businesses: a plant for making synthetic detergents for domestic uses, a garment and sock knitting factory and seven state farms producing , among other things 17,000 tonnes of potatoes in 1993 and considerable amounts of beef, wheat and vegetables.

The present plant produced over 4 million tonnes of carbon steel products per year. About three-quarters of its output was exported, mostly to Russia and the NIS. With the recent opening of rail links to western China, the company was developing a promising Chinese market.[14] The enterprise had been subject to considerable disruption as a result of the break up of the Soviet Union; it was previously an integral part of the all-Union steel industry. The large volumes of cross-border transactions, the rapid and unpredictable changes in prices and the extreme slowness of the banking system had encouraged the widespread use of barter trade, even in domestic transactions with the mining industry. It was claimed that the slow

operation of the banking system and the government's foreign exchange retention requirements amounted to a 33 per cent tax on export earnings in 1994.

The government was evaluating a request from the management of the steel combine for a government guarantee for a loan of nearly $700 million from a Western banking consortium to finance the installation of a continuous casting plant and modernisation of the coking plant (a major source of atmospheric pollution). The main argument in favour of the continuous casting plant revolved around the superiority of the technology compared with the older three-step process using converters, slabbing and blooming mills. Apparently virtually every steel plant in the former Soviet Union was contemplating changing to continuous casting technology and the Kazakh combine's management were worried about losing competitive advantage.

Perhaps the most striking aspect of the operation of the steel combine was the scale and complexity of the different challenges facing the undertaking and the difficulties, both political and economic, the government faced in deciding whether to back a project equivalent to more than 40 per cent of the government's entire annual revenues. It was noticeable that within the management team the case for the new investment was presented almost exclusively in technological terms. There was no evidence of an attempt to justify the project in terms of a corporate strategic plan, marketing plan or cash flow forecast for the enterprise as a whole. Profitability of the entire enterprise, should the new investment go ahead, would become significantly more dependent on operating at near full capacity, yet the resort to barter trading for essential inputs added considerable downside risk in terms of security of supplies to support continuous steel casting. It may have been no accident that the Soviet Union's planners did not favour continuous casting technology.

Clearly, in the context of a market-oriented economy, any enterprise contemplating a large strategic investment would normally appraise the project within the parameters of an overall strategic development plan for the enterprise. Yet enterprise management in central Asia have no experience or training in the preparation of market-oriented strategic plans for individual enterprises. Implementation is even more problematic for enterprises typically lack an active marketing function and sales team to find and secure markets, or a financial management function and supporting management accounting and information systems to enable the necessary control of cash flow. The steel combine was no exception. Senior managers were certainly aware of the technological backwardness of the enterprise they managed, but were also justifiably proud of their ability to maintain production from obsolete equipment that had been written off many years ago. However they almost certainly under estimated the logistical, marketing and cash flow implications of the high performance required of the proposed modern capital intensive process technology.

The immediate problem for the Kazakhstan governments was how to respond this kind of proposal. As in the case of the Azeri aluminium smelter, the downside of doing nothing was eventual closure of a strategic industry and significant loss of jobs, mostly held by ethnic Russians in a politically sensitive region near the Russian border. Privatisation offered no immediate solution because the real constraints on enterprise performance were as much to do with the enterprise's organisational structure and strategy, and the managerial capacity and capabilities of its senior management as with property rights and incentives. What was required was the preparation of a corporate restructuring and development plan that encompassed all of the revenue generating and consuming activities of the enterprise.

From that planning exercise management needed to develop a restructuring programme that focused in the short-term on improving the enterprise's cash flow position. This required attention to defining core and non-core activities, introducing active financial management and supporting management accounting systems and a plan for disposal of surplus assets. A marketing plan and an appropriate marketing department and sales team also needed to be established. Only after reviewing the enterprise's cash flow position and its markets was it appropriate to review the production plant and its future development to meet market needs, existing and projected, and to improve pollution control.[15]

Textile and garment production

Uzbekistan ranks in the top ten producers in the world with an annual output of more than 4 million tonnes a year. Unusually, Uzbek processing capacity was limited to less than 20 percent of raw cotton output reflecting the Soviet planners' strategy of developing the country as a source of cheap cotton.[16] Various foreign companies have already established modest non-equity alliances with local producers to manufacture under contract, partly because export of raw cotton was subject to close government control.[17] Deals usually involved some form of trade-financed purchase of machinery and spare parts purchases together with technical assistance with production and design.

Textile production

The major cotton yarn, textiles and industrial sewing thread producer in Uzbekistan employed around 13,000 people on three sites. The major site employed 9,000 people. Output in 1993 was 14,600 tonnes of yarn, 2.6 million standard bobbins of sewing thread and about 100 million metres of grey cloth. The input price of raw cotton was set by the government after negotiations with producer co-operatives. Domestic prices for finished production were also effectively controlled by government through the requirement that the enterprise sell 85 per cent of its output to the state-owned light industry holding company. Although officially independent, the holding company had to negotiate transfer prices within the domestic market with the government and agree on which organisations in the domestic market were to be permitted to buy the output for further processing. The majority of the remaining 15 per cent of production was used for barter with Russia and Kazakhstan for spare parts, chemicals and dyes. The domestic transfer price was significantly lower in terms of revenues received by the producer than the export price.

The breakdown of supply chains from the former Soviet Union was seriously hampering the performance of the finishing section of the textile enterprise by causing shortages of chemicals and dyestuffs. Barter trading was being used to relieve the situation. While input and output prices were substantially controlled by the government along with capital purchases, there was no possibility or incentive for the management to accumulate reserves except through their ability to barter the officially permitted 'marginal' 15 per cent of output to finance immediate purchases. Some of the government allocation of bales of raw cotton could also be unofficially diverted for barter purposes, although government control of cotton exports was apparently strict. Barter trade in the textile industry was relatively easy to organise since raw cotton, industrial thread and grey cloth were tradable commodities with recognised market prices.

The enterprise's management used any remaining surpluses from barter trade for purchase of spare parts and a limited number of new machines. More substantial modernisation of the plant remained dependent on direct budgetary support from the government. This had not

been forthcoming since the collapse of the Soviet planning mechanism. For example, advantage could not be taken of the recent upgrading of the fabric finishing and printing section, the last project in the plant to benefit from Soviet capital investment. Thus while the finishing section had the capacity to process fabric up to the international standard of 164 cm, the plant's weaving section could only manufacture to the old Soviet standard of 85 cm. Senior management of the textile plant were able to cite a number of similar examples of where the slow incremental process of equipment purchases during the Soviet era had resulted in losses of efficiency due to incompatibility and mismatches between different vintages of machinery in various sections of the plant. In some sections it was also proving necessary to cannibalise some of the older machines as sources of spare parts.

Paradoxically, then, in Uzbekistan, many of the classic features of production in a 'shortage economy' were exemplified by the operation of the textile plant. The ultimate hard budget constraint was physical availability of product; where new equipment was introduced, it was invariably used inefficiently because it was rarely compatible with the existing stock of machines, a result of the exigencies of the old capital allocation system; and continued state control of input and output prices prevented any financial autonomy of the enterprise except where barter trade was possible. A final irony of the conditions under which the factory operated was that the management team was forced to concentrate on production issues . It was simply the critical activity for the survival of the plant. In any case, management was powerless to 'manage' other functions such as finance or marketing as these were administered externally by other state agencies.

Garment manufacture

The enterprise described here, located in Uzbekistan, was founded in 1942. In 1994, it manufactured a variety of cotton knitwear and hosiery for the domestic market. Current output was 20 million pieces manufactured in 300 different designs. The enterprise employed 3,500 people. It was facing a number of production constraints particularly with respect to the quality of yarn supplies and dyestuffs. These constraints prevented management from improving the quality and diversity of production. Even though the enterprise had recently installed a modern dye house using Western European technology purchased before the dissolution of the Soviet Union, poor quality of locally available yarns and dyes and antiquated knitting machines precluded manufacturing to international quality standards. Since the break up of the Soviet Union, the company has also been unable to buy synthetic fibres for blending with cotton. Nevertheless, despite the poor quality of the company's products, there was no serious domestic competition; foreign imports were sporadic and higher priced due to foreign exchange shortages; and tight restrictions on private importers and retail outlets prevented significant imports of second-hand clothes.

The management of the garment enterprise claimed to be eager to produce internationally competitive products and certainly reported that they did not consider selling their garments in Russia as 'real' exporting However, the company relied on the state holding company for light industry to organise sales and there was no company-based marketing function to develop marketing strategies or carry out market research. In short there was no provision for customer feedback to the garment design process. Samples of attempts to copy a West European branded product demonstrated that the major constraints on developing export products was the quality of local cotton yarn and dyestuffs. While the finish of garments on display in the company's exhibition room was comparable to Western samples, the knitted fabric had several faults derived from poor quality yarn and colours appeared 'faded'.

Enterprise management identified the major bottlenecks facing the development of the enterprise as being primarily technical in nature. Given the company's monopoly position, there was virtually no incentive to innovate with product design. Again as in the textile plant described above, the technical constraints imposed by obsolete technology and poor quality raw materials such as yarn and dyestuffs meant that management's major function was to prevent breakdowns and to keep production going more or less independently of market needs. The absence of a modern management and cost accounting system restricted effective action to drive down unit costs.

Military conversion

Two examples from the Kyrgyz Republic, a military electronics enterprise and a torpedo manufacturing and assembly enterprise, serve to illustrate the enormous problems confronting attempts to convert enterprise units of the former Soviet military-industrial complex located in the central Asia to civilian production.

After the collapse of the USSR, the Soviet military procurement system contracted sharply to serve Russia's very much reduced requirements only from Russian territory. All component supplies and purchase orders to the central Asian republics ceased and production collapsed. With no work, most of the labour force was laid off, initially on full pay but as the credit squeeze has begun to bite most now receive no pay. Vast complexes of buildings were all that remained of the former production regime[18], sometimes full of derelict work stations, sometimes containing under used, state-of the-art machine tools, and mostly devoid of employees.

Attempts to convert a Kyrgyz military electronics assembly enterprise to civilian production was stalled by, among others, lack of commercial expertise of the existing management, the small size and remoteness of the domestic Kyrgyz market, poor commercial and logistics infrastructure,[19] and shortages of foreign exchange with which to purchase components. Fundamentally, all the enterprise had to offer investors, local or foreign, were buildings, hardly an obvious source of comparative advantage in a remote location beset with infrastructural inadequacies. The enterprise required liquidation and the premises leased or sold to employees and others wishing to establish private small enterprises able to 'make do' in the barter dominated markets of the Kyrgyz Republic.

The second example of the challenges facing military conversion exercises was a torpedo manufacture and assembly facility. The plant had originally been relocated to central Asia during World War II. It had since undergone periodic upgrading and expansion as the Soviet submarine fleet had grown. It was one of four such enterprises, the only one outside Russia. The main production activities were split between manufacture of standard electrical components, assembly of the electronic guidance systems for the torpedoes (from components supplied from Russia and the Ukraine), machining of torpedo casings and final assembly. The finished torpedoes then used to be air freighted to Soviet submarine bases several thousand kilometres away. With the end of the Cold War and Russian military retrenchment, production of torpedoes was stopped outside of Russia. Kyrgyz producers were also prevented from supplying the export market by dependence on Russian components.

The only substantial civilian product that the plant manufactured was various types of high speed centrifuges. These required the use of the precision machining facilities of the enterprise and incorporated locally produced electric motors and control systems, though

components still had to be imported. Management estimated that only 8 per cent of the plant's capacity was in use, although around 1500 employees were still nominally on the payroll. As in the case of the military electronics enterprise, a paralysing mix of technical, financial and commercial factors constituted major barriers to effective conversion to civilian production. Specifically, the Kyrgyz domestic economy had only limited requirements for precision engineering products, the export potential of large machined components was limited by high transportation costs, there was no supporting indigenous steel or non-ferrous metal industry and external supply chains were plagued with problems (discussed above).

While the technical and skills base of the work force was not in doubt, the management team had no experience of seeking out and developing a customer base in the domestic market, leave alone international markets. The enterprise already had problems sourcing its components for medical centrifuges and was forced to rely to a large extent on barter arrangements with its major Chinese customers. Given the magnitude of the problems afflicting the enterprise's supply chain, it seemed rather unlikely that the enterprise would be able to attract foreign subcontracts to take advantage of its sophisticated computer-controlled, flexible machining systems. Unfortunately, production facilities, however sophisticated, are of no use without secure supplies of materials for processing and appropriate customers.
The problems affecting large state enterprises and the policy issues involved in central Asia are summarised in Table 2.

The challenges for industrial restructuring in the Central Asian Republics
With the slow pace of privatisation in the Republics and the absence of a well-developed private sector, many of the large state-owned enterprises of the type described above will remain in the public sector for some time to come (Henley and Assaf, 1995).[20] It is therefore vital in this interim period governments continue to press ahead with improving efficiency, productivity and the competitiveness of existing state enterprises. In this context, industrial restructuring has become the major challenge for the industrial sector. However as the case studies presented above demonstrate, existing enterprises in the region face acute problems and are increasingly turning to already stretched governments for help with funding working capital and purchasing new capital equipment. At the same time, the international financial institutions (World Bank, IMF and EBRD) are insisting on strict credit control to the state-owned sector and significantly positive interest rates on all loans as a condition of their financial and technical assistance to governments.

While there has been considerable debate about the speed and sequence of required policy reforms, there has been little disagreement about the necessity of supporting the restructuring process with specific measures and assistance (Rana, 1995; Sachs and Woo, 1994; Naughton, 1994). It is also pointless to debate whether the governments of the central Asian republics could choose a more gradual approach to reform: shock 'therapy' was imposed on the region by the sudden and unexpected collapse of the former Soviet Union. There is no choice. Action has to be taken at enterprise level very soon, for without restructuring, most enterprises in the region will not be viable for the reasons described above, yet potentially many are salvageable with carefully targeted assistance and debt restructuring. At the same time, political stability in the region is too fragile to absorb high levels of unemployment. The frequently acknowledged and discussed need for social safety nets has rarely been followed by adequate funding to support benefits programmes for those disadvantaged by the transition process. Heightened social pressure will surely follow major closures. Naturally, restructuring needs to avoid re-establishing the previous conditions for inefficient production

but instead should create a sound basis for developing competitiveness, growth of output and securing employment.

Deteriorating performance and eventual bankruptcy of some industrial enterprises are inherent features of a dynamic industrial development process. However, this also can indicate inadequate economic and industrial policies and other shortcomings in the business and commercial environment or the result of abrupt changes in key parameters - such as sudden dislocation of supply chains and output markets and sharp increases in the price of vital but previously subsidised inputs such as energy or freight charges. Policy co-ordination is inevitably likely to be problematic when so many elements of policy are novel or being refocused, more or less simultaneously. Another factor contributing to policy inadequacies is the relative inexperience of the officials and advisers preparing and implementing the policies and the under-developed consultation procedures of the Central Asian Republics. Introducing new industrial policy measures, drawing up special structural adjustment programmes at the sectoral and sub-sectoral levels and enhancing the resilience of individual enterprises are among the major problems that governments are addressing. The task is enormous for in all four Republics most enterprises are in need of restructuring.

The regional dimension of enterprise restructuring also needs to be addressed As indicated in the case studies above, several communities within individual Republics were developed as 'one-enterprise' towns. The threat of closure or major retrenchment of an enterprise that is the basis of the livelihood of a community spells economic and social disaster for those dependent on the enterprise. The situation is particularly acute in Kazakhstan because of its vast size and the geographical isolation of its mining complexes. The extensive social and welfare responsibilities of large state-owned enterprises further exacerbate the consequences of closure for the community involved. It is therefore vital to develop restructuring plans that take account of local interests and have built into them scope for effective local consultation and the means for helping local communities to develop ways of ameliorating the situation.

Enterprise restructuring approach and methodology

The results so far achieved with enterprise restructuring in the Central Asian Republics has been extremely limited. While macroeconomic reform is now well-entrenched, the supply side response at enterprise level to changes in macroeconomic parameters, so far has been even less than in Central and Eastern Europe, sometimes even undetectable. It is now rather clear from central European experience that spontaneous restructuring of large state-owned enterprises led by the existing management team is exceptional. More usually restructuring is induced by selective intervention by state agencies or new shareholders following privatisation. This is unsurprising given the complexities of the problems involved. As Rybezynski (1991) notes, restructuring in former socialist states entails major 'operations' on all parts of the critically 'ill' enterprise, in comparison to the more selective approach normally used in turning round the 'sick' parts of Western enterprises. In the case of many of the enterprises in Central Asia, they are not self-contained production units but disconnected segments of a once integrated all-Union production network. The weak legal, regulatory and financial services infrastructure typically found in the region also means there are few professional services to draw on for appropriate advice, guidance and follow up support.

From Polish experience of restructuring of large state-owned enterprises certain lessons emerge (Henley, 1996). The key stages of the restructuring process are likely to be:

- **In the short term**, it is necessary to take steps to ensure that the enterprise remains operational. This means securing short term financial liquidity and carrying out a rapid review of marketing and production activities in order to establish whether there are any short term changes that can be introduced to improve the immediate cash flow situation. Without these initial steps being taken the enterprise may well collapse.
- **In the medium term,** a comprehensive technical and economic evaluation of the enterprise's operations has to be carried out focusing on the human resources available, the scope for cost reduction, and an assessment of physical facilities, plant and equipment.
- **On the basis of the comprehensive evaluation** of the enterprise's operations, advice can be provided to top management on the strategic development of the enterprise's product mix, the opportunities for diversifying product lines and markets, together with the financial implications and proposals for shedding surplus capacity and labour.
- **In the final stage** it is necessary to assist top management in creating a strategic plan for the enterprise, typically encapsulated in a mission statement, that is then agreed with employee representatives and the workforce generally. Then, and perhaps most crucially of all, it is vital to agree upon an implementation programme for the strategic plan with all the stakeholders in the enterprise, including the government.

Naturally, the restructuring process must take into account the technological base of a given enterprise. Once the strategic mission of a company has been defined, the technological review focuses on identifying the core productive assets necessary to fulfil the mission. Usually a reduction in the extent of vertical integration is a key component of the restructuring process that eventually leads to a sharply focused enterprise with a sustainable capital investment programme. Governments in the region need to insist on the development of proper enterprise restructuring plans before they accept capital investment proposals. Otherwise it is impossible to appraise the investment explicitly and it creates a clear signal to enterprise management teams that the soft budget constraint still exists. Any investment proposal must be backed up by an enterprise restructuring plan that indicates clearly the steps top management propose taking to commercialise their enterprise and attain financial viability within the parameters set by the government. Typical technological problems observed in the enterprises of central Asia include: aged, mismatched and obsolete equipment; under-utilised maintenance and service departments; inefficient materials handling and production flows; weak plant maintenance systems, poor quality control and lack of attention to pollution.

Training is a crucial part of a comprehensive restructuring programme. A primary objective of industrial restructuring is building flexibility into enterprises so that they are better able to react to changing market opportunities with an appropriately profitable response. This requires selective investment in modern plant and equipment, reconfiguration of existing machinery, the introduction of management information and accounting systems and the development of a proactive marketing function and sales force. All of these actions imply major organisational change, renewal and development. Human resource management was as much neglected as financial management and marketing in state-owned enterprises, yet it is only through mobilising the workforce that restructuring programmes can be implemented.

Polish experience suggests that there is a synergy of investment in plant and equipment, in research and development, in management systems, and in human resources. The optimal strategy is to upgrade all four together, or else investment in management systems and new plant will be designed around short term deficiencies in the labour force. Unfortunately, state

enterprises typically have few funds to pay for training so that technical assistance with training provided by foreign governments and multilateral agencies is often of paramount importance in securing successful implementation of well conceived and executed restructuring programmes. The offer of a package of training and retraining in modern management techniques is quite often the ingredient that secures management and labour assent to change.

Financial restructuring, particularly of enterprise debt, and establishing an appropriately commercial relationship with the banking system is the critical aspect of enterprise restructuring from the point of view of the government. When this is achieved the state's governance role and budgetary obligations to the enterprise are in principle delegated to the banking system. This, of course, presupposes the commercial banking system is able to perform this function which is presently not the case in the Central Asian Republics.

It is particularly important that top management is actively involved in the diagnostic financial review process, for it is likely to be the first opportunity they will have had to participate in a modern financial analysis. Implementation of the eventual restructuring plan will be that much surer if top management are fully conversant with the financial condition of the enterprises. They also have to understand the financial implications of the new economic reality facing their company. Particular problems typically arise from neglect of cost accounting systems, profit and contribution analysis, balance sheet and income statement analysis, and financial analysis of sales. Once the management information system and accounting system has been redesigned and the financial state of the enterprise been evaluated, it is usually necessary to look to the banking system for assistance. Presently this assistance may not be of very high quality in Central Asia. Bank restructuring and banking reform is a subject outside the scope of this paper, except to observe that an effective commercial banking system should be providing the driving force behind enterprise restructuring and privatisation more generally in the region because the credit crunch is now really beginning to effect the viability of enterprises. The professionalism and efficiency with which debt workout regimes are negotiated with enterprises is going to determine the future of industry in the region for the next decade or more.

The role of foreign investment

Many of the countries of central and eastern Europe have been eager to attract foreign investors to assist with the transformation of previously state-owned enterprises through participation in privatisations either on an equity joint venture basis or through outright acquisition. The countries of central Asia discussed in this paper have all begun to develop policies relating to foreign direct investment but so far have met with very limited success in attracting foreign investment interest.

The barriers to entry faced by foreign investors in central Asia are very similar to those aspects of the operating environment causing the crisis in domestic state-owned enterprises the lack of a clearly defined, stable and transparent policy environment; high rates of inflation and a rapidly depreciating local currency; rapidly shrinking domestic demand; inadequate infrastructure and business support services; underdeveloped banking and financial service sector and chronic foreign exchanges shortages. Official policy towards inward investors in all four countries could benefit from further liberalisation, especially through streamlining the approval mechanism and measures to guarantee equal treatment before the law for foreign and domestic companies.[21]

Only those investors that can secure their foreign exchange requirements for essential inputs and for repatriating profits through trade have shown real interest. Three kinds of investors have begun establishing themselves. Firstly, those in extractive industries (oil, gas, minerals) pursue a strategy of securing their payments by export of product but face severe and continuing logistic problems in maintaining operations. There have also been examples of irregular tendering procedures in assigning concessions to international companies. For example, the Kazakhstan authorities awarded the Vasilkovskoye gold mining concession to a local company which then brought in a major Canadian gold mining company cutting out the Australian mining company that had spent several million dollars exploring and proving the reserves (Financial Times, 9 August 1995).

The second type of foreign investor bases production on the assembly of prepaid kits, for example vehicle assemblers in Kazakhstan and Uzbekistan. Although the domestic markets are not large, for a modest investment of less than US$ 10 million it is possible to purchase premises and start assembly operations. High effective rates of protection from competitors' products are available and the regional market is still virtually undeveloped. The logistics of importing kits is difficult and costly but has the advantage of minimising reliance on domestic inputs in the short run while experience of working in an unknown market is built up.

A third type of foreign investment that has so far involved a rather limited amount of equity is investment in plant processing and manufacturing products with a high local resource content. The major exception is the investment by Reynolds Tobacco (US) and Philip Morris (US) in Kazakhstan and BAT (UK) in Uzbekistan to manufacture cigarettes using locally grown tobacco. Promising areas for foreign investment in the medium-term are likely to be in the processing of cotton, wool, skins and hides. Already some buyers from OECD countries have been signing subcontracting agreements with cotton textile plants in Kazakhstan and Uzbekistan. Turkish companies have been active in establishing production sharing agreements with skins and hides producers in Kazakhstan and Azerbaijan. In Uzbekistan, production agreements have been established in the textile sector with several different countries including France, Italy, Austria, Germany and South Korea. The depth of these ventures is so far relatively shallow, involving very little equity participation. The foreign partner typically supplies machinery, specialist raw materials, accessories and technical support in exchange for finished products delivered against a contract.

Despite the abundance of oil and natural gas in the region, the world's chemical industry has shown little interest in becoming involved in downstream processing of petrochemicals. It appears to be waiting to see firm evidence of returns from the development of oil and gas concessions in Azerbaijan, Kazakhstan and Uzbekistan before committing itself to downstream investment.

The role of technical assistance

The scale and scope of enterprise restructuring and reform required in Central Asia is simply beyond the present capacity and capabilities of the governments of the region. As indicated above, state budgets are already over stretched and inexperienced civil servants are struggling to maintain the delivery of existing services. The collapse of state enterprises and/or the transfer of social welfare obligations from enterprises to the state are creating additional demands on the government budget.

While significant progress has been achieved in all four republics with reforming macroeconomic policy and establishing a framework for the development of a market-oriented economy, very little has been achieved at enterprise level. So far, technical assistance provided by the international financial institutions and bilateral donors to state-owned enterprises has hardly scratched the surface of the problems involved in restructuring enterprises.

Reform of the state sector is inextricably linked to private sector development. Unfortunately, private firms usually have to fight for survival against an extremely complex state bureaucracy that remains notably resistant to relaxing controls on private sector activity. However, without a vibrant private sector there is no alternative employment for workers displaced by restructuring exercises, no supply of support services essential for the efficient functioning of a market economy and no competitive pressure to challenge the monopolistic practices of the state sector.

Unsurprisingly, privatisation of industry has achieved very little to date beyond formal transfer of ownership, usually to existing management teams and employee collectives (Varanese, 1995). In the absence of entrepreneurial talent, venture capital and an active financial services sector, there are few incentives for senior management to undertake the onerous task of enterprise restructuring: it easier to accumulate debt and hope for financial assistance from the state. Without substantial external support for enterprise restructuring, there appears to be little prospect of existing management teams being able to help themselves.

Assistance is required at many levels. First, governments require advice and assistance at national level with identifying the prospects of the existing stock of state enterprises, then devising a realistic strategic "vision" of investment requirements and the social implications of anticipated closures resulting from industrial restructuring. Line ministries responsible for restructuring also need reform so that they are able to develop market-oriented industrial policy and industrial development programmes. Staff require training in project appraisal techniques and commercial risk assessment so that they are competent to negotiate with the management of state enterprises, supervise privatisation activities and assess potential foreign investors.

Second, at a subsectoral level, government agencies need to be developed with the capacity to assess the competitiveness and commercial viability of state enterprises and prospects for rehabilitation. Diagnostic services required may include assessment of the management and organisational structure, the marketing and sales function, cost accounting and financial control systems, technical and technological support of product design and production processes and the preparation of strategic business plans. Programmes will then be required to meet specific training needs identified to support restructuring and privatisation.

While international consulting companies are active in the region funded by a variety of technical assistance programmes, domestic business services companies are undeveloped There is clearly scope for public - private partnerships to foster the formation of domestic consultancy and business services companies. Technical assistance might be directed towards training local consultants in how to go about advising enterprises to adopt modern business planning techniques, management accounting and cost control systems, marketing and market research, product design and development and how to cope with the rapidly changing lega

and regulatory environment. International consulting companies operating in the region would clearly benefit from the increased pool of local expertise and should be encouraged to form alliances and joint ventures with emerging domestic consulting companies. At the same time, governments have to establish transparent tendering procedures for consultancy contracts in order to avoid moral hazard in an immature and thin market.

A third area for technical assistance and for public - private partnerships is in developing the banking and financial services sector. A competitive and proactive banking and financial services industry is an essential catalyst for enterprise reform and restructuring. While the sector has begun to attract substantial technical assistance from the IMF, World Bank and EBRD, there are very real limits as to what can be achieved without competition and foreign commercial banking expertise. Another major constraint is the shortage of bankers with knowledge of commercial risk appraisal and financial intermediation. An important focus of technical assistance and financial support from the international financial institutions has been bad debt sanitisation and the design of debt workout regimes. Progress has been slow and soft budgetary constraints and subsidised credits for state enterprises are proving surprisingly difficult to eliminate from the system of financial management. There is also a shortage of venture capital for funding restructuring and reinvestment in privatised or private enterprises. Current lending is short-term and trade related or state-directed to state enterprises and/or based on inter-firm credits. The state-owned commercial banks of the region would undoubtedly benefit from 'twinning' arrangements with Western commercial banks.[22]

A fourth area for technical assistance is encouragement and support of entrepreneurship. Small and medium sized private enterprises (SMEs) were almost totally absent from the industrial structure of the central Asian economies before the break up of the former Soviet Union. As a consequence, governments in the region have no experience of targeting the specific needs of SMEs and are ill-equipped to develop policy instruments such as small business incubators, advisory centres and credit lines for entrepreneurs. Technical assistance is desperately needed to assist the authorities in creating a policy environment in which SMEs are positively encouraged through the relaxation of administrative and legal restrictions on private enterprise and the provision of efficient support systems. Major constraints on the growth of an independent entrepreneurial class, as already noted above, is the lack of medium term credit and a chronic shortage of local low cost consultancy and other business services to provide the necessary assistance to entrepreneurs. Undoubtedly, the restructuring and associated down-sizing of large state enterprises will provide many opportunities for the development of new private businesses. However, in the absence of a flourishing entrepreneurial culture support systems for business start-ups are particularly important, not least as a way of mitigating the effects of unemployment arising from restructuring exercises. Many towns in the region are dependent on a single large employer, especially in Kazakhstan where geographical isolation is marked, so that any substantial reduction in employment may spell social disaster for particular communities. Job creation schemes including support for small businesses are thus likely to form an essential component of many restructuring plans.

Finally, there exists an almost unlimited requirement for in-company training and advice in all aspect of modern business methods. The region of central Asia has been totally cut off from developments in business practice in the market economies of the world. Even in the largest state-owned enterprises, management have no modern management information systems available to them, accounts are still kept according to the standards of the central

planning system of the former Soviet Union, that is they are simply records of expenditure, the ability to develop a marketing plan supported by market research is unknown, product design and development is usually organised as an autonomous activity divorced from any systematic attempt to assess consumer needs and quality standards are largely dictated by the available supply of raw materials and machinery. Nothing less than a radical change in organisational cultures is required throughout the region, yet organisational inertia appears to be immense.

It is in the area of management training that public - private partnerships are likely to prove most fruitful. While official technical assistance is effective in designing training programmes and mobilising training advisers, and is already doing so on a considerable scale in the region, such training tends to be rather general, is taught off-the-job and is not carried out on a sufficient scale to achieve a critical mass of trained managers in individual enterprises. As a result it is rarely rooted in specific organisational sub-cultures, with the possible exception of training targeted at the banking industry which because of globalisation of the world's financial system has an increasingly universal operating culture.[23]

The challenge for the donor community is not only to provide training and management development schemes on a sufficient scale but to create mechanisms that ensure that enterprise cultures support effective management training. One such way is to forge twinning arrangements between Western companies and enterprises in central Asia so that managers from the region can acquire positive role models from foreign companies they can understand at a technical level. By appealing through the strong scientific and engineering culture of enterprise managers in central Asia, it should be possible to introduce the 'technology' of modern management practices. This is most likely to be achieved where managers are familiar with each other's operating environments.

Endnotes

1 The enterprises were visited during July-August 1994 as part of a UNIDO mission to central Asia. Since some of these enterprises are unique to particular countries their exact national location will not be specified in order to protect the anonymity of the management teams of particular enterprises.

2 The Soviet Union conducted its atmospheric atomic and hydrogen bomb tests in north-east Kazakhstan, near Semipalatinsk. The radioactive 'hot spots', of course, still remain along with the human casualties of exposure to radioactivity.

3 (World Bank, 1995, p 263) Trade statistics have to be treated with a considerable amount of caution because of substantial fraud in reporting before 1991. The most notorious example was the over reporting of Uzbekistan's cotton exports to Russia by around a quarter in order to permit Moscow to unofficially support the political elite in exchange for their vote in the Politburo. When Mikhail Gorbachev came to power in 1985 he tried to stop the widespread corruption but with little success. Under the influence of various technical assistance programmes statistical coverage is gradually improving in the region. However comprehensive production and employment censuses are still unknown.

4 Trade statistics since 1991 have become extremely unreliable as a result of the explosion of barter deals and attempts by state-owned enterprises to avoid turnover tax and surrendering foreign exchange earnings to the authorities. There are no customs controls on trade within central Asia so that trade statistics do not capture most regional flows. In addition, rapid rates of depreciation of domestic currencies make it very difficult to establish a value for recorded transactions not conducted in a hard currency. Non-NIS trade statistics are more reliable because of tighter official control of foreign exchange denominated transactions.

5 It is debatable whether the absence of real interests rates effected enterprise behaviour since hardly any were servicing their existing debt and NIS governments were usually unable to lend new money. On the other hand, governments have not tried to enforce loan and tax payments due but instead permitted capitalisation of debt. Domestic credit, of course, nominally expanded quite rapidly and in a restricted sense state enterprises faced a 'soft' budget constraint. They were therefore under only very limited pressure to restructure and certainly have not been subject to the kind of harassment typically experienced by much of the emerging private sector when taxes and loans are not paid on time.

6 An extreme example is provided by Azerbaijan, where almost half of the government's revenues in 1994 were collected from the system of surrender requirements at differentiated and highly appreciated exchange rates which effectively appropriated a large share of export proceeds, particularly from cotton and petroleum producers. Surrender requirements reached 65 - 70 per cent.

7 The basic product of the smelter is 25kg ingots. The 25 tonne ingots are made specially for rolling into sheet and constitute the minimum order acceptable to the rolling mill. In this case, the company paid for processing with part of the consignment of rolled sheet.

8 It is likely that differences between the four republics were much greater than was officially acknowledged by the Soviet authorities before 1991 for there was widespread fraud in the reporting of statistics from the republics to Moscow. Official ideology expected uniformity or at least convergence in the economic performance of the republics and local statisticians were happy to maintain this myth.

9 The average fall in GDP for other NIS between 1992-94 was 40 per cent.

10 There were serious riots in Tashkent when consumer prices leapt by 120 per cent in January 1992.

11 The tradition of barter trading goes back to the 'shortage economy' and the central planning system where scarcities of physical product was often the hard budget constraint.

12 Of course, after the second free general election after 1989, liberalising regimes in central and eastern Europe were all replaced with post-socialist regimes, with the sole exception of the Czech Republic. Even so, political debate remains vigorous in most central and east European countries. In the central Asian republics, post-socialist regimes have been autocratic and prone to suspending parliament, ruling by decree and, sometimes, abusing human rights. In general, opposition parties are tightly controlled.

[13] The largest smelter of this type in the region is in Tadjikistan which has a rated capacity of 517,000 tonnes per year but is currently operating at less than 300,000 tonnes.

[14] Some estimates suggest a short fall in steel making capacity of 70 million tonnes in China by the year 2000.

[15] Of course, the analysis of the combine's cash flow position would have indicated a number of distortion caused by government intervention in its economic and financial relations and these may need short-term compensation, for example, in the case of Kazakhstan the foreign exchange retention requirement and tax on exports of steel .

[16] Pakistan, for example, has succeeded in increasing its domestic processing capacity to nearly 100 per cent of its cotton crop from around 20 per cent twenty years ago.

[17] The President himself must approve foreign sales of more than 5,000 tonnes.

[18] An average sized military equipment plant usually covers 25-35 hectares.

[19] For example, in 1994, there were no scheduled airline connections outside the country and petrol had to be bought from private tankers that sold from the roadside.

[20] The garment and textile companies in Uzbekistan described above were nominally privatised in that 'ownership' had passed to the employee collective but the government is in the process of reversing this policy. It has been found tin practice hat merely transferring ownership to the existing employees does not change the status quo and indeed makes the adoption of effective corporate governance and management-driven strategies very difficult.

[21] It is widely believed by foreigners that tax collection is highly inefficient and many local companies pay very little tax. For example, in the Kyrgyz Republic, VAT revenues only increased by 30 per cent in 1993 while prices increased by 300 per cent.

[22] The World Bank, for example, has supported successful 'twinning' arrangements with Western banks in Poland whereby modern banking techniques are introduced into the management of state-owned commercial banks through technical assistance from foreign banks.

[23] The international oil and mining industries also have many universal features and are well able to fund necessary management training programmes. Extractive industries that attract foreign interest are the exception, the bulk of state-owned enterprises are unlikely to attract significant foreign investment.

Table 1: The Contraction of the Economies of Azerbaijan, Kazakhstan, Kyrgyz Republic and Uzbekistan

Annual change in NMP/GDP (%)

Year	Azerbaijan (NMP)	Kazakhstan (GDP)	Kyrgyz Republic (GDP)	Uzbekistan
1990	-11.5	- 0.8	3.2	11.3 (NMP)
1991	- 1.9	-11.8	- 3.6	- 3.7 (NMP)
1992	-27.5	-13.0	-19.1	- 9.6 (GDP)
1993	-14.4	-12.9	-16.0	- 2.4 (GDP)
1994	- 8.0	-25.0	n/a	-10.1 (GDP)

(Source: Economist Intelligence Unit Country Reports 19 and 36, 1995)

Table 2: SUMMARY OF PROBLEMS AFFECTING LARGE STATE ENTERPRISES IN CENTRAL ASIA
Bottlenecks, Causes and Policy Issues

ENTERPRISE PROBLEM	REASONS	MAIN POLICY ISSUES
1. SCARCITY AND QUALITY OF RAW MATERIALS AND SPARE PARTS	Reduced import capability to service an industrial sector over-dependent on the FSU for inputs, the result of policy biases, excessive investments in import intensive industries, and trade disruption caused by break-up of Soviet Union.	Since (I) credit from state budget will remain insufficient to service needs of over-extended industrial sector, and (ii) many firms are inefficient at attainable capacity, the allocation of credit should be against viable business plans.
2. INADEQUATE INFRASTRUCTURE (POWER, WATER, TRANSPORT) AND COMMUNICATIONS	Due to insufficient past investments, inadequate maintenance and overall deterioration, combined with location of enterprises based on non-economic considerations of the Moscow-driven central planning mechanism.	Overall infrastructural improvements are required. Specific debottlenecking for particular enterprises (e.g. provision of roads and power plants) justified only if benefits would exceed (potentially high) investment costs.
3. EQUIPMENT INADEQUACY	Wrong technological choice, lack of preventive maintenance, poor quality control, all related to weak technological capability and absence of market oriented incentive structure. Role of central planning system in provision of inadequate, or inappropriate, equipment.	Reformed policy framework required to reward effective maintenance and upgrading (rather than purchase of new imported equipment), for adoption of appropriate technology, and measures to enhance technological capability. Need for 'honest broker' to assist with evaluation of proprosals.
4. CASHFLOW CRISIS AND HEAVY DEBT BURDEN	Sudden collapse of rouble zone, switch to national currency, imposition of credit controls and real interest rates.	Short term requirement for improved liquidity pending restructuring and negotiation of debt workout required to achieve longrun viability.

Enterprises Problem	Reasons	Main Policy Issues
5. INADEQUATE TECHNOLOGICAL BASE AND MARKET-ORIENTED CAPABILITY	Over-extended industrial sector for the country's technological capability: wrong choices of industrial activities, and lack of indigenous capability growth over time. Macroeconomic and trade policies and role of authorities in Moscow often were not conducive to indigenous technological capability growth.	Improvement in macroeconomic, trade and industrial policies necessary but not sufficient. Specific measures required for technological learning and management development which is a slow process.
6. WRONG PLANT SCALE, INAPPROPRIATE IMPORT AND CAPITAL INTENSITY	Policy bias of central planning in FSU encouraged large-scale, import and capital-intensive investments; non-economic factors, especially military, involved in investments. Little concern for domestic demand and market size. The promotion of dependency on the republics of FSU was implicit policy objective.	Viability of operating existing large enterprises ought to be assessed considering capital costs as sunk. For new projects, an adequate policy framework, investment appraisal capability and technical assistance is essential. Development of safety net provisions vital for down-sizing exercises.
7. INSUFFICIENT DEMAND	Depressed state of the economy, low product quality and high production costs result in high prices and excessive idle capacity. These, in turn, are due to past policy inadequacies, inappropriate expansion of capacity and external factors.	Reformed policy framework important to increase GDP growth and aggregate demand, to lower costs (and prices), and improve quality and market orientation of production.
8. WASTEFUL UTILISATION OF INPUTS	Supply uncertainties and pricing policies do not encourage savings in resources used, and inadequate technological choice, equipment condition and technological capability lead to excessive stockholdings and waste.	Improvement of overall policy framework, and better technological capability, skilled labour, and management that implements business strategies based on modern marketing, accounting and financial management techniques.

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