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PRUDENTIAL MANAGEMENT OF HYDROCARBON REVENUES IN RESOURCE-RICH ECONOMIES

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Low income and high natural resource dependency

The experience of more than a decade of transition from a Soviet-type economy has demonstrated that macroeconomic stabilization and supplementation of domestic investment by capital inflows from abroad are necessary, but not sufficient, conditions for economic development.¹ The still changing institutional framework in the three Caspian States selected for analysis in this paper – Azerbaijan, Kazakhstan and Turkmenistan – displays deficiencies in domestic markets and in microeconomic governance. Their governments need to pursue policies to safeguard the stabilization achieved while at the same time guiding the investment mix towards furthering sustainable development. Various kinds of levies on the exploitation of natural resources furnish the governments of resource-rich countries with substantial means to contribute to, as well as guide and regulate, capital formation. The three States share two relevant characteristics, namely a high degree of export dependence on hydrocarbons – Azerbaijan on oil, Kazakhstan on oil and other minerals, and Turkmenistan chiefly on natural gas, but also on oil – and a high ratio of investment to gross domestic product (GDP). The interdependence is clear: earnings from natural resources sustain the high rate of capital formation, and investment of the earnings in turn is required to sustain the exploitation of those natural resources and to diversify the capital stock into other sectors of production.

Policies to promote investment for generating sustainable growth are particularly important for low- and lower-middle-income countries such as the three discussed here. The World Bank, which classifies Azerbaijan as “low income” and Kazakhstan and Turkmenistan as “lower middle income”, has recently provided new estimates of their population and gross national income (GNI): the per capita values are shown in table 1 at purchasing power parity dollars.² Kazakhstan is only 6 per cent ahead of Turkmenistan, but generates 83 per cent more GNI than Azerbaijan; but, as discussed below, the addition of the “shadow economy”, proportionately greater in Azerbaijan than in Kazakhstan and probably also Turkmenistan, would narrow the difference. Azerbaijan and Kazakhstan are moving at a similar pace towards a market economy, and well ahead of Turkmenistan; in their emergence from the recession that affected all the successor states of the Soviet Union, Kazakhstan and Turkmenistan have, on measured GDP, approached the late-Soviet level more quickly than Azerbaijan. However, if one were to take into account the “shadow economy”, the level of Azerbaijan’s GDP would exceed the late-Soviet level.

Part of their broadly similar economic fundamentals is their achievement of price stabilization since at least 2000. The European Bank for Reconstruction and Development (EBRD) estimated a rise in the consumer price index (CPI) for end 2004³ of 3.6 per cent in Azerbaijan, 4.8 per cent in Kazakhstan and 10 per cent in Turkmenistan. However, the Turkmenistan authorities keeps the official inflation index low by heavily subsidizing consumer goods and utilities and by maintaining an unrealistically overvalued exchange rate. Its “Strategy for Development to 2020” promulgated in August 2003 requires maintaining its exchange rate, until the year 2010 at 5,200 manat to the dollar (the rate since 1999), which is at variance with the unofficial “kerb” rate (currently some 24,400 manat). The statist structure of Turkmenistan is reflected in table 1 by the high proportion of GDP devoted to government consumption and the low participation of the private sector in production; in Azerbaijan and Kazakhstan the share of the private sector is about average for the Commonwealth of Independent States (CIS).

¹ This study is the revised version of a paper presented at the UNECE Spring Seminar on *Financing for Development in the UNECE Region: Promoting Growth in Low-income Transition Economies*, held in Geneva, 21 February 2005. This revision takes account of comments by participants and our discussant, Jan Svejnar.

² World Bank, *World Development Report 2004: Making Services Work for Poor People* (Washington, D.C.), p. 264.

³ EBRD, *Transition Report 2004* (London).

TABLE 1

Key economic indicators for Azerbaijan, Kazakhstan and Turkmenistan, 2004

	Azerbaijan	Kazakhstan	Turkmenistan
1) Share of mineral exports in total exports (per cent)	82.3	68.3	78.5
2) Share of cotton fibre in total exports (per cent), 2003	1.0 ^a	0.8	4.4
3) GNI per capita (\$PPP), 2003 ^a	3 380	6 170	5 840
4) EBRD transition indicator ^b	2+	3+	1
5) GDP index (1989=100), 2003	70.2	93.7	90.9
6) Capital formation as a per cent of GDP ^c	34.4	22.7	35.6 ^d
7) Government consumption as a per cent of GDP	11.6	12.3	12.9 ^d
8) Share of the private sector in GDP (per cent)	60	65	25

Source: Rows 1, 2, 6 and 7 – Asian Development Bank, *Key Indicators of Developing Asian and Pacific Countries* (Manila), 2004, except cotton exports from Kazakhstan, which is from IMF, *Republic of Kazakhstan: Statistical Appendix*, Country Report 04/363 (Washington, D.C.), November 2004, table 23; row 3 – table 4 below; rows 4 and 8 – EBRD, *Transition Report 2005* (London), table 1.1 (arithmetical average of nine indicators graded 1 to 4+); row 5 – UNECE, *Economic Survey of Europe, 2005 No.1* (Geneva), appendix table B.1.

^a 2004.

^b On a ranking of 1+, 2-, 2, 2+, 3-, 3, 3+, 4-, 4.

^c 2000-2003.

^d 2000-2003.

Although oil and gas extraction declined during the post-Soviet recession (Kazakh gas excepted), due to a fall in consumption in the other CIS countries which led to a fall in exports via the pipeline network, output levels soon recovered (charts 1 and 2), and subsequent increases allowed exporters to take advantage of the fivefold rise in the world price of oil since its nadir in 1998. Turkmen gas exports have expanded as a consequence of agreements in 2000 by the Russian Federation and in 2003 by the Russian Federation and Ukraine to buy all the gas that could be supplied for the next 25 years. Deliveries which began in 2004 are priced for the first three years at \$44 per thousand cubic metres, \$2 higher than the price the Russian Federation and Ukraine had previously been paying; until 2007 half the payment is to be in goods, but thereafter it will all be in cash, and the price will be increased to conform more closely with the world price. Turkmenistan has the option to terminate the agreements unilaterally at the end of each five-year period. Both the increased export opportunities and the rise in the world price have intensified the dependence of the three economies and their government revenues on hydrocarbon production. Following the disintegration of the Soviet Union, these newly independent States began to experience a turnaround from their high trade dependence on the other successor states and the unfavourable terms of trade – in 1991 the price of crude oil in the Soviet Union was only 13 per cent of the world price and the prices of manufactures were even lower.⁴ The biggest change occurred in Azerbaijan, which reduced its trade intensity (share of exports to the region in the region's share of world imports) from 22.7 per cent in 1995 to 7.3 per cent in 2001, and Kazakhstan from 27.8 per cent to 23.2 per cent.⁵ Industrially developed countries took up the export share forgone by the CIS partners. For all three countries, the improvement in their terms of trade since 2000 has been substantial due to the rising world oil prices.

Countering a reliance on natural resource exports

The considerable gains in the terms of trade in recent years underscores the volatility in the prices of minerals and expectations of their decline. Both Kazakhstan and Turkmenistan sell non-fuel minerals – in 2000 these were equal to 39 per cent of fuel exports from Turkmenistan and 47 per cent from Kazakhstan⁶ – and their prices have risen coincidentally with those of fuels, though to a lesser extent. Given both their price volatility and the fact that non-fuel remunerative deposits are finite, an argument could be made that both those countries need protection from resource exhaustion and from

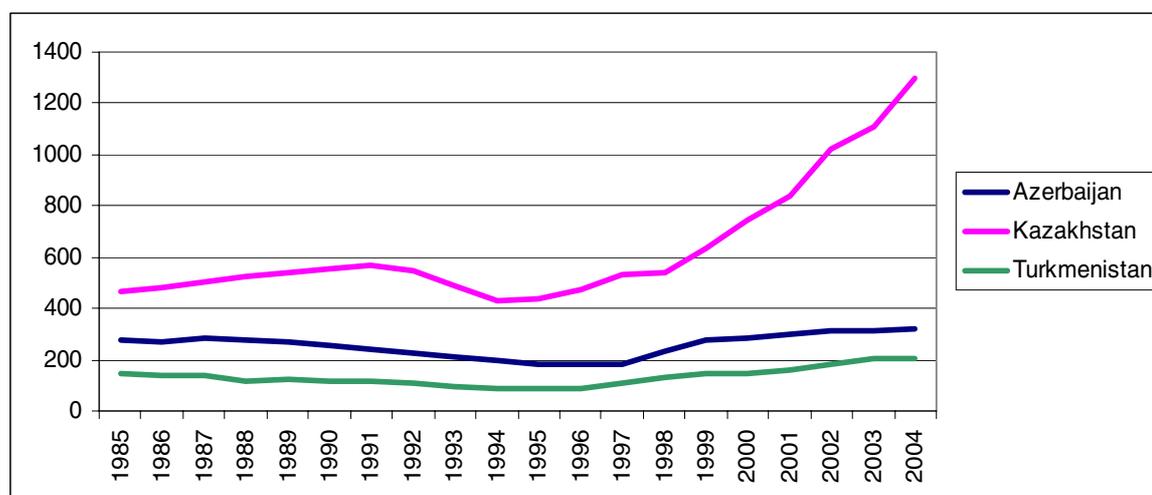
⁴ UNECE, *Economic Survey of Europe, 2003 No. 1* (Geneva), p. 177.

⁵ *Ibid.*, table 6.2.6.

⁶ *Ibid.*, chart 6.2.5.

CHART 1

Oil production in Azerbaijan, Kazakhstan and Turkmenistan, 1985-2004
(Thousand barrels per day)



Source: BP, Statistical Review of World Energy, June 2005.

price variability for all tradable resources. Cotton fibre is another natural product that has ranked high among central Asian exports. The Russian occupation of the region in the late nineteenth century was partly due to its need to assure domestic supply after imports from America had been interrupted by the federal blockade of confederate shipments during the Civil War (1861-1866). Although the bulk since then has come from Uzbekistan, cotton fibre procurement rose in the three countries covered by this study from 564,000 tons in 1940 to 745,000 tons in 1985.⁷ As table 1 shows, little cotton is exported as fibre, mainly because governments have promoted cotton spinning and garment-making in order to increase the value added of domestic production. However, the competitiveness of crude oil and pipelined gas against shipment of refined products limits any increase in value added for these commodities. In what is termed the “Dutch disease” (derived from the effects of gas overexploitation in the Netherlands in the 1960s) there is a dual impact of exchange rate appreciation arising from high shares of natural resources in exports and the more rapid growth of productivity in tradables compared to non-tradables, termed the Balassa-Samuelson effect. The ECE has shown that the effect applies to transition countries after 1990, including the central and eastern European economies.⁸

The “natural resource curse” relates to at least three characteristics examined in the literature for transition economies, including two on which this study concentrates. The first, as Sachs and Warner demonstrated, is the negative relationship between an abundance of natural resources and economic growth: a one-standard-deviation increment in the share in GDP of natural resource exports was associated with an approximately 1 per cent decrement in the rate of growth.⁹ Citing both that study and the contrary experience of some high-income countries,¹⁰ De Gregorio cites a number of factors “through which having natural resources might be detrimental for growth”,¹¹ while Larsen, examining Norwegian growth since oil was discovered in 1969, ascribes the recent slowdown of GDP

⁷ Goskomstat SSSR, *Narodnoe khozyaistvo SSSR za 70 let* (Moscow), 1987, p. 229.

⁸ UNECE, *Economic Survey of Europe, 2001 No. 1* (Geneva), pp. 227-39 and UNECE, *Economic Survey of Europe, 2004 No. 1* (Geneva), p. 62.

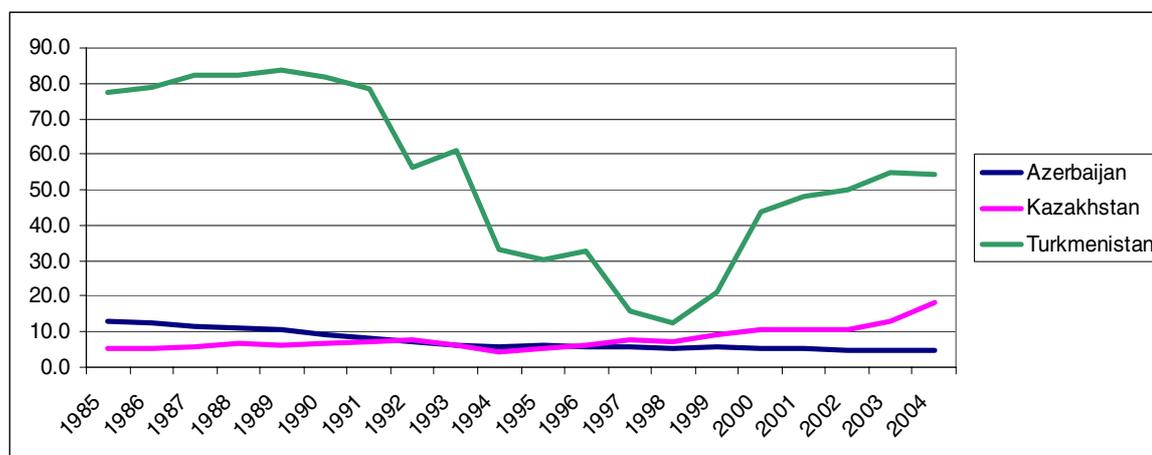
⁹ J. Sachs and A. Warner, *Natural Resource Abundance and Economic Growth*, National Bureau of Economic Research Working Paper No. 5398 (Cambridge, MA), December 1995.

¹⁰ Notably D. Lederman and W. Maloney, “Open questions about the link between natural resources and economic growth: Sachs and Warner revisited”, World Bank, 2002, mimeo.

¹¹ J. De Gregorio, “The role of foreign direct investment and natural resources in economic development”, in E. Graham (ed.), *Multinationals and Foreign Investment in Economic Development* (London, Palgrave, 2005), pp. 179-197 at p. 191.

CHART 2

Natural gas production in Azerbaijan, Kazakhstan and Turkmenistan, 1985-2004
(Billions of cubic metres)



Source: BP, *Statistical Review of World Energy*, June 2005.

growth to a late onset of the resource-rich effect, even in high-income economies.¹² But in the 20 transition economies examined by Kronenberg, there is strong evidence that natural resource abundance is associated with slower economic growth.¹³ The second feature is the volatility of the terms of trade of resource-dependent countries, which may be countered through the setting aside of funds for targeted use. The third is the choice of government expenditure, which, as Kronenberg reveals through a “State capture” index that measures the extent of corruption in a State bureaucracy, is closely correlated with natural resource abundance. The present study examines a fourth feature: the authorities’ choice of projects that yield lower returns than others available to them or to the private sector.

Setting aside funds from resource revenue

More generally, as some economists point out, “we find evidence that several nations of the globe are failing to meet a sustainability criterion: their investments in human and manufactured capital are not sufficient to offset the depletion of natural capital. This investment problem seems most acute in some of the poorest countries of the world.”¹⁴ Some resource-rich governments, on the other hand, have respected the sustainability criterion by setting aside a proportion of their revenues from resource exploitation in funds protected from immediate use. Chile, for example, has run a stabilization fund for copper since 1985, and a number of other States have opted for such funds derived from oil income (e.g. Algeria, Canada (Alberta), Kuwait, Norway, the United States (Alaska) and Venezuela). A major CIS hydrocarbons exporter, the Russian Federation, has an oil fund, which, a year after its establishment,¹⁵ had reached its target of 500 billion roubles (\$18 billion), and by March 2005 held 708 billion roubles (\$25.6 billion).¹⁶ The United Kingdom is a significant exception in

¹² E. Larsen, “Are rich countries immune to the resource curse? Evidence from Norway’s management of its oil riches”, *Resources Policy*, Vol. 30, No. 2, 2005, pp. 75-86.

¹³ T. Kronenberg, “The curse of natural resources in the transition economies”, *Economics of Transition*, Vol. 12, No. 3, 2004, pp. 399-426.

¹⁴ K. Arrow et al., “Are we consuming too much?” *Journal of Economic Perspectives*, Vol. 18, No. 1, 2004, pp. 147-172 at p. 167.

¹⁵ Protracted debate within the Administration on its investment rules delayed their promulgation until September 2004. The rules require the capital to be held in government securities of the United States or of 13 EU States, with cash in dollars, euros or sterling.

¹⁶ World Bank, *Russian Economic Report*, No. 10 (Moscow), March 2005. The threshold price, initially \$20 per barrel, was raised to \$25.

having established no such fund for revenue from its North Sea hydrocarbons. For the three countries under review here, “oil trust funds [have been] an effective instrument for oil revenue management”;¹⁷ Azerbaijan and Kazakhstan have each established a fund into which a share of oil revenue is channelled, and Turkmenistan has a fund into which revenues from both oil and gas are directed. In summary, the funds have three purposes: to shield the domestic economy from the volatility of world prices, to foster investment in branches other than natural resource exploitation and, given prospective resource exhaustion, to ensure that income is shared more equitably across generations. This last objective combines saving, to provide income after the resources have been exhausted, with inter-generational equity.¹⁸ The International Monetary Fund (IMF) has devoted considerable attention to such optimization for oil-producing countries¹⁹ through a permanent income hypothesis (PIH), which has been elaborated by numerous authors.²⁰ The IMF has expressly argued the case for an “oil fund” on the basis of a PIH for the Government of Kazakhstan.

The volatility and unpredictability of world oil prices is transmitted to government revenue through export earnings. The implication of this for State budget projections is readily seen in their variation from actual revenue. When the authorities overestimate the oil price in the budget, the revenue shortfall requires a corresponding reduction of expenditure, an increase in other fiscal sources, or borrowing more than was forecast in the budget. The transmission effect on the macroeconomy differs according to which of these paths is followed, and in the case of spending cuts it may have political consequences in terms of support for the authorities. Governments in developing economies can undertake a broad range of measures to reduce their vulnerability: strengthen domestic institutions to encourage investment, build human and physical capital, and provide adequate and sustainable social protection mechanisms. Where, natural resources are a dominant contributor to public revenue, as in the three countries under review, prudent management of that revenue is decisive for maintaining macroeconomic stability.

The magnitude of public resources derived from resource rents involves two issues concerning their distribution: that between the public and private sector, and allocation of payments among central, regional and local levels. Government investment can be directed either to the State or to complement that of the private sector, with due regard to risk management. These two aspects of distribution also influence that part of the government agenda that addresses poverty reduction.

Creation of oil funds

Decree No. 240 of 29 December 1999 established the State Oil Fund of Azerbaijan (SOFAZ) at the National Bank of Azerbaijan into the account of which the State oil company SOCAR would pay a share of its revenue from its constituent companies. An initial transfer of \$271 million was made, largely revenue from the Chirag field, and by end September 2004 its assets stood at \$858 million. The Oil Fund is directly accountable to the President, who also confirms members of the

¹⁷ Y. Kalyuzhnova, “Economies and energy”, in Y. Kalyuzhnova, A. Jaffe and D. Lynch (eds.), *Energy in the Caspian Region: Present and Future* (London, Palgrave, 2002), pp. 58-85 at p. 79.

¹⁸ Formally, on an optimal path for the intertemporal maximization of social welfare, as established by S. Barnett, and R. Ossowski, “Operational aspects of fiscal policy in oil-producing countries”, in J. Davis, R. Ossowski and A. Fedelino (eds.), *Fiscal Policy Formulation and Implementation in Oil-producing Countries* (Washington, D.C., IMF, 2003), chap. 3, subject to dynamic consistency, as in R. Bénabou and M. Pycia, “Dynamic inconsistency and self-control: a planner-doer interpretation”, *Economics Letters*, Vol. 77, 2002, p. 419-424; and D. Newbery, “Oil prices, cartels and the problem of dynamic inconsistency”, *Economic Journal*, Vol. 91, September 1981, pp. 617-646.

¹⁹ U. Fasano, *Review of the Experience with Oil Stabilization and Savings Funds in Selected Countries*, IMF Working Paper No. WP/00/112 (Washington, D.C.), June 2000; J. Davis, R. Ossowski, J. Daniel and S. Barnett, *Stabilisation and Savings Funds for Nonrenewable Resources*, IMF Occasional Paper No. 205 (Washington, D.C.), 2001; and J. Davis, R. Ossowski and A. Fedelino (eds.), *Fiscal Policy Formulation...*, op. cit.

²⁰ Statoil, *Paradox of Plenty: The Management of Oil Wealth*, Centre for Economic Analysis Report No. 12/02, Project No. 25411 (Bergen), 2002; A. Gelb, “Adjustment to windfall gains: a comparative analysis of oil-exporting countries”, in J. Neary and S. van Wijnbergen (eds.), *Natural Resources and the Macroeconomy* (Oxford, Basil Blackwell, 1985), pp. 54-89; and T. Karl, *The Paradox of Plenty: Oil Booms and Petro-states* (Berkeley, CA, University of California Press, 1997).

Supervisory Council and appoints the General Manager. It receives all revenues associated with the “new” oilfields, that is, those specified in the so-called “Contract of the Century” of 1994. It receives proceeds from the State’s share of oil sales, royalties, pipeline fees, rental fees, bonus payments and interest income. At present, most of the revenues come from the first and only operational consortium at the Azeri, Chirag and Guneshli (ACG) oilfields, a source of the Baku-Tbilisi-Ceyhan oil pipeline.²¹ The Fund is to be used solely for investment, although, as noted below, some has been used for emergency housing. In March 2005, in the reporting of oil revenue and its disbursement Azerbaijan adhered to the Extractive Industries Transparency Initiative, launched by the United Kingdom at the World Summit of Sustainable Development (Johannesburg, September 2002); within the CIS, Kyrgyzstan (on its gold mining revenue) was the only other member at the time to have subscribed to the Initiative.²²

The Kazakh oil fund, the National Fund for the Republic of Kazakhstan (NFRK), was established by Presidential Decree No. 402 of 23 August 2000, and by the end of 2004 it had accumulated some \$5 billion (13 per cent of GDP), about equal to the gross reserves of the National Bank of Kazakhstan. The NFRK, run by a Management Council nominated by the President, comprises the President, the Prime Minister, the heads of the two chambers of Parliament, the National Bank chairman and the Minister of Finance. The President also chairs an executive board, which devolves management to the National Bank. The Fund’s operations are transparent, and its revenues, expenditures and the independent audit report are published in the national press. Following IMF recommendations, 75 per cent of the Fund is allocated to investment in foreign equities and 25 per cent contributes to the stabilization of government revenue; the source of the Fund’s capital consists of shares of government income from the oil sector (i.e. corporation tax, value added tax (VAT), royalties, bonuses and revenue from production-sharing agreements (PSAs)). In February 2001, State-owned enterprises in the hydrocarbon extraction and pipeline sector were joined together to form a single company, KazMunayGaz.

In Turkmenistan, a State Fund for the Development of the Oil and Gas Industry and Mineral Resources (SFDOG) was established as early as 1996, at the same time as a larger fund, the Foreign Exchange Reserve Fund (FERF). The latter is financed from a range of sources, and, since 1997, also by a 50 per cent tax on foreign exchange receipts from gas exports.²³ Both are under the personal control of the President and they are not required to publish accounts. Little has been published about either fund, but it appears that a substantial proportion of FERF expenditure is on public sector projects (discussed below), whereas SFDOG is more industry-oriented, investing in the five main State-owned enterprises in the hydrocarbons sector, but also financing the reconstruction of Ashgabat airport.²⁴

The funds use three different channels for investment, the most common one for the part designated as the investment portfolio being foreign bonds. In Kazakhstan, funds may be used as an initial capital endowment for the pension scheme, itself a combination of commercial and State insurance. The pension scheme thus becomes an institutional investor in the capital market. The sale of 5 per cent of the State’s shares in the TengizChevroil Joint Venture yielded \$660 million as the first contribution to Kazakhstan’s so-called “generation fund”. The stabilization segment has to be invested in foreign short-term financial instruments that can be quickly accessed to deal with sudden and unexpected shortfalls in the budget. The stabilization function is exercised in the NFRK through reference prices for gas, oil and four metals (chrome, zinc, lead and copper). Levies are charged from the nine largest oil companies and from three in the metals sector when the world price exceeds the reference price. In the case of oil, the rate has been set at \$19/barrel. Until ChevronTexaco raised its planning price in December 2004 from a range of \$15-\$25/barrel to \$20-\$30/barrel, \$20 had been generally adopted, but with the price exceeding \$55/barrel in March 2005, companies will be revising

²¹ SOFAZ Press Release, 16 April 2003.

²² G. Soros, “Transparency can alleviate poverty”, *Financial Times* (London), 17 March 2005.

²³ IMF, *Turkmenistan: Recent Economic Developments* (Washington, D.C.), 1999, pp. 14 and 28.

²⁴ *Ibid.*, pp. 28-29.

their projections for investment decisions. The NFRK sets a quarterly baseline tax payment target for each company, based on any excess over the relevant reference price, which triggers the tax payments to it. On the other hand, if market prices are below the relevant reference price, the Fund provides revenue to the Government. The savings portfolio of the NFRK is based on 10 per cent of baseline revenues (at the reference price) of designated resource-exploiting enterprises plus ad hoc privatization receipts and bonus payments from the oil sector. Its stabilization portfolio must constitute at least 20 per cent of NFRK's assets. Apart from paying administrative expenses, neither SOFAZ nor NFRK were allowed to be accessed for the first five years with the exception of Azerbaijan, where some money was spent on housing for refugees.

Issues concerning the deployment of oil funds

The oil funds execute the normal function of savings in that they cannot be used for current expenditure and they obtain returns on invested assets; placing the funds abroad avoids political issues that could arise from domestic investment, with due regard to diversification among foreign securities and acceptable risk. In Azerbaijan, SOFAZ has foreign managers for the placement of its assets in foreign banks, and in Kazakhstan, early suggestions for Parliament to be empowered to oversee NFRK investment decisions gave way to the decision that legislators should merely be “informed” of the fund's activities.

All three economies exhibit a high share of capital formation in GDP (table 1). In 2003, only Kazakhstan had a high share of external debt (76.8 per cent) while that of Azerbaijan was 21.1 per cent and Turkmenistan's was 34.8 per cent.²⁵ At that time, the moratorium on disbursements from the oil funds was in force, and hence two of the countries, Azerbaijan and Kazakhstan, could not use the funds for investment purposes. But the steady fall in the Turkmen external debt (from 101.7 per cent of GDP in 1999 to 78.6 per cent in 2001 and to 34.8 per cent in 2003) suggests some deployment of its fund for this purpose. With the moratoria on expenditure lapsing in 2005 and the Turkmen fund facing no explicit constraints, the question arises as to whether it is more rational to borrow money from international institutions or capital markets, with the ensuing service costs (which could be paid out of the oil funds), or to invest the “oil money” in domestic development. Governments and the international agencies regard the estimated life of hydrocarbon deposits as the decisive argument in favour of placing the funds' investments abroad, whence income will be accrued on the PIH.

Regarding its PIH, the IMF envisaged that the oil resources of Kazakhstan would be exhausted in 2045. However, this projection did not take account of the then undiscovered reserves. Recent exploration in Kazakhstan has been much more successful than in Azerbaijan, leading to the discovery of the Kashagan field in the Caspian Sea, which alone is believed to hold nearly 40 billion barrels of probable oil reserves. Estimates of how long these countries will remain significant producers of oil should take account of expected future discoveries set against future rates of production, which will of course relate extraction and transport costs to the current/projected world price. Kazakhstan's proven reserves already amount to 18 billion barrels (including Kashagan's known reserves), with a further probable 11 billion. In Azerbaijan, the ACG oilfields will be producing for another 30-40 years, although at a far lower level towards the end of the period, as exemplified in BP's production profile that shows a rapid decline; however, the revenues accruing to Azerbaijan will be higher in that period due to the structure of its production-sharing agreement. Shah Deniz will most likely be on-stream for another 50 years – peaking at around 2015-2020, and depending on the evolution of the gas markets. Whether the oil funds will continue to operate for as long remains an open question. Some argue that all three countries had used their hydrocarbon revenues for the past century without recourse to oil funds. In particular, the Government of the United Kingdom decided against an oil fund on discovering oil in the North Sea, preferring to use the revenue for the restructuring that became necessary in response to the economic problems of the time, characterized by high inflation and unemployment.

²⁵ EBRD, *Transition Report 2004* (London), appendix tables.

TABLE 2

Capital projects in progress in Turkmenistan in 2004

	Number of projects	Project value (million dollars)
Oil, gas and petrochemicals	27	970
Textiles, trade and finance	19	297
Construction and transport	24	182
Agriculture	18	89
Culture	2	74
Defence and justice	24	32
Projects under regional / <i>velayat</i> administration	114	1 964
Total	204	3 608

Source: Government of Turkmenistan, *Baky Bitarap Turkmenistan Dowletimizin Maya Goyum Maksatnamasy (2004-2005 yyllar)* (Ashgabat), 2004.

A feature of the Azeri oil fund is the banning of credits, whether to State agencies and enterprises or to private businesses. This provision is a risk-aversion strategy that precludes the channelling of oil revenues into the non-oil sector in support of diversification and regional development. These are objectives that could be achieved if SOFAZ capitalized an economic development bank to provide credits for investment in non-oil goods and services.

The choice of projects paid for by the Turkmen Oil Fund may already be scrutinized because it was not subject to any five-year moratorium, but in the absence of published accounts the attribution of its money to any particular capital scheme (and the cost) is conjectural. Three major construction projects have been completed since the Fund was established. Not only were the three projects costly in terms of foreign exchange – the main contractor being the French firm Bouygues – investment in such non-tradables also fails to diversify the Turkmen economy to enable alternative exports to oil and gas. A marginal investment has been the stud and horse-racing establishment near Ashgabat, which could be an export earner from the sales of bloodstock of the famous Akalteke horse. Due to the absence of accounts, it cannot be confirmed that Fund expenditure has been diverted from capital to current uses, but this may be implied by the substantial share of government consumption in GDP (table 1) – the highest of the three economies. To put such expenditures in perspective, table 2 lists the sectors in which capital projects were undertaken in 2004.

Schneider and Klinglmair²⁶ show that the level of government consumption was negatively correlated to annual GDP growth in 104 developing and transition economies during 1990-2000. It was also one of the variables “significantly and robustly partially correlated with long-term growth” in an analysis of 38 countries (other than Soviet-type or transition economies) from 1960 to 1996.²⁷ Correlation is not of itself causality, but the section below advances some reasons for such a relationship.

Fiscal availabilities and public investment strategies

Shortcomings in both public income and outlay are common in most countries. Nevertheless they tend to occur least in States with a long-established government service and a cohesive civil society, and are considerably more common in newly independent States that are engaged in creating their own public administration and finance structures. Among the latter group, political preferences are likely to take precedence over economic cost-benefit analysis in the choice of expenditures, while revenue may be deflected from government use by rent-seeking among those in charge of public institutions and by tax avoidance within the enterprise and household sectors.

²⁶ F. Schneider and R. Klinglmair, *Shadow Economies Around the World: What Do We Know?*, CES and IZA Working Paper, No. 1167 (Munich), March 2004, table 5.1.

²⁷ X. Sala-i-Martin, G. Doppelhofer and R. Miller, “Determinants of long-term growth: a Bayesian averaging of classical estimates (BACE) approach”, *American Economic Review*, Vol. 94, No. 4, 2004, pp. 813-835 at p. 813.

In launching its draft *Guide on Resource Revenue Transparency* in February 2005, the IMF commented: “While fiscal transparency matters for all economies, it may be particularly critical in economies highly dependent on oil and gas reserves that are subject to dramatic price volatility. Around 50 of the IMF’s 184 member countries can be considered rich in hydrocarbon and mineral resources. Many of these are low- or middle-income countries in which revenues from these resources account for over 50 per cent of government revenue or export proceeds. Revenues from natural resources often pose special challenges to governments in low- or middle-income countries with limited institutional capacity.” The *Guide* advocates good practice under four general principles: (i) clarity of government roles and responsibilities; (ii) public disclosure of resource revenue data and other relevant information; (iii) open processes in budget preparation, execution and reporting; and (iv) independent assurances of integrity with regard to resource-related transactions.²⁸

Spending policies in all resource-rich countries are distinctive because revenue from such resources is not hypothecated, formally or implicitly, to any set of government expenditures. The business or household sectors which pay taxes or duties, broadly expect in return benefits in the form of national or personal security or economic, social or cultural services (epitomized in the phrase “using taxpayers’ money”), but such reciprocity is not expected when the government exacts its dues from gifts of nature. It is a universal practice that because the resources available for exploitation are exhaustible, the government imposes a levy on such exploitation. Hence, annually, large sums are at the disposal of office-holders in national, and in some cases regional, governments. As mentioned, the three States under review have established funds for the deposit of such revenue, and earmark their expenditure for current use (mainly stabilization) and investment. However, it seems to be broadly true, as Lal and Myint,²⁹ for example, have shown, that the average efficiency of total investment in resource-dependent countries is lower than in countries which derive less of their production from natural resources. One reason is a weaker profit motive among government decision-makers than among corporate executives or entrepreneurs.

Most government services are non-tradables, and it is therefore to be expected that governments invest in projects that generate non-tradable services. Their investments facilitate the collection of revenue (such as offices for taxation and regulation), accord security (the armed and police forces), or provide housing and cultural facilities. These have an indirect return if public infrastructure helps to establish an environment that fosters foreign and domestic private investment or contributes to a more efficient operation of the State apparatus in terms of opportunity costs.³⁰ The border is blurred between such outlays and those that respond to a government’s political priorities. For example, the high cost of moving Kazakhstan’s capital from Almaty to Astana, with the major administrative, housing and transport investments it entailed, responded to a political consideration for the capital to be geographically central rather than peripheral in location. Similarly, its \$300-million space programme both responds to a geopolitical imperative and builds on an infrastructure inherited from the Soviet period. The projects in Turkmenistan serve to demonstrate political achievements. Where prestigious projects are envisaged with an explicitly economic return, a government may make a more optimistic assessment of it than would a commercial organization. An example is an infrastructure scheme in Turkmenistan expected to cost between \$4.5 and \$6 billion, the “Golden Lake of the Desert”. Its reservoir of 2,092 square kilometres aims to stabilize and increase water availability for cotton growing, but it may eventually lose much of its water through evaporation, induce widespread salination of arable land and accelerate the destruction of the Aral Sea.³¹ Because a government of a resource-rich developing country can mobilize resources for large projects from its

²⁸ *IMF Survey*, 7 February 2005, pp. 22-23.

²⁹ D. Lal and H. Myint, *The Political Economy of Poverty, Equity and Growth: A Comparative Study* (Oxford, Clarendon Press, 1996).

³⁰ Y. Kalyuzhnova, “The EU and the Caspian region: an energy partnership”, *Economic Systems*, 2005, particularly notes the Government’s role in promoting production diversification away from natural resources and that of the financial sector in shifting resources from traded to non-traded sectors to allay the “Dutch disease”.

³¹ SPECA, *Cooperation Strategy to Promote the Rational and Efficient Use of Water and Energy Resources in Central Asia* (Geneva and Manila: UNECE and UNESCAP, 2004).

own funds, it may disregard imputed interest, as measurable in national or foreign capital markets at government-bond rates or from international organizations on concessional terms (at least before it becomes excessively indebted or defaults). Usui³² demonstrates this proclivity with the Mexican Government's use of its large projected hydrocarbon revenues, and Sarraf and Jiwanji³³ identify numerous cases where "... governments tend to invest in projects with low rates of return compared to the private sector". They show, as do others, that this is not always the case, such as public investment in Botswana.³⁴

In the three countries under review, substantial sums of money are at the disposal of political office-holders and civil servants at a time when generalized systemic change has disrupted established regulation and practice. During such a transition period, strategic misjudgement and only a gradual control over rent-seeking could be expected. In examining the related variables of adherence to the rule of law and of trust in the business environment, the EBRD³⁵ ranks the three States as low. Measured on a scale of 0 (poor rule of law) to 1 (good governance), Turkmenistan is the second lowest (though above Tajikistan), at 0.21, Azerbaijan is at 0.3 and Kazakhstan is better with a ranking of 0.35, though that is, nevertheless, lower than 16 other transition economies. For trust in the business environment, the EBRD makes no estimate for Turkmenistan, but puts Azerbaijan and Kazakhstan in the same low bracket as the Russian Federation, with 19 transition economies ranking above them.

The need for productivity growth

Over the next 15 years the labour force will expand in each of the three countries. United Nations projections for the period 2005 to 2020 show expected increases in the population aged 15 to 64 years on its medium variants³⁶ of 33 per cent in Turkmenistan and 23.2 per cent in Azerbaijan, but only 1.8 per cent in Kazakhstan. These increments are associated with reductions in the economically dependent population on that population cohort (i.e. those younger and older than working age) as a per cent of the total population, at a remarkably similar rate: 30.1 per cent in Azerbaijan, 31.1 per cent in Kazakhstan and 32 per cent in Turkmenistan. These States cannot rely on the primary sector to create employment for their growing labour force. As the Kazakh Minister for Economy, Kairat Kelimbetov, recently stated: "The oil sector brings in foreign investments but it does not create jobs. We must overcome our legacy of being a natural resource economy and make 15 million Kazakh people competitive".³⁷ In addition, labour will be released from cotton growing, where labour productivity is both low and in need of regulation to address problems such as the use of child and forced labour for harvesting. Moreover, the Turkmen Government imposes procurement quotas on farmers to enable it to secure cotton at below world market price (and hence generate profits that risk being deflected into corruption and rent-seeking). Also, the extension of irrigation causes the land to deteriorate and it uses excessive amounts of limited water resources. As stated in a recent report, "The cotton monoculture is more destructive to central Asia's future than the tons of heroin that regularly transit the region."³⁸

³² N. Usui, "Dutch disease and policy adjustments to the oil boom: a comparative study of Indonesia and Mexico", *Resources Policy*, Vol. 23, No. 4, 1997, pp. 151-162.

³³ M. Sarraf and M. Jiwanji, *Beating the Resource Curse: The Case of Botswana*, World Bank, Environment Department Working Paper No. 83 (Washington, D.C.), October 2001, p. 11.

³⁴ R. Love, "Drought, Dutch Disease and controlled transition in Botswana agriculture", *Journal of Southern African Studies*, Vol. 20, No. 1, 1994, pp. 71-83; and B. Tsie, "The political context of Botswana's development performance", *Journal of Southern African Studies*, Vol. 22, No. 4, 1996, pp. 599-616.

³⁵ EBRD, *Transition Report 2003* (London), charts 2.6 and 2.7.

³⁶ United Nations Population Division, *World Population Prospects: The 2002 Revision* (New York, United Nations, 2004).

³⁷ Reported in *Financial Times* (London), 28 January 2005.

³⁸ "The curse of cotton in central Asia", report of the International Crisis Group (Brussels), 28 February 2005; summary in *Financial Times* (London), 10 March 2005.

The relative abundance of labour suggests that governments should seek employment-maximizing investment, but most natural resource projects involve high capital/labour ratios and few backward or forward linkages to domestic activity. Non-governmental organizations (NGOs) and other critics have drawn attention to the limited gains accruing to the local population from such investment. Concerns about foreign investment in enclaves or in a “dual economy” have been voiced for the past half-century, and host governments have formulated numerous schemes whereby natural resource exporters could contribute positively to domestic economic activity. Since much of the exploitation of natural resources is by foreign firms, specific regulations could be introduced requiring employment of local staff, local sourcing of inputs or equity participation by the State or host-country nationals. However, there are also disadvantages to such impositions, both to the foreign firm in terms of lower efficiency and competitiveness and to the economy by increasing the scope for rent-seeking; both arise, for example, when nationals participate in joint ventures, where the only contribution they make is their political connections. Arguing that “foreigners should be treated in the same way as locals”, one analyst notes, “if the concerns are with the stability of the economy and capital flows, the best instrument is a strong system of prudential regulation of the financial system.”³⁹ The foreign firm may also face a discriminatory commercial and legal system that constrains its power to borrow and service external funding or imposes a harsh fiscal regime, such as a high withholding tax in the absence of double-taxation relief through bilateral treaties.

The diffusion of employment, investment and technology from the natural resource sector to the rest of the domestic economy contributes to raising living standards, generally low in the three countries covered in this study. Tables 3 and 4 indicate the gap in consumption that could partly be filled by enhancing total factor productivity (TFP). The extensive empirical literature on TFP (accounting for the positive or negative growth associated with changes other than the incremental application of capital and labour) is, nevertheless, sparse for the three economies under review. Kaser⁴⁰ has collected estimates for these and for other States in the region. Easterly and Fischer⁴¹ show negative TFP during the period 1970-1990 for Kazakhstan and Turkmenistan (annually 1.1 and 2 per cent respectively), but a positive 1.4 per cent for Azerbaijan. De Broeck and Koen⁴² also report negative TFP growth for Kazakhstan between 1981 and 1990. For the period after the break-up of the Soviet Union, only one country seems to have been specifically studied: Kalyuzhnova, Pemberton and Mukhamedieyev⁴³ estimate an average TFP growth rate for Kazakhstan of -5.57 per cent annually between 1991 and 1996, but a remarkable turnaround to +5.58 per cent annually between 1996 and 2001. As living standards remain relatively modest (see table 3) and significant increases in the numbers gainfully employed cannot be expected in the coming decade, growth through TFP can contribute considerably to enhancing those standards.

Research and development (R&D) adds to TFP growth,⁴⁴ for example, Comin⁴⁵ has shown that it adds 0.3–0.5 per cent in the United States. Thus the three countries under consideration may be

³⁹ J. De Gregorio, “The role of foreign direct investment and natural resources in economic development”, in E. Graham (ed.), *Multinationals and Foreign Investment in Economic Development* (London, Palgrave Macmillan, 2005), pp. 179-97 at p. 194.

⁴⁰ M. Kaser, “Growth accounting for eight Eurasian economies: factors differentiating future prospects from Soviet and transition experience”, in I. Morozova (ed.), *Towards Social Responsibility and Democratic Governance in Central Eurasia: Challenges to Regional Security* (Amsterdam, IOS Press, 2005), pp. 148-163.

⁴¹ W. Easterly and S. Fisher, “The Soviet economic decline,” *World Bank Economic Review*, Vol. 9, No. 3, 1995, pp. 341-371.

⁴² M. De Broeck and V. Koen, *The Great Contradictions in Russia, the Baltics and the Other Countries of the Former Soviet Union – A View from the Supply Side*, IMF Working Paper No. 00/32 (Washington, D.C.), March 2000, tables 6 and A1.

⁴³ Y. Kalyuzhnova, J. Pemberton and B. Mukhamedieyev, “Natural resources and growth in Kazakhstan”, in G. Ofer and R. Pomfret (eds.), *The Economic Prospects of the CIS: Sources of Long-term Growth* (Cheltenham, Edward Elgar, 2004), pp. 249-267 at p. 252.

⁴⁴ Z. Griliches, *R&D and Productivity: the Econometric Evidence* (Chicago, University of Chicago Press, 1998) cites 10 country studies (p. 269) and G. Lee, “How the globalization of R&D competition affects trade and growth”, *Japanese Economic Review*, Vol. 55, No. 3, 2004, pp. 267-285, shows R&D expenditure positively correlated with trade and growth.

TABLE 3

Indicators of living standards in Azerbaijan, Kazakhstan and Turkmenistan around 2000

	Human development Index, ^a 1999	Index of:			Income concentration index (Gini index) ^c	Daily nutrition calorie content kcal per capita, 1997 ^d
		Life expectancy	Education level	GDP ^b		
Azerbaijan	0.738	0.77	0.88	0.56	..	2 236
Kazakhstan	0.742	0.66	0.92	0.65	34.8	3 085
Turkmenistan	0.730	0.68	0.92	0.59	40.8	2 306

Source: Statistical Agency of the Republic of Kazakhstan, *Statistical Yearbook of Kazakhstan*, 2003 (Almaty); United Nations, *Human Development Report 2003* (New York).

^a UNDP estimates.

^b Real GDP index per capita in dollars according to purchasing power parity. The UNDP calculations are based on data of the International Comparisons Programme.

^c Latest available between 1990 and 2001.

^d FAO estimates.

TABLE 4

GNI per capita, Atlas method and PPP, 2003
(Dollars)

World rank	Country	At actual exchange rates (Atlas methodology)	World rank	Country	At purchasing power parity
119	Kazakhstan	1 780	101	Kazakhstan	6 170
131	Turkmenistan	1 120	106	Turkmenistan	5 840
146	Azerbaijan	810	138	Azerbaijan	3 380

Source: World Bank, World Development Indicators database.

forgoing gains by being among the countries of the ECE region which spend the lowest shares of their GDP on R&D, shares which have been declining since independence. UNECE⁴⁶ shows that all the CIS countries, except the Russian Federation and Ukraine, spent less than 1 per cent of their GDP on R&D in 2000, with Turkmenistan spending 0.1 per cent, Kazakhstan 0.17 per cent and Azerbaijan 0.35 per cent; the corresponding values for 1991 were 0.48, 0.56 and 0.75. Factor-productivity enhancement through the previous provision of secondary and tertiary education is likely to remain constant in Azerbaijan, where enrolments in 2002 were about the same as at independence and 4.2 per cent of GDP was spent on education, and in Kazakhstan, where the percentage of GDP spent on education rose from 3.2 in 1990 to 3.7 in 2001. In Turkmenistan, however, this may slacken, since the percentage of GDP spent on education declined from 4.3 in 1990 to 3.7 in 1997.⁴⁷ Cuts in education spending began in Turkmenistan in 1993, when schooling was curtailed from ten to nine years and university education from four to two years; 12,000 teachers were made redundant (out of 69,000 teachers in the mid-1990s) and the academic content of curricula was reduced. In contrast, the number of teachers rose between 1991 and 2003 in Azerbaijan (from 124,000 to 169,000) and in Kazakhstan (from 242,000 to 262,000).⁴⁸

A deterioration in the quality of Turkmen human capital may occur due to the low proportion of enrolment in higher education in 2001 (as a share of the population aged 19-24 years) of only 2.7 per cent – far below the 31 per cent average for the transition countries.⁴⁹ In the longer run, the quality

⁴⁵ D. Comin, *R&D: A Small Contribution to Productivity Growth*, NBER Working Paper, No. W10625 (Cambridge, MA), July 2004; this magnitude is in line with firm-level samples among United States firms in Z. Griliches, op. cit., table 12.1.

⁴⁶ UNECE, *Economic Survey of Europe, 2002, No. 1* (Geneva), table 4.4.1.

⁴⁷ UNDP, *Human Development Report 2003* (New York, United Nations, 2003), indicator table 9; CIS, *Commonwealth of Independent States in 2003: Statistical Yearbook* (Moscow, Interstate Statistical Committee of the CIS, 2004), pp. 54, 178, 370 and 628.

⁴⁸ CIS, *Commonwealth of Independent States in 2003*, op. cit., pp. 202 and 400.

⁴⁹ EBRD, *Strategy for Turkmenistan*, approved by the Board of Directors on 23 June 2004.

of human resources may also be affected by cut-backs in the health-care services in all three countries: in Turkmenistan in 2004 this involved the dismissal of 15,000 medical workers (from 113,000 physicians and nurses in the mid-1990s). Since there were also downward trends in the corresponding numbers in Azerbaijan, from 98,000 in 1991 to 89,200 in 2003, and in Kazakhstan, from 263,000 in 1991 to 169,000,⁵⁰ there are grounds for supporting the view that “central Asia is heading towards a major public health crisis”.⁵¹

Growth as measured by GDP, and hence derivatives from growth accounting such as TFP, underestimate the expansion of economic activity during the period since 1991 because of a growing “shadow” economy. On one set of estimates over both the Soviet and post-Soviet periods, Alexeev and Pyle⁵² show a decline towards the end of the Soviet era, but a significant expansion after independence. Again, Turkmenistan escapes scrutiny, but in Azerbaijan and Kazakhstan the share of the “hidden” economy in all economic activities was 50 per cent in 1979 and fell to 33 per cent in 1989. After the break-up of the Soviet Union, the share increased to 70 per cent in Azerbaijan and to 50 per cent in Kazakhstan. Schneider⁵³ plots growth in the “shadow economy” from 1990-1993 to 2000-2001 at 45 per cent and 60 per cent, respectively, of all activities in Azerbaijan and at 32 per cent and 42 per cent, respectively, in Kazakhstan. Schnieder and Kinglmair further compare the figures in 2000 (61 per cent in Azerbaijan and 43 per cent in Kazakhstan) with 107 other countries: only Bolivia, Georgia and Panama showed lower shares of the “shadow economy” than Azerbaijan, and the figures for Zimbabwe were just slightly higher.⁵⁴

Fostering prudence in the private sector

The private sector’s command over resources is proportionately greater in Kazakhstan, with Azerbaijan close behind, but it is low in Turkmenistan (table 1, above). All governments of transition economies need to establish or promote institutions which can help minimize wasting of resources, protect the interests of economic agents against criminality or malpractice, and encourage competitiveness and the rewards it generates. Since there is already considerable literature on this topic, it is not the aim of this study to specify the institutional and regulatory reforms that remain to be undertaken, especially in the field of financial services. The three countries considered are fairly similar with regard to protection of competition: the EBRD’s transition indicator (on a scale 1 to 4+) for 2003 is 2 for Azerbaijan and Kazakhstan, but only 1 for Turkmenistan. However, they differ more markedly with regard to reform of financial institutions. The EBRD distinguishes banking reform and interest-rate liberalization from reform in the securities market and non-bank financial institutions. Kazakhstan had pursued most reforms, the indicators being 3 and 2+, Turkmenistan the least, with a rating of 1 on each indicator, and Azerbaijan scored 2+ and 2. The EBRD reports that in Turkmenistan “95 per cent of all [bank] loans continue to go to state-owned enterprises at the direction of the Government”.⁵⁵

Some indication of the business climate that exists after a decade of independence is reflected in the net inflows of foreign direct investment (FDI). A study of 3,225 firms in the Russian Federation and the European economies demonstrated positive correlations between the above indicators and FDI inflows, and between FDI and enterprise performance.⁵⁶ In the case of the three resource-rich

⁵⁰ CIS, *Commonwealth of Independent States in 2003*, op. cit., pp. 206 and 404.

⁵¹ R. Elovich, “Central Asia: ailing public health systems limit effective harm reduction efforts”, *Open Society News*, Spring/Summer 2004, p. 14.

⁵² M. Alexeev and W. Pyle, “A note on measuring the unofficial economy in the former Soviet Republics”, *Economics of Transition*, Vol. 11, No. 1, 2003, pp. 153-175.

⁵³ F. Schneider, *The Development of the Shadow Economies and Shadow Labour Force in 21 OECD and 22 Transition Countries*, CESifo DICE Report, No. 1 (Munich), 2003, table 3.

⁵⁴ F. Schneider and R. Klinglmair, *Shadow Economies Around the World: What Do We Know?* CES and IZA Working Paper, No. 1167 (Munich), March 2004, table 7.1.

⁵⁵ EBRD, *Strategy for Turkmenistan*, op. cit., p. 16.

⁵⁶ EBRD, *Transition Report 2003* (London), tables 5.1 and 5.2.

countries covered by the present analysis, foreign corporations entering the hydrocarbons sector appear to tolerate weaker reforms in these spheres because that sector can be partially partitioned from the rest of the economy; their export activities can be conducted with minimum interaction with the domestic institutional environment. Nevertheless, as Tengiz Chevroil's tax dispute with the regional authorities of Atyrau in 2002-2003 showed (when the local authority levied a \$71 million environmental damage fine on stored sulphur stocks), no enterprise is immune from the host-country institutional environment. Azerbaijan and Kazakhstan have received by far the most FDI of all the CIS on a per capita basis⁵⁷ – \$873 and \$1,110, respectively, during the period 1989-2003 – while Turkmenistan with \$236 ranked fifth in the CIS. Bayulgen suggests that among oil-rich States in the developing world those with authoritarian regimes tend to fare better in attracting FDI in the oil sector than States with democratizing or hybrid regimes, and that the FDI inflow perpetuates such regimes by external legitimization.⁵⁸ As wealth is accumulated, especially from the hydrocarbons sector and from rent-seeking in the government sector, a reverse flow is occurring. The UNECE estimated that FDI outflows from the Caucasus and the central Asian CIS substantially expanded, to \$756 million in 2002 and to \$816 million in 2003.⁵⁹

Prospects for sustainable development

The record rise in the world price of oil (by late 2004 it had registered a fivefold increase over its 1998 and a sixfold increase in early 2005) and gas, and the likelihood, supported by world growth projections, that none of the three countries considered in this study will be constrained by potentially weaker demand for their exports of these commodities in the medium term, leads to the conclusion that their reliance on their natural resources, and consequently their earning capacity, will continue for the remainder of the current decade. But this is not to say that volatility of prices and of export receipts and government revenue are matters of the past. The practice of channelling a share of that revenue into oil funds for purposes of stabilization and long-term investment remains desirable for all three countries.

As their economies and societies become more integrated with the rest of the world, in contrast to their isolation within the Soviet system until 1991, the political status of those funds and of the policies associated with them will doubtless come under increasing scrutiny, based on comparisons with practices elsewhere. The desirability of a sound international investment rating necessitates regular auditing and public reporting of financial and management performance, not only of the oil funds but of public sector institutions generally. The IMF has long recommended the adoption of a "treasury system" whereby self-financing State institutions are restricted to a few defined spheres and the bulk of central government revenue and expenditure passes through the national budget. Furthermore, following IMF guidelines, investments of the oil funds are best placed abroad.

In sum, both the domestic public and the international community should be able to have confidence that the funds are well managed, transparent and used for the purposes set out by law. What is valid for the funds is also relevant for reforms of financial services, and for the provision of an environment and infrastructure that facilitates both the inflow of external resources and technologies and the intermediation which attracts domestic savings into productive investment. The broad economic environment, with respect to both macro and micro indicators and variables, will determine whether there are sufficient incentives to invest and increase productivity. The three countries have a largely shared historical and cultural heritage, and institutions shaped under other conditions may not be appropriate. But given the forces of globalization and integration that shape economic development, convergence towards generalized norms, including those for financial management, is desirable.

⁵⁷ EBRD, *Transition Report 2004* (London), table A8.

⁵⁸ O. Bayulgen, "Foreign investment, oil curse and democratization: a comparison of Azerbaijan and Russia", *Business and Politics*, Vol. 7, No. 1, 2005 [<http://www.bepress.com/bap/vol7/iss1/art3>].

⁵⁹ UNECE, *Economic Survey of Europe, 2004 No. 1*, table 4.5.8 and its database.