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RUSSIAN ECONOMIC REPORT No.17[1]

After a decade of high growth, the Russian economy is experiencing a slowdown in the wake of the global financial crisis. While Russia's strong short-term macroeconomic fundamentals make it better prepared than many emerging economies to deal with the crisis, its underlying structural weaknesses and high dependence on the price of a single commodity make its impact more pronounced than otherwise. Prudent fiscal management and substantial financial reserves have protected Russia from deeper consequences of this external shock. The government's policy response so far—swift, comprehensive, and coordinated—has helped limit the impact. Short-term macroeconomic stabilization has to be the immediate priority as the authorities continue to adjust their short-term policy responses to changing economic circumstances. But the crisis also presents an opportunity to address the medium- to longer term challenges of competitiveness, economic diversification, and financial sector modernization which are necessary to boost growth and living standards. This would ensure that Russia emerges from this global crisis with a stronger basis for dynamic, productivity-led growth and is better placed to take advantage of global integration.

1. RECENT ECONOMIC DEVELOPMENTS

Output and investment—starting to decelerate

After a decade of high growth, the global financial crisis has affected Russia, posing a new challenge for macroeconomic policy. Having grown at an impressive 7 percent a year during 1999-2007—and at an overheating 8 percent in the first half of 2008—the Russian economy has started a gradual slowdown.

Output growth—slowing

In the first six months of 2008, real GDP growth in Russia continued at a brisk pace of about 8 percent, reflecting a booming economy and strong macroeconomic fundamentals (table 1.1). This growth exceeds the long-term potential of the economy (estimated in the 6-7 percent range), with clear signs of overheating. An upturn in inflation, a decline in unemployment, a rise in capital utilization, and real wages significantly outpacing productivity growth all indicated an overheating economy against the backdrop of binding supply (infrastructure) constraints.

[1] Prepared by a World Bank team led by Zeljko Bogetic, Lead Economist for Russia and PREM Country Sector Coordinator. The team members were: Karlis Smits (Economist), Sergey Ulatov (Economist), Stepan Titov (Senior Economist), Olga Emelyanova (Research Analyst) and Marco Hernandez (Economist). Annete De Kleine contributed the box on the external environment. Victor Sulla contributed the box on the poverty impact.

Russia's strong macroeconomic fundamentals, prudent fiscal policy, and lack of exposure to the US sub-prime crisis have partially protected its economy and helped limit the impact of the global financial crisis. Thanks to low sovereign external debt, large twin surpluses (fiscal and external current account), one of the world's largest international reserves, and favorable rating agency assessments, until mid-2008, foreign investors viewed Russia as a "safe heaven," fairly "decoupled" from worsening global financial environment. By building significant fiscal and reserve cushions relative to most other emerging markets, Russia has also managed to delay and limit the impact of the global crisis. In fact, it is now clear that if Russia had not entered the current global financial crisis with such a strong fiscal surplus and large resources accumulated in the stabilization funds and foreign reserves, the impact of the crisis would have been much quicker and more severe than is currently the case. Equally important, the government would have had much less time, resources, policy options and room for maneuvering to limit the impact of the crisis on the real economy.

Table 1.1: Main macroeconomic indicators, 2003-08

	2003	2004	2005	2006	2007	2008Q1-3
GDP growth, %	7.3	7.2	6.4	7.4	8.1	8[a]
Industrial production growth, y-o-y, %	8.9	8	5.1	6.3	6.3	5.4
Fixed capital investment growth, %, y-o-y	12.5	13.7	10.9	16.7	21.1	13.1
Federal government balance, % GDP	1.7	4.3	7.5	7.4	5.5	8.1
Inflation (CPI), % change , e-o-p	12	11.7	10.9	9	11.9	11.6[b]
Current account, billion USD	35.4	58.6	84.2	95.6	76.6	91.2
Unemployment, %	8.6	8.2	7.6	7.2	6.1	5.3
Reserves (including gold) billion USD, e-o-p	76.9	124.5	182.2	303.7	478.8	475[c]

[a]. *data for 2008Q1-2.*
[b]. *data for 10 months.*
[c]. *data as of November 7, 2008.*
Source: Rosstat, CBR, Ministry of Finance.

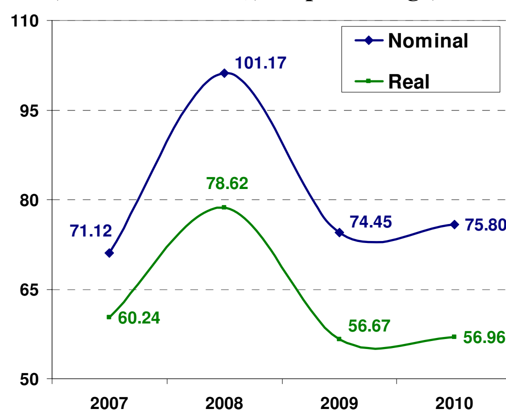
Box 1.1. A worsening international environment

Total gross capital flows to emerging markets plummeted in the third quarter of 2008 and world economic activity has decelerated markedly in recent months with further slowdown projected in 2009. Compared with the same period of 2007, they went down 36 percent, posting the lowest volumes since 2004. All segments were hit, with equity inflows falling to the lowest level since 2002. Bond and equity issuance fell off sharply, while bank lending remained more resilient, averaging USD26 billion a month. Year-to-date flows to Latin America have halved. Those in Asia—the region with strongest macro and financial sector fundamentals—eased moderately. Total gross capital flows to Russia declined to USD75 billion in 2008Q3, down 40 percent from the same period in 2007. As flows to emerging markets declined, bond spreads widened markedly, reaching the highest levels since 2004. At the same time, world economic activity is slowing down significantly. The world economic output is to increase by only 0.93 percent in 2009 and by 3.01 percent in 2010. Economic growth in developing (low- and middle-income) countries is expected to be around 4.45 percent in 2009 and 6.06 percent in 2010. However, high-income countries are facing a growth decline to only 0.15 percent in 2009 and a moderate recovery to 2.04 percent in 2010. Many factors led to the fall-off in activity, as consumers and businesses alike are being squeezed by tighter credit conditions and rising inflationary pressures, in addition to marked deterioration in business and consumer confidence. In many countries, negative wealth effects from falling asset prices are contributing

to the slowdown. Potential negative feedbacks from the recent severe financial market turmoil point to a deepening of the current downturn and sharp downside risks.

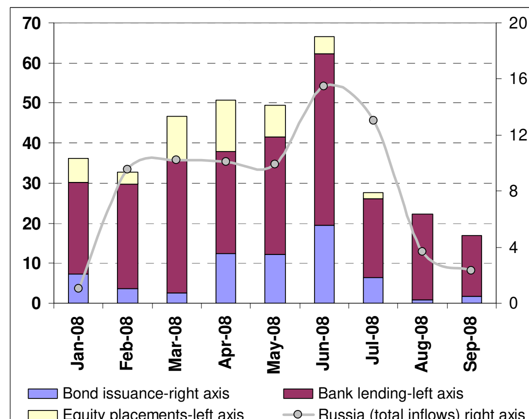
Box figure 1. Oil price forecast and capital flows to emerging markets

World Bank oil price forecast: Average crude (Brent, Dubai and WTI), simple average, USD/bbl



Sources: Dealogic and World Bank.

Gross capital inflows to emerging markets in 2008 (USD billions)



Source: World Bank staff.

Crude oil prices fell dramatically from USD144 a barrel to below USD55 a barrel in mid-November. The slump was due to sharply declining demand in the United States and Europe, and expectations of slowing demand in developing countries as the global economy slows. Non-OPEC supplies are also set to jump in the fourth quarter and in 2009, which should result in higher stocks. Inventories remain relatively low given disruptions from the Caspian region, Nigeria, and the US Gulf of Mexico. OPEC meets on December 17, but it is unknown to what extent the organization may step in to support prices. Despite setbacks, increases in non-OPEC supplies are expected in the next few years, and investments are under way to add capacity in all OPEC countries. This is expected to contribute to a decline in the current official World Bank's average crude price forecast from an annual average of USD101.17 a barrel in 2008 to USD75.80 a barrel in 2010.

Four major related shocks appear to have transmitted the global crisis to Russia:

- First, the intensification of the global crisis caused a sudden stop and then a reversal in capital flows as investors fled to quality across world markets, Russia included.
- Second, the global credit crunch has affected Russia's banking system, which faces its own liquidity problems against short-term external repayment obligations.
- Third, a sharp drop in the price of oil began to erode Russia's fiscal and external account surpluses and very large international reserve buffer.
- Fourth, Russia's stock market experienced a massive decline—largely reflecting the global loss of confidence and the precipitous drop in the price of oil—losing two-thirds of its value in the less than five months to mid-November 2008.

These shocks are slowing domestic demand—hitherto the engine of Russia's growth—posing new policy challenges in a dramatically different external and domestic environment from just a few months ago. The main policy challenge now is to limit the

inevitable impact of the crisis on the real economy while safeguarding hard-won gains in macroeconomic, especially fiscal stability.

Specifically, since July 2008, the rapidly worsening global financial crisis and the declining oil prices have dramatically altered the international economic outlook, cooling the Russian economy. And since July 3, 2008, when the oil prices reached the historic peaks of USD144.07 per barrel (Brent crude) —USD139.52 Ural— respectively, there have been early signs of cooling off, initially due to increasing capacity constraints, higher factor costs, and real appreciation of the currency. But the worsening of global demand and the associated decline in oil prices accelerated the slowdown, which is expected to be felt strongly in the last quarter of 2008 (box 1.1).

On the supply side, tradable sectors were the first to register slower growth, but nontradables are also slowing from very high growth rates. The rapid increase in wages, outpacing productivity growth, and the appreciation of the currency continued to undermine the competitiveness of tradables. Tradables grew by 3.4 percent in the second quarter of 2008, down from 5.2 percent in the first quarter of 2008 (table 1.2). By contrast, nontradables expanded by 9.5 percent in the first half of 2008, driven by a strong consumer demand in construction and retail trade. Even the booming construction sector growth slowed to (a still high) 18.7 percent in the second quarter of 2008, from 28.3 percent in the previous quarter. And there are signs that growth in construction will continue to decelerate sharply with the ongoing tightening of credit conditions. The most recent data on production growth in the main sectors indicate a continuing sharp decline in construction growth during the third quarter of the year—only 9.5 percent, down from 15.7 percent during the same period in 2007.

Table 1.2. GDP growth by main sectors, 2003–08 (value added)

GDP growth	2003	2004	2005	2006	2007	2008 Q1	2008 Q2
Total GDP growth	**7.3**	**7.2**	**6.4**	**7.4**	**8.1**	**8.5**	**7.5**
Tradable sectors	**8.9**	**6.3**	**3.5**	**2.6**	**4.6**	**5.2**	**3.4**
Agriculture, forestry	5.5	3.0	1.1	3.6	3.1	3.2	3.2
Extraction industries	10.8	7.9	0.5	1.6	0.3	1.5	-1.0
Manufacturing	9.5	6.7	6.0	2.9	7.4	7.6	5.6
Nontradable sectors	**7.2**	**7.3**	**7.3**	**9.8**	**9.8**	**9.9**	**9.1**
Electricity, gas, water production and distribution	1.6	2.0	1.2	4.7	-1.9	5.3	1.7
Construction	13.0	10.3	10.5	11.6	16.4	28.3	18.7
Wholesale and retail trade	13.2	9.2	9.4	14.6	12.9	11.9	11.7
Financial services	9.6	9.9	11.9	10.3	11.4	9.7	9.7
Transport and communication	7.2	10.9	6.2	9.6	7.7	9.8	9.4

Source: Rosstat; World Bank staff calculations.

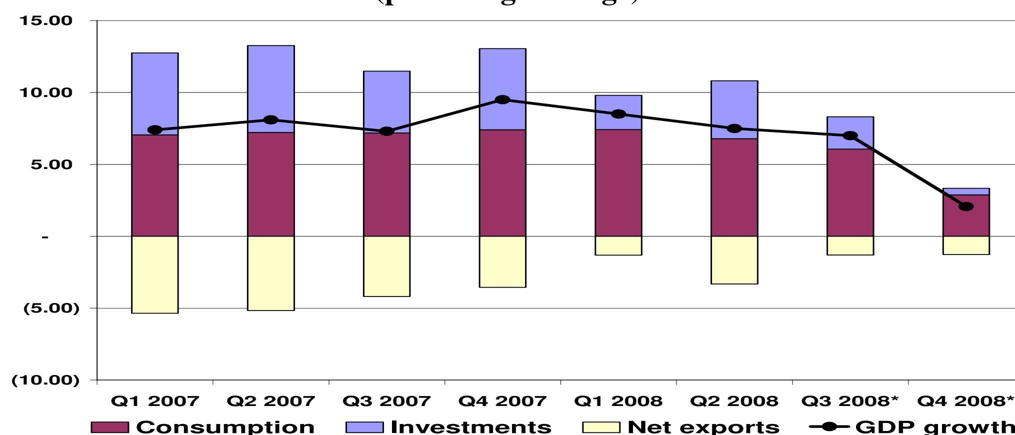
Manufacturing—the engine of Russia's industrial growth—did well through September 2008, but a slowdown is likely in the last quarter. The most recent data based on production indices show that manufacturing grew by 8.2 percent year-on-year in September 2008, mainly driven by growth in production of water turbines (97.3 percent year-on-year), tractors (74 percent year-on-year), passenger cars (28.4 percent year-on-year), and pipes (26.1 percent year-on-year). In the first three quarters of 2008, manufacturing grew 7.7 percent, compared with 7.8 percent in the same period in 2007. The growth momentum in manufacturing is partly a result of past orders, mainly by state-owned enterprises. But with credit tightening in the fourth quarter, manufacturing will also likely feel a drop in demand, with attendant impacts on production.

Looking ahead, the weakening of global financial conditions and the sharp fall in oil prices in the third and fourth quarters of 2008 is expected to accelerate the economic slowdown. The financial turmoil has already increased borrowing costs, adversely affected liquidity and credit, and dampened the aggregate demand, thus affecting consumption and investment. This is expected to accelerate in the fourth quarter, especially in the most finance-sensitive sectors, such as construction and retail trade.

Domestic demand—a key engine of Russia's short-term growth—weakening

The deceleration of investment growth in the first half of 2008 has marked the beginning of a gradual slowdown in aggregate demand, with consumption following suit (figure 1.1). Following the boom in the first quarter of 2008, investment—with consumption, the main driver of short-term growth—increased by 19.1 percent (year-on-year) but then slowed to 13.0 percent in the second quarter and to 9.9 percent in the third quarter (table 1.3). This slowdown was largely due to state corporations and to extraction industries, which reported a sharp drop in investment growth to only 6.2 percent in the first half of 2008 (year-on-year), down from 19.1 percent in 2007. Supply constraints and a gradual rise in global uncertainties and associated changes in investment sentiments, international and domestic, likely played a role in these developments. With heightened uncertainties, investors everywhere shortened their time horizons and revisited or delayed costly long-term investments. As a result, foreign direct investments have slowed. Total investment-to-GDP remains at about 22 percent, lower than that of the fast-growing Asian economies. In addition, tighter credit conditions and rising uncertainty and weak labor market outlook has adversely affected consumption growth (figure 1.1).

Figure 1.1. Demand sources of Russia's real GDP growth by quarter, 2007-2008 (percentage change)



Source: World Bank decomposition and estimates based on Rosstat data.
* World Bank staff projected estimate.

Table 1.3. Fixed capital investments, 2005-08, year-on-year growth rates, and shares

	2005	2006	2007	2008 Q1	2008 Q2	2008 Q3
Fixed capital investment growth, %	10.9	16.7	21.1	19.1	13	9.9
Gross fixed capital formation growth, %	10.6	17.7	20.8	19.4	12.9	n/a
Share of gross fixed capital formation, % of GDP	17.7	18.5	21.1	15.6	20.1	n/a
Consolidated budgetary investments, % of GDP	2.8	2.9	3.2	1.2	2.3	n/a

n/a = not available.
Source: Rosstat.

More worrisome for the long term is that investment is heavily concentrated in a few, mainly nontradable sectors. Nontradables account for two-thirds of fixed capital investment, reflecting the overall pattern of growth (table 1.4). A more detailed sectoral decomposition of investment shows that the bulk remains concentrated in resource extraction and in the transport and communication category, out of which pipeline transport accounted for a significant part. Investment growth in the tradable sectors slowed to 8.1 percent in the first half of 2008, from 16.1 percent in 2007. Among non-tradables, fixed capital investment in retail trade has begun to decline dramatically, mainly due to tighter credit. There was one bright spot, however: fixed capital investment in railways increased by 49.3 percent in the first half of 2008, perhaps thanks to large, past orders of locomotives, passenger cars, and freight cars.

Table 1.4. Sectoral structure of fixed capital investments, 2005-08 (percentage of total, unless otherwise indicated)

	2005	2006	2007	Growth rates, 2007, year-on-year	Growth rates, 6M 2008, y-o-y
Tradable sector	**36**	**37.1**	**37.3**	**16.1**	**8.1**
Agriculture, hunting, forestry	3.2	4.0	4.3	25.2	7.1
Extraction of mineral resources	15.2	17.0	17.3	19.1	6.2
Manufacturing	17.6	16.1	15.7	10.8	10.6
Food industry, including beverages, tobacco production	*3.1*	*2.8*	*2.8*	*10.4*	*-6.6*
Coke and oil products	*1.8*	*1.6*	*1.6*	*4.4*	*19.2*
Machine building	*0.5*	*0.6*	*0.7*	*12.0*	*-23.9*
Transportation devices	*1.0*	*1.0*	*1.2*	*38.6*	*43.8*
Chemical products	*1.7*	*1.8*	*1.7*	*4.8*	*12.7*
Other non-metal mineral products	*1.5*	*1.2*	*1.6*	*45.5*	*59.0*
Metallurgy and metal products	*4.7*	*4.1*	*3.6*	*–2.0*	*15.3*
Nontradable sector	**64**	**62.9**	**62.7**	**14.2**	**15.4**
Electricity, gas, and water production and distribution	7.8	7.6	8.7	30.0	15.0
Construction	2.9	3.0	2.4	5.1	35.4
Retail and wholesale trade, maintenance of vehicles, home appliances	2.8	3.1	2.9	12.8	-9.5
Transport and communication	28.8	25.5	25.3	8.2	14.4
Railways	6.4	3.7	*4.3*	*16.6*	*49.3*
Pipelines	7.7	8.5	*7.0*	*–8.4*	*-7.2*
Communication	6.7	5.3	*5.1*	*2.6*	*8.5*
Real estate operations, leasing, and services provision	11.5	12.0	12.0	18.3	15.8
Health care and social services	2.3	2.7	2.6	15.2	18.1
Provision of other public utilities, social and personal services	2.6	2.8	2.7	11.7	13.4

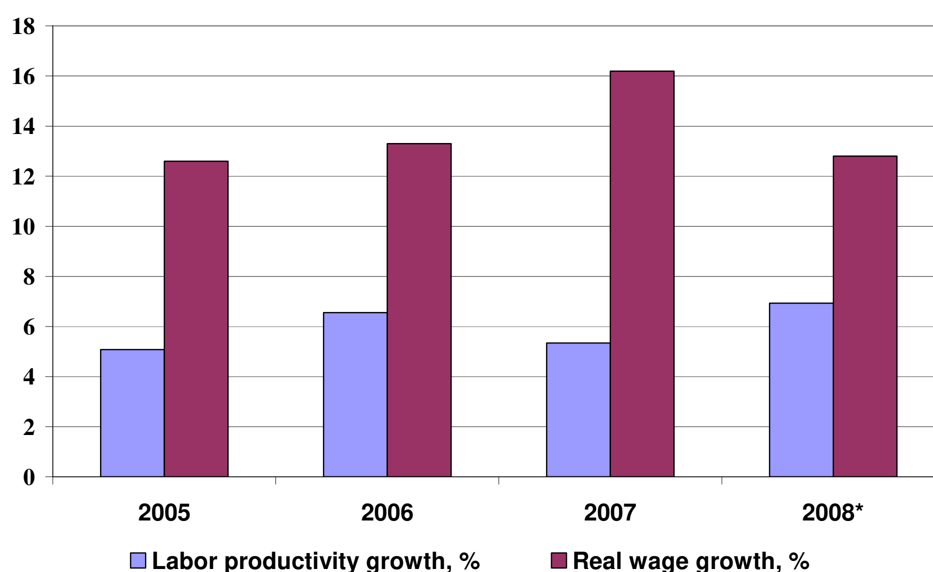
Source: Rosstat and World Bank staff calculations.

Labor markets—still tight but likely to soften

Real wages continue to outpace productivity growth, undermining competitiveness, but wage growth has begun to moderate while unemployment—a lagging indicator to real economic activity—has declined further. According to Rosstat, in the first nine months of 2008 average real wage growth was 12.8 percent, down from 16.2 percent during the

same period in 2007 (figure 1.2, table 1.5). Unemployment declined to 5.3 percent, indicating that the economic slowdown has not yet reached the labor market. But this is expected to change by year end as large, non-tradable and labor-intensive sectors such as construction and trade delay the execution of existing and new projects and adjust to higher borrowing costs, more difficult access to credit, uncertain demand, therefore, and lower profit margins. Similarly, the ongoing restructuring in the banking sector is expected to increase the number of unemployed.

Figure 1.2. Labor productivity and real wage growth, 2005-2008 (in percentages)



Source: Rosstat and World Bank staff estimates.
* Labor productivity growth Jan-June 2008, the real wage growth Jan-September 2008.
Note: Labor productivity calculated as output (GDP) per employed person.

Table 1.5. Incomes and unemployment, 2003-08

	2003	2004	2005	2006	2007	9m-2007	9m-2008
Real disposable income growth, %	14.9	9.9	8.8	10.2	10.7	10.4	7.8
Real wage growth, %	10.9	10.6	10	13.4	16.2	16.2	12.8
Average monthly wage, USD	179.4	237.2	301.6	394.7	529.0	495.0	693.0
Unemployment (%, ILO definition)	8.6	8.2	7.6	7.1	6.1	5.6	5.3

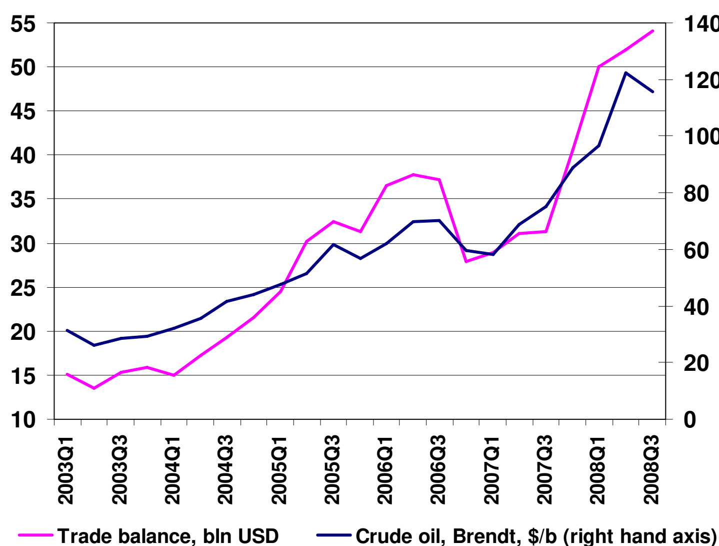
Source: Rosstat.

External sector: balance of payments, foreign direct investment, and debt

Reversal in capital flows and a drop in oil prices—deteriorating external outlook

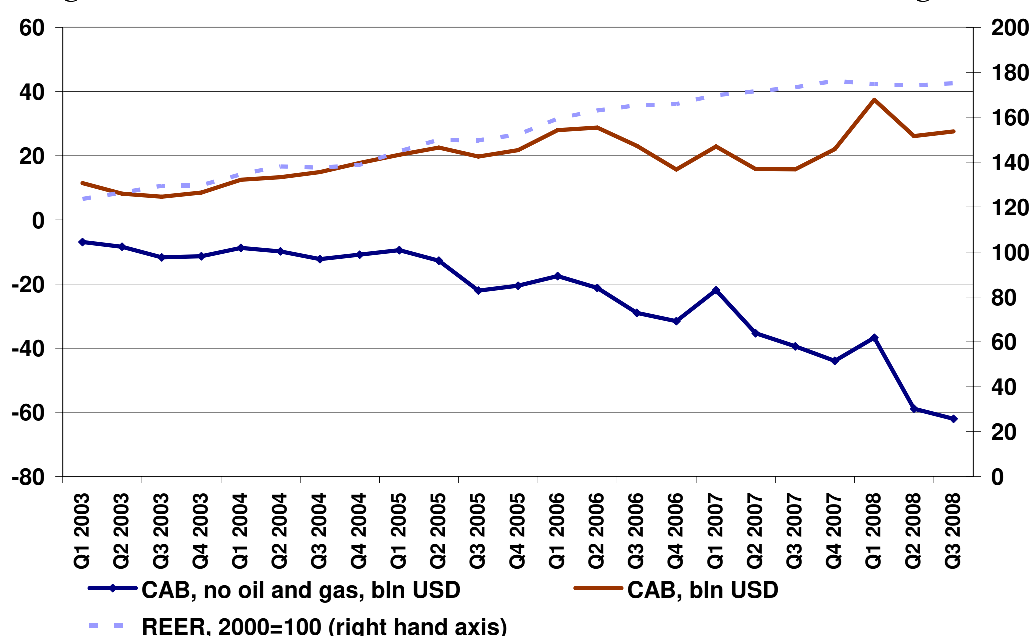
In the nine months of 2008, Russia began to experience a globally incited "sudden stop" and a reversal of capital flows, followed by a rapid fall in oil prices—but the current account has held well. Despite rapid import growth driven by strong domestic demand, trade and the overall external current account continued to improve on the back of record high oil prices (figure 1.3). The fall in oil prices will significantly affect the trade and external current accounts only in the fourth quarter of 2008, when export deliveries based on past lower oil price will take place. More worrisome, however, is that the nonoil external current account continues to deteriorate quickly in 2008 as import volumes grow considerably faster than nonoil exports (figure 1.4). In the second quarter of 2008, the nonoil external current account deficit sharply increased to almost USD60 billion, and further to USD62 billion in the third quarter, making Russia's balance of payments position particularly vulnerable to a sudden drop in oil and gas prices.

Figure 1.3. Oil prices and the trade balance



Source: CBR and World Bank staff.

Figure 1.4. Current account balances and the real effective exchange rate



Source: World Bank staff calculations based on Rosstat and CBR data.

After record inflows in 2007, Russia has experienced a sudden reversal in capital inflows since mid-year. After reaching a peak USD84.3 billion in 2007, the surplus of the capital account for the first three quarters of 2008 was only USD0.5 billion, compared to USD59.3 billion in the same period of 2007, reflecting mainly a sudden reversal in capital inflows in the third quarter of 2008. An outflow of capital is also reflected in a slower accumulation of official reserves in the first three quarters of 2008 compared with the same period in 2007, despite a much stronger external current account in 2008 (table 1.6). Two main factors were behind the deterioration of the capital account. First, changes in investment sentiment triggered a reversal of capital flows, including short-term speculative flows and FDI. Second, changes in foreign exchange expectations resulted in the unwinding of ruble positions held by foreign investors betting on a continuing ruble appreciation.

Table 1.6. Balance of payments (USD billions), 2004-08

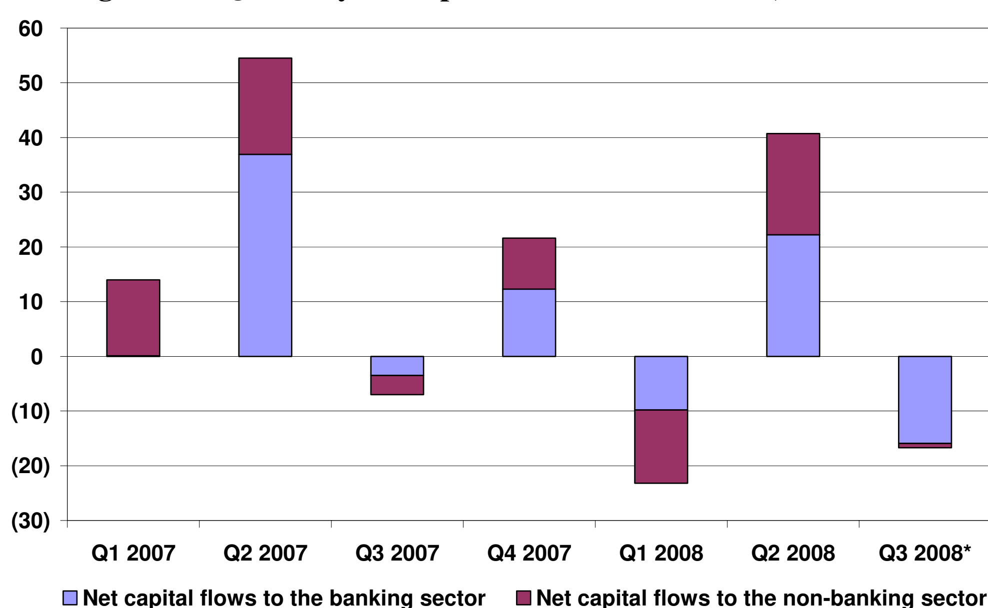
	2004	2005	2006	2007	Q1-3-2007	Q1-3-2008 [a]
Current Account Balance	58.6	83.8	94.5	78.3	52.3	91.2
Trade Balance	*85.8*	*118.4*	*139.2*	*132*	*91*	*153.3*
Capital and Financial Account	-6.3	-13.6	11.9	84.3	59.3	0.5
Errors and Omissions	-7.1	-8.8	1.1	-13.6	-5.2	-5.8
Change in Reserves (+ = increase)	45.2	61.5	107.5	148.9	106.4	85.9

Source: CBR.

[a] Preliminary estimates.

In 2008, capital flows became more volatile, and the banking sector experienced a sharp reversal of capital inflows (figure 1.5). The structure of the Russian capital account shows a sudden reversal of private capital inflows, especially in the banking sector. In the first quarter of 2008, total net capital outflows amounted to USD23.2 billion, followed by inflows of USD40.7 billion in the second quarter, and outflows of USD16.7 billion in the third quarter of 2008 (table 1.7). During the first two quarters of 2008, the banks contributed about half of total net capital flows, and in the third quarter, almost the full amount of capital outflows.

Figure 1.5. Quarterly net capital flows in USD billion, 2007–2008



Source: CBR.

Table 1.7. Net capital flows (USD billions), 2003-08

	2003	2004	2005	2006	2007	Q1-3-2007[a]	Q1-3-2008[a]
Total net capital inflows to the private sector	-1.9	-8.9	0.1	41.9	81.2	61.4	0.8
Net capital inflows to the banking sector	*10.3*	*3.5*	*5.9*	*27.5*	*45.9*	*33.5*	*-3.5*
Net capital inflows to the non-banking sector	*-12.2*	*-12.4*	*-5.8*	*14.4*	*35.4*	*27.9*	*4.3*

[a.] Since the beginning of year.
Source: CBR.

Foreign direct investment—non-debt-creating capital flows that can also bring new technology and knowhow—registered a decline due to changes in domestic laws and

investor sentiment. The fall in FDI in 2008 is mainly due to a drop of FDI in extraction industries, accounting for about half of FDI in 2007. According to Rosstat, FDI flows in extraction industries were only USD2.5 billion in the first half of 2008, down from USD13.9 billion for all 2007. This is due to a combination of gradual worsening of the investment sentiment and policy steps aimed at increasing state control in sectors of strategic importance. Although the new law "on the practice of implementation of foreign investment in companies which have strategic importance for ensuring defense and security of the state," adopted on April 29, 2008 clearly defines rules of the game and brings more transparency, it also considerably limits foreign participation in resource extraction industries, something that has incited concern by some foreign investors. So, in terms of the environment for foreign participation, there appears to have been a clear shift away from extractive industries and toward the recently liberalized electricity sector (table 1.8).

Table 1.8. Shares of foreign direct investment, by sector, 2005-08 (percent of total)

	2005	2006	2007	2008 H1
Tradable sector-total	**77.7**	**53.5**	**65.7**	**37.4**
Agriculture, hunting, forestry	0.9	1.4	0.8	1.7
Extraction industries	30.7	33.1	50.1	22.6
Manufacturing	46.1	19.0	14.8	13.1
Non-tradable sector-total	**22.3**	**46.5**	**34.3**	**62.6**
Electricity, gas, and water production and distribution	1.1	0.4	0.5	33.9
Construction	0.9	2	3.2	5.3
Retail and wholesale trade, maintenance of vehicles, home appliances	5.9	6.1	11.7	8.0
Hotels and restaurants	0.2	0.2	0.2	n/a
Transport and communication	1.9	2.8	2.1	1.5
Finance	4.5	11	4.0	1.3
Real estate operations, leasing, and services provision	7.1	23.5	11.8	11.9
Provision of other public utilities, social and personal services	0.6	0.4	0.5	0.5

Source: Rosstat and World Bank staff calculations.

The decline in FDI was partly offset by greater reliance on external borrowing. Replacing FDI with debt financing makes Russia more vulnerable to sudden changes in investor confidence or changes in external market conditions. After recording more than USD27.8 billion in FDI in 2007, FDI flows in Russia fell by about USD11.1 billion in the first half of 2008. Total debt flows increased from USD53.4 billion in 2006 to USD152.9 billion in 2007 but then decreased to USD63.6 billion in 2008. As a share of total capital flows, they increased from 77 percent in 2005 to 85.2 percent in the first half of 2008

(table 1.9). If this trend continues, capital account would become even more vulnerable to changes in investor confidence and borrowing and refinancing conditions.

Table 1.9. Foreign direct investment and debt flows, 2005-08 (USD billions)

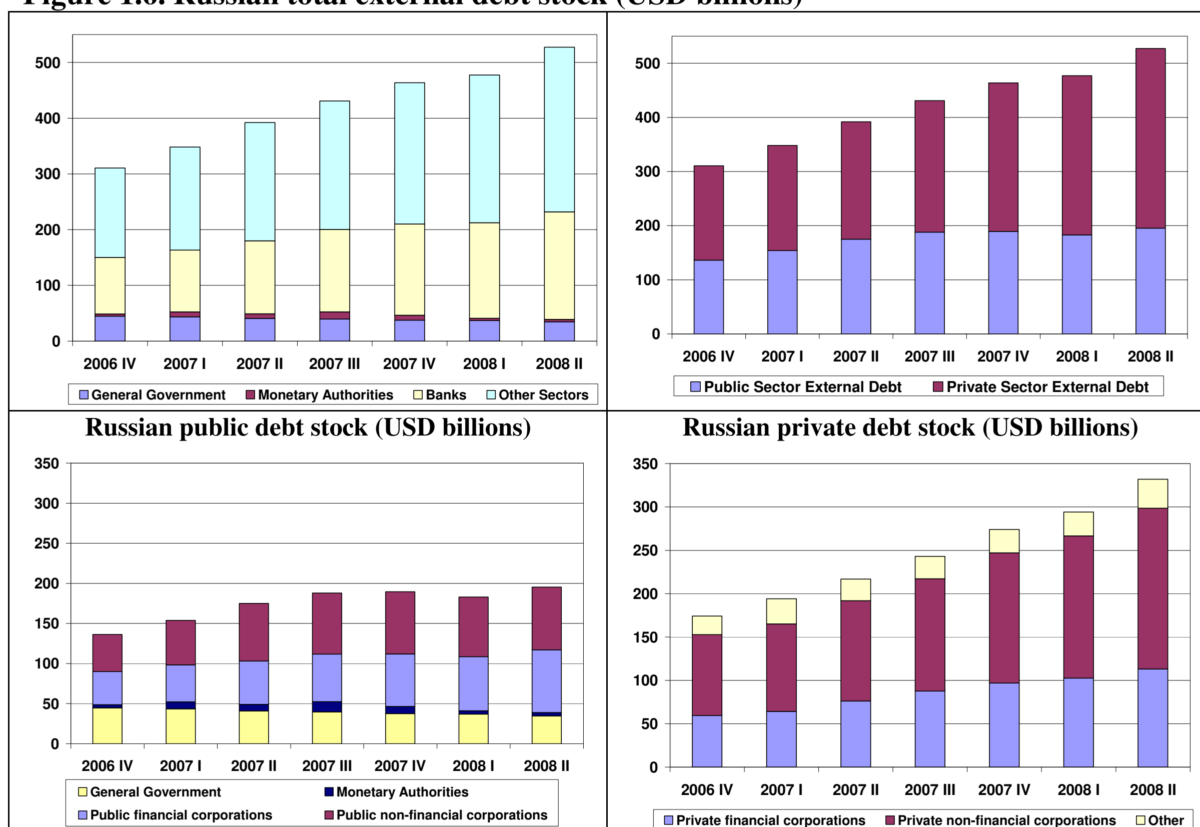
	2005	2006	2007	H1 - 2008
FDI inflows	13.1	13.7	27.8	11.1
External debt stock	257.2	310.6	463.5	527.1
External debt flows	43.7	53.4	152.9	63.6
Total capital flows	57.7	67.1	180.7	74.7
Share of debt flows as a percent of total capital inflows	77.0%	79.6%	84.6%	85.2%

Source: Rosstat; CBR.

External public and corporate and banking debt continue growing fast

Russia's private corporate and banking debt grew rapidly in the first half of 2008 and total external debt rose by USD50.1 billion in the second quarter of 2008. Although the general government's external debt remains modest, the private corporate and banking debt increased by USD37.8 billion in the second quarter of 2008. The corporate sector—officially classified as "private" but including such state-controlled enterprises as Gazprom—accounts for most of the debt stock (figure 1.6). In the corporate sector, both financial and nonfinancial institutions have increased their debt stock, but nonfinancial institutions have increased it more rapidly. Public external debt has moderated.

Figure 1.6. Russian total external debt stock (USD billions)



Sources: CBR and World Bank staff calculations.

Banking—rollover risk sharply rising and consolidation starting

While the overall share of short-term external debt of Russia remains low, accounting for less than 20 percent of total external debt, the share of short-term debt in private financial institutions is significantly higher at around 40 percent (table 1.10). High levels of short-term debt make these private financial institutions, predominantly small and medium-size banks that were able to tap into international capital markets funding, vulnerable to the rollover risk and sudden changes in investment sentiment. Many banks relying on external borrowing must revisit their funding model under conditions of abrupt difficulties in access to new external credit and sharply rising rollover risk. For banks already relying on a broad deposit base, this may be easier to accomplish. Others, relying more on wholesale models and few and potentially volatile corporate clients, might need to seek additional sources of capital and reorient their funding model toward traditional retail banking. As a result, bank consolidation has been restarted with several banks being taken over by other, stronger banks or the government. Given the fragmented Russian banking system and the large number of small banks, orderly consolidation could contribute to a stronger and healthier banking sector emerging after the crisis.

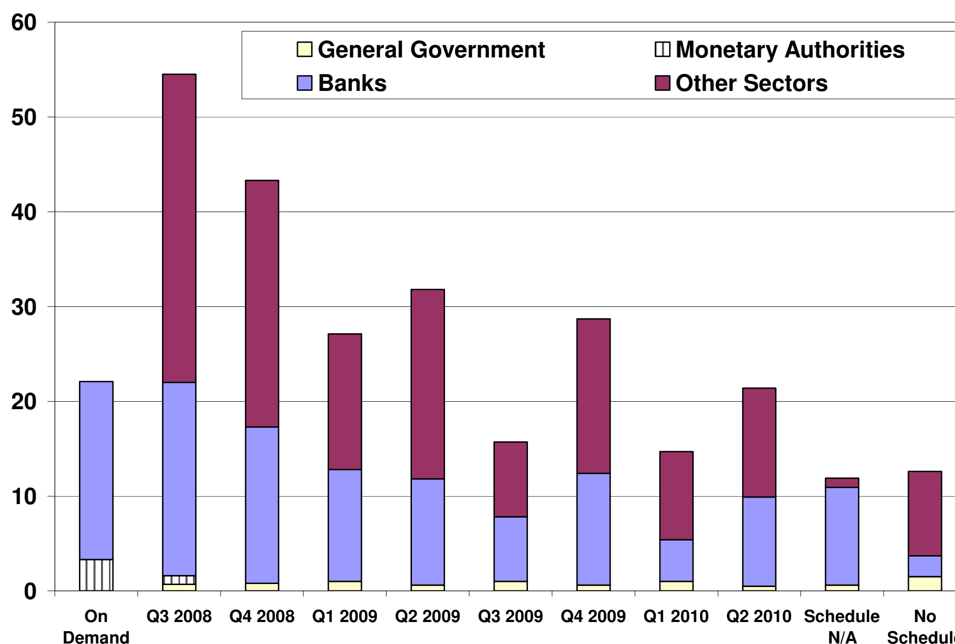
Table 1.10: Russia's external debt (USD billions)

	2008 Q1			2008 Q2		
	Total	of which short term	Short-term: share of total	Total	of which short term	Short-term: share of total
Public sector-total	**182.9**	**16.9**	**9.24%**	**195.3**	**18.5**	**9.47%**
.. o/w general government	36.9	1.6	4.34%	34.7	1.6	4.61%
.. o/w monetary Authorities	4.1	4.1	100.00%	4.2	4.2	100.00%
..o/w public financial corporations (banks)	67.4	11.2	16.62%	78.2	11.9	15.22%
..o/w public non-financial sector	74.5	0	0.00%	78.2	0.8	1.02%
Private sector-total	**294.1**	**76.5**	**26.01%**	**331.9**	**84.6**	**25.49%**
..o/w private financial corporations	104	44.6	42.88%	114.6	48.6	42.41%
..o/w private non-financial corporations	190.1	31.9	16.78%	217.3	36	16.57%
Aggregate	**477**	**93.4**	**19.58%**	**527.1**	**103.1**	**19.56%**

Source: CBR, World Bank staff calculations.

With hefty repayment obligations at a time of sharply tighter global credit, the rollover risk has risen, but the systemic risk is limited. Russia's external debt maturing in the third and fourth quarters of 2008 is around USD100 billion, of which about USD45 billion is due in the last quarter of 2008. After including on-demand deposits held by the banking sector, the total debt that requires repayment or refinancing exceeds USD120 billion (figure 1.7). The external debt maturing for the entire 2009 fiscal year is slightly less, around USD100 billion, however. Certain sectors, especially private financial corporations, are likely to face challenges in rolling over their external debt. In addition, higher prices for debt refinancing are inevitable. Furthermore, a sharp drop in stock values that were used as loan collateral have resulted in sizeable margin calls on lending facilities with 1-2 year maturities. It is estimated that the total debt due in the fourth quarter of 2008 including the margin calls might, therefore, amount to about USD60-65 billion. Even so, systemic risk to the banking sector, while rising, appears limited because of the government's resolve to support the systemically important banks and a sizable package of measures taken to date (see part II of this RER below on the impact of the crisis and policy measures). A recent IMF mission has also concluded that the systemic risk remains limited (see IMF's Press Release No. 08/225 of September 26, 2008).

Figure 1.7. Repayment schedule of Russia's external debt (in USD billion)



Source: CBR.

Monetary-exchange policy and inflation—risk shifting towards liquidity

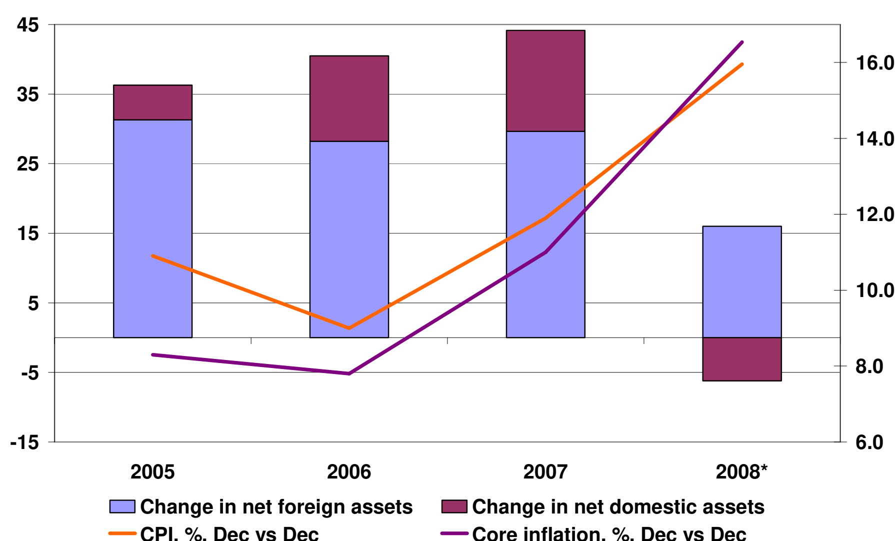
The central bank has gradually begun to change its policy of exchange rate switching towards inflation targeting, making the exchange rate more flexible. These policy steps included tightening monetary policy gradually since the beginning of the year and increasing reserve requirements and interest rates. In the event, there was a considerable slowdown of money supply growth in the first nine months of 2008 (8.3 percent), compared with the same period in 2007 (27.8 percent), largely because of a reversal of capital flows and slower reserve accumulation by the Central Bank of Russia. Yet, the gradual tightening of money was not sufficient to engineer a decline in inflation, which remains high on the back of high inflation expectations and high aggregate demand (figure 1.8).

But with liquidity risks rising sharply, the central bank moved decisively to support liquidity in the system and help restore confidence during the September liquidity crunch. Dramatic worsening of global financial conditions in the third quarter of 2008 and the liquidity crisis in September caused the central bank to change the policy course and provide substantial liquidity in its efforts to alleviate the confidence crisis and unfreeze the interbank credit market. These actions were swift, appropriate, and proportionate to the problem at hand. And they helped to temporarily stabilize the financial markets after the tumultuous week of 15-19 September. An estimated 400 billion rubles of additional liquidity (USD15 billion or 1.2 percent of GDP) were pumped into the economy in September and October, when the reserve requirements were dropped sharply to 0.5 percent. This temporarily alleviated the sharp liquidity and

confidence crisis in mid-September, but liquidity pressures continued later in October and prompted the government to take additional measures to ensure the rollover of external obligations by banks and corporations (see part II of this RER below). In hindsight, this was the right decision, helping avoid more difficult liquidity conditions in September and early October than otherwise.

Figure 1.8. Monetary growth and inflation

(in percent; monetary growth-left scale; inflation-right scale)



Source: CBR; Rosstat; World Bank calculations

Note: 2008 data are as of September.

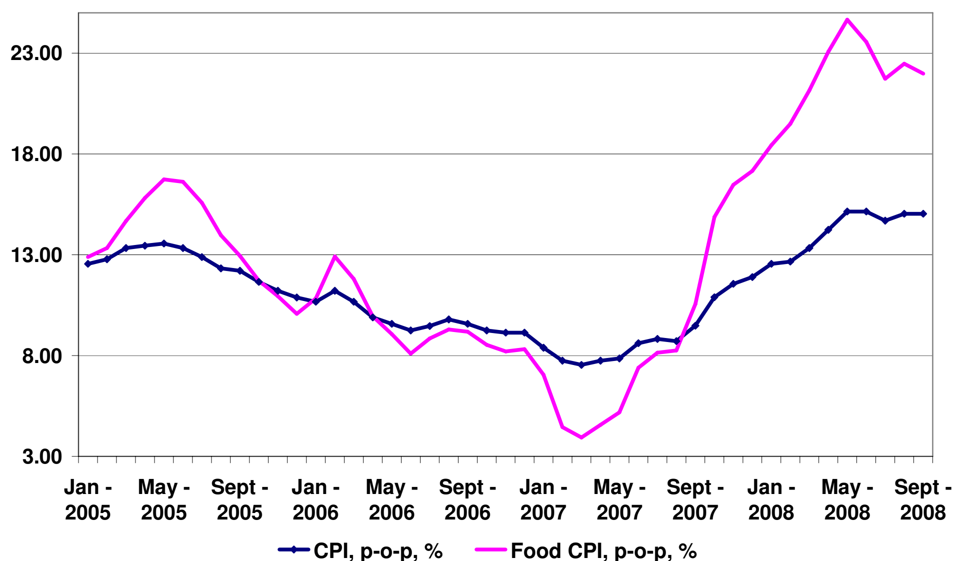
Inflationary expectations, higher import prices, combined with loose monetary and fiscal policy in 2007 and early in 2008 have resulted in an upturn in CPI inflation, which reached 11.6 percent in the first ten months of 2008 (table 1.11). But with the slowdown of economic growth and aggregate demand, inflationary pressures should gradually decrease. Yet, given the injection of liquidity, it is unlikely that the government's inflation target of 11.8 percent for 2008 will be met, despite the economic slowdown and the fall in food prices (figure 1.8 and 1.9). In the most recent monetary policy statements, the CBR has revised the year-end CPI inflation target to 13 percent.

Table 1.11. CPI, inflation, and money growth

	2003	2004	2005	2006	2007	9m-07	9m-08	10m-08
CPI inflation, %	12	11.7	10.9	9	11.9	7.5	10.6	11.6
Core CPI Inflation, %, to Dec of the previous year	11.2	10.5	8.3	7.8	11	6.6	10.1	11.6
PPI inflation, % to Dec of the previous year	12.5	28.8	13.4	10.4	25.1	17	17.6	n/a
M2 growth, %	50.5	35.8	38.5	48.8	47.5	27.8	8.3	n/a

Source: Rosstat.

Figure 1.9. CPI inflation and food prices (year-on-year)



Source: Rosstat.

Fiscal policy and fiscal developments—aiming to limit the impact of the crisis

Russia's consolidated (general) budget was executed with the strong surplus of 11.1 percent of GDP in the first nine months of 2008, compared with 9.4 percent for the same period in 2007 (table 1.12). The difference is largely explained by higher revenue collections associated with record-high oil prices. The fiscal balance of the *consolidated (general)* budget marginally improved in the first nine months of 2008, compared with the corresponding period of the previous year. However, according to preliminary data from the Ministry of Finance, the consolidated non-oil balance amounted to -0.2 percent of GDP, compared with about 0.7 percent surplus last year. Given the seasonality in expenditures, a sharp fall in oil and gas prices—and the recently announced increases in government spending to weather the impact of the global financial crisis—the fiscal position is expected to deteriorate toward year-end, with the non-oil deficit possibly exceeding the last year's -2.9 percent of GDP. Given the balance of risks that has shifted dramatically toward growth, the financial sector, and the real economy, there might be a case for such a temporary shift. Long-term, public expenditures will clearly need to adjust, however, to keep the overall fiscal balance on a long-term sustainable path in case of prolonged periods of very low international prices of oil and weak global demand (see part II of the previous Russian Economic Report #16 on issues of fiscal sustainability at www.worldbank.org/russia).

Table 1.12. Consolidated budget: revenues, expenditures, and the fiscal surplus, 2005-08

	2005	2006	2007	9m-2008
Revenues, % GDP	39.7	39.6	40.2	39.5
Expenditure, % GDP	31.5	31.2	34.1	28.3
Surplus, % GDP	8.1	8.4	6.1	11.1
Non-oil balance, % GDP	-2.1	-2.8	-2.9	-0.2
Primary non-oil balance, % GDP	-1	-2	-2.3	0.3

Source: Ministry of Finance.

The State Duma approved in the second reading the draft Law "On the federal budget 2009 and planned period of 2010 and 2011," submitted by the federal government at the end of August, and then amended expenditures on the third reading to deal with the financial crisis. The approved budget plan envisages a gradual decline in fiscal revenues associated with lower oil prices and notable reduction in federal spending as a percentage of GDP by 2011 (table 1.13). On 23 October, the State Duma approved in the second and third readings the Federal Law "On the federal budget for 2008 and planned period of 2009 and 2010." The revised law envisages an increase in government spending by 172.3 billion rubles in 2008 (about USD6.4 billion or 2.3 percent of total federal expenditures), which partly will be financed by redistributing expenditures from 2009 (16.1 billion rubles) and by "borrowing" from investment funds (114.3 billion rubles). Almost half of this amount (75 billion rubles or about USD3 billion) will be used to capitalize Vnesheconombank as an additional measure to support the financial system. And some 60 billion rubles (about USD2.4 billion) will be used for capitalizing the Agency for Housing Financing to support the mortgage market.

Table 1.13. Three-year plan for federal budget, 2009-11 (in percent of GDP)

	2009	2010	2011
Revenues	21.2	19.8	19
..oil and gas revenues	9.1	7.7	6.9
Expenditures	17.5	17.4	16.7
General state management w/o interest expenditure	2.2	1.7	1.3
National defense	2.5	2.4	2.2
National security, law enforcement	2.1	2	1.9
National economy	2	2	2
Housing and communal services	0.2	0.2	0.2
Education	0.8	0.8	0.7
Culture, mass media	0.2	0.2	0.2
Health and sport	0.7	0.6	0.6
Social policy	0.6	0.6	0.5
Inter-budgetary transfers	5.8	6.1	5.9
Transfers to extra-budgetary funds	3.4	4.1	4.1
Total non-interest expenditure	17.1	17	16.2
Interest payments	0.4	0.4	0.5
Oil and gas transfer	4.9	4.5	3.7
Surplus/deficit	3.7	2.4	2.3
Non-oil surplus/deficit	-5.4	-5.3	-4.6

Source: Ministry of Finance.

The approved amendments also stipulate the possibility for the government to use 200 billion rubles for further capitalization of the Deposit Insurance Agency—using the residual budget funds normally used to cover gaps in cash budget execution—as well as 175 billion rubles for implementing measures to support financial markets and industrial sector.

While the proposed budget indicates a loosening of the fiscal policy stance, this might be appropriate as a temporary policy response. Temporary loosening, if implemented swiftly with clear results on the confidence front, might limit the impact of the crisis on the economy while maintaining flexibility for later tightening to support future disinflation. In general, counter-cyclical fiscal policy has a better chance of affecting the real economy when there is a sizeable fiscal surplus, as in Russia, as opposed to when additional public debt might risk aggravating the underlying fiscal problems.

Policy challenges going forward

Russia's first challenge is to limit the overall impact of the crisis on liquidity and the real economy while not losing control of the public finances and not letting inflation get out of control. This will be a delicate balancing act. But Russia is better prepared today to deal with these new challenges than at any time since the beginning of the transition. Despite some similarities with the crisis triggers of 1998, Russia today is a much larger economy with much stronger macroeconomic fundamentals. Prudent fiscal policy over the last decade has permitted accumulating international reserves of USD475 billion (November 7, 2008), a fiscal surplus around 8.1 percent (January-September 2008), a ratio of external short-term debt to total international reserves of around 0.18 (2008 Q2), and a fairly low overall external debt of 35.9 percent of GDP. Thus, despite the evolving liquidity and stock market crisis, Russia is better positioned to withstand the situation than other emerging economies, and its policy response so far has been swift, massive, and broadly appropriate.

The second challenge is to intensify the efforts to diversify the economy, strengthen institutions as well as the financial sector for sustained, long-term growth. Oil and gas exports continue to account for more than two-thirds of Russia's export revenue and more than 15 percent of GDP. But the crisis shows how dependent the Russian economy is on oil prices and how much it needs to diversify and strengthen its financial sector for sustained, long-term growth. Despite strong macroeconomic fundamentals, structural weaknesses in the banking sector and a limited economic base make Russia vulnerable to highly correlated, multiple shocks of a decline in oil price, a sudden reversal in capital flows, and a drop in the market sentiment and the stock market. Russia's economic recovery will depend largely on its ability to regain the confidence of domestic consumers and domestic and foreign investors. The crisis can be a catalyst for continuing the structural reforms to improve productivity and the business climate and fiscal reforms to strengthen the economy's non-oil tax base. The way forward is diversification through greater openness, greater macroeconomic stability, more use of cutting-edge technology and knowhow, more foreign direct investments, and a stronger and healthier banking system.

The third challenge is to continue the integration into the global economy, including the acceleration of accession to the WTO. Russia has benefited substantially from being more integrated with global markets. Indeed, integration of trade, capital, and finance has helped Russia reap important benefits during the past decade of rapid economic growth. A key source of investment and growth in the past years has been long-term equity and debt from foreign investors. The WTO accession can be used as a means towards locking in domestic reforms, ensuring that Russia benefits from a rules-based international trading regime, as well as to strengthen Russia's future integration into the world economy by improving its policies and institutional capacity. Russia's active participation in the design of the new international financial architecture will solidify its role in global financial markets.

The fourth challenge is to limit the impact of the crisis at the regional level and be vigilant to the emergence of non-payment problems. First, the credit crunch is likely to have a negative effect on regions that have relied on debt financing and narrow tax bases. Although aggregate sub-national debt levels including guarantees are very small for the economy as a whole (currently 527 billion rubles, or approximately 1.5 percent of GDP), the slowdown of economic growth and shortfall in tax revenues will put additional fiscal pressures. Furthermore, for regions that have relied on debt to cover its expenditure gap, the cost of borrowing is likely to increase. On October 7 the rating agency S&P downgraded the rating of Moscow oblast, the largest debt holder among Russian regions in absolute terms, four notches from BB to B-. Second, in an environment with more limited access to borrowing different sectors of economy once again risk an increase in non-payments. In addressing this potential problem, the authorities need to carefully weigh the implications of its policy mix. Although softening of budget constraint on the state owned companies (especially utilities) or introduction of administrative price controls might seem as an easy solution to minimize the negative social consequences of the economic slowdown, such policy will distort incentives for enterprises to restructure and use inputs and existing assets more efficiently.

Finally, a prolonged economic slowdown into 2009 might require an introduction of a well targeted and structured, fiscal stimulus package to enhance key drivers of sustained economic growth. From the macroeconomic perspective, Russia may be a good candidate for such a fiscal stimulus as economic activity drops significantly below potential, inflation risks subside, and fiscal reserves remain comfortable. The objective would be to unlock investment and boost aggregate demand and create more favorable environment for a more rapid recovery of private investment and FDI. To have desired effect, however, such a fiscal stimulus (which could consist of a combination of spending increases and targeted tax cuts) must be temporary, transparent, affordable, and rule-based and implemented as exceptional policy in an exceptional situation. This is important for governance reasons and for credibility of the authorities policy response discussed below. But it is also important to minimize the potential longer-term "moral hazard" and incentives problems that arise from state support for enterprises and banks that made inadequate commercial and borrowing decisions.

Outlook for 2008-09

The following outlook is based on key global assumptions of the World Bank's Global Economic Prospects and Russia-specific information and assumptions. Given that the global financial outlook remains uncertain as the crisis continues to unfold in the Western countries that are implementing major policy packages, the outlook is especially uncertain both in terms of global demand and oil prices. Key global assumptions are current World Bank projections of oil prices in 2008 of about USD101.5 a barrel and in 2009 of USD74.5 a barrel, and world growth slowing to 2.48 in 2008 and 0.93 percent in 2009. Also, the Russia outlook is based on the impact on the economy so far and policy

responses thus far[2]. On that basis, this report projects real GDP growth for 2008 as a whole at about 6 percent (compared with 6.8 percent before the crisis began) and 3 percent in 2009 (compared with 6.5 percent before the crisis). Most of the impact is concentrated in the last quarter of this year when economic activity is expected to slow to about 2 percent. Unemployment is expected to rise moderately to 5.9 percent (from 5.3 percent) by year end, reflecting employment losses in labor intensive sectors such as construction, trade and services as well as the financial sector undergoing restructuring.

Inflation outlook remains broadly unchanged for 2008 and somewhat higher for 2009. We project end-year 2008 inflation at about 13.5 percent, close to the upper end of our earlier estimate of 12-14 percent. This reflects opposing factors of slowing economy, credit crunch, and reversal of capital inflows and additional liquidity and public expenditures, which are likely to rise further. In 2009, reducing inflation below 12 percent will be difficult, a mark that could be possible if the global financial crisis shows signs of easing towards the end of that year.

Twin surpluses (federal fiscal and external current account) will substantially decline and capital account deficit would widen with further capital outflows. Federal fiscal surplus in 2008 would likely remain within 3.5 percent of GDP range but could decrease further in 2009, reflecting lower oil export revenues and additional public expenditures now under consideration. Current account surplus would be around USD100 billion in 2008 and about USD40 billion in 2009. Capital account would deteriorate in 2008 to about USD50 billion and then to USD100 billion in 2009, largely reflecting the repayment obligations and the lack of large new FDIs or portfolio investments until the global crisis nears the end. The attendant impact on CBR reserves should be limited to a possible loss of no more than additional USD100 billion in 2009, including the announced policy interventions in support of the banking and corporate sectors.

[2] To the extent these assumptions and policy responses are revised, the outlook for Russia discussed here will need to be revisited.

2. ANATOMY OF THE CRISIS

A perfect storm—the US subprime mortgage and financial crises

The origins of the current global financial crisis can be traced to the housing market collapse in the United States. After a period of prolonged low interest rates, the US Federal funds rate (interest rates at which a depository institution lends immediately available funds (balances at the Federal Reserve) to another depository institutions) rose sharply from 1 percent in 2004 to 5.25 percent in 2006, resulting in falling housing prices and rising homeowner defaults on mortgage. Particularly large defaults were recorded in the subprime mortgage segment—high risk loans to homeowners with poor or no credit histories. By early 2007, the subprime housing industry began to collapse, taking down with it US consumer incomes, employment, and confidence, traditionally the engine of the US economy.

But the first signs of the global impact of escalating US sub-prime credit crisis were evident in August 2007. Credit markets worldwide tightened as subprime mortgage backed securities were discovered to have afflicted large segments of bank portfolios and hedge funds around the world. On 10 August 2007, central banks around the world made their first coordinated effort to ease the liquidity constraints. By the fall of 2007, major losses of the banking sector begin to emerge: UBS and Citibank, for example, wrote down billions of dollars in afflicted assets. In September 2007, a run on Northern Rock, a bank in the United Kingdom, resulted in the first direct, major international bailout by national authorities in that country. In March 2008, Bear Stearns, a major US investment bank, was bailed out by JP Morgan Chase.

In this first phase of the global crisis, Russia was largely immune to the worsening of global financial markets. The impacts of the liquidity squeeze of August 2007 were short-lived, and after a short break, the Russian stock market kept on rising. Although Russia was the third largest holder of fixed income securities issued by government-backed mortgage lenders in the United States, the Russian banking system did not have significant, direct exposure to subprime mortgage-backed securities. And with the price of oil still high, investors around the world viewed Russia as a safe haven in a more turbulent global financial environment. So, despite tightening global credit markets, Russia remained a favorable destination for foreign capital, attracting a record inflow of capital and FDI in 2007.

The global crisis reaches Russia—oil prices and the stock market collapse

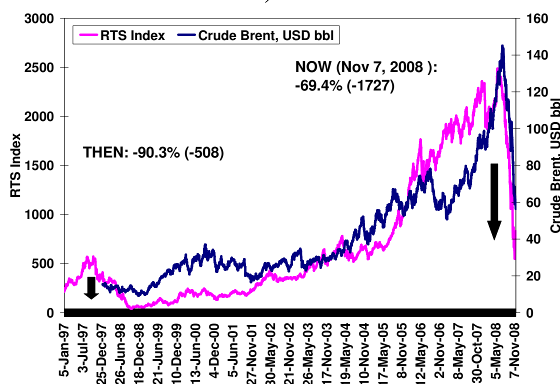
By mid-2008, the global financial crisis began to reach Russia on the back of a weakening and highly oil-dependent global economy. Rapidly deteriorating global conditions affected Russia in two fundamental ways. First, the tightening of global credit markets resulted in a liquidity crisis around the world, which hit emerging markets, all suffering massive losses. Second, the perceptions of a global economic slowdown led to a sharp decline in the price of oil, Russia's main export. While these two factors were

dominant, the Russian financial markets reacted negatively to some domestic policy related news, further weakening investor confidence. Examples include the Mechel case on July 24 and the corporate dispute within TNK-BP. The August conflict in Georgia also took its one-time toll on the market. The worst financial crisis in Russia in a decade ensued. Between its peak on 19 May and November 7, 2008, the Russian stock market lost about two thirds of its value, equivalent of close to USD1 trillion (about 84 percent of Russia's 2007 GDP). Other emerging markets suffered similar losses in the same time period: China's CSI 300 index lost 57 percent and Brazil's Bovespa stock index lost 50 percent. Even the much wider US S&P index lost 35 percent, one of the worst bear markets in history.

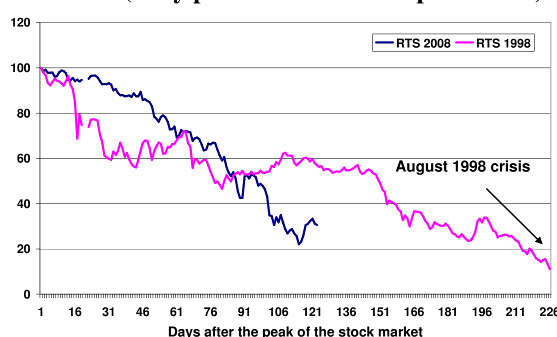
Box 2.1: Comparing the financial crises of 1998 and 2008

Russia is facing its greatest financial crisis since the August 1998 debt moratorium and analysts have drawn similarities between 1998 and 2008 by looking at the stock market dynamics. The common denominator between 1998 and 2008 is one of the ***key triggers***—namely the global economic slowdown and the decline in the price of oil—demonstrating the continued, high vulnerability of the Russian economy to fluctuations on the world markets. RTS index is now *more* dependent on changes in oil prices: the pairwise correlation between the RTS index and the price of oil increased from 0.6 in 1998 to 0.8 in 2008. As illustrated in figure 1, steep decreases in oil prices caused the RTS index to tumble by 90.3 percent in 1998 and by 69 percent in 2008. In both cases, the RTS index lost 50 percent of its value only about 80 days after it had peaked (figure 2). But this is where similarities stop.

Box figure 1: Oil price and the Russian stock market, 1997-2008



Box figure 2: Comparing the RTS index in 1998 and 2008 (daily prices as a % of the peak value)



Source: RTS and Thompson Datastream

The duration, severity and impact of these crises are likely to vary due to the vastly different underlying vulnerabilities of the economy as well as policy responses. In 1998, Russia had fiscal deficits and mounting interest payments, high levels of public debt, weak growth prospects, and low reserves. Moreover, fiscal imbalances coupled with a fixed exchange rate band made an especially vulnerable policy mix. By contrast, in 2008, macroeconomic vulnerability was much lower due to two main factors. First, since 1998, Russia has implemented important reforms, prudently managed public finances, created sizeable stabilization fund and liberalized foreign exchange system. This contributed to the strengthening of the financial system and to the achievement of large fiscal and external account surpluses, and low levels of debt. In addition, the banking system today is much stronger and better supervised. Second, thanks to the high oil prices in the last decade, Russia now possesses the third largest foreign reserves in the world,

which provide a hefty buffer against shocks. As a result of these factors, Russia is now far better prepared to deal with the shocks arising from the world markets.

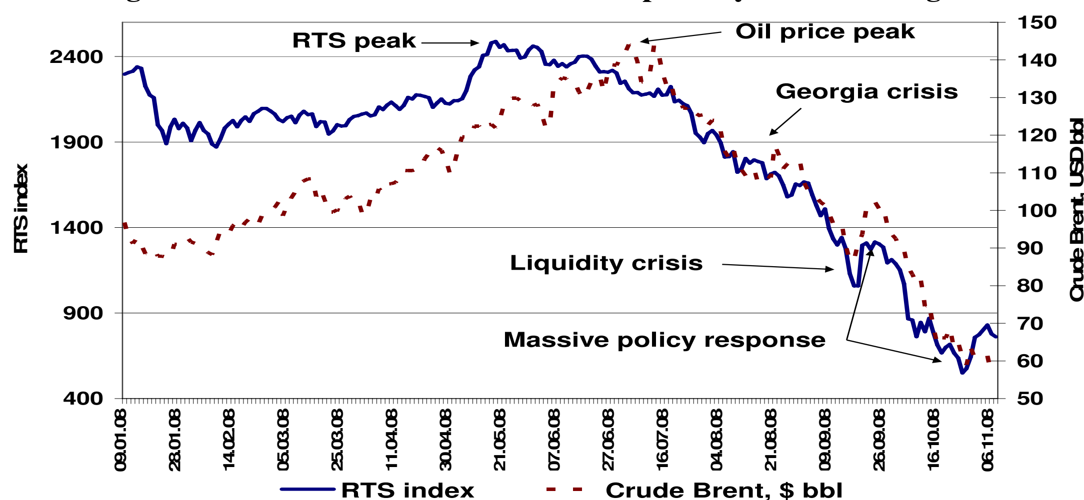
Box table 1: Similar triggers but different context, 1998 versus 2008

	1998	2008
Triggers	Asian financial crisis; Decline in oil prices; Inconsistencies between fiscal and exchange rate policies	Global credit crisis; Decline in oil prices;
Context	Low external reserves; Weak fiscal position; Stock market played a small role in transmitting the impact of the crisis to the real economy; Barter and non-payments played a large role in the economy	World's third largest external reserves; Strong fiscal position; Stock market is now *more* vulnerable to changes in oil prices, and plays a larger role in transmitting the impact of the crisis to the real economy; The economy is now a "cash" economy and does not longer rely heavily on barter schemes

The type of policy responses and costs of the crises also differ. In 1998, the government reacted by devaluating the ruble and defaulting on its debt obligations. By contrast, in 2008, the government responded swiftly by boosting liquidity, providing capital injections to the banking system, and ensuring the repayment of external obligations by banks and enterprises. These measures aimed to prevent a wave of panic selling amid fears of large losses. Regarding the parties bearing the costs of the crises, in 1998 the private sector assimilated most of the cost as a result of the policy response, whereas in 2008, the cost will mainly be assimilated by the public sector through substantial fiscal and quasi-fiscal costs.

To analyze the financial crisis in Russia, we divide the present crisis into three phases: (1) the orderly decline phase; (2) the investor liquidity and confidence crisis phase; and (3) the ongoing and policy response phase. These phases proceed chronologically and capture the various impacts of key international and domestic factors on the Russian financial markets.

Figure 2.1. Russian stock market and oil price dynamics during crisis



Source: RTS; Thomson Datastream.

First phase: orderly decline

The first phase began on May 19, the day the Russian stock market peaked, and ended on September 12. During this whole phase, there was a gradual decline in the RTS index, largely driven by international factors, mainly a worsening of global conditions and a decline in confidence in equity markets worldwide (table 2.1 and figure 2.1). At first, the drying up of global liquidity and investor confidence and the rapidly slowing US economy resulted in a fall in equity markets worldwide—as investors fled to quality amid fears of unknown future losses in the financial sector and the sense that the crisis has become truly global. From May 19 to July 3, both S&P and RTS indices fell by around 11 percent. But after July 3, the prospects of the prolonged global economic slowdown triggered a rapid decline in oil prices from its peak at USD144.07 per barrel (Brent Crude—USD139.52 per barrel, Ural). The RTS index fell by around 38 percent from July 3 to September 12, or slightly more than the fall in oil prices. During this phase, the pairwise correlation between the Russian stock market index and its fundamental variable—the oil price—reached an almost perfect 0.973 value.

Table 2.1. Anatomy of the crisis: volatility in key market indicators (% change)

	Dates	RTS	RTS*	S&P 500	Oil price	CDS (in basis points)	Interbank rate (in basis points)	Official reserves (in USD b)
Phase 1: gradual meltdown								
Worsening global conditions…	May 19-Jul 3	-11.1%	-6.0%	-11.5%	18.2%	23.60	-18.50	27.00
…followed by a start of oil price decline	Jul 4 - Sep 12	-38.7%	-33.4%	-0.89%	-32.4%	53.20	195.50	-14.10
Policy news (Mechel case) dents investor confidence	Jul 24-Aug 6	-12.2%	-8.1%	2.9%	-8.8%	0.80	1.00	5.20
Geopolitical tensions escalate (Georgia conflict)	Aug 8 - Aug 24	-6.5%	-5.7%	0.9%	0.8%	20.00	80.50	-16.00
Phase 2: confidence crisis								
Liquidity freeze blocks the Russian interbank market	Sep 15-Sep 18	-21.1%	-10.7%	-3.6%	-5.5%	99.90	103.00	-0.90
Phase 3: aftermath and policy response								
Initial rescue package announced on September 17	Sep 19-Sep 26	-0.8%	-1.9%	-3.3%	7.9%	33.40	-47.50	3.40
Additional packages announced on September 29 and October 14	Sep 29 – November 13	-48.1%	-55.5%	-17.7%	-43.8%	512.5	966.50	-71.1

RTS* - average of RTS sectoral indices weighted by the share of the sectoral contribution to the GDP in 2007. RTS indices for oil, mining and metals are combined (weighted by market capitalization).
CDS: credit default swap spreads in basis points for a sovereign 5 year Russian government bond
Interbank: Russian interbank lending rate for duration of 31 to 90 days
Source: RTS, Thompson Datastream, Government of the Russian Federation, the World Bank.

With worsening global conditions, international investors began reassessing the attractiveness of the Russian market, and many investors, led by some large hedge funds, closed their positions in Russia. Russia was no longer viewed as a safe haven by equity investors. In the week of June 23-27, credit default swaps (CDSs) on Russia's sovereign debts jumped by 30 basis points, a clear indication that foreign investor confidence worsened considerably. Some policy-related news during the week of July 25 (the Mechel and TNK-BP cases) also shook confidence in domestic economic policy in the eyes of foreign investors, contributing to a fall of 8.6 percent in the RTS index during the following two weeks and yet another increase in the CDSs. Global liquidity constraints also affected the Russian interbank rates, which increased to about 18 percent in the week of June 20. The credit crunch triggered a rapid increase in margin calls in early July, which led to a further decline in the stock market. On top of these developments, on August 8, geopolitical tensions arising from the Georgia conflict became an additional international factor contributing to the jump in credit default swaps (an increase by 20 basis points) and to the decline in the RTS index (by 6.5 percent).

During the first phase there were no major official announcements of policy measures specifically geared toward addressing the stock market crisis. Importantly, the decline in the stock market was contained within that part of the financial system. While some banks were facing large external repayments, no Russian bank had yet experienced repayment difficulties or an acute liquidity crisis that would warrant a strong policy response. A key policy change was that the Russian Central Bank began switching from exchange rate to inflation targeting, increasing exchange rate volatility and uncertainty about short-term exchange rate movements. Signs of tightening of liquidity became evident during September 8 when during the Ministry of Finance's extraordinary deposit auction the demand for budget fund deposits by banks was 50 percent higher than supply.

Second phase: the liquidity and confidence crisis in mid-September

The second phase marks the peak of the liquidity and confidence crisis caused mainly by the Lehman Brothers filing for bankruptcy and the bailout of AIG, the world's largest insurer. With hindsight, these events were a turning point that moved the global financial crisis into a panic. World markets reacted very negatively with massive daily drops. In Russia, these events, carefully watched by all market players, triggered a virtual freeze of the interbank market during the week of September 15-19. In just a few days, interbank lending rates jumped by 100 basis points, but the interbank money market remained dysfunctional. While the overall liquidity in the system was not at critical levels and, in fact, began to improve toward the end of this episode in late September, the transfer of liquidity from a few large banks to the second and third tier banks stalled partly because of the fear of escalating counterparty risk. The equity market experienced a sharp increase in selloffs fuelled by massive margin calls as investors cashed in their rapidly dwindling equity positions. On September 15-16, the Ministry of Finance doubled the total limit of budget funds available over deposit auctions and increased the daily limits for such auctions, followed by CBR's increase in daily limits for REPO operations on September 17; however, this coordinated effort turned out to be not sufficient to stem

the fear in the market. On September 17, the Federal Financial Markets Service closed the exchanges for two days to prevent a wave of panic-selling amid fears of large losses. The announcement of massive policy response by the authorities on September 17 resulted in a bounce back of the market on Friday, September 19, recouping all the losses of this tumultuous week.

Third phase: Swift and massive policy response

The stock market meltdown and a clear sense that global crisis had moved to a panic prompted the Russian authorities to respond with quick and massive policy measures. The authorities reversed the earlier policy of gradual monetary policy tightening and committed substantial fiscal resources to shore up the banking system and ensure liquidity in financial markets. Given the shifting balance of risk from inflation to the banking system and the real economy, the initial policy response was broadly timely and appropriate. The first set of policy measures announced on September 17 was aimed at injecting liquidity into the financial market (table 2.2).

Table 2.2. Policy measures announced during September 17-23, 2008 and their cost

Policy measure	Objectives	Financing source	Status and implementation mechanism	Cost in billions (fiscal, quasi-fiscal, monetary)
Monetary policy measures				
Increasing the amount of funds available through REPO	Providing liquidity for the banking sector	CBR	Implemented immediately	Monetary impact up to 430 billion (rubles)
A cut in the reserve requirements a)	Providing liquidity for the banking sector	Reserves held at the CBR	effective from September 18	Monetary impact: 300 billion (rubles)
Fiscal policy measures				
A cut in the crude-export duty b)	Mitigate the impact of oil price decline for oil companies	Lost tax revenues	Effective October 1, 2008	Fiscal cost: 140 billion (rubles)
Increasing the grace period for VAT payments due in October	Providing additional liquidity to private companies	Tax credit	October VAT payments are extended for 3 months	Quasi-fiscal: approximately 115 billion rubles (3-month credit)
A capital injection into AHML (agency of home mortgage loans);	Capitalize AHML	Federal budget	implemented	Quasi-Fiscal cost: 60 billion (rubles)
A liquidity injection to the three largest state-controlled banks	Providing liquidity for Sberbank, Gazprombank and VTB	Federal budget	Announced, but not implemented	Quasi Fiscal cost: 60 billion (rubles)

Policy measure	Objectives	Financing source	Status and implementation mechanism	Cost in billions (fiscal, quasi-fiscal, monetary)
A temporary allocation of federal budget funds into the short-term (3 month) deposits at selected banks	Providing liquidity for the banking sector	Federal budget		Quasi-fiscal cost: up to 1,514 billion (rubles)
A decrease in deposit insurance premium payments	Providing liquidity to the banking sector	Deposit insurance agency	A decrease in transfer banks pay to the deposit insurance fund c)	
Administrative				
A ban on short-selling of stocks	Limiting large price fluctuations on the stock exchange			
Temporary closure of stock exchanges (MICEX and RTS)	Limiting large price fluctuations on the stock exchange		Regulators from the Federal Financial Markets Service have repeatedly suspended trading	

a. By four percentage points to 1.5 percent on household deposits, 4.5 percent on liabilities to non-residents, and 2.0 percent on other liabilities.
b. From USD495.90 to USD372 per ton.
c. from 0.13 to 0.1 percent starting from the fourth quarter of 2008
Sources: Economic Expert Group and World Bank daily monitoring of the macro and financial indicators.

Because some announced liquidity measures were not immediately implemented or did not have the desired effect, liquidity conditions had remained very tight. This was especially the case for secondary banks and highly leveraged sectors and enterprises (construction, retail, agriculture). The liquidity injection into the large state-owned banks, for example, did not trickle down to the banking system. The segmented interbank market prevented the liquidity from moving beyond a few large market players because fear of counterparty risk dominated market sentiment. And the demand for temporary allocation of federal funds remained weak since the banks that did qualify for these deposits, mainly the largest banks, continued to rely on the daily REPO facility to access the liquidity.

The second set of policy measures announced on September 29 and October 14 was aimed at addressing the more systemic risks of the banking sector. Government-orchestrated bailouts targeted USD5 billion capital injections in Svyaz bank, Globex bank, Sobinbank (CBR injected USD2.5 billion in Svyaz bank and USD2 billion in Globex bank via VEB, and additional USD0.5 billion in Sobinbank via Gazenergoprombank). To strengthen the confidence of deposit holders, the government increased deposit insurance coverage to 700,000 rubles (about USD28,000) and injected additional capital into the federal deposit insurance agency. CBR was allowed to place a USD50 billion deposit at the VEB bank to reduce the rollover risk of short-term external

debt held by domestic financial and non-financial corporations. The government also announced a plan to provide long-term financing in subordinated debt of around 950 billion rubles (USD35.4 billion). Most of this long-term finance was earmarked for three state owned banks - Sberbank, VTB, Rosselkhozbank could be eligible for up to 725 billion rubles.

Table 2.3. Policy measures announced on September 29 and October 14 2008 and their cost

Policy measure	Objectives	Financing source	Status and implementation mechanism	Cost in billions (fiscal, quasi-fiscal, monetary)
Monetary policy				
CBR will be allowed to partially compensate the losses of a bank lender, if a financial organization, the recipient of the loan, fails to repay the loan.	Providing liquidity for the banking sector, especially second-tier banks	CBR	Temporary measure effective until December 31, 2009	Unspecified quasi fiscal cost
Additional cut in reserve requirements	Providing liquidity for the banking sector	Reserves held at the CBR	Effective immediately until early 2009	Monetary impact: 100 billion (rubles)
The CBR will be allowed to lend (short-term) without collateral	Providing liquidity for the banking sector, especially second-tier banks	CBR	Legislation approved	Unspecified quasi fiscal cost
The CBR will deposit USD50bn with Vnesheconombank (VEB) to replace foreign funding to those entities which cannot refinance existing debt abroad.	Reducing rollover risk of short-term external debt of domestic financial and non-financial corporations	Foreign exchange reserves of CBR	The CBR will deposit USD50bn with Vnesheconombank (VEB) to replace foreign funding to those entities which cannot refinance existing debt abroad.	Quasi-fiscal: 1,300 billion (rubles) 51.18 billion (USD)
The government and CBR will provide RUB950bn (USD36bn) in subordinated debt	Providing liquidity for the banking sector	CBR 500 billion, National welfare fund deposits of 450 billion	Subordinated credits up to 2020, interest rate 8%, Sberbank up to 500 billion rubles, VTB up to 200b rubles, Rosslekhozbank up to 25b rubles.	Quasi-fiscal 950 billion (rubles) 37.40 billion (usd)
Introduction of daily limits on currency-swap operations	Limiting currency speculation		The CBR will announce a limit on traders' currency-swap operations daily by 10 a.m. in Moscow	None

Policy measure	Objectives	Financing source	Status and implementation mechanism	Cost in billions (fiscal, quasi-fiscal, monetary)
Fiscal policy				
Recapitalization of Deposit Insurance Agency	Strengthening the confidence in the banking system	Federal budget		Quasi-fiscal cost: 200 billion (rubles)
Support for financial markets	Provide support for companies traded on stock market	Federal budget via National welfare fund deposits in VEB	Using public funds to purchase equities and bonds of companies, assets will be purchased via VEB	Quasi-fiscal: 175 billion (rubles) in 2008, 175 billion (rubles in 2009): 350 billion (rubles) total
Recapitalization of VEB	Strengthening the banking system	Federal budget		Quasi-fiscal cost: 75 billion (rubles)
An additional cut in the crude-export duty a)	Mitigate the impact of oil price decline for oil companies	lost tax revenues	effective November 1, 2008	Fiscal cost: 50 billion (rubles)

a) from USD372 per ton to USD287.30 per ton

Sources: Economic Expert Group; announcements of the Government of the Russian Federation; and World Bank daily monitoring of macro and financial indicators in Russia.

As a result of these monetary, fiscal, and quasi-fiscal measures, the authorities in Russia will affect both short-term and long-term interest rates. Having a direct control of both short-term and long-term interest rates raises important issue of indeterminacy, especially if long-term rates were not to accurately reflect market expectations about the future path of interest rates. This could undermine the effectiveness of monetary policy in the medium term, especially with interest rates increasingly important in combating inflation in the aftermath of the crisis.

The impact of the second set of policy measures on equity markets was limited, however, against the backdrop of a further decline in the oil price and a panic in world markets. RTS index fell by an additional 48 percent from September 29 to November 13, and the oil price by 43 percent.

On November 7, the government announced a new plan for a broad set of policies to address the impact of crisis on real economy. The plan includes 55 tasks categorized in 10 blocks covering a wide span of economic sectors, including, agriculture, manufacturing and real estate. Although the plan includes examples of good policy proposals, such as instruments to support small and medium business, the plan focuses on short-term measures that are vaguely defined and would require additional loosing of monetary and fiscal policy. In addition, the plan includes some protectionist and administrative measures that result in a preferential treatment for select market participants. These measures will likely be made more concrete in the months ahead and their implementation will be important to monitor and adjust as needed as the crisis evolves in the real economy.

The impact of the financial crisis: fiscal and monetary growth and poverty

The impact of global financial crisis on Russia will continue to be felt on several fronts in the remainder of 2008 and 2009. The final outcome will depend on the rather uncertain global economic outlook, including the price of oil and the continuing soundness of the policy responses. But some immediate effects can be estimated with some certainty.

- First, there is a ***wealth effect***, from a loss of about USD1 trillion (about 84 percent of Russia's 2007 GDP) of Russian stock market capitalization in the short period from May 19 to November 7, 2008. Of this amount, Russia's wealthy individuals have reportedly lost about USD300 billion in paper value. The remainder was lost to large state owned oil and gas and related companies and some limited stock ownership by the middle class. Even so, the wealth effect is large enough that it is bound to affect aggregate consumption, compounded by tighter borrowing conditions and access to credit.

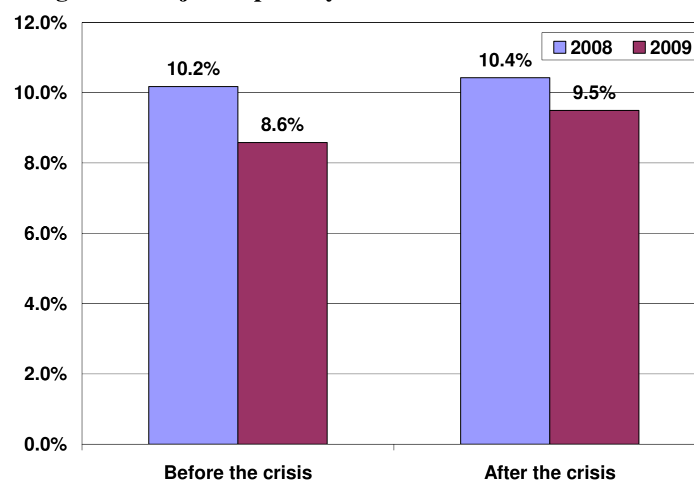
- Second, global and domestic liquidity constraints will result in a notable ***growth slowdown*** in Russia with attendant losses in real incomes and employment and a rise in poverty. Investment in the fourth quarter of 2008 is likely to stall due to increases in borrowing costs and possible access problems and to heightened uncertainty and its impact on domestic and foreign investor confidence. An increase in borrowing costs will slow consumer demand. Several non-tradable industries, notably construction and trade, are especially vulnerable to a fall in aggregate demand. This economic report estimates the GDP growth in 2008 will be in the 6 percent range and in 2009 about 3 percent. This compares with the earlier, mid-year estimate of 6.8 percent for 2008 and 6.5 percent for 2009. The difference between these estimated growth rates "before" and "after" the crisis reflects the impact of growth slowdown. The relatively moderate slowdown in 2008 relative to earlier forecasts reflects the fact that the Russian economy continued to grow at about 7.5 percent through the first three quarters of 2008, so the impact of the crisis this year will be felt largely in the last quarter.

- Third, the growth slowdown will affect real incomes of the middle class and of the poor. This adds the human dimension of what began as a financial crisis, calling for an estimate of the ***social impact*** of the crisis and a formulation of appropriate policy response (see box 2.2).

Box 2.2: Impact of the financial crisis on Russia's poor

Over the past eight years, Russia's robust growth has reduced poverty. Real GDP per capita grew on average by about 7 percent a year between 2000 and 2007. Meanwhile, the poverty headcount rate declined from 29 percent in 2000 to 13.4 percent in 2007. This implies that approximately 30 million people appeared to have moved out of poverty during 2000–07.

Box figure 1: Projected poverty headcount rates for 2008 and 2009



Source: World Bank staff calculations

The implications of the financial crisis on Russia's poor are troubling. Figures 1 and 2 show the projected impact of the financial crisis on Russia's poor using Rosstat's 2006 household budget survey. Projections of future changes in poverty rates are based on two scenarios: (1) a "before the crisis" scenario, where we assume that real GDP per capita would growth at 6.8 percent in 2008 and 6.5 percent in 2009; and (2) an "after the crisis" scenario, where we predict a slowdown in per capita growth due to the ongoing financial crisis, resulting in a GDP per capita growth rate of 6.5 percent in 2008 and 3.5 percent in 2009.

If the high growth rates of the 2000–07 period had continued in the next two years (i.e. in the "before the crisis" scenario), our projections suggest that the poverty headcount rate would have declined by 10.2 percent in 2008 and 8.6 percent in 2009. In other words, the poverty headcount would have declined by almost one-third between 2007 and 2009. Yet, the likely growth slowdown from the ongoing financial crisis will dampen this otherwise rapid progress. In an "after the crisis" scenario, currently viewed as a "baseline", the projected poverty headcount rates would increase to 10.4 percent in 2008 and to 9.5 percent in 2009. The higher poverty headcount rates imply that about 1.3 million *fewer* people will move out of poverty between 2007 and 2009.

International experience and good practice suggest that the government could soften the impact of the financial crisis on the poor. The ongoing financial crisis emphasizes having a strong social protection and assistance system, which could be scaled up in times of need. The most important income transfer in Russia is pensions, and other non-contributory social assistance transfers for the poor are small. In addition, social protection expenditures in Russia have been mainly pro-cyclical, while targeting performance in the biggest two programs benefiting the poor (the child allowance and the decentralized social assistance programs) is fairly low. Policy recommendations to soften the impact of the crisis on the poor are, in this order: (1) reallocate untargeted, regressive privileges toward targeted social assistance programs; (2) strengthen the system of decentralized social spending through improved financing and better targeting of instruments; and (3) improve the targeting performance of those social programs targeted to the lowest quintiles (such as the child allowance program).

Some of the economic slowdown represents a welcome cooling of an overheated economy and will also help reduce inflation from the current high levels. But as a result of significant relaxing of monetary policy to address the liquidity crisis (relaxation of reserve requirements alone injects 400 billion rubles), inflation pressures will persist in 2009. And some depreciation of the ruble will feed into the CPI inflation.

Although the direct fiscal costs of the announced measures are manageable, quasi-fiscal costs are much larger. Estimated direct fiscal costs are only 190 billion rubles (USD7.6 billion or about 0.58 percent of Russia's GDP in 2007) but the quasi-fiscal and contingent costs could reach up to about 4,639 billion rubles (USD185 billion, or about 14.7 percent of Russia's GDP in 2007). These additional commitments have significantly reduced the fiscal space and halted many important initiatives, especially large capital expenditures to address infrastructure bottlenecks that might be scaled down or postponed. In the worst case, if the price of oil continues to decline toward the long-term average of about USD30—something not envisaged by most analysts at this time—significant revisions in medium-term expenditure plans will be required.

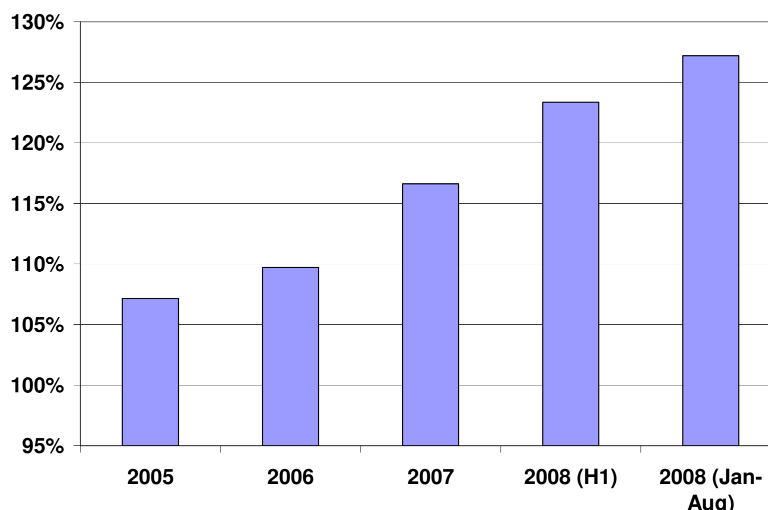
Table 2.4: Aggregate fiscal, quasi-fiscal and monetary cost and sources of financing of anti-crisis policy measures (in billions of rubles, unless otherwise indicated)

	Fiscal	Quasi-fiscal	Monetary	Total
Federal Budget	190	up to 2,839		up to 3,029
..o/w National Welfare Fund		*up to 700*		*up to 700*
Central Bank of Russia		up to 1,800	830	up to 2,630
Total (in bln rubles)	***190***	***up to 4,639***	***830***	***up to 5,659***
Total (in bln USD)	**7.6**	**up to 185.0**	**33.0**	**up to 225.6**

Source: World Bank staff estimates.

The effects of the crisis will change the Russian banking sector, already triggering the consolidation of banks. The loan-deposit ratio of the Russian banking system increased from around 105 percent in 2005 to more than 125 percent in the first months of 2008 (figure 2.2), reflecting greater reliance of banks on foreign borrowing as a source of funding. Although the aggregate ratio is high, it is not as high as in many CIS countries in a much more vulnerable position. But large external borrowings in Russia have put pressure on some small and medium banks, which in the absence of borrowing and refinancing options, have no other significant and stable sources of funding (such as deposits). Larger banks, including private ones, are generally in a stronger position to weather the financial turmoil.

Figure 2.2: Evolution of the loan-deposit ratio



Source: CBR.

More broadly, some banks and corporations may have to revisit their business models. Banks who relied excessively on external borrowing as a mode of funding will need to revisit their business model and, as in other countries, move towards more traditional banking business and funding model relying on more stable and diversified deposit/client base. Also, given the ongoing, massive margin calls to private corporations on loans collateralized by volatile equity shares, corporate borrowing strategies as a business model should also be revisited.

After a prolonged period of rapid real estate price increases fueled by high liquidity, the adjustment has started in select segments of the real estate sector, most notably in Moscow city. According to data from realmarket.ru, the average price of one square meter of an apartment in Moscow has increased on average by 35 percent annually in period from 2004 to the peak in August 2008. In October, the prices fell by around 5 percent comparing to previous month. A slowdown in the real estate sector will not be limited to the construction industry, but would have wider implications, including the banking sector, a provider of mortgage lending and other lending instruments collateralized with property.

In sum, the global crisis has affected Russia but the Government has so far responded in a pro-active and comprehensive manner. A lot more may need to be done to implement these measures. Transparency and effectiveness of such policy response is key to ensure that they limit the impact on the real economy. Attention will also need to be paid to longer-term issues of competitiveness, diversification, and growth of small- and medium- sized enterprises. Such reforms and modernization of the banking sector will lead to improvements in productivity and will help Russia emerge from the current crisis with a healthier and more dynamic economy.

3. LOW ENERGY EFFICIENCY AFFECTS RUSSIA'S ECONOMY AND REQUIRES GOVERNMENT INTERVENTION[3]

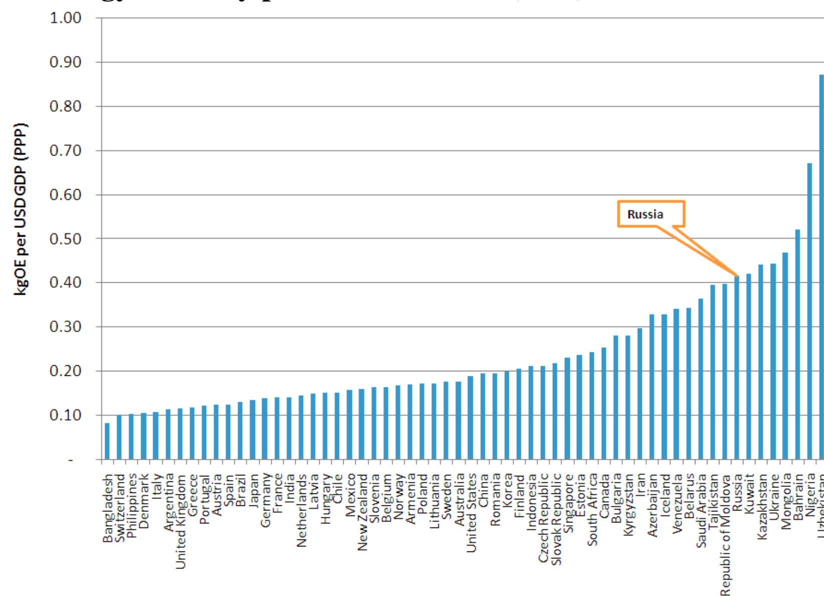
Benefits from making Russian economy more efficient in energy use can amount to USD120-150 billion per year. The amount of energy released from greater efficiency can cover the increased demand for energy until 2020 at one third of the cost of building new generation capacity. Most barriers to energy efficiency are regulatory and informational, requiring active government intervention.

Russia consumes more energy per unit of GDP than any of the world's 10 largest energy consuming countries. In 2005, its energy consumption was 12th of 121 countries in kilograms of oil equivalent (kgoe) per US dollar of the country's GDP (figure 3.1). High energy intensity brings about many challenges for the Russian economy and places a heavy burden on society. A recent report by the World Bank Group, *Energy Efficiency in Russia: Untapped Reserves*, assessed Russia's potential energy savings at roughly 300 million tons of oil per year, or 45 percent of its primary energy consumption. This potential saving is equivalent to all energy produced and imported (net of exports) by France or the United Kingdom, and to 2 percent of all energy produced in the world in 2005. This chapter analyzes the roots of slow progress in tapping this potential and recommends policy action for change.

The slow decline in Russia's energy intensity is no longer sustainable without major cost to the economy. Russia's energy intensity has fallen by 3.4 percent a year since 1990, while most former Soviet Republics achieved 6-7 percent average annual reductions. The improvement in Russia was driven primarily by a shift toward less energy-intensive industries and increased industrial capacity utilization. Since most major industries were already approaching full capacity as early as 2006, this will not be a major driver for reducing energy intensity in the future.

[3] This is a resume of the recent World Bank/IFC report *Energy Efficiency in Russia: Untapped Reserves,* September, 2008, website: http://www.ifc.org/ifcext/rsefp.nsf/Content/Materials

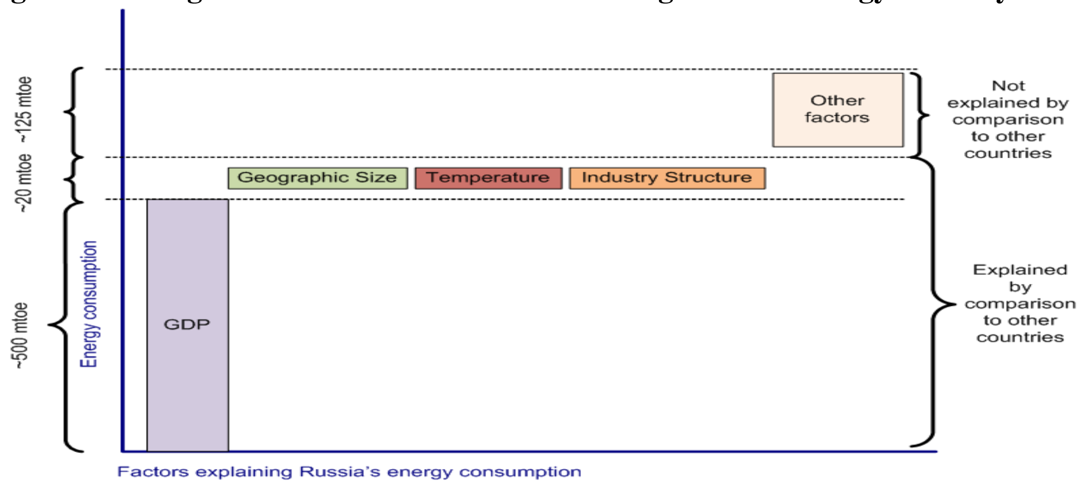
Figure 3.1. Energy intensity per dollar of GDP (PPP)



Source: Energy consumption data from the International Energy Agency (IEA), Energy Balances data set. GDP and PPP conversion factor data from the World Bank Development Indicators Database.

Russia's energy intensity cannot be fully accounted for by natural causes or industry structure. With the world's largest land mass, centers of population in some of the coldest areas on earth, the world's 10th largest economy, and a predominance of heavy industry, Russia will be at the higher end of any international ranking of energy intensity. Together, however, these factors fail to explain all of Russia's energy intensity. Russia remains more energy intensive than international comparisons would suggest for countries with its income, land mass, temperatures, and industry structures. At least some of Russia's energy consumption is due to factors other than income, size, temperature, and industry structure (figure 3.2).

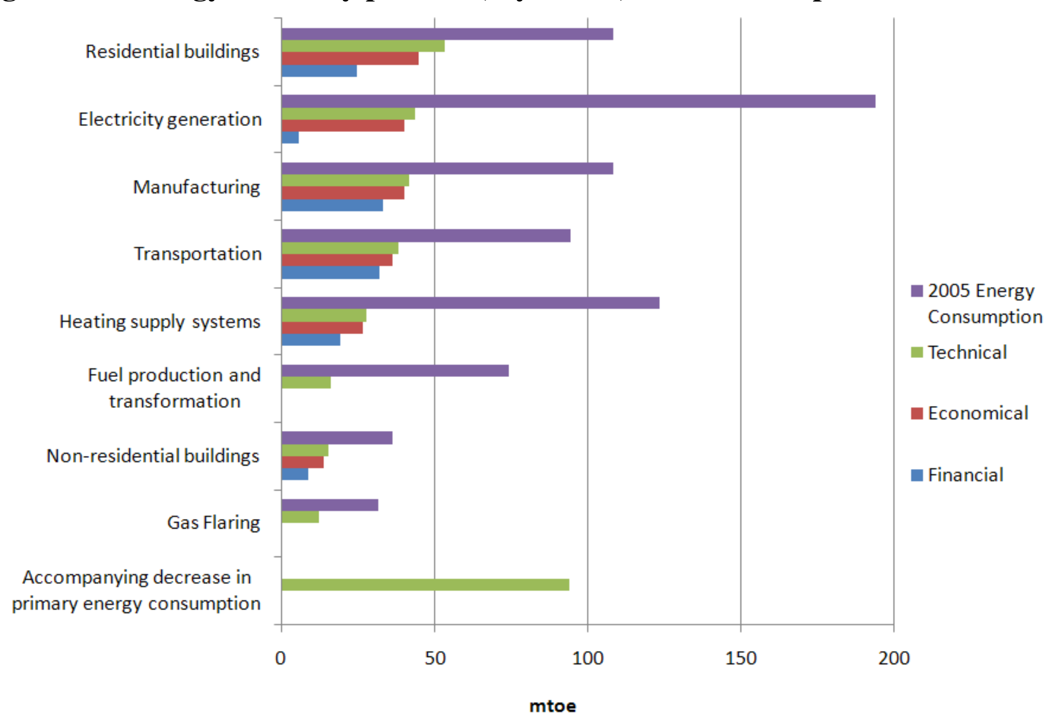
Figure 3.2. Weight of various factors in determining Russia's energy intensity



Source: Based on econometric analyses by the study team and subjective expert assessments. The following datasets were used: Energy consumption data from the International Energy Agency (IEA), Energy Balances data set. GDP and PPP conversion factor data from the World Bank Development Indicators Database. Temperature data from data set TYN CY 1.1, Mitchell, Carter, Jones, Hulme, and New, 2003: "A comprehensive set of high-resolution grids of monthly climate for Europe and the globe: the observed record (1901-2000) and 16 scenarios (2001-2100)." *Journal of Climate*, submitted. Gross value added data (by sector) from UNDP National Accounts dataset.

The greatest potential for saving energy is in final consumption. The largest reductions in end-use energy consumption are achievable in residential energy consumption (53.4 mtoe), electricity generation (44.4 mtoe), manufacturing (41.5 mtoe), transport (38.3 mtoe), and heat supply systems (31.2 mtoe).

Figure 3.3: Energy efficiency potential, by sector, and the multiplier effect



Note: The study uses the definition of technically viable potential, economically viable potential and financially viable potential. For details please see *Energy Efficiency in Russia: Untapped Reserves*, Annex B.
Source: CENEf for the World Bank. Statistical data on the economic and financial viability of fuel production and transformation and gas flaring is currently unavailable.

The challenges of high energy intensity

Russia's natural gas supply obligations are at risk. Some experts, including the International Energy Agency (IEA), have forecast that the Russian gas supply could, without significant additional upstream investment, fall short of projected domestic and export demand within the next few years. Russia may face the uncomfortable choice of using its gas to serve either domestic or export markets. Russia's gas production is only slightly higher than it was in 1990. In contrast, domestic gas consumption, having grown at 1.7 percent a year between 1999 and 2006, is now growing at 2.5 percent, despite a quadrupling in the domestic tariff for natural gas.

European natural gas import demand, meanwhile, is expected to continue to climb rapidly, from roughly 500 billion cubic meters to 800 billion cubic meters by 2030. As domestic supply falls, Europe will need to import a much larger percentage of the natural gas it uses. The inability to guarantee sufficient supplies was demonstrated in mid-February 2006 when Russia unexpectedly cut gas deliveries to Serbia, Bosnia and Herzegovina, Croatia, Italy, Romania, and Poland, due to a lack of available gas. To the

extent that Russia's supply constraints continue to leave it unable to meet these growing supply needs, Europe will look elsewhere to serve its gas supply needs reliably.

Demand for electricity outpaces supply. Russia needs to add a minimum of 20,000 MW of new generating capacity over the next two to four years to meet growing electricity demand. The country will not come anywhere near this goal, having added only 1,000-2,000 MW a year recently. Electricity consumption has been increasing at roughly 2-4 percent a year, but supply has failed to keep pace, with Russia importing roughly 200-800 MWh a month from Ukraine as of late 2006. Finland, importing electricity from Russia for years, is now preparing to reverse the electricity flow and become a net exporter to Russia rather than a net importer.

Oil production comes short of meeting the growing demand. The Russian government has acknowledged that Russian oil production has stagnated, and oil exports are largely believed to be nearing a plateau. A top energy executive for Russia's largest independent oil company believes that Russia's oil production has already peaked and may never return to its current level. Meanwhile domestic demand for petroleum products continues to increase at a robust rate. The IEA expects crude output to decline as early as 2010. Other sources believe that crude production may already be declining.

Russia's energy intensity is a burden for industries driving the Russian economy. Russian companies currently share in one of the world's largest energy subsidies, roughly USD40 billion a year. The Russian government recognizes the need to raise domestic electricity and gas prices to reflect the actual long-run cost of meeting demand, maintaining reliability, and operating and maintaining those assets. The government has been gradually increasing natural gas and electricity tariffs, and plans to continue to do so. Growth in energy tariffs will increase costs and reduce the profitability of industrial enterprises. Companies will either accept a decline in profitability—some of them possibly going out of business—or increase prices for their goods and services. Both options hurt their competitive position. Estimates from the Center for Macroeconomic Analysis and Short-term Planning indicate that from 2007 to 2010 growth in energy costs will translate into a 15 percent reduction in profits (3-7 percent on an annual basis). For some industries, profits may decline more than 25 percent.

Government expenditure on energy has increased significantly since 2000. Federal budget funding for energy services increased from USD1.14 billion in 2000 to USD2.96 billion in 2005 and USD3.81 billion in 2006, a three-fold increase. Of the USD2.96 billion spent in 2005, USD1 billion paid for electricity supply, USD727 million paid for heating, USD131 million paid for gas consumption, and USD178 million for consumption of other fuels for boilers. Total government budget spending on energy supply and maintenance, including regional and municipal budgets, amounts to USD12.7 billion, or 1 percent of Russia's GDP.

Russia sacrifices export revenue for every 1,000 cubic meters of gas demand that it cannot serve. The Russian government currently loses income for every 1,000 cubic

meters of gas wasted in inefficient electricity production, lost in transmission and distribution, flared at oil wells, or lost through inefficient use by households. Russia could earn an additional USD84-112 billion in export revenues every year by reaching its technical energy efficiency potential. This figure is equal to roughly 5 percent of Russia's 2006 GDP. Oil and gas exports together currently contribute to roughly 20 percent of Russian GDP.

Environmental consequences of high energy intensity put Russian health at risk. A handful of pollutants linked to fossil fuel combustion, primarily PM10, SO2, and NOx, are responsible for 90 percent of human health risks from air pollution in Russia. These health risks, which increase rates of premature mortality, include respiratory illnesses, cardiovascular disease, increased prevalence of chronic bronchitis, and upper and lower respiratory tract infections. One study, based on 1993 and 1998 Rosgidromet data for 178 Russian cities, estimated that 219-233,000 premature deaths, or 15-17 percent of the total in Russian towns, might be due to air pollution. These are aggregated numbers, and pollution-related mortality rates in towns with the highest level in air pollution are believed to be much higher. Another study estimated that for 1999, the mortality rate linked to air pollution was 44 persons per 100,000. Furthermore, an estimated 30 persons per 1,000 were likely to get sick due to air pollution.

Benefits of energy efficiency in addressing the challenges

Energy efficiency saving represents one-third the cost of building new energy supply facilities, and can be implemented more quickly. Achieving Russia's full energy efficiency potential would cost the economy USD320 billion and result in annual costs savings to investors and end-users of about USD80 billion, paying it back in just four years.[4] By realizing its energy efficiency potential, Russia can save 240 billion cubic meters of natural gas, 340 billion kWh of electricity, 89 million tons of coal, and 43 million tons of crude oil and equivalents in refined petroleum products. The forecast shortfall of natural gas production (35-100 billion cubic meters by 2010) and the potential gap in additional electrical generation capacity (~20,000 MW) can be met by energy resources released through increased efficiency (240 billion cubic meters of gas and ~43,000 MW of electricity capacity). Russia would require investments of more than USD1 trillion to construct energy supply facilities to generate the same amount of energy. Energy efficiency can achieve the same effect at one-third of the cost.

Energy efficiency mitigates the risks and costs to Russia's economy. It does this by helping to:

- *Maintain competitiveness*: Enterprises can maintain their competitive position only by increasing labor and energy resource productivity. Industrial equipment modernization projects, witnessed by the World Bank Group, boosted the energy efficiency of production and reduced specific energy consumption by 40-70 percent. Observed energy efficiency improvements have translated into a 5-7 percent profit increase, even for non-energy intensive industries.

[4] In 2007 internal prices.

- *Increase oil and gas export earnings*: Russia's energy intensity has a cost of USD84-112 billion a year in forgone export revenues.
- *Lower budget expenditures*: USD3-5 billion can be saved annually from federal and local budgets by eliminating the inefficient use of energy.
- *Reduce environmental costs*: By ignoring the consequences of emissions caused by its energy intensity, Russia sacrifices the health and welfare of its citizens and roughly USD10 billion a year in direct economic benefit from selling CO2 emissions reduction units.
- *Avoid becoming a CO2 buyer:* If its energy efficiency potential was to be fully realized, Russia's CO2 emissions in 2030 would be about 20 percent below the 1990 level. Russia's energy efficiency potential translates into a CO2 emissions reduction of 793 million tons of CO2 equivalent per year (about half of 2005 emissions). This will not only address the challenge of climate change. It will also improve Russia's international image and help it reemerge as a leader in addressing global environmental issues.

Shaping an effective policy agenda to achieve energy efficiency

Achieving greater energy efficiency requires that many individual decision makers gain comfort in investing their capital in projects to use energy more rationally. The government can provide that comfort by removing barriers, establishing clear conditions and standards, and supplying critical information. By creating a "pro-energy efficiency" business environment, it can catalyze significant investment flows.

Roughly half of Russia's potential energy savings can already be achieved through financially viable investments. Yet even financially viable investments have slow uptake. For example, in the manufacturing sector, 80 percent of energy efficiency potential is financially attractive, but few companies take advantage of all the opportunities.

Current federal and regional legislation on energy efficiency is largely declarative. It does not address key barriers, such as the lack of information and access to long-term funding. Measures to remove these barriers and stimulate uptake of financially viable energy-efficiency projects are essential to realizing Russia's energy efficiency potential and avoiding the consequences of continued high-energy intensity at higher tariffs.

An energy efficiency champion is a prerequisite for successful policy implementation. Dedicated government agencies for energy efficiency have become a common way to coordinate government action on energy efficiency. At the federal level in Russia, the responsibility for energy efficiency policy has been moving from one agency to another, resulting in a general lack of ownership of the agenda. The late 1990s saw several good-faith attempts to raise the profile of energy efficiency, but Russia's energy efficiency policy is once again fragmented and lacking clear ownership. Russia may want to consider designating an energy efficiency champion, which may include creating a separate office of energy efficiency.

Systematic and comprehensive data gathering is crucial to the adoption of energy efficient practices and investments. The statistics office and line ministries need to develop uniform and user-friendly methods for recording, reporting, and aggregating individual, firm, sector, and regional data on energy production and consumption. Local government can facilitate and manage more detailed data gathering. This information is vital in developing benchmarking and best practices guidelines to demonstrate the potential benefits of energy efficiency investments to end-users.

Information dissemination is critical. Individual households, companies, and public organizations need to be equipped with the knowhow and provided the expertise to carry out energy efficiency investments. In addition, information dissemination can raise general public awareness and acceptance of energy efficiency practices and socially beneficial decisions. Information dissemination campaigns can come in multiple forms, but need to be tailored to the end-user to be effective. Such campaigns can include advertising campaigns on energy efficiency, energy labeling of appliances and equipment, advice on equipment and behavioral practices, education at schools, and interactive expert advice through audits. Such campaigns are often funded with government support.

Higher energy costs are making the benefits of energy efficiency more compelling—and the consequences of inaction more painful—than ever before. To realize its energy efficiency potential, Russia needs a robust and comprehensive energy efficiency policy. The Russian government needs to face the challenge and focus on changing the attitudes and behaviors of diverse entities and individuals. The starting point is to create and fund an “energy efficiency champion” empowered to formulate and implement the energy efficiency agenda. This will enable the government to provide effective leadership to remove both general and sector-specific barriers, and create a framework conducive to public and private investment in energy efficiency improvements.

Annex: Main macroeconomic indicators

	2001	2002	2003	2004	2005	2006	2007	2008								
Output Indicators	Yr	Yr	Yr	Yr	Yr			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
GDP, % change, y-o-y 1/	5.1	4.7	7.3	7.2	6.4	7.4	8.1	-	-	8.5	-	-	8.0	-	-	
Industrial production, % change, y-o-y	4.9	3.1	8.9	8.0	5.1	6.3	6.3	4.5	7.5	6.5	9.2	6.7	0.9	3.2	4.7	6.3
Manufacturing, % change, y-o-y	-	1.1	10.3	10.5	7.6	8.3	9.5	4.0	11.2	10.4	14.5	10.0	0.6	4.6	6.5	8.2
Extraction of mineral resources, % change, y-o-y	-	6.8	8.7	6.8	1.4	2.5	1.9	0.6	2.3	-0.7	0.4	0.1	0.6	-1.8	0.7	3.2
Fixed capital investment, % change, y-o-y	10.0	2.8	12.5	13.7	10.9	16.7	21.1	19.0	21.1	20.1	20.3	15.3	8.7	9.9	7.9	11.8
Fiscal and Monetary Indicators																
Federal government balance, % GDP 1/	3.0	1.4	1.7	4.3	7.5	7.4	5.5	10.4	8.2	7.2	9.0	8.2	7.1	9.2	8.7	8.1
Consolidated budget balance, % GDP 2/	-	-	1.3	4.5	7.7	8.5	6.1	-	-	12.1	-	-	10.6	-	-	11.1
M2, % change, p-o-p 3/	44.6	34.1	44.8	42.5	35.6	43.6	51.3	-2.7	1.3	2.3	-0.3	2.8	3.8	-0.2	2.3	-1.1
Inflation (CPI), % change, p-o-p	18.6	15.1	12.0	11.7	10.9	9.0	11.9	2.3	1.2	1.2	1.4	1.4	1.0	0.5	0.4	0.8
GDP deflator 1/	16.5	15.7	14.0	20.1	19.2	15.7	13.5	-	-	20.7	-	-	22.1	-	-	
Producer price index (PPI), % change, p-o-p	8.3	17.7	12.5	28.8	13.4	10.4	25.1	1.6	0.7	0.7	4.5	3.5	4.9	5.4	0.4	-5.0
Nominal exchange rate, average	29.2	31.4	30.7	28.8	28.3	27.1	25.6	24.5	24.5	23.8	23.5	23.7	23.6	23.4	24.1	25.3
Real effective exchange rate, 2000 = 100 (IMF)	120.3	123.6	127.3	137.3	149.3	163.4	172.7	179.9	179.5	181.5	184.1	184.6	186.0	188.4		
Real effective exchange rate, % change, p-o-p (IMF)	20.3	2.8	3.0	7.8	8.7	9.5	5.7	1.6	-0.2	1.1	1.4	0.3	0.7	1.3		
Stabilization Fund bln USD, end-o-p	-	-	-	18.7	42.9	89.1	156.8	157.4								
Reserve Fund, bln USD e-o-p									127.8	130.5	129.8	129.3	130.3	129.7	142.6	141.0
National Wealth Fund, bln USD, e-o-p									32.2	32.9	32.7	32.6	32.9	32.7	31.9	48.7
Reserves (including gold) billion $, end-o-p	36.6	47.8	76.9	124.5	182.2	303.7	477.9	488.4	494.9	512.6	532.5	546.0	569.0	596.6	582.2	556.8
Balance of Payment Indicators																
Trade Balance, billion $	48.1	46.3	59.9	86.9	118.3	139.2	128.7	18.9	14.6	16.6	15.0	18.3	18.5	19.1	18.5	16.4
Share of energy resources in export of goods, %	51.2	52.4	54.2	54.7	61.1	63.3	61.5	-	-	68.8	-	-	67.1			66.9
Current Account, billion $	33.9	29.1	35.4	58.6	84.2	95.6	76.6	-	-	37.5	-	-	26.2	-	-	27.6
Export of goods, billion $	101.9	107.3	135.9	183.2	243.6	303.9	354.0	34.5	35.7	40.0	40.3	42.8	44.0	47.8	45.6	43.8
Import of goods, billion $	53.8	61.0	76.1	96.3	125.3	164.7	225.3	15.6	21.2	23.4	25.3	24.4	25.4	28.7	27.0	27.4
Gross FDI, mln USD 1/	3980	4002	6781	9420	13072	13678	27797	-	-	5585	-	-	11080	-	-	
Average export price of Russia's oil, $/bbl	20.9	21.0	23.9	34.1	45.2	56.2	64.4	84.3	84.7	91.0	95.8	105.0	114.5	122.0	112.0	
Financial Market Indicators																
Average weighted lending rate for enterprises, % 4/	17.9	15.8	13.1	11.5	10.7	10.5	10.8	10.4	11.0	11.3	11.2	11.0	11.3	11.4	11.8	
CBR refinancing rate, %, end-o-p	25.0	21.0	16.0	13.0	12.0	11.0	10.0	10.0	10.3	10.3	10.5	10.5	10.8	11.0	11.0	11.0
Real average rate for Ruble loans, % (deflated by PPI)	-1.1	3.9	-2.2	-10.1	-8.4	-1.8	-3.4	-11.6	-11.8	-12.2	-12.4	-11.0	-12.8	-16.6	-14.9	
Stock market index (RTS, ruble term)	260	359	567	614	1126	1922	2291	1907	2064	2054	2123	2460	2303	1967	1646	1212
Enterprises Finances																
Share of loss-making companies 1/	38.4	43.4	41.3	35.8	33.5	29.7	23.4	34.3	33.0	34.3	33.3	31.3	29.4	29.4		
Share of credits in capital investment 1/	-	10.8	14.5	15.2	13.8	14.3	15.5	-	-	17.3	-	-	17.2			
Profitability (net profit/paid sales), % 1/	25.6	17.4	20.7	25.5	25.3	25.6	36.8	58.0	39.1	32.1	32.5	34.3	36.7	35.2		
Income, Poverty and Labor Market																
Real disposable income, (1999 = 100%)	121.7	135.3	155.5	171.7	190.6	216.0	238.4	191.0	231.9	236.3	257.3	247.5	259.9	263.3	268.8	269.3
Average dollar wage, US $	112.4	138.6	179.4	237.2	301.6	395.3	529.0	603.4	636.6	687.6	699.3	701.1	755.1	757.3	701.5	706.8
Share of people living below subsistence, % 1/	27.5	24.6	20.3	17.6	17.7	15.2	13.4	-	-		-	-		-	-	
Unemployment (%, ILO definition)	9.0	8.0	8.6	8.2	7.6	7.2	6.1	6.6	7.1	6.5	6.6	5.4	5.4	5.3	5.3	5.3

1/ Cumulative from the year beginning
2/ Starting 2006 incl. extrabudgetary funds

3/ Annual change is calculated for average annual M2

4/ All terms up to one year
Source: Goskomstat, CBR, EEG, IMF, staff estimates.