

RUSSIAN ECONOMIC REPORT

December 2006

RUSSIAN ECONOMIC REPORT – DECEMBER 2006

I. RECENT ECONOMIC DEVELOPMENTS

A booming domestic market continues to drive strong economic growth in Russia. Substantial net capital inflows have now joined receipts from resource exports in fueling domestic demand. In this context, the pace of economic growth has accelerated since the second quarter of the year. Annual GDP growth could reach 7.0 percent. Fixed capital investment and FDI have also exhibited impressive growth. The economic expansion continues to be concentrated primarily in non-tradable sectors of the economy that have profited from a stronger ruble. Stagnating production, high investment needs, and rapidly-growing domestic demand are raising increasing concerns about the state of the Russian energy sector.

Following the stabilization of oil prices, Russia's large current account surplus has finally begun to contract. Yet a stronger capital account has somewhat compensated for this trend, supporting the continued accumulation of foreign reserves, albeit at a slower pace. Rapid growth in money supply and higher federal expenditures in 2006 have been largely absorbed by higher-than-expected economic growth. Inflation has slowed considerably in the second half of the year. The planned 2007 budget foresees an expansion of federal expenditures of 0.9 percent of GDP, with priorities in additional expenditures going to the state apparatus, investment and social programs.

Real incomes of the population, wages, and retail trade have been growing in double digits, significantly outpacing GDP growth. Consistent with this picture, import growth soared to 29 percent for the first three quarters of the year.

Recent policy initiatives of the government include a planned package of measures aimed at promoting diversified growth and the innovation economy and new legislative initiatives on migration. A long awaited bilateral agreement with the United States could pave the way for Russia's accession to the WTO in the near future.

Table 1: Main Macroeconomic Indicators

	2001	2002	2003	2004	2005	2006 ^{1/}
GDP growth, %	5.1	4.7	7.3	7.2	6.4	6.5 ^{2/}
Industrial production growth, y-o-y, %	4.9	3.7	7.0	8.3	4.0	4.3
Fixed capital investment growth, %, y-o-y	8.7	2.6	12.5	10.9	10.5	12.6
Federal government balance, % GDP	3.0	2.3	1.7	4.2	7.5	8.6
Inflation (CPI), % change, y-o-y	18.6	15.1	12.0	11.7	10.9	7.5
Current Account, billion \$	35.1	32.8	35.9	60.1	86.6	79.9 ^{3/}
Reserves (including gold) billion \$, end-o-p	36.6	47.8	76.9	124.5	182.2	272.5

Source: Rosstat, Minfin, CBR

^{1/} Estimate for January – October 2006

^{2/} Estimate for the first half of 2006

^{3/} End September 2006

GDP and Industrial Production

A slowdown in output growth at the beginning of 2006 gave way to an accelerated expansion of economic activity in the second and third quarters of the year. GDP growth in the second quarter reached an estimated 7.4 percent, bringing the figure for the first half of 2006 to 6.5 percent. The growth in Russia remains concentrated primarily in the production of non-tradable

services and goods for the domestic market. Almost fifty percent of the GDP expansion in the first half of 2006 came from trade and construction.

Russian industry exhibited somewhat more rapid growth (4.3 percent) in the first 10 months of 2006 than during the same period in 2005 (3.7 percent). Within industry, energy and utilities have exhibited somewhat higher growth than in 2005, while the expansion in manufacturing has continued to slow down (Table 2).

Table 2: Output Growth by Sectors: 2005-2006

	2005	Jan-Oct 2005	Jan-Oct 2006
Agriculture	2.4	2.2	1.3
Logging	-6.0	-5.7	-7.3
Extraction of mineral resources	1.3	1.1	2.2
Manufacturing	5.7	5.3	4.7
Electricity, gas, water production and distribution	1.2	1.2	5.1
Construction	10.5	9.0	13.2
Retail trade	12.8	12.6	12.5
Transport	2.5	2.5	2.5

Source: Rosstat

The rapid real appreciation of the Russian ruble (8 percent in the first three quarters of 2006) and double digit increases in real labor costs continue to challenge Russian firms in competition on international markets. Machine building as a whole has not fared well in 2006. The production of machines and equipment has stagnated (0.5 percent growth in the first 10 months of the year), while the production of electro-technical equipment has fallen (-1.5 percent growth). Chemicals grew at only 1.2 percent. Growth in most other sectors of manufacturing was somewhat stronger. Several industries reported increases in their growth rates for the first ten months of 2006 relative to the same period of 2005 (Figures 1 - 4). Metallurgy continued to exhibit strong performance, growing at 10.2 percent. The food industry (5.3 percent), coke/oil processing (6.0 percent) and cellulose-paper and publishing (6.8 percent) also exhibited higher-than-average growth in manufacturing. The long decline in light industry may have finally bottomed out, with rapid growth reported in textiles and sewing (7.8 percent) and the production of shoes and leather products (13.2 percent). Plastic and rubber products also expanded by an estimated 11.1 percent. Textiles, sewing, plastics, and rubber products together account for only 4 percent of manufacturing, however, and their growth is from a very low base.

Figure 1: Growth Rates in Machine Building (%)

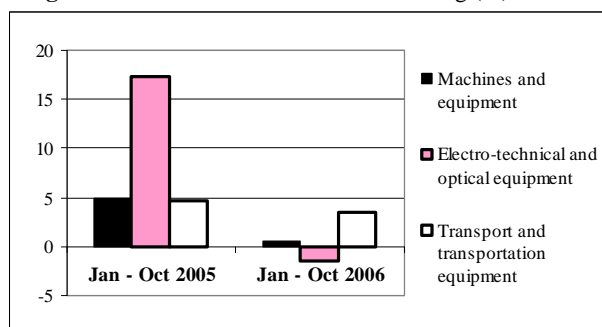


Figure 2: Growth Rates in Chemicals and Metallurgy (%)

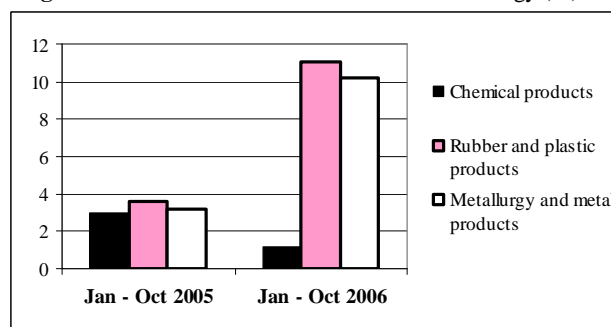
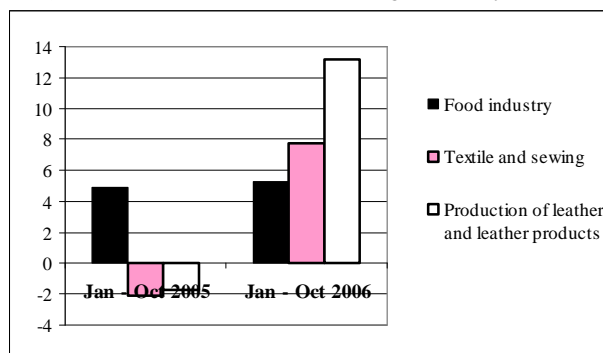
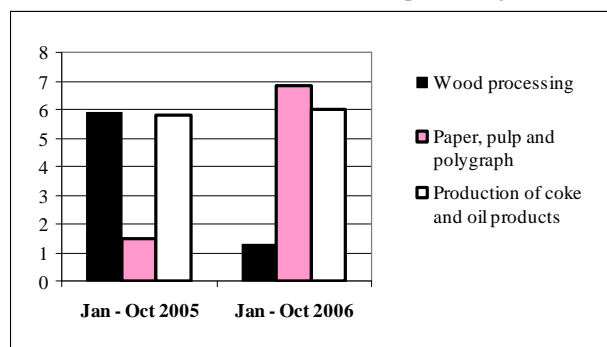


Figure 3: Growth rates in food and light industry (%)**Figure 4:** Growth rates in wood and oil processing (%)

Sources: Rosstat

Increasing attention has focused on the Russian gas and electricity sectors, where a combination of rapidly growing demand, stagnating supply, and the depletion of existing fields have raised prospects of additional price increases and possible future shortages. The government has acknowledged the seriousness of the situation, and recently approved a package of measures to increase domestic gas prices and promote the more rapid growth of alternative energy sources (nuclear and coal) for electricity. Against this backdrop, there has also been a certain revitalization of discussions for introducing more competition into the gas industry, particular in gas production, as several oil companies have unrealized potential for producing gas. Under the most recent plans, the government will increase domestic gas prices for enterprises by 15 percent in 2007, and between 25-27 percent annually from 2008-2010. Relative increases in gas prices are projected to continue until the profitability for domestic sales and exports is equalized. This does not imply the equalization of Russian and EU tariffs net of transportation costs, however, as the Russian government can use the gas export tax to regulate the profitability of exports. This is a valuable tool, given the fact that export gas prices include rents that Russia receives due to its market power in natural gas.

The question of providing sufficient investment in gas and electricity over the medium term remains one of the most critical questions for Russia's future development. In this regard, Russia's cautious attitude toward foreign investment in the energy sector increases the share of this needed investment that will most likely need to be financed internally through higher tariffs or other means. Higher energy tariffs may become another increasingly limiting factor in the expansion of Russian manufacturing.

Investment

Given Russia's needs in capital and modernization, the government has placed a high priority on increasing fixed capital investment rates beyond the current 19 percent of GDP. 2006 has witnessed at least some important progress on this front. Fixed capital investment growth accelerated to 12.6 percent during January-October 2006, as compared to 9.9 percent growth in the first 10 months of 2005. Inflows of direct foreign investment increased by an estimated 55 percent during the first three quarters of the year, and reached US\$ 10.3 billion. Along with high profits in the energy sector, the strong ruble and booming domestic market have helped make Russia increasingly attractive to private investors.

The lion's share of investment in Russia is still going to energy, transportation, real estate and services. Other than metals, manufacturing received only 13 percent of fixed capital investment in the first three quarters of 2006. A similar picture of concentration emerges for foreign direct investment. In 2004-2005, manufacturing technically received 30-45 percent of FDI, but much of this was concentrated either in metals or oil processing (from the sale of Sibneft in 2005). Net of those two sectors, Table 4 shows that the share of FDI in other areas of manufacturing

has consistently amounted to about 17 percent during those three years. In 2006, the financial sector has attracted a notably higher share of FDI than in previous years.

Table 3: Total Fixed Capital Investment by Sector (% of total)

	2004	2005	2006-9M
Agriculture, hunting, forestry	4.1	4.0	3.9
Extraction of mineral resources	14.8	13.4	19.1
Manufacturing	16.5	16.8	17.5
<i>Food industry, incl beverages, tobacco production</i>	3.3	3.3	3.0
<i>Coke and oil products</i>	1.5	1.4	1.8
<i>Machine building</i>	0.8	0.7	0.7
<i>Chemical products</i>	1.3	1.6	2.1
<i>Other non-metal mineral products</i>	1.2	1.4	1.2
<i>Metallurgy and metal products</i>	3.6	3.8	4.9
Electricity, gas and water production and distribution	7.1	6.6	7.0
Construction	3.6	3.5	3.6
Retail and wholesale trade, maintenance of vehicles, home appliances and etc.	3.6	3.9	2.8
Transport and communication	23.1	25.9	26.0
<i>Communication</i>	5.6	5.7	4.6
Real estate operations, leasing and services provision	17.6	16.6	10.8
Health care and social services	2.2	2.2	2.2
Provision of other public utilities, social and personal services	2.5	2.4	2.3

Source: Rosstat

Table 4: Shares of Foreign Direct Investment by Sector of the Economy

	2004	2005	2006-9M
	% total	% total	% total
Agriculture, hunting, forestry	0.9	0.9	1.3
Extraction of mineral resources	43.3	30.7	43.3
Manufacturing	30.9	46.1	18.2
<i>Manufacturing excluding metallurgy, coke and oil products</i>	18.7	17.6	17.1
Electricity, gas and water production and distribution	0.001	1.1	0.2
Construction	0.9	0.9	1.7
Retail and wholesale trade, maintenance of vehicles, home appliances and etc.	10.2	5.9	5.5
Hotels and restaurants	0.2	0.2	0.1
Transport and communication	2.1	1.9	2.7
Finance	3.8	4.5	11.2
Real estate operations, leasing and services provision	6.9	7.1	15.2
Provision of other public utilities, social and personal services	0.7	0.6	0.4

Source: Rosstat

The Balance of Payments, Capital Flows, and FDI

Russia's balance of payments is now undergoing some important changes. The first half of 2006 fits the general trends since 2003: the substantial widening of Russia's current account due to higher oil and gas prices, despite very high import growth rates and slow export growth in quantity terms. In the first half of 2006, import growth accelerated to 26 percent. Still, record oil prices pushed the current account to an impressive record high of US\$ 56.5 billion, which is 32 percent higher than in the first half of 2005.

The third quarter of 2006 witnessed the first narrowing of Russia's current account surplus. Preliminary data place the current account surplus for the third quarter at US\$ 14.2 billion, with is less than the estimated US\$ 19 billion current account surplus for the third quarter of 2005. While oil and gas revenues stabilized, and even fell slightly, import growth continued its acceleration in the third quarter, bringing January-September imports an estimated 29.4 percent higher than during the same period of the previous year.

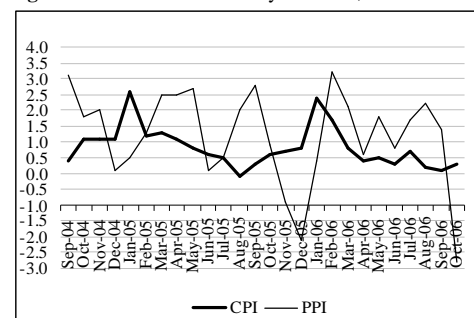
Table 5: Balance of Payments (USD billions)

	2003	2004	2005	2005 (Jan - Sept)	2006* (Jan - Sept)
Current Account Balance	35.4	58.6	84.2	61.7	79.9
Trade Balance	59.9	85.8	118.3	87.4	111.5
Capital and Financial Account	-0.8	-6.3	-10.9	-13.9	2.2
Errors and Omissions	-8.2	-7.1	-11.9	-7.3	-6.0
Change in Reserves	26.4	45.2	61.5	40.5	76.2

Source: CBR * preliminary estimates

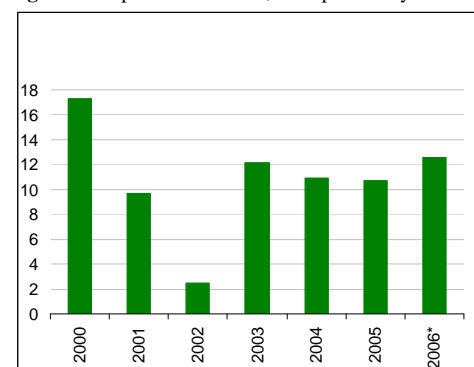
Although Russia's sizeable current account may finally be weakening, the capital account is strengthening. Despite the early repayment of USD 22.3 billion to the Paris Club, the capital account showed an estimated net surplus of US\$ 2.2 billion in the first nine months of 2006, compared to a deficit of USD 13.9 billion in the same period of 2005 (Table 5). Figures of the Central Bank show an estimated US\$ 27 billion in net private capital inflows for the first three quarters of the year. (Table 6). Gross foreign reserves of the Central Bank have continued to accumulate, reaching US\$ 277 billion in mid-November. The pace of accumulation has slowed in the second half of the year, however. The fiscal Stabilization Fund expanded to 76.6 bln USD in end-October, following a dip in the summer due to the debt repayments to the Paris Club.

Figure 5: CPI and PPI monthly inflation, %



Source Rosstat

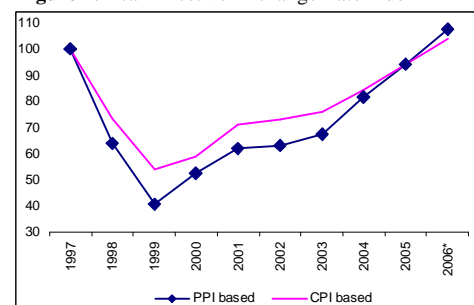
Figure 6: Capital investments, % to previous year



Source Rosstat

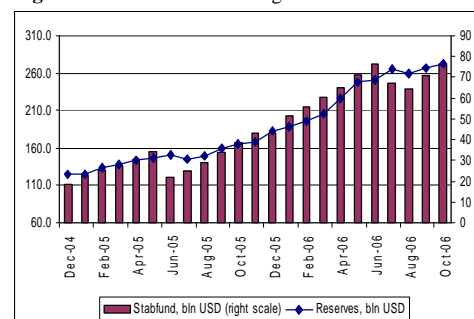
* data for January – September

Figure 7: Real Effective Exchange Rate Index



Source: Staff estimates

Figure 8: Stabfund and Foreign Reserves



Source: Rosstat

Table 6: Net Capital Inflows to the Private Sector (USD billion)

	2004	2005	2005 Jan-Sept	2006 Jan-Sept
Total net capital inflows to the private sector	-8.0	1.3	5.3	26.8
<i>Net capital inflows to the banking sector</i>	3.5	5.9	1.2	17.5
<i>Net capital inflows to the non-banking sector</i>	-11.5	-4.6	4.0	9.3

Source: CBR

Unless oil prices again increase sharply, current trends will lead to the steady evaporation of Russia's current account surplus. In this context, Russia's overall balance of payments position will depend increasingly on the capital account. The attraction of much higher levels of FDI is encouraging, although, as discussed below, volatile short-term capital flows could become an increasing challenge in the absence of today's strong current account buffer. A sharp fall in oil prices could quickly push Russia's balance of payments into deficit, as capital inflows would also most likely temporarily slow or reverse in such a case.

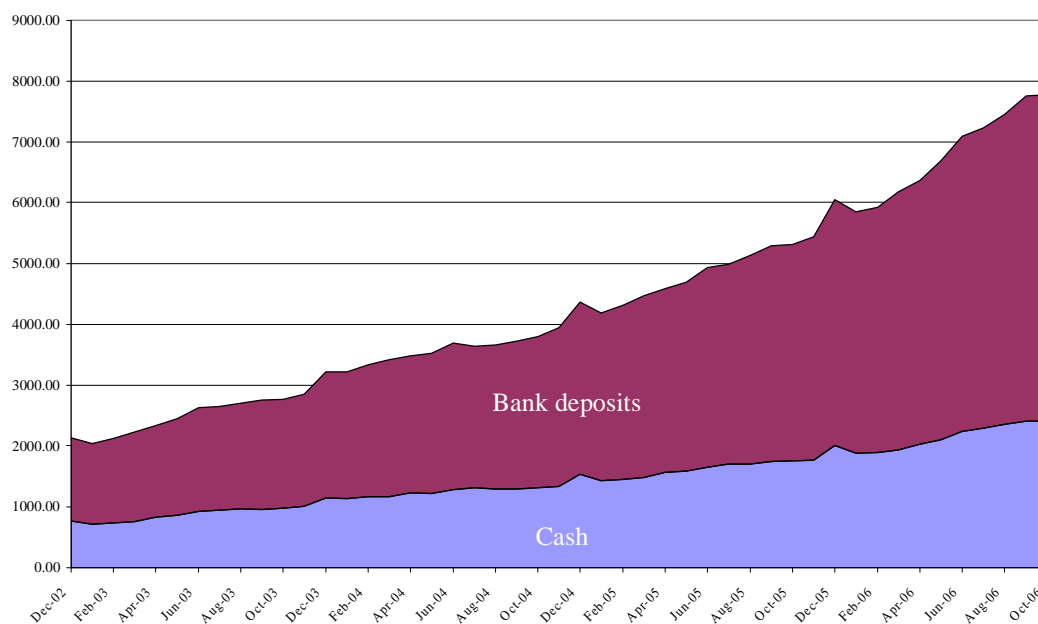
Inflation and monetary policy

Higher-than-expected economic growth has helped absorb the rapid money expansion related to foreign inflows. Concerns over higher-than-expected inflation, which dominated economic policy discussions in early 2006, abated during the second half of the year. According to preliminary data, CPI inflation for the first ten months of 2006 amounted to 7.5 percent, as compared to 9.2 percent during the corresponding period of 2005 (table 7). In addition to the effect of economic growth on inflation, money velocity appears to be slowing in line with higher incomes and greater trust of the population in commercial banks. Currency in circulation (M0) expanded by 19.6 percent for the first 10 months of the year, while money held in bank accounts increased by an estimated 33 percent. As shown in Figure 9, the share of bank deposits in M2 has increased steadily since 2004.

Table 7: Monetary Indicators

	First Quarter		Second Quarter		Third Quarter		January-October	
	2005	2006	2005	2006	2005	2006	2005	2006
CPI inflation, %	5.3	5.0	2.5	1.2	0.7	1.0	9.2	7.5
Core CPI Inflation, %	2.4	2.8	2.0	1.1	1.8	1.9	7.1	6.5
M2 growth, %	2.6	2.1	10.0	15.0	7.4	9.4	21.8	28.5

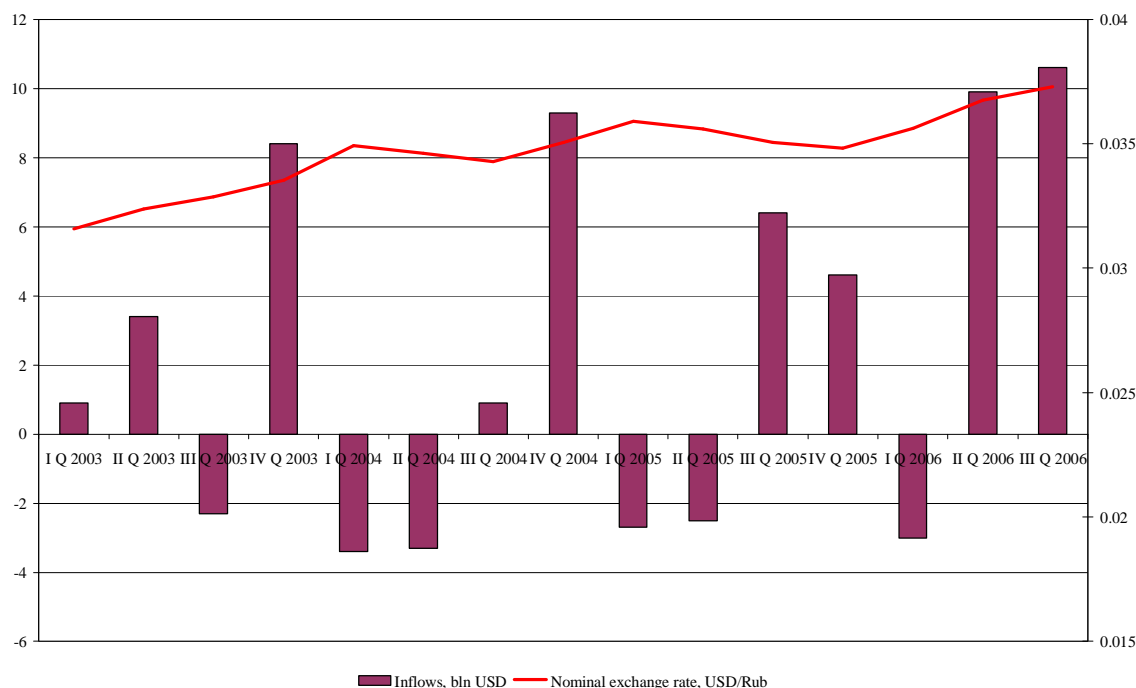
Source: CBR

Figure 9: The Composition of Money Supply (M2), bln. rubles

Source: CBR

The primary instrument for the sterilization of the large balance of payment inflows remains the fiscal Stabilization Fund. Exchange rate policy, and associated interventions on the currency market, represents the main monetary policy tool of the Central Bank. In 2006, the Central Bank has introduced more flexibility in exchange rate policy, allowing the ruble to appreciate in nominal terms (7.6 percent against the US dollar in the first 10 months of 2006) as a means of relieving inflationary pressures. The effectiveness of this policy instrument appears to be limited by short-term capital flows, which have been quite volatile, and have generally increased in times when the Central Bank allowed nominal ruble appreciation (Figure 10). The movement to full convertibility of the ruble in 2006 enhances somewhat the potential volatility of short-term capital flows. This includes the record US\$ 20 billion in inflows to the Russian banking sector during the second and third quarters of 2006. Volatile short-term capital flows, as well as potentially unstable money demand, are primary reasons why the Central Bank exhibits caution in exchange rate policy, as well as in open-market operations that could raise domestic interest rates. A speculative bubble on the ruble could be detrimental for the Russian economy in increasing uncertainty for investors, placing unwarranted competitive pressures on Russian enterprises, and generating still greater inflationary pressures.

Figure 10: Net Capital Inflows to Banking sector, (bln USD) and the Nominal Exchange Rate, (USD/Rub)



Monetary policy has suffered somewhat in recent years from being poorly understood by many investors and the population. Part of this confusion has stemmed from the announcement of a specific target not for the nominal, but real effective, exchange rate of the ruble, along with targets for inflation. Exchange rate policy has shifted gears several times between allowing more or less flexibility. In this regard, the new official document "General Directions of a Unified Government Monetary (Money and Credit) Policy for 2007" represents an important step forward in clarifying the true underlying objectives of monetary policy in Russia. In contrast to the recent past, no specific target for the real effective exchange rate is stated, with indications that real appreciation should fall into the range of 0-10 percent, depending on external factors. The Central Bank will continue to follow a cautious approach in its gradual transition to more exchange rate flexibility, concentrating on reducing inflation and preventing exchange rate volatility. The Central Bank and government plans to reduce inflation to the range of 6.5-8 percent in 2007, and base inflation to 5.5-7 percent.

Remaining inflationary pressure is evident in data on core CPI inflation (excluding administrative and seasonal price increases). Unlike in 2005, when core CPI inflation fell considerably, reported core inflation in January-October of 2006 (6.5 percent) remains close to its 2005 level of 7.1 percent. Given the strong monetary expansion during the second quarter of the year and seasonal trends in the fulfillment of the federal budget, inflationary pressures should remain significant in late 2006 and early 2007.

Fiscal policy and the Federal Budget

According to preliminary estimates for the first ten months of 2006, the Federal Budget was executed with a surplus of 1892 billion rubles, or 8.6 percent of GDP on a cash basis. Federal budgetary revenues amounted to 5102.6 billion rubles or 23.2 percent of GDP. Excluding the large repayment of past tax debts from Yukos received in 2005, total federal revenues in the first three quarters of 2006 exceeded their 2005 levels by about 1 percent of GDP. Higher oil and gas prices were the primary sources of higher federal revenues, while tax revenues as share of GDP

declined from 15.2 to 13.7, due mostly to a reduction in net VAT collection. This can be associated with an increase in the share of realized VAT refunds, as well as (possibly) temporary problems associated with a shift to new accounting rules.

The planned fiscal expansion in the 2006 budget has been absorbed by higher GDP growth. Federal government expenditures registered at only 14.6 percent of GDP for the first ten months of 2006, which is considerably lower than in the same period of 2005. A recent November amendment to the federal budget for 2006 has increased planned spending by 161 billion rubles (0.6 percent of GDP), and planned revenues were adjusted upward by 1.1 trillion rubles (4.2 percent of GDP).

The State Duma approved the Federal Budget for 2007 in the third reading. According to the approved draft, planned federal revenues for 2007 will amount to 6965.3 billion rubles (22.3 percent of GDP), while federal expenditures will be increased to 5463.5 billion rubles (17.5 percent) (table 8). This represents a fiscal expansion in nominal terms of 26 percent, although it is only expected to amount to 0.9 percent of GDP. Particularly strong increases are envisioned in spending on the national economy, the government apparatus, and the social sphere (health and education). For the first time in recent years, the average oil price assumption in the budget (61 dollars a barrel) may very well turn out to be an overestimate, and federal revenues could be lower than planned. Given the planned fiscal surplus of 4.8 percent, however, a somewhat weaker oil price would only affect the rate of future accumulation in the fiscal Stabilization Fund.

Table 8: The Federal Budget (% of GDP)

	2006 Budget Law (approved)	2006 Budget (with amendment)	2007 Draft Budget approved in third reading	Nominal Increase over 2006, %
Revenues	20.7	23.5	22.3	38.0
Expenditures	17.5	16.7	17.5	26.3
Of which:				
General state management	1.82		2.10	49.5
National defense	2.73		2.63	24.6
National security, law enforcement	2.22		2.13	23.1
National economy	1.39		1.59	49.8
Housing and utility	0.16		0.17	-7.7
Environment	0.03		0.03	21.9
Education	0.83		0.89	33.4
Culture, mass media	0.21		0.22	25.2
Health and sport	0.61		0.66	31.5
Social policy	0.84		0.68	-2.4
Interbudgetary transfers	5.87		5.91	26.1
Total non-interest expenditure	16.7	16.0	17.0	30.3
Debt service	0.81	0.7	0.50	-20.7

Sources: Minfin, EEG, World Bank staff calculation

Income, Employment and Poverty

Real disposable income of the population continues to exhibit strong growth. According to Rosstat, average real wages and incomes increased by 13.2 and 11.5 percent, respectively during the first ten months of the year (table 9), which is considerably higher than the rapid growth in 2005 (9.1 and 9.0 percent, respectively). This is consistent with growth in retail trade (12.6 percent) that also well exceeds the expansion of GDP. Given the strong appreciation of the ruble, average monthly dollar wages exhibited particularly rapid growth during the year,

reaching an average of US\$ 381 for the first 10 months of 2006. This is a 30 percent increase over the corresponding period of 2005. Despite various signs of a tightening labor market, the average unemployment rate (ILO definition) in the first ten months of 2006 remained virtually unchanged relative to the same period of 2005 (table 9).

As Rosstat is currently revising its methodology for poverty measurement, official data are not yet available for 2005 or 2006. Unofficial estimates suggest that poverty is still declining in Russia, and the share of the population with incomes below subsistence level may drop to below 15 percent by the end of 2006.

Table 9: Social Indicators

	2002	2003	2004	2005	Jan-Oct 2005	Jan-Oct 2006
Real disposable income growth, %	11.1	14.9	9.9	8.8	9.1	11.5
Real wage growth, %	16.2	10.9	10.6	10.0	9.0	13.2
Average wage, USD	138.6	179.4	237.2	301.6	291.8	381
Unemployment (% , ILO definition)	8.1	8.6	8.2	7.6	7.6	7.5

Source: Rosstat

Recent Policy Initiatives

The government's attention has turned increasingly to the question of diversification. A strong initiative in the Ministry for Economic Trade and Development can be associated with the preparation of a new package of laws, or amendments to laws, with the overall goal of stimulating investment and economic activity in manufacturing, particularly in innovation-oriented sectors. The measures include changes in tax rules (more favorable amortization write offs, tax breaks of innovation-related activities), increasing state finance on science and R&D, subsidized credits for exporters, more favorable conditions for importing modern equipment, the creation of a state development bank, state support for training programs, the creation of special economic zones in port cities, state-supported venture funds, special programs for the development of particular sectors. This package of laws represents a further development in the government's determination to create more favorable conditions for particular priority sectors and territories. The question of policies to promote diversification and innovation is taken up in more detail in part 2 of this RER.

RER 11 emphasized Russia's growing needs in both external and internal migration for sustaining rapid growth over the medium and longer term. For external migration, it recommended measures to liberalize and simplify the formal regime in order to bring a large part of the current massive informal migration into the legal sphere. The government has proposed a package of measures for 2007 that is broadly consistent with this overall goal. The liberalization of the migration regime, together with better legal protection of the rights of registered migrants, is a planned part of this package. In its current form, however, new regulations may very well have a net negative effect on migration flows. New measures promise to introduce quotas on migrants that, if enforced, would greatly decrease the number of migrant workers in Russia, as well as regulations that forbid non-citizens to work in open markets. More frequent crackdowns on illegally employed migrants and deportations have become more common. A more hostile and restrictive environment for migrants could have negative consequences for labor supply in Russia. Western European countries face similar conflicting problems of a need for migrant workers and social tensions surrounded mass migration into the country. It should be noted that Russia's needs in migration are even greater than those of Western Europe.

Russia finally achieved a bilateral agreement with the United States that could pave the way for its entry into the WTO in 2007. As argued in RER 10, Russia stand to gain much from deeper integration with the world economy, for which WTO entry is an important step.

II. FOSTERING AN INNOVATION ECONOMY IN RUSSIA

Since the second half of 2004, the Russian economy has settled into a recognizable pattern of economic development. Inflows from resource exports have ignited domestic demand, which has fueled the fire of recent economic growth. As capacity constraints slowed expansion in the energy sector, economic growth has become increasingly concentrated in sectors that service the domestic market, particularly in goods and services that cannot be easily substituted by imports. At the same time, Russian enterprises in competition with foreign producers have been feeling the increasing pinch of ruble appreciation through rising production costs and wages. Growth in “tradable” areas of manufacturing is slowing, and labor is moving to other sectors. Outside of natural resources and metals, Russia still has few comparative advantages on international markets.

If current trends continue, what are the prospects for Russia’s development over the medium and longer term? On the one hand, in the absence of a sharp fall in energy prices, current growth patterns might be sustainable over the medium term. In addition to ample remaining resource wealth, the Russian domestic market is sufficiently large and geographically spread to support a significant variety of economic activity that is, to one degree or another, naturally sheltered from international competition. While a stronger ruble creates increasing challenges for non-resource-based enterprises competing in world markets, it also makes servicing the Russian domestic market more profitable relative to opportunities in other countries. The recent sharp increase in foreign investment to Russia reflects this fact. Of course, sustaining current patterns of economic growth would still imply addressing major medium-term challenges in areas like infrastructure, energy, and labor supply (migration). Yet, these and other challenges could conceivably be addressed through policies and reforms that do not change the basic pattern of economic development in the country.

On the other hand, the current path of economic development not only leaves Russia highly vulnerable to fluctuations in energy prices, but likely constrains longer-term growth well below its potential. Countries with high levels of resource dependence (defined as the share of resource-based exports in GDP or in total exports) have generally performed relatively poorly in terms of economic growth, stability, corruption, human capital development, and other indicators.¹ Resource *abundance* itself is not necessarily a disadvantage for economic growth,² but resource *dependence* does indeed appear correlated with low long-run growth. On the flip side, a growing literature in development economics demonstrates that success in achieving comparative advantage on international markets in manufacturing and tradable services, particularly in knowledge-intensive and technologically sophisticated products, can be associated with rapid economic growth.³

The current high priority of the Russian government to promote diversification, develop competitive industries outside of the resource sectors, and cultivate a knowledge-based or “innovation” economy is therefore both understandable and commendable. Indeed, the prospects for maintaining rapid growth in Russian GDP and living standards depend greatly on the realization of this goal. The government has been developing a series of programs and policies aimed at achieving competitive industries outside of resource-based industries and igniting the innovation economy. This strategy consists primarily of selective interventions by the government to promote particular sectors of the economy or particular geographical areas,

¹ From a summary of this research through 2001, see Auty, R.M., *Resource Abundance and Economic Development*, Oxford U Press, 2002.

² Potential advantages of resource abundance for growth are argued and illustrated in Wright, G. (1990), “The Origins of American Industrial Success, 1879-1940,” *American Economic Review*, 80: 651-668.

³ See, for example Hausmann, J. Hwang, J. and Rodrik, D. “What You Export Matters,” mimeo, Harvard University, 2006 and Rodrik, D. “What is So Special about China’s Exports?” mimeo, Harvard University, 2006

including special economic zones, IT parks, state venture funds, a state development bank, tax incentives, training programs, export promotion, and direct government participation in some sectors of the economy. This emerging strategy represents a certain shift in emphasis away from the classical liberal economic objectives of creating a level playing field for private initiatives and entrepreneurship, and toward “industrial” or “regional” policy where the objective, on the contrary, is to create special conditions for the priority development of certain sectors, regions, or firms. The logic behind this strategy is the perception that market forces alone are pushing Russia down a path of resource dependence and low international competitiveness, and that government intervention is required to remedy this problem.

What does international experience tell us about the potential role of industrial policy in promoting growth and diversification? While there is general agreement on the need for diversification and for policies to foster innovation, there remains considerable debate about the appropriate policies for achieving these objectives, and the potential role for industrial policy in particular. The experiences of East Asian countries such as Japan, Korea, and China have often been cited by some authors as examples of successful sector-specific industrial policy. The argument is that such policies can be needed to address market failures in the creation of new industries (infant industries with increasing returns to scale), knowledge spillovers, or the coordination of multiple activities and institutions to support new markets.

However, the world experience with industrial policy is highly mixed, and mostly negative. Some recent studies that examine carefully the East Asian economic success and recent disappointments in Latin America conclude that differences in macroeconomic and basic structural policies (including education, financial depth, infrastructure, trade openness, and government burden) appear to explain much more than any selective public interventions (industrial policy).⁴ The disappointing experience with industrial policy in India, Mexico, Latin America and many other countries during the 1960s and 1970s also demonstrates that selective support for specific sectors and firms can invite corruption and rent-seeking behavior as opposed to innovative activity or the creation of competitive industries.

If selective intervention to support specific sectors did play a constructive role in East Asian industrial development, the key contribution appears to be in promoting the adaptation and imitation of foreign technologies, as opposed to innovation per se. As Russia is still at a stage of industrial development where it might profit significantly from the imitation and adaptation of foreign technologies, it is sometimes argued that active industrial policy might therefore play an important role in promoting modern competitive industries outside of the resource sectors in certain cases.

In comparison with the historical experience, however, it should be noted that Russia has at least three major disadvantages. First, in contrast to the earlier period (1950s-1970s) when East Asian economies made the greatest use of selective industrial policy, world markets have become highly integrated international production networks, where private firms must coordinate with suppliers and buyers in several locations and respond to orders in real time. This makes a centralized approach to fostering industries both more difficult and less necessary. Second, the current policy constraints imposed by multilateral accords, such as the World Trade Organization (WTO), essentially rule out many of the selective interventions employed in Korea and elsewhere in earlier years. Finally, and perhaps most important, the first stage of the Asian miracle in Japan, Korea, and China was based on low labor costs, which enabled these countries to gain a comparative advantage in labor-intensive products. The government could play a natural coordinating role in identifying such products, and in supporting complementary

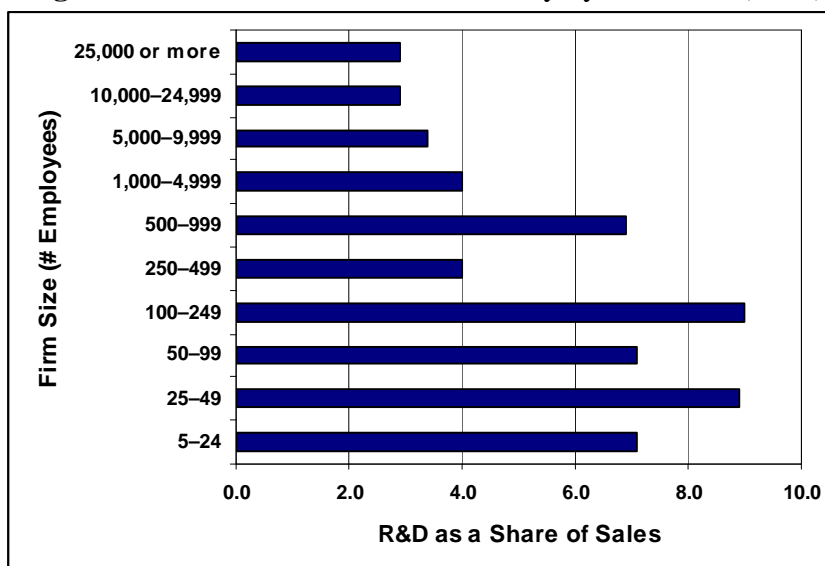
⁴ For a detailed such examination of the East Asia experience, see Nolan, M. and Pack, H. , *Industrial Policy in an Era of Globalization*, Institute for International Economics, 2003. For Latin America, see Loayza, N., P. Fajnzylber, and C. Calderon, “Economic Growth in Latin America and the Carribean: Stylized Facts, Explanations, and Forecasts,” World Bank, 20

networks and institutions around the development of their associated industries. In Russia, on the contrary, labor costs are already relatively high, which implies the need for immediate specialization in higher value-added industries. Under these circumstances, the centralized determination of areas of potential comparative advantage is considerably more complicated and risky. As indicated in section 3 of this RER, Russia has much to gain from more effective technological absorption and imitation, which can be achieved through better integration with world markets. Yet, it is difficult to identify particular constructive roles for industrial policy to support this endeavor for the case of Russia.

For this reason, and also due to Russia's considerable human capital endowments, political priorities have focused understandably on exploiting Russia's knowledge and educational base for stimulating the "innovation economy," which has become a prime source of high value-added employment in many countries in recent years. What does Russia need to foster an innovation economy? As in many other countries, the state might play a specific role in stimulating innovative activity through programs such as matching grants or participation in private venture funds. The fact that entrepreneurs typically do not expropriate the full value of their innovations or worker training programs (the presence of externalities) justifies at least some government support in these areas. Nevertheless, the experience of other countries in this area strongly suggests that an innovation economy thrives primarily on dynamic decentralized processes in the context of fierce international competition. Economic systems as diverse as the United States and China have succeeded in fostering vibrant innovative activity in their countries through the creation of strong incentives and opportunities for entrepreneurship, market entry, market exit, and exposure to international and domestic competition. While Russia has made some progress in creating such an environment during 15 years of economic transition, this agenda remains highly incomplete. Furthermore, recent trends toward greater centralization and expanding government participation in the economy could even hinder future progress in this area. The vision of such a Russian "national economic model" may be consistent with a continued resource-oriented path of development, but it is unlikely to deliver much success in developing a highly competitive or innovation economy in Russia.

A now voluminous literature has been devoted to understanding the nature of the world's leading innovation economy, the United States. The fact that large companies such as Microsoft, Apple, and IBM dominate significant parts of the economy is deceiving. In fact, a significant share of innovative activity comes from small start-up firms operating under conditions of fierce competition. The majority of start-ups are not successful, but others do succeed in innovating and then sell their patents and ideas to larger firms. A number of studies on the US economy show that large firms do not appear to have advantages in undertaking R&D, and may even suffer from disadvantages. Large firms do not conduct more R&D relative to their size compared to small firms (figure 2.1). Furthermore, small firms in the US generate more patents and innovations, as measured either relative to firm size or per dollar of R&D, than do larger firms.⁵ Policies that would reduce competition or consolidate R&D in favor of large firms would likely stifle the engine of innovation in the United States.

⁵ See Cohen W. and S. Klapper, "A Reprise of Size and R&D," *Economic Journal*, 1996

Figure 2.1: US Industrial R&D Intensity by Firm Size (2002)

Source: NSF (2006)

Empirical work on other countries also provides strong evidence that a higher degree of product market competition stimulates innovative activity on the part of firms. Some recent studies examine micro-level data on productivity growth and patents for manufacturing firms in the UK, concluding that greater product market competition (measured by the threat of entry or the inverse of market concentration) leads to higher levels of firm-level innovation over a large range.⁶ Another study based on enterprise level data for 27 emerging economies in the Europe and Central Asia region finds that reducing tariffs and enacting and enforcing competition laws increases the likelihood of new product and process development on the part of firms.⁷ The recent World Bank/Higher School of Economics Investment Climate Assessment presents strong similar evidence for the particular case of Russia (See section 3 of this RER).

The environment for innovative entrepreneurship in the United States and other developed countries profits from well developed market institutions for intellectual property rights, anti-trust, corporate governance, and contract enforcement. Yet some recent successes in emerging economies indicate that an innovation economy can thrive even under weaker formal market institutions. The example of China is particularly interesting in this regard. While China's formal institutions in the areas of contract enforcement, anti-trust, corporate governance, and intellectual property rights have been weak, it has nevertheless managed to foster vibrant innovative activity on the part of its firms. This has been made possible by the fact that China has developed an impressive set of informal institutions that support the same kind of dynamic innovative activity (entrepreneurship, market entry and exit) and competitive markets that underlie the innovation economy in the United States. A key to this model lies in the a division of authority and responsibility between different levels of government in China that gives provincial and lower-level state bodies strong incentives and policy tools to promote a healthy business climate, and places them in competition with each other to attract resources and investment.⁸

More generally, recent research has increasingly documented the degree to which productivity growth is driven by the entry of more productive firms and the exit of less productive firms, in a

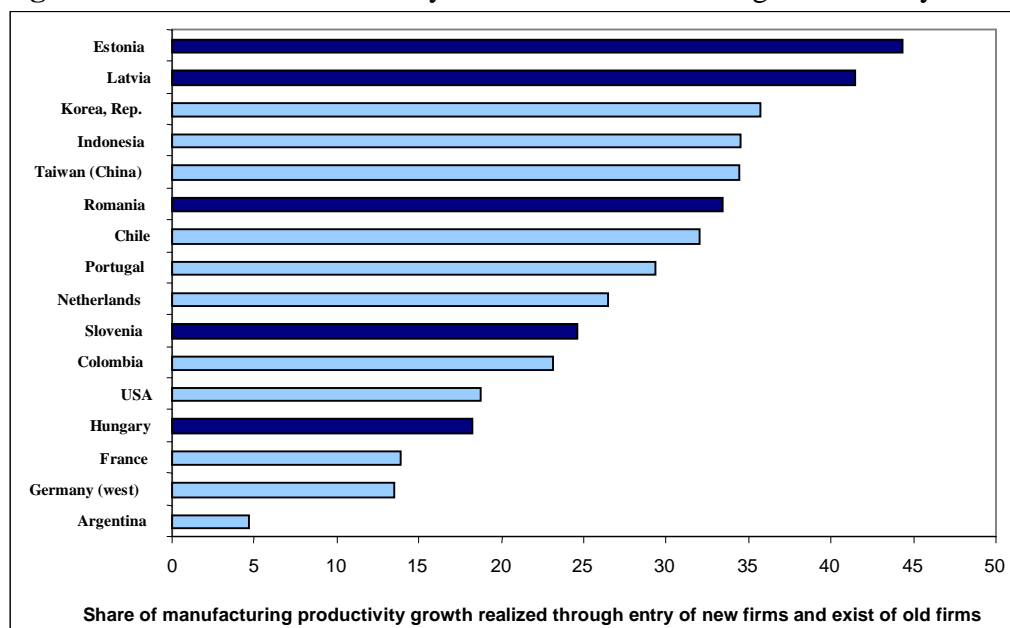
⁶ See Aghion P., R. Blundell, R. Griffith, P. Howitt, and S. Prantl, "The Effects of Entry on Incumbent Innovation and Productivity," NBER Working Paper # 12027, 2006

⁷ Clarke G., "Do Government Policies that Promote Competition Encourage or Discourage New Product and Process Development in Low and Middle Income Countries?" World Bank Policy Research Working Paper # 3471, 2005

⁸ See, for example, Qian, Y., "How Reform Worked in China," in *In Search of Prosperity: Analytic Narratives on Economic Growth* (ed. D. Rodrik), and Rodrik, D., "What is So Special about China's Exports?" mimeo, Harvard University, 2006.

dynamic process of “creative destruction” first described in detail by Joseph Schumpeter in 1934. It has been estimated that as much as 30% of manufacturing productivity growth during 1977-87 in the United States was the result of firm entry and exit.⁹ Another recent cross-country study focused productivity growth in a cross-section of middle-income and industrial countries also confirmed the significance of firm creation and destruction for explaining productivity growth (Figure 2.2). In addition, the evidence of this study indicates that the contribution of firm entry and exit is particularly strong in transition economies, accounting for between 20-45% of manufacturing productivity growth.

Figure 2.2: Contribution of Entry & Exit to Manufacturing Productivity Growth



Source: Bartelsman, Haltiwanger, Scarpetta (2005)

Where do the prospects for creating an innovation economy rest in Russia? Clearly, as our discussion above has made clear, achieving strong international competitiveness will require a strengthening of the investment climate, in which a principal component must be greater opportunities for fair competition and entrepreneurship. It is still typical in Russia for markets to be captured by a few incumbent firms, likely in cooperation with regional or local officials, who receive quasi-fiscal services from larger firms on their territories.¹⁰ This phenomenon is not just a product of corruption or rent-seeking. Given low explicit budgetary (especially tax) autonomy at lower levels of government in Russia, regions and municipalities realize many of their social objectives through shadow budgets that employ the quasi-fiscal services of larger incumbent enterprises on their territories. This creates a natural bias against outside competition from other businesses or entrepreneurs.

By itself, survey evidence on the costs and time for registration of a new business would imply that market entry for small entrepreneurs is relatively easy in Russia. This is misleading. Such surveys are of firms that have already successfully registered in sectors where they are welcome.

⁹ Foster, L., J. Haltiwanger, and C. Krizan, “Aggregate Productivity Growth: Lessons from Microeconomic Evidence,” in *New Directions in Productivity Analysis* (eds. E. Dean, M. Harper and C. Hulten), 2001 Haltiwanger, and Krizan (2001)

¹⁰ A 2005 survey of 822 large corporations in 52 Russian regions carried out by the Moscow Higher School of Economics and Hitotsubashi University revealed that 40 percent of these corporations characterize themselves as having special bilateral relationships based on mutual favors (two-way support) with regional and local authorities. 83 percent of enterprises claimed to give special support to regional and local authorities. 44 percent admitted to also receiving such support. See Yakovlev, A, “The Russian Corporation and Regional Authorities: Models of Interrelations and Their Evolution,” mimeo 2006

This presents no measure of the degree to which particular markets are controlled and made hostile to competition from new firms. As highlighted in the World Bank Russian Economic Memorandum, the degree of concentration in the Russian economy is quite high by world standards.¹¹ The survey of enterprises associated with the recent Investment Climate Assessment (the subject of part 3 of this RER) indicates that a large share of incumbent Russian firms operate under quite weak competitive pressures. Although the share of employment in small businesses and individual entrepreneurial activities in Russia has increased somewhat in recent years, it remains quite low by international standards (25 percent).

What are the key policies and reforms that could help ignite an innovation economy in Russia? A number of them concern unfinished areas of the general structural reform agenda for transition to market that has been pursued by the government since 2000, including property rights, competition policy, the judiciary, and the alleviation of various administrative barriers to business. While structural reforms may have become less fashionable than industrial policy in recent economic debates in Russia, prospects for the development of an innovation economy in Russia depend much more on the former.

A critical part of the structural reform agenda in this regard concerns the reform of government itself. Russia is too large and diverse a country to manage effectively from Moscow alone. The environment for entrepreneurship and the development of the innovation economy unavoidably depends critically on the orientation of regional and local officials. As indicated above, the decentralization of considerable autonomy to the provincial level of government has been critical for allowing China to develop the market dynamism needed for an innovation economy even in the absence of strong formal market institutions.

Similarly, reforms since 2000 in Russia in the areas of fiscal federalism, the civil service, and government administration have aimed at creating conditions under which regional and local officials would have both the incentives and the means for creating a favorable business environment on their territories. Yet these complicated reforms are far from complete. Furthermore, the de facto centralization of power in recent years raises concerns that the decentralized initiatives needed for the innovation economy could be stifled. The political focus at the regional level has been shifting increasingly toward pleasing Moscow, which is not the same as genuine concern for improving the local business climate. Moscow has vastly incomplete information about actual conditions in the regions. The development of an innovation economy in Russia depends critically on igniting decentralized processes.

¹¹ Russian Economic Memorandum (2004)

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III. COMPETITIVENESS, INNOVATION, AND SKILLED LABOR: SOME CONCLUSIONS FROM THE WORLD BANK/HIGHER SCHOOL OF ECONOMICS INVESTMENT CLIMATE SURVEY

In 2005, the World Bank and the Moscow Higher School of Economics collaborated on an Investment Climate Assessment (ICA) study of productivity and competitiveness in Russian manufacturing. This involved a survey of over 1000 medium-large sized manufacturing firms spread across Russian regions and industrial branches. The survey covered not only external factors (investment climate) affecting the operation of Russian firms, but contained questions pertaining to the internal operations of enterprises, including the training of workers, innovative activity, ownership structure, and management. The analysis of this data, in combination with other data and sources of information, is an on-going project. Preliminary results have been released and discussed at several events in 2006. One preliminary group of findings was posted on the World Bank Russia website in October 2006.¹² More studies are forthcoming. This section of the Russian Economic Report is devoted to some of the preliminary findings of the ICA, as well as policy implications.

The competitiveness of Russian manufacturing

During the last decade, external factors have had dramatic and variable effects on the competitiveness of Russian manufacturing. Low international competitiveness inherited from Soviet industrial infrastructure plagued Russian manufacturing throughout the 1990s. Competitiveness in industry received a significant boost from the strong depreciation of the ruble during the 1998-99 crisis, leading to rapid industrially-based economic recovery and growth. Although the real exchange rate has now appreciated back to its pre-crisis level and the temporary advantages for manufacturing have all but vanished, many branches of industry have made major progress in restructuring and increasing productivity. Where does Russian manufacturing stand today from the point of view of international competitiveness?

An examination of the data offers a mixed picture. On the positive side, a substantial amount of restructuring has indeed occurred, and leading firms with relatively high levels of competitiveness appear to be emerging in most branches of industry. On the negative side, in comparison with many other countries, average productivity in Russian manufacturing remains quite low relative to labor costs. Average productivity is now about 40% of that in Brazil's, one-third of that in South Africa's, and only one half of that in Poland. Value added per worker in Germany is 10 times as high as in Russia. Manufacturing value added per worker in Russia is about the same as that in China, and a bit higher than that in India. But substantially lower labor costs in these two countries place Russia at a competitive disadvantage: For each dollar of wages, an average Russian worker produces about half the output of an Indian or Chinese worker. In addition, the real appreciation of the ruble presents increasing challenges to leading Russian firms in competition on international markets.

How can Russia accelerate productivity growth and develop strong competitive industries in manufacturing? Sources of productivity growth can be broken down into three primary components (a) improvements in efficiency or productivity within individual firms, (b) flows of labor, capital, and other factors from less productive to more productive firms, and (c) the entry into markets of new (more productive) firms, and the exit of less productive firms. All of three of these components take on specific dimensions for the case of Russia. The latter (c) is given particular attention in section 2 of this RER.

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Previous RERs have given much attention to the question of flows of labor and capital from more to less efficient enterprises. An inherited inefficient Soviet spatial allocation of capital and labor, a declining working age population, significant barriers to migration, and remaining problems in the bankruptcy and liquidation of loss-making enterprises (unfinished restructuring) present major obstacles to efficiency, productivity growth, and thus competitiveness. Data from the ICA survey confirm a very high variance in productivity levels among firms within single branches of industry.

Given its focus on individual enterprises, the recently released Investment Climate Assessment of the World Bank (Higher School) gives particular attention to sources of productivity growth and competitiveness within single enterprises. The released study divides these factors into technical progress (innovation and absorption of new technologies), improvements in the quality (skills) of workers, and external (investment climate) factors. A number of recent, including World Bank, studies have focused on the investment climate. This note instead devotes attention to the former two factors.

Innovation and the absorption of new technologies

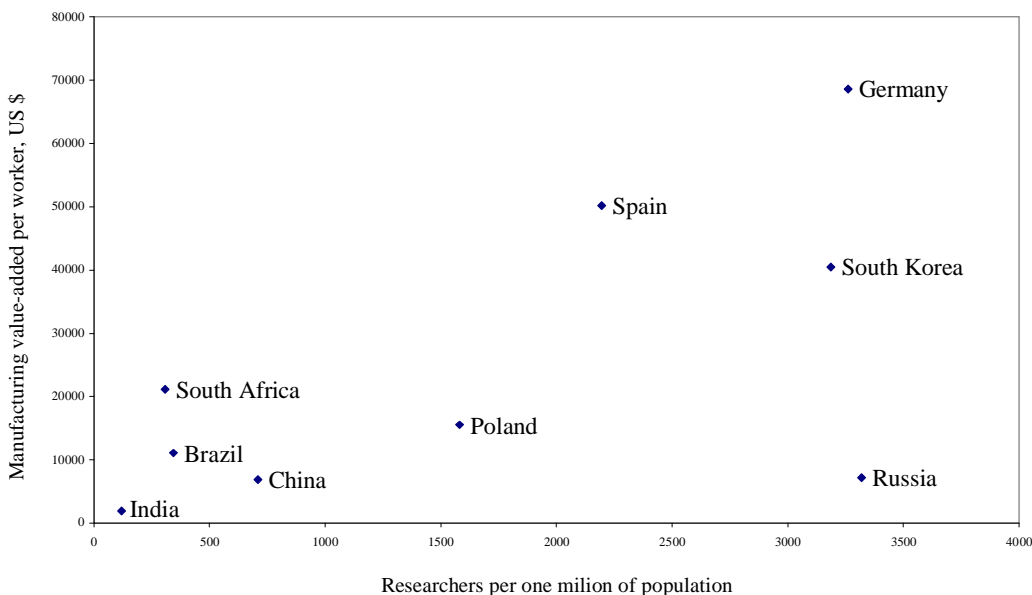
Technical progress is a primary source of productivity growth and competitiveness. The ICA survey examines “innovative activity” within Russian firms, as defined by the introduction of products or technologies that are new to the firm. This broad definition includes the absorption of existing modern technologies as well new-to-the world innovations created through research and development. In fact, a number of economic studies document a strong relationship between these two types of technical progress at the level of the firm.

Russia has a number of advantages in knowledge and innovation. By international standards, Russia boasts a highly educated population. Enrollment in higher education, the share of researchers in the population, and aggregate outlays on R&D in GDP place Russia on the level of Germany or South Korea, and far ahead of other BRIC¹³ countries. Despite a high level of inputs, Russia still lags well behind OECD and other large middle-income countries in R&D outputs. This is visible not only in relatively low value added per capita, as shown in Chart 3.1, but a relatively low number of patents and scientific publications per capita.¹⁴

¹³ BRIC = Brazil, Russia, India, China

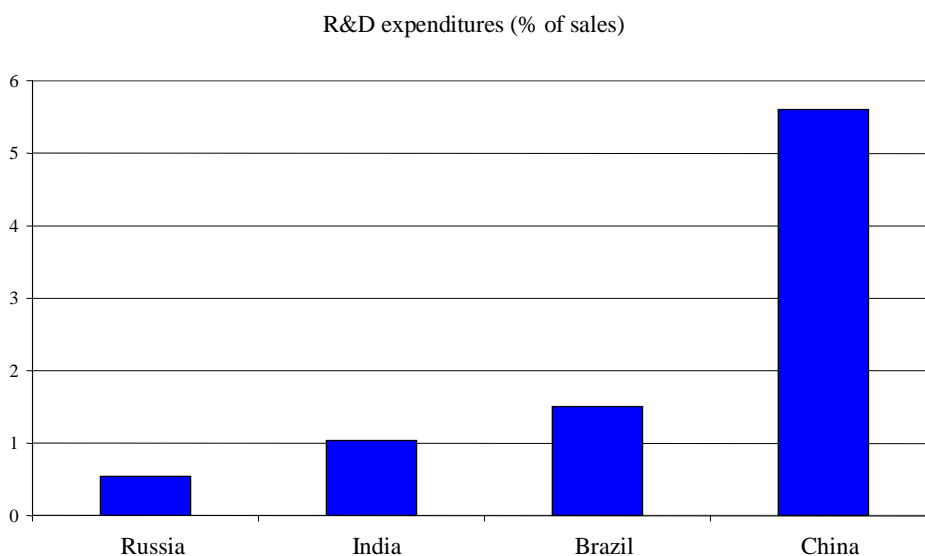
¹⁴ Researchers in Poland, India, Brazil, and South Korea generate 2-3 times as many scientific publications per person. German and Spanish researchers generate 6 times as many. Per capital scientific publications in Russia are roughly on the level of China, a country that spends less than half of Russian outlays on R&D. Similarly, patents per capita are almost 10 times higher than Russia in Spain, 60 times higher in South Korea, and 100 times higher in Germany.

Chart 3.1: Number of Researches and Valued added Per Capita in Selected Countries



Of course, one of the reasons for relatively low value added per capita in Russia is unfinished restructuring. Nevertheless, the overall return on R&D spending in Russia also appears quite low by international standards. As other studies have noted, there is a wide gap between much Russian R&D and the demands of the market. The majority of R&D in Russia (58 percent) is financed by government, as compared to an OECD country average of 30 percent. At the same time, investment in R&D by the private sector (Russian enterprises) as a share of sales is actually quite low compared to other BRIC countries. R&D as a share of sales in Russia amounts to 2.6 percent, as compared to 3.1 percent in Brazil, 3.9 percent in India, and 5.9 percent in China (Chart 3.2).

Chart 3.2: Private (in-house) R&D Expenditures as a Share of Sales



Strong evidence from numerous economic studies supports the notion that integration in world markets, including the attraction of foreign direct investment, can accelerate technical progress and innovation in developing and emerging market economies. Through foreign trade, technical progress can be embodied in imports or transferred through learning by doing. In addition,

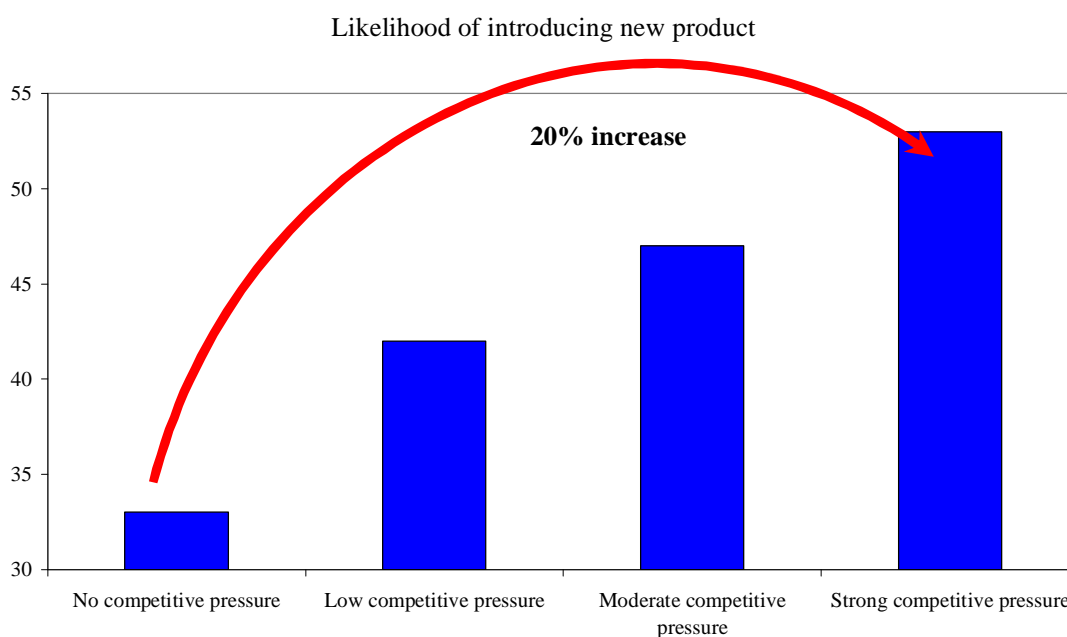
there exists evidence that those countries that achieve competitiveness in exports of more sophisticated goods grow faster. Foreign investment can contribute to technical progress through the direct importation of modern capital, managerial skills, and corporate practices, as well as indirectly through linkages with domestic firms, worker training, and increasing competition on domestic markets.

Technological transfer through world market integration has also played an important role in the modernization of the Russian economy. Still, several factors have limited the degree to which Russia has been able to profit from technological transfer:

- Although trade volume in Russia as a share of GDP is similar to many other countries, trade volume in manufactured goods is relatively low, particular in the critical parts and components industries where much technology transfer and learning by doing is thought to take place. Furthermore, the majority (64 percent) of both imports and exports in parts and components can be associated with the CIS, where Russia likely receives minimal benefits from technology transfer.
- Foreign direct investment has also been relatively low in Russia compared to other dynamic emerging market economies. While FDI rates have picked up notably in 2005 and (especially) 2006, less than 17 percent of this investment is going into manufacturing other than metals and oil processing.

What factors can be associated with innovative activity in Russian enterprises? One of the strongest relationships uncovered in the ICA survey is a strong statistical relationship between innovative activity (the introduction of new products) and competition. Those firms that reported themselves as being in strong competition with foreign or domestic firms have a higher incidence of innovative activity by as much as 20 percent. Thus, relatively low levels of innovative activity in Russian manufacturing may be related to limited competition on domestic markets. 20 percent of all enterprises in the ICA study responded that they have no competitors whatsoever on Russian markets for their products. Another 29 percent claim to feel no competitive pressures for foreign competition.

Chart 3.3: Innovative Activity and Competition



The supply of skilled labor

Considering relatively high wage costs in Russia compared to most other emerging markets, economic growth and competitiveness depend critically on a sufficient supply of highly-skilled and productive workers. In this regard, Russia faces serious problems in both demography and adequate training. In the absence of an acceleration of external migration to Russia, the working age population is due to decline over the medium term (See RER 11). This fact, combined with remaining inefficiencies in the territorial allocation of domestic labor, imply that both external and internal migration will become increasingly critical to Russia's economic prospects.

Results from the ICA survey confirm that many Russian enterprises are already experiencing shortages of skilled labor. Among investment climate constraints, larger Russian manufacturing enterprises rank the importance of "lack of skilled and qualified workforce" only behind taxation (which firms in almost every country rank as a primary constraint). In the survey, twice as many enterprises (27 percent) complained about being understaffed, as opposed to overstaffed (13 percent). Of the firms reporting understaffing, 72 percent complained in particular about a lack of workers with needed skills in the local labor market. Many complaints were also made about wage competition (41 percent), high labor turnover (30 percent), and competition from high labor demand on local markets (23 percent). The overall picture is consistent with one of a significant shortage of qualified labor.

The ICA survey reveals that over 50 percent of Russian manufacturing firms provide some sort of in-house training, which is not low by international standards. Yet the share of the workforce that receives this training is indeed quite low: only 7.7 percent of skilled and 1.4 percent of unskilled workers. This can be compared with 53 and 45 percent in Brazil and 44 and 28 percent in China, respectively (Chart 3.4).

Chart 3.4: Share of Firms Providing Employee Training and Shares of Employees Trained in Selected Countries



Given the perceived shortages of skilled workers in Russia, why are so few workers trained by manufacturing firms? This is an intriguing puzzle, and should be the subject of future research. One important explanatory factor likely concerns the high degree of labor turnover in Russia, and the fact that workers have been exiting manufacturing in favor of other sectors. Investing in

upgrading workers skills does not make sense for individual firms if they believe that the workers may leave with high probability and apply these skills somewhere else, maybe even to competing firms.

Policy implications

What policies can best promote the creation of competitive industries in Russian manufacturing? A first primary set of basic policies concerns improvements in the investment climate in accordance with the basic priorities that the government has been pursuing since 2000. As indicated above and argued in section 2 of this RER, improving conditions for fair competition and market entry are particularly important for the development of the knowledge-based (innovation) economy. While Russia has made important strides in improving the business climate since 2000, the picture in recent years has been more mixed, with a larger number of complaints about corruption and unfair competitive practice being an obstacle to business. The ICA survey also confirmed that Russian enterprises that perceive themselves to be in strong competition with other domestic or foreign firms also feel more strongly constrained by the business climate, i.e. such firms more commonly cite variables like corruption, policy uncertainty, and tax administration as significant constraints to their activities.

Many government policies and activities are relevant for promoting innovation, technology absorption, and the training of workers. The public education system is a case in point. The Russian public education system has been criticized in many studies and government programs as being inadequate for the current needs of a market economy, which has motivated a current initiative for its modernization. Numerous economic studies have linked growth and competitiveness with the quality and quantity of basic education and training. Similarly, Russia needs to undertake a complete overhaul of its state-funded R&D programs and networks, with a goal to linking these activities more closely to the needs of a modern market economy.

A number of countries have employed specific programs for stimulating in-house R&D or training within firms. A primary justification for state interventions in these areas is the presence of common market failures (externalities). Individual firms typically do not capture all of the benefits from in-house training or innovation, as they are at least partly appropriated by other firms. World experience in the design of these programs has been very mixed, however, and warrants close attention by Russia. In particular, work practice involving state-owned or state-dominated venture funds has been almost uniformly negative. On the other hand, some countries do appear to have achieved at least a modest impact from the use of matching grants for R&D or training, certain types of private public partnerships, and participation in private venture funds. A forthcoming World Bank study based on ICA and other data will clarify world experience in this regard with applications to Russia. Much relevant information for specific policies aimed at promoting innovation and technological absorption can be found in the recent World Bank study: *Public Financial Support for Commercial Innovation: Europe and Central Asia Knowledge Economy Study Part 1*. World Bank (2006).¹⁵

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Table 10: Main Macroeconomic Indicators

	2001	2002	2003	2004	2005	2006									
	Yr	Yr	Yr	Yr	Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Output Indicators															
GDP, % change, y-o-y 1/	5.1	4.7	7.3	7.2	6.4	-	-	5.5	-	-	7.4	-	-	-	-
Industrial production, % change, y-o-y	4.9	3.7	7.0	8.3	4.0	4.4	1.0	4.1	4.8	10.6	2.9	2.9	5.6	4.1	5.4
Manufacturing, % change, y-o-y	-	1.1	10.3	10.5	5.7	4.1	-0.1	5.7	5.6	15.1	2.8	2.5	6.2	5.1	7.5
Extraction of mineral resources, % change, y-o-y	-	6.8	8.7	6.8	1.3	0.9	1.1	1.8	3.8	3.6	2.4	3.1	3.8	1.7	0.6
Fixed capital investment, % change, y-o-y	8.7	2.6	12.5	10.9	10.5	4.2	2.3	10.8	10.8	18.8	12.6	10.7	12.6	15.0	19.1
Fiscal and Monetary Indicators															
Federal government balance, % GDP 1/	3.0	1.4	1.7	4.3	7.5	13.9	11.4	10.9	9.0	9.5	8.7	8.7	8.8	8.7	9.2
Consolidated budget balance, % GDP 2/	-	-	1.3	4.5	7.7	-	-	12.5	-	-	11.0	-	-	-	-
M2, % change, p-o-p 3/	44.6	34.1	44.8	42.5	35.6	-3.4	1.3	4.2	3.1	5.2	6.0	2.0	3.0	4.1	0.2
Inflation (CPI), % change, p-o-p	18.6	15.1	12.0	11.7	10.9	2.4	1.7	0.8	0.4	0.5	0.3	0.7	0.2	0.1	0.3
GDP deflator 1/	16.5	15.7	14.0	19.5	19.6	-	-	23.3	-	-	20.1	-	-	-	-
Producer price index (PPI), % change, p-o-p	8.3	17.7	12.5	28.8	13.4	0.4	3.2	2.1	0.6	1.8	0.8	1.7	2.2	1.4	-2.8
Nominal exchange rate, average	29.2	31.4	30.7	28.8	28.3	28.4	28.2	27.9	27.6	27.1	27.0	26.9	26.8	26.7	26.9
Real effective exchange rate, 2000 = 100 (IMF)	120.3	123.6	127.3	137.3	149.2	152.3	154.6	156.5	156.5	156.4	158.3	-	-	-	-
Real effective exchange rate, % change, p-o-p (IMF)	20.3	2.8	3.0	7.9	8.7	0.2	1.5	1.3	0.0	-0.1	1.3	-	-	-	-
Stabilization Fund bln USD, end-o-p	-	-	-	18.7	42.9	51.6	55.4	60.4	66.0	71.5	76.3	67.2	64.7	70.7	76.6
Reserves (including gold) billion \$, end-o-p	36.6	47.8	76.9	124.5	182.2	188.5	195.9	205.9	226.4	247.3	250.6	265.7	259.9	266.2	272.5
Balance of Payment Indicators															
Trade Balance, billion \$	48.1	46.3	59.9	86.9	118.3	12.3	11.7	11.8	13.0	14.6	11.1	12.0	13.7	11.3	-
Share of energy resources in export of goods, %	51.2	52.4	54.2	54.7	61.1	-	-	67.6	-	-	65.4	-	-	65.2	-
Current Account, billion \$	33.9	29.1	35.4	58.6	84.2	-	-	28.0	-	-	28.8	-	-	23.1	-
Export of goods, billion \$	101.9	107.3	135.9	183.2	243.6	20.9	22.1	24.5	24.1	27.2	25.4	25.8	28.1	25.9	-
Import of goods, billion \$	53.8	61.0	76.1	96.3	125.3	8.6	10.4	12.7	11.1	12.6	14.3	13.7	14.4	14.5	-
Gross FDI, mln USD 1/	3980	4002	6781	9420	13072	-	-	3845	-	-	6445	-	-	10268	-
Average export price of Russia's oil, \$/bbl	20.9	21.0	23.9	34.1	45.2	51.5	52.8	52.5	57.4	60.3	59.4	59.6	-	-	-
Financial Market Indicators															
Average weighted lending rate for enterprises, %	17.9	15.8	13.1	11.5	10.7	10.2	10.7	10.2	10.8	11.0	10.5	10.1	10.3	-	-
CBR refinancing rate, %, end-o-p	25.0	21.0	16.0	13.0	12.0	12.0	12.0	12.0	12.0	12.0	11.5	11.5	11.5	11.5	11.0
Real average rate for Ruble loans, % (deflated by PPI)	-1.1	3.9	-2.2	-10.1	-8.4	-2.8	-4.1	-4.2	-1.8	-0.8	-1.9	-3.4	-3.4	-	-
Net credits to real sector, R billion	486.0	479.0	897.8	1210.2	1603.6	20.4	106.2	189.9	176.5	183.3	355.3	273.4	233.8	-	-
Net credits to real sector/ GDP, %	5.4	4.4	6.8	7.1	7.4	-	-	5.5	-	-	11.3	-	-	-	-
Stock market index (RTS, ruble term)	260	359	567	614	1126	1316	1453	1435	1657	1461	1495	1551	1627	1550	1614
Enterprises Finances															
Share of loss-making companies 1/	38.4	43.4	41.3	35.8	33.5	33.5	38.6	38.5	40.7	39.9	37.5	35.6	35.7	-	-
Share of credits in capital investment 1/	-	10.8	14.5	15.2	13.8	-	-	13.2	-	-	12.7	-	-	-	-
Profitability (net profit/paid sales), % 1/	25.6	17.4	20.7	25.5	25.3	49.7	32.8	28.5	27.6	27.0	27.0	26.4	-	-	-
Income, Poverty and Labor Market															
Real disposable income, (1999 = 100%)	121.7	135.3	155.4	170.8	185.8	151.0	184.6	200.4	211.1	209.2	223.2	214.0	219.4	217.8	218.1
Average dollar wage, US \$	112.4	138.6	179.4	237.2	301.6	320.6	329.1	357.1	360.6	380.2	410.1	417.5	407.7	413.4	413.9
Share of people living below subsistence, % 1/	27.3	24.2	20.6	17.8	15.8	-	-	-	-	-	-	-	-	-	-
Unemployment (% , ILO definition)	9.0	8.1	8.6	8.2	7.6	7.9	8.0	7.9	7.7	7.6	7.4	7.2	7.2	7.1	6.7

1/ Cumulative from the year beginning

2/ Federal and consolidated regional budgets (no extrabudgetary funds)

3/ Annual change is calculated for average annual M2

Source: Goskomstat, CBR, EEG, IMF, staff estimates.