

Russia: Competitiveness, Growth, and the Next Stage of Development

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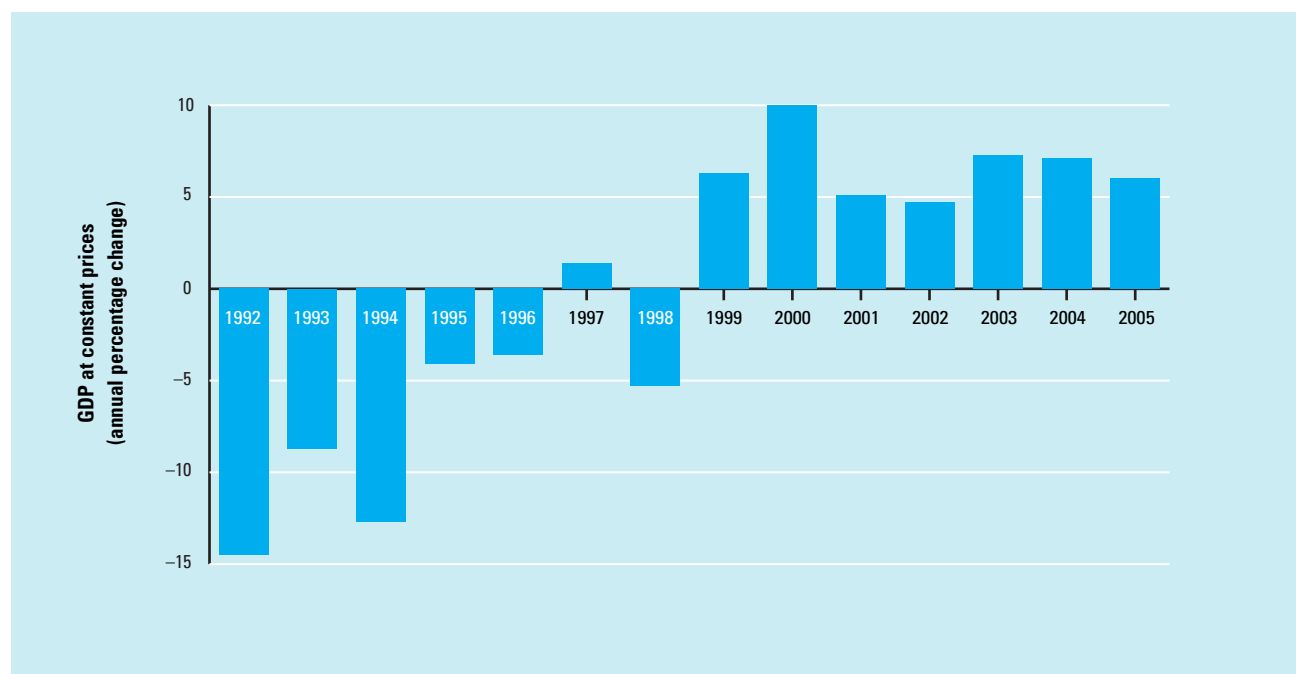
In a recent article in the *International Herald Tribune*, entitled “And Now, Command Capitalism,” the Russian writer Viktor Erofeyev refers to the difficulties associated with building the institutions of capitalism in Russia while hindered by a “lack of competitiveness.”² Erofeyev’s essay is mainly about the contradictions of government attempts at building a market economy—the essence of which is increasing its flexibility by giving a larger role to market forces—while at the same time exercising a growing degree of bureaucratic control. But it indirectly addresses the broader question of the policy and institutional requirements for boosting the Russian economy’s long-term growth prospects.

In this chapter we will examine the factors that are likely to play a key role in enhancing the productivity of the Russian economy, and improving its levels of competitiveness. As noted elsewhere in this volume, productivity is the main driver of the rates of return on investment, which, in turn, determine the growth rates of an economy. A more competitive economy is one that is likely to grow faster over the medium to long term,³ so the natural question is whether these factors are likely to sustain high growth rates in Russia over the next decade.

We then turn our attention to a broader institutional question: to what extent can Russia anchor its future economic development in a significant strengthening of its relations with the European Union? Can the EU play in Russia, in some fashion, the critical role it has played in the development of Central and Eastern Europe during the past decade and a half? If so, how?

The need for convergence

The question of the pace of economic growth in Russia was put at the centre of the economic policy debate by President Putin himself in his State of the Nation address of May 2003, when he called for a doubling of Russian GDP within the next ten years. With all its imperfections as an indicator of human welfare, the evolution of GDP per capita is still seen by officials, academia, the media, and the development community as an appropriate measure of a government’s success in implementing good economic policies, supportive of private sector development. Nowhere is this measure more relevant than in those countries coming out of long periods of stagnation or crisis, in which the need to “catch up” with neighbors and trade partners is seen as of the utmost importance. As shown in Figure 1 and Table 1, the question acquires an additional layer of urgency in Russia because of the heavy costs borne by the population during the period 1992–98, when output contracted by a cumulative 40 percent, leading to a calamitous decline in living standards.⁴

Figure 1: Russia: Gross domestic product, constant prices, annual percent change

Source: IMF, 2005b.

Table 1: Russia: Selected economic indicators

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Inflation ¹	1734.7	878.8	307.5	198.0	47.7	14.8	27.7	85.7	20.8	21.5	15.8	13.7	10.9	11.8
GDP growth ²	-14.5	-8.7	-12.7	-4.1	-3.6	1.4	-5.3	6.3	10.0	5.1	4.7	7.3	7.1	6.0
Fiscal balance ³	-44.3	-15.6	-10.6	-6.1	-8.9	-7.4	-5.0	-1.3	1.2	3.0	1.4	1.7	4.4	6.1
Public debt ⁴	—	63.8	48.8	41.7	40.7	50.7	57.5	92.1	61.3	46.9	40.8	34.0	24.8	—
Current account balance ⁵	-1.4	1.4	1.9	1.4	2.1	-0.6	-0.8	11.3	17.2	10.9	9.0	8.2	10.2	11.4
Interest rate (percent) ⁶	80	210	180	160	48	28	60	55	25	25	21	16	13	13

Sources:

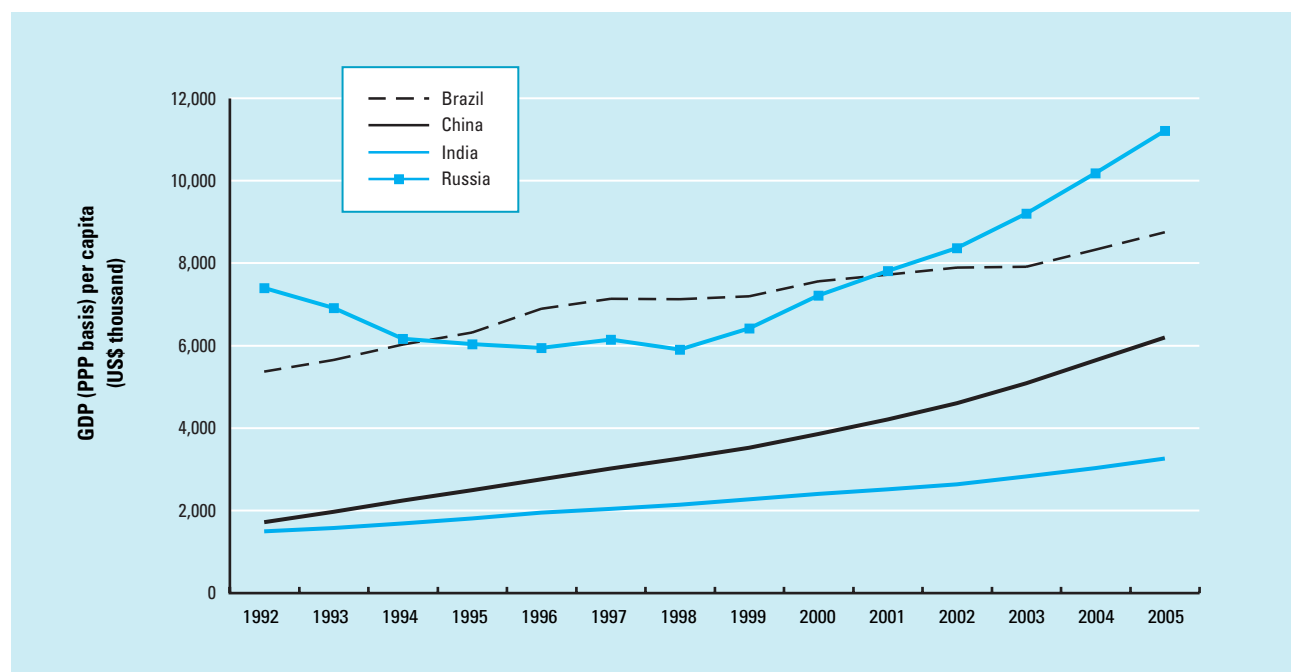
¹ Inflation, annual percent change, IMF, 2005b.² Gross domestic product, constant prices, annual percent change, IMF, 2005b.³ Federal budget, as a percentage of GDP, Russian Federation, 2005.⁴ Total foreign and domestic currency public debt, as a percentage of GDP. IMF, 2003; EIU, 2005.⁵ Current account balance in percent of GDP, IMF 2005b.⁶ Refinancing rate of the Central Bank, end of year values in percent, Russian Federation, Central Bank, as of end July 2005.

Much of this decline was probably inevitable, reflecting the need to eliminate the mindless distortions of central planning, such as the undue emphasis on propping up the military industrial complex; the ubiquitous presence of overt and hidden subsidization of consumers and producers (without regard to the associated opportunity costs), and the overwhelming presence of the state as producer, distributor and regulator of the economy. However, the fact remains that it brought with it a period of economic divergence between Russia and the rest of the world. For instance, as shown in Figure 2, on a PPP-adjusted basis

Russian per capita GDP was higher in 1992 than in Brazil, China and India, but by 1998, Brazil had overtaken it by a significant margin, and China (and to a lesser extent India) had considerably narrowed the gap. By the late 1990s no economic policy question in Russia was more pressing than how to reverse the decline and set the economy on a path of recovery and convergence with the rest of the world.

Russia does not fare well in the competitiveness indicators assembled by the World Economic Forum, attaining a rank of 75 among 117 economies in the 2005 version of

Figure 2: Russia and selected economies: GDP per capita 1992–2005



Source: IMF, 2005b.

the Growth Competitiveness Index, a position well below that of China and India (49th and 50th respectively), Poland (51st), Mexico (55th), Brazil (65th), Turkey (66th), and Argentina (72nd).⁵ At the same time, Russia has enjoyed several years of relatively strong growth since 1999, reflecting significant gains in the terms of trade, the introduction of some structural reforms, particularly during the early part of the first Putin administration, and the generally more cautious approach to management of the public finances pursued by the authorities in the aftermath of the 1998 financial crisis. However, these growth rates have not been high enough to match those of China, or even India during the last three years, and have been accompanied by an increase in the relative importance of the energy sector as the mainstay of the Russian economy—beneficial during periods of buoyant oil markets, dangerous during the bust phase of the cycle. In parallel, there has been a significant deterioration in a number of indicators which track aspects of the country’s institutional environment. More importantly, the growth rates themselves are not high enough to ensure rapid convergence to the levels of income per capita attained in other transition economies in the region, to say nothing of the average levels within the EU.

A narrowing of the per capita income gap with the likes of Poland, Hungary, and other new EU members will require substantially higher real growth rates than the

6 percent average rate seen during the last three years. The goal is likely to remain a challenging one for the government, because most countries want to “converge” to the levels of income per capita seen in the wealthier economies. The transition economies of Central and Eastern Europe, for instance—a useful comparator group for Russia given their common central planning past and geographical proximity—are expected to continue to grow rapidly in coming years. This will reflect the beneficial effects of the institutional and policy improvements required for full participation within the EU—including the adoption of the euro, which is likely to act as the new disciplining mechanism within the new member states—and continued inflows of foreign direct investment, brought about by the attractive combination of a skilled labor force, low labor costs, and political and social stability. As Ireland has done so effectively during the past 20 years, the new EU member states—already growing at close to three times the average of the EU15—are well set on a path of convergence. As shown in Table 2, Russia, on the other hand, is far behind in terms of GDP per capita levels, and does not benefit from the institutional incentives which made it possible for the EU accession states in the 1990s to push ahead with ambitious macroeconomic and institutional reforms.

Table 2: Gross Domestic Product per capita, 2004 (US\$)

	Nominal dollars	PPP-adjusted
Russian Federation	4,093	10,179
Spain	24,144	23,627
Israel	17,695	22,077
Portugal	16,375	19,038
Korea	14,098	21,305
Taiwan	13,260	25,614
Czech Republic	10,480	18,357
Hungary	10,129	15,546
Mexico	6,506	9,666
Poland	6,227	12,244
Malaysia	4,625	10,423
South Africa	4,500	10,603
Turkey	4,251	7,503
Argentina	3,912	12,468
Brazil	3,417	8,328
China	1,269	5,642
Indonesia	1,165	3,622
Nigeria	500	1,120
India	608	3,029

Source: IMF, 2005b.

Russia's long-term growth

There are at least four sets of factors which are likely to play a prominent role in determining Russia's growth path over the longer term, say, the next ten years: the economy's structural endowments, the nature of the external environment, the content of macroeconomic and structural policies, and the evolution of the country's potential for technological innovation. We now look at each of these factors in turn, with particular reference to the ways in which they can be perceived as strengths, that is, able to fuel the growth process in important ways, or as weaknesses, dragging the economy down, and preventing improvements in the efficiency of resource utilization and factor productivity.

Structural endowments

This concept refers to the structural inheritance of Russia, as it emerged from several decades of central planning under the Soviet Union. There are several components to this set of factors, some which work to Russia's advantage, and some of which do not. The economic distortions of the Soviet era were far more pervasive in Russia than in other centrally planned economies, many of which, by the early 1990s, had thriving private sectors. In contrast, Russia did not even have the rudiments of a price and tax system, and there was pervasive and widespread subsidization of production through the exchange rate, interest rates, and the price of raw materials. All this, exacerbated by an unhealthy emphasis on boosting the prominence of military output, had made its industrial sector glaringly uncompetitive. In the early stages, broadly through 1995–96, the phasing out of many of these distortions had

an adverse impact on measured output. As the privileged access by various sectors in the economy to resources, such as cheap credit, hard currency, and commodities at a fraction of the world price, were withdrawn, and as the country moved gradually to a more rational system of resource allocation—based on a decentralized structure of market-determined prices—the economy entered a period of severe contraction, with drastically reduced levels of profitability at the enterprise level, major cutbacks in investment and employment, and associated social dislocations.⁶

However, the ongoing dismantling of these distortions is expected to have a potentially large impact on existing supply constraints, and could tangibly boost potential output. Two examples of this process make the point clear. First, the gradual elimination of restrictions on the ownership of agricultural land, and the beneficial impact this could eventually have on the ability of farmers to mortgage their land to finance planting and harvesting, as is done routinely in more developed economies. The agricultural sector is emerging from decades of neglect; the territory of the Russian Federation is by a huge margin the largest land mass in the planet, spanning 11 time zones, yet the country imports a large share of its food requirements. The potential for growth in the agricultural sector is, therefore, clearly enormous, if supported by the appropriate policy framework. Second, the emergence of a broad array of private schools, universities, and training centers far more attuned to the needs of the private sector. These new institutions are better able to deliver to the market a labor force with a vastly improved set of skills and capabilities, as compared with the early stages of the transition, when education and training were state funded, and in which virtually no effort was made to match skills with needs. Both could have potentially huge implications for the future evolution of total factor productivity and, therefore, potential output. Both highlight the scope for improved resource utilization as a key driver of growth in Russia, in contrast with early episodes of growth in the Soviet economy, which were largely driven by heavy investment and higher labor force participation rates.⁷

A related aspect is the extent to which repressed demand for consumer and durable goods seems to be fuelling the growth of investment, particularly in the construction sector, where the potential benefits of modernization of the entire stock of residential and commercial real estate could spur growth significantly in coming years. Unlike China, Russia is not likely to benefit much from a process of urbanization, whereby a large peasant population moves from the country side—where labor productivity is close to zero—to the cities, where it is much higher and captured in the official statistics. However, Russia does have an unusually old and dilapidated capital stock: a full 67 percent of capital equipment is at least 15

years old. Again, the potential here for major gains in factor productivity are large. As with tapping the potential of Russian agriculture, the extent to which the country will benefit from this process will depend on the content of policies—in the case of the renewal of the capital stock, a marked improvement in the investment climate (see below). Similar comments apply to the country's decaying infrastructure.

Yet another feature which enhances Russia's long-term growth potential is its natural resource base. At a time of increasing pressures on world reserves Russia is quickly emerging as a major power in the international oil markets.⁸ Partly reflecting sizeable investments by the oil companies during the last several years, Russian oil output (Table 3) has expanded by close to 42 percent in the period 2000–04 and the country is now the world's number two oil producer, after Saudi Arabia, and well ahead of the United States.⁹ If account is taken of gas exports—where Russia is by far the largest supplier in world markets (Table 4), accounting for a 27 percent global share—then Russia may well be the world's largest *energy* exporter.

The government's past reluctance to submit to requests from OPEC for production cuts reflects a combination of factors, including the setting of ambitious medium-term production targets by Russian private producers, concerns about the establishment of a precedent which could then lead to future OPEC demands on the government and producers, and the fact that the government appears to have made a deliberate strategic choice to present itself to other trade partners as a reliable, alternative supplier. While some of these plans may have suffered a blow in the wake of the clumsy re-nationalization of Yukos (see below), the fact remains that Russia continues to maintain a number of important strategic advantages.

First, the Russian oil companies are engaged in a major process of restructuring and modernization, reinvesting their large profits to expand capacity and enhance efficiency. Unlike their peers in many of the OPEC member countries—often dominated by state monopoly companies that bar or sharply limit foreign investment in the oil sector—Russia's oil companies are seeking to establish a presence among the world's oil industry leaders, and are doing so against the background of a much stronger macroeconomic situation.

Second, and more important, there are a number of questions about the long-term political outlook for those countries in the Middle East which have been major suppliers of oil to the United States and other markets in the industrial world. In particular, Saudi Arabia (the world's largest oil exporter) and other countries in the Middle East may well be on the threshold of major political changes in the next decade or so. The countries in the Gulf region have the highest rates of population growth in the world and, hence, the most rapidly expanding labor

Table 3: Oil production, 2004 (million tons)

	Million tons	Share of total (percent)	Rank
United States	329.8	8.5	3
Canada	147.6	3.8	9
Mexico	190.7	4.9	5
Venezuela	153.5	4.0	7
Norway	149.9	3.9	8
United Kingdom	95.4	2.5	14
Russian Federation	458.7	11.9	2
Iran	202.6	5.2	4
Iraq	99.7	2.6	13
Kuwait	119.8	3.1	12
Saudi Arabia	505.9	13.1	1
United Arab Emirates	125.8	3.3	10
Nigeria	122.2	3.2	11
China	174.5	4.5	6
Total World	3,867.9		

Source: British Petroleum, 2005.

Table 4: Natural gas exports, 2004 (billion cubic meters)¹

	Billion cubic meters	Share of total (percent)	Rank	World rank
United States	21.4	2.6%	7	10
Canada	102.1	12.6%	2	2
Argentina	7.8	1.0%	10	20
Denmark	4.1	0.5%	11	24
Germany	12.1	1.5%	8	15
Netherlands	49.2	6.1%	5	5
Norway	74.9	9.2%	3	3
United Kingdom	9.8	1.2%	9	17
Russian Federation	215.0	26.5%	1	1
Turkmenistan	43.9	5.4%	6	6
Algeria	60.9	7.5%	4	4
Other	210.0	25.9%	—	—
Total	811.2	100.0%		

¹ Provisional
Source: Cedigaz, 2005.

forces. Unemployment rates have reached historically high levels, and serious structural rigidities in their economies have resulted in anemic economic growth rates, and falling per capita incomes.¹⁰ Rising social tensions in countries with unreformed political institutions and no ostensible experience of democracy could well result in instability. Whether these emerging tensions will lead to evolutionary and largely peaceful changes—as happened in Central and Eastern Europe in the late 1980s and early 1990s—or will be more destabilizing in nature is not yet clear. The point is that, from a strategic point of view—Yukos notwithstanding—the new geopolitics of energy may, indeed, create an opportunity for Moscow to “assume a far more significant position in the world petroleum sector than ever before,” as noted in an insightful article by Morse and Richard (2002). This would mean potentially larger inflows of FDI to the energy sector, with the

associated beneficial repercussions for technological diffusion, modernization, and growth.

The extent to which the country's *human* capital endowment is likely to spur growth in coming years is more difficult to assess. The redeployment of labor from the military industrial complex and other heavy and inefficient industries to the private non-defense sector has probably run most of its course, and has led to improvements in labor productivity, as Russia's generally educated labor force has continued to move to light manufacturing, services and other industries long neglected under central planning. However, the Russian labor force continues to suffer from skills mismatches, which are particularly acute in the public sector. Submerged in a centuries-old deeply authoritarian tradition, the capacity of Russia's civil service to formulate and implement policy reforms is woefully inadequate, and this, in turn, has limited the ability of the government to efficiently utilize surplus revenues in ways that might contribute to enhancing factor productivity and boosting competitiveness.

Two examples illustrate the dilemmas this sometimes creates. The social expenditure reforms introduced in early 2005 met with fierce opposition on the part of the population, had to be partially abandoned, and ended up being far more costly in financial terms than initially envisaged. A key aspect of this was lack of proper preparation during the formulation stage. The public sector was just not up to the task of effectively tackling reforms in Russia's complex system of social benefits. On another front: having amortized, ahead of schedule, all of its obligations to the IMF, the government has just prepaid some US\$15 billion of debt to Paris Club official bilateral creditors. While it is possible to come up with good reasons to justify this use of public resources, one cannot help noting that Moscow's main international airport (Sheremetyevo 2) remains a third-rate facility. Fifteen years into the transition, with a bountiful surplus in the budget, an efficient mechanism has not been found to deliver an essential facility to a G8 capital: a large modern international airport.

Furthermore, Russia's long-term demographic trends are not particularly favorable, as is persuasively argued by Nicholas Eberstadt elsewhere in this volume (Chapter 3.2). Thus, the expansion of the labor force is unlikely to be an engine of economic growth in coming years. However, the scope for progress in innovation and improvements in the productivity of the factors of production is considerably larger (see below). Although it is difficult to quantify the impact on long-term growth of these structural endowments, they are expected to play a supportive role, particularly if accompanied by a favorable external environment, and by the structural and institutional reforms noted below.

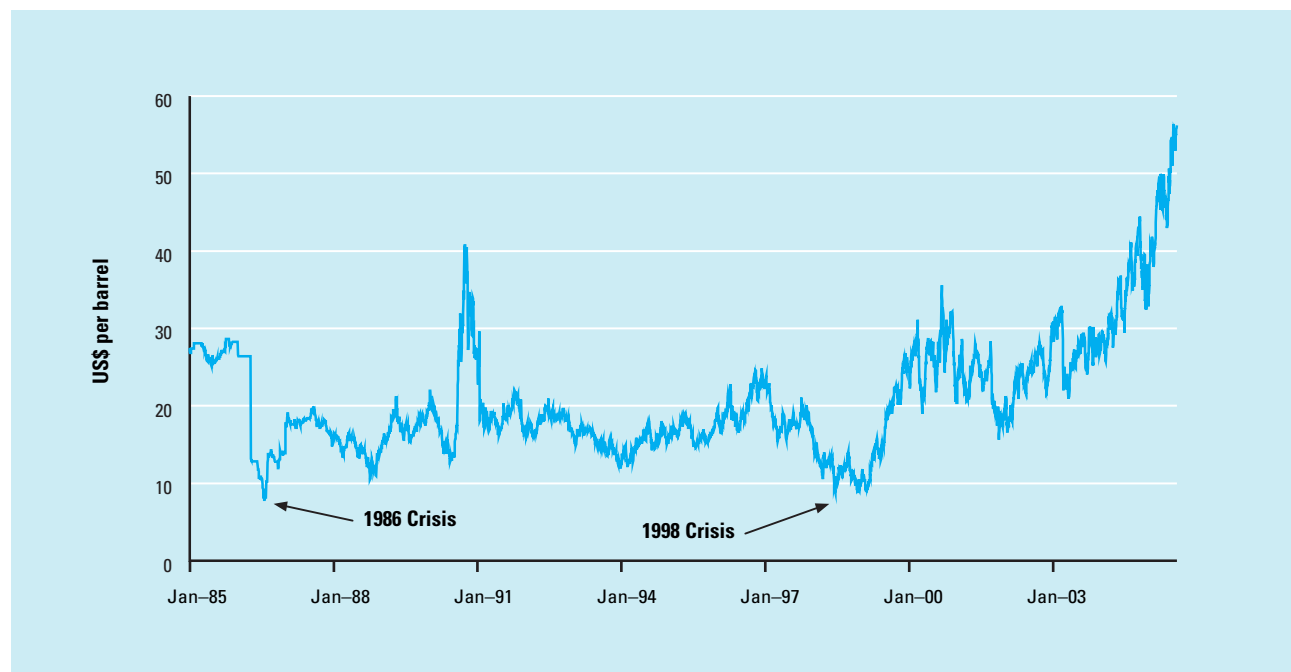
The external environment

The external environment has played a key role in the evolution of the Russian economy, with the most recent examples being the collapse of oil prices in 1997–98 and in 1986. As Figure 3 implies, both precipitated a fiscal implosion, although the effects of the more recent episode were more readily apparent, owing to the substantial opening up of the economy that had taken place in the intervening decade.

Some recent progress notwithstanding, the Russian economy remains strongly dependent on the energy sector. According to an IMF study released in 2002,¹¹ the energy sector contributes some 17 percent of Russia's total value added: oil and gas extraction account for 6 percent of GDP; energy-related transportation and pipelines account for 9 percent of GDP; and other fuels and products make up the remaining 2 percent of GDP. Furthermore, the energy sector contributes about a quarter of total revenues for the consolidated government budget.¹² It has also accounted for 40 percent of total investment in recent years and energy exports account for nearly 60 percent of total exports. The IMF also reports on some oil price sensitivity analysis, the results of which suggest that a US\$1/barrel drop in the price of oil translates into a 0.5 percent GDP contraction; a 0.3 percent reduction in federal revenues and a US\$1 billion drop in exports.¹³

The authorities have been generally aware of the vulnerabilities implicit in the above "facts" about the Russian economy, and have gone about mitigating the undue influence of oil in two ways: first, to encourage the growth of exports and to gear taxation of the energy sector with a view to generating a higher level of revenues for the federal budget for a given level of prices. Their efforts in this area have met a measure of success, as the interests of the state and the oil companies have broadly converged. In this scenario—provided the federal budget continues to be implemented in the cautious fashion seen in recent years—the growth in the volume of exports would far exceed the real rate of expenditure growth, and, hence, the demands made by the budget on oil revenues. Implicit is the assumption that existing pipeline capacity constraints on exports would be gradually relieved through additional construction.

A second component of this strategy has been the creation of a Norwegian-style Stabilization Fund in early 2004, to reduce the country's vulnerability to external shocks linked to terms of trade losses.¹⁴ This important initiative—arguably the most important piece of economic legislation approved during the past two years—has made an important contribution to reducing investor perceptions that the country is nothing more than "an oil play." Incidentally, it has also been used by the authorities as a monetary sterilization mechanism, at a time of considerable

Figure 3: Urals oil price (US\$ per barrel)

Source: Bloomberg.

upward pressure on the ruble, associated with massive inflows of liquidity through the balance of payments. Of course, the budget and the balance of payments continue to be strongly determined by commodity prices, but the circumstances under which the country used to enter a financial danger zone have been radically altered. To the extent that a major share of the proceeds of the Stabilization Fund continue to be allocated to prepayment of external debt, it is not inconceivable that within a few years Russia's debt-to-GDP ratio may have fallen to some 10 percent, significantly enhancing the capacity of the government to precipitate major shifts in the composition of spending, away from debt service toward education, health, investment in infrastructure, and other competitiveness-enhancing areas.

The external environment has other features which could have a bearing on Russia's ability to sustain high growth rates. Global demand prospects, the timing and conditions under which Russia would enter the WTO, the patterns of trade flows and the extent to which these are likely to be affected by the increasingly global reach of Russia's energy sector (e.g., in China). On balance, as shown in Figure 4, the combination of an unusually strong balance of payments position—the current account in 2005 should amount to some US\$70 billion and reserves at the Central Bank of Russia reach some US\$170 billion, equivalent to about a year and a half of imports—and a

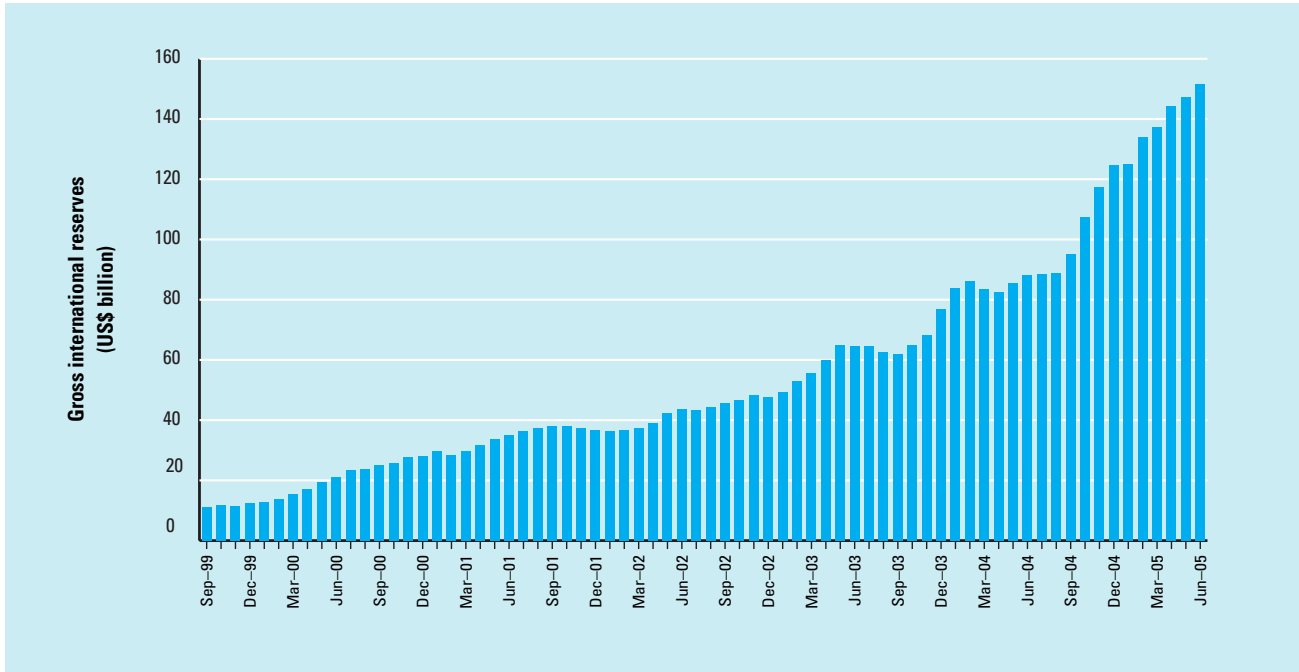
strong medium-term outlook for energy prices, is expected to provide favorable conditions for continued economic growth.¹⁵

Policy content: structural and institutional reforms

Real growth rates in the 7–9 percent range are needed to make a tangible difference in the pace of “catch-up.” Such rates are not impossible, but would require a much more aggressive stance as regards structural reforms and improvements in the institutional environment. We take it as given that the government will continue to show credible commitment to a stable macroeconomic framework, and that the budget indiscipline—the defining characteristic of Russian economic policy during much of the 1990s—is long gone. The actual evolution of the fiscal accounts during the last six years, shown in Figure 5, would suggest this to be a reasonable assumption.

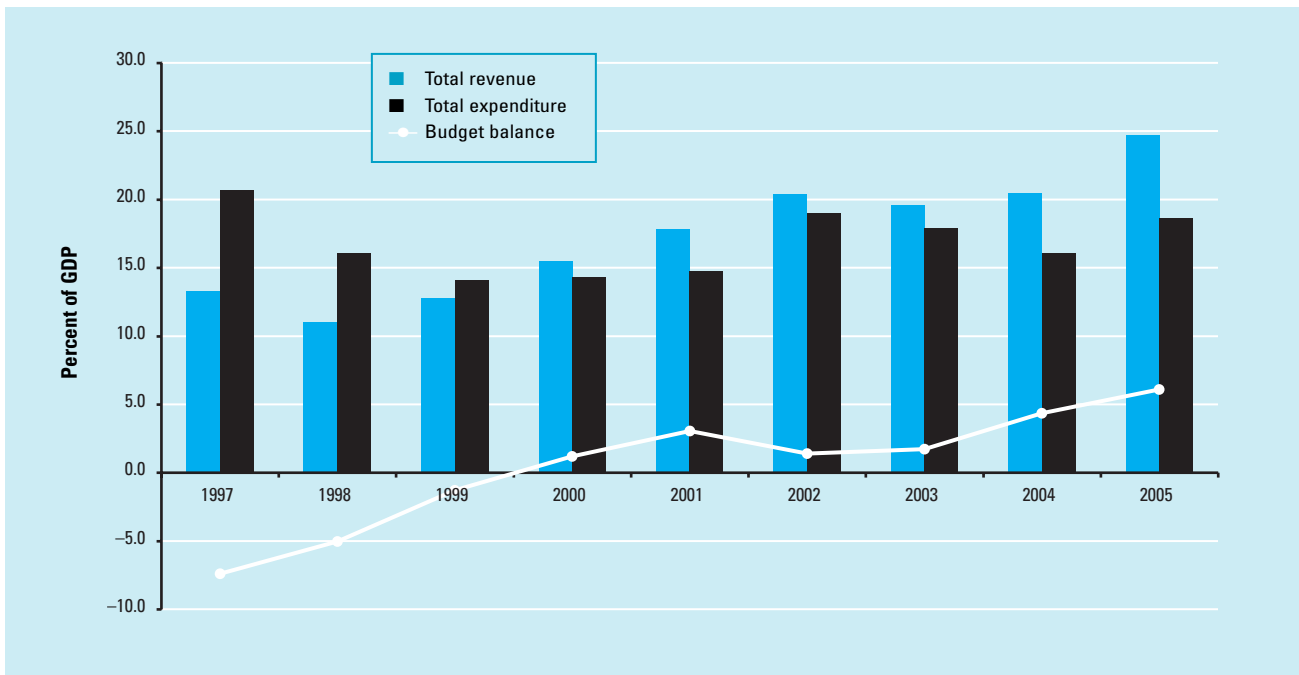
Indeed, since coming into office in early 2000, the government of President Vladimir Putin has shown remarkable fiscal restraint, largely avoiding the sort of relaxation of policies that have come to be associated with countries experiencing significant improvements in the terms of trade. Instead, the government has been running budget surpluses—for the sixth consecutive year in 2005—having used the excess revenues stemming from higher-than-assumed oil prices in successive annual budgets, to reduce the stock of external debt, to build up a

Figure 4: Russia: Gross international reserves, US\$ billion



Source: Central Bank of Russia, online at: <http://www.cbr.ru/eng/>

Figure 5: Russia: Government budget balance (percent of GDP)



Source: Russian Federation, 2005.

large cushion of cash reserves at the central bank, and to boost pensions and public sector wages, as well as selected components of expenditure. In this respect, in the remarkably benign external environment of the last few years created by buoyant oil markets, the Russian government's behavior in the area of fiscal policy can be characterized as being closer in spirit to that of Norway, than to that of Venezuela and Nigeria, where oil revenues in the past have tended to fall victim to a combination of inefficiency and venality. However, a solid budget and cautious monetary policies will clearly not be enough.

Temporarily setting aside the management of the fiscal accounts (see below), particular attention would have to be given to measures aimed at creating a friendlier environment for small- to medium-sized enterprises, the bedrock of output and employment growth in the more successful transition economies in the region. In particular, the authorities must urgently concentrate on the task of enhancing the intermediation role of Russia's banking sector by addressing some of its most glaring weaknesses, namely: the lack of appropriate supervision, the fact that it is dominated by state banks which do not always operate on a commercial basis, its sprawling nature, and the absence of international accounting standards (IAS) reporting, to name a few.

But this is not all. The authorities must do much more to improve the legal and regulatory environment. The big conglomerates have no difficulty lobbying the government and parliament to ensure that the system works for them, just as they have had no problem financing expansion plans out of retained earnings, or via "pocket" banks. Indeed, the extent to which they dominate the economic and political landscape is itself a worrisome development, suggesting the emergence of a South Korean-style *chaebol* form of capitalism.¹⁶ But, at the other end, potential entrepreneurs face a labyrinthine regulatory environment, corrupt officialdom, and have few chances to gain access to bank credit. There was a time, a few years back, when the government seemed to be aware of these weaknesses, and appeared intent on doing something about them. Indeed, much of the push in the area of structural reforms seen during the first Putin administration appears to have been motivated by a desire to remedy them. But remaining problems are glaring.

The Forum's 2005 Executive Opinion Survey of more than 470 enterprises in Russia shows extremely poor rankings in a number of critical areas, highlighting several serious institutional weaknesses, and raising fundamental questions about the quality of the investment climate. Table 5 shows a comprehensive summary of these indicators for 2004 and 2005.

The private sector in Russia has serious misgivings about the independence of the judiciary, and about the way justice is administered. Legal redress in Russia is not

Table 5: Russia's macroeconomic and structural environment: An international perspective

Variable	Rank 2005 (out of 117 countries)	Rank 2004 (out of 104 countries)
Macroeconomic and financial environment		
Level of financial market sophistication	86	72
Soundness of banks	101	91
Ease of access to loans	91	67
Venture capital availability	66	49
Local equity market access for raising money	69	74
Government encouragement of FDI	109	97
Prevalence of trade barriers	91	95
Technological innovation and diffusion		
Technological readiness	77	69
Firm level technology absorption	63	56
Prevalence of foreign technology licensing	101	87
Extent to which FDI brings new technology into the country	98	87
Quality of science and math education	21	23
University/industry research collaboration	42	40
Quality of research institutions	31	19
Information and communication technology (ICT)		
Cellular mobile subscribers per 100 inhabitants	65	74
Internet users per 10,000 inhabitants	66	72
Government prioritization of ICT	91	68
Personal computers per 100 inhabitants	52	47
General infrastructure		
Overall infrastructure quality	79	64
Air transport quality	64	66
Railroad infrastructure development	24	26
Fixed telephone lines	46	50
Public institutions-contracts and law		
Judicial independence	102	84
Efficiency of legal framework	95	80
Protection of property rights	108	88
Intellectual property protection	105	84
Favoritism in decisions of government officials	106	85
Effectiveness of law-making bodies	80	63
Extent of bureaucratic red tape	90	89
Reliability of police services	99	90
Business costs of organized crime	101	88
Strength of auditing and accounting standards	89	81
Impact of taxes on the incentives to work or invest	81	73
Freedom of the press	96	84
Public institutions-corruption		
Irregular payments in:		
Exports and imports	83	91
Tax collection	69	69
Public contracts	82	75
Judicial decisions	76	83
Diversion of public funds	87	69
Business costs of corruption	109	100
Public trust of politicians	94	76

Source: World Economic Forum, 2004 and 2005.

Table 6: Russia: Doing business in 2005

	Starting a business			Enforcing a contract		
	Number of procedures	Time ¹	Cost ²	Number of procedures	Time ¹	Cost ³
Argentina	15	32	15.7	33	520	15.0
Brazil	17	152	11.7	25	566	15.5
China	12	41	14.5	25	241	25.5
Czech Republic	10	40	10.8	22	300	9.6
Hungary	6	52	22.9	21	365	8.1
India	11	89	49.5	40	425	43.1
Indonesia	12	151	130.7	34	570	126.5
Israel	5	34	5.5	27	585	22.1
Korea	12	22	17.7	29	75	5.4
Malaysia	9	30	25.1	31	300	20.2
Mexico	8	58	16.7	37	421	20.0
Nigeria	10	44	95.2	23	730	37.2
Poland	10	31	20.6	41	1000	8.7
Portugal	11	78	13.5	24	320	17.5
Russian Federation	9	36	6.7	29	330	20.3
South Africa	9	38	9.1	26	277	11.5
Spain	6	108	16.5	23	169	14.1
Taiwan	8	48	6.3	22	210	7.7
Turkey	8	9	26.4	22	330	12.5
Sample Average	10	57	27.1	28	407	23.2

Notes:

¹ Time measured in days² Cost measured as percent income per capita³ Percent of debt

Source: World Bank, 2005

expeditious, transparent, or inexpensive, as it is in the most competitive economies in the world. A ranking of 102 among 117 countries in 2005 suggests that it is time consuming, unpredictable, and a burden on the cost structure of enterprises. Partly because of this, the environment for the protection of property rights is extremely poor and worsening. Russia's ranking in this indicator this year has suffered a precipitous decline with respect to 2004, from 88 to 108, among the worst in the world. The heavy-handed, arbitrary handling of the Yukos case has, no doubt, been a contributing factor.¹⁷

What foreign investment has come in has been largely directed to the energy sector, characterized by a high risk/high reward tradeoff. In this respect, Russia is not unlike China, where property rights and a poor judicial climate are also a serious concern, but where the growth of FDI has been fuelled by the country's large and expanding market, offering the promise of high returns on such investments. The opportunity costs associated with the poor property rights climate are huge for the country, as Russian flight capital—well in excess of US\$200 billion by conservative estimates during the past decade—remains parked abroad, waiting for a better day.¹⁸ Russia is afflicted with insufferable levels of red tape and needless bureaucracy, a particularly heavy burden for potential startups, as shown, in Table 6, by the unremittingly mediocre scores in the World Bank study on the costs of doing business

(number of procedures and cost to start a new business, etc.).

But there is more. Public officials in general are not perceived as impartial arbitrators of government policy, but rather as active supporters of particular interests. Lack of security remains a heavy burden on businesses as well, reflecting a combination of the high prevalence of crime and the unreliability of police services. The incidence of crime and corruption imposes heavy costs on business, and, therefore, adversely affects the international competitiveness of Russian companies. Accounting and auditing standards are weak, raising yet another set of concerns about the investment climate. Increasing restraints on freedom of the press highlight the risks for the abuse of power, and the difficulties for civil society to emerge as a constructive counterweight to the power of the state.

Technology and innovation

The speed with which a country can utilize new technologies and the extent to which it can itself be part of the process of scientific and technological innovation are key drivers of productivity growth. The Growth Competitiveness Index captures this by looking at two specific aspects of technology that foster sustained growth: innovation and technology transfer, on the one hand, and the use that is made of information and communications technologies (ICT), on the other. Technological improvements may be made through the introduction of new

technologies—that is, innovation—or by adopting those technologies already developed abroad through technology transfer. The second process is generally seen to be particularly important for developing economies, where it is cheaper to import and adapt technologies from outside, than to develop them from the outset.

Russia finds itself in a unique position along the technology frontier. On the one hand, it is a country that has a century-long history of distinguished contributions to basic scientific research.¹⁹ Innovation as a concept—the process of scientific inquiry and application, leading to an expansion of the frontiers of knowledge—is an integral part of the country’s cultural and educational heritage. The collapse of the Soviet Union, however, precipitated a massive brain drain. Faced with sharp cutbacks in resources allocated to basic scientific research and an unsettled political situation, many of Russia’s best scientists emigrated, enriching the universities and research establishments in other parts of the world. Thus, the various indicators used to construct the technology index of the Growth Competitiveness Index convey an ambiguous picture. Some examples will suffice to illustrate Russia’s mixed picture. First, not surprisingly, and reflecting the country’s still impressive scientific endowment, Russia gets a very good ranking of 29 on the innovation subindex; its extremely high tertiary enrollment rates and relatively high number of patent registrations, as well as good levels of university/industry collaboration help explain this.²⁰ Its innovation ranking would be even higher, were it not for relatively weak scores in the area of “technological sophistication” captured by the Survey, broadly reflecting the antiquated state of the capital stock, as noted earlier.

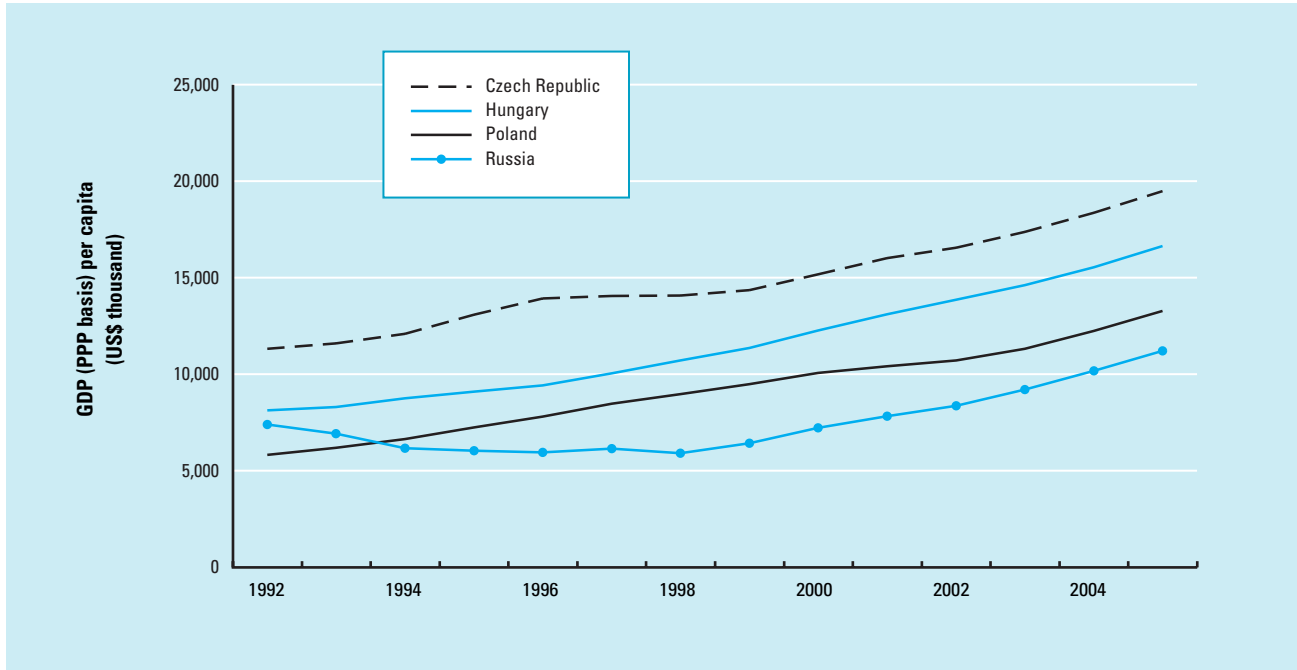
Second, Russia does not have particularly impressive penetration rates for the latest technologies. Even in the area of mobile telephony—where notable progress has been made in recent years in terms of expanding coverage—cellular telephone use per 100 inhabitants is about 25, putting Russia in 65th place in the world, better than its 74th rank in 2004, but still not quite in the top half among the 117 economies covered in the GCR. Similar results are obtained for Internet use: improvements with respect to 2004 but absolute levels that are not high enough to put Russia above its 66th place in the world. The results of the Survey also suggest that the government does not appear to give high priority to the promotion and dissemination of information and communications technologies (ICT) policies, in contrast to other countries, where the government plays a leading role in promoting the use of the latest technologies in the public sector, encourages their adoption and use in the private sector, and continuously updates the legal environment underlying the ICT sector. The importance of this cannot be underestimated. ICT continues to be regarded as a key driver for productivity and sustained growth. It acts as a

catalyst for organizational transformation, improving the way people work in an economy, facilitating the flow of information, and increasing the efficiency and speed needed to accomplish tasks. For developing countries in particular, ICT is further seen as a means of leapfrogging to a greatly improved economic and business environment.²¹

However, Russia gets its *lowest* ranking in the area of technology transfer, whether as regards the role of FDI as a source of new technologies, or the prevalence of foreign technology licensing as a means of acquiring new technologies. This may be due, in part, to the fact that with a commodity-based export structure, Russia may be less adept at absorbing foreign technologies than a country with a strong technology-based export sector. In addition to this, there seems to be broad consensus that Russian attitudes toward FDI may contain an element of ambivalence. Throughout much of the past decade the government has remained publicly committed to encouraging foreign direct investment and, at least formally, Russia has managed to create a fairly liberal regulatory framework. The authorities seem to recognize that the benefits of FDI could be great, involving much-needed technology transfers, improving managerial skills in the enterprise sector, as well as helping to reduce, through diversification, the dependence of the balance of payments and the budget on primary commodities. However, in practice, the authorities have sometimes displayed a more ambivalent attitude toward foreign ownership, one characterized by the somewhat old-fashioned view that there are sectors that should remain “strategic,” largely under national control. This has been reflected in a number of ways in recent years: in the consolidation of the aluminium sector, in the relatively low levels of foreign participation in the banking sector,²² in sharp contrast with what has happened in other transition economies in the region—particularly in Central and Eastern Europe—and, more recently, in government attempts—clumsy but largely effective—in reasserting control over the energy sector. Not surprisingly, FDI inflows have been relatively small in Russia over the past decade, rarely above 2 percent of GDP on an annual basis.

Summary

The above picture is decidedly mixed. It consists of good resource and structural endowments, the pursuit, in recent years, of broadly cautious macro policies, buttressed by a benign external environment, one that is likely to remain so in coming years. It includes much unfulfilled potential in the area of technological innovation—against a background of impressive past achievements in the area of basic scientific research. It is marred, however, by disturbing institutional deficiencies across a broad range of areas, essential for the creation of a more investor-friendly environment. This would suggest that to ensure high growth

Figure 6: Russia and selected economies: GDP per capita 1992 to 2005

Source: IMF, 2005b.

rates in coming years, a multi-pronged strategy should be adopted. First and foremost, deliberate and ambitious reforms are needed to tackle rule of law, property rights and transparency issues. The government will also have to continue to pursue cautious macroeconomic policies—in particular, it will have to strive not to yield to the temptation to simply convert buoyant oil revenues into higher public sector wages and pensions. In this respect, the Concluding Statement of the 2005 IMF Mission, with its warning that “the oil wealth is not being harnessed in support of reforms that could raise potential GDP” is a troubling development.²³ Only as these deficiencies are addressed will Russia be able to capitalize on its strengths to move the economy’s growth profile to a higher level, consistent with the government’s desire to converge to income per capita levels seen elsewhere in Central and Eastern Europe. As noted in Figure 6, the gap in PPP-adjusted Russian GDP per capita with respect to Poland, Hungary, and the Czech Republic is actually wider in 2005 than it was in 1992. Russia has, in fact, *diverged*.

The EU: An institutional anchor for Russian development?

The future of Russia’s relations with the EU has been the subject of frequent consultations between the EU and successive Russian governments.²⁴ Discussions have addressed issues both of economic integration and the associated institutional mechanisms that would gradually

remove barriers to the flow of goods and services and facilitate factor mobility, as well as aspects of political cooperation. The dialogue has stretched for more than a decade now, and various decisions taken along the way have at times fallen victim to the somewhat disorderly nature of Russia’s transition to the market, and to the accompanying introduction of democratic processes and institutions. To a lesser extent in recent years, the EU enlargement process has also at times acted as a temporary distraction.

More recently, the dialogue has intensified, and has merged with the broader agenda that seeks to identify what Russia’s future role will be in the international community. This agenda includes the formulation of new cooperative arrangements with NATO, under the umbrella of an established Russia-NATO Council, the decision to put WTO accession negotiations on a fast track,²⁵ and plans for the creation of a Common European Economic Area, initially called for in 1999 and reaffirmed on several subsequent occasions. We now consider some aspects of the evolving Russia-EU relationship.

Russia-EU facts

It is useful to set out some basic structural parameters that will have a bearing on the future of Russia-EU relations. Russia has a population of some 145 million, compared with the EU’s 457 million. Its population is thus 80

percent higher than that of Germany, the largest of the EU states. Russia's population is twice that of the 10 new members of the EU who joined on 1 May 2004. It has a landmass of 17.1 million square kilometers, 5.3 times that of the EU15. Russia had a *per capita* GDP of US\$4,093 in 2004, compared with a weighted average for the EU25 of US\$28,058. On a PPP-adjusted basis, the gap is smaller: according to the IMF World Economic Outlook database, GDP *per capita* in Russia in 2004 was \$10,179, as compared with US\$25,791 for the EU25 and US\$19,038 for Portugal. On a PPP-adjusted basis, the Russian economy is roughly the size of Brazil's, and about 40 to 50 percent larger than that of Canada, Korea, Mexico, and Spain.

Russia's main macroeconomic indicators do not compare unfavorably with those in the EU: inflation is higher, but Russia has a large budget surplus, lower public indebtedness, a stronger current account, and GDP growth rates during the past three years more than three times the EU average.

In terms of structural and institutional reforms, Russia still lags behind some of the more successful transition economies in the region, most of which had a considerable head start in terms of private sector development. The EU is a far more important trade partner to Russia than the other way around (Table 7). In 2004, Russian merchandise exports amounted to US\$183 billion, of which roughly 31 percent were sold to EU15 countries. The share rises to 50 percent if the 10 EU enlargement candidates are added. On the import side, some 32 percent of goods originate in EU25 countries.

About 50 percent of Russia's exports to the EU15 are energy products. This figure rises to close to 70 percent, if the combined EU25 is considered, because many of the new EU member states import up to 100 percent of their energy needs from Russia, including gas, oil, and nuclear fuels. In contrast, Russia accounts only for some 2–3 percent of total EU exports and imports. It is the fourth largest market for EU exporters, after the United States, Switzerland, and China.

Russia's international political weight far exceeds its economic importance. This stems as much from the Cold War, as from the fact that Russia emerged as the legal successor state to the Soviet Union. It is a permanent member of the United Nations Security Council, has been made a full member of the G8, and is presently a member of the "Quartet" (with the United States, the EU, and the UN), holding discussions on a possible peace settlement in the Middle East. A not insignificant share of Russia's perceived political weight stems from the desire by G7 partners during the 1990s to encourage a peaceful transition, at a time of severe internal tensions associated with the collapse of the central planning system. A key element of this was tacit recognition of Russia's earlier status as a global nuclear power.

Table 7: Russia: Exports and imports 2004 (US\$ billion)¹

	Exports	Imports	Share of exports (percent)	Share of imports (percent)
World	183.5	96.3	100	100
EU25	91.6	30.7	49.9	31.8
<i>Of which</i>				
France	4.7	2.7	2.6	2.8
Germany	14.0	9.4	7.7	9.7
Italy	11.4	2.8	6.2	2.9
United Kingdom	6.5	1.7	3.6	1.7
Finland	5.8	2.1	3.2	2.2
Netherlands	11.7	1.5	6.4	1.5
Poland	6.3	2.0	3.4	2.1
Hungary	3.9	0.7	2.1	0.7
Czech Republic	2.6	0.8	1.4	0.9
United States	8.3	3.5	4.5	3.6
Japan	3.3	2.1	1.8	2.2
Switzerland	7.8	0.6	4.3	0.7
China	11.1	3.9	6.1	4.0
India	3.7	0.7	2.0	0.7
Belarus	10.3	5.8	5.6	6.0
Cyprus	6.0	0.0	3.2	0.0
Kazakhstan	4.5	3.1	2.4	3.3
Ukraine	10.3	5.2	5.6	5.4
Other	26.6	40.8	14.5	42.3

¹ Country levels corresponded to 2003 totals.

Source: IMF, 2005a.

Russia–EU cooperation

One of the first initiatives in the area of Russia–EU cooperation was the 1994 Agreement on Partnership and Cooperation (APC), a comprehensive document containing 112 articles, various annexes and protocols, covering trade in goods, investment, intellectual protection, and understandings in the areas of energy, agriculture, the environment, transport, and so on. The agreement, which came into force on 1 December 1997, contains various provisions aimed at strengthening cooperation in the political and security areas as well. Its avowed goal is to prepare the groundwork for the eventual establishment of a free trade area.²⁶ This vision has been reinforced a number of times in subsequent summits, and in 1999 the EU called for the creation of a Common Economic Space, a goal which presupposes tangible steps in the direction of harmonization of legislation and the regulatory framework. The Common Economic Space figured prominently in the discussions at the May 2005 summit. Russia has not been a passive party in this process: in late 1999 it set out its own vision of the future of Russia–EU relations, proposing, in a medium-term framework, some of the priority areas for cooperation. Implicit in this document is the notion of the voluntary and gradual incorporation by Russia of the EU's *acquis communautaire*. This particular interpretation of future relations has been reiterated by President Putin, including in his annual addresses to the Federal Assembly, in which he has stated

that the Russian government would “continue the vigorous work with the European Union aimed at forming a single economic space.”

Options for the future

A reading of these policy statements suggests that, at least over the next decade, Russian membership of the EU is not on the agenda. Indeed, it is not clear whether, because of its size and other structural characteristics, Russian membership could ever be seriously contemplated, at least under the EU’s present legal and institutional structure. Russia is simply too large for the EU to absorb, in the way it has absorbed 10 countries in 2004, with (together) half the population of Russia, a small fraction of the land mass, no strategic nuclear weapons, or the associated political weight (inherited or otherwise) that comes with having a permanent seat in the UN’s Security Council.

Paradoxically, it is not the *stage* of Russia’s development that is likely to be the binding constraint. The EU has agreed to start accession negotiations with Turkey later in 2005, although when it agreed to do so, it had serious concerns about the strength of its democracy, the treatment of its Kurdish minority, its treatment of women, and its unwillingness to recognize Cyprus, an EU member. While negotiations with Turkey could be delayed and will, in any event, take at least a decade to complete, the prospect of these getting off the ground at some point and actually being successfully concluded, cannot be totally ruled out. In contrast, even if Russia were to continue to solidify its democratic credentials, sort out the conflict in Chechnya, and achieve macroeconomic and financial indicators comparable to the likes of Estonia and Hungary, it is unlikely to be invited. On the doorsteps of China and Japan, spanning 11 time zones, Russia inside the EU would change the EU as much, if not more, than it would change Russia.

So, a more promising approach might be to continue to work in those areas of common interest, with the APC surely providing a broad enough agenda. Russia could gain much from a voluntary incorporation of those elements of the *acquis* which have a bearing on improved competitiveness and efficiency, and which might facilitate EU trade with, and investment in, Russia. Russia is still in the early stages of private sector development. It has only been five years since it approved a revised version of the Land Code, which allows, for the first time since the earliest days of the Communist revolution, the private ownership of agricultural land. It has a banking system which does not yet efficiently intermediate financial resources for investment by small and medium-sized companies, and has thereby become a drag on growth rather than a propeller of it. While much progress has been made in recent years in laying the foundation of a sounder macroeconomic environment, the Russian economy remains saddled with

many rigidities and inefficiencies: from extensive subsidization of energy consumption to the household and business sector, to a (still) labyrinthine regulatory environment, to enormous deficiencies in the legal framework, as noted above, and highlighted in the World Economic Forum’s Executive Opinion Survey.

Progress in all of these areas need not be held captive to a political decision whether or not to pursue EU membership as a long-term goal. The above deficiencies will have to be addressed *in any event*, if Russia is to be able to catch up to the per capita income levels of the more successful transition economies in the region. Unlike Estonia—which has had to *introduce* agricultural subsidies and *raise* its overall level of tariff protection to the EU’s common external tariff in order to ensure EU accession—or Poland and Hungary—which negotiated with the EU from a position of weakness—Russia could pick and choose those elements of the *acquis* which were in its national interest.

Thus, going it alone, it would not introduce the grossly distorting features of the EU’s Common Agricultural Policy, but would definitely seek to reform its banking sector to meet the regulatory and prudential requirements of the EU’s Banking Directives. In the same spirit, it would have to make its bankruptcy legislation conform to EU norms and actively cooperate with the EU in such areas as law enforcement, the environment, energy—where Russia is expected to continue to be a major supplier to the EU—and a broad range of security issues where Russia is a global player. In parallel, Russia could seek to play a stabilizing role vis-à-vis the 11 other members of the former Soviet Union, many of them highly dependant on Russian trade (including energy), fostering among them the kind of policy and institutional innovations that have been the basis for the early phases of the EU’s development. In due course, say, after a decade of further political and economic consolidation in Russia, with the EU having successfully dealt with the challenges of possible further waves of enlargement, the Russian government and its counterparts in Brussels could re-examine the broad parameters and supporting institutions of a future Russia-EU relationship.

Risk factors and conclusions

There is no intrinsic reason why the Russian economy could not enter a period of high, sustained growth in coming years. It has a number of structural features which create the conditions for rapid growth: it is likely to benefit from gains in efficiency associated with the continued elimination of remaining distortions from its central planning past; it has an impressive natural resource endowment which is likely to spur continued and growing interest among foreign investors, particularly in the all-important

energy sector. The human capital stock is, likewise, on balance, a competitive advantage, and remaining skills shortages—while sharply limiting in many ways in the public sector—are gradually being addressed. Russia has an impressive tradition of world-class research in the basic sciences, including seminal contributions to mathematics and physics. But the brain drain has been a blow to the country's ability to quickly move back to the outer limits of the technology frontier. The basic machinery to do so, in the form of higher education establishments that support scientific research, and the commitment to excellence that was the distinguishing feature of Russian culture and science during much of the past century will have to be revamped.

Tight conditions in the global oil markets suggest that the external environment is likely to remain favorable to Russia, creating an ideal opportunity to push ahead with structural and institutional reforms. A strong budgetary position provides the cushion, in political economy terms, for implementing ambitious reforms. The alternative is to pursue these in the middle of an economic downturn or a crisis, a scenario that is traditionally more difficult. Particular attention will have to be paid to reforms to improve Russia's woefully inadequate public institutions, to improve the judicial and legal climate, to safeguard property rights, to reduce the prevalence of corruption and crime. It is to be hoped that the arbitrary and amateur behavior which characterized the Yukos case are behind us, a lesson for the future on how *not* to go about enhancing the rule of law and creating a better investment climate.

Russian policymakers will have their hands full in the period ahead. The large inflows from record high energy prices create opportunities, but they also pose important challenges. Liquidity management—not a central concern of policymakers in the past—is now very much at the center of macroeconomic policy, particularly as regards the evolution of the real exchange rate for the ruble. The IMF is certainly correct in suggesting that a loosening of fiscal policy—particularly one aimed at boosting public sector wages and pensions, not investments in education, public health, and infrastructure, all of which would boost productivity and thus enhance the permissible level of real appreciation of the ruble—will “exacerbate tensions between exchange rate and inflation objectives.” But beyond these issues, it is incumbent on the authorities to broaden their focus, and deal with a broad range of emerging stresses. Foremost among these are how to arrest the disturbing demographic trends, how to better utilize surplus public resources to enhance the economy's capacity for innovation, and how to put the country back on a path of world-class scientific and technological achievement, so that Russia may join the ranks of the most competitive economies in the world.

Notes

- 1 The author would like to thank Sergey Alexashenko, Evgeny Gavrilenko, Kristalina I. Georgieva, Andrew Kutchins, Yaroslav Lissovlik, John Litwack, Natalia Ivanova, Thierry Malleret, Alexei Mozhin, Tatyana V. Paramonova, Alexander Pumpysky, Alan Rouso, Charles Ryan, and Mikhail M. Zadornov. He also thanks Ibrahim Cotran, Justina Roberts, and Shubhra Saxena for able research assistance during the preparation of this chapter.
- 2 Erofeyev, 2005.
- 3 See Chapter 1.1 in this volume.
- 4 On Russia's output collapse during the early phase of the transition and other related policy issues, see Gavrilenko and Koen (1995) and Koen and Phillips (1993). Tanzi (1993) provides an excellent perspective on fiscal issues in transition economies.
- 5 Russia's ranking in the newly formulated Global Competitiveness Index (to be used by the Forum as of 2006) is likely to be higher, because the country will get credit for certain factors on which the country does well, and for which our present competitiveness indicators do not give it enough credit (e.g., excellent levels of higher education).
- 6 On this and related topics see Lipton and Sachs (1992), Aslund (1994, 1995), Layard and Parker (1996), and Lopez-Claros and Alexashenko (1998).
- 7 On this point see Dolinskaya (2001).
- 8 See the analysis by Kenneth S. Deffeyes (2001), and Lopez-Claros (2003a).
- 9 Crude oil output growth rates during the four-year period ending in 2004 were 7.7, 8.9, 11.0, and 8.9 percent, respectively, for a cumulative growth rate of 41.8 percent.
- 10 See, for instance, World Bank (2003).
- 11 IMF, 2002.
- 12 Russia, however, is considerably less energy dependent than Saudi Arabia, where 83 percent of total revenues and 88 percent of total exports are linked to oil (IMF, 2005c).
- 13 These estimates should now be updated, to reflect oil prices roughly twice as high as those which prevailed in 2002. Nevertheless, the broad thrust of the conclusion is unlikely to have changed fundamentally.
- 14 As of the end of 2005, the Stabilization Fund will have accumulated close to US\$45 billion, a significant relaxation of Russia's external constraint.
- 15 Merchandise exports from Russia in 2005 could amount to some US\$220 billion, more than double 2002 levels, and nearly triple 1999 levels. This represents an annual rate of growth of 20 percent in dollar terms.
- 16 *Chaebol*, the Korean term for a conglomerate of many companies clustered around one parent company. The companies usually hold shares in each other and are often run by one family.
- 17 This is not to suggest that the “loans-for-shares” privatization schemes of the mid-1990s were not intrinsically corrupt. One cannot help thinking, however, that if the intent of the government in 2003 was to revisit these old transactions in an attempt to extract, post facto, greater value for the original owner (the state), this could have been done in a less amateurish way, one which did not convey to outsiders the impression—rightly or wrongly—that there were other agendas at play. The handling of the Yukos case has done much to undermine investor confidence, and this is reflected, as noted above, in the terrible competitiveness rankings on rule of law and transparency indicators.
- 18 Estimates of capital flight in Russia—a combination of non-receipt of export earnings, unredeemed import advances, and errors and omissions—are subject to large margins of uncertainty. For a careful discussion of the issues, see Grigoryev and Kosarev (2000).

- 19 Particularly noteworthy are Russia's 10 Nobel Prize winners in physics: Pavel Cherenkov, Ilya Frank, Igor Tamm, Leo Landau, Alexander Prokhorov, Nikolay Basov, Petr Kapitsa, Zhores Alferov, Vitaly Ginzburg, and Alexei Abrikosov. Even more impressive is its list of mathematicians, a veritable pantheon that includes such 20th century superstars as Lyapunov, Steklov, Kolmogorov, Pontryagin, Vinogradov, Kantorovich, Markov, Sobolev, Krein, and many others. Soviet and Russian mathematicians have greatly enriched the field of mathematics during the past 100 years.
- 20 Russian patents for inventions registered at the US Patent and Trademark Office during the last few years have averaged about 200 or so per year. However, patents registered in 2002 (the latest year for which such information is available) with Russia's own patents office were closer to 20,000.
- 21 I am indebted to Jennifer Blanke for the latter observations. For a fuller discussion see Blanke et al., (2003).
- 22 The share of bank capital in Russia controlled by non-residents is about 7 percent, as compared to well over 60 percent in much of Central and Eastern Europe.
- 23 See IMF (2005d).
- 24 The EU and Russia had their 15th summit in Moscow on 10 May 2005.
- 25 European support for Russia's bid to join the WTO was facilitated in 2004 by Russian agreement to endorse the Kyoto Protocol on Global Warming.
- 26 For the full text, see: <http://www.eur.ru>

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