

Russian Federation: Selected Issues and Statistical Appendix

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RUSSIAN FEDERATION

Selected Issues

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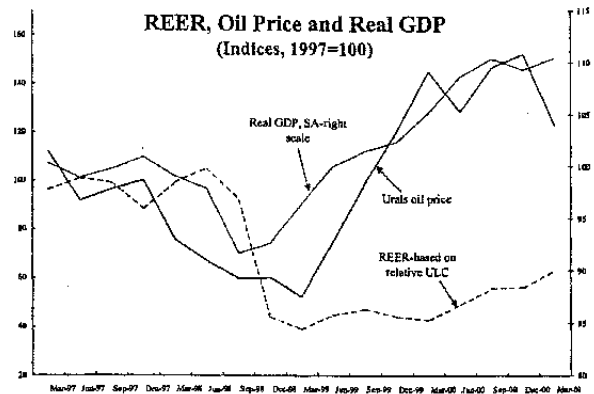
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I. GROWTH AFTER THE 1998 CRISIS¹

A. Overview

1. **This chapter analyzes output developments since the 1998 crisis and outlines near-term growth prospects for the economy.**² Output growth accelerated in 1999 and the first half of 2000, but has since slowed. The initial output recovery was led by import substitution as a result of the large exchange rate depreciation in 1998. Growth was sustained by a large improvement in the terms of trade and a sharp recovery in domestic demand as a result of improved profitability and rising real incomes, while net exports contributed negatively to growth from mid-2000. The recent slowdown of investment and output growth is a result of the real appreciation of the ruble (35 percent since the end of 1999) and decline in oil prices (35 percent since the end of 2000).



2. **Our main findings are that in the context of an overall policy package:**

- The real exchange rate and oil prices were the main determinants of growth after the 1998 crisis.
- Expected increases in labor costs and continuing real exchange rate appreciation, combined with lower oil prices, are likely to slow growth in the near term.
- Industrial production is the best coincident indicator for GDP, while the real exchange rate is the most significant leading indicator.

¹Prepared by Emil Stavrev (EU2).

² For a deeper understanding of growth factors following the crisis, it would have been desirable to perform a more disaggregated analysis of growth; however, the lack of sectoral data restricted our study to the aggregate level. To alleviate the significant problems in the aggregate data—short-time series, measurement problems, and structural changes that affect economic agents' behavior—standard econometric methods are supplemented with techniques and analysis aimed at identifying important links among the basic macroeconomic variables. The application of robust econometric techniques does not, though, solve all the problems—a major problem remains with the seasonal adjustment, which poses serious difficulties with our growth analysis (for a discussion on seasonal adjustment issues, see Chapter 1, Box 1—IMF (2000)).

B. Recent Output Developments

Supply side

3. **The growth of basic sectors³ of the economy accelerated in 1999 and 2000, but has since slowed.** Industry, construction, and freight transportation—which account for an estimated 45 percent of GDP—drove growth of the basic sectors after the crisis, but a slowdown in industry and transportation since the end of 2000 has been the main reason for the slowdown in GDP growth. These sectors are either all tradable or closely linked to investment spending, which has declined since the end of 2000 (see below). In contrast, retail sales, accounting for 8 percent of GDP and being the closest proxy for consumption, have recovered from 2000, indicating buoyant private consumption.

	1998		1999		2000		2001	
	H1	H2	H1	H2	H1	H2	H1	Q3
Basic sectors	-1.1	-9.2	-0.9	9.6	10.8	9.3	5.3	6.4
o/w production								
Industry			-1.1	13.9	12.4	11.4	5.9	4.5
Construction			-2.9	10.1	11.6	11.1	6.5	12.2
Agriculture			-1.7	6.3	1.8	4.3	0.9	10.1
o/w services								
Freight transportation			3.3	7.3	6.1	4.0	2.3	3.7
Retail trade	3.1	-4.9	-12.8	-5.3	7.6	9.9	9.9	11.3

Source: Goskomstat.

4. **At a more disaggregated level, growth in the tradable sectors of industry was high in 1999 and 2000 but has declined since, while growth in non-tradable sectors has remained stable.⁴** The real exchange rate appreciation, weaknesses in global commodity prices, and the slowdown in the global economy have adversely affected growth of output in the tradable sectors of industry—in particular, the chemical and petrochemical industry and metals and machine-building, which together account for more than a third of industrial production. On the other hand, output of construction materials registered robust growth since the second half of 1999.

	1999		2000		2001	
	H1	H2	H1	H2	H1	Q3
Ferrous metals	4.1	30.7	23.4	9.1	0.3	-0.4
Non-ferrous metals	7.3	12.2	16.3	14.6	5.6	4.2
Chemical and petrochemical industry	16.1	32.7	17.5	9.0	7.0	5.9
Machine-building & metal work	3.0	33.8	21.1	19.3	10.5	2.6
Forest, woodworking & pulp and paper	11.0	25.1	17.7	9.6	2.1	3.6
Construction materials	5.1	14.7	16.8	6.9	14.2	16.0
Light	-10.3	41.1	30.7	12.9	5.1	4.8
Food	-4.1	11.7	15.8	13.3	5.8	9.6

Source: Goskomstat.

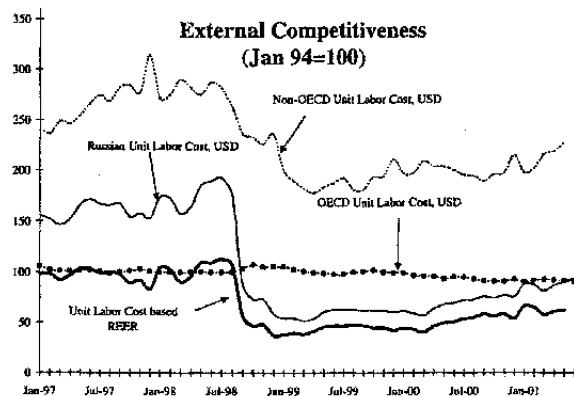
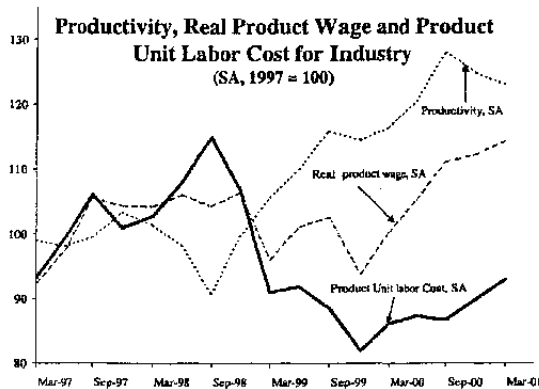
Productivity, profits, and external competitiveness

5. **Rapid productivity growth has sustained the improvement in profitability and competitiveness arising from the large depreciation in 1998.** Labor productivity in

³ These include industry, construction, agriculture, freight transportation, and retail trade, which account for about 65 percent of GDP.

⁴ The construction materials industry is considered a relatively less tradable sector, while the remaining industrial sectors are more tradable sectors. This division is based on the weights of the different industries in total trade as reported in customs statistics.

industry increased by almost 40 percent during September 1998–September 2000. While real wages have been rising rapidly since late 1999, profitability in the domestic market—as measured by Product Unit Labor Costs (PULC)⁵—remains 20 percent higher than before the crisis. External competitiveness—as captured by the Unit Labor Cost (ULC) based REER—improved dramatically after the crisis as a result of the depreciation. Despite a gradual erosion since early 1999, the REER remained about 50 percent below its pre-crisis level in the first half of 2001.



6. **Slower growth of prices of natural monopolies contributed to lower costs in the non-energy sector and supported higher profits and growth.** The pattern of a slower adjustment in natural monopoly prices (relative to CPI) after the 1998 crisis continued in 2001 as well. As a result, the energy sector continued to implicitly subsidize the rest of the economy—leading to lower input costs and higher profits, which in turn contributed to higher investment and growth in the non-energy sectors.⁶

7. **Economy-wide profitability also improved significantly after the crisis, further supported by rising global energy prices.** Thus, while net profits were negative in 1998, they are now close to 14 percent of GDP, far above the pre-crisis level of 7 percent. This reflects a sharp decline in the number of loss-making enterprises and in the improved profitability of the tradable sector.

Enterprise Profits, 1997-2001					
	1997	1998	1999	2000	2001 1/
(Billions of rubles)					
Gross profits	309	358	729	1,187	1,355
Gross losses	135	473	152	131	155
Net profits	174	-115	577	1,056	1,200
(Percent of GDP)					
Gross profits	12.5	13.1	15.3	16.8	15.3
Gross losses	5.4	17.3	3.2	1.9	1.7
Net profits	7.0	-4.2	12.1	14.9	13.6

Source: Goskomstat.

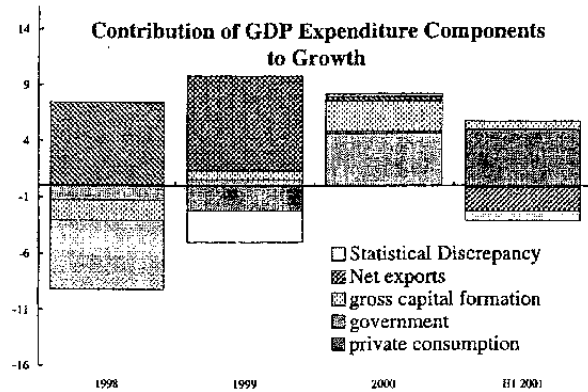
1/ Estimated using data for the first half of 2001.

⁵ Product unit labor cost is defined as unit labor cost deflated by the producer price index. PULC measures the relative profitability of enterprises—a decline of PULC indicates an increase in profitability.

⁶ For a discussion on regulated prices, see Chapter 1, Box 3—IMF (2000).

Demand side

8. In 1998–99, growth was driven by net exports, while in the last two years domestic demand has gained in importance. As a result of the sharp real depreciation, net exports led to growth in 1999, with private consumption contributing negatively and the contribution of investment and government consumption being negligible. However, the combination of real exchange rate appreciation and real wage growth since the second half of 1999 led to a decline in the contribution of net exports to growth and an increase in that of consumption. At the same time, high oil prices that increased profits in the energy-exporting sector supported a higher contribution of investment to growth.



9. The fiscal stimulus declined after the crisis and turned negative in the first half of 2001. Reflecting improved tax compliance and expenditure restraint, the general government primary balance at constant oil prices has strengthened by more than 2 percent of GDP since 1999. The impact of government consumption on growth thus declined to -0.1 percentage points in the first half of 2001 from 0.6 percentage points in 1998.

10. After a sharp contraction in 1998, real private consumption has increased steadily in line with real wages. Two factors explain the robust growth of private consumption: a fast increase of reported real wages since late 1999 (real wages are the main component of real income though real incomes rose much slower) and an increase in incomes of lower income groups, which was the result of an increase in minimum wages and pensions by the government.



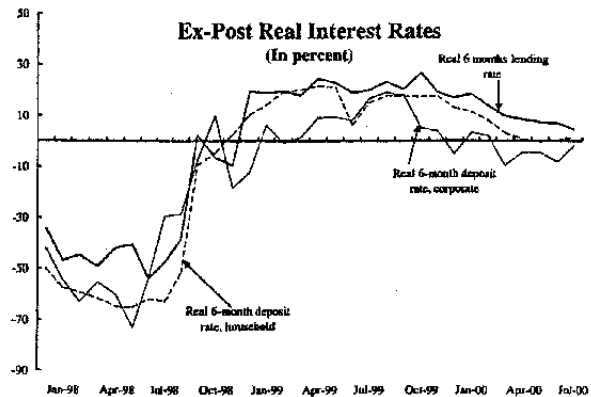
11. Total investment surged in 2000 on the heels of rapid profit growth but slowed in 2001. Investment was the fastest growing component of GDP in 2000. With retained earnings the main source of investment, this reflected mainly improved profitability—credit from the banking system expanded rapidly reflecting lower real interest rates, but remained a relatively minor source of investment financing. The investment boom

	1998 H2	1999 H1	1999 H2	2000 H1	2000 H2	2001 H1
Investment	-7.1	-10.5	12.4	16.9	17.9	5.2
o/w						
Fuel 1/	15.7	15.0	na	21.5	na	24.2
Transportation 1/	15.6	20.1	na	22.1	na	22.7
Total profits	-311.3	-239.9	-363.2	169.5	60.9	25.1
o/w						
Industry	-757.6	630.1	-213.0	193.5	43.4	-11.8
Fuel	-70.4	-87.6	126.7	435.3	54.6	-5.9
Construction	-44.8	104.1	267.7	334.0	116.0	58.3

Source: Goskomstat.
1/ Share of total.

was concentrated in the energy and transportation sectors and as such was not clearly related to a general improvement in the investment climate. With profits declining, investment became significantly less buoyant in 2001.

12. **Growth of non-energy exports was strong in 2000, but eroding competitiveness of the tradable goods sector has since slowed growth.** As a result of the real effective exchange rate appreciation since early 1999, growth of non-energy exports eased substantially in the first half of 2001. Non-energy exports to non-CIS countries declined much faster than to CIS countries reflecting relatively higher growth in the latter. In particular, growth of machinery exports to non-CIS countries was halved while that to CIS countries increased. Light industry exports, facing strong competition, declined for both country groups.



Total and Non-Energy Exports
(Volume, year-on-year percent change)

	1998		1999		2000		2001
	H2	H1	H2	H1	H2	H1	
Total exports	-3.1	-3.4	-7.3	5.6	9.3	3.6	
non-energy exports	-9.6	-5.6	-0.9	13.9	17.9	6.6	

Sources: Central Bank of Russia; and Fund staff estimates.

13. **Exports of oil and oil products expanded significantly in 2000-01 as new investment eased capacity constraints.** Exports of oil and oil products are less sensitive to real exchange rate developments and their growth in the short term is determined mainly by capacity constraints. Increased demand from CIS countries led to a marked increase of exports of these products to these countries. At the same time, the growth of oil exports to non-CIS countries slowed, reflecting lower economic activity in Western Europe.

Export of Oil and Oil Products
(Volume, year-on-year percent change)

	1998		1999		2000		2001
	H2	H1	H2	H1	H2	H1	
Oil	4.1	4.4	-5.8	5.8	10.1	6.1	
crude		2.0	-5.2	2.1	12.1	5.9	
products		13.1	0.9	15.6	3.9	5.2	
Gas	17.0	0.5	3.1	4.4	-15.4	-8.4	

Sources: Central Bank of Russia; and Fund staff estimates.

14. **Imports recovered strongly in the first half of 2000 and their growth rate accelerated subsequently, in line with the real appreciation and recovery in domestic demand** (see Box 1). During 1999 and 2000, a switch by consumers to lower quality but cheaper goods from CIS countries led to relatively higher import growth from these countries. However, continuing steady real appreciation has made higher quality goods produced in non-CIS countries more attractive, and growth of imports from these countries exceeded that from CIS countries in the first half of 2001.

Imports by Origin

	1998		1999		2000		2001
	H2	H1	H2	H1	H2	H1	
	(Year-on-year percent change, volume)						
Total imports	-40.3	-44.4	-5.1	11.8	26.9	23.3	
	(Year-on-year percent change, in U.S. dollars)						
Total imports c/w	-42.0	-45.8	-10	5.4	17.9	18.2	
Imports from non-CIS countries	-41.9	-45.5	-4.8	0.3	11.5	20.3	
Imports from CIS countries	-42.4	-56.8	4.6	23.4	35.8	13.4	

Sources: Goskomstat; Central Bank of Russia; and Fund staff estimates.

Box 1. Import Demand Function

Imports are an important component of consumption and investment, accounting for 25 percent of GDP. Twenty-five percent of total imports are food products and 29 percent machinery and transport equipment (customs statistics). The estimated share of imported consumption goods in private consumption is more than 30 percent, while the estimated share of imported investment goods is more than 40 percent of total investment.

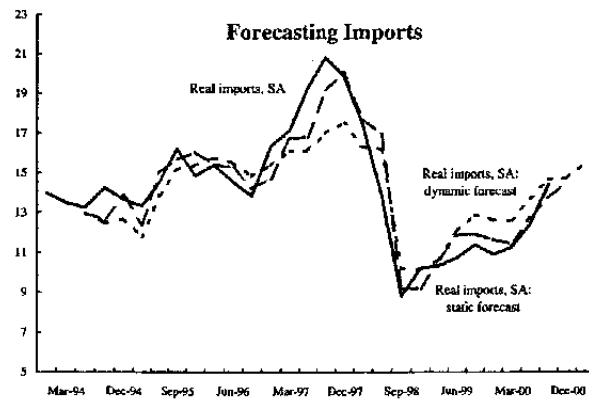
In the equation below m denotes log of real imports, y is log of real output, z is log of the real exchange rate and $Aug98Dummy$ is a dummy for August 1998 crisis and Δ is a difference operator.

$$\Delta m_t = 0.17 \underset{(0.04)}{Aug98Dummy} + 3.82 \underset{(0.73)}{\Delta y_{t-1}} + 0.46 \underset{(0.12)}{\left(0.48 \underset{(0.07)}{y_{t-1}} - 0.51 \underset{(0.19)}{z_{t-1}} - m_{t-1} \right)}, \text{ Adjusted } R^2 = 0.76, \text{ Standard error} = 0.06, \text{ Durbin-Watson} = 1.9$$

Our estimation results show several important findings. First, the long-run elasticities with respect to both real GDP and the real exchange rate are less than one and of a similar magnitude. Second, in the short run, due to the higher short-term income elasticity, imports are mainly determined by real GDP, with the price effects having only a longer-term impact.¹ Third, the import demand function has a relatively high speed of adjustment to its long run equilibrium—it takes approximately one and a half years for a shock to disappear completely. Finally, the results from the Vector Autoregressive Regression (VAR) representation show that the real exchange rate plays an important role in determining real GDP in Russia. Details about the import demand function are given in the appendix.

The estimated income elasticities indicate that the marginal propensity to spend on imports is very high in the short run (0.5) and declines substantially in the long run (0.22).

The estimated import demand function shows acceptable dynamic and static forecast performance. It correctly captures all qualitative changes in real imports (see the graph) and has a satisfactory root mean squared error of 1 percent for the dynamic forecast.



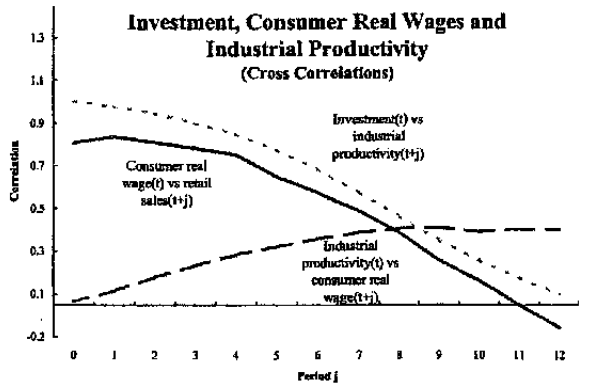
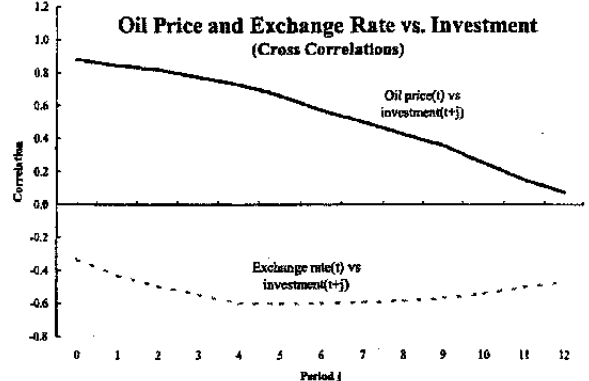
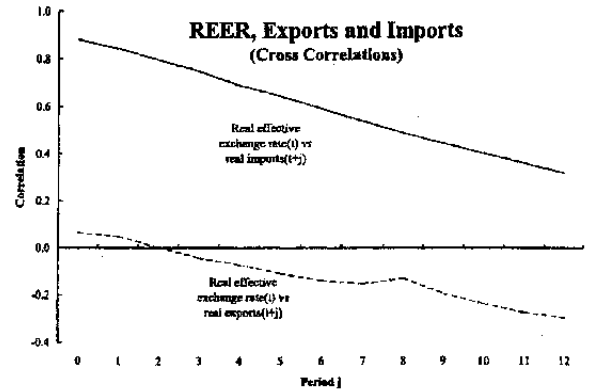
¹ The short run here should be thought as capturing the impact of the explanatory variables on the dependent variable during the next couple of quarters, while the long run defines the level to which the dependent variable will converge in several years.

C. Leading and Coincident Indicators

15. **National accounts statistics are reported with substantial time lags and frequently revised,** which complicates the evaluation of current and near-term economic activity. If revisions are substantial, initial estimates may not provide sufficient information for policymakers, which poses problems in choosing the appropriate policy mix. Studying leading and coincident indicators may help address these problems.

16. Our analysis shows that the real exchange rate and oil prices are important leading indicators (see Box 2). They affect growth in several ways. First, they have a direct impact through their effect on net exports.⁷ Second, favorable external factors (high oil prices and prices of raw materials) and depreciation of the real exchange rate have a positive effect on profits and will increase domestic demand (investment) from the export sector, thus stimulating the rest of the economy and supporting higher growth.⁸ Third, higher investment, other things being equal, will increase the marginal product of labor and hence real wages, which leads to higher private consumption. Finally, a second round effect on growth comes through the impact of investment on next period output and profits.

17. Investment has produced productivity gain that have translated into increased private consumption. A relatively high and persistent correlation between investment and productivity implies that strong investment during the current period will increase productivity with half a year lag. At the same time, a high correlation between productivity and real consumer wages suggest that productivity pick up leads to an increase in real wages, which in turn will give an impulse to real consumer wages, causing private consumption to increase.



⁷ The REER is highly and positively correlated with real imports and negatively correlated with real exports. The correlation of the REER with imports is much stronger than with exports suggesting that movements in the REER influence net exports mainly through imports.

⁸ The real exchange rate is persistently and negatively correlated with investment demand, leading investment by approximately half a year. Oil prices also lead investment, but their impact fades within six months (see second graph).

Box 2. The Real Exchange Rate and Oil Prices as Leading Growth Indicators

The short-term direct impact of the real exchange rate and oil prices on growth of industrial production and GDP is captured by the estimated equations given below. In the first equation seasonally adjusted growth of industrial production is explained by changes in the real effective exchange rate and oil prices and in the second equation the same variables explain growth of GDP. Both equations were estimated using quarterly data. The industrial production equation was estimated for the period Q1 1994–Q2 2001 and the GDP equation for the period Q1 1994–Q1 2001.

Industrial production equation:

$$DLog(IP) = \underset{(0.06)}{-0.15} DLog(REER(-1)) + \underset{(0.04)}{0.12} DLog(POilUral), \text{ Adjusted } R^2 = 0.26, \text{ Standard error} = 0.033, \text{ Durbin-Watson} = 1.9,$$

where *IP* is industrial production, *REER* is the real effective exchange rate and *PoilUral* is the price of Urals oil.

GDP equation:

$$DLog(GDP) = \underset{(0.03)}{-0.10} DLog(REER(-1)) + \underset{(0.01)}{0.06} DLog(POilUral), \text{ Adjusted } R^2 = 0.38, \text{ Standard error} = 0.018, \text{ Durbin-Watson} = 1.6,$$

where *GDP* is real GDP.

Several important observations flow from the two equations. First, as expected, the real exchange rate and oil price have a bigger impact on the tradable sector (represented by industrial production) than on GDP as a whole. The reason is that services, which account for more than 45 percent of GDP, are not as much directly influenced by the exchange rate as the tradable sector. Second, a comparison of the real exchange rate and oil price elasticities shows that the exchange rate plays a more important role with respect to growth than oil prices. Finally, the two variables explain around 30 percent and 40 percent of the variation of short-term growth in industry and GDP, respectively. This suggests that although the real exchange rate and oil prices explain one third of real GDP growth, there are other important determinants of growth such as technological improvements and structural changes—that are difficult to measure and not included in the equations. For this reason, the above equations should not be used for point estimation of growth, but rather for providing qualitative signals for future growth developments.

18. Our analysis shows that basic sectors and industrial production perform relatively well as coincident indicators.⁹

Three important characteristics of the two indexes make them useful

**GDP Forecast Using Basic Sectors
(Year-on-year growth in percent)**

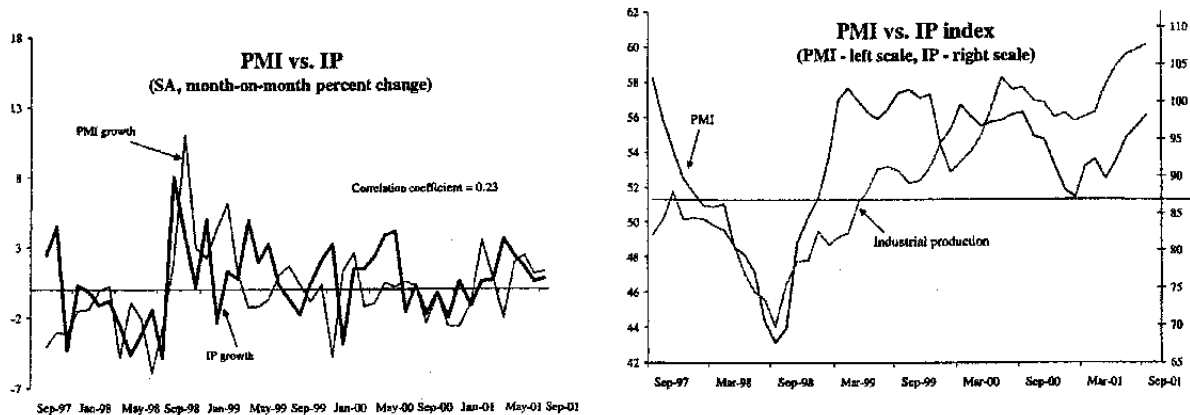
	1999				2000				2001		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Actual GDP growth	-2.7	2.2	10.8	10.5	9.0	8.6	8.8	6.8	4.9	5.3	5.8
Growth of basic sectors	-7.3	-0.5	10.5	11.5	11.6	9.9	10.0	8.4	4.9	5.7	6.4

Source: GokomstaL
/ Estimate.

⁹ The data of the individual components of the five basic sectors start in 1996 and exist as a chain index (year-on-year percent change) and a base index (percent change relative the previous month). However, for the first three years of the sample (1996, 1997 and 1998) the data for December are missing. For that reason continuous and consistent time series are available only since January 1999, which makes the sample very small for reliable econometric analysis.

coincident indicators: they are published monthly and well in advance of the GDP numbers; they represent a high share of GDP (70 percent for basic sectors and around 35 percent for industrial production); and, both predict relatively well GDP growth (see the table for basic sectors results and Box 3 for industrial production results).

19. As an alternative coincident indicator, we studied the Purchasing Manager's Index (PMI) and assessed econometrically how it predicts industrial production (IP) growth.¹⁰ Although we did not find significant correlation between the growth of the PMI and IP (the correlation coefficient was lower than 0.25) we consider the PMI a good qualitative indicator for economic activity, because it captures relatively well turning points in industrial production dynamics. For example, the fall in the PMI prior to the crisis, the slowdown at the end of last year, and the consequent buoyant growth are in line with developments in the IP index.



20. Leading and coincident indicators suggest that short-term growth prospects for 2002 remain broadly positive although growth is expected to be lower. As a result of the real appreciation, the real exchange rate contributed negatively to growth in 2001 and is expected to continue to do so. Higher oil prices contributed positively to growth in the first three quarters of 2001, but price declines in the fourth quarter had a negative impact, which is expected to continue in 2002. The recently announced industrial production growth of 5.1 percent for the first ten months of the year (year-on-year) confirms the positive output developments in late 2001. In addition, high growth in the remaining basic sectors (6.4 percent year-on-year in Q3) suggests that GDP growth has a broader base. The PMI is also indicative of continued growth, although data for November and December show a decline in growth.

Leading and Coincident Indicators		
(Qualitative assessment, "+" pro growth, "-" against growth)		
	2001	2002 1/
Industrial production	+	+
Basic sectors	+	+
Purchasing Manager's Index	+	+
Real Effective Exchange Rate	-	-
Oil prices	+	-

1/ Projection

¹⁰ The Purchasing Manager's Index is published by Moscow Narodny Bank.

Box 3. Coincident and Leading Indicators

Main methods

The two most commonly used methodologies to construct coincident and leading indicators are the NBER-Department of Commerce approach (NBER) and Stock and Watson (1989) approach (SW). Both methods construct a composite indicator but differ in their strategy of selecting the indicators.

The NBER approach is based on a scoring system. The system requires that the time series have the following characteristics: economic significance, statistical adequacy, conformity to historical business cycles, smoothness, and currency. These characteristics are then arbitrarily weighted by assigning each characteristic a maximum possible score. Thereafter, a particular indicator is evaluated given how closely it follows each characteristic and an average score is then attached to it. The choice of indicators is based both on the average score and economic judgment.

In the SW approach, time series analysis and econometric techniques (Granger Causality, regression analysis) are used in the selection process. The weights of the indicators are determined using econometric methods. As in the NBER approach, composite indicators are constructed using weighted averages of the selected variables. However, in contrast to the NBER approach, the weights are estimated in the SW approach.

As mentioned earlier, data problems do not allow using the above methods for all potential candidates for leading and coincident indicators. Since industrial production data are the most reliable and have the longest sample, we apply the SW approach to the industrial production index only.

Industrial production as an indicator

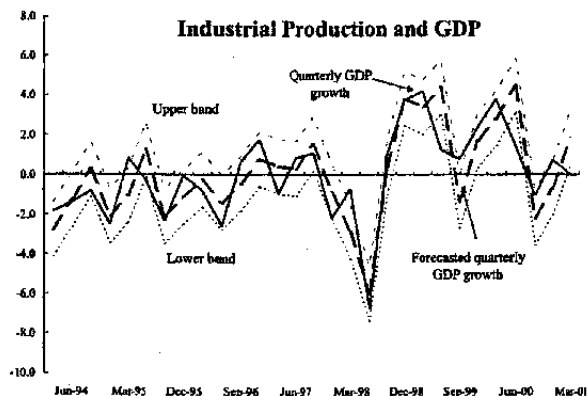
$$D\text{Log}(GDP) = 0.45 D\text{Log}(IP) + 0.32 \left(1.6 + 0.6 \text{Log}(IP(-1)) - \text{Log}(GDP(-1)) \right)$$

(0.06) (0.1) (0.5) (0.6)

Adjusted $R^2 = 0.75$, Standard error = 0.01, Durbin-Watson = 2.3

Unit root tests showed that both series are integrated of order one and Engle-Granger tests confirmed a co-integration relationship between the two variables. In addition to this we have evaluated the predictive performance of the estimated equation using "sign statistics" (the ratio of correctly forecasted growth rates to total number of forecasts).

The above equation was used to produce one period ahead forecasts of seasonally adjusted quarterly GDP growth. Actual GDP growth and the forecast together with \pm one standard error bands (with a probability of 68 percent growth will be within the bands) are shown in the graph. The "sign statistic" is 0.8, meaning that in 80 percent of the cases the equation correctly predicts the sign of quarterly GDP growth. The standard error implies that the estimates vary within 2 percentage points. For example, a 2 percent estimate of quarterly GDP growth means that with 68 percent probability GDP growth will be between 1 and 3 percent.



IMPORT DEMAND FUNCTION FOR RUSSIA

A. Specification and Estimation Methodology

We begin with a prior specification of the import demand function of the following form:

$$m = f(y, z, \varepsilon) \quad (1)$$

where m is a logarithm of the real imports, y is a logarithm of the real GDP, z is a logarithm of the real exchange rate (positive change implies real depreciation) and ε is a random term. In the above specification an increase in real GDP has a positive impact on imports while an increase in the real exchange rate has a negative impact.

Next, we apply the Engle-Granger methodology to test if our prior is consistent with the data and estimate the specified import demand function in an error correction form.

B. Estimation Results

We present here the estimation results for the import demand in Russia in its error-correction form. Standard errors are given in parentheses. Detailed estimation results are given in the technical appendix.

$$\Delta m_t = 0.17 \text{ August98Dummy} + 3.82 \Delta y_{t-1} + 0.46 \left(0.48 y_{t-1} - 0.51 z_{t-1} - m_{t-1} \right) \quad (2)$$

(0.04) (0.73) (0.12) (0.07) (0.19)

In order to take account of the August 1998 crisis we include a dummy variable. The coefficient before the term in the brackets is the speed of adjustment coefficient. The inverse of this coefficient determines how many quarters it takes for 65 percent of the deviation from the long-term equilibrium to be eliminated. In this case we need slightly more than two quarters. The coefficients in the brackets form the co-integrating vector for the import demand function (the coefficient for imports is normalized to one). The short-term import elasticity with respect to the real GDP is 3.82 and the long-term elasticity is 0.48. The long-term import elasticity with respect to the real exchange rate is -0.51.

C. Impulse Response Functions and Variance Decomposition¹¹

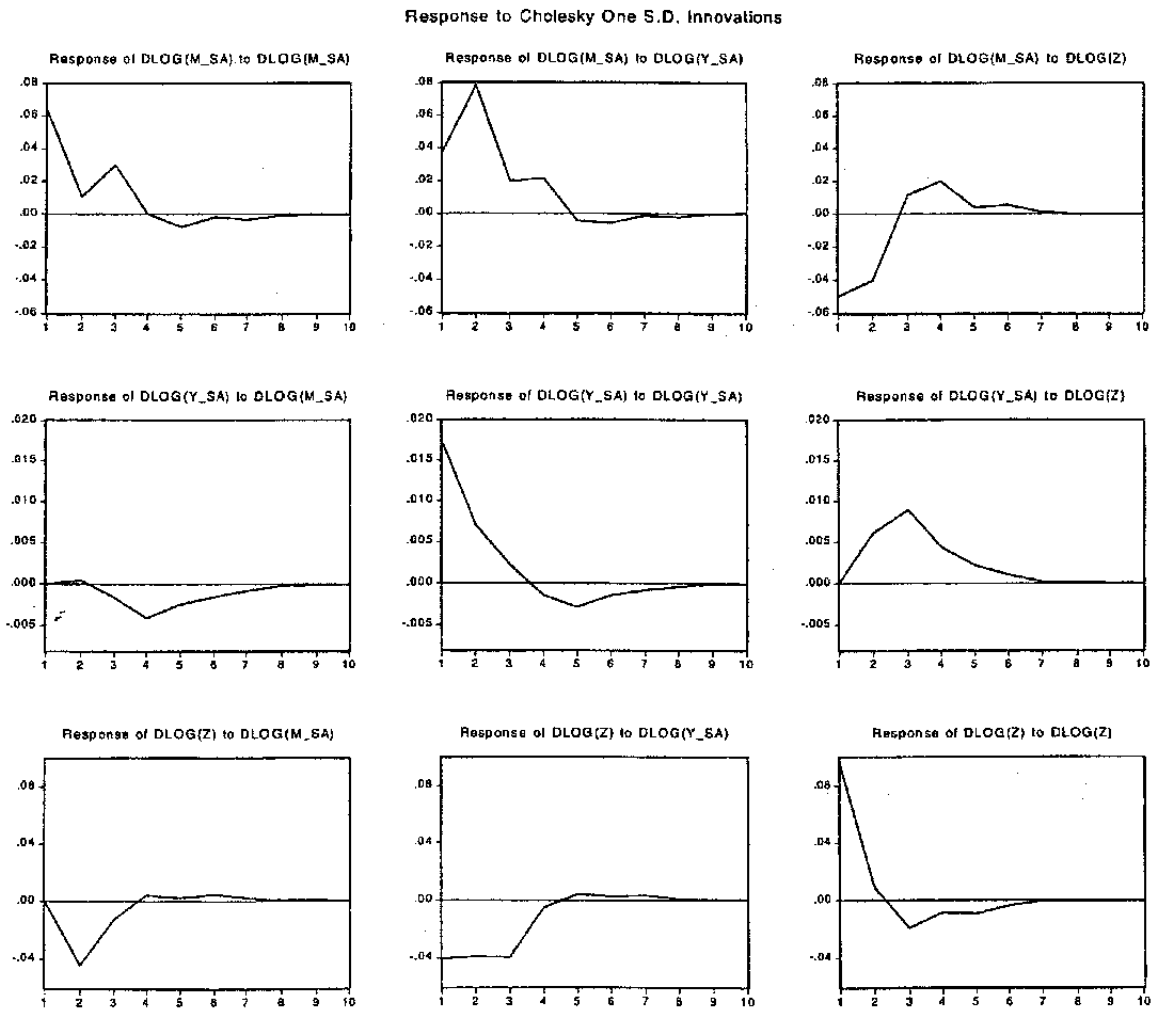
In Figure 1 we present the impulse response function from the VAR representation. We use the Cholesky decomposition in order to recover the structural VAR from the reduced form estimated with Ordinary Least Squares (OLS). In order to estimate the structural residuals we use the following restrictions. First, we assume that real GDP is affected contemporaneously by real

¹¹ The impulse response function and the variance decomposition results presented in Figures 1 and 2 are based on the estimated VAR model.

imports and the real exchange rate; second we suppose that the real exchange rate is affected contemporaneously by real imports; and third we order real imports last implying that they are affected only in the second round from the other two variables.

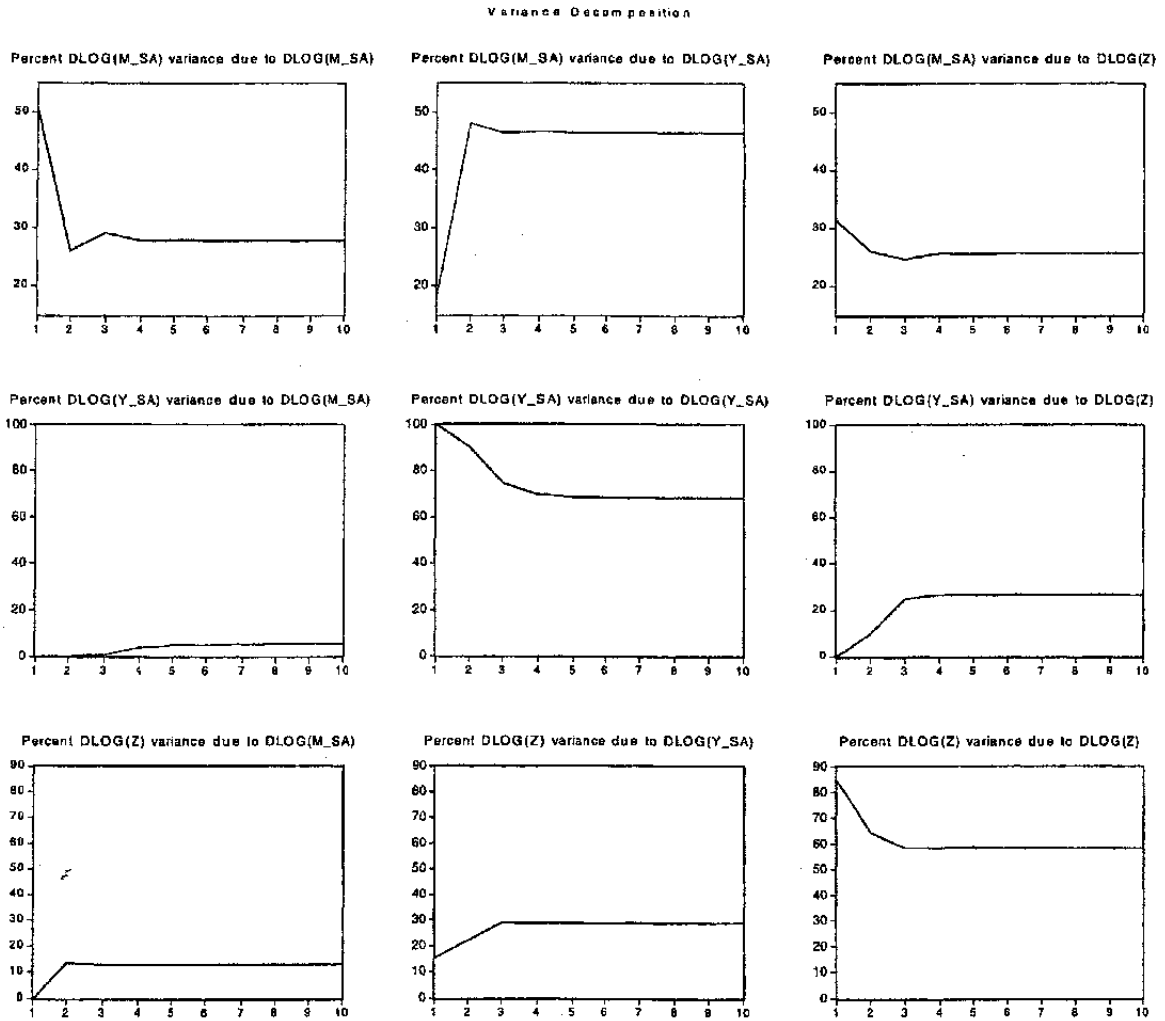
On the horizontal axis we plot the time unit in quarters. On the vertical axis we show the impact of a shock of one standard deviation of the residuals of the corresponding equation in the VAR system. For example, the first column shows the response of real imports, real GDP and the real exchange rate to a shock in the equation for real imports. The full effect of the shocks disappears in approximately one and a half year. The other two columns represent the reaction of the three variables to shocks in real GDP and the real exchange rate.

Figure 1. Impulse Response Functions



The results in Figure 2 show that real GDP and the real exchange rate explain a substantial amount of the variation in the import demand in Russia with real GDP accounting for almost 50 percent and the real exchange rate for 25 percent of the variation.

Figure 2. Variance Decomposition



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II. MONEY DEMAND¹

1. **During 2000 and early 2001, ruble broad money grew at a rapid pace as large foreign exchange inflows from the balance of payments were only partially sterilized.** Despite the rapid money growth, inflation remained at moderate levels during most of this period due to a strong increase in money demand and higher capital outflows. However there have been periods during which the growth in ruble broad money exceeded that of money demand—as in late 2000, for example—resulting in inflationary pressures. An accurate assessment of money demand will, thus, be critical in determining the appropriate stance of monetary policy in the immediate future.

2. **This paper examines the extent to which empirical models of money demand can explain the observed increase in ruble broad money.** Given the short time period available and the large shocks that have occurred—the August 1998 crisis that included an involuntary change of the exchange regime and a banking crisis, large swings in terms of trade, uneven pace of structural reform, Y2K uncertainties—it is difficult to place too much confidence in an empirically determined money demand equation. Thus the approach taken here is to focus on a number of alternative specifications that have both solid economic foundations and provide a reasonable fit to the data. The results of the models are then compared in an attempt to derive common features across the alternative specifications and indicative ranges for the key parameters of the money demand function. Selection between the models is left to future work as more data become available and the out-of-sample predictive performance of the models can be tested more rigorously. The models are estimated using the error correction framework in order to identify both the long-term equilibrium parameters of the money demand function and the short-term adjustment dynamics.

3. **The main conclusions are as follows:**

- When the estimation was based on data seasonally adjusted over the estimation period, it was possible to estimate three alternative statistically significant specifications of money demand function for Russia on the basis of data for the period June 1995–March 2001. In the **first specification**—which excludes measures of the return on foreign assets—the long run money demand is positively affected by the level of real output and inversely to the inflation rate, the refinancing and deposit interest rates, and barter. The elasticity of real output (close to unity) and inflation are consistent with the findings in other countries. The **second specification**—including an additional variable, the depreciation of the exchange rate, as a proxy for the return on U.S. dollar cash—also yielded intuitively appealing results but the output coefficient was significantly lower, possibly due to problems of multi-collinearity. In

¹ Prepared by Angana Banerji (EU2).

the **third specification**, the exchange rate level, added as a proxy for convertibility risk, turned out to be a significant explanatory variable for money demand.

- The results of these estimations—especially the long-run relationship—must be interpreted cautiously since the time series span only 6 years. Moreover the results appear to depend on the methodology used for calculating seasonal adjustment factors for the variables used in the regression and time period analysis.
- The models were also estimated with unadjusted data—including monthly dummies as an alternative means of capturing the seasonality. It was difficult to estimate economically sensible models of the second and third specification using this method. However, it was possible to estimate a money demand model using the first specification, with the elasticities of most variables broadly similar to those mentioned above.
- In the short run, the growth of money demand depends on the growth of output, inflation, barter, and the two interest rates as well as the lagged growth rates of real money. The short-run equation also indicates that it takes about 2–3 months for a money demand shock to dissipate and for it to return to its long run path.
- The estimated money demand function was tested for stability and was found to have a structural break in 1998. However, it was difficult to estimate money demand equations for the sub-periods before and after the August 1998 crisis because the available time series were too short.
- A comparison of actual and fitted values indicates that the estimated model provides a reasonable approximation of the actual money demand process over June 1995–March 2001. However, possibly due to the instability of the estimated coefficients, the out-of-sample performance of the model is somewhat mixed. Nevertheless, extending the model beyond March 2001, we find that monetary policy was tight during the first half of the year but was loosened during the third quarter. However, these results must be interpreted cautiously as, in addition to the econometric caveats mentioned above, they depend on developments in real output during this period, which are somewhat uncertain.

A. Background

4. **Since 1995, there have been major shifts in the monetary policy regime and only some progress in the development of broader financial markets (Box 1).** The exchange rate band that underpinned the stabilization program was abandoned in August 1998. At that point, the exchange rate formally floated but it has been managed following the strengthening of the balance of payments in late 1999. Broad money has increased during much of this period, strongly since late 1999, but the level of monetization in Russia remains low. At the same time broader financial markets have developed only gradually—the market for government securities (GKOs) was active until the crisis but the subsequent default on those

Box 1. Trends in Monetary and Exchange Rate Policies, July 1995–March 2001

The economic environment under which monetary policy was conducted in Russia has differed significantly over the period 1995-2001. Through 1998, the main objective was to keep inflation under control in the face of large fiscal deficits which were partly financed by large capital inflows as the government borrowed heavily abroad. The challenges posed by the need to accommodate large budget deficits was further exacerbated in 1998 by the weak balance of payments position due to a deterioration in the terms of trade and contagion from the Asian crisis. Since the second half of 1999, as the terms of trade shock reversed and fiscal financing pressures were brought under control, the CBR has had to tackle the issue of keeping inflation under control in the face of strong balance of payments inflows, while, at the same time, resisting the pressures for the ruble to appreciate.

July 1995–July 1997

Measures were taken to stabilize the economy and dampen inflation. Monetary policy was tightened. The exchange rate was pegged to a crawling band against the U.S. dollar from July 1995 onwards. Key structural changes were instituted—a new law gave the CBR some measure of independence from the government and greater control over monetary policy and inflation and a local securities market was developed in order to enable the government to borrow domestically and abroad.

August–December 1998

A wide-ranging financial crisis led to the government's default on its domestic debt obligations. The ruble was devalued and eventually floated; the sharp depreciation fed quickly into a rapid acceleration in inflation. Ruble denominated government debt was restructured. Investor confidence was further eroded by an increase in political uncertainty due to the dissolution of the Kiriyenko government and private capital outflows increased. The crisis pushed many banks into insolvency as they had large open foreign exchange positions and were poorly managed. Confidence was rapidly eroded and the payments system came to a halt. To preserve the payment system, the CBR injected liquidity into the banking system by reducing reserve requirements and providing large new credits. Despite this, however, base money declined significantly in real terms reflecting the sharp decline in output and increased resort to nonmonetary forms of payment.

Initial stabilization, January–September 1999

Monetary policy was tightened mainly by reducing net credit to the banking system. Inflation fell sharply and the depreciation of the exchange rate slowed. Stabilization continued to take hold during the second and third quarters of 1999—fiscal performance sharply improved following the approval of a new package of fiscal measures and a determined effort to collect revenues; the external environment strengthened as world energy prices increased; and, the real economy recovered as inflationary pressures eased. Despite the formal adoption of a floating exchange rate, the exchange rate effectively became one of the CBR's key monetary policy targets from about mid-1999. The CBR responded to the strengthened balance of payments by resisting a nominal appreciation of the ruble through increased foreign exchange market purchases.

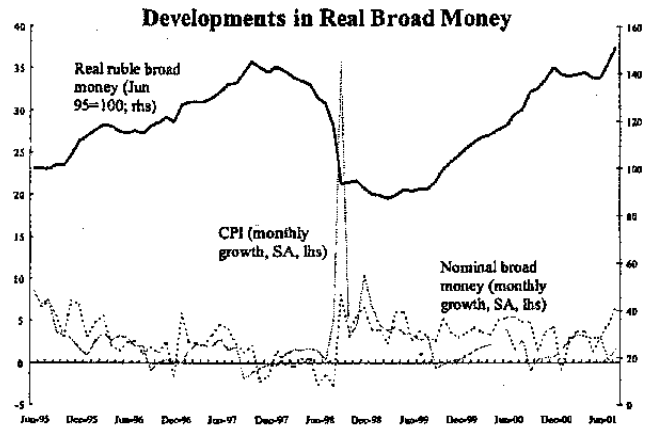
Response to the strong balance of payments, September 1999–March 2001

The continuing strength of the balance of payments and the CBR's reluctance to permit a nominal appreciation of the ruble have placed increasing pressure on monetary policy. The CBR has continued its policy of resisting a nominal appreciation, resulting in substantial injections of liquidity into the banking system. The increase in base money has been limited due to a sharp contraction in NDA stemming from a combination of a strong fiscal surplus at all levels of government and an increase in sterilization activity by the CBR.

Since mid-January 2000 the CBR has conducted sterilization using market-based instruments. The CBR has avoided further adjustments to reserve requirements since January 2000, and, instead, has relied on its other liquidity management instruments. In practice, the only instrument employed by the CBR has been its deposit facility, although substantial amounts of liquidity have been "absorbed" in the form of substantial excess reserves held by commercial banks in their correspondent accounts at the CBR.

securities effectively wiped out the market, which is only just starting to revive. Corporate debt and equity markets are small, reflecting remaining weaknesses in corporate governance and the legal environment. Indeed, nonmonetary transactions (barter) were used extensively during much of the period.

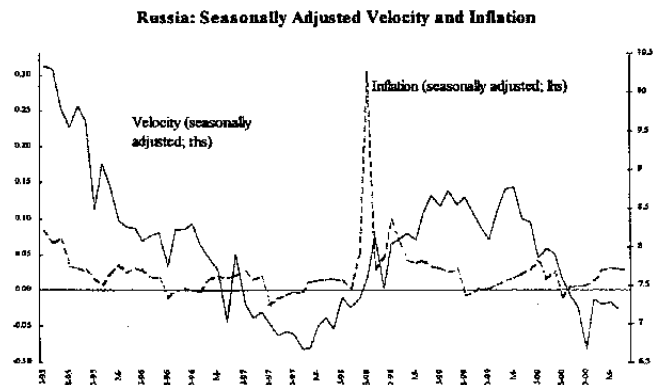
5. **Real ruble broad money grew steadily during 1995–98.** Broad money growth was reduced during this period in support of the exchange rate band, which enabled a reduction in inflation from an average of 10 percent a month in 1994 to less than 2 percent a month in 1996. Money growth remained subdued until September 1998, with seasonally adjusted ruble broad money growing at an average monthly rate of 1.5 percent from January 1996 through August 1998. This compared with 1.3 percent monthly growth for inflation, which implied a gradual improvement in money demand.



6. **The August 1998 crisis led to a sharp drop in real ruble broad money.** The sharp depreciation of the ruble as the exchange rate band was abandoned produced a steep acceleration in inflation. Monetary and fiscal policies were tightened, resulting in the inflationary shock being quickly brought under control and in the stabilization of the newly floating exchange rate with modest net intervention in the foreign exchange market. However, real ruble broad money did not start to recover until August 1999.

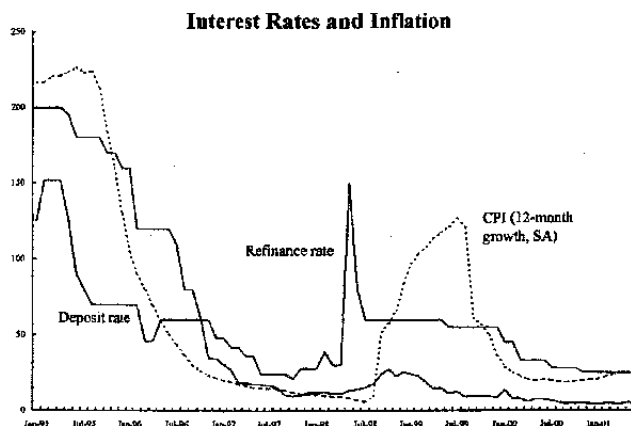
7. **Since August 1999, real ruble broad money has increased rapidly although the growth temporarily slowed in early 2001.** Real ruble broad money increased by 2.1 percent a month during August 1999–August 2001, as ruble broad money increased by 3.7 percent a month while inflation remained at about 1.5 percent a month. Following a sharp increase in broad money at end 2000 as a result of an expansionary supplementary budget, broad money growth slowed during the first quarter of 2001 before accelerating again.

8. **Movements in velocity reveal a similar pattern.** Since 1995, velocity declined gradually as monetary policy was tightened and inflation was sharply reduced. Velocity began increasing from early 1998 as confidence in the currency weakened before the onset of the crisis and the sharp burst of inflation in August–September 1998. Even though inflation was soon brought under control, it was not until 2000 that velocity began to decline again as macroeconomic



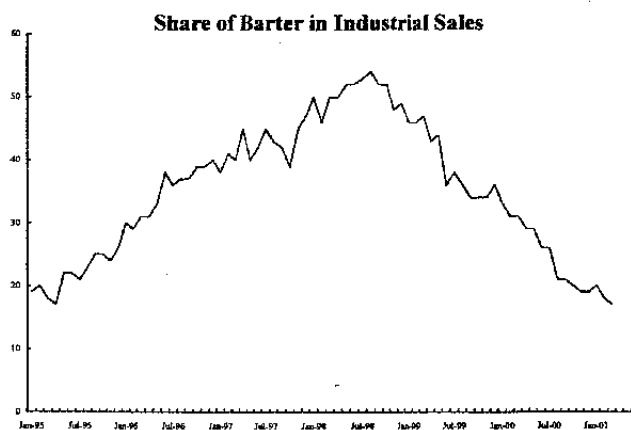
stabilization took hold with a pick-up in growth and a decline in barter.

9. **Russia's financial markets remain relatively underdeveloped, resulting in a low level of financial intermediation, thin capital markets, and negative real interest rates.** While the payments system works fairly smoothly, with some exceptions during the 1998 crisis, the banking system has been slow to develop and remains small both in absolute terms and in relation to other advanced transition countries (Chapter III). Interest rates have declined



steadily since their peak in 1995 but have been negative in real terms for much of the period. Indeed the absence of financial assets is one factor underlying the substantial capital flight recorded during this period.

10. **An additional feature of Russian financial markets is the role played by barter, or non-cash, transactions.** The absence of hard budget constraints on enterprises and government combined with legal uncertainties regarding contract enforcement and bankruptcy led to an extensive use of money substitutes early in the transition.² The use of barter increased as macroeconomic policies were tightened in 1995–96 and then



increased further in the run up to the crisis.³ Its use declined sharply in the post-crisis period following the halting of noncash operations (receipts and payments) by the federal government in late 1998, improved liquidity situation in the economy following the real exchange rate depreciation and improvement in international energy prices, and the gradual impact of ongoing structural reform. While some theoretical studies have included barter as a determinant of money demand, the empirical literature—which has focused largely on

² Detailed discussion of the role of barter in Russia can be found in Commander, Dolinskaya, and Mumssen (2000).

³ Barter is measured here as the share of non-cash payments in total receipts of the industrial sector. While it is difficult to gauge the appropriateness of these trends for the use of barter in the economy as a whole, the sharp post-crisis decline is also seen in both government operations and in cash collection rates reported by the major natural monopolies (notably Gazprom, UES, and the railways).

developed countries—has mostly ignored its existence (Marvasti and Smyth (1999) is one exception).

B. Modeling Money Demand in Russia

11. **Empirical modeling of money demand typically begins from a general specification for the long run demand for money:**

$$mp = f(y; r; x),$$

where, mp is the demand for real money, y is a scale variable measuring the level of economic activity, r is one or more variables capturing the opportunity cost of holding money, and x is one or more variables (including dummies) that are to be included in the model. Such specifications are consistent with a range of underlying monetary theories (Sriram (1999a)).

12. **The alternative specifications examined differ through the choice of opportunity cost variables.** One specification is essentially a closed economy model in which the opportunity cost variables are limited to those on ruble assets. The second model is an open economy model in which the opportunity cost variables also include the rate of return on foreign assets as measured by the depreciation of the exchange rate. The third model includes the level of the exchange rate as an explanatory variable for reasons discussed below.

13. **Money balances are measured as Ruble M2**, defined as ruble currency in circulation plus ruble deposits held by households and enterprises. Foreign currency deposits were excluded from the definition of broad money, in part due to the lack of data on foreign currency cash holdings of the population which are suspected to be significant.

14. **Nominal GDP deflated by the CPI is employed as the scale variable.** The monthly nominal GDP series is constructed from published quarterly data using monthly indices of retail sales, industrial production, agricultural production, and construction. Korhonen (1998) and Pesoran and Korhonen (1999) used industrial production rather than GDP as the scale variable but given the large structural shifts occurring in the economy (including an increase in the share of the service sector), a broader measure—even if it is interpolated—may be a more reliable indicator of the level of economic activity.⁴

15. **The appropriate measure of the opportunity cost of holding money in Russia is difficult to determine a priori due to the limited and evolving availability of alternative domestic and foreign financial assets during the sample period (Box 2).** There have been two basic approaches. In either case, variables to measure the return on M2 are included as

⁴ One difficulty in using GDP is that the series has been subject to large revisions with a long time lag. In addition, in constructing projections, data on GDP are only available with a lag of several months—the identification of leading indicators for predicting GDP movements is discussed in Chapter I.

Box 2: Alternative Financial Assets in Russia

The relative importance of alternative assets to money has varied greatly over the past 10 years. The ratio of their combined value to ruble broad money has varied from less than 1 to almost 4.¹ Domestic ruble-denominated securities have constituted a limited alternative financial asset class to ruble money for several reasons, notably that markets were created only after 1991, inflation rates were high and variable, and government securities are concentrated in banks. Not surprisingly, foreign currency-denominated assets have tended to be the main alternative to holding ruble broad money.

Foreign currency-denominated assets – Despite regulatory controls on the acquisition of foreign assets, in practice residents' appetite for such assets has been fairly freely satisfied. An important part of such assets is **U.S. dollar cash**. Most estimates – including those of the CBR – indicate that Russian residents currently hold the equivalent of about \$30-40 billion in foreign currency cash (almost all in U.S. dollars), equivalent to about 75 percent of ruble broad money. **Foreign currency deposits held with resident banks** are also significant, accounting for about 39 percent of ruble broad money at end-June 2001. **Foreign currency veksel**s issued by Russian companies amounted to some 4 percent of ruble broad money at end-June 2001. In addition, while the holding of **accounts by Russian residents with nonresident banks** was formally not allowed until July 2001, it is widely considered that this restriction was not tightly binding. Based on official balance of payments statistics, the possible accumulation of bank deposits and other financial assets abroad by Russian residents is roughly estimated to be some 239 percent of ruble broad money during 1994 - June 30, 2001, the bulk of which is accounted for by the nonbank private sector.

Domestic ruble denominated assets – These comprise the following types of assets.

- **Equities** – Since 1999 equities have regained their position as the largest alternative asset class to money (excluding non-cash foreign currency assets abroad). At end-June 2001 the capitalization of the Russian equity market was just over US\$60 billion (135 percent of ruble broad money), although at its pre-crisis peak it exceeded \$150 billion (211 percent of ruble broad money). Banks hold a small proportion of equities, so the nominal stock is reflective of the role of equities as an alternative financial asset for households and nonfinancial enterprises.
- **Government securities** – During 1995-97, government securities constituted the largest category of non-money financial assets, and the stock of OFZs and GKO's (medium and long-term government bonds and short-term treasury bills respectively) outstanding exceeded the value of ruble broad money at end-1997. However, this figure overstates the role of GKO/OFZs as an alternative asset to money for households and nonfinancial enterprises since about two thirds of the outstanding stock was held by banks. The government securities market has gradually revived since the August 1998 crisis, but the volume of issuance has remained relatively modest, owing mainly to the government's strong fiscal position in 2000-01. At end-June 2001, the stock of GKO's and OFZs outstanding was Rub195 billion (about 15 percent of ruble broad money), with the bulk of securities still held by banks.
- **Corporate bonds** – Domestically issued corporate bonds are a recent phenomenon, with the first issue in June 1999. The market has grown rapidly since then, however; at end-June 2001 there were some Rub51 billion in bonds outstanding (about 4 percent of ruble broad money). Banks have increased their holdings of corporate bonds from virtually nothing at end-2000 to about a fifth of the stock by September 2001.
- **Veksel**s – Unlike corporate bonds, corporate promissory notes ("veksels") have a long history in Russia extending back to the reign of Peter the Great. The market for veksels revived in the 1990s, and on June 30, 2001, there were an estimated Rub171 billion in circulation (equivalent to 17 percent of ruble broad money), of which Rub53 billion were foreign-currency-denominated. Banks hold about half of the outstanding stock of veksels. Including such estimated assets would raise the peak value of alternative assets to about 6 times ruble broad money.

^{1/} This excludes the estimated accumulation of non-cash foreign assets referred to in the paragraph on foreign assets. Including such estimated assets would raise the peak value of alternative assets to about 6 times ruble broad money.

well as variables to measure the return on assets outside of the definition of M2. A narrow (transactions) view of money demand would employ one or more short-term rates—such as the yields on government securities or commercial paper—that could be considered close substitutes for money. In broader portfolio choice models, a wide range of returns on domestic real and financial assets, and foreign assets could be included.

16. **A series of opportunity cost variables were employed below:**

- Deposit interest rate. Measures the rate of return on ruble time deposits. Since early 1998, these have accounted for around 40 percent of ruble broad money. About 85 percent of household ruble deposits are at Sberbank, so that developments in household deposit rates are driven by Sberbank's marketing policy (Chapter III).
- CBR refinancing rate. The end of period refinancing rate is considered to be of key importance to the system of interest rates set by the CBR. Changes in the refinancing rate influence changes in the CBR's lending rate to banks and signal to market participants the direction of changes in inflation and influence the expectations of economic agents and interest rates in the economy. Thus it captures interest rates on assets outside of M2.
- Inflation rate. Captures the return on real assets.
- Expected depreciation of the ruble/dollar exchange rate. Captures the return on holding cash U.S. dollars, a key asset outside of M2. The actual depreciation was used as a proxy for the expected rate.

17. **Finally, one specification considered below also includes the level of the exchange rate.** While this is not standard, several studies have employed this variable. Sriram (1999b) argues that in Malaysia under a managed floating regime in which the principal monetary instrument was interventions in the Treasury bill market, the level of the exchange rate provides important information on the authorities' intervention behavior and, therefore, future interest rates. Black, Christofides, and Mourmouras (2001) include the level of the exchange rate in a model of money demand in Korea on the basis that it serves as a proxy for convertibility risk following a crisis. Both elements could be significant in the case of Russia.⁵

⁵ In the empirical work, in addition to the level of the exchange rate, a variable set equal to the distance between the exchange rate and the upper bound of the peg through August 1998 and then set to zero thereafter was examined. Despite its intuitive appeal as a means of capturing the policy reaction function under the managed float, the empirical results were difficult to interpret.

C. Estimation Results

18. **The estimation is conducted in a number of steps.** First, unit root tests are applied to all variables of interest to determine the stationarity of the individual variables. As in most other studies of money demand, real money is found to have a single unit root implying that it is stationary in first differences. Second, a general autoregressive distributed lag (ARDL) model is estimated from which the long run relation between the demand for money and its determinants is derived.⁶ Finally, a more parsimonious error correction formulation is estimated to provide an explanation of the short term dynamics of money demand and an estimate of the speed at which money demand converges to its equilibrium.

19. **The estimations were performed using data for June 1995 until September 2001.** Data through end-March 2001 were used for estimation, with the remaining observations reserved for out-of-sample forecasting. As many of the series exhibit regular seasonal patterns, it is necessary to take account of the seasonal factors in the estimation. This is done in two ways: first, seasonally adjusted series were estimated using X-11 over the sample period; and second, the raw series were used with monthly seasonal dummies included in the estimation (this is referred to as unadjusted data in the remainder of the text).⁷ The data were compiled from a variety of public sources, as described in Appendix I.

20. **The stationarity properties of the series were examined using both Dickey Fuller and Augmented Dickey Fuller tests.** With the exception of the exchange rate depreciation (and inflation under the Dickey-Fuller test), the variables were found to be integrated of order one in levels, that is consistent with

Table 1. Test for Unit Root 1/ 2/

	Levels		Changes	
	Dickey Fuller	Augmented Dickey Fuller	Dickey Fuller	Augmented Dickey Fuller
Real broad money	-1.1	-1	-7.0**	-4.7**
Inflation	-12.9**	-2.7	-14.9**	-11.9**
Real output	-3**	-2.5	-10.2**	-8.0**
Exchange rate	-0.3	-0.6	-6.3**	-4.8**
Change in exchange rate	-6.3**	-4.8**	-12.1**	-9.8**
Barter	-0.5	-0.4	-9.7**	-4.7**
Refinancing interest rate	-1.9	-1.8	-10.4**	-7.9**
Deposit interest rate	-1.1	-0.9	-9.4**	-5.2**
<i>Seasonally Adjusted Variables</i>				
Real broad money	-0.9	-1.4	-5.5**	-4.2**
Inflation	-6.2**	-3.4	-12.6**	-10.5**
Real output	-1.6	-1.3	-10.3**	-4.9**

1/ Variables are in logarithms.

2/ * indicates rejection of null hypothesis at 5% level, ** at 1% level.

⁶ This approach makes two key assumptions: first, it is simply assumed that there is a single cointegrating vector and no test is conducted for the presence of more than one such vector—note that the stationarity of the residuals is tested to ensure that the estimated vector is in fact a cointegrating vector; second, the single equation framework assumes that the right hand side variables are weakly exogenous. These assumptions can be tested in a multivariate setting but, given the limited number of degrees of freedom, the power of such tests is likely to be limited. Initial Vector autoregressive (VAR) estimations for 1995–2001 for money, prices and exchange rate, and money, prices and output, did not yield sensible or robust results.

⁷ A priori, it is difficult to choose between these techniques. Seasonal adjustment was performed using X-11. The use of seasonally adjusted data may impact the dynamic specification (see Ericsson, Hendry, and Tran (1994)). However, the alternative approach of including seasonal dummies in the estimation is not without cost as it imposes constant seasonal factors (unlike X-11 which permits the factors to evolve through time) and uses up degrees of freedom, thereby reducing the power of test statistics.

a stationary representation in first differences.

21. **A long-run cointegrating relation was estimated on the basis of an ARDL model linking real ruble broad money and its determinants.** The ARDL model was initially specified with 6 lags and simplified through general to specific modeling techniques to eventually yield the long-run cointegrating relationship. The basic formulation is as follows:

$$mp_t = \alpha + \beta \Delta p_t + \gamma y_t + \delta id_t + \eta ir_t + \theta er_t + \rho barter_t + \varepsilon_t$$

where, mp stands for real ruble broad money, Δp denotes inflation, y real output, id the deposit interest rate, ir the rate on assets outside of M2, er is the exchange rate variable and ε is a white noise error term. The long run elasticities could be expected to have the following signs: $\beta \leq 0$, $\gamma \geq 0$, $\delta \geq 0$, $\eta \leq 0$, and $\rho \leq 0$. In addition, to the extent that an increase in the level of the exchange rate causes agents to reduce their ruble holdings, $\theta \leq 0$. All variables are expressed as a logarithm.

Table 2. Long-Run Cointegrating Relationship 1/

	Output		Inflation		Barter		Refinancing Rate		Deposit Rate	
I	0.84*	0.15	-1.43*	0.5	-0.07	0.09	-0.19*	0.05	0.07*	0.04
II	0.4*	0.2	-1.93*	0.7	-0.3*	0.1	-0.3*	0.06	0.14*	0.04
III	0.92*	0.04	-1.44*	0.2			-0.14*	0.01	0.04*	0.01
	Exchange Rate		Depreciation		Crisis Dummy		Constant		RMSE 2/	
I					0.09*	0.04	1.3*	0.4		0.03
II			-0.3	0.3	0.39*	0.13	2.44*	0.6		0.05
III	-0.01*	0.01					-0.94*	0.03		0.02

1/ Seasonally adjusted data. * implies coefficients significant at 5% level. Standard errors in right column.
2/ Root Mean Square Error for dynamic forecasts.

22. **Estimates for each of the models on the basis of seasonally adjusted data have the anticipated signs (with the possible exception of the crisis dummy) and there is relatively little variation in the estimates of key parameters.**⁸ Models I and III provide very similar estimates, although Model II in which the exchange rate depreciation is included produces a very low estimate for the output elasticity and higher estimate for the elasticity with respect to inflation. One possible explanation is that the problems of multi-collinearity become more acute in Model II due to the close correlation between exchange rate depreciation and inflation (see Table 5 in Appendix I). However, these results depend critically on the seasonal adjustment factors used to deflate the raw data. When the data on inflation were deflated using seasonal adjustment factors that were calculated excluding 1998, the results differed significantly.

⁸ The crisis dummy is specified as equal to 1 in August and September 1998 and zero elsewhere. In subsequent work, separate dummies for these months were included to avoid the implied constraint that the coefficients in August and September were equal.

23. Since the results depend so critically on the seasonal factors used, the alternative specifications were also estimated using the raw data and monthly seasonal dummies.⁹

24. Estimations using non-seasonally adjusted data yielded sensible results for only the closed economy model. The estimations of the second and third specification generated counterintuitive results with respect to output, barter and the interest rate variables, possibly due to the problems of multi-collinearity. The key difference between the two estimations of the closed economy specification lies in the inflation coefficient.

Table 3. Long-Run Cointegrating Relation 1/

	Constant	Inflation	Output	Barter	Deposit rate	Refinancing rate	Dummies	
							Aug-98	Sep-98
Coefficient	1.36*	-3.03*	0.96*	-0.1*	0.04*	-0.18*	0.14*	1.01*
Standard Error	[0.09]	[0.33]	[0.05]	[0.02]	[.01]	[0.01]	[0.04]	[0.13]
	Dummies							
	Jul-98	S1	S2	S3	S7	S8	S9	S10
Coefficient	0.2*	0.02*	0.02*	0.06*	0.1*	0.05*	0.2*	0.1*
Standard Error	[0.04]	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]	[0.02]	[0.01]

1/ * denotes significant at 5 percent level.

25. The key parameter estimates in Table 3 are consistent with the theoretical literature and of similar orders of magnitudes to those found in other emerging markets. The output coefficients are close to 1, consistent with the quantity theory of money—the point estimates are below one, the difference is not statistically significant. While most studies find elasticities on the scale variable slightly in excess of one, the estimates are frequently not significantly different from one.¹⁰ The elasticity with respect to inflation is high, which is consistent with an economy in which the availability of financial assets outside of broad money is limited so that economic agents have significant holdings of real assets.¹¹

⁹ The seasonal dummies are denoted as follows: S (June), S1 (July), S2 (August), S3 (September), S6 (December), S7 (January), S8 (February), S9 (March), S10 (April).

¹⁰ In similar empirical techniques: Sriram (1998b) estimates 1.13 in a closed economy model and 1.0358 in an open economy model of Malaysia; Ericsson and Sharma (1998) estimate an elasticity of 1.22 for Greece; Nachege (2001) estimates 1.1 for Cameroon; and Egoumé-Bossogo(2001) finds 0.8 for Guyana.

¹¹ Sriram (1999b) finds an inflation elasticity of 4.9 in Malaysia, Arize (1994) finds 9.15 in Korea.

26. **The model suggests that the strong growth in real ruble broad money since August 1999 was driven largely by the pick-up of real output, the decline in barter, and the decline in the real refinancing rate.** While the decline in inflation also contributed to increasing the demand for money, its effect was relatively small since inflation had already been substantially reduced by then. At the same time, the decline in real deposit rates contributed negatively to the growth of money demand during this period.

Table 4. Contribution to Real Ruble Broad Money Growth (Aug '99-Sep '01) 1/

	Growth 2/	Percentage of change in real money
Real money	0.5	....
<i>Contribution</i>		
Real output	0.27	55
Inflation	0.02	4
Real refinancing rate	0.14	27
Real deposit rate	-0.02	-4
Barter	0.10	20

1/ Based on long-run model.

2/ Difference between values in Aug '99 and Sep '01. Variables in logarithms.

27. **The coefficients on the crisis dummies are consistently positive implying that money demand was higher than would have otherwise been expected during this period.** This contradicts prior assumptions of a sudden flight from the ruble at the time of the crisis. One explanation is that during the crisis, especially in the period immediately after the crisis, money balances were held involuntarily. Disruptions to the payment system and administrative delays introduced by some banks on the making of deposit withdrawals prevented M2 from declining.¹²

28. **The short-run dynamics of the models were examined by estimating an error correction model.** The initial specification was estimated with 6 lags on all variables and subsequently simplified using a general to specific modeling strategy. The basic equation for Model I was:

$$\Delta mp = C + \sum_{j=1}^6 \mu_{1j} \Delta mp_{t-j} + \sum_{j=1}^6 \mu_{2j} \Delta \Delta p_{t-j} + \sum_{j=1}^5 \mu_{3j} \Delta(\text{real output})_t + \sum_{j=1}^5 \mu_{4j} \Delta(i - \text{ref})_t + \sum_{j=0}^5 \mu_{5j} \Delta(\text{deposit rate})_t + \phi (mp - \overline{mp})_{t-1} + \text{crisis dummies} + \text{seasonal dummies} + \zeta_t,$$

where Δ stands for the first difference of a variable, the subscripts denote lagged values. The coefficients $\mu_{1t...5t}$ measure the short run elasticities of money demand. \overline{mp} stands for the fitted values of the long-run equation and the error correction term $\phi (mp - \overline{mp})_{t-1}$ measures the deviation from the long-run equilibrium cointegration relationship. ϕ is the feedback coefficient which measures the speed with which money demand will return to equilibrium.

¹² It is also the case that part of the flight from the ruble had already occurred prior to August. Ruble deposits in the banking system had been drawn down during the first half of 1998.

29. **Detailed results of the short-run specifications are shown in Table 7 (Appendix I).** The diagnostic tests reveal no autocorrelation in the estimated residuals and the normality of the residuals could not be rejected. To check for parameter constancy the model was reestimated backwards recursively and the results indicate that the estimated coefficients are not constant over time (Figures 1–3).¹³ For instance, the graphs of the coefficients of output, barter and the interest rates over the sample show that the coefficients estimated recursively for 1996–98 lie outside the confidence interval determined on the basis of a model estimated using observations during 1998–2001. Due to a lack of sufficient data points, the model could not be estimated separately for the pre- and post-crisis period; for this reason it was also difficult to formally test for a structural break in 1998 using a Chow test statistic.

30. **The estimated feedback coefficients imply a rapid rate of adjustment to monetary shocks.** The estimated coefficient on the error correction term is negative, consistent with the presence of a long-run equilibrium relation among the variables of the money demand function. The coefficient of 0.4 implies that some 40 percent of the disequilibrium is corrected in the subsequent month.

31. **Within sample static (one-step ahead) and dynamic forecasts suggest that the models provide a reasonable approximation of the actual money demand process during 1995–2001 (Figures 4–5).** In the static forecasts shown below, the forecasted value of real ruble money balances in any period t is calculated as $\overline{mp}_t = mp_{t-1} + \overline{\Delta mp}_t$, where $\overline{\Delta mp}_t$ is based on the estimated error correction model. In the dynamic forecasts, the forecasted value of real ruble money balances in any period t is calculated as $\overline{mp}_t = mp_0 + \sum_1^t \overline{\Delta mp}_j$, i.e., estimation errors get cumulated over time. In particular, the dynamic forecasts for end-2000 shows that the sharp pick-up in ruble broad money during this period was much larger than the estimated growth in money demand during this period, generating a monetary overhang which subsequently led to inflationary pressures during early 2001.

¹³ Forward recursive estimations could not be done as there were not enough observations to allow us to check for a structural break in 1998.

Figure 1. Recursive estimation (backward)

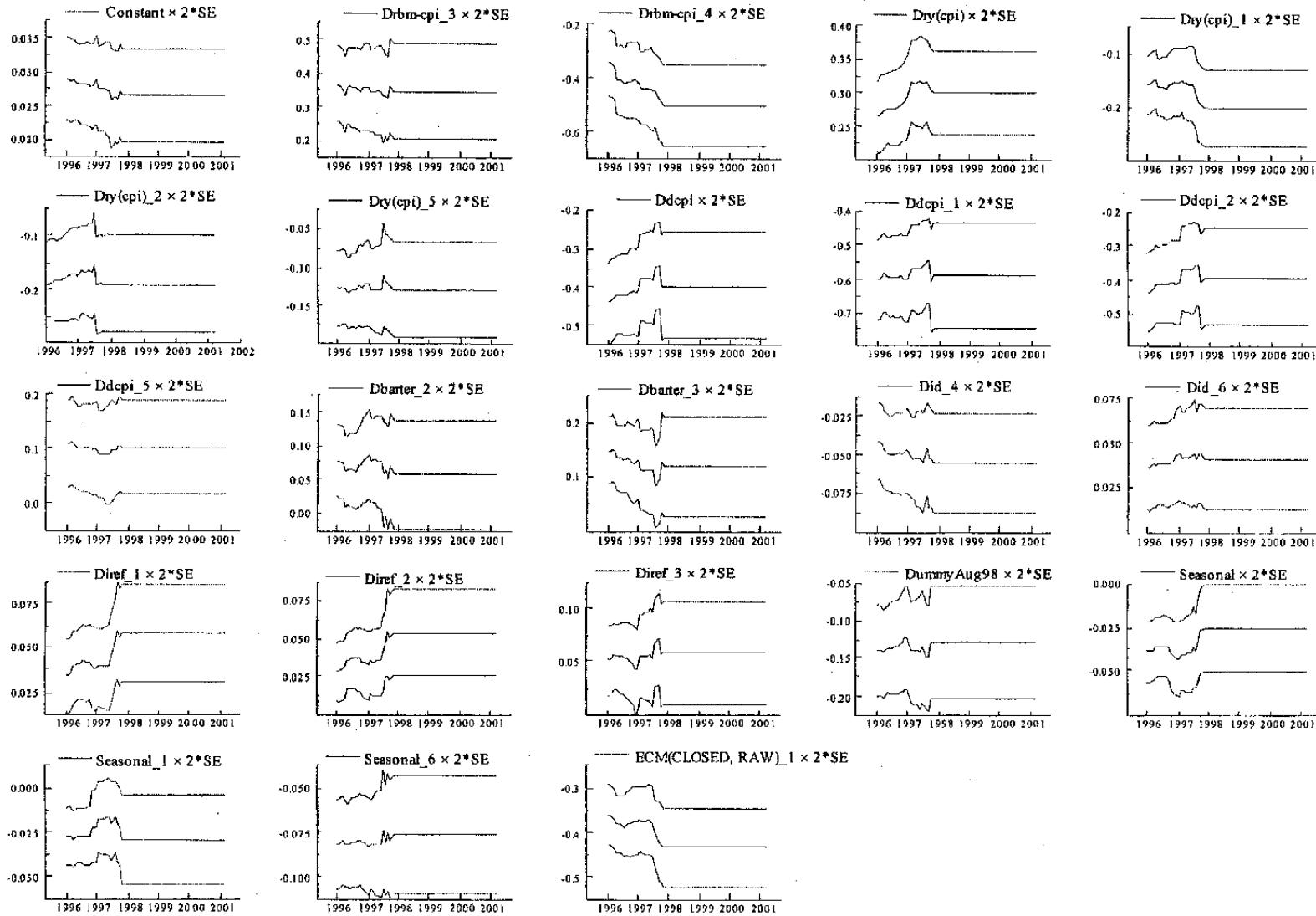


Figure 2. Recursive estimation (backward)

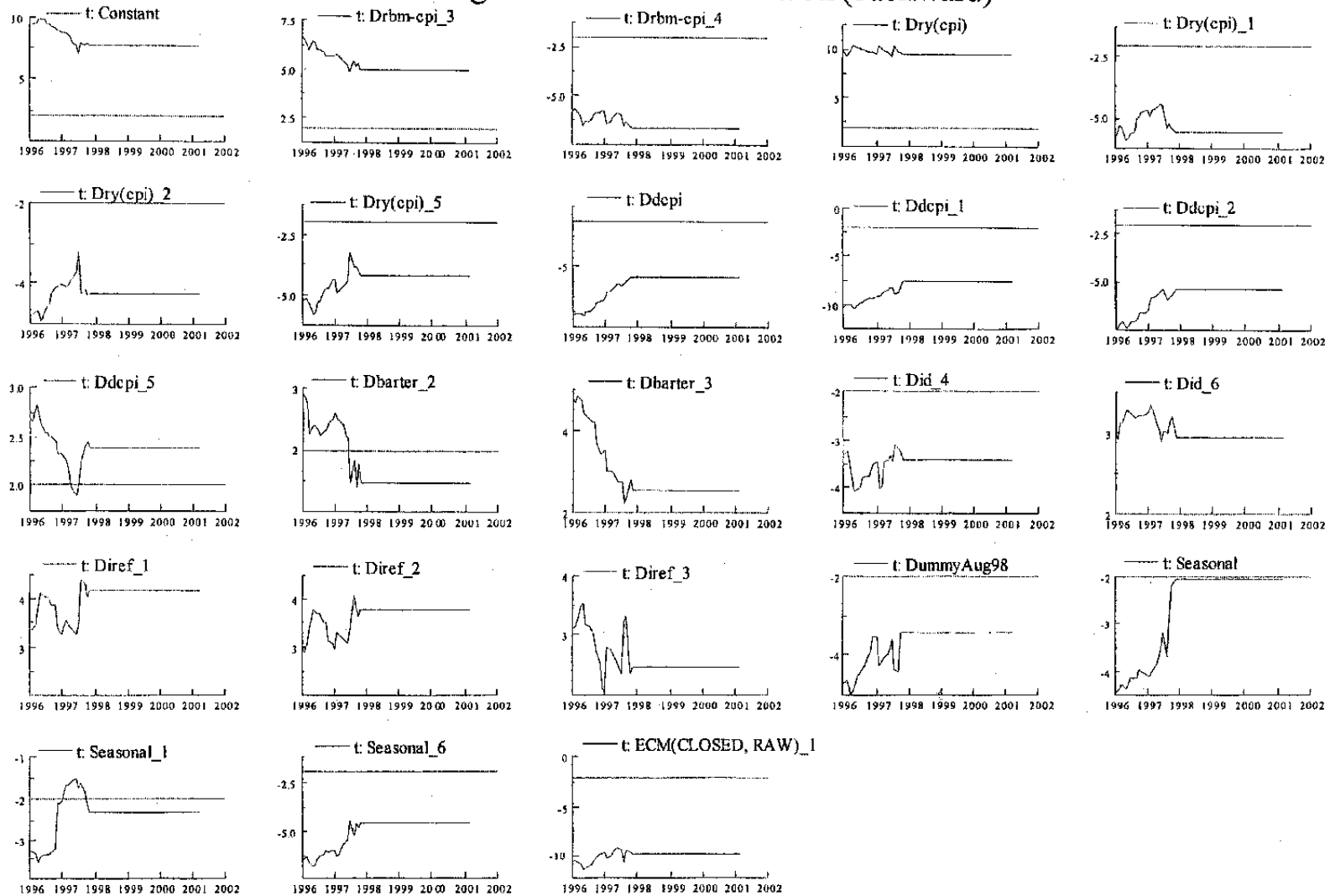


Figure 3. Recursive estimation (backward)

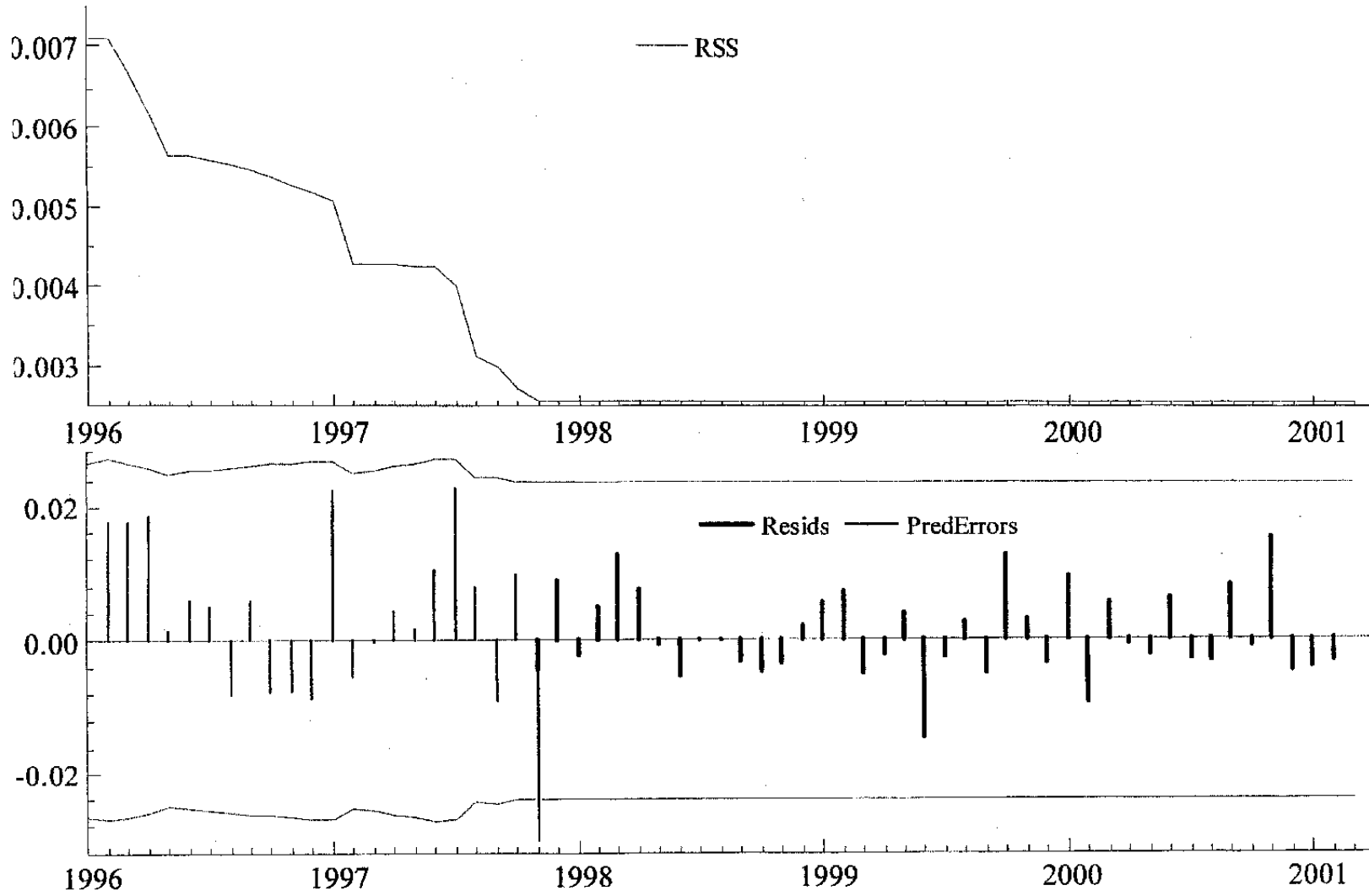
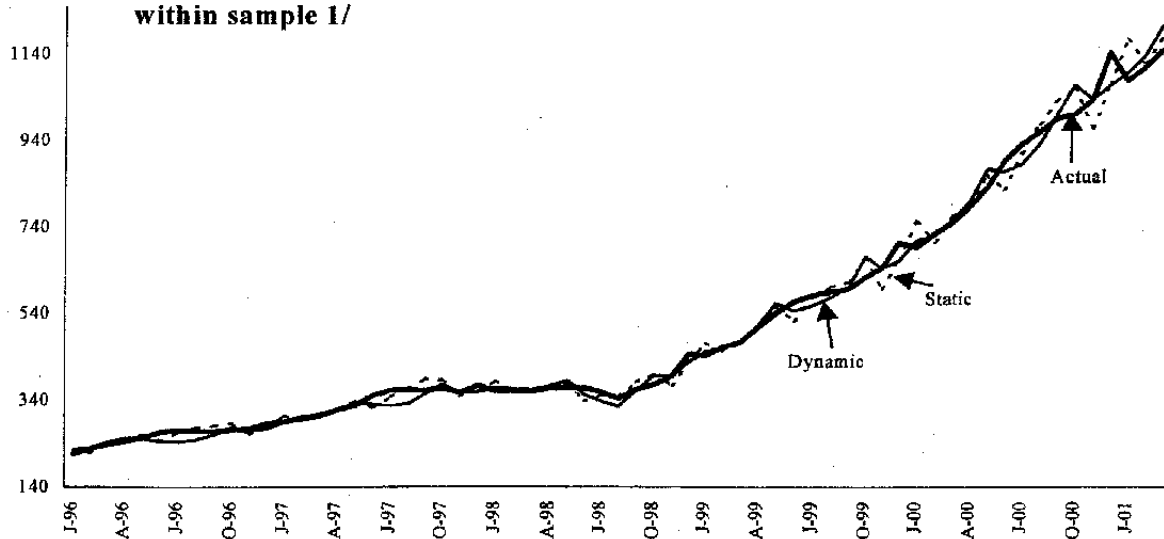
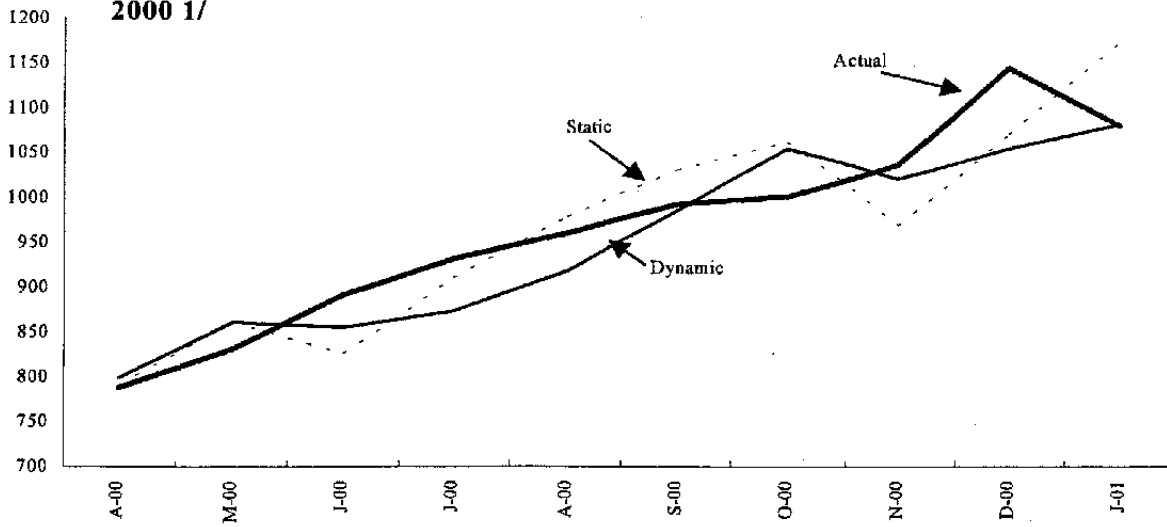


Figure 4. Ruble Broad Money (Rub bn): Actuals and Fitted Values within sample 1/



1/ Estimation period is July 1996-March 2001. Dynamic forecasts based on June 1995.

Figure 5. Ruble Broad Money (Rub bn): Actuals and Fitted Values for 2000 1/

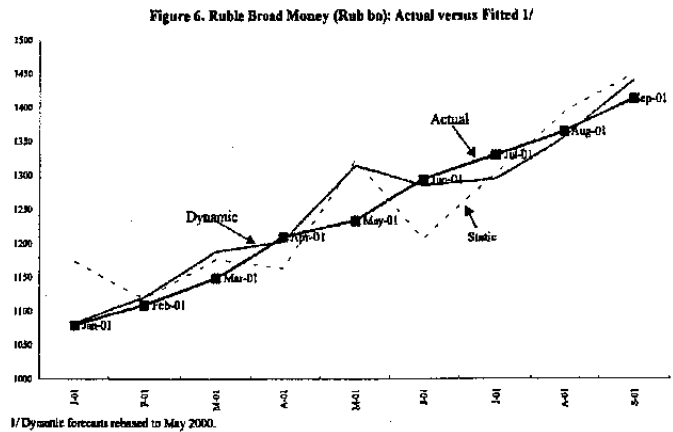


1/ Graph plotted for April 2000-January 2001. Dynamic forecast rebased to May 2000.

32. The out-of-sample forecast provides a broadly consistent picture of the stance of monetary policy during April–September 2001, although this is subject to errors of roughly 2.5 percent a month (Figure 6). The dynamic forecast would indicate that monetary policy during the first half of the year has been tight as ruble broad money has remained below the projected money demand. The absence of a monetary overhang is also reflected in the fact that inflationary pressures have been subdued during the third quarter of the year.

While the growth of ruble broad money appears to have outpaced the increase in money demand since July, these conclusions depend to a large extent on the growth of real output during this period and there is some uncertainty in this regard.

33. The results of the above analysis should be treated with some caution. Such an exercise is useful to the extent it enables us to determine the most important factors that affect money demand, and the relative importance of the various determinants. However, the estimated elasticities must be used cautiously, as it is difficult to interpret them as true long-run elasticities given the short time series available for our estimation. Moreover, the money demand function is likely to continue to change in line with structural changes in the Russian economy.



DATA APPENDIX

1. **The estimation was based on 72 monthly observations from June 1995 until March 2001.** The data was collected from the following sources: International Financial Statistics (ruble broad money, exchange rate, deposit rates and refinancing rates); Russian Economic Barometer (barter); and the Economic Expert Group and Goskomstat (nominal GDP and CPI).

- **Nominal Money** The monetary aggregate—ruble broad money—is defined as currency in circulation plus various ruble deposits held by the public and is reported as the value at the end of the month.
- **Real GDP** The monthly series was calculated by deflating monthly nominal GDP by the CPI. The monthly nominal GDP series on the other hand was calibrated on the basis of the time series of indices on retail sales, industrial production, agricultural production, and construction.
- **CPI** The monthly CPI series (1993 = 100) was used.
- **Exchange rate.** The official end of period ruble-U.S. dollar exchange rate defined as the CBR rate based on the Moscow Interbank Currency Exchange (MICEX) rate.
- **Refinancing rate.** The CBR's lending rate to banks is influenced by changes in the refinancing rate. End of period rate used for regressions.
- **Deposit rate.** Defined as the prevailing rate for one-month time deposits in denominations of more than Rub300,000. Beginning in January 1997, this refers to the weighted average rate offered by commercial banks on time deposits of households in national currency with remaining maturity of up to one year. The rate is weighted by deposit amounts.
- **Barter** This variable is defined as the share of non-cash payments in total receipts of the industrial sector.

Table 5. Correlation Matrix

	Depreciation	Exchange Rate	Barter	Inflation	Output	Deposit Rate	Refinance Rate
Depreciation	1.00	0.10	0.29	0.86	-0.42	0.05	0.03
Exchange Rate	0.10	1.00	-0.26	0.08	-0.46	-0.73	-0.45
Barter	0.29	-0.26	1.00	0.07	-0.50	0.14	-0.05
Inflation	0.86	0.08	0.07	1.00	-0.39	0.21	0.24
Output	-0.42	-0.46	-0.50	-0.39	1.00	0.06	-0.05
Deposit Rate	0.05	-0.73	0.14	0.21	0.06	1.00	0.83
Refinance Rate	0.03	-0.45	-0.05	0.24	-0.05	0.82	1.00

Table 6. Coefficients of Error Correction Model 1/

Variables	Lags	Coefficient	S.E.	Variables	Lags	Coefficient	S.E.
Real Money	_2	0.37*	0.06	Deposit rate	_4	-0.04*	0.01
	_3	-0.34*	0.06		_6	0.04*	0.01
Output	_0	0.27*	0.03	Refinancing rate	_1	0.03*	0.01
	_1	-0.16*	0.03		_2	0.03*	0.01
	_2	-0.19*	0.04		_3	0.1*	0.02
	_5	-0.13*	0.02	DummyAug98		-0.14*	0.03
Inflation	_0	-0.44*	0.05	Seasonal Dummy	_0	-0.04*	0.01
	_1	-0.6*	0.06	_1	-0.03*	0.01	
	_2	-0.44*	0.06	_6	-0.08*	0.01	
	_5	0.11*	0.04	Error Correction Term		-0.36*	0.03
Barter	_2	0.08*	0.03	Constant		0.03*	0.003
	_3	0.15*	0.03				

1/ Variables are not seasonally adjusted. They are expressed in logarithms and in first differences. * indicates significant at 5 percent level.

Table 7. Coefficients of Error Correction Equation 1/

Model 1 : RMSE = 0.0129 (static) and 0.0126 (dynamic); SC = -8.33 2/										
	Real Money			Inflation		Output		Barter		Error correction term
Lags	-2	-3	-6	-0	-1	-2	-0	-2	-4	-3
Coefficients	0.16*	0.16*	0.16*	-0.66*	-0.44*	-0.22*	0.11*	0.05*	-0.07*	-0.06*
										-0.13*
Model 2 : RMSE = 0.019 (static) and 0.0205 (dynamic); SC = -8.18 2/										
	Real Money			Inflation		Output		Refinancing Rate	Error correction term	Depreciation
Lags	-2	-4	-5	-0	-1	-3	-6	-0	-5	-6
Coefficients	.29*	.22*	-.15*	-.79*	-.46*	.33*	-.18*	.16*	.17*	-.04*
										-.05*
										-.13*
Model 3 : RMSE = 0.016 (static) and 0.021 (dynamic); SC = -8.22 2/										
	Real Money			Inflation		Output		Barter		Error correction term
Lags	-2	-3	-0	-1	-3	-4	-5	-0	-4	-5
Coefficients	.22*	.25*	-0.62*	-.31*	0.25*	0.18*	0.11*	0.12*	-0.05*	-0.05*
										-0.16*

1/ All variables in first differences and in logarithms. Data seasonally adjusted.

2/ RMSE = Root Mean Square Error; SC = Schwartz Information Criteria.

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III. SELECTED ISSUES IN BANKING SECTOR REFORM¹

1. **The August 1998 crisis led to severe pressures on the banking system and disrupted the payment system.** A large part of the banking system became technically insolvent as a significant portion of bank assets were short-term treasury bills (GKO), on which the government defaulted. In addition, the large exchange rate depreciation led to losses on banks' short positions in foreign exchange and default rates on other assets (like loans) increased. Interbank transactions came to a halt due to concerns about counterparty risk, thereby paralyzing the payments system. Through a combination of measures comprising liquidity support—reductions in reserve requirements and special rehabilitation credits to banks with restructuring plans—and the transfer of deposits from a number of insolvent institutions to Sberbank, a run on the banking system was avoided without resort to an extension of a blanket deposit guarantee.

2. **The recent strength of the economy has led to some improvement in bank balance sheets, but the lack of fundamental reform continues to inhibit the emergence of an efficient banking system.** The strength of the post-crisis economic recovery, coupled with the improvement in secondary market prices for government debt, has improved the liquidity and solvency of many banks. Indeed, the sector is being recapitalized, albeit at a slow pace. However, the restructuring has been drawn out and, despite significant progress, the legislative framework is still not fully in place. Moreover, the small size of the banking system, its concentration into a few state banks, and the difficulty of assessing the financial position of banks (using Russian Accounting Standards (RAS)) all point to the need for fundamental reform of the financial system.

3. **Banking reform in Russia has received fresh impetus recently.** In February 2001, the CBR formulated and made public a draft strategy paper for developing the banking system. A revised version of this paper—incorporating comments from a range of government agencies, bankers' groups, and the IMF and World Bank—formed the basis of a joint government-CBR strategy paper approved in December 2001.

4. **This paper presents an illustrative assessment of the vulnerability of the banking sector to shocks and focuses on three areas of reform critical for fostering competition in an environment dominated by state banks.** These reforms address the interrelated role of state banks, deposit insurance, and consolidation, and are only part of a broad range of reforms needed to put the Russian banking system on a sound footing. The reforms needed to improve the environment for the efficient operation of the banking sector—for instance, improved banking supervision, corporate governance, and legal and regulatory reform—are

¹ Prepared by Angana Banerji (EU2), Julia Majaha-Jartby, and Gabriel Sensenbrenner (both MAE), in collaboration with World Bank staff.

well specified in the authorities' strategy paper. The authorities intend to formulate specific measures and detailed action plans in each of these areas over time.

A. The Russian Banking System

5. Russia has a two-tier banking system with the CBR responsible for supervision over commercial banks. However, the CBR maintains a number of foreign subsidiaries and has controlling stakes in two large domestic banks (Sberbank and Vneshtorgbank (VTB)), thereby blurring the distinction between tiers.

6. The Russian banking system is characterized by a large number of banks.² As in many countries in transition, in the early years of transition, the number of operating banks increased sharply, reaching 2,457 in 1994, as a result of lax criteria for licensing banks. The number of operating banks has been significantly reduced since then principally because of stricter criteria for the issue of licenses since 1995 and the removal of licenses from credit institutions with financial difficulties. There have been few mergers and acquisitions within the Russian banking system in the past decade. While initially mergers took place as larger banks undertook regional expansion through mergers with smaller regional banks,³ during the second half of 2000, mergers were announced between privately owned Moscow banks with a view to increasing efficiency and cutting costs. However, consolidation has been slow possibly because the lack of transparency of balance sheets and ownership structures has acted a deterrent (Interfax report (2000)). As a result, a large number of banks—more than 1,300 at end-September 2001—continue to operate, straining supervisory capacity.

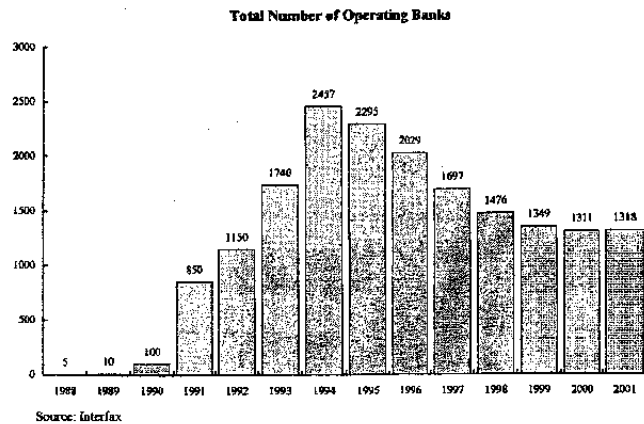


Table 1. Process of Consolidation

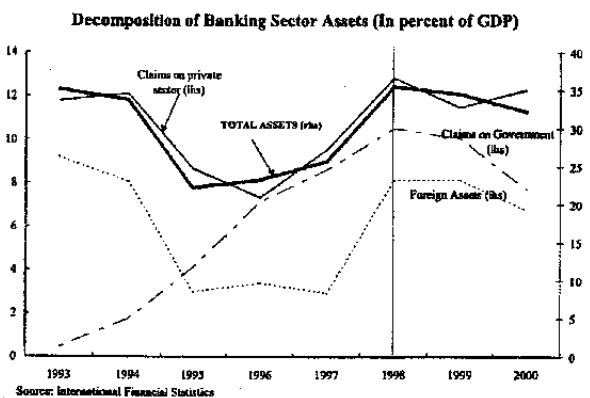
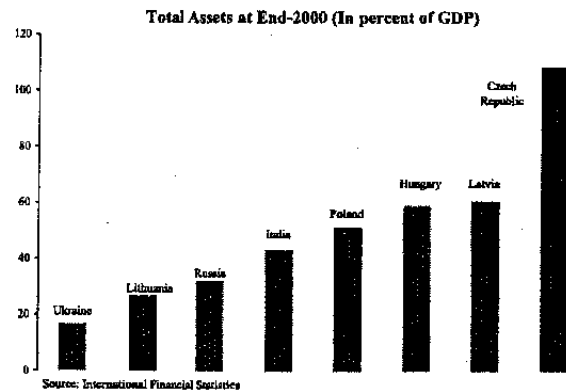
	1988-1994	1995	1996	1997	1998	1999	2000	2001	TOTAL
Licenses revoked	71	216	275	329	227	127	33	12	1290
Mergers and acquisitions	....	2	5	2	8	12	11	3	43
New banks	2490	85	26	12	9	8	17	20	2667

Source: Interfax.

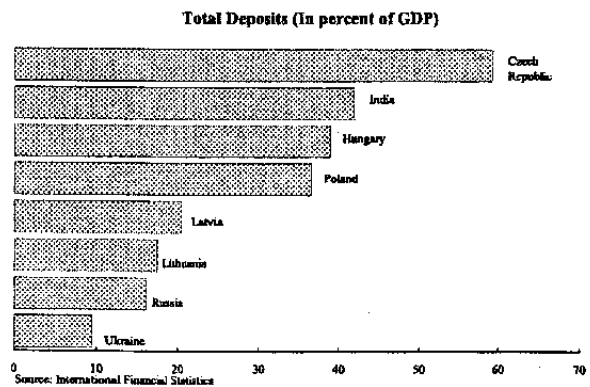
² The only country with more commercial banks than Russia is the U.S., which has some 9,000 banks. However, it is difficult to draw parallels between the banking systems of these two countries given the vast differences in the level of sophistication of the two systems, especially in supervisory capacity.

³ Interfax report (2000). One possible explanation for these mergers is that larger banks sought to access a stable and relatively cheap source of resources.

7. **Despite the large number of banks, the Russian banking sector is small by international standards and has remained relatively stagnant.** Total assets of the banking sector amounted to only 32 percent of GDP at end-2000, well below the levels in other middle-income transition and emerging market economies. Banking sector assets, which were increasing sharply as a ratio to GDP before the 1998 crisis, have been on a downward trend since then. In the aftermath of the crisis, the decline in assets (relative to GDP) was due to a sharp decline in bank lending to the private sector, as well as bank holdings of government securities. The decline in the latter has accelerated recently and has only been partially compensated by a growth in private sector lending. Foreign assets declined as a result of the real appreciation of the exchange rate.



8. **Despite some improvements, total deposits in the banking sector—some 16 percent of GDP at end-2000—remain low by international standards.** Bank deposits began increasing steadily as inflation was brought down in 1996 until the 1998 crisis. Deposits as a ratio to GDP have resumed growth since 2000 as the strength of the economy has allowed savings to be rebuilt in the aftermath of the crisis. The increase has occurred for both household (60 percent growth in real terms during 1998–2000) and enterprise deposits (180 percent real growth during 1998–2000). The recent increase may also reflect a gradual return of confidence in the banking system as macroeconomic stability takes hold, and as the economy enjoys high real rates of growth for the third successive year. The increase in banking sector deposits has occurred despite negative real interest rates on deposits and has been accompanied by a switch from foreign currency to ruble deposits.



9. **Although lending to the real economy has increased steadily since the crisis, the banking system's ability to effectively intermediate savings is, to a large part, hampered by the lack of transparency in the corporate sector and by obstacles to the enforcement of creditor rights.** Intermediation in the Russian banking system remains low by international standards, although at a level appropriate for the stage of development of the banking sector.⁴ Lending is hampered by the lack of transparency and poor corporate governance in the real sector, which impedes proper risk assessment, a lack of adequate financial instruments with which to diversify risk, and absence of mortgage lending, and weak legislative protection of creditor and lender rights. Nevertheless, as the supply of government securities has declined after the crisis because of an improved fiscal performance, bank lending to the private sector—which fell after the crisis—has revived, growing at an annual rate of 37 percent in real terms in 2001. The growth in lending has been strongest in Sberbank and VTB; however private banks have also increased lending to the private sector. At end-September 2001, net lending to the private sector was concentrated in the top 50 banks by asset size, with Sberbank accounting for 24 percent of the net lending to the private sector and 29 percent of all credit to the corporate sector.

Table 2. Indicators of Financial Intermediation (end-2000) 1/

	Currency/ Deposits	Deposits	Liquid liabilities	M2	Private sector credit
(In percent of GDP)					
Belarus	18	15	3	12	9
China	14	125	56	57	122
Czech Republic	14	65	25	25	54
Estonia	23	32	24	25	26
Hungary	19	39	19	19	26
India	24	42	16	16	26
Kazakhstan	37	11	5	15	13
Latvia	48	20	18	18	19
Lithuania	34	17	7	23	12
Poland	17	37	14	14	24
Russia	37	16	12	12	12
Ukraine	80	9	11	11	9

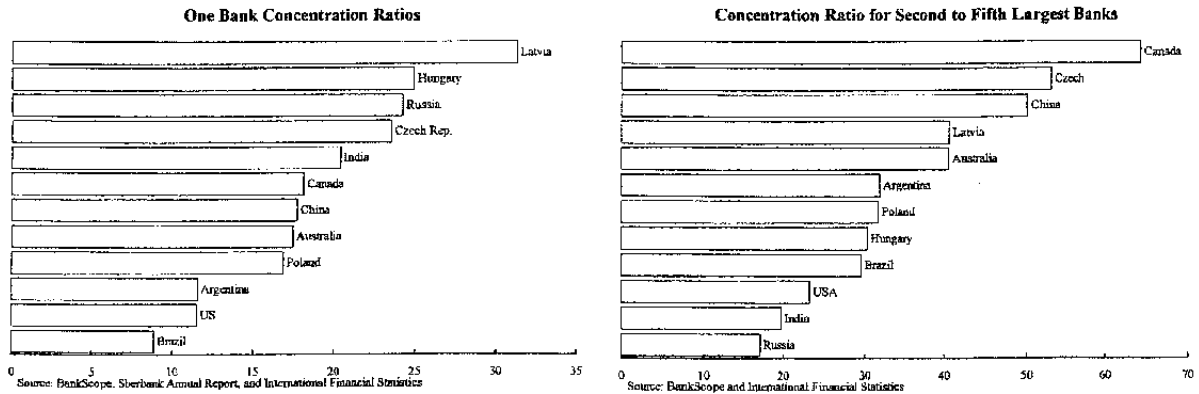
Source: International Financial Statistics
1/ Listed alphabetically.

10. **Except at the one-bank level, the Russian banking system is not highly concentrated.**⁵ Ninety percent of banking sector assets are concentrated in the top 200 banks, with Sberbank alone accounting for 25 percent of total assets. The vast majority of

⁴ A recent study of intermediation by the banking sector in transition economies during 1994–99 concludes the following: while the ratio of private sector credit to GDP in Russia in 1999 was low, its performance was broadly in line with those of other transition economies when comparing country's performance relative to an estimated benchmark for a market economy at a comparable level of development (the "market economy benchmark"). The latter varies from country to country and is estimated by a nonlinear regression of the ratio of bank credit to the private sector to GDP on per capita GNP for a sample of 125 developing and industrialized market economies (see Table 2, Fries and Taci (June, 2001)).

⁵ Measured as bank assets divided by total assets of banking system. For Russia, the ratios are calculated for end-1999.

Russian banks are very small and many of the smaller banks operate as finance companies.^{6 7} Excluding Sberbank, the Russian banking sector is not very highly concentrated relative to transition economies or other large-sized countries. The latter typically have few large-sized banks—as evident from the figures below—while the share of banking sector assets concentrated in the largest bank is higher in Russia than in most other comparable countries, the share of assets concentrated in the second–fifth largest banks is a lot smaller.



11. **The Russian financial sector is dominated by state-owned banks, in particular Sberbank.** Federal and regional authorities hold equity in an estimated 881 banks. Of these, the state (including regional governments) holds majority stakes in 23 banks—including Sberbank and VTB, which are owned by the CBR—which account for a third of the total assets of the banking system (Goryunov (2000)).

The dominance of state-owned banks in the banking system is due in part to the favorable treatment accorded these banks. These advantages were not as much of a concern prior to the 1998 crisis as they are now, since at that time Sberbank operated as a quasi-narrow bank, investing almost

50 percent of its assets in government securities. Moreover, Sberbank played an important role in helping support some measure of depositor confidence during the turmoil of the 1998 financial crisis. During the crisis, there was a flight of both retail and corporate customers to the safe haven of state banks, and the CBR encouraged the transfer of private deposits to Sberbank. Unlike private banks, state banks have benefited from an explicit and unlimited

Table 3. Sberbank and VTB (end-March 2001, Rub bn)

	Assets	Deposits	Capital	Profits	Branches
Sberbank	599	386	47	6	1598
(percent of total)	28	54	16	43	...
Vneshtorgbank	148	6	45	1	...
(percent of total)	7	1	15	4	...
Banking system 1/	2120	719	303	14	...

Source: Interfax.

1/ 250 largest banks

⁶ The smallest 800 banks have total assets averaging Rub 30 million or roughly \$1 million per bank (source: Interfax).

⁷ After the 1998 crisis, the CBR abolished a regulation that would have required all banks with charter capital less than €1 million to restructure as non-banking organizations, that allowed such banks to continue to exist but in a narrower role.

guarantee on household deposits, although state banks other than Sberbank do not have a significant share of household deposits.⁸ In addition to these advantages, state banks have a substantial role in the payments system and provision of government services that has not been opened up to competition.

12. Sberbank accounts for the largest share of banking sector assets and also dominates deposit taking from households.

On the asset side, Sberbank already holds almost 60 percent of government securities held by the banking system. It is also the largest lender to businesses, increasing its corporate loan portfolio by 49 percent in 2000, and 54 percent during the first three quarters of 2001 (Renaissance Capital (2002)). Such a sharp increase in corporate lending has been possible because of Sberbank's access to stable funding by virtue of its dominance of the household ruble deposit market. Sberbank's large share of total household deposits—80 percent at end-March 2001—is due to a number of factors. In addition to those mentioned in ¶ 11, Sberbank also benefits from an extensive regional branch network—which allows unparalleled access to retail deposits in regions of Russia—and from its large share (60 percent) of the pension payments system (pensioners account for almost half of all individual deposits in Russian banks). Its access to a stable source of funds has allowed Sberbank to offer loans of a longer maturity than other banks. Moreover, large capital base has allowed Sberbank to make larger loans given the prudential restrictions on banks' exposure to individual borrowers.

Table 4. Lending to Non-banks (percent of total) (end-March 2001)

	Total	Of which:	
		Businesses	Govt. securities
Sberbank	31.3	30.9	59.2
IIB	6.0	6.4	...
Vneshtorgbank	4.3	4.6	15.3
Alfa-bank	3.0	2.6	...
Rosbank	2.6	2.6	...
Bank Moskvyy	2.5	2.5	...

Source: Interfax

Table 5. Interest Rates on Household Deposits in Q1, 2001

Maturity	Deposits:			
	Ruble		Foreign exchange	
	Sberbank	Commercial banks 1/	Sberbank	Commercial banks 1/
Demand	2	1.5	1	1
1 month	8	9.3	2	4.3
3 months	10	13.9	6	6.4
6 months	13	15.8	7	7.2
1 year	18	18.3	10	8.3

Source: Commercial banks' data, Interfax.

1/ Computed for a sample of nine large retail banks (excluding Sberbank).

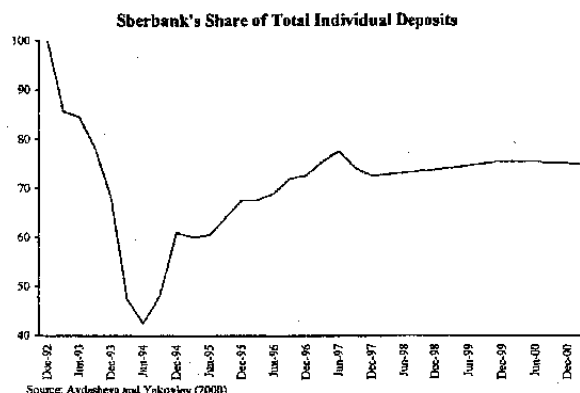
⁸ Under the law on banks and banking, the state guarantees household deposits in banks created by the state and in which the state holds more than 50 percent of voting shares. Banks falling in this category include Sberbank, VTB, Russian Bank for Regional Development, Russian Development Bank, Roseximbank, and Russian Finance Corporation.

Table 6. Deposits in the Banking System
(end-March 2001)

Total Deposits	Government deposits	Enterprise deposits	Household Deposits
(In percent of total deposits of banking system)			
Sberbank	53.2	Vozrozhdenie 16.9	Surgutneftegazbank 22.5
Surgutneftegazbank	7.5	Bashkreditbank 15.9	IMB 20.8
IMB	7.0	SBS-Agro 13.8	Rosbank 7.4
Rosbank	3.4	Sberbank 7.1	Sberbank 5.3
			SBS-Agro 1.1
			Gazprombank 1.3
			Alfa-bank 1.3

Source: Interfax

13. **The existence of a guarantee on its deposits has allowed Sberbank to dominate the market for retail deposits.** Since the beginning of transition, the share of total household deposits held in Sberbank declined steadily as other banks were able to attract a share of the market for retail deposits. However, this was reversed after 1994, primarily because of the introduction of an explicit guarantee on deposits held in state banks, and a re-evaluation of risk following the collapse of several financial pyramid schemes. Sberbank's share of household deposits has remained broadly stable since 1997 in contrast with the loss of market share for corporate deposits, particularly against the larger private banks.



B. Issues in Banking System Soundness

14. **This section looks at various indicators of soundness of the Russian banking system and provides a quantitative assessment of its vulnerability to credit risk arising from default by the government, bank, or non-bank borrowers.** The analysis indicates that risks are building up in the large—especially private—banks, whereas smaller banks have been unable to improve profitability despite the favorable macroeconomic environment. Preliminary stress tests indicate that Russian banks would be under-capitalized to various degrees in the event of a credit shock.

15. **Banking ratios calculated from audited financial statements for 2000 point to the build-up of risk in the large private banks and the lack of profitability among the smaller banks (Table 7).** Although still low by international standards, bank earnings have recovered in line with GDP growth and the lower loan loss reserves associated with the better cash flow of borrowers. While this has helped most banks restore capital to pre-crisis levels, it is unclear whether the better returns reflect the higher credit risks incurred by the banks while expanding lending or a fundamental improvement in core profitability. With the

Table 7. Micro-Prudential Indicators for sample of Russian banks 1/
(In percent)

	1997	1999	2000
Sberbank			
ROEA	2	2	3
ROEE	15	25	30
LLR/Gross loans	11	8	6
Liquid assets/Liquid liabilities	14	21	17
Net interest income/Net income	-65	16	54
Expenses/Income	36	66	72
Top 11 banks			
ROEA	3	2	3
ROEE	15	12	12
LLR/Gross loans	14	6	4
Liquid assets/Liquid liabilities	26	43	45
Net interest income/Net income	22	11	39
Expenses/Income (median of 11 banks)	61	38	54
19 smaller private banks			
ROEA	1	-5	1
ROEE	4	-13	1
LLR/Gross loans	4	14	8
Liquid assets/Liquid liabilities	25	62	49
Net interest income/Net Income	35	-2	24
Expenses/Income (median of 19 banks)	70	83	85

1/ ROEA: return on end-of-period assets; ROEE: return on end-of-period equity; LLR: loan loss reserves.

exception of Sberbank—whose ready access to financial support allows it to operate with less capital and liquidity—returns on bank capital for the larger banks (about 12 percent) do not compensate for the risks in the Russian environment. While the larger banks have aggressively lent to the Russian “blue chip” companies, often related to bank owners, the apparent lower credit risk in these “blue chip” exposures is potentially outweighed by legal risk that could become apparent in a downturn. Moreover, these exposures are typically high relative to equity and some banks could be vulnerable to defaults of large borrowers.⁹ The large banks’ dash for market share in the corporate market seems to be abating, based on first half 2001 figures for a sample of internationally-rated banks. However, risk management practices need to be closely monitored by the supervisor and the audit profession.

⁹ Related party loans were 33 percent more likely to default and had 30 cents/dollar lower recovery value in the case of post-1995 Mexico (La Porta and others, (2001)). Mexican recovery rates were 38 percent for secured debt and 19 percent for unsecured debt (Fitch, (January 2002)).

Profitability of the smaller banks (on the order of 1 percent) remains insignificant, even in the current benign environment, and indicates a need to rationalize the market.

16. **The liquidity of bank balance sheets has increased across the board.** To some extent, this reflects the banks' inability or caution in expanding beyond relationship lending. There is as yet little lending to middle market corporate borrowers and to individuals, although there appears to be scope for risk and income diversification from lending to these under-leveraged and under-banked borrowers. The increase in balance sheet liquidity is also precautionary: poor perceptions of counterparty credit risk mean that banks cannot rely on the wholesale funding market. Operating expenses have grown sharply for Sberbank as it modernizes its network, and they remain too high for the smaller banks. The relatively better efficiency of the large private banks reflects their minimal retail network. In line with the growth of lending, net interest margins have risen substantially, except for the smaller banks, which continue to rely on trading and fee income.

17. **In the remainder of this section a quantitative assessment of the vulnerability of the Russian banking system to credit risk arising from default by the government, bank, or non-bank borrowers is provided.**¹⁰ The assessment is calibrated on the basis of changes in bank balance sheets observed during the 1998 crisis. However, given the removal of significant macroeconomic risk factors as well as the recovery in the financial positions of the enterprise sector, this assessment should be considered purely illustrative. Additional caveats arise from the limited disclosure of financial information, uncertainties regarding accounting standards and auditing practices, and the inability to integrate qualitative dimensions of the data due to a lack of information about, inter alia, the quality of capital and risk management, uncertainties in the measurement of variables (e.g., classification of loans and government securities, measurement of capital), regulatory and supervisory standards. While there is scope for further refining the analysis on the basis of better information, the overall assessment is not likely to be materially different.

Table 8. Key Balance Sheet Aggregates of Sample of Russian Banks Used for Stress Test

	1997							2000						
	Assets	Government securities	Loans	Capital (RAS)	Profits (RAS)	ROE 1/	Deposits 2/	Assets	Government securities	Loans	Capital (RAS)	Profits (RAS)	ROE 1/	Deposits
	\$ billions							\$ billions						
Sberbank	30	16	7	3.4	0.5	15	24	20	6	10	1.5	0.5	30	16
Next 14 top banks 2/	10	2	6	1.2	0.2	17	4	13	1	8	2.6	0.3	12	6
19 smaller private banks	7	1	4	1.2	0.3	25	3	7	0	4	1.5	0.0	1	3

Source: Bank balance sheets on CBR website for all banks except Sberbank and Gazprombank. Financial press for Sberbank and Gazprombank.

1/ Return on equity. In percent.

2/ Excluding VTB.

¹⁰ The analysis was based on fairly detailed bank balance sheets provided by the World Bank for end-2000 (see Appendix I for additional details). No attempt is made to quantify market risk, nor the correlation structure of market and credit risk factors.

18. **The analysis estimates the likely costs to the banking system of a default by creditors on the outstanding loans from the banking system.** Concentration of lending and funding are prominent risks of the Russian banking system, as counterparty risk deters from interbank funding and few banks have so far diversified outside the industrial holding structures they typically belong to. Commodity mining and trading (particularly oil and gas), commercial real estate, and retail trade are the dominant exposures in the credit portfolio, in contrast to the pre-crisis pattern of relatively large exposure to government risk.¹¹ Interest rate risk is limited because of the rapid repricing of loans. Also, foreign exchange positions are believed to be generally neutral as ruble stability has reduced currency gains.¹²

Table 9. Preliminary Results of Stress Tests
(In percent)

	Current conditions (end-2000 data)			Stress	
	Assets	Leverage Ratio		Capital Shortfall	
	(In percent of GDP)	RAS 1/	Implied IAS 2/	Large Shock 3/	Medium Shock 4/
Sberbank 5/	8	8	5	1.8	0.7
Next 14 banks 6/	7	18	9	2	1.1
Sample of private banks 7/	3	22	15	0.5	0.1

1/ Basel-type capital adequacy ratios not used because of uncertainties in the measurement of capital, risk weights, and asset classification (see Box 1).

2/ Implied IAS derived by applying RAS-IAS conversion factors to the major asset categories and to capital. Conversion factors reflect differences between RAS and IAS, such as valuation effects, consolidation, and asset reclassification by external auditors.

3/ The large shock has been roughly calibrated on the 1998 event.

4/ The medium shock may be viewed as representing a normal cyclical downturn.

5/ Sberbank represents 24 percent of system assets.

6/ Excluding Vneshtorgbank with a capital/asset ratio of 40 percent. These banks represent 21 percent of system assets.

7/ These banks represent 8 percent of system assets, or 15 percent of system assets excluding the top 15 banks.

19. **The results of the stress test indicate the following:**

- **Despite the recent improvements in solvency and profitability, the system appears to be undercapitalized in light of the underlying credit risks.** The stress

¹¹ As two thirds of Sberbank's GKO/OFZs holdings were converted into Eurobonds in July 1998, government securities still represent 30 percent of Sberbank's assets and contribute half of the bank's interest income. Sberbank accounts for 60 percent of government securities held by Russian banks (source: 2000 Financial Statements and Auditor's Report for Sberbank and ATON Equity Research (2000)).

¹² Source: Fitch rating reports for 19 large Russian banks.

tests suggest an upper bound for capital shortfall on the order of 8 percent of GDP in the event of a large shock. This is arrived at by adding the capital shortfall of Sberbank (1.8 percent) and the next 14 banks (2 percent), and extrapolating the capital shortfall of the sample of 19 private FIDP banks (½ percent) to the rest of the system. FIDP banks represent about 15 percent of system assets, excluding the top 15 banks, and would have a capital shortfall of ½ percent of GDP. If one assumes a rule of proportionality and no aggregation bias, this would translate into a capital shortfall of 2¾ percent of GDP for out-of-sample banks.

- The somewhat unrealistic assumption underlying the estimated shortfall of 8 percent of GDP is that all banks would be recapitalized by their owners or public funds. A more likely scenario is that, in the event of a shock, the vast majority of banks would be left to fend for themselves as they were in 1998. Public money might only be required in the case of systemically critical institutions with financially weak owners. Very few Russian banks fit this profile. **Even assuming that all the largest 15 banks are both systemically critical and have owners of weak financial strength, the need for public money in the event of a large shock would be about 3½ percent of GDP.**
 - **The cost of recapitalizing the next 14 banks is of a similar order of magnitude as Sberbank's.** The recent rapid growth of these banks suggests that risks may be building up that may not be well appreciated. In particular, several of the more aggressive banks are so-called "bridge banks." These banks are the successors of the larger private Russian banks that collapsed during the crisis. Their owners and management are believed to be basically intact, and, in light of their aggressive lending growth, the adequacy of their risk control systems should be subject to close scrutiny.
20. **Results of stress tests reflect work in progress.** In particular, attention is being drawn to the following qualifications.
- With the exception of Sberbank, the results do not yet reflect a detailed bank-by-bank analysis. This may introduce aggregation bias. Bank-by-bank analysis is not expected to substantially change the assessment.
 - Off balance sheet exposures, especially guarantees, may increase certain risks. This potential vulnerability has not been taken into account.
 - The assumptions embedded in the stress scenarios are based on the historical experience of the Russian banking system, cross-country historical patterns, as well as a fair amount of judgment. In the context of the upcoming work on the Financial Sector Assessment Program, it should be possible to minimize judgmental factors and better substantiate the various assumptions made.

- The latest comprehensive data are available from the World Bank for end-2000 on RAS basis. However, World Bank IAS-RAS conversion factors are only available for 1999.

Box 1. Russian Accounting Standards (RAS) and International Accounting Standards (IAS)

Financial statements for banks and enterprises are currently prepared on the basis of RAS. RAS differ from IAS with respect to the accounting principles underlying the preparation of financial statements and specific disclosure requirements. The principal differences affecting banks are as follows:

- *Recording income and expenses.* Under RAS, receipts and payments are recorded on a cash (not accrual) basis.
- *Asset valuation.* Under RAS, domestic government and corporate securities can be valued at either market value or at cost. Under IAS, a fair market value has to be determined for all financial assets and where fair values fall below market or acquisition cost the unrealized loss needs to be disclosed. In addition, holdings of precious metals are recorded at cost under RAS, rather than at a fair market value.
- *Consolidation of subsidiaries (domestic and foreign).* There is no consolidation requirement in RAS. Under IAS, the accounts of a bank as well as its subsidiaries would be presented as a single set of accounts.
- *Stricter disclosure requirements.* IAS require extensive disclosure of items relevant to an evaluation of the financial position of an entity and the risks it faces, e.g., risk management objectives and policies, exposure to exchange rate, interest rate, and credit risk, etc.

Rationale for moving to IAS. The purpose of any accounting system is to provide a framework to ensure the integrity and consistency of all disclosed financial information. This requires adopting an appropriate set of accounting standards and ensuring that all relevant standards are fully implemented in a consistent fashion. The lack of such a system would make it increasingly difficult for entities wishing to access global capital markets.

Cross-country experience. Accounting standards vary from country to country, but there is now increasing convergence between national accounting systems and IAS. The European Union has committed to move from its underlying national standards to IAS by 2005.

Progress toward IAS in Russia. Emphasizing the need to improve the transparency of reporting by the banking system, the reform strategy developed by the CBR and the government states that the banking system and the enterprise sector will adopt IAS by January 1, 2004. To this end, the CBR is closely monitoring a pilot project developed with the assistance of TACIS to reform existing systems of bookkeeping and reporting with a view to introducing enhanced reporting standards for banks in 2002. Since the pilot program was initiated, to date 9 banks have begun participating in this program. The CBR and the government also intend to identify the necessary legal and regulatory changes required for the full adoption of IAS reporting by banks and organizations, as well as develop a timetable for the removal of current impediments to the adoption of IAS by January 1, 2004. Some 130 banks already prepare IAS accounts on an annual basis, but the enterprise sector is lagging behind in this regard.

C. The Need for Financial Sector Reform

21. **The development of the banking system will be critical for achieving the true growth potential of the Russian economy.** High risks of lending to the private sector have kept intermediation by the banking sector at a low level. Despite this, the real economy has grown—and continues to do so—at unprecedented high rates in the post-crisis period,

initially the result of a real depreciation and import compression, but thereafter due to a positive terms of trade shock and a strong recovery in domestic demand. However, the large windfall accrued mainly to the energy sector, spurring investment in these and related sectors. The windfall did not spread to other sectors of the economy, partly because of the lack of intermediation via the banking system. While it would be imprudent for banks to increase lending indiscriminately without the proper tools for risk assessment, it is also true that the recent high growth rates are unlikely to be sustainable over the medium term unless the banking system can provide the necessary intermediation of savings in the energy and household sectors to other parts of the economy. Thus, the reform process must be accelerated to establish the necessary conditions in the financial and non-financial sectors, which would allow proper risk assessment and limit the vulnerability of the banking sector to credit risk.

22. **A strong banking system is also an important pre-condition for the success of the authorities' plans to liberalize the capital account.** Recent episodes of financial crises across the globe point clearly to the need for countries to establish sound, sustainable, and credible macroeconomic policies geared at promoting price stability, supported by measures to develop and maintain sound and efficient financial systems. Thus, an appropriately sequenced strengthening of the financial system is needed to ensure an orderly process of capital account liberalization. Moreover, it would be difficult to reverse the large-scale capital flight that Russia has experienced during recent years in the absence of a sound and well-regulated financial sector.

D. Reforms to Improve Competitiveness in the Banking System

23. **The reform agenda is vast and progress can be achieved only over time. The authorities' strategy paper highlights the need for action on two broad fronts:**

- **An important first step toward building confidence in the financial system would be to preserve macroeconomic stability through strict monetary and fiscal discipline.** As past experience in Russia has shown, periods of high inflation and exchange rate shocks lead to an expropriation of financial assets in the system through inflation. This undermines confidence, leading to an exodus of deposits from the banking system and a flight of capital to assets abroad or to foreign currency. Thus, in order to build a functioning financial system in Russia, a stable macroeconomic environment is essential, one that would allow the real value of financial assets to be preserved, encourage a flow of deposits in the banking system including through the repatriation of savings kept abroad, and allow banking sector assets to grow.
- **In addition, a wide range of reforms are needed to establish the appropriate environment for the growth of a competitive, efficient and stable banking system.** Key among these are: a continued improvement in bank supervision (Box 2); further legal and regulatory reform; even-handed implementation of laws; greater

Box 2. Banking Supervision

Despite considerable improvement in the CBR's capacity to supervise banks since the 1998 crisis, much more remains to be done. A World Bank report (August 2001) identifies the following key areas where work must continue in order to improve the effectiveness of banking supervision in Russia. Many of these measures are already in the process of being implemented and the even-handed implementation of a simplified but effective bank supervision has been identified as a key priority in the joint CBR-government strategy on banking reform. The authorities have already initiated work to determine specific reform measures in each of these areas but these will need to be further developed in the period ahead:

Increased emphasis on on-site supervision to improve the accuracy of regulatory reporting, verify asset values, assess the operational capacity of individual institutions, and prepare timely and effective supervisory interventions. This will involve the introduction of improved reporting standards and continued emphasis on compliance with accounting procedures and regulatory ratios.

Strengthening bank licensing requirements. When licensing banks, in addition to ensuring that banks meet certain minimum requirements and that its shareholders and managers meet fit and proper criteria, the CBR should place more emphasis on evaluating a bank's business strategy, internal controls, risk management systems and safeguard margins on capital and liquidity to ensure that the bank is viable.

Fit and proper requirements. Increased effort should be made to hold shareholders and managers of failed institutions accountable for their actions and to prevent them from reentering the banking sector. Requirements regarding the regular disclosure of shareholders and the granting of approvals for share acquisition should be tightened and expanded to include indirect as well as direct shareholder interests. The definition of imprudent activities should be tightened and enforcement actions against criminal misconduct should be strengthened.

Strengthened definition and role of capital adequacy. Measures need to be taken inter alia to: (1) improve due diligence on the true nature and availability of bank liabilities qualifying as bank capital; (2) strengthen the ability of supervisors to charge equity capital down to the value ascertained as part of on-site bank inspections; and (3) substitute capital insolvency for illiquidity as the criterion for bank bankruptcy. Legislative amendments addressing the last two of these points were recently passed by the Duma and would need to be implemented once they are enacted.

Strengthened oversight of banking groups on a consolidated basis. Oversight of banking groups is important since many banks are parts of groups. Recently enacted amendments to the Law on Banks and Banking have introduced the notions of "banking groups" and "bank holding." Although the advantages of consolidation should be considered when assessing the potential risks arising within a financial-industrial group, the fact of its consolidation should not be used to camouflage the capital weakness of an individual bank within a group simply because of the strong standing of the industry balance sheets within that group.

Expeditious bank consolidation and exit. The current rehabilitation process is highly procedural, involving long delays and allowing even badly distressed institutions to continue operations. The supervisor will need to be much more proactive in evaluating bank safety and soundness and, faced by a deteriorating institution, should act rapidly to implement corrective action. In its supervisory function, the CBR should focus its activities on obtaining and analyzing information related to the core elements of bank distress, should encourage consolidation, and where appropriate should target its rehabilitation efforts only on potentially viable banks.

transparency in the banking system, including through a move to IAS-based accounting (Box 1); improvement in the corporate governance of banks and the real sector; and, better risk management. Over time this would help create the appropriate conditions for the entry of other private sector players, including foreign investors, in the banking system, which would provide further impetus to greater competition and improvements in technology and corporate governance. In fact, since the introduction of fit and proper private ownership and management is a pre-requisite for building confidence in the banking system, this may need to take the form of foreign ownership until corporate governance in the domestic banking sector can be improved. The development of a healthy banking system will need to be complemented by the development of broader financial markets to offer the economy a diversity of funding sources and thus increase the resilience to shocks. Key areas would include further developing the government securities markets, deepening corporate debt and equities markets, the development of a diverse institutional investor base (insurance, asset management, etc.), and pension reform.

24. Reforms would also need to address as a matter of priority the fundamental issue of how to stimulate competition in an environment dominated by a few large state banks. Measures to level the playing field in the financial sector would involve creating conditions that prevent state banks from exercising undue influence on the banking sector. An important element in increasing competition would therefore be to remove the competitive advantage enjoyed by state banks from an unlimited, free of charge, guarantee of deposits that is not available to private banks. In fact, the strategy for reforming the banking sector will need to go beyond this and focus on the three core interrelated issues of the role of the state banks, deposit insurance, and consolidation.

25. One option being discussed by the authorities to level the playing field involves the phased introduction of a deposit insurance scheme covering all household deposit-taking banks in Russia. According to this option, Sberbank will join the deposit insurance system over time, after an IAS-based assessment of participant banks' financial situation. While extending deposit insurance to all banks could go some way toward correcting one of the key market distortions that currently benefit state banks, it is unlikely to level the playing field. This is because under the currently proposed scheme, private banks would be required to pay a fee to receive partial deposit insurance whereas state banks would continue to enjoy full coverage. Moreover, a key concern is that bank supervisory capacity in Russia is currently inadequate for effectively implementing a scheme covering such a large number of banks. In particular, on-site examination of banks is essential before they can be allowed to participate in this scheme, and it would be difficult for existing bank supervisors to perform such examinations for the 1,300 banks that currently operate in Russia. In sum, a broad coverage of banks without adequate supervisory capacity would inevitably lead to large costs to the government and could further undermine confidence in the banking system.

26. **Three options for leveling the playing field could be considered instead:**

Option 1—*Convert Sberbank into a narrow bank that would offer deposit insurance through the portfolio it holds rather than a formal scheme.*

Sberbank's lending activities would be limited to low-risk assets, thereby limiting the amount of risky lending undertaken by Sberbank and potential costs to the budget. One issue that would need to be addressed in this context is how to set limits that are economically meaningful. It would also be necessary to determine which assets could be considered low risk, not an easy task in Russia. In principle, this could comprise securities issued by the government or the CBR, mortgage lending, or bonds issued by highly rated enterprises. However, the institutional basis for mortgage lending does not yet exist in Russia, and given the lack of transparency and poor corporate governance in the enterprise sector, it is difficult to know how to determine which enterprises can be classified as "low risk."¹³ Perhaps most important, the development of a sound private banking system would suffer if the supply of low-risk financial instruments for investment were to be reserved for Sberbank. Indeed, if the ultimate objective is to stimulate the growth of private banks, it may be counter-productive to channel the best clients to Sberbank. Thus, while such an approach could address near-term concerns about increased risk from Sberbank's rapidly growing credit portfolio, it would likely be detrimental to the growth of the banking system in Russia.

Option 2—*Introduce a price-based deposit insurance scheme covering only Sberbank, with no restrictions on Sberbank's lending activities.*

Under this option Sberbank would be charged an explicit fee for the guarantee it enjoys on its deposits; the fee would be set to eliminate its price advantage. The change in the price of funds for Sberbank would translate into changes in its lending practices only if Sberbank faces a hard budget constraint that prevents it from absorbing the higher cost of funds through losses or lower profits. Key issues under this option are how to determine the size of the fee for Sberbank and whether to aim for eliminating the price advantage over time or immediately.

Option 3—*Introduce partial deposit insurance on identical terms for a select set of private and state banks, including Sberbank, which meet stringent pre-announced eligibility criteria.*

Key issues that must be addressed are how to determine how much additional fee to charge Sberbank (if necessary), as well as the criteria for selecting banks for inclusion in the scheme. Participation could be limited to banks meeting enhanced prudential standards, reporting to the CBR on an IAS basis, undertaking regular onsite examinations and (possibly)

¹³ Moreover, if this should lead to a reduction in competition in the market for government/CBR securities, it could hamper the development of capital markets in Russia over the longer term.

a limit on minimum capital.¹⁴ Sberbank would be included in the scheme on terms similar to other banks, and would be assessed higher fees if it is not possible to limit the amount of guarantee provided to deposits in Sberbank. As in option 2, this option would succeed in leveling the playing field only if Sberbank faces a hard budget constraint and is therefore forced to change its lending practices. Banks that do not meet these criteria could either be issued new licenses that would not permit them to accept household deposits—although they could continue to operate as finance companies—or they could simply be left as they are and see their deposit bases eroded by competition from other banks with deposit insurance. The latter is not expected to be a major problem since deposits are already concentrated in Sberbank, and because there is, in any case, a great deal of uncertainty about their ownership and operation.¹⁵ This option has the advantage of providing a market-based mechanism to level the playing field, while fostering a much-needed further consolidation of the banking system, which would reduce the burden on bank supervision in Russia. However, this scheme should not be implemented until the necessary pre-conditions are in place. A key source of uncertainty is whether banking supervision can be strengthened adequately to allow the risks to be contained.

27. Consolidation is not a goal in itself but would help reduce the burden on supervision, which would be especially important if a broad-based deposit insurance scheme were to be put in place. According to the CBR, the small banks pose minimal systemic risk in that they typically are inactive, do not take household deposits, and have few dealings with other banks. However, if a deposit insurance scheme is put in place, bank supervision would have to be of adequate quality and have the capacity to supervise all participants in the scheme so that the risks can be contained. Given the limited supervisory capacity and the large number of operating banks in Russia, it is therefore important to reduce the burden on bank supervision through consolidation of the system in the event a deposit insurance scheme is introduced. Efforts to consolidate must proceed cautiously to avoid asset stripping, further undermining the confidence in the banking system, and giving rise to new rounds of resource intensive litigation.

28. Despite efforts to level the playing field through market-based mechanisms, Sberbank will continue to enjoy the benefits of cheaper funding in the near term by virtue of its large branch network and near-monopoly of the pension payments system. One could at best limit Sberbank's undue influence in these respects by, for instance,

¹⁴ It must be noted in this context that larger banks typically entail more complex risks and therefore are a bigger burden on bank supervision.

¹⁵ Some US\$13 billion (4.2 percent of GDP) of retail deposits in state banks are already covered by the existing state guarantee. If the currently proposed scheme is put in place, covered liabilities would increase by an additional US\$4 billion (1.3 percent of GDP). The CBR estimates that covered liabilities would increase from US\$4 billion currently to US\$5–6 billion in 2005, excluding Sberbank and Arco banks. Should the entire amount need to be paid out, it would increase Russia's debt to GDP ratio from 36 percent to 37 percent at the 2005 horizon.

allowing other banks to compete with Sberbank to provide these government services. Given the lack of confidence in other private and state banks, however, this may not be feasible in the short run. The CBR may then want to limit the problem by ensuring that Sberbank is run on commercial principles, which would mean that losses made by keeping unprofitable branches open should be explicitly subsidized by the government.

29. **If a strategy to level the playing field is to succeed, Sberbank would need to face a hard budget constraint.** This implies that the issue of Sberbank's ownership structure would need to be addressed since state-ownership generally leads to an inefficient management of resources. While privatization is widely recommended internationally as a way to deal with the perceived inefficiencies in state-dominated banking systems, in the Russian case, private ownership is not necessarily a panacea given the deficiencies in the governance of private banks as highlighted by recent experience. Moreover, any proposal to change the ownership of Sberbank would need to take into account whether this could undermine confidence in the banking system. Thus, any decision on whether and how to change the ownership of Sberbank over the long run would need to be arrived at carefully in the context of an in-depth strategic review of its operations. If ultimately a decision were made to privatize Sberbank, the privatization would have to be carefully prepared and possibly carried out over several years.

30. **How then to ensure that Sberbank is run on commercial principles while preserving the ownership structure in the near term?** One option could be to have the CBR, as owner, set a target for the return on equity for Sberbank at a sufficiently high level to encourage Sberbank management to raise lending rates to market levels. Another option would be for the CBR to transfer its share ownership to a trustee established to ensure that Sberbank operates on a commercial basis. Similar options have been adopted by other countries where immediate privatization of state-owned banks was not feasible. For Sberbank, this could imply that the CBR would delegate its decision-making power to independent "trustees" from the private sector—whether domestic or foreign—appointed on its behalf to the Board of Sberbank. To preserve the independence of the trustees and to ensure their accountability, the bank's charter may need to be amended to include additional by-laws, to which the Board would be expected to adhere. It would also be important to increase transparency in the operation and decision-making process of Sberbank by requiring greater and more frequent disclosure on its part. The CBR would have to determine a mechanism to ensure that its supervision of Sberbank is not contaminated by its ownership of the bank. Finally, if Sberbank were to operate on a purely commercial basis, the government would need to be prepared to directly subsidize the bank for any non-profitable operation it is forced to undertake on its behalf to meet social objectives.

TECHNICAL NOTES ON SECTION II (ISSUES IN BANKING SYSTEM SOUNDNESS)

Data set—source and key features

1. The exercise is based on fairly detailed bank balance sheets provided by the World Bank for end-2000. World Bank analysts have worked with Russian banking data continuously since 1996 in the context of the Financial Institutions Development Program (FIDP). Thus, while generally derived from official data, World Bank data have the advantage of having undergone a fair amount of cleaning up and harmonization. The dataset provides only limited information with which to assess concentration risks (on both the asset or liability side), off-balance sheet items, ownership, and management capabilities.¹⁶
2. The dataset comprises information compiled according to the Russian Accounting Standards for three sets of banks that account for some 60 percent of the assets of the Russian banking system at end-2000. These are:
 - The two largest state-owned banks, Sberbank and Vneshtorgbank.
 - The next 14 banks by asset size, comprising both state-owned banks and private banks. The balance sheet structure of these banks is similar to the purely private banks included in the third set.
 - Nineteen banks under the World Bank's Financial Institutions Development Project. The median FIDP bank ranked approximately fiftieth by asset size, but FIDP banks also include the sixth and fifteenth largest banks by asset size.

Assumptions underlying the stress test

3. **The stress tests for credit risk involve three steps:**
 - RAS balance sheets were converted into IAS balance sheets by applying conversion factors derived from World Bank data to establish a more realistic capital base, and asset classification and valuation.¹⁷ This adjustment yielded leverage ratios (bank capital as a ratio to total bank assets) that are 30–50 percent lower, thus indicating higher levels of risks than under RAS.
 - Under a large shock, it was assumed that assets are written down by 0 percent for claims on the CBR and claims on the government in the investment book, by

¹⁶ Comprehensive data on bank guarantees to borrowers were not available. For one large private bank, guarantees represent an additional 20 percent exposure on top of loans; in this case, no data were available that would have allowed to map guarantees into an equivalent credit exposure.

¹⁷ See Box 1 for an explanation of differences between RAS and IAS.

1/3 percent for claims on banks, non-banks, and government in the trading book, and by 1/2 percent for non-earnings assets (fixed and other assets). With the exception of government securities, these are orders of magnitude that approximate the 1998 event.¹⁸ A medium shock reflects smaller write-down factors.

- Government credit risk for securities in the trading accounts is assumed identical to private credit risk. Government credit risk in the investment account is assumed identical to CBR credit risk. Government securities in the combined accounts only represent 7 percent of private banks' assets, but 30 percent for Sberbank. However, Sberbank and other banks hold mainly Russian foreign bonds, and these were not defaulted in 1998. On restructured GKO's, while losses in dollar terms by foreign holders were substantial, the market value of restructured GKO's in ruble terms has increased from 70 percent of par at the time of the restructuring to above par currently.

Table 10. Write-Down Factors
(In percent)

Types of Claims	In the event of a "large" shock	In the event of a "medium-sized" shock
Claims on CBR	0	0
Claims on government – investment account	0	0
Claims on government – trading account	30	15
Claims on banks	30	15
Claims on non-banks	30	15
Equity	50	30
Other assets	50	30

- The final step is to derive the capital shortfall implied by the new asset values. The calculations assume that banks would need fresh equity sufficient to achieve a 10 percent leverage ratio, roughly comparable to current levels, but double of current level in the case of Sberbank.

¹⁸ Write-down factors were loosely calibrated on the basis of changes in balance sheet items of the private FIDP banks between end-1997 and end-1998.

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IV. TAX REFORM IN RUSSIA SINCE 1999¹

A. Overview

1. **The Russian authorities have, since 1999, been pursuing tax reform as a pillar of the transition to a market economy.**² These reforms have required changes in both administrative arrangements and tax policy so as to secure adequate revenue to achieve macroeconomic stability, foster the development of a market-oriented economy by minimizing distortions, and support fiscal decentralization. The specific changes aim to ensure that the tax system has as neutral an impact as possible on the allocation of resources, distributes the tax burden fairly, is relatively simple to administer, and relies on broad-based and elastic revenue sources.

2. **The tax reform shifts revenue from subnational governments to the federal budget and exploits high oil prices to partly offset the overall cost of reforms.** At constant 2001 oil prices (\$20.4 a barrel of Urals oil, f.o.b.), the reforms cost 2.1 percent of GDP (Table 1).³ These costs largely reflect the reductions in turnover taxes in 2001 and in profits tax in 2002.

3. **The federal government actually gains over ½ percent of GDP in 2001, with no net loss in 2002.** These federal gains reflect both the complete shift of domestic VAT to the federal level and changes in hydrocarbon taxation that also shift revenues from the subnational to the federal level, while largely insulating subnational budgets from further oil price changes. In contrast, subnational budgets lose over 2 percent of GDP in 2001, reflecting both the VAT centralization and the loss of turnover taxes, and a further ½ percent of GDP in 2002, owing to their diminished share of natural resources taxation.

¹ Prepared by Ali Mansoor (FAD), and Nikola Spatafora (EU2).

² The current system of taxation was only introduced in 1991. Officials were initially unfamiliar with key issues in tax policy, and particularly in tax administration. Moreover, they lacked the time needed to plan and set up a reasonably effective tax system.

³ Since the reforms alter the sensitivity of federal, local, and consolidated revenues to oil prices, the precise reform cost does depend on which 'constant oil price' is assumed. Roughly, for every \$1 a barrel reduction in the assumed Urals oil price, the reform cost increases by 0.13 percent of GDP at the federal level, decreases by 0.07 percent of GDP at the local level, and increases by 0.06 percent of GDP at the consolidated level. These calculations of reform costs should not be directly compared with the calculations presented in Chapter V, "Fiscal Sustainability", which assumes a different, non-constant oil price.

4. **These findings highlight the importance of improving tax administration and compliance, especially at the subnational level.**⁴ They also suggest that the authorities'

Table 1. Impact of Tax Reform at Constant 2001 Oil Price

	Total	Federal	Subnational	Total	Federal	Subnational
	(In percent of GDP)			(In billions of Rubles)		
Total impact of reforms enacted	-2.1	0.5	-2.6	-191	46	-237
Reforms in 2001	-1.7	0.5	-2.2	-150	47	-197
PIT	-0.2	-0.4	0.2	-21	-38	17
Domestic VAT	-0.6	0.8	-1.4	-52	75	-127
VAT centralization	0.0	1.4	-1.4	0	127	-127
Other changes	-0.6	-0.6	0.0	-52	-52	0
Import VAT	0.6	0.6	0.0	51	51	0
Turnover tax	-1.7	-0.8	-1.0	-156	-70	-86
Excises	0.1	0.1	0.0	10	10	0
Gasoline	0.2	0.2	0.0	16	18	-2
Other excises	-0.1	-0.1	0.0	-7	-8	1
Export taxes	0.2	0.2	0.0	17	17	0
Reforms in 2002	-0.5	0.0	-0.4	-41	-1	-40
Natural Resources Taxation	0.0	0.7	-0.6	4	61	-57
Profits Tax	-0.5	-0.7	0.2	-44	-62	17
<i>Memorandum item:</i>						
Reforms excluding natural resources taxation	-2.2	-0.2	-2.0	-194	-15	-179

Sources: Ministry of Finance; and Fund staff estimates.

review of fiscal federalism arrangements will need to focus on appropriate tax bases to devolve to subnational governments.

5. **Regarding Laffer effects, the evidence is still unclear, but tax performance in the second and third quarter of 2001 does appear better than expected.** The strong performance could reflect higher income rather than a Laffer effect. Evaluating the precise causes requires micro-level data that will only be available in April/June 2002. Meanwhile, in view of the interest in the issue, the authorities may want to encourage some data sampling to obtain a preliminary picture.

⁴ Although compliance varies between federal and subnational governments, a single organization (formerly the State Tax Service, and now the Ministry of Taxes and Fees) collects all taxes (other than trade-related ones), operating from local and regional offices throughout the country. Until recently, however, the local offices were generally more sensitive to local than to national interests. As a result, they exerted more effort in collecting taxes for local governments than for the national government, e.g., collecting first those taxes where the local take was highest; did not remit to the Federal Government all that it was owed; and provided more favorable tax treatment to locally based enterprises.

B. Reforms from 1999 to Date

Context

6. **Through the period until 1998, the Russian tax system performed poorly.** Taxes as a ratio of GDP fell almost continually from 39 percent in 1992 to 33.5 percent in 1998. Many taxpayers withheld payments in expectation of explicit amnesties or offset operations that would allow them to supply goods and services. Large taxpayers routinely negotiated their tax payments. Measures to address these shortcomings were ineffective. As a result, the public was left with an impression of an arbitrary tax system where the government was unable to enforce statutory tax obligations.

7. **The rudimentary tax administration and the low levels of taxpayer compliance were reflected in large tax arrears.** Although the stock of arrears was reduced by high inflation, this stock remained high compared to OECD countries. For example, as a ratio to tax collections over the prior 12-month period, these arrears reached 34 percent on August 1, 1997, compared with tax arrears to collection ratios of 4–6 percent for Canada, the United States, and Australia.⁵

8. **These negative developments were the backdrop to continued reform to make tax rules stable and predictable, while relieving the tax burden on law-abiding taxpayers and increasing pressure on non-filers and tax evaders.** President Putin, building on efforts initiated under President Yeltsin, made tax reform a cornerstone of the government's Comprehensive Program of Economic Reform. The "Strategies and Measures to Improve the Tax System" submitted to the Duma proposed phased reforms with the goal of eventually establishing a fair and consistent tax system.

Objectives

9. **The specific objectives of the authorities' program are to make the tax system:**

- *fairer*, by: ensuring that all taxpayers are treated the same (without any discrimination); abolishing inefficient and harmful taxes; excluding procedural requirements that distort the substance of taxes, e.g., negotiating over rates and accepting non-cash payments or offsets; easing tax pressure on law-abiding taxpayers by ensuring a more equitable distribution of the tax burden (tax incidence), while gradually reducing rates across the spectrum of major federal taxes;⁶ and lowering payroll taxes;

⁵ The accumulation of tax arrears and offsets cannot be blamed entirely on inadequate administration. It also reflects a circle of non-payment between the government and its suppliers, with the tax authority caught in the middle.

⁶ The term 'federal taxes' is used as shorthand for 'taxes accruing to the federal budget'.

- *simpler*, by: establishing an exhaustive list of taxes, duties and fees to be levied while reducing their total number; minimizing targeted taxes and duties; and adopting uniform computation methods and payment procedures across all the various taxes;
- *more stable and predictable*, thus increasing the level of certainty for taxpayers as to their future tax liabilities on a long-term basis; and
- *more efficient*, by significantly improving tax collection.

10. **This tax reform agenda, delivering lower rates, fewer exemptions, less discretion, fewer taxes, and better compliance is being gradually implemented.** The initial focus has been on improving tax administration and lowering the overall tax burden on the economy.

11. **Part I of the new Tax Code was enacted into law in July 1998.** It includes the procedural law and significant substantive provisions, including revenue relations among the different levels of government, and “definitions” (for example, determining in which instances the reported price at which a transaction is carried out would not be used for tax purposes). The Code builds in safeguards aimed at protecting taxpayers’ interest by establishing an exhaustive list of rights and responsibilities of both taxpayers and revenue authorities, clearly defines the Revenue Administration’s supervisory role, and requires that penalties be enforced only by courts coupled with a drastic reduction in penalties.

12. **Reform of tax legislation will be completed as the Duma adopts in steps all of Part II of the Tax Code covering the “substantive taxes.”** Part II sets out procedures for computation and payment of federal taxes, guiding principles for regional and local taxation systems, and describes special tax treatments.

13. In summary, tax reform rests on phased adoption of an integrated and coherent Tax Code covering the entire tax system at federal and subnational levels and on a modernization of the administrative processes for tax collection.

Part I of the Tax Code and tax administration

14. **The adoption of Part I of the Tax Code in 1998 represented a major step forward in clarifying the obligations and rights of taxpayers and tax officials.** However, major improvements were required in order to facilitate tax administration. Amendments to Part I of the Tax Code were therefore developed, including: limiting deferral of payment to exceptional circumstances; attempting to better balance the rights of the tax authorities with those of taxpayers; improving means of collection; eliminating caps on interest; and providing adequate authority to issue regulations. These amendments were presented to the

Duma in 2001.⁷ Once they are adopted, Part I of the Tax Code will help support the required improvements in tax administration.

15. **Reforming tax administration has proved to be a slow and lengthy process because of resistance from those benefiting from the status quo.** A major deficiency has been an organizational structure that is open to abuse because it matches tax officials to firms rather than assigning them on functional lines. Moreover, the tax administration has provided low priority to taxpayer education and has resisted reliance on self-assessment of tax obligations by taxpayers. In view of the difficulties with overall reform, in 1999 the authorities launched a pilot Tax Administration Modernization project in Nizhny Novgorod, Volgograd, and Moscow (Box 1).

16. **To emphasize the importance of tax administration, the authorities created a Ministry of Taxes and Fees in 1999.**⁸ They also reorganized the debt collection/arrears management process. This resulted in some Rub 257 billion of extra tax payments during 1999, or about 25 percent of all taxes collected by the Ministry.

17. **The level of voluntary compliance by taxpayers (i.e., payment by the statutory due date) remained under 70 percent during 1999.**⁹ Thus, efforts in 2000 focused on encouraging voluntary compliance, with timely follow-up action where nonpayment is detected. This involves telephone action within 3–4 days of a nonpayment by large taxpayers and computer-generated payment demands within 7–14 days of a statutory due date for other taxpayers. Tax officials initiated further follow-up action within a relatively short time based on the size of debt involved.

18. **Notwithstanding these efforts, tax arrears remain high (over 5 percent of GDP as of mid-2001), partly reflecting the absence of administrative action to write off uncollectible debts (i.e., because the taxpayer no longer exists, cannot be located, or has no assets).** This issue is the subject of current discussion, including consideration of a possible tax amnesty.

⁷ These amendments to Part I of the Code have been introduced repeatedly by the government, but were not passed earlier.

⁸ While this ministry is the only organization responsible for federal budget and subnational tax collection, there is also a separate Tax Police, which complicates tax administration.

⁹ This compares with compliance rates of about 80 percent in the U.S., 85 percent in the EU, and 95 percent in the Nordic countries. However, in Russia compliance rates relate only to payments of assessed taxes, and *not* to whether or to what extent such assessments cover the real taxes that are legally owed under the statutes. Thus, the 70 percent is not directly comparable to the 80–85 percent figure for developed countries, which covers a much higher proportion of truly owed tax.

Part II of the Tax Code

19. **Four chapters of Part II were passed by the Duma in July 2000 and have been in force since January 1, 2001: the Personal Income Tax (PIT), the VAT, Excises, and Social Taxes.** Overall, this legislation represented a major improvement. The legislation also reduced the turnover taxes (e.g., those earmarked for the Road Fund), but did not eliminate

Box 1. Tax Administration Modernization Project in Nizhny Novgorod, Volgograd and Moscow

This project aimed at improving efficiency and effectiveness of tax administration in the pilot regions. It also focused on related areas such as improved service to taxpayers and reductions in taxpayers' compliance costs. By June 2000, the project had set up data processing centers, trained staff in use of new software and focused efforts on large taxpayer operations. More importantly, it introduced self-assessment with a system of audits and a switch to a functional organization to replace relations between tax collectors and taxpayers. The pilots achieved the immediate objectives, but they did not produce the benefits anticipated. Inter alia, this was due to: lack of clarity in the overall goals of the modernization project; a strong tendency to simply automate existing, and at times poorly-designed, manual processes, rather than undertake a fundamental and holistic redesign effort; failure to challenge existing business practices; artificial limitations imposed by provisions of the tax and other laws governing the work of the tax authority; and selection of inadequately skilled staff for the redesign effort. Many of the difficulties reflect the tax administration's lack of experience.

Meanwhile, starting in the second half of 2000, the Ministry of Taxes began planning for a "Concept of Operations" (CONOPS) that would incorporate lessons from the pilot program. The CONOPS envisages:

- improving the link between electronic service delivery and data capture (e.g., co-coordinating electronic data services to taxpayers, data collection and information on taxpayer transactions);
- changing methods of paying taxes to reduce the burden on taxpayers while achieving quicker crediting of payments to Treasury accounts (e.g., use of pre-identified payment vouchers/orders, systems of electronic funds transfer and direct debit, internet banking); and
- creating Data Processing Centers (DPCs) in coordination with a review of the size of the network of local inspectorates and their internal organizational design—the bulk of staff is located in over 2600 local inspectorates, many of which may not be economically viable.

them as originally planned. Legislation on the profits tax and the taxation of natural resources, as well as sections dealing with the (very) numerous smaller taxes were adopted in 2001 and will take effect with the 2002 budget. The various measures adopted move Russia toward a fairer, simpler and more efficient tax system.

20. **These reforms also embody a revised concept of fiscal federalism regulating tax-sharing mechanisms in the Russian Federation's three-tier government system.** Thus, the adoption of the chapters relating to the above advances the process of codifying tax laws under a single source of law—the Tax Code of the Russian Federation. The general approach adopted has been to split each tax between the three levels of government, thus unifying in

one tax the revenue needs of federal, regional, and local budgets. Accordingly, the same tax base will apply to the three levels. The new system makes it possible to take into account specific features inherent to each region by allowing each subnational government some leeway in setting rates for its share of the base. This is particularly important in such a vast country as Russia where economic conditions vary significantly from region to region.

21. **Some key changes in the Tax Code are shown in Table 2.** Effective with the 2001 budget,

- the taxation of individuals was modified, with the introduction of a flat 13 percent rate and a series of social tax deductions to replace the three-band progressive tax rates of 12, 20, and 30 percent. In counterpart, the number of deductions was reduced. Before reform, the average effective tax rate was 14 percent, and in practice the tax was more flat than progressive, owing to the extensive use of deductions;
- a unified social tax was introduced, lowering the highest tax rate on payroll by several percentage points, while applying a regressive rate for contributions to the State extrabudgetary funds. The pension, social, and medical fund contributions were consolidated at a maximum rate of 35.5 percent and the 3 percent unemployment fund contribution was eliminated. The new law enacted a regressive contribution scale (with, for example, a 5 percent band applying to wages in excess of about \$21,000 for a given employee);
- provisions were adopted to enhance excise-tax collection and to counteract avoidance/evasion schemes. These provisions included the introduction of bonded warehouses for alcohol products; setting up tax posts to check books and records, monitor disposal of goods, control access to goods, manage the warehouse, and keep track of payments made; shifting the tax burden from alcohol distilleries to wholesalers by making them liable for as much as 50 percent of the statutory rate;¹⁰ and introducing special regional stamps;
- the tax base was broadened by subjecting diesel fuel and lubricants to excises and increasing rates of excise tax on other oil products (by three times) and alcohol-containing products by Rub 2–5 per deciliter;
- a major VAT overhaul was implemented, including, among other things, changes to the place-of-supply rules; application of the tax to individual entrepreneurs; elimination of the three-payments-per-month system; crediting of VAT on construction inputs rather than capitalization; elimination of some exemptions; and the introduction of small business exemption thresholds as a measure to reduce compliance burden;

¹⁰ Shifting the tax liability from producers (distilleries) to wholesalers was a negative development that complicates tax administration.

- the “road-user’s” turnover tax rate was reduced from 2.5 percent to 1 percent of gross sales, and a series of taxes were eliminated including those on: the sale of fuel and lubricants; maintenance of housing stock and social objects; individual types of transportation vehicles; and acquisition of motorcars; and
 - effective July 1, 2001, the destination principle was adopted for VAT on non-energy trade with CIS countries,¹¹ with analogous changes in excise taxes.
22. **Additional changes which became effective in 2002 include:**
- reducing the overall profit-tax rate from 35 percent to 24 percent, while canceling (mainly local level) tax incentives and tax holidays;
 - merging the tax on recovery of mineral resources, the mineral excises, and the subsurface mineral tax into one ad valorem charge (“natural resource tax”), and simplifying the methods of adjustment for geological conditions; and
 - increasing the excise rate for alcohol by 12 percent and raising the specific rates for oil products (see Table 2).

Impact of reforms

23. **We estimate the adoption to date of Part II of the Code to result in a loss of revenue (at constant oil prices) equivalent to 2.1 percent of GDP, assuming no change in compliance (Table 1).**¹² Losses from the turnover tax (1.7 percent of GDP), domestic VAT¹³ (0.6 percent of GDP), profit tax (0.5 percent of GDP), and personal income tax (0.2 percent of GDP) are partially offset by gains from import VAT (0.6 percent of GDP), and oil and gas export taxes¹⁴ (0.2 percent of GDP). Changes in natural resource taxation were roughly revenue-neutral.

24. **The reforms could cost less than estimated here.** This is because the tax reform is designed to improve compliance, while the above estimates assume unchanged compliance.

¹¹ VAT on all trade with non-CIS countries was already on the destination principle.

¹² Some tax reform measures have been (or are close to being) adopted by the Duma but would only take effect in 2002 (e.g., the profits tax and natural resource taxation). We include the impact of such measures in our overall estimation but distinguish between measures already in place and those adopted but yet to be implemented. We do not estimate the impact of measures that are still under discussion (e.g., removal of export taxes and possible unification of the VAT rate with fewer exemptions). The impact is estimated using the 2001 tax base.

¹³ More accurately, VAT on exports, which are now zero-rated following the partial move to destination basis for VAT. These losses are almost exactly offset by the increased VAT on previously exempt imports.

¹⁴ In particular, the gas tariff for non-CIS exports is doubled to 10 percent.

Table 2. Tax Code Changes, Including Measures Effective Only in 2002

Tax	Previous Regime before 2001	New Tax Code
	Base and rate	Base and rate
Personal Income Tax	Tax on income of physical persons. Up to Rub 50,000: 12% Rub 50,000-150,000: 20% Over Rub 150,000: 30%	Split between federal & subnational Federal: 16% Subnational: 84%, of which local not less than 1/2 of regional share
Profits Tax	On profits after depreciation and exemptions. Federal: 11% Regional: 19-24% Local: 2%	Split between federal & subnational Federal: 1% Subnational: 99%, of which local not less than 1/2 of regional share.
Tax on extraction of economic minerals		Uniform rate of 13%
		Split according to rates (see base)
		Almost all incentives, incl. investment allowance, have been eliminated in exchange for a rate reduction from 35% to 24%. Federal: 7 1/2% Regional: 10 1/2-14 1/2% Local: 2%
		From 2002 all to subnational Split according to rates (see base)
		Petroleum: in 2002-2004, Rub 425 / ton, adjusted for changes in oil price above Rub 4,300 / ton (about \$17 / barrel); as of January 1, 2005, 16.5% of value; Extraction of combustible natural gas & gas condensate: 16.5% of value; 2.5-8% for other minerals
		Federal: 80% Region: 20%.
		For autonomous regions: Federal: 70% Region: 30%
Excise Taxes on Mineral Raw Materials (oil, gas condensate, natural gas)	Oil : Rub 66 per ton Gasoline per ton: High octane: Rub 1,850 Lubricants: Rub 1,500 Diesel: Rub 550 Other: Rub 1,350 Natural Gas: Levied on value of production excluding "dry refining gas": Domestic & Belarus 15 percent; Exports including CIS 30 percent	Federal 100%
Recovery of mineral resources tax ('mineral rehabilitation tax')	10% of the value of extracted oil, reduced by a credit for exploration expenditures incurred by the producer. This is meant to recoup the State's costs of exploration of fields prior to privatization.	Oil excise replaced by tax on extraction of economic minerals Gasoline per ton: High octane: Rub 2,072 Lubricants: Rub 1,680 Diesel: Rub 616 Other: Rub 1,512 Rates unchanged, but removed excise exemption for dry refining gas Replaced by Tax on extraction of economic minerals
Subsurface mineral tax	Tax on domestic sales "value" of extracted mineral, excl. VAT, excises, and transport costs. The base has not been defined clearly and there are many exemptions and loopholes, depending on the quality of mineral reserves; natural, geographic, mining, technological & economic parameters of field developments; and risks involved. For hydrocarbons, the maximum permissible regular royalty, which is a major form of the subsurface tax, is set at 6-16% of the value of extracted mineral.	Hydrocarbon: Federal 40% Regional 30% Local 30% Sea: Federal 40% Regional 60% Continental Shelf: Federal 100% Hydrocarbon: Federal 40% Regional 30% District/city 30% Other minerals: Federal 25% Regional 25% District/city 50%
		Replaced by Tax on extraction of economic minerals

Sources: Ministry of Finance, Fund staff, and FAD TA reports.

Some optimism that compliance could improve is in fact justified, since there is still scope for important tax administration measures (see Section III). Moreover, our analysis of the personal income tax is consistent with the hypothesis of some improvement in compliance (see Section IV). Further, some improvement in performance could arise from collection of tax arrears, which in July 2001 were estimated at 11 percent of GDP (including penalties of 5 percent of GDP).

Changing split between Federal and Subnational budgets

25. As discussed above, the tax reform is shifting resources to the federal from subnational budgets. The reform broadly completes implementation of the revenue side of the *Concept of Reform of Intergovernmental Relations for 1999–2001*, approved in 1998. With the package of measures already adopted, and holding world oil prices constant at their 2001 level, federal revenue increased from just over one-third of total consolidated government revenue in 1998 to almost one-half in 2001 (Table 3).¹⁵

Table 3. Changing Split of Revenue between Federal and Subnational Authorities at Constant 2001 Oil Price, 1998–2002

	1998	1999	2000	2001	2002
(In billions of rubles)					
Federal revenue	401	651	1,108	1,535	1,763
Subnational revenue	487	681	947	1,017	1,199
Extra budgetary revenue	222	373	575	671	813
Consolidated revenue	1,110	1,704	2,631	3,223	3,775
(In percent of GDP)					
Federal revenue	14.6	13.7	15.7	17.1	17.2
Subnational revenue	17.8	14.3	13.4	11.4	11.7
Extra-budgetary revenue	8.1	7.8	8.1	7.5	7.9
Consolidated revenue	40.5	35.8	37.3	36.0	36.8
(As a share of consolidated revenue)					
Federal revenue	36.1	38.2	42.1	47.6	46.7
Subnational revenue	43.9	39.9	36.0	31.6	31.7
Extra-budgetary revenue	20.0	21.9	21.9	20.8	21.5
Consolidated revenue	100	100	100	100	100
<i>Memorandum item:</i>					
Nominal GDP in Rub (bn)	2,741	4,757	7,063	8,955	10,272

Sources: Ministry of Finance; and Fund staff estimates.

¹⁵ This analysis explicitly estimates and controls for the significant impact on the federal/local split of changes in oil prices. Future work might usefully examine the impact of other, less important but nevertheless significant factors, such as changes in the real exchange rate.

26. **Subnational revenue, which fell below 13½ percent of GDP in 2000, is set to decline sharply in 2001, to 11½ percent of GDP, or less than one-third of total consolidated revenue.** Extrabudgetary revenue is projected to decline slightly, from about 8 percent of GDP through 2000 to 7½ percent of GDP in 2001. This reflects the unification of the various payroll taxes into the Unified Social Tax (UST), which was associated with an overall rate reduction of about 4 percentage points. For 2002, the above projections assume some increase in compliance, which will help stabilize subnational revenues and reverse the decline in extrabudgetary revenues (although the extrabudgetary balance is still likely to worsen).

27. **The sharp reduction in subnational revenue after 2000 may create fiscal imbalances.** Subnational governments may not cut expenditures in line with lower revenue, and they lack sufficient tax handles to generate the additional resources needed to maintain spending. Moreover, spending pressures are increasing with the large wage increases in December 2001 for staff paid under the Unified Tariff Schedule (UTS) and with the expected burden from reform of housing services (see Chapter VI, "Structural Reforms"). The transfer of responsibility for welfare payments may also add to fiscal pressures, in the absence of adequate federal transfers and/or cuts in benefits.

C. The Remaining Agenda

Tax administration

28. **As explained above, despite the measures to date, compliance rates remain low and the tax administration still needs fundamental restructuring.** The Ministry of Taxes and Fees is, therefore, incorporating the lessons from the pilot (Box 1) into a strategic plan for modernization of the tax administration being prepared with Fund and U.S. Treasury assistance. To facilitate implementation, it is discussing with the World Bank a second Tax Administration Modernization Project (TAMP II). This program includes, among other things, measures to:

- increase the level of tax compliance;
- promote efficiency by streamlining the network of offices, generalizing the functional structure adopted in the pilots, and improving links between departments based on computerization;
- create a small network of regional data processing centers to undertake the bulk of information processing tasks together with a new information systems infrastructure and associated applications systems;
- encourage professional ethics by establishing a code of ethics, increasing professionalization of staff, and establishing a strong internal audit function to monitor integrity;

- refine the system of self-assessment;
- improve the fairness of the tax system by improving dialogue with taxpayers and adopting transparent dispute resolution procedures;
- reduce the taxpayer compliance burden by improving service delivery and simplifying procedures; and
- enhance staff development programs.

Tax policy

29. **The key tax policy reforms are now in place or about to be enacted** (Section II). The remaining agenda consists of fine-tuning various measures based on implementation results and anomalies that slipped into the legislation, particularly the corporate profits tax. Other areas where the authorities plan to move include:

- **VAT. The authorities have indicated their intention to adopt the accrual method of accounting, but have moved slowly.** The authorities aim to facilitate compliance by significantly simplifying the current rules for the timing of liabilities and credits. The Ministry of Taxes and Fees will need to develop implementation and education programs and decide on transition rules. **In the medium-term, the authorities are considering adopting a single VAT rate of about 16–17 percent.** As for VAT on intra-CIS trade in energy products, it is still applied on the origin principle, but in the medium term consideration may be given to adopting the destination principle.
- **Export taxes. These taxes were introduced as temporary emergency measures in the context of the recent Fund arrangements.** The authorities plan to phase out non-energy export taxes over 2002–03. They are also committed, in principle, to phasing out energy-related export taxes once appropriate arrangements for taxing minerals are in place. However, there is no clear timeframe for this as of now.
- **Personal income tax, profit tax and unified social tax. The different rates applying to income of various types create incentives to shift income from one category to another.** In particular, the large differential that will arise once the profit tax rate is cut may induce employers to shift some compensation to profits. This could have a negative impact on unified social tax receipts. The authorities are currently exploring proposals to move to a flat rate for all income and social taxes. Unification of the profit tax rate and personal income tax rate is also being contemplated, but no firm decisions have been made.
- **Production sharing arrangements. In view of its complexity, this topic was separated from the reform of natural resources.** Consultations are under way with current and potential investors in the minerals sector (including gas and oil). The

objective is a transparent regime that protects the interests of the state while providing appropriate incentives to investors.

- **Property taxes, inheritance taxes, state duties, sales taxes, and small business taxes. Reform of these taxes may be considered as part of the new fiscal federalism arrangements that are being developed.** The authorities are considering phasing out the sales tax, given its distortionary nature. The other taxes offer bases that could be devolved to subnational governments to better match tax and expenditure assignments.

D. Performance of Personal Income Taxes After the Reform: Is There a Russian Laffer Curve?

Introduction and overview

30. **As mentioned above, in 2001 Russia implemented an income tax reform that introduced a single 13 percent rate to replace a progressive schedule with three rates of 12, 20, and 30 percent.**¹⁶ In the face of this reduction in rates, PIT revenues in Russia have performed better than expected. During January–September 2001, collections reached 2.7 percent of GDP, compared with 2.3 percent of GDP in the corresponding period of 2000. However, tax performance has exceeded expectations across the board, and even more so for taxes other than the PIT.

31. **The strong performance of income tax collections has led to a widespread perception in Russia that lower rates have resulted in increased revenue (the Laffer curve effect).**¹⁷ This Laffer effect might arise because of a high elasticity of aggregate labor supply, or (likely more relevant to Russia) because tax cuts provide an incentive for labor to move from the underground to the official economy, discouraging tax avoidance and reducing tax evasion. In this section, we first review some of the international evidence (see Box 2) and then analyze the Russian experience to date.¹⁸

32. **We conclude that the positive revenue performance in the first quarter of 2001 can be explained without appealing to Laffer effects, while the second and third quarters present somewhat of a puzzle.** However, we have insufficient data to distinguish

¹⁶ The effective rate was little changed, from 14 percent to 13 percent. Perhaps more significantly, the progressive rate structure was replaced by a flat tax, which may facilitate tax administration and improve compliance.

¹⁷ For example, see the interview of Tax Minister Gennady Bukaev with *Izvestia* on March 12, 2001.

¹⁸ Since the Laffer curve is concerned with increases in labor supply, we should ideally consider marginal rather than average rates. We would like to focus on high income earners, benefiting from a marginal rate reduction from 30 percent to 13 percent. Unfortunately, we do not have the micro-level data needed to verify the importance of the high income group in generating personal income tax revenue.

Box 2. Review of International Evidence of the Laffer Curve

Ebrill (1987) fails to identify a Laffer effect in Sweden, Korea, Jamaica, or India.

He reviews Stuart's work on Sweden and Kwon's work on Korea and fails to find evidence of a Laffer effect in India and Jamaica despite positive performance of taxes following rate reductions.

Evidence from the United States and Canada also fails to support the argument that cutting top marginal rates results in increased revenue. The Reagan tax cuts failed to generate revenue and a recovery in revenue is associated with the Bush/Clinton tax increases of the early nineties. Moreover, Goolsbee (1999) points out that extensive literature finds very little impact of changes in tax rates on labor supply in the U.S., thus refuting the central Laffer curve tenet.

Goolsbee (1999) also summarizes much of the criticism of the New Tax Responsiveness work and points out that correcting for the methodological flaws results in significantly lower elasticity estimates. More importantly, he finds that the high elasticity reported for the eighties tax cuts is atypical. Making the simplifying assumption that there was only one rate in the tax code, his estimates suggest that the Laffer peak for high income taxpayers ranges between 42 percent (1985–89 data) and 100 percent (1934–38 data).¹ Excluding the eighties, the lowest peak would have been 63 percent (1922–26 data). However, the "optimal" tax rate is likely to be well below the Laffer peak.

Richupan (1987) finds evidence that a progressive structure yields less revenue than a proportional tax structure in the presence of significant tax evasion. Sanyal *et al.* (2000) point out that intensified tax efforts may have the same impact as higher tax rates in encouraging tax evasion.

Lindsey (1987) and Feldstein (1995), among others, emphasize the major efficiency costs of high marginal rates and hypothesize that high rates fail to raise revenue at the top of the income distribution. Even if labor supply elasticity were zero, the Laffer curve effects would hold if high taxes result in a shift of income out of taxable form. This approach, labeled by Goolsbee (1999) as the New Tax Responsiveness (NTR) literature, focuses on estimating the elasticity of taxable income with respect to the tax rate. This literature suggests that high income individuals may face a Laffer curve (high income Laffer curve). Goolsbee finds no empirical support, however.

Notwithstanding lack of empirical support for a Laffer curve, Tyler Cowen (1980) points out that cutting taxes has a positive effect on private-sector productivity. This in turn may generate enough economic activity to produce, on the same base, enough additional revenue to pay for the cuts. Dalamagas (1998) confirms this effect for G-7 countries where governments crowd out the private sector (U.S., U.K., and Italy) while the opposite is true for Japan, Germany, and Canada where public sector activity complements private capital in the production of private goods.

Hall (1999) points out that the NTR methodology does not allow a direct answer to the question of whether an increase in tax rates raises or lowers revenue. Moreover, he suggests that the variability of the elasticity estimates across episodes and the high elasticity observed in the eighties imply that institutional factors may be critical in the observed response.

Jackson (2000) cites evidence from the United States and Canada that tax levels are neutral in efficiency terms. He argues there is no trade-off between equity and efficiency. Taxes to finance productive expenditure may result in higher growth than tax cuts with spending cuts. Mackenzie (1987) finds "the impact of marginal income tax rate reductions depends on the value of many parameters and that the elasticity of savings, somewhat surprisingly, may be relatively unimportant."

In summary, the evidence seems to suggest that there is no direct Laffer effect of an automatic base expansion to compensate for lower rates.

¹ These are average rates that are well above those facing high income people.

between Laffer effects and other explanations. For instance, the positive revenue performance could plausibly reflect an underestimation of nominal GDP and the wage bill (which in turn may only partly reflect Laffer effects), and/or errors in estimating the quarterly profile for effective tax rates and estimated taxes. The paper, therefore, suggests areas for further work that would help pinpoint the impact on tax revenues of a reduction in tax rates.¹⁹

Review of evidence from Russia to date

Context

33. **In the case of Russia, given poor compliance and significant unrecorded activity, the reduction of rates with stronger enforcement may result in an increase in the tax base.** Indeed, this is the objective of the authorities. The international experience (see above) suggests that the Russian package of lower rates and stronger enforcement could have indeterminate results in terms of compliance. Nevertheless, if there were a positive effect from reducing rates in Russia, it would probably arise through a reduction in tax evasion. At the macro level, the rapid increase in reported wages, which far exceeds the growth of recorded expenditures (a proxy for growth of actual wages and income), is consistent with such a hypothesis.

34. **Until the micro-data can be collected, an analysis of available macro-data can help test for the presence of Laffer effects; however, the test will not be conclusive.** Specifically, we use parameters from previous years, information from the Ministry of Finance, and macro-data for January–September 2001 (in particular, the estimated wage bill, estimated exemptions, and the estimated average effective tax rate) to construct PIT revenue projections, based on the assumption of no Laffer effects. If these projections fall short of actual collections, then this suggests that there may be a Laffer effect. However, the discrepancy may also reflect errors in estimating the wage bill and/or exemptions.²⁰

Personal income tax reform: impact by quarter

35. **We estimate personal income tax reform to result in a modest revenue loss of about Rub 21 billion (0.2 percent of GDP) in 2001.** This revenue loss occurs in the second half of the year, and particularly in the last quarter. In contrast, for the first quarter we project

¹⁹ As noted earlier, the overperformance of the PIT is relatively unimportant from a macroeconomic perspective compared to that of other taxes. It would, therefore, be desirable to extend any micro-level analysis based on tax returns to the major taxes that have shown strong performance, and in particular the VAT, profits tax, and excises. It will also be crucial to examine the performance of the profit tax after the rate cuts that came into effect in 2002.

²⁰ In addition, strong PIT collections could also reflect the positive impact on compliance coming from the reduction in social taxes following their consolidation into the UST. While this could also be seen as a Laffer effect, it implies that any analysis of PIT revenues should examine their performance not in isolation, but jointly with that of the UST. Given lags in information collection, we do not attempt such an exercise.

a small gain of Rub 3 billion, owing to an effective increase in the tax rate, offset by an equivalent loss in the second quarter.

36. **This pattern of increased revenue in the first quarter, with losses concentrated in the second half, arises because of the tax assessment rules.** Under the old tax code, taxpayers paid at the lowest marginal tax rate (12 percent) until their cumulative annual income exceeded the upper bound for the lowest income-tax band. Any further income was then taxed at the next higher marginal rate, until the cumulative annual income exceeded the upper bound for that band too, and so on. This system implied that effective rates increased through the year, from about 12 percent in the first quarter of 2000, to an estimated 13½ percent in the second quarter, and about 15 percent in the second half of the year; the average for the year as a whole was 14 percent. Thus, the move to a uniform tax rate of 13 percent implies an increase in effective tax rates in the first quarter of the year and a reduction in the second half.

Projected versus actual revenue

37. **We should avoid reading too much into the small deviations observed between projected and actual revenue** (Table 4). There are three reasons for this. First, a small reduction in the effective rate, from 14 percent to 13 percent, would not be expected a priori to generate large gains and losses. Second, in the circumstances of Russia, our estimates are affected by large data uncertainties. In particular, the small deviation between actuals and projections is very sensitive to two assumptions. We assume that the split of the annual wage bill across quarters is correctly reported by Goskomstat, even though it estimates a total wage bill for the year as a whole that is significantly different from that reported to the Ministry of Finance. Further, we assume that the ratio of deductions to the total wage bill remains in each quarter at the level observed by the Ministry of Finance in the 2000 outcomes. Finally, GDP estimates are subject to uncertainty and have in the past been subject to significant revisions.

Table 4. Actual and Projected Personal Income Tax Collections in 2001

	Year	Q1	Q2	Q3	Q4
		(Percent of GDP)			
Projected tax collections	2.6	2.6	2.5	2.5	2.5
Actual tax collections	..	2.6	2.8	2.7	..
Actual less projected	..	0.0	0.2	0.2	..

Sources: Ministry of Finance; and Fund staff estimates.

38. **Subject to these caveats, tax revenue in the first quarter was virtually equal to the projected level of Rub 49 billion (2.6 percent of GDP).** In contrast, in both the second and the third quarters, income tax receipts exceeded projections by about Rub 5 billion (0.2 percent of GDP). Put differently, during the first three quarters, actual collections exceeded projections by an amount equal to the projected revenue loss from reforms. Prima

facie, this does not rule out the possibility that the reforms were, if not revenue-enhancing, at least revenue-neutral.

39. **Without detailed information on the source of this increase in collections, we cannot verify if it reflects a widening of the base, higher compliance, higher nominal wage growth, or other possibly one-off factors.** We can, however, investigate to what extent plausible changes in the above factors can explain the difference between projected and actual revenue in Q2 and Q3. In turn, this can help set plausible bounds to the size of any Laffer effects.

40. **We are interested in which factors could lead us to increase our estimate of the tax base, which is essentially the wage bill.** Higher nominal GDP per se would not directly change our projections. However, it would be an indication that we may have underestimated the wage bill. Table 5 summarizes what nominal GDP levels, and wage shares in GDP, would be required in 2001 Q2 and Q3 to explain the observed tax collections, assuming unchanged compliance. At one extreme, if the estimated nominal GDP were roughly correct, then the true wage share in GDP would have to be up to 2 percentage points higher than estimated. Such wage underestimation would hardly be unprecedented, nor implausible.^{21,22} Alternatively, if the wage share in GDP were correctly estimated, then the true nominal GDP would have to be about 10 percent higher than estimated. Such a difference is significantly larger than the typical ex post revision in nominal GDP, but not unrealistic. Overall, plausible combinations of higher nominal GDP and higher wage ratios could comfortably account for the revenue overperformance. If neither nominal GDP nor the wage share are underestimated, then unexplained revenues amount to 0.2 percent of GDP, which could be interpreted as an upper bound to any potential Laffer effect on personal income taxes.

41. **To explore this effect further, and to determine whether it could simply reflect sampling variability, we undertake a simple econometric analysis, running a regression of personal income tax collections on (estimated) assessed taxes.** We use quarterly data for the period 2000 Q1–2001 Q3, and normalize both the independent and the explanatory

²¹ To obtain a sense of the underlying volatility, note that the percentage wage share in GDP for the first quarter of each year during 1997–2001 is estimated, respectively, at 30.6, 35.3, 27.4, 24.8, and 28.8. Admittedly, such estimates are themselves likely to be affected by compliance effects, and may therefore overestimate volatility in the ‘true’ wage share. Parenthetically, these wage ratios are as reported by Goskomstat, and cannot be directly compared to the values shown in Table 5, which have been scaled down to match the much lower annual totals reported by the Ministry of Finance.

²² The labor market is clearly tightening, in response to both cyclical and demographic factors, although it is hard to quantify the precise impact of these changes.

Table 5. Potential Laffer Effect for Different Nominal GDP in 2001 Q2 and Q3

Postulated underestimate of nominal GDP in 2001 Q2 and Q3 (percent):	0	1	2	5	10
Hypothetical wage bill required for projected personal income tax collections to equal actual (percent of GDP)	23.7	23.5	23.3	22.6	21.6
Deviation from estimated wage bill (percent of GDP)	2.1	1.9	1.7	1.0	0.0
Upper bound to any Laffer effect on tax revenues (percent of GDP)	0.2	0.2	0.2	0.1	0.0

Sources: Ministry of Finance; and Fund staff estimates.

variables by nominal GDP so as to induce stationarity.²³ We run the regression in logarithmic form and allow for a constant, but the results are not sensitive to the particular specification.

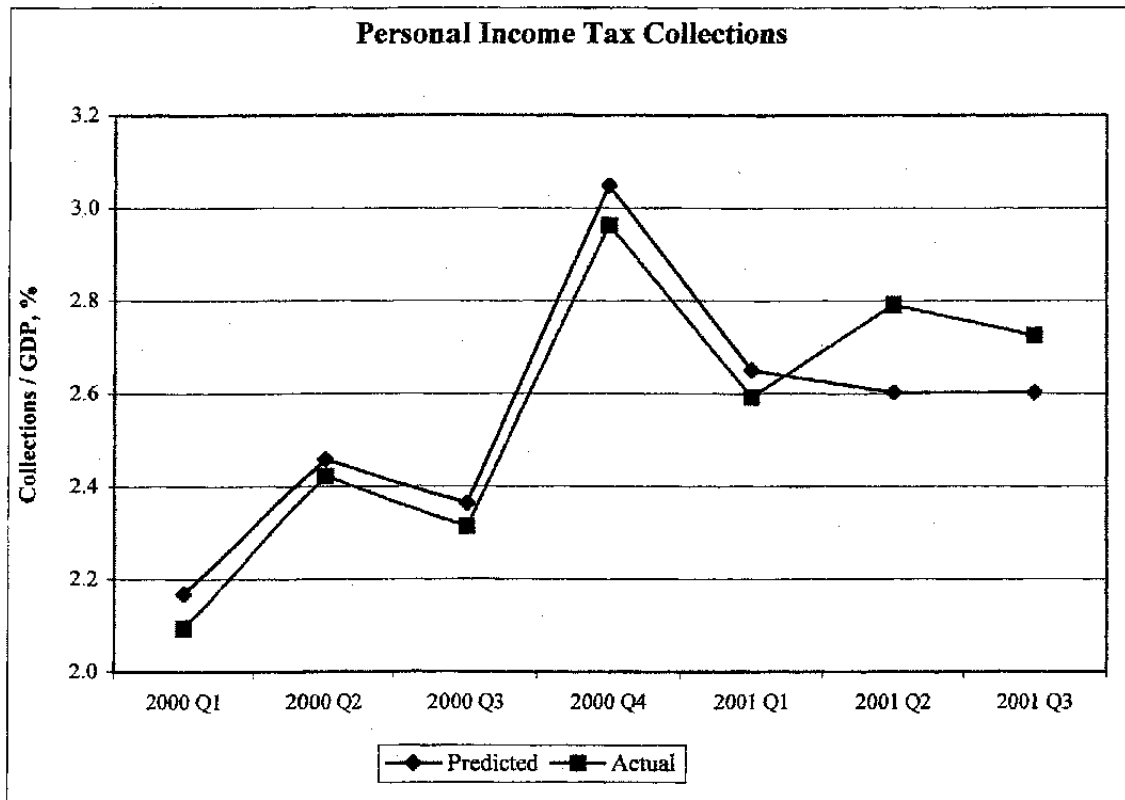
42. **The regression model performs very well, with an R^2 of 0.88 for the period as a whole** (Figure 1). The elasticity of tax collections with respect to assessed taxes is insignificantly different from unity, which is in line with our prior expectations. However, the fit clearly worsens in the last two quarters, where the difference between actual and fitted collections becomes economically important (the average discrepancy is about 0.15 percent of GDP, or about 6 percent of total income tax collections), with some indications of statistical significance (the average residual equals 1.5 times the standard error of the equation).²⁴ The residual would be somewhat larger if we adopted the alternative approach of recursive estimation, that is, if we estimated the coefficients using only data through 2001 Q1, and used these to predict the outcomes in 2001 Q2 and Q3.

43. **One final crucial issue concerns the interpretation of any change in the wage bill.** So far, we have assumed that, to the extent that high personal income tax collections reflect high economy-wide wages, there is no puzzle to explain and no need to invoke any Laffer effect. An alternative view is that the Laffer effect would operate not through an increase in compliance as conventionally defined, but rather by inducing a shift from the underground to the official economy, and in particular by encouraging employers to report payroll figures more truthfully, with an implied increase in both nominal GDP and the wage share. In principle, the Goskomstat quarterly wage bill estimates on which we rely (unlike the Ministry of Finance figures) do embody adjustments for the size of the gray economy; while such adjustments may be imperfect, any error should be random. In practice, estimates of the relative size of the gray economy are only revised infrequently. As a result, when the gray economy is shrinking, the reported wage bill growth may exceed its true value for extended

²³ We exclude earlier periods, for reasons that are both principled (the outcomes were heavily distorted by the effects of the crisis) and practical (we lack reliable data on the tax base). Given the limited sample, all results should be treated with great caution.

²⁴ The predicted values from this exercise, based on a formal econometric methodology, need not equal the projected values discussed earlier, based on a deterministic methodology with add-factor adjustments. However, the two sets of values turn out to be extremely close. In any case, a deterministic approach cannot be used to discuss statistical significance.

Figure 1. Personal Income Tax Collection: Actual versus Predicted



periods. Our methodology would then underestimate the size of any Laffer effect. In the absence of a well-specified wage determination model, there is no simple way to gauge the magnitude of this error, but we are confident that it does not fundamentally invalidate our analysis. One reason is that, while the wage share in GDP for the first three quarters of this year is indeed 2 to 3 percentage points above the corresponding values for 1999 and 2000, it is even further *below* the corresponding values for 1996–98, when compliance is generally estimated to have been lower, and the gray economy significantly larger, than is currently the case. That is, changes in the relative size of the gray economy appear to be only one, relatively minor factor behind observed variations in the wage share.

44. **Overall, we conclude that the positive revenue performance in 2001 Q2 and Q3 is unlikely to reflect mere sampling error.** It could plausibly reflect an underestimation of both nominal GDP and the wage share, as well as errors in estimating the quarterly profile for effective tax rates and estimated taxes. Alternatively, the apparent buoyancy in personal income tax revenues might reflect Laffer-style effects, sufficient to fully offset the projected Q2 and Q3 revenue loss from reform (amounting to Rub 9 billion). In any case, most of the revenue loss from reform is not projected to occur until 2001 Q4. Hence, clear conclusions will be impossible until, at the very least, figures are released for whole year nominal GDP and tax collections.

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V. FISCAL SUSTAINABILITY¹

1. **Despite an impressive improvement in Russia's fiscal position since the crisis in 1998, questions remain about the sustainability of public finances over the medium to long term.** The enlarged government primary balance strengthened by 11 percent of GDP during 1997–2000, reaching a surplus of almost 8 percent of GDP in 2000 and is estimated to have declined only moderately in 2001. At the same time, the level of federal government debt was roughly halved to 64 percent of GDP at end-2000, that is estimated to have declined further to about 50 percent of GDP by end-2001, reflecting also strong GDP growth and the real appreciation of the ruble during 1999–2001. The strengthening of the fiscal position reflects a sharp compression of noninterest expenditure and, more recently, an increase in revenues owing to rapid income growth and high global energy prices since 1999. The question is to what extent this improvement can be sustained in the face of weaker growth, lower energy prices, a lowering of the tax burden, and potentially significant budget pressures arising from compressed social spending and reform costs. The latter issues are particularly important at the subnational government level.

2. **Our analysis suggests that Russia's fiscal position should be sustainable, but that it remains vulnerable over the medium term to a sharp downturn in global energy prices.** While there should be considerable room for the fiscal surplus to decline from its current high level, this should be implemented cautiously to reduce vulnerability. In this context, pressures to spend current windfall gains should be contained and the fiscal cost of reforms carefully assessed so that the implementation of these reforms is appropriately paced and sequenced. Further, intergovernmental fiscal relations should be re-examined to ensure that policies are sustainable at all levels of government.

3. **We examine the issue of fiscal sustainability in a normative framework.** We assume that economic developments in Russia will gradually resemble those in advanced transition countries and emerging markets. We also assume that global energy prices return to their "normal" level. Fiscal sustainability is examined both from a fiscal debt sustainability and from a balance of payments sustainability perspective (or macroeconomic balance approach). In addition, we look at fiscal policy over the medium term where financing constraints also need to be addressed.

¹ Prepared by Thomas Laursen (EU2).

A. Conceptual Framework

4. **Long-term fiscal sustainability is typically analyzed in terms of public debt sustainability.**² The standard analysis of debt sustainability looks at the primary fiscal balance consistent with maintaining a certain “sustainable” ratio of public debt to GDP given output growth, real interest and exchange rates:

$$(1) \quad PB/Y = [(r-g)*(D/Y)]/(1+g),$$

where PB is the primary fiscal balance, Y is nominal GDP, r is the real interest rate on government debt, g is the real GDP growth rate, and D is the stock of public debt. This formula assumes a constant nominal exchange rate and ignores potential access to nondebt financing.³

Thus, if the government is in a net debtor position, and the real interest rate exceeds the rate of real GDP growth, a primary surplus would be required to maintain a constant debt ratio.

5. **For a transition economy, the macroeconomic balance approach may be more relevant.** This approach looks at the fiscal balance consistent with a viable or target external current account position and the outlook for private savings and investment:

$$(2) \quad (S-I)_{gov} = CA^* - (S-I)_{priv}$$

where $(S-I)_{gov}$ denotes the overall fiscal balance, CA^* the sustainable current account, and $(S-I)_{priv}$ the private sector savings-investment balance.⁴

This approach may be more relevant for a country like Russia, where long-term debt sustainability considerations are likely to be dominated by concerns about medium-term

² For a resource-rich economy, fiscal and external sustainability should ideally be examined in the context of intertemporal welfare maximization, which takes into account the depletion of non-renewable resources. Such an approach has been the object of extensive research and attempts have been made to apply it in some countries (see e.g. Liuksila and others 1994 and Chalk 1998). However, it requires considerable information and/or assumptions for which there is substantial uncertainty (e.g., existing reserves of natural resources and future extraction rates, costs, and prices, as well as the social discount factor), and it generally also ignores the substitution of natural resource wealth with other and potentially higher yielding forms of wealth, including the stock of physical and human capital which affect future income growth in the economy or the stock of financial assets. In Russia, future generations are likely to be better off than current generations as transition takes hold and a dynamic market economy is established.

³ Ceteris paribus, the use of nondebt financing such as privatization proceeds does not change the government's net worth.

⁴ The macroeconomic balance approach abstracts from the issue of private sector external assets owing to the difficulties of estimating both their size and yield. This is potentially an important caveat as the cumulative external current account balances during the 1990s suggests that Russia should be in a net creditor position vis-à-vis abroad.

balance of payments viability and where prudential thresholds on public debt ratios for industrial countries (as established notably for members of the European Monetary Union by the Maastricht criteria) are probably of limited value in determining sustainable fiscal policy. Of course, one would need to ensure that the fiscal balance determined in this way does not raise concern about debt sustainability.

6. **We employ a medium- to long-term perspective and a “normative” framework.** We assume that the economy will reach during 2010–15 a “steady-state” economic development path similar to that observed in advanced transition and emerging economies, and—given the dependence of both public finances and the balance of payments on energy prices—where global energy prices have stabilized at a “normal” level. It is thus necessary to determine “normal” energy prices and a viable external current account balance as well as to analyze the prospects for real GDP growth, private investment and savings, and real interest rates and exchange rates.

7. **We draw on both theoretical considerations and evidence from comparator countries,** and we distinguish three groups of countries:

- non-transition emerging markets (Argentina, Brazil, China, Korea, Malaysia, Mexico, South Africa, Thailand, and Turkey);
- advanced transition economies (Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovak Republic, and Slovenia); and
- resource rich economies (Chile, Indonesia, Kazakhstan, Mexico, Nigeria, Norway, Saudi Arabia, South Africa, United Kingdom, and Venezuela).

The latter group is included as these otherwise diverse economies share certain characteristics owing to their dependence on income from natural resources. In addition to historical data, we include the latest World Economic Outlook (WEO) projections.

B. “Normal” Energy Prices

8. Although it has proved difficult to model oil prices, various methods suggest remarkably similar values for their long-term level. Most studies have been unable to reject the hypothesis that—over the long run—oil prices follow a random walk either in nominal or real terms (see e.g., Engel and Valdes, 2000). One statistical approach to determining long-run oil prices is to examine the 10-year moving average. This has fluctuated in the range of \$17.6–18.9 a barrel since 1996.⁵ Alternatively, it could be assumed that prices revert to the level prevailing in a stable period (say 1987–97, where the average price stripping out the Gulf war spike was \$17.8). A third approach is to run an ARIMA regression for this stable

⁵ Oil prices in this chapter refer to a simple average of spot prices of U.K. Brent, Dubai, and West Texas Intermediate.

period, which suggests that oil prices are stationary, with a long-run level of \$19.3.⁶ However, these statistical constructs based on historical prices ignore any information regarding structural shifts in oil markets and thus in future oil prices. The WEO forecasts oil prices five years ahead based on market forecasts—futures prices and/or forward contracts—and trade publications. For 2007, the December 2001 WEO forecast is \$19.5.

9. **These methods thus suggest that a plausible “normal” level of oil prices is in the range \$18–20.** In line with the medium-term WEO forecast, we thus assume a long-term average oil price of \$19 a barrel. We use this oil price both for extrapolating backward and for projecting forward the constant-oil-price fiscal and external balances, including to assess fiscal sustainability.⁷

C. Growth Prospects and Private Sector Investment/Savings

Potential output growth

10. **Output growth in comparator countries has broadly been in the range of 4–6 percent a year.** In emerging markets, output growth has generally been in the range of 4–6 percent a year over the last 20 years, except for the period of the Asian and Russian crisis. Similar growth rates have been experienced by advanced transition economies in the second half of the 1990s, with improvements in total factor productivity accounting for about one-half of the growth.⁸ Growth rates appear to have been somewhat lower in resource rich economies, both in a longer time perspective and in recent years, when it has hovered around 4 percent.

⁶ The baseline specification, selected by both the Akaike and Schwartz Information Criteria, is an ARMA (5,3) regression: $Y_t = 18.3 - .26 Y_{t-1} + .03 Y_{t-2} + .43 Y_{t-3} + .21 Y_{t-4} - .36 Y_{t-5} + 1.8 MA_t + 1.77 MA_{t-1} + .95 MA_{t-2}$, where Y denotes the world oil price.

⁷ This is a useful rough indicator of the underlying or structural fiscal (or external) balance and has been applied by Fund staff in assessing changes in the fiscal stance (see Staff Report for the 2001 Article IV Consultation). While one should, in principle, also adjust for deviations in output from its potential level, and for deviations (or unrealized effects of past changes) in the real exchange rate from its equilibrium level, such adjustments pose well-known problems in a case like Russia. It is also assumed that neither imports nor public expenditure are affected by changes in energy prices.

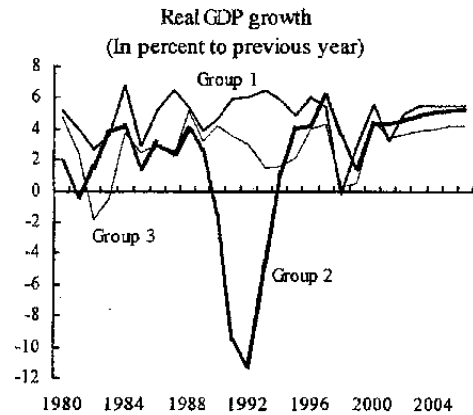
⁸ On average, estimates suggest that annual TFP growth in advanced transition economies during the period 1991–97 amounted to about 2 percent, but with large variations (Poland had the highest growth rates of close to 4 percent per year).

11. **Empirical evidence on the determinants of growth confirms that Russia should be able to achieve growth rates similar to comparator countries.** In analyzing growth in transition economies, several authors have used variations of the following general specification:

$$(3) \quad g = f(y, PS, SS, INV, GOV, POP)$$

$$f_y < 0; f_{gov} < 0; f_{pop} < 0; f_{ps} > 0; f_{ss} > 0; f_{inv} > 0$$

where g is per capita growth, y is per capita income, PS and SS are the primary and secondary school enrollment rates (proxies for human capital), respectively, INV is gross capital formation in percent of GDP, GOV is government consumption in percent of GDP, POP is the population growth rate, and f denotes the first derivative.



12. Table 2 below shows the values of these key variables for Russia and for a sample of fast-growing and of slow-growing developing economies. The high level of education in Russia suggests that growth prospects are relatively favorable. Based on the empirical equation first developed by Levine & Renelt (1992), the forecasted per capita growth rate for Russia would be around 4.7 percent with the relatively high value, in large part, reflecting the relatively high level of human capital.⁹

13. Fischer, Sahay, & Vegh (1998), using a similar approach, forecasted per capita growth rates in the range 4.8–5.3 percent. Gomulka (2000) studied real GDP growth in transition economies using as explanatory variables the ratio of gross investment to GDP, per

⁹ The baseline specification for the Levine & Renelt equation is as follows:

$$g_t = -0.83 - 0.0035 * Y_0 - 0.38 * POP + 3.17 * SS_0 + 17.5 * INV,$$

where g_t , the growth rate of per capita income, is expressed in percentage points; and Y_0 , the initial level of real per capita income, is divided by 1000. This equation was estimated over the period 1960–89 using data for 119 countries.

The strengths of this equation are that it tries to relate growth to its underlying, exogenous determinants, that it explains a surprisingly large fraction of the sample variance in growth rates ($R^2 = 0.46$), and that its specification is relatively robust. The main weakness for our purposes is that the estimation sample does not include any transition economies or resource exporters. Hence, the relevance of this (or any other) cross-country growth regression to the long-term growth prospects of transition economies in general, and Russia in particular, rests on the assumption that in the long run such economies will not fundamentally differ from other developing economies.

Table 1. Factors Affecting Long-Term Growth: Russia in a Global Perspective

Variable	Russia	Fast-Growers	Slow-Growers
Primary-school enrollment rate (pct)	91	90	54
Secondary-school enrollment rate (pct)	92	30	10
Gross investment/GDP (pct)	0.23	0.23	0.17
Government consumption/GDP (pct)	0.21	0.16	0.12
Population growth rate (pct)	-0.28	...	...

Sources: IMF, The World Bank (WB), OECD, and Levine and Renelt (1992).

Note: Data for the various variables refer to the following years: Primary school enrollment rate: Russia (1997); Fast & Slow Growers (1960). Secondary school enrollment rate: Russia (1995); Fast & Slow Growers (1960). Gross investment and government consumption: Russia (1997); Fast & Slow Growers (1960–89). Population Growth Rate: Russia (1999).

capita income, and inflation. He found that for investment to GDP ratios in the range of 20 to 30 percent, Russia's forecasted growth rate over the next decade would be between 4.5 percent and 6 percent. The EBRD in its 1997 Transition Report similarly noted that Russia should be able to grow at rates of around 5 percent per year. **In sum, evidence suggests that a potential growth rate of 5–6 percent in Russia is a reasonable working assumption.** This, of course, assumes that structural reforms are implemented in a comprehensive and sustained manner.

14. **Russia's growth potential could also be examined in a growth accounting framework** (see e.g., IMF 2000a and Laursen 2000). This would be based on the specification of a production function and assumptions about developments in inputs, output elasticities, and total factor productivity. We use such a framework below to examine the level of investment required to sustain output growth at its potential.

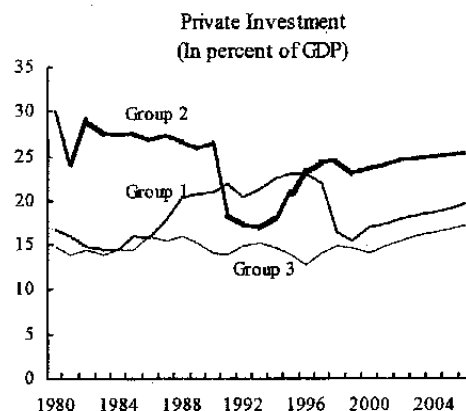
Gross investment

15. **Private investment in transition economies has generally been higher than in advanced emerging markets.** Over the last 20 years, gross investment in emerging markets has fluctuated in the range of 15–20 percent of GDP (it appears to be stabilizing in the upper end of this interval). In contrast, investment in transition economies has been 24–25 percent of GDP in the second half of the 1990s implying a higher incremental capital-output ratio. While there is no evidence of higher investment ratios in resource-rich countries, rather the opposite, this may not be all that relevant for Russia given its under-developed extraction and transportation infrastructure. Turning to more disaggregated data, private investment ratios in advanced transition economies typically lie in the range 19–24 percent of GDP, with public investment accounting for another 3–6 percent of GDP; in other advanced emerging markets, private investment generally hovers around 17–20 percent of GDP.

16. **Investment needs may be examined in a simple growth accounting framework.** Assuming a constant-returns-to-scale Cobb-Douglas production function, the gross investment ratio required to support the long run potential growth rate equals:

$$(4) \ I/Y = K/Y [(g_Y - g_{TFP} - \alpha g_L) / (1 - \alpha) + \delta],$$

where I is gross investment, Y is output, TFP is total factor productivity, K is capital, L is labor, g_x denotes the net growth rate of any variable x , α and $(1-\alpha)$ are the marginal elasticities of output with respect to labor and to capital, respectively, and δ is the rate of capital depreciation.



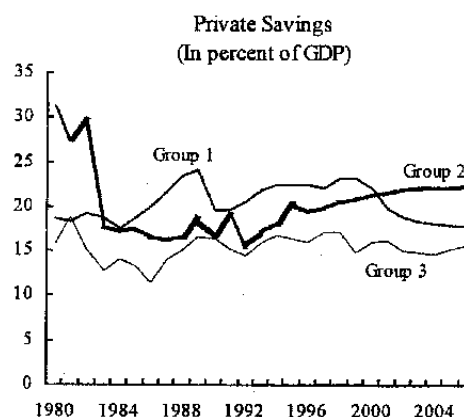
17. As discussed above, real GDP should potentially be growing at 5–6 percent per year in the medium to long run, with around one-half being accounted for by total factor productivity growth. According to the national accounts, the prevailing capital-output ratio is around seven. However, this implies unrealistically high values for the contribution of total factor productivity growth, and various studies suggest that the capital-output ratio is considerably overestimated owing to a low value of pre-transition capital (see e.g., McKinsey, 1999). A more plausible number would be around three, implying that pre-transition capital is worth only about 10 percent of post-transition capital. The depreciation rate has been around 4 percent a year in recent years according to the national accounts. The labor force should remain broadly stable based on demographic projections. Finally, international evidence suggests that the marginal elasticity of output with respect to labor—equal to the labor share assuming competitive labor markets—is fairly stable at around 65 percent.¹⁰ With these parameters, the required total investment-to-GDP ratio would be about 26 percent.

18. In sum, it seems reasonable to **assume a gross investment ratio of 26 percent, of which the private investment ratio would be about 21 percent** (reflecting both the evidence from advanced transition economies and the prediction from the growth accounting framework).

¹⁰ This elasticity in Russia (and many other transition economies) is currently closer to one-half, significantly lower than in advanced economies and many other developing countries. There are two main explanations: (i) the labor share may increase as an economy develops; and (ii) developing countries in general, and transition economies in particular, have a large unincorporated business sector whose operating surplus should be included in the labor share. Also, part of the remuneration of labor is not presently recorded as wages, e.g., subsidized rents and utilities. Adjusting for this, the true labor share may be quite constant around the world at about 0.65 (see Bernanke 2001).

Private sector saving

19. **Private saving ratios in emerging markets and advanced transition economies have been fairly similar and stable.** In these groups of countries, private saving has fluctuated in the range of 18–22 percent of GDP over an extended period. It has been somewhat lower in resource-rich economies, fluctuating around 15 percent of GDP.



20. **The theoretical and empirical analysis of private saving has focused little on the unique institutional structures of transition economies.** While the literature generally finds that a number of factors are important determinants of saving levels in countries independent of their level of development (e.g., the dependency ratio, public saving, the rate of output growth, and changes in terms of trade), it also suggests that private saving in developing countries is influenced importantly by other factors than in industrial countries (Appendix I). In particular, the degree of financial liberalization and foreign saving. Given the different findings for industrial and developing countries, it is conceivable that emerging markets and the more advanced transition economies may also exhibit a unique behavior that may be more relevant for Russia. This could, for example, relate to the significant role of enterprises in providing social safety nets in transition economies or the deeper integration with international financial markets in emerging markets, as well as macroeconomic instability in both groups of countries.

21. **We have therefore estimated a private savings equation for a sample consisting of our two groups of advanced emerging markets and transition economies (Annex I).** The results show a significant positive effect of real GDP growth and financial deepening (proxied by the ratio of M2 to GDP), and a negative effect of the budget deficit and the dependency ratio. The impact of inflation volatility is very small. Per capita income was not found to be significant.¹¹ **Using this equation and projected long-run values for these variables for Russia suggests a private savings rate of about 20 percent of GDP.**

Real interest rate

22. **Evidence on real interest rates in emerging and transition economies is difficult to interpret.** This owes to imperfect financial markets, capital controls, unreliable data on interest rates on government debt, typically large spreads between lending and deposit rates, volatile inflation, and uncertain inflation expectations. Estimates suggest that real lending

¹¹ Private savings and its determinants in transition economies are discussed in UN (2001)—see Appendix I for further details. The analysis emphasizes the importance of the level of per capita income and the depth and strength of the financial system. The latter underlines the crucial importance of financial reform and the creation of sound institutions for encouraging higher levels of saving and investment.

rates in transition economies have been around 8 percent, somewhat less than in developing countries but higher than in advanced and industrial countries (Table 2).

Table 2. Real Deposit and Lending Rates (1990–2000)

	Industrial Countries	Advanced Countries	Developing Countries	Transition countries
	(In percent)			
Real deposit rate: <i>mean</i>	1.5	2.5	3.5	1.7
Real deposit rate: <i>median</i>	1.7	2.0	4.0	1.0
Real lending rate: <i>mean</i>	5.0	6.6	12.2	7.8
Real lending rate: <i>median</i>	5.0	6.0	9.9	8.3

Source: IFS.

23. **While real interest rates are currently very low in Russia, they can be expected to gradually mirror those in transition and advanced economies.** The current low rates reflect the absence of government borrowing requirements. Yield spreads on Russian Eurobonds have fallen substantially since the crisis but remain relatively high compared to other transition and emerging markets given the current strength of macroeconomic fundamentals. This reflects both the lingering memories of the default on government debt in 1998 and the large debt repayments falling due in coming years. Over time one would expect spreads on new Russian long-term borrowing to be broadly similar to those faced by advanced transition economies and emerging markets, which have typically been around 200–300 basis points (abstracting from crisis periods). Thus, with real interest rates in industrial countries around 4 percent (average of the 1990s), it seems reasonable to assume that Russia would be facing real interest rates the order of 6–7 percent (the choice of ruble debt versus foreign currency debt is essentially a debt management issue).¹²

D. Sustainable External and Fiscal Balances

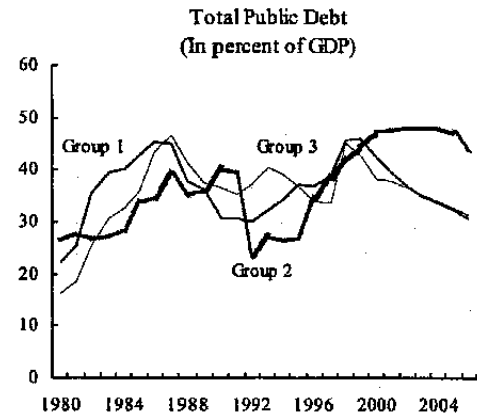
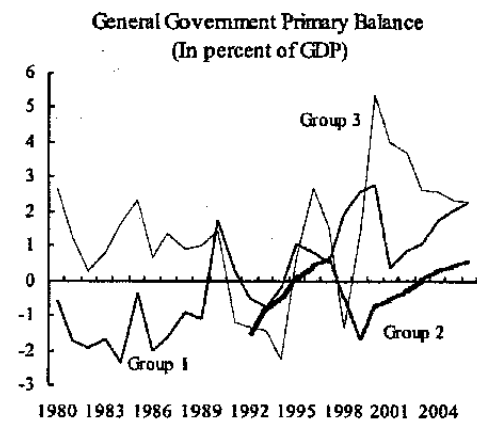
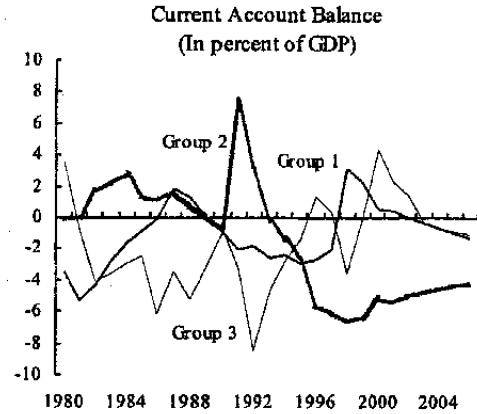
24. **Russia should be targeting an external current account deficit of 2–3 percent of GDP.** This is well within the danger zone experienced by a number of emerging markets and transition economies where deficits of 4–6 percent have generally proved to be sustainable. However, most of these countries, especially the advanced transition economies, have benefited from very high levels of foreign direct investment, and are generally converging toward lower external deficits in the 2–4 percent of GDP range. A cautious current account

¹² Over the medium term, and even beyond, interest rates on aggregate public debt will be lower reflecting the large stock of outstanding, restructured commercial debt as well as the lower rates on bilateral debt.

target is also warranted by Russia's experience with large capital flight and potentially volatile capital flows in the future.

25. **This implies that the general government deficit should be limited to 1–2 percent of GDP.** With private investment expected to expand rapidly, our analysis above suggests that the private sector savings-investment balance is likely to turn slightly negative, by about 1 percent of GDP, requiring that the fiscal deficit is contained to 1–2 percent of GDP to be consistent with the current account target (this compares to projected fiscal deficits of ½–2 percent of GDP in advanced transition economies and emerging markets). Given projected interest payments, this in turn requires a primary surplus of 1–2 percent of GDP.

26. **These external current account and fiscal balances are consistent with debt sustainability.** External and public sector debt ratios would be declining fairly rapidly over the medium term, reflecting both the large current surpluses and the relatively low interest rate on the current debt stock, as well as real appreciation of the ruble (see below). Thus, staff projections suggest that by 2005 total federal government debt would have declined to about 30 percent of GDP and it would continue declining thereafter.¹³ This compares to debt ratios in emerging market and transition economies that increased to about 45 percent of GDP during the 1990s but are expected to gradually decline to 30–40 percent over the medium term.¹⁴



¹³ With output growth of 5½ percent and a real interest rate of 6½ percent, the primary surplus consistent with maintaining a stable debt-to-GDP ratio of 30 percent would be ½ percent of GDP (the analysis here abstracts from subnational government debt, which is relatively small).

¹⁴ The Maastricht criteria for membership of the European Economic and Monetary Union establishes a public debt limit of 60 percent of GDP, but such a threshold is clearly too high for developing countries. Fischer (2001) notes that since the variability of the real interest rate in emerging market countries is significantly higher (up to a factor of 5) than in industrialized countries, emerging market countries are likely to face a very large fiscal shock if their debt to GDP ratio is around 60 percent. Thus, ratios nearer 30 percent are much safer.

27. **Russia should aim for conservative fiscal and external balances and debt levels.** Fiscal revenues and exports remain highly dependent on volatile global commodity prices, and budget financing is subject to both swings in international financial markets and limited development of domestic capital markets. Also, both reform costs and contingent liabilities may prove to be substantial although difficult to quantify *ex ante*. Further, the balance of payments remains characterized by large private capital outflows and a relatively low level of FDI and it is uncertain how fast these flows will improve. Under these circumstances, it would be prudent to target debt levels at the lower end of those aimed for by advanced emerging markets and transition economies.

28. **The adjustment of external and fiscal balances over the medium term to the “steady-state” discussed above is of paramount importance to policymakers.**

While there is considerable room for the current account balance to deteriorate and the real exchange rate to appreciate over the medium term, this process should proceed cautiously—both to maintain a prudent reserve cover in the face of only a slow reduction in capital flight and to avoid jeopardizing growth while the investment climate and domestic demand are strengthened. Similarly, while there is room to ease the underlying fiscal position by about 3 percentage points of GDP, caution is warranted as financing remains limited, the fiscal balance remains vulnerable to a sharp downturn in global energy prices, and additional budget pressures could arise from the ongoing tax reform and structural reform related expenditures.

Key Parameters (Share of GDP unless otherwise noted)

	1999	2000	2001	Steady-State
Real GDP growth	5.4	8.3	5.2	5 to 6
Gross investment	15.1	17.2	19.5	26
o/w Private	6.4	9.3	12.2	21
National savings	26.9	35.2	30.6	23 to 24
o/w Private	21.4	23.7	20.1	20
External current account	11.8	18.0	11.0	-2 to -3
Federal government 1/				
Primary balance		4.5	5.3	1 to 2
Overall balance		1.9	2.7	-1 to -2
Total debt 2/	96.5	63.8	48.4	24
External debt service 2/3/	35.6	25.3	24.7	16
Enlarged government				
Primary balance		6.4	5.5	1 to 2
Overall balance		3.8	2.9	-1 to -2
<i>Memo items:</i>				
World oil price	18.0	28.2	24.3	19
REER (change; e.o.p.)	12.3	22.0	12.8	2
Underlying fiscal primary balance		3.5	4.7	1 to 2

1/ Cash basis.

2/ "Steady State" refers to the average over 2010-15.

3/ Share of federal government revenues.

29. **Fiscal policy in the next couple of years is likely to be constrained on the financing side.** With limited access to international capital markets and large debt service payments falling due, especially in 2003, foreign financing will be negative over the medium term. While the government should be able to gradually substitute foreign for domestic financing, the ability of the financial system to absorb new government debt will be constrained by the slow process of remonetization and increasing demand for credit to support a broad based expansion of investment. Under these circumstances, there is little

scope for the budget to go into deficit, at least through 2003–04, and thus for the primary surplus to decline significantly from its envisaged level in 2002.¹⁵

30. **This will place the federal budget under considerable pressures.** With revenues projected to decline by about 2½ percent of GDP over the medium term (2002–04) as a result of lower oil prices and macroeconomic developments, considerable expenditure restraint will be required in the coming years. While it should be possible to maintain noninterest expenditures close to the level envisaged for 2002 of 13 percent of GDP, expected reform costs and increased transfers to regions (see below) would mean that expenditures on existing needs would have to be scaled back.

31. **Further, subnational governments would need to undertake significant adjustment to cope with losses from tax reform and increased federal expenditure mandates.** Agreed tax reforms will cost local governments about 1 percent of GDP in 2002 (see Chapter IV—Tax Reform), while planned tax reforms (phasing out of the road fund tax and abolition of the sales tax) could cost another 1½ percent of GDP in 2003–04.¹⁶ At the same time, the federally mandated increase in government wages will cost about 1½ percent of GDP in 2002. Thus, subnational government would need to find measures on the order of 2½ percent of GDP in 2002 and further savings over the medium term to preserve overall balance. While part of the adjustment could come from increased cost recovery in housing and communal services, it is not clear whether net savings can be achieved in the short term given the plan for introducing targeted subsidies (see Chapter VI). There may also be scope for reducing employment at the subnational level, but again the short-term savings are uncertain.

32. **The medium-term outlook and the sustainability of fiscal policy are subject to a number of risks.** Over the medium term, the key risk is that rapid output growth is not sustained. Sustaining output growth in the range of 5–6 percent over the medium term while the external current account is deteriorating rapidly in conjunction with the real appreciation of the ruble, implies that domestic demand continues to recover strongly. Although some rise in private consumption from its still relatively depressed level can be expected, the driving force should be private investment. This in turn requires comprehensive structural reform and an improvement in the investment climate. In particular, financial sector reform is needed to ensure an efficient intermediation of resources and the provision of adequate liquidity from the banking system. Over the shorter term, the main risk is a major deterioration in the external environment, notably a sharp decline in global energy prices.

¹⁵ The budget plans for 2002 envisage a decline in the enlarged government primary balance at constant oil prices to less than 3 percent of GDP (and to 2 percent of GDP at actual oil prices based on the staff's output and revenue projections).

¹⁶ These costs may be smaller to the extent that tax compliance improves.

Estimating Private Sector Savings

1. A number of studies have discussed the variables determining private savings in developing countries and have examined these relationships empirically (see e.g., Dayal-Gulati and Thimann 1997, Masson and others 1995, Savastano 1995, and Ogaki and others 1996).
2. However, these studies have only to a limited extent included transition economies and emerging markets, which may be more relevant for Russia, and are somewhat outdated.¹⁷ We have therefore performed an empirical analysis covering the period 1985–99 for two groups of countries: (i) Argentina, Brazil, China, Korea, Malaysia, Mexico, South Africa, Thailand, and Turkey; and (ii) Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic, and Slovenia. The sample period for the first group is 1985–98 and for the second 1993–99.

Appendix Table 1. Descriptive Statistics for Group 1

	Private Savings	Government Debt (in percent of GDP)	Money Supply (in percent of GDP)	Inflation	Real GDP Growth	Income Per Capita	Dependency Ratio
Mean	20.0	-2.8	37.3	203.2	4.5	4614	61.1
Median	20.6	-2.0	30.2	13.4	5.5	4069	63.6
Maximum	32.2	4.7	98.9	3079.8	13.3	11864	82.9
Minimum	8.4	-18.6	6.2	0.2	-16.2	1357	40.1
Std. Dev.	4.3	4.7	21.7	589.8	5.4	2318	9.3

¹⁷ An exception is the UN Economic Survey of Europe 2001, which includes a chapter on domestic savings in transition economies. The study identifies the following relevant variables: current account balance, government savings, social security expenditure, the level and growth of per capita income, the level of monetization, the real interest rate, CPI inflation, change in the terms of trade, and the age dependency ratio. The estimated equation for Eastern Europe and the Baltic States (1995–98) is:

$$Sp = 0.09*CA - 0.6*Sg + 0.3*SS + 0.7*y + 0.09*dy + 0.1*M - 0.2*r - 0.01*dCPI + 0.16*dTOT + 0.13*DEP$$

(*R-square*=0.79),

where *Sp* is private saving, *CA* is the current account balance, *Sg* is government savings, *SS* is social security expenditure, *y* is per capita income, *M* is broad money, *r* is the real (ex-post) interest rate, *CPI* is the consumer price index, *TOT* is the terms of trade, *DEP* is the dependency ratio, and *d* denotes rate of change. The fitted value for Russia using our medium-term/steady-state projections of the explanatory variables is 19 percent of GDP.

Appendix Table 2. Descriptive Statistics for Group 2

	Private Savings	Government Debt (in percent of GDP)	Money Supply (in percent of GDP)	Inflation	Real GDP Growth	Income Per Capita	Dependency Ratio
Mean	18.9	-1.8	36.8	22.0	2.8	4085	48.6
Median	19.8	-1.4	31.8	17.6	4.0	3460	49.1
Maximum	26.9	2.6	71.3	89.8	10.6	10716	54.0
Minimum	11.6	-6.7	16.6	4.7	-11.9	1031	42.8
Std. Dev.	4.0	2.1	16.4	18.1	4.5	2522	2.9

3. The OLS estimation shows a significant effect of the budget deficit, financial deepening, real GDP growth, inflation volatility (measured as the difference between inflation and a two year moving average), and the dependency ratio on private savings (Appendix Table 3). The estimated coefficients, however, are biased since significant correlation pattern in residuals is present. This could be as a result of missing explanatory variables or endogeneity problems inherent in this type of single equation regressions.

4. We use these estimation results to forecast the long run savings ratio for Russia. Applying the “steady-state” values for real GDP growth and fiscal balance discussed in the main text, inflation volatility and financial deepening ratios corresponding to the average for Groups 1 and 2 in recent years (70 percent and 34 percent, respectively), and a dependency ratio of 42 percent (projected average for the period 2010–15), yields a private savings rate of 20 percent of GDP.

Appendix Table 3. OLS Estimation Results

Dependent Variable: PRS?				
Method: Pooled Least Squares				
Sample(adjusted): 1986 1998				
Included observations: 13 after adjusting endpoints				
Number of cross-sections used: 17				
Total panel (unbalanced) observations: 136				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	23.75	2.57	9.24	0.00
GVBGDP?	-0.41	0.11	-3.81	0.00
GDPDOT?	0.31	0.07	4.11	0.00
M2GDP?	0.16	0.02	9.87	0.00
INFLVOL?	0.00	0.00	2.29	0.02
DEP?	-0.21	0.04	-4.99	0.00
R-squared	0.56	Mean dependent var	21.13	
Adjusted R-squared	0.54	S.D. dependent var	6.52	
S.E. of regression	4.41	Sum squared resid	2523.24	
F-statistic	33.11	Durbin-Watson stat	0.65	
Prob(F-statistic)	0.00			

Where

- PRS? – is Private savings for the pool of countries
- C – Constant
- CVBGDP? – Government deficit as a percent of GDP
- GDPDOT? – Real GDP growth
- M2GDP? – Broad money supply to GDP ratio
- INFLVOL? – Inflation volatility
- DEP? – Dependency ratio

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VI. STRUCTURAL REFORMS¹

A. Overview

1. **The pace of structural reform accelerated markedly in mid-2001.** Until late spring 2001, the implementation of the government's structural reform program for 2000–01, approved in July 2000, was behind schedule, particularly banking and natural monopoly reform. However, a package of amendments to banking laws was adopted in spring 2001, aimed to facilitate the regulation and consolidation of the sector, followed by government approval of a restructuring plan for the railways in May. Subsequently, reforms across the board accelerated in the summer. The government approved a restructuring plan for the electricity sector in July, and before its summer recess, the Duma passed the profit tax chapter of Part II of the Tax Code; a package of laws to deregulate economic activities; and a law against money laundering. A new land code was passed at the start of the fall session and a Government Regulation on housing and communal services reform was issued in September. A new Labor Code, key pension reform legislation, and parts of the judicial reform were adopted at end-2001.

2. **The government also adopted a new medium-term program for 2002–04 in July.** The emphasis remains on the improvement of the investment climate for the private sector and on the achievement of long-term sustainability in public finances. Underlying this emphasis is the view, articulated by both President Putin and the government, that economic growth should be increasingly led by private investment and that reliance on volatile raw material exports should be reduced. Starting in fall 2001 and continuing into the medium term, the main challenges in implementing the reform agenda include the initiation of reforms in electricity and railways sectors; the implementation of business deregulation, pension, labor, land, and housing and communal services reforms; the adoption of customs and remaining judicial reforms; and the formulation of further reforms in the areas of banking, foreign exchange liberalization, gas sector restructuring, and intergovernmental relations.

3. **The depth and breadth of the reform agenda pose significant implementation and coordination challenges.** To ensure consistent and universal implementation of the enacted reform acts and measures at all levels of government across the whole country is the main challenge and risk for the success of the reform program. The implementation of many reforms will also have significant fiscal implications, which, while not readily quantifiable at this early stage, will necessitate good coordination of reform design and implementation so as to avoid the emergence of excessive fiscal and macroeconomic shocks and imbalances.

¹ Prepared by Timo Vällilä (EU2).

B. Energy Sector Reform

Electricity sector

4. **In general, the broad aim of a market-oriented electricity sector reform is to separate out naturally monopolistic from potentially competitive activities.** The naturally monopolistic activities include electricity transmission from producers to retail sellers (utilities) along high-voltage grids and electricity distribution from utilities to consumers along low-voltage grids. The need for grids generally makes transmission and distribution natural monopolies, and state regulation and supervision of these activities is required to limit the abuse of monopoly power. The potentially competitive activities, in turn, include electricity generation (production) and retail sales. Both privatization and liberalization are generally undertaken to introduce competition in these activities.

5. **Currently, the state dominates all activities in the Russian electricity sector.** The state controls electricity generation, transmission, sales, and distribution through its 52 percent stake in RAO UES, which in turn has ownership stakes in all but 2 of the 74 vertically integrated regional energy companies. Of total generation capacity, 84 percent is accounted for by RAO UES, the regional energy companies under its control, and the nine state-controlled nuclear power plants. The federal high-voltage grid belongs to RAO UES, while parts of the regional high-voltage grids and the low-voltage grids belong to regional energy companies. Tariff regulation in the wholesale market and in electricity transmission is conducted by the recently established Single Tariff Agency, with the government approving any tariff changes, but it remains to be decided whether the Single Tariff Agency or Regional Energy Commissions control retail tariffs. At present, the implicit subsidy due to below-market electricity pricing is estimated at roughly at 3–6 percent of GDP. In addition, there is significant cross-subsidization of residential retail tariffs by industrial retail tariffs.

6. **The main problem in the electricity sector has been insufficient investment.** As a result of insufficient investment in generation capacity over the last 15 years and the recent upswing in industrial activity which has boosted the demand for electricity, the risk for supply shortfalls in the medium-term has increased. While RAO UES's annual investment budget is currently only around \$1 billion, it is estimated by the World Bank that investments of \$30–70 billion are needed over the coming ten years for power plant rehabilitation and construction and for maintaining and developing the transmission and distribution networks. While the state will continue to invest in the natural monopoly segments of the power industry, a reform plan for the entire electricity sector has been developed to attract large-scale private investments, including from abroad, into the potentially competitive segments of the sector.

7. **The Russian government has approved a three-stage reform plan for the electricity sector.** The broad reform plan, which covers a period of 8–10 years as detailed below, was approved on July 13, 2001. Ultimately, the plan envisages the liberalization of both wholesale and retail electricity tariffs, as well as the withdrawal of the state from electricity generation (with the exception of nuclear power generation) and sales. As a first

step to this end, the government approved a detailed action plan for the initial stage of the reform on August 3, 2001.

8. **The first stage of the reform is chiefly preparatory in character.** It covers the period through spring 2004, by when the necessary legal and organizational changes are to be completed and the wholesale electricity market is to be established, as detailed below. While tariff regulation in both wholesale and retail markets will remain in place throughout the first stage, the retail tariff will be linked to the wholesale tariff through a formula.

- The necessary **legal changes** include the introduction of a new federal framework law for the electricity sector, as well as amendments to existing legislation pertaining to, e.g., natural monopolies, tariff regulation, and competition.
- The **organizational changes** include the creation of a federal high-voltage grid company; a system operator; a number of generating companies consolidating RAO UES's existing power plants; and a holding company to manage RAO UES's stakes in regional energy companies, which are to spin off their distribution assets into separate subsidiaries. All these new companies will initially be fully-owned subsidiaries of RAO UES, so the shareholders of RAO UES will receive stakes in these companies on a pro rata basis. Furthermore, all existing nuclear power plants will be merged into one fully state-owned generating company. The regulation of the electricity sector will be consolidated into a uniform system, with a view to ensuring a level playing field in both wholesale and retail markets and to enhance investment.
- The organizational changes will be accompanied by **financial rehabilitation and measures to enhance financial transparency.** Financial rehabilitation includes cost-cutting and, when necessary, the restructuring of companies' debts and receivables. Relatedly, a system of social assistance for workers displaced in the reform process will be adopted. Measures to enhance transparency, in turn, include the separation of accounting for different activities and the conduct of a full inventory of RAO UES's assets.
- The **establishment of the wholesale market** involves the setting-up of the market infrastructure, a trading system administrator, a payment system with a settlement center, and the introduction of forward and futures contracts for the wholesale market.

9. **The second stage will culminate in the liberalization of both wholesale and retail markets in parts of Russia.** Following the establishment of the wholesale market in the first stage of the reform, independent sales companies for the retail market will be introduced in the second stage, including from regional energy companies; these will divest themselves of their transmission and, in only a few cases, distribution assets against due compensation from RAO UES. Independent sales companies are not required to spin off their generation assets, so some degree of vertical integration of competitive activities (generation and sales) will be allowed to remain. Tariff regulation will be discontinued in the wholesale market and in the retail markets in European Russia, Ural region, and in Siberia. The deregulation is expected

to lead to a rough doubling of wholesale prices from their current levels. All in all, the second stage will take place two–three years after the completion of the first stage.

10. **In the third stage, the state will withdraw from electricity generation and sales.** In the course of the next three–four years, RAO UES will divest itself of its stakes in power plants and regional energy companies, while increasing its stake in the federal high-voltage grid company; in other words, RAO UES will eventually become a transmission company controlling the naturally monopolistic high-voltage transmission network. The privatization of all assets in the competitive segments of the sector (which will have been liberalized during the previous stage) is expected to ensure sufficient and appropriate investment in generation capacity.

11. **The strategic choices embedded in the plan follow largely those made by industrial countries that have embarked on market-oriented electricity sector reforms.** In the past two decades, a number of OECD countries have embarked on electricity sector reforms to liberalize both wholesale and retail electricity markets and to strengthen the regulation of the naturally monopolistic segments of the markets. While no universal consensus on electricity sector reform has emerged, it appears the Russian government's plan described above follows the mainstream in terms of key strategic choices (see Box 1).

Gas sector

12. **The current structure of the Russian gas sector resembles that of the electricity sector.** The state exercises significant control of the sector through its 38-percent ownership of Gazprom and its majority representation at the Board of Gazprom's Directors. Gazprom operates as a vertically integrated company with both naturally monopolistic activities (gas transmission and distribution) and potentially competitive ones (gas production and sales). Gazprom accounts for some 90 percent of gas production in Russia; it controls 80 percent of gas reserves; it controls the gas transportation network; and it has monopoly rights to gas exports outside the CIS. Gas transportation tariffs as well as Gazprom's domestic retail tariffs are controlled by the Single Tariff Agency, with the government approving any tariff changes. Notably, independent gas producers are in principle free to set their own retail tariffs.

13. **Problems in the gas sector have included:**

- Gazprom's control over the pipeline network and below-market regulated tariffs for its domestic sales have created a barrier for independent producers to enter the domestic market. This, in combination with Gazprom's export monopoly beyond the CIS (with only Itera allowed to export to CIS countries), has curtailed independent producers' incentives to invest in their gas fields, which have significant potential, and to start up and expand production.

Box 1. International Experiences in Reforming the Electricity Sector

Until the late 1970s, the electricity sector was viewed either as a single natural monopoly (in Europe) or as a private monopoly that required public regulation (in the US). Following the oil shocks of the 1970s, fuels other than oil were introduced into electricity generation, which contributed to the unbundling of generation from transmission. Vertical disintegration of the electricity sector allowed the introduction of competition in some of its segments, first in generation and subsequently in sales. The first set of countries embarking on reform along these lines included the UK, Norway, Sweden, Australia, and New Zealand, with more recent entrants including all EU members, the US, Canada, and Japan. The experience from these reforms, most of which are still on-going, suggests that the following are among the key strategic issues:

Unbundling. The naturally monopolistic activities need to be separated from the potentially competitive ones to prevent the abuse of the naturally monopolistic segment as a barrier to entry (e.g., a generating company controlling transmission could prevent other generators' access to the grid). While there are many ways to separate activities, ownership separation is generally a better guarantee against discrimination than, e.g., mere operational or accounting separation.

Retail market liberalization. To benefit the end-consumer, electricity sector reform needs to include the liberalization of the retail market which, in turn, requires the unbundling of sales from distribution. Retail market liberalization needs to encompass both free entry and free tariff-setting.

Regulation. Regulation needs to develop in parallel with the reform and encompass both the regulation of the naturally monopolistic activities and the implementation of an appropriate competition policy in the competitive segments. The regulatory authority should be independent of the regulated and of the government, particularly in cases where the government is a grid owner. The role of competition policy, in turn, has been particularly important in merger control and in the elimination of explicit subsidies.

Sequencing. While most reforms have proceeded from legal changes to regulatory reforms to restructuring and privatization, the sequencing of privatization and liberalization has varied between countries. For example, utilities were privatized before liberalization in the UK, while liberalization preceded privatization in the Nordic countries.

Sources: International Energy Agency *Electricity Market Reform. An IEA Handbook* (1999) and *Competition in Electricity Markets* (2001).

- Gazprom's exports, particularly to non-CIS countries, have cross-subsidized its domestic sales, which have been subject to not only below-market tariffs (the current tariff for industrial consumers is around one-tenth of the world-market price and below the break-even level) but also, until last year, to pervasive nonpayments. Abstracting from nonpayments, the implicit subsidy due to below-market pricing is estimated at roughly 3 percent of GDP. Exports to many CIS countries have also included a subsidy element in the form of below-market pricing or nonpayments.
- Gazprom's corporate governance record has suffered from poor transparency, particularly related to its relationship with Russia's second-largest gas producer, Itera, and extensive operations outside its core business. Also, the ring-fence around Gazprom's domestic share market (foreigners are not allowed to purchase Gazprom's

shares in Russia; they can only hold Gazprom's ADRs) has created a dual market for its shares and prevented foreign shareholders from exercising normal shareholder control.

14. **Some of these problems are being addressed.** Gazprom's cash collections for current domestic shipments have improved from below 20 percent in the spring of 1999 to 80-100 percent since spring 2001. Progress has recently been made in restructuring other CIS countries (notably Ukraine) arrears to Gazprom. To enhance transparency, Gazprom has prepared financial statements based on International Accounting Standards since 1998. Also, Gazprom commissioned in the spring of 2001 its regular auditor to conduct a special audit of the relationship between Gazprom and Itera. Gazprom has furthermore initiated the development of its own corporate governance code. Finally, a working group has been working on a proposal to gradually liberalize Gazprom's domestic share market.

15. **A comprehensive restructuring plan for the gas sector will be developed in the near future.** While the government's program for the second half of 2001 envisaged a draft plan to be finalized by end-2001, this schedule may slip because of the need to first conduct a thorough inventory of Gazprom's assets. The main elements of the restructuring plan would concern the reform of gas transportation and the liberalization of domestic gas market and exports. On gas transportation, the key issue to be determined is whether it will be spun off from Gazprom into a separate state-regulated natural monopoly. On domestic gas market liberalization, the government's long-term energy strategy envisages that domestic gas prices rise gradually to the "European level" (net of taxes and transportation costs) by 2007. On gas exports, it remains to be determined to what extent and how fast they will be opened up to independent producers.

Oil sector

16. **The reform of the oil sector has advanced further than the reforms of the electricity and gas sectors.** Oil exploration, production, refining, and sales have been separated from pipeline transportation, and the majority of oil companies were privatized in 1995-96. The state retains majority interest in two vertically integrated companies, Slavneft and Rosneft, which account for less than 10 percent of Russia's total crude oil production. Although the majority of the oil sector has been privatized, however, administrative control of exports have distorted domestic markets by depressing prices and by encouraging excessive substitution of other fuels by oil and oil products.

17. **The state controls the oil pipeline company and allocates access to the pipeline administratively.** Transneft, the oil pipeline company, is 75 percent state-owned. The Single Tariff Agency controls Transneft's tariff-setting, with the government approving any tariff changes, and a special governmental commission regulates oil companies' access to the export pipeline. While part of the pipeline capacity is allocated among oil companies on the basis of their production volumes—with small and medium-sized oil companies allowed to export a larger share of their production than large ones—the commission has considerable discretion to allocate the residual capacity.

18. **The administrative control of exports of both crude oil and refined oil products drives a wedge between domestic and world market prices.** The production-based allocation of part of the export pipeline capacity creates an incentive for oil companies to overproduce crude oil. The excess production is either sold domestically, which widens the wedge between domestic and world market prices further, or refined. However, as the state has in the past conditioned certain refined products' exports on the fulfillment of domestic delivery targets, a wedge has also been driven between domestic and world market prices for these refined oil products. The significance of these administrative export restrictions depends naturally on the volatile world market prices for oil products. Fund staff estimates suggest that the wedge between domestic and world market prices was approximately 2 percent of GDP at end-2000.

19. **The government is contemplating some liberalization measures.** While auctions to allocate export pipeline capacity among oil companies have not been introduced yet, preparatory work to this end is underway. Also, the government hopes to eliminate the need to introduce domestic delivery targets for oil products while ensuring sufficient supplies to the domestic markets by creating a physical oil product reserve and by continuing the use of export tariffs for that purpose. Nevertheless, quantitative export quotas were imposed on fuel oil in the last quarter of 2001. Finally, the government envisages the privatization of a blocking stake in Slavneft in 2002.

C. Other Structural Reforms

Railways restructuring

20. **Currently, the Ministry of Railways controls the entire railways sector.** The Ministry controls a large vertically integrated structure of production facilities; railway infrastructure; railway operations; repair services; social services, including education and health facilities for railway employees and their families; and even regulatory and supervisory bodies. Current problems in the sector include the lack of oversight, accountability, financial transparency, and profitability resulting from vertical integration; insufficient investment in infrastructure and rolling stock; overstaffing; and tariff cross-subsidization (freight tariffs subsidizing passenger tariffs and export/import tariffs subsidizing domestic tariffs).

21. **The government approved a restructuring plan for the railways sector in May 2001.** The broad aim of the restructuring is to separate out naturally monopolistic activities (railway infrastructure) from the potentially competitive ones (both passenger and freight transportation as well as repair services) and to eventually liberalize and privatize the latter (see Box 2). In addition, the plan envisages the spin-off of non-core functions from the railway sector (social and educational responsibilities currently borne by the Ministry of Railways) and the establishment of an independent authority to regulate and supervise the sector. Also, cross-subsidization is to be phased out within five years, and the on-going reduction of the number of employees is to continue.

22. **The restructuring is envisaged in three stages.** In stage one (2001–02), the necessary legal bills will be drafted and approved, paving the way for the reorganization of the sector. Also, a fully state-owned holding company is created to control a railway infrastructure company; regionally independent commercial railway companies (selling passenger and freight transportation services); and other non-core functions. In stage two (2003–05), the potentially competitive activities are spun off from the holding company into daughter companies, and regulatory functions will be separated out from the Ministry of Railways. In stage three (2006–10), the holding company will be liquidated and commercial railway companies will be privatized on a case-by-case basis.

Box 2. Separation of Railway Activities

The economic rationale for separating naturally monopolistic from potentially competitive activities in the railway sector goes beyond the introduction of competition within the sector. In the power sector, electricity and gas face few, if any, perfect substitutes that would not need to use and finance the maintenance of a naturally monopolistic segment (power grid, pipeline). However, rail transportation (both freight and passenger) faces competition from other means of transportation, including road, sea, and air, which need not maintain any naturally monopolistic segment; on the contrary, they often benefit from subsidized supporting infrastructure. Therefore, a vertically integrated railway sector has a competitive disadvantage vis-à-vis its competitors as it has to bear the cost of maintaining the railway infrastructure.

While many European countries have recently proceeded with the separation of railway activities, they have chosen different approaches to privatization. In the UK, separation was followed by the privatization of all activities, including infrastructure and traffic control. In Germany, while the state-owned railway company both manages the infrastructure and provides transportation services, a phased introduction of competition into transportation operations is taking place. In France, a separate infrastructure authority has been created without any privatization of non-infrastructure activities.

Separation has improved financial transparency but raised questions about regulation. There are technical, as opposed to economic, arguments for integrating railway infrastructure with locomotive fleet and rolling stock. To the extent that financial and ownership separation lead to technical separation, concerns about compatibility and maintenance may arise. Therefore, and in order to ensure fair access to and non-predatory pricing of the naturally monopolistic services, an adequate regulatory framework is required.

Business deregulation

23. **As part of the effort to improve the investment climate, the Duma approved, in July 2001, a package of laws aimed to deregulate the conduct and establishment of business activities.** Running or establishing a private business has been administratively burdensome as the regulatory framework has been ambiguous and numerous authorities at different levels of government have had far-reaching powers of administrative intervention. This has also created a fertile breeding ground for corruption and poor governance.

24. **The deregulation package consists of three laws.** Specifically, they aim at easing the administrative burden on enterprises by limiting state inspections of businesses; reducing

the number of activities requiring a license and eliminating subnational licenses; and simplifying the registration of new firms, as detailed below.

- Regulatory bodies' (e.g., fire safety and sanitary inspectorates, but excluding tax and financial inspections) ability to carry out unannounced **inspections** will be limited to cases of filed complaints, which may not be anonymous. Regular inspection visits will have to be preannounced and there will be authority-specific annual caps on the number of inspection visits per enterprise.
- The number of activities requiring state **licensing** will be cut from the current level of above 2000 (including both federal and subnational licenses) to about 100, and subnational licenses will be eliminated. Licenses issued by the designated federal agency will be automatically recognized throughout the country. The process of obtaining a license is streamlined and made unambiguous by including all requirements in the law.
- **Registration** of new enterprises will be moved to an announcement basis (as opposed to a permit basis, except for activities requiring a license) and to a one-window basis, where the responsibility of informing tax, social, health, and other authorities of the establishment of the new firm will be shifted from the firm itself to the registering authority. Also, a five-day time limit for registration is established where all relevant registration documents have been provided by the entrepreneur.

25. **Deregulation is part of a comprehensive agenda to support private sector growth.** Apart from deregulation, the tax reform, strengthening of property rights (particularly through land reform), labor reform, and judicial reform will all—if adopted and implemented—significantly stimulate the growth of particularly small and medium-sized enterprises, which have been the engine of sustainable growth in most transition economies. In addition to these reforms that have already been adopted or formulated, progress on financial sector reform will be a key determinant of the private sector's growth potential.

26. **Deregulation has merits in its own right but needs to be accompanied by competition policy to be fully effective.** The specific role of deregulation is to lower barriers to entry and to reduce the costs of establishing and conducting business. While deregulation therefore has potential in its own right to enhance competition, the simultaneous formulation and implementation of an adequate competition policy is necessary to ensure that competition takes place on a level playing field. To this end, the government's recently adopted medium-term program specifies measures aimed at leveling the playing field, particularly between public and private sector enterprises.

Land reform

27. **Land reform is another key element in the effort to improve the investment climate and strengthen property rights.** While the right to private land ownership was written into the 1991 constitution, its exercise was effectively blocked by the absence of a

legal and procedural framework. These frameworks have been created in the Civil Code (whose Chapter 17 "On Transactions with Land" was unfrozen by the Duma at the beginning of 2001) and the Land Code (that was adopted in October 2001, and will come into force at the beginning of 2002). In addition, the improvement of the land cadastre is a priority so as to allow the strengthening of the link between the cadastre and the registration of land rights.

28. **The Land Code covers only urban land.** It establishes the right and procedures for owning, trading, and collateralizing commercial and residential land as well as household plots and family farms by resident and non-resident individuals and enterprises. This covers all non-agricultural land except land occupied by military or nuclear facilities; lands of ZATOs (closed administrative districts); and conservation areas and national parks. Foreigners are not allowed to own land in border areas and other special territories, as defined in other legislation.

29. **Ownership of and trade in agricultural land will be regulated separately.** As stipulated in the draft Law on Differentiation of Land Property, which regulates public land ownership between different levels of government, agricultural land belongs currently to municipalities. A separate law on the ownership of and trade in agricultural land is being drafted, with a view to submitting it to the Duma in March 2002 (see Box 3 on agricultural reforms more broadly).

Labor reform

30. **The Duma approved a new Labor Code in December 2001.** The old Labor Code originated from the Soviet era and thus, among other things, did not recognize private employment. Therefore, it only covered a fraction of the current labor force. The new Labor Code aims to be better compatible with a market economy and to increase the flexibility of labor markets, including by granting employers the right to terminate labor contracts; by extending the use of fixed-term labor contracts; and by streamlining the collective bargaining process. In addition, the new Labor Code details the basic parameters of labor contracts, such as minimum wage (which is to converge to the official minimum living standard over a transitional period), working time, overtime compensation, leave entitlements, penalties for wage arrears, etc.

31. **At the same time, the authorities will strengthen the social safety net.** From the viewpoint of labor markets, the most relevant pieces of social legislation to be prepared according to the government's program are bills aimed to improve active and passive employment assistance, including the Employment Law. The former consists of improving access by the unemployed to already existing employment assistance programs as well as of introducing procedures to evaluate the efficiency of active employment assistance programs. The latter, in turn, consists of enhancing the adequacy and efficiency of the existing unemployment benefit system. The medium-term program envisages strengthening the system of mandatory social insurance for work-related injuries and occupational diseases.

Box 3. Agricultural Reforms in Russia

Background. Agricultural production could be among Russia's main comparative advantages. Its arable land area is vast; a significant share of arable land has very fertile soil; the growing season is long particularly in southern Russia; and agricultural human capital remains abundant.

However, lack of farm-level restructuring in combination with declining subsidies and the introduction of market mechanisms into agricultural input and output markets has hit the agricultural sector hard in the past decade. Total agricultural production dropped by one-third between 1990 and 2000—with livestock production halving and crop production declining by a quarter—and the GDP share of agriculture declined from 14 percent to 6.5 percent. By 1999, the share of the rural population with cash income below the subsistence level had reached almost three-quarters. Some 90 percent of farms are now unprofitable, and 70 percent of the debts of agricultural enterprises are in arrears.

Reforms so far. Agricultural reforms to date have focused on limiting distortions from federal government intervention in the agricultural sector. Agricultural prices have mostly been liberalized (although a revival of federal procurement to regulate grain markets is being planned); federal trade protection of agriculture is low compared to many industrial countries; and direct subsidies from the federal budget are only one-third of their level in OECD countries. Furthermore, 90 percent of enterprises servicing farms and enterprises processing farms' output have been privatized. One positive result of the reforms so far has been the emergence of private farming (mainly household plots), which now accounts for as much as 60 percent of all agricultural production despite operating only around 10 percent of agricultural land.

Remaining agenda. At the federal level, a general rural development strategy remains to be developed, aimed in particular at leveling the playing field between public and private producers by ending the current policy which has used soft budget constraints and debt forgiveness to favor large collective enterprises. Therefore, a comprehensive program of debt settlement is needed, combined with farm restructuring, genuine privatization, bankruptcy where necessary, and hardening of budget constraints. To support this agenda, agricultural land reform is key, as is the development of a market-based system of agricultural financing. However, the bulk of agricultural reform need is at the regional level. Regions have considerable autonomy in formulating their agricultural policies, and this autonomy is exploited by many regions in main agricultural production areas to support inefficient production. This is done through regional trade barriers; physical food reserves aimed at controlling prices; implicit subsidies (including in the form of tolerance for nonpayments); as well as the use of commodity credit schemes as a way of non-cash public procurement. All these practices are inherently distortionary and stand in the way of farm-level restructuring and, hence, Russia's ability to utilize its comparative advantage in agriculture.

Source: World Bank

Housing and communal services

32. **Housing and communal services are characterized by pervasive implicit subsidies and other non-market features.** Cost recovery levels for housing and communal services are low; for example, operational cost recovery (i.e., cost recovery excluding long-term investment needs) for public housing maintenance is estimated at below 50 percent (1999); for heating, water, and sewage at 35 percent (2000); for gas at 50 percent (2000); and for electricity at 40 percent (2000). Utility tariffs are partly cross-subsidized, with industrial consumers subsidizing low tariffs for the household sector. In addition, public housing

construction—which in 2000 still accounted for 20 percent of all residential housing construction by area—as well as publicly organized housing maintenance remain characterized by the absence of market-based and transparent tendering procedures.

33. **The government aims to introduce market mechanisms into housing and communal services.** Operational cost recovery in both housing and communal services is envisaged to be achieved by 2004. Furthermore, municipal housing maintenance and construction will be moved to a competitive tender basis. To facilitate the financing of housing investments by households, legislation on mortgage markets and instruments will be introduced.

34. **These principles are spelled out in the government's reform program for housing and communal services.** The program, approved by the government in September and further detailed in November 2001, has four main parts to it: administrative and financial reform of housing and communal services; provision of access to affordable housing; reform of housing construction; and fulfillment of current housing obligations of the state to certain categories of citizens. The program covers the period through 2010 and is divided in two phases. Apart from the financial measures mentioned above, the first phase (through 2004) consists of legal, regulatory, and organizational changes, including the approval of a new Housing Code. The second phase (2004–10) comprises the refinement and universal implementation of the reform measures introduced in the first stage.

35. **The reform, while improving economic efficiency generally, could necessitate significant fiscal subsidies.** Given the current low cost recovery levels, housing rents and communal services' tariffs need to increase substantially over the medium and long term. Preliminary estimates by Fund staff suggest that if all households whose housing and communal services expenditures exceed 22 percent of their income (which has been established as a threshold) are to be compensated for the difference between their actual expenditures and the threshold, the fiscal cost of introducing operational cost recovery could amount to 0.7 percent of GDP annually. Additional subsidies would be needed to compensate budgetary organizations for increased utility tariffs, which in the case of electricity alone could amount to some 0.4 percent of GDP. With the threshold described above, the introduction of full cost recovery could imply a fiscal cost of subsidies to households of as much as 3–4 percent of GDP.

36. **Several factors, however, can mitigate the fiscal impact of the reform.** First, given the present inefficiencies in housing construction and the production and provision of some communal services, the estimated operational and investment-inclusive costs are likely exaggerated, resulting in too high projections for fiscal subsidy needs. Second, consumption-side inefficiencies due to below-market pricing imply scope for savings, in particular through energy conservation, which will also reduce the fiscal subsidy need. Furthermore, the reform will also likely generate higher fiscal revenues through improved profitability in the utilities' sector, which will reduce the net fiscal cost of the reform. Nevertheless, as all these offsetting effects are difficult to quantify, measures to improve the efficiency of the subsidy schemes

(e.g. introducing metering to utilities other than electricity, which is currently the only metered utility) need to be taken to ensure the affordability of the reform.

External trade reform and WTO accession

37. **The reform of the external trade system comprises import tariff reform and customs reform.** A major revision of the import tariff schedule was approved in November 2000 and came into force at the beginning of 2001, with the number of basic rate bands declining from 7 to 4 and the maximum tariff declining from 30 to 20 percent (except for automobiles for which the tariff rate is 30 percent). The tariff schedule has subsequently been amended, further reducing the level and dispersion of tariffs. Customs reform, in turn, aims to streamline and modernize procedures for customs clearance and the organization of the State Customs Committee (SCC). Customs procedures will be streamlined by a new draft Customs Code, which is aimed to be WTO-compatible and compatible with the Kyoto convention on harmonization and simplification of customs procedures. Discussions concerning the reorganization of the SCC are ongoing.

38. **Russia is also in the process of negotiating membership in the World Trade Organization (WTO).** Russia's formal application for membership was submitted in 1993. The approval of the tariff reform in the fall of 2000 marked an acceleration of the accession process, and the current government has declared WTO accession a priority. The ongoing stage of accession negotiations involves a multilateral review by the Working Party on Russia's Accession of Russia's trade regime, as well as the preparation of bilateral agreements between Russia and WTO member countries on future market access commitments. The Russian authorities' apparent objective is to join the WTO by 2004.

39. **The accession negotiations have focused on trade protection and the necessary legal changes and their implementation.** Tariffs for some 20-30 percent of a total of 11,000 categories of goods remain to be negotiated, with agriculture, machinery and equipment (aircrafts, trucks, cars), furniture, pharmaceuticals, and chemicals among the sectors where progress has been slowest. In the area of non-tariff barriers, negotiations have focused on certification and standardization requirements. Apart from tariff and non-tariff barriers, the extent of protection of domestic producers through direct agricultural subsidies and indirect energy subsidies—as well as through restricting foreigners' access to services (particularly banking, insurance, telecoms, transportation, and health care)—remains to be agreed upon.

40. **Apart from the approval of relevant legislation, legal enforcement has been a concern in the accession negotiations.** As for introducing necessary legal changes, the Duma is scheduled to consider a package of important bills, including the draft Customs Code, in its spring 2002 session. As for legal enforcement, negotiations have focused on the protection of intellectual property rights, including on audiovisual products, as well as on the implementation of relevant laws and agreements at subnational levels of government.

Judicial reform

41. **The transformation of the Soviet judicial system began in the early 1990s.** The most important changes at that juncture were organizational in character, including the establishment of the Constitutional Court as well as special courts (arbitration courts) to handle commercial disputes instead of the system of state arbitration. However, the division of responsibility for commercial disputes between arbitration courts and courts of general jurisdiction was ambiguous. Therefore, commercial disputes are often brought to both arbitration and general courts, which has led to prolonged processes.

42. **Current judicial reforms aim to simplify and professionalize the court system improve the status and independence of judges and provide a more humane penal system.** The court system is envisaged to be simplified by a better delineation of responsibilities between different types of courts, including by a transfer of all commercial disputes to arbitration courts. Enhancements to the professionalization of the court system and to an improvement in judges' status and independence will result from significant increase in judges' average salaries; an imposition of age and term limits on judges, and a shift of power from prosecutors in favor of judges. In addition, judges' independence from regional authorities and legislature is to be increased by removing their right to approve judicial appointments and by shifting the financing of the judiciary to the federal budget. Finally, the use of jury trials will be generalized, suspects in criminal cases will be protected against police brutality, and separate first-tier appeal courts are to be created in selected regions.

43. **Approximately one-third of the legal bills relating to the reform have been enacted.** They relate to legislation on the judicial system and the Constitutional Court; on criminal investigation and court procedures; and on the appointment and status of judges. Also, the government has approved a judicial reform program through 2006, including financing for wage increases for judges and computerization of courts.

INTERNATIONAL MONETARY FUND

RUSSIAN FEDERATION

Statistical Appendix

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Russian Federation: Basic Data

	1995	1996	1997	1998	1999	2000
Social and demographic indicators 1/						
Area	17,075,400 sq. km					
Population (in millions) 2/	144.8					
Urban (As a percent of total population)	72.9					
Rate of population growth (Percent per annum)	-0.5					
Life expectancy at birth (Years)	65.3					
Infant mortality rate (Per 1,000 live births)	15.3					
Literacy (Percent of population)	99.1					
	1995	1996	1997	1998	1999	2000
Share of gross domestic product 3/						
Agriculture 4/	7.2	7.3	6.5	5.7	7.9	7.4
Industry	29.0	29.5	28.3	29.9	31.1	32.5
Services	54.6	54.2	56.7	56.6	54.3	53.0
GDP						
Nominal GDP (in billions of rubles)	1,541	2,146	2,479	2,741	4,757	7,063
Real GDP (percentage change)	-4.1	-3.4	0.9	-4.9	5.4	8.3
Consumer prices (percentage change, period average)	197.6	47.8	14.8	27.7	85.7	20.8
Enlarged government finances 5/						
Total revenue	526	720	920	903	1,619	2,711
(in percent of GDP)	34.1	33.5	37.1	33.0	34.0	38.4
Total expenditure	619	910	1,119	1,119	1,769	2,482
(in percent of GDP)	40.2	42.4	45.1	40.8	37.2	35.1
Overall balance	-93	-190	-199	-215	-150	229
(in percent of GDP)	-6.0	-8.9	-8.0	-7.9	-3.1	3.2
Money and credit (end-period)						
Ruble broad money (in billions of rubles)	221	295	370	448	705	1,144
Velocity of ruble broad money (level)	8.9	8.3	7.4	7.3	8.1	6.8
Balance of payments						
Total exports (in billion of US dollars)	82.9	90.6	89.0	74.9	75.7	105.6
Total imports (in billion of US dollars)	62.6	68.1	72.0	58.0	39.5	44.9
Current account balance (in billion of US dollars)	7.5	11.7	-0.4	-1.6	22.7	45.3
Official reserves (in months of imports of goods and services)	2.4	2.0	2.9	2.5	2.4	4.6
Exchange rate, rubles per U.S. dollar, end-period	4.6	5.6	6.0	20.7	27.0	28.2

Sources: Russian authorities; and Fund staff estimates.

1/ Data for 2000 or latest available.

2/ Resident population at January 1, 2001.

3/ GDP share of gross value added by economic sectors, in basic prices, not adjusted for imputed financial services.

4/ Agriculture, including companies servicing agriculture and forestry.

5/ On a cash basis before 1996, commitment basis thereafter.

Table 1. Russian Federation: Selected Indicators of Economic Activity, 1995-2001

	1995	1996	1997	1998	1999	2000	2001
	(Percentage change, year-on-year)						
Gross domestic product	-4.1	-3.4	0.9	-4.9	5.4	8.3	5.0 1/
Industrial output 2/	-3.3	-4.5	2.0	-5.2	11.0	11.9	4.9
Agricultural output	-8.0	-5.1	1.5	-13.2	4.1	7.7	6.8
Crops	-4.6	0.3	7.3	-22.3	9.1	13.6	
Livestock	-10.4	-11.0	-5.0	-1.8	-0.7	0.8	
Freight transport 3/	-1.0	-4.6	-3.4	-3.3	5.3	5.0	3.1

Source: Goskomstat.

1/ January - September.

2/ Adjusted for informal production; data for 1999-2001 revised using 1999 weights.

3/ Turnover of transport companies (including pipelines).

Table 2. Russian Federation: GDP by Expenditure, 1995-2001

	1995	1996	1997	1998	1999	2000	2001 2/
	(Annual percent change 1/)						
Gross domestic product	-4.1	-3.4	0.9	-4.9	5.4	8.3	5.0
Total domestic demand	-4.9	-7.7	1.3	-7.8	-0.5	8.9	9.2
Consumption	-2.7	-3.1	3.0	-1.5	-2.4	7.0	7.0
Households	-2.8	-4.7	5.4	-2.4	-4.4	8.9	9.8
General government	1.1	0.8	-2.4	0.6	3.0	1.6	-1.1
Non-profit institutions	-30.5	-0.5	-1.8	-1.6	0.4	0.4	0.1
Gross investment	-10.8	-20.6	-3.6	-28.7	8.5	17.3	16.5
Capital formation	-7.5	-19.3	-5.7	-9.8	4.7	15.5	6.0
Net exports of goods and services	3.2	21.2	-8.8	111.0	72.3	2.4	-9.6
Memorandum item:							
GDP at production basis	-4.1	-3.4	0.9	-4.9	5.4	8.3	5.0
	(Share of nominal GDP, in percent)						
Total domestic demand	97	96	97	93	83	80	86
Consumption	71	71	75	77	68	62	64
Households	49	49	50	55	52	46	48
General government	19	20	21	19	14	14	14
Non-profit institutions	2	2	3	3	2	2	2
Gross Investment	25	24	22	16	15	17	22
Capital formation	21	21	19	18	16	18	17
Changes in inventory	4	3	3	-2	-1	-1	5
Net exports of goods and services	3	4	3	7	17	20	14
Exports of goods and services (fob)	28	25	23	31	43	45	38
Imports of goods and services (fob)	24	20	21	24	26	24	23

Source: Goskomstat; and Fund staff estimate.

1/ In previous year's comparable prices.

2/ January-September.

Table 3. Russian Federation: GDP by Sector, 1995-2001 1/

	1995	1996	1997	1998	1999	2000	2001 2/
	(In percent)						
Agriculture 3/	7.2	7.3	6.5	5.7	7.9	7.4	8.6
Industry	29.0	29.5	28.3	29.9	31.1	32.5	30.9
<i>of which:</i>							
processing industry							
Construction	8.5	8.4	7.9	7.1	6.2	6.7	6.6
Wholesale, retail, foreign trade, public catering, procurement	19.6	18.3	17.6	19.5	21.7	21.1	19.2
Transportation and communications 4/	11.9	12.4	12.1	10.9	9.6	8.5	8.9
Finance, credit, insurance, real estate operations, science and research, housing, geology, subsoil resources, exploration, meteorology, computer services, others	9.5	8.6	9.6	9.2	10.2	11.0	12.4
State administration and defense	4.7	4.6	5.5	5.9	4.6	4.9	5.1
Education, culture and art, health care, physical education & social security, utilities, non- production activities services to households, people's associations	9.6	10.9	12.5	11.8	8.7	7.9	8.3

Source: Goskomstat.

1/ GDP share of gross value added by economic sectors, in basic prices -- excludes taxes, includes subsidies; not adjusted for imputed financial services.

2/ January-September.

3/ Agriculture, including companies servicing agriculture and forestry.

4/ Transport, communications, road infrastructure.

Table 4. Russian Federation: Gross Industrial Output by Sector, 1995-2001

	1995	1996	1997	1998	1999	2000	2001
	(Percent change, annual average)						
Total	-3.3	-4.5	2.0	-5.2	11.0	11.9	4.9
Electric power generation	-3.2	-2.7	-1.8	-2.3	-1.2	2.3	1.6
Fuel	-0.8	-3.1	-0.4	-2.6	2.5	4.9	6.1
Ferrous metallurgy	9.6	-4.8	0.9	-7.6	16.8	15.7	-0.2
Nonferrous metallurgy	2.8	-3.6	6.0	-4.3	10.1	15.2	4.9
Chemicals and petrochemicals	8.0	-8.4	2.0	-6.0	24.1	13.1	6.5
Machinery	-9.3	-13.7	3.5	-8.7	17.2	20.0	7.2
Forestry, timber processing, paper and pulp	-0.7	-22.6	-0.4	0.4	17.8	13.4	2.6
Construction materials	-8	-25.5	-4.1	-6.3	10.2	13.1	5.5
Light industry	-30.2	-28.2	-3.9	-10.3	12.3	20.9	5.0
Food processing	-8.2	-9.3	-2.8	0.8	3.6	14.4	8.4
	(In percent of 1991 level)						
Total	53.9	51.5	52.5	49.8	55.2	61.8	64.8
Electric power generation	80.2	78.0	76.6	74.8	73.9	75.6	76.9
Fuel	73.2	71.0	70.7	68.8	70.6	74.0	78.5
Ferrous metallurgy	63.2	60.2	60.7	56.1	65.5	75.8	75.6
Nonferrous metallurgy	60.0	57.9	61.3	58.7	64.6	74.4	78.1
Chemicals and petrochemicals	49.5	45.4	46.3	43.5	54.0	61.1	65.0
Machinery	44.8	38.7	40.0	36.5	42.8	51.4	55.1
Forestry, timber processing, paper and pulp	47.9	37.1	36.9	37.1	43.7	49.5	50.8
Construction materials	44.7	33.3	32.0	29.9	33.0	37.3	39.4
Light industry	20.3	14.6	14.0	12.6	14.1	17.1	17.9
Food processing	57.6	52.3	50.8	51.2	53.0	60.7	65.8

Source: Goskomstat.

Table 5. Russian Federation: Employment, Labor Productivity and Real Wages in Industry by Sector, 1995-2001

	1995	1996	1997	1998	1999	2000	2001
	(In thousands)						
Employment 1/							
Total	16,006	14,934	14,009	13,173	13,077	13,294	13,421
Electric power generation	750	790	810	842	880	913	926
Fuel	846	856	821	794	738	730	939
Ferrous metallurgy	727	727	683	673	676	711	795
Nonferrous metallurgy	549	537	508	480	503	560	649
Chemicals and petrochemicals	895	851	821	775	761	785	841
Machinery	6,149	5,590	5,231	4,833	4,688	4,709	4,675
Forestry, timber processing, paper and pulp	1,383	1,261	1,138	1,034	1,057	1,102	1,008
Construction materials	973	868	783	713	718	684	597
Light industry	1,332	1,133	1,006	888	863	849	842
Food processing	1,506	1,487	1,454	1,396	1,439	1,484	1,433
Others	896	834	754	745	754	767	716
	(In percent of 1991 levels)						
Total	54	51	52	50	55	62	65
Electric power generation	80	78	77	75	74	76	77
Fuel	73	71	71	69	71	74	79
Ferrous metallurgy	63	60	61	56	66	76	76
Nonferrous metallurgy	60	58	61	59	65	74	78
Chemicals and petrochemicals	50	45	46	43	54	61	65
Machinery	45	39	40	37	43	51	55
Forestry, timber processing, paper and pulp	48	37	37	37	44	50	51
Construction materials	45	33	32	30	33	37	39
Light industry	20	15	14	13	14	17	18
Food processing	58	52	51	51	53	61	66
Average Labor Productivity 2/							
Total	68	69	75	76	85	94	97
Electric power generation	60	56	53	50	47	47	47
Fuel	71	68	70	71	78	83	68
Ferrous metallurgy	67	64	69	64	75	82	73
Nonferrous metallurgy	55	54	61	61	64	67	60
Chemicals and petrochemicals	57	55	58	58	74	81	80
Machinery	66	63	69	68	83	99	107
Forestry, timber processing, paper and pulp	60	51	56	62	71	78	87
Construction materials	49	41	44	45	49	58	70
Light industry	33	28	30	30	35	43	46
Food processing	59	54	54	56	57	63	70
Real producer wages 3/							
Total	37	40	43	46	44	49	66
Electric power generation	46	50	50	53	47	48	60
Fuel	51	54	57	57	59	72	101
Ferrous metallurgy	39	47	47	47	46	55	66
Nonferrous metallurgy	47	48	49	55	59	70	79
Chemicals and petrochemicals	37	40	43	47	45	49	61
Machinery	32	35	37	41	38	44	58
Forestry, timber processing, paper and pulp	33	33	34	34	34	37	48
Construction materials	34	35	37	37	32	36	46
Light industry	20	19	21	22	21	23	30
Food processing	36	40	41	43	40	40	52
Product Unit Labor Costs 4/							
Total	55	58	57	60	52	53	68
Electric power generation	76	89	94	107	99	103	128
Fuel	73	80	81	81	76	88	148
Ferrous metallurgy	59	73	68	73	62	67	89
Nonferrous metallurgy	85	88	80	89	91	105	130
Chemicals and petrochemicals	64	72	74	81	62	60	76
Machinery	49	55	54	59	46	44	54
Forestry, timber processing, paper and pulp	55	65	60	56	48	48	55
Construction materials	70	87	84	84	66	61	65
Light industry	60	70	69	71	59	53	66
Food processing	62	74	76	76	71	64	73

Source: Goskomstat; and Fund staff estimates.

1/ Average payroll fund data.

2/ Measured as the ratio of production to workforce.

3/ Deflated by industrial PPI.

4/ Measured as the ratio of real producer wages to average labor productivity.

Table 6. Russian Federation: Labor Force Turnover, 1995-2001 1/

	1995	1996	1997	1998	1999	2000	2001 2/
	(In thousands)						
Total number of separations	13,069	11,372	11,017	10,650	10,274	11,616	9,127
<i>of which: in industry</i>	4,284	3,709	3,385	3,333	3,152	3,503	2,813
Number of new hires	11,480	8,982	8,981	8,984	10,128	11,236	8,935
<i>of which: in industry</i>	3,192	2,321	2,426	2,387	3,200	3,582	2,675
	(As percent of total employment)						
Total number of separations	25.7	23.9	24.5	24.9	24.5	27.8	22.1
<i>of which: in industry</i>	28.4	27.0	26.8	27.7	27.0	29.5	23.8
Number of new hires	22.6	18.9	19.9	21.0	24.2	26.9	21.6
<i>of which: in industry</i>	21.1	16.9	19.2	19.8	27.4	30.1	22.6

Sources: Goskomstat.

1/ Data for large and medium enterprises.

2/ January-September.

Table 7. Russian Federation: Employment by Sector, 1995-2000 1/

	1995	1996	1997	1998	1999	2000
	(In thousands)					
Total	66,409	65,950	64,693	63,812	63,963	64,327
Industry 2/	17,161	16,366	14,905	14,162	14,297	14,543
Agriculture and forestry	10,003	9,508	8,832	8,963	8,738	8,609
Construction	6,208	5,875	5,664	5,094	5,083	5,002
Transportation and communication	5,250	5,220	5,124	4,852	4,919	5,011
Commerce, food service, material and technical supply, marketing and procurement	6,676	6,795	8,725	9,312	9,320	9,421
Public health, physical training, social security, education, art, culture and science	13,446	13,358	12,995	12,795	12,769	12,719
Administrative staff, lending and state insurance	2,713	3,454	3,359	3,513	3,602	3,667
Other sectors (housing, pub. utilities, nonproduction types of gen. services to the public)	4,952	5,374	5,089	5,121	5,235	5,355
	(In percent of 1991 level)					
Total	88.6	88.0	86.3	85.2	85.4	85.8
Industry 2/	71.0	67.7	61.7	58.6	59.1	60.2
Agriculture and forestry	93.6	89.0	82.6	83.9	81.8	80.6
Construction	87.6	82.9	80.0	71.9	71.8	70.6
Transportation and communication	71.6	71.2	69.9	66.1	67.1	68.3
Commerce, food service, material and technical supply, marketing and procurement	107.3	109.2	140.2	149.7	149.8	151.4
Public health, physical training, social security, education, art, culture and science	99.3	98.6	95.9	94.4	94.3	93.9
Administrative staff, lending and state insurance	150.0	190.9	185.7	194.2	199.1	202.7
Other sectors (housing, pub. utilities, nonproduction types of gen. services to the public)	121.4	131.7	124.8	125.5	128.3	131.3
	(In percent of total employment)					
Total	100.0	100.0	100.0	100.0	100.0	100.0
Industry	25.8	24.8	23.0	22.2	22.4	22.6
Agriculture and forestry	15.1	14.4	13.7	14.0	13.7	13.4
Construction	9.3	8.9	8.8	8.0	7.9	7.8
Transportation and communication	7.9	7.9	7.9	7.6	7.7	7.8
Commerce, food service, material and technical supply, marketing and procurement	10.1	10.3	13.5	14.6	14.6	14.6
Public health, physical training, social security, education, art, culture and science	20.2	20.3	20.1	20.1	20.0	19.8
Administrative staff, lending and state insurance	4.1	5.2	5.2	5.5	5.6	5.7
Other sectors (housing, public utilities, nonproduction types of general services to the public)	7.5	8.2	7.8	8.0	8.1	8.3

Source: Goskomstat.

1/ Average for the year; does not include students.

2/ Goskomstat estimates, which do not necessarily match the payroll fund data.

Table 8. Russian Federation: Indicators of Hidden Unemployment, 1995-2001 1/

	Shortened Workday 2/		Forced Leave 3/	
	Thousands of persons	In percent of workforce	Thousands of persons	Avg. leave days per person per quarter
<u>1995</u>				
Q1	2244	4.4	2466	11.0
Q2	1991	3.9	1868	11.0
Q3	1900	3.8	1793	11.0
Q4	2051	4.1	2401	10.0
<u>1996</u>				
Q1	2952	6.1	2316	11.0
Q2	3292	6.8	1991	10.0
Q3	3184	6.6	1793	12.0
Q4	3409	7.2	2408	10.0
<u>1997</u>				
Q1	2382	5.2	1708	11.0
Q2	2552	5.6	1688	9.0
Q3	2482	5.5	1223	11.0
Q4	2596	5.8	1494	9.0
<u>1998</u>				
Q1	2324	5.4	2471	18.2
Q2	3060	7.1	4095	21.0
Q3	3724	8.6	4155	33.0
Q4	4306	10.1	4742	38.8
<u>1999</u>				
Q1	2196	5.3	2000	17.6
Q2	2444	5.8	2484	23.8
Q3	2591	6.2	2804	28.4
Q4	2728	6.5	3325	29.5
<u>2000</u>				
Q1	1069	2.6	1204	15.1
Q2	1253	3.0	1562	21.0
Q3	1367	3.3	1798	25.4
Q4	1499	3.6	2175	27.1
<u>2001</u>				
Q1	792	1.9	1137	13.6
Q2	928	2.2	1492	18.3
Q3	986	2.4	1658	22.6
Q4				

Source: Goskomstat.

1/ In industry, construction, transportation, communication, services, science, and scientific support.

2/ For 1995-97 data include number of workers on shortened workday at the end of each quarter;

for 1998-2000 data show number of workers on shortened workdays over the course of the period.

3/ Without pay or with partial pay.

Table 9. Russian Federation: Selected Labor Market Indicators, 1995-2001

	Employment	Vacancies	Jobseekers	Registered Unemployed		Unemployment
				Total	Receiving Benefits	According to ILO Definition
(In thousands, end of period)						
End-year 1995	66,441	309	2,549	2,327	2,026	6,712
End-year 1996	65,950	255	2,751	2,506	2,265	6,732
End-year 1997	64,639	369	2,203	1,999	1,771	8,058
End-year 1998	63,642	328	2,148	1,929	1,756	8,902
End-year 1999	63,082	588	1,443	1,263	1,090	9,094
End-year 2000	64,465	751	1,196	1,037	910	6,999
August 2001	65,459	1,153	1,208	1,014	883	6,149
	(Percent change)		(Percent of labor force)			
End-year 1994	-3.3	0.4	2.5	2.2	1.9	7.7
End-year 1995	-3.0	0.4	3.5	3.2	2.8	9.2
End-year 1996	-0.7	0.4	3.8	3.4	3.1	9.3
End-year 1997	-2.0	0.5	3.0	2.7	2.4	11.1
End-year 1998	-1.5	0.5	3.0	2.7	2.4	12.3
End-year 1999	-0.9	0.8	2.0	1.7	1.5	12.6
End-year 2000	2.2	1.1	1.7	1.5	1.3	9.8
August 2001	1.5	1.6	1.7	1.4	1.2	8.6

Source: Goskomstat.

Table 10. Russian Federation: Unemployment Rate by Regions (ILO methodology), 1995-2000
(In percent of labor force)

	1995	1996	1997	1998	1999	2000
Northern Region						
Karelian Republic	13.2	11.5	11.9	16.6	15.7	11.5
Komi Republic	10.9	10.4	13.9	17.6	16.1	12.1
Arkhangel'sk Oblast	11.0	12.0	12.4	14.6	14.9	12.2
Nenets Autonomous Okrug	...	...	13.3	11.5	20.0	17.0
Vologodsk Oblast	8.8	8.0	10.5	12.4	11.5	8.0
Murmansk Oblast	12.4	14.7	18.5	21.1	16.4	12.8
North-western region						
Saint Petersburg	10.6	10.3	9.9	11.3	11.0	6.3
Leningrad Oblast	10.2	10.0	12.8	14.9	14.6	9.7
Novgorod Oblast	10.2	9.1	13.5	14.8	14.1	7.8
Pskov Oblast	12.2	13.7	14.2	15.9	13.3	12.5
Central region						
Bryansk Oblast	9.4	8.2	12.9	15.6	15.5	13.2
Vladimir Oblast	13.1	11.5	11.6	12.1	12.1	12.2
Ivanovo Oblast	14.6	16.5	16.9	18.6	17.5	10.1
Kaluzhska Oblast	8.3	7.8	11.2	10.2	11.2	8.0
Kostromska Oblast	9.4	9.9	9.4	11.0	10.0	8.6
Moscow	7.0	6.3	4.8	4.8	5.6	3.8
Moscow Oblast	7.9	7.6	8.8	9.9	10.5	7.4
Orlov Oblast	8.0	9.6	9.8	12.6	8.6	8.5
Ryazan Oblast	6.7	6.4	10.1	7.3	12.4	9.5
Smolensk Oblast	10.2	11.3	12.9	16.4	13.6	12.2
Tver Oblast	8.2	5.7	9.9	11.3	10.1	9.4
Tula Oblast	6.2	6.9	10.0	11.6	11.3	9.7
Yaroslavl Oblast	12.1	10.8	8.8	11.2	8.7	7.3
Volga region						
Marii-El Republic	11.8	11.3	18.0	13.1	10.3	11.3
Mordoviya Republic	11.6	13.1	12.2	13.7	12.6	10.7
Chuvash Republic	10.2	11.1	13.9	13.6	13.1	9.1
Kirov Oblast	9.2	8.9	11.4	13.1	9.5	8.2
Nizhegorod Oblast	8.7	9.0	9.7	9.2	7.4	7.5
Central-Chernozem region						
Belgorod Oblast	6.6	10.7	11.3	13.1	11.2	11.2
Voronezh Oblast	8.2	9.2	8.1	9.7	11.4	10.0
Kursk Oblast	6.1	7.4	8.1	10.3	10.7	10.4
Lipetsk Oblast	6.3	6.7	9.8	10.9	10.3	8.5
Tambov Oblast	10.6	11.1	12.9	12.6	12.8	8.2
Povolgskii region						
Kalmykiya Republic	22.2	14.5	26.1	31.3	23.8	20.1
Tatarstan Republic	6.5	6.5	7.9	11.1	11.1	8.0
Astrakhan Oblast	14.7	12.8	14.6	15.9	14.1	10.8
Volgograd Oblast	11.5	11.2	14.4	14.1	11.8	9.7
Penzensk Oblast	13.9	14.9	12.0	17.3	10.8	11.2
Samara Oblast	8.0	8.7	9.3	8.7	12.2	10.3
Saratov Oblast	10.4	10.5	15.8	15.9	10.7	9.5
Ulyanov Oblast	8.3	8.2	9.8	11.1	8.8	6.4

Continued on next page.

Table 10 (contd). Russian Federation: Unemployment Rate by Regions (ILO methodology), 1995-2000

	1995	1996	1997	1998	1999	2000
North-Kaukaz region						
Adygeya Republic	12.4	11.1	15.6	19.6	14.1	25.4
Dagestan Republic	25.3	27.7	27.0	30.0	27.9	25.6
Ingush Republic	43.1	32.2	58.2	50.9	51.8	32.0
Kabardino-Balkar Republic	14.3	17.1	17.7	23.9	25.1	16.6
Karachay-Circassian Republic	27.4	20.8	18.9	25.5	21.4	20.7
North Ossetian-Alaniya Republic	23.3	30.1	22.2	26.6	32.0	28.5
Chechen Republic						
Krasnodarsk Krai	9.3	10.7	16.5	16.3	15.1	16.0
Stavropol Krai	9.4	9.8	13.9	16.2	18.5	13.8
Rostov Oblast	8.5	8.5	12.0	15.6	17.8	14.9
Ural						
Bashkortostan Republic	7.8	7.9	11.2	13.3	12.1	11.5
Udmurt Republic	11.6	13.1	12.1	12.6	11.3	9.3
Kurgan Oblast	8.4	10.2	12.5	12.9	12.6	13.2
Orenburg Oblast	7.5	5.5	9.5	12.7	13.6	11.8
Perm Oblast	9.0	8.8	11.1	12.7	14.0	14.4
Komi-Permyatsk Autonomous Ok	...	...	17.6	17.1	8.3	7.6
Sverdlovsk Oblast	8.5	8.5	10.2	10.5	13.9	10.0
Chelyabinsk Oblast	8.2	8.7	9.5	12.4	11.8	8.1
West-Siberia						
Altai Republic	9.9	13.2	18.4	18.0	19.0	17.5
Altai Krai	11.1	10.7	13.9	16.1	12.5	11.5
Kemerovo Oblast	6.6	6.8	11.2	12.4	13.7	10.4
Novosibirsk Oblast	10.1	8.9	10.7	13.5	14.5	13.4
Omsk Oblast	5.4	7.0	13.4	15.4	14.5	13.9
Tomsk Oblast	7.9	7.9	12.8	14.7	16.2	12.2
Tyumen Oblast	6.9	9.2	8.9	14.0	11.1	10.5
Khanti-Mansi Autonomous Okrug	...	...	12.5	14.6	11.3	11.2
Yamalo-Nenetsk Autonomous Ok	...	...	10.7	11.2	10.0	7.9
East Siberia						
Buryat Republic	15.1	14.6	21.3	22.0	17.3	19.1
Tyva Republic	21.4	18.1	22.0	20.9	25.7	22.9
Khakasian Republic	8.7	11.6	13.0	9.6	15.7	12.3
Krasnoyarsk Krai	9.0	8.1	13.3	16.4	14.2	11.9
Taimyrsk Autonomous Okrug	...	...	7.0	15.5	9.6	5.7
Evenkisk Autonomous Okrug	...	...	3.4	6.2	6.9	3.2
Irkutsk Oblast	8.9	11.2	14.4	13.6	14.7	11.4
Ust-Ordinsk Buryat Autonomous (	...	...	7.7	8.2	11.8	8.9
Chitinsk Oblast	9.2	14.9	18.5	19.8	20.1	13.9
Aginsk Buryat A. Okrug	...	...	28.1	35.2	20.5	25.6
Far East region						
Sakha republic (Yakutiya)	7.1	6.7	12.6	13.4	13.8	11.3
Jewish Autonomous Oblast	17.0	12.6	25.1	23.9	17.6	15.2
Chukotsk A. Oblast	...	...	8.4	4.7	9.3	10.0
Primorye Krai	10.0	9.6	13.3	14.7	13.5	11.9
Khabarovsk Krai	11.4	12.1	12.7	12.5	14.2	11.6
Amur Oblast	13.4	11.0	15.6	16.2	16.2	13.4
Kamchatka Oblast	6.8	7.0	12.5	17.8	18.1	16.0
Koryak Autonomous Okrug	...	...	6.8	8.4	8.8	12.5
Magadan Oblast	9.7	10.4	13.6	17.9	20.3	10.8
Sakhalin Oblast	11.3	10.9	15.0	17.4	20.4	13.0
Kaliningrad Oblast	9.2	13.9	11.5	16.8	15.6	15.4

Source: Goskomstat.

Table 11. Russia Federation: Unemployment Composition by Duration of Job Search and Age Group, 1996-2001

	Job search time (months)						Average
	Under 1	1-3	3-6	6-9	9-12	12+	
	(In percent of total I)						
Total unemployed, October 1996	7.4	10.3	26.8	12.3	10.7	32.5	8.2
of which: ages							
Under 20	10.4	13.1	29.2	15.1	12.7	19.6	6.8
20-24	7.1	11.6	28.0	13.3	11.1	28.8	7.8
25-29	8.1	8.4	27.4	10.3	9.3	36.6	8.5
30-34	7.1	10.1	25.5	12.8	8.1	36.3	8.5
35-39	6.8	9.6	27.0	11.9	10.4	34.3	8.4
40-44	5.9	10.3	25.8	12.3	12.2	33.5	8.4
45-49	6.8	8.9	24.9	11.5	11.5	36.4	8.7
50-54	5.5	10.3	24.8	12.6	12.4	34.4	8.6
55-59	6.7	9.1	26.7	10.5	11.2	35.7	8.6
60-64	11.7	12.7	22.6	12.3	3.9	36.9	8.0
65-72	16.3	14.3	35.8	6.5	5.5	21.7	6.0
Total unemployed, October 1997	7.8	15.9	15.8	10.7	11.6	38.1	8.8
of which: ages							
Under 20	11.7	23.2	24.1	10.1	10.8	20.1	6.5
20-24	9.1	19.1	19.9	10.1	10.7	31.1	7.9
25-29	8.6	16.0	15.1	10.2	11.0	39.1	8.8
30-34	7.8	14.9	13.9	10.9	12.4	40.1	9.1
35-39	6.6	14.9	13.2	11.4	11.8	42.2	9.3
40-44	6.6	14.0	14.3	11.9	12.5	40.6	9.3
45-49	5.7	12.2	13.2	11.1	12.4	45.4	9.8
50-54	5.9	11.1	11.7	12.5	12.9	45.9	10.0
55-59	7.1	11.7	13.7	8.7	12.8	45.9	9.8
60-64	6.0	15.9	15.3	6.6	5.4	50.7	9.7
65-72	5.3	12.7	13.3	4.9	10.2	53.6	10.4
Total unemployed, October 1998	6.1	16.0	15.9	10.3	10.8	40.9	9.1
of which: ages							
Under 20	7.6	24.6	27.4	9.2	8.8	22.4	6.7
20-24	7.7	18.9	18.5	10.2	10.3	34.4	8.3
25-29	6.3	15.3	16.5	12.6	10.4	38.9	9.0
30-34	5.2	15.1	13.3	10.5	12.5	43.4	9.5
35-39	5.8	14.1	12.9	10.0	11.0	46.2	9.7
40-44	5.2	13.1	14.4	9.5	10.8	47.1	9.8
45-49	5.5	13.7	13.4	10.1	11.4	45.9	9.7
50-54	4.6	15.4	13.9	8.3	9.2	48.6	9.8
55-59	6.4	16.0	12.5	9.3	10.5	45.3	9.5
60-64	4.6	13.9	15.9	13.4	13.1	39.1	9.3
65-72	6.6	12.7	11.3	7.4	15.0	47.0	10.0
Total unemployed, October 1999	6.4	13.6	13.1	9.3	10.6	47.1	9.8
of which: ages							
Under 20	13.0	22.1	17.8	9.9	12.2	25.0	7.1
20-24	7.9	17.1	14.6	10.8	10.3	39.4	8.8
25-29	6.1	12.1	14.2	8.4	11.2	48.0	9.9
30-34	5.3	13.1	13.5	9.6	10.9	47.6	9.9
35-39	5.7	11.8	12.3	9.0	10.3	51.0	10.2
40-44	5.2	11.2	12.7	9.0	10.5	51.4	10.3
45-49	5.2	13.6	10.8	9.3	10.1	51.0	10.2
50-54	4.5	10.1	10.6	9.2	10.0	55.5	10.8
55-59	4.7	9.7	9.0	8.7	10.4	57.6	11.0
60-64	6.1	10.4	8.8	5.8	8.4	60.5	11.0
65-72	4.4	5.8	8.1	5.6	8.2	68.1	12.0
Total unemployed, October 2000	8.1	16.4	14.1	8.8	10.2	42.3	9.1
of which: ages							
Under 20	12.8	25.5	27.5	9.3	9.2	15.7	5.8
20-24	11.5	18.0	16.9	9.2	10.2	34.2	8.1
25-29	9.5	17.2	14.6	9.1	8.3	41.4	8.8
30-34	7.8	19.0	11.7	10.2	10.9	40.4	8.9
35-39	6.3	13.9	14.1	8.1	10.0	47.6	9.7
40-44	7.0	15.4	10.5	9.2	10.3	47.7	9.7
45-49	5.3	14.6	10.7	6.9	12.9	49.5	10.1
50-54	7.2	12.0	13.4	8.5	7.7	51.2	10.0
55-59	2.6	10.9	7.7	13.1	13.1	52.5	10.8
60-72	4.4	8.7	11.0	3.0	12.2	60.7	11.3
Total unemployed, August 2001	9.7	18.8	13.0	7.8	9.8	39.2	8.5
of which: ages							
Under 20	18.2	38.0	12.0	5.1	9.5	17.1	5.3
20-24	10.9	25.9	12.3	9.2	9.3	30.3	7.4
25-29	8.1	15.5	14.4	10.1	10.2	38.9	8.7
30-34	6.6	16.9	13.1	8.8	8.8	44.6	9.2
35-39	8.3	15.1	12.5	6.8	10.7	45.1	9.3
40-44	9.4	15.2	13.3	7.6	10.2	42.2	8.9
45-49	8.0	12.4	14.8	8.7	10.1	45.4	9.5
50-54	9.4	13.2	8.0	6.1	12.2	50.6	10.0
55-59	11.0	7.5	17.8	4.6	7.6	48.2	9.4
60-72	6.7	10.5	16.3	2.6	6.5	56.4	10.3

Source: Goskomstat Statistical Bulletin, various issues.

I/ For age groups in percent of total for each group

Table 12. Russia Federation: Unemployment by Reason of Being Unemployed, 1995-2001 1/
(In percent of total unemployed)

	1995	1996	1997	1998	1999	2000	2001
Total unemployed	100	100	100	100	100	100	100
Those who had a previous job	83.2	83.7	88.0	85.9	80.6	81.2	76.4
<i>of which:</i> left the previous employment because of :							
release, redundancy, liquidation	28.3	29.8	34.0	37.1	34.4	29.3	22.2
resignation	39.4	38.4	25.0	22.2	20.8	24.4	25.8
completion of term of temporary, seasonal or contract work	4.8	4.0	4.4	5.3	4.1	4.8	5.1
discharge from military	1.5	1.1	0.9	1.2	0.5	0.5	0.2
other reasons	9.2	10.6	23.7	20.2	20.8	22.2	23.0
Those who have not had a job before	16.8	16.3	12.0	14.1	19.4	18.8	23.6
Total unemployed: male	100	100	100	100	100	100	100
Those who had a previous job	84.8	85.6	89.0	86.8	80.6	81.1	78.1
<i>of which:</i> left the previous employment because of :							
release, redundancy, liquidation	23.8	26.0	31.1	34.4	31.7	25.7	19.7
resignation	43.9	42.4	29.5	25.7	24.1	28.5	30.3
completion of term of temporary, seasonal or contract work	4.6	3.7	5.2	5.8	5.0	5.8	6.0
discharge from military	2.8	1.8	1.6	2.1	0.9	0.9	0.2
other reasons	9.7	11.7	21.7	18.9	18.8	20.2	21.8
Those who have not had a job before	15.2	14.4	11.0	13.2	19.4	18.9	21.9
Total unemployed: female	100	100	100	100	100	100	100
Those who had a previous job	81.4	81.5	86.8	84.8	80.7	81.4	74.5
<i>of which:</i> left the previous employment because of :							
release, redundancy, liquidation	33.6	34.2	37.5	40.3	37.5	33.5	25.0
resignation	34.1	33.6	19.7	18.0	17.1	19.6	20.9
completion of term of temporary, seasonal or contract work	5.1	4.3	3.6	4.7	3.0	3.7	4.1
discharge from military	0.0	0.2	0.1	0.1	0.1	0.1	0.2
other reasons	8.5	9.2	25.9	21.6	23.0	24.5	24.3
Those who have not had a job before	18.6	18.5	13.2	15.2	19.3	18.6	25.5

Source: Goskomstat.

1/ For 1995-1997, data refer to end-October values; for 1998-2000, data refer to annual average; for 2001 data are for August.

Table 13. Russia Federation: Distribution of the Unemployed by Job Search Methods, 1995-2001
(In percent of total)

	1995 Oct.	1996 Mar.	1997 Oct.	1998 Oct.	1999 1/ 1/	2000 1/ 1/	2001 2/ 2/
Application to the state employment service	36.3	39.0	39.9	37.2	33	27.7	28.0
Application to a commercial employment service	3.8	4.2	2.4	2.4	2.4	2.3	2.8
Placing ads in papers, responding to ads	16.9	17.6	16.3	18.6	19.2	21.8	21.3
Contacting friends, relatives, acquaintances	38.5	37.0	55.0	57.8	55.7	59.0	59.8
Directly contacting the management/employer	27.9	25.6	28.8	29.5	31.5	31.4	27.7
Search for land, machines and equipment, raw materials, financial resources for starting own business, applying for licenses, etc.	1.4	0.9	1.1	1.0			
Other methods 3/	15.3	14.3	14.7	15.6	12.8	12.6	12.3

Source: Goskomstat.

1/ Annual average.

2/ August 2001.

3/ From 1999 "Search for land, machines and equipment..." is included in Other methods.

Table 14. Russian Federation: Migration Between the Regions of Russia, 1995-2000 1/
(In thousands)

	1995	1996	1997	1998	1999	2000
Federal districts:						
Central	70.8	60.4	80.8	85.4	82.9	73.9
Belgorod Oblast	6.4	6.8	6.8	7.6	9.4	6.9
Bryansk Oblast	3.1	0.6	0.4	0.9	1.0	-0.3
Vladimir Oblast	4.2	2.5	2.9	2.1	1.1	0.5
Voronezh Oblast	4.6	3.4	1.1	3.8	3.8	1.4
Ivanovo Oblast	1.5	0.9	0.9	1.1	1.4	0.7
Kaluzhsk Oblast	2.2	1.1	1.0	0.3	-0.9	-1.3
Kostromsk Oblast	1.5	0.8	1.0	1.0	1.0	1.0
Kursk Oblast	1.4	0.7	0.4	-0.9	-1.0	-2.3
Lipetsk Oblast	3.7	3.1	3.2	1.9	2.6	1.8
Moscow Oblast	13.6	9.6	24.2	22.6	18.0	22.7
Orlov Oblast	0.5	0.1	0.6	0.7	1.1	0.1
Ryazan Oblast	-0.6	-1.9	-0.8	-1.2	-0.4	-1.4
Smolensk Oblast	2.3	0.6	-0.4	-0.9	-1.2	-2.0
Tambov Oblast	1.0	-1.3	-1.1	-1.3	-1.1	-2.1
Tver Oblast	5.8	4.3	1.4	0.2	-0.4	-2.0
Tula Oblast	2.3	1.1	0.3	-0.5	-0.7	-2.0
Yaroslavl Oblast	3.2	1.8	2.3	1.5	2.0	1.0
Moscow	14.0	26.1	36.6	46.7	47.2	51.3
North West	-18.2	-11.5	-13.1	-8.4	-12.6	-1.6
Karelian Republic	0.5	0.1	-0.2	-0.4	-0.3	0.6
Komi Republic	-12.9	-9.7	-11.1	-10.5	-10.7	-6.7
Arkhangel'sk Oblast	-6.5	-6.2	-7.9	-7.9	-8.1	-6.4
Nenets Autonomous Okrug	...	-0.1	-0.8	-0.5	-0.3	-0.2
Vologodsk Oblast	2.0	2.1	1.5	1.3	0.9	0.6
Kaliningrad Oblast	1.6	2.0	4.4	4.1	0.2	0.7
Leningrad Oblast	9.3	8.3	11.2	9.1	9.3	10.0
Murmansk Oblast	-18.6	-15.8	-16.1	-16.3	-13.6	-9.9
Novgorod Oblast	1.2	1.4	3.0	1.9	1.0	0.2
Pskov Oblast	2.1	1.4	1.0	0.2	0.7	...
Saint Petersburg	3.2	5.0	1.0	10.2	8.1	9.3
South	28.5	13.3	3.2	-3.7	-0.5	-12.6
Adygeya Republic	-0.1	1.2	1.4	0.6	0.3	-0.1
Dagestan Republic	-3.8	-5.9	-5.6	-1.4	-1.1	-5.7
Ingush Republic	-21.1	-14.2	-21.3	-20.5	-19.3	-11.7
Chechen Republic	-2.2	-1.2	-0.5	-1.2	-1.6	-1.9
Kabardino-Balkar Republic	-3.1	-2.0	-1.4	-1.5	-1.6	-2.2
Kalmykiya Republic	-0.1	-0.6	-0.9	-1.0	-2.1	-2.0
Karachaev-Circassian Republic	-2.0	-1.5	-3.0	-2.1	-2.5	-2.4
North Ossetian-Alaniya Republic	29.4	19.2	16.2	10.7	19.3	12.6
Krasnodarsk Krai	10.7	6.6	11.4	9.2	7.5	2.1
Stavropol Krai	3.1	0.8	-0.3	-0.5	-0.3	0.7
Astrakhan Oblast	10.0	6.7	5.3	3.2	0.3	-2.7
Volgograd Oblast	7.8	4.3	2.0	0.9	0.6	0.5
Rostov Oblast						

Continued on next page.

1/ A positive entry indicates a net inflow.

Table 14 (contd.) Russian Federation: Migration Between the Regions of Russia, 1995-2000 1/
(In thousands)

	1995	1996	1997	1998	1999	2000
Volga	37.3	20.0	18.2	20.5	23.3	-2.3
Bashkortostan Republic	8.6	4.8	1.6	2.5	4.9	-2.0
Mari-El Republic	1.4	...	0.2	0.4	1.1	...
Mordoviya Republic	-0.6	-1.1	-1.8	-1.9	-1.6	-2.3
Tatarstan Republic	2.6	4.7	6.6	5.5	4.5	3.0
Udmurt Republic	2.3	1.4	1.3	1.3	0.3	-0.8
Chuvash Republic	2.4	1.8	1.3	2.4	2.0	0.5
Kirov Oblast	-0.5	-1.7	-2.2	-1.9	-1.0	-2.1
Nizhegorod Oblast	9.2	7.8	9.0	7.8	6.4	2.8
Orenburg Oblast	...	-2.7	-2.8	-3.9	-3.0	-4.4
Penzensk Oblast	0.1	...	0.6	0.3	...	-1.3
Perm Oblast	0.1	0.5	-0.3	0.4	2.0	0.7
Komi-Permyatsk Autonomous Okrug	...	-2.1	-1.3	-0.5	-0.3	-0.3
Samara Oblast	8.7	7.6	6.5	7.2	7.1	5.4
Saratov Oblast	1.5	-1.6	0.9	3.0	2.4	0.6
Ulyanov Oblast	1.5	-1.6	-2.8	-2.5	-1.7	-2.3
Urals	-7.5	3.1	5.0	-4.7	-14.3	1.6
Kurgan Oblast	-2.0	-2.7	-3.6	-2.7	-2.3	-3.9
Sverdlovsk Oblast	3.8	3.4	2.1	1.3	1.4	1.0
Tyumen Oblast	-12.5	0.3	2.0	-7.6	-15.1	4.4
Khanti-Mansi Autonomous Okrug	...	20.4	4.2	-2.6	-8.8	9.4
Yamalo-Nenetsk Autonomous Okrug	...	9.2	-2.0	-5.0	-6.3	-2.6
Chelyabinsk Oblast	3.3	2.1	4.6	4.3	1.6	0.1
Siberian	-14.1	-19.0	-30.5	-25.7	-21.6	-22.4
Altai Republic	0.8	0.1	0.3	0.4	0.3	0.2
Buryat Republic	-1.6	-3.3	-5.4	-5.3	-4.7	-4.2
Tyva Republic	-0.6	-1.2	-1.0	-0.7	-0.7	-1.0
Khakasian Republic	4.0	1.5	1.3	0.9	1.3	1.2
Altai Krai	0.3	-0.2	-2.1	-3.2	-0.6	-2.9
Krasnoyarsk Krai	-9.8	-7.3	-9.5	-8.7	-9.4	-4.9
Taimyrsk Autonomous Okrug	...	...	-1.3	-1.1	-0.7	-0.1
Evenkisk Autonomous Okrug	...	-0.2	-0.4	-0.5	-0.5	-0.4
Irkutsk Oblast	-3.7	-3.8	-6.6	-4.4	-3.5	-1.6
Ust-Ordinsk Buryat Autonomous Okrug	...	0.5	0.2	0.1	0.1	-0.4
Kemerovo Oblast	1.7	-1.4	-4.6	-2.4	...	-0.1
Novosibirsk Oblast	5.1	6.2	6.0	6.9	4.1	0.8
Omsk Oblast	0.7	...	0.1	-0.2	-1.2	-3.4
Tomsk Oblast	-1.6	-0.9	-0.3	-0.5	-1.2	-0.1
Chitinsk Oblast	-9.4	-8.6	-8.8	-8.6	-6.2	-6.6
Aginsk Buryat A. Okrug	...	0.1	-0.6	-0.2	-0.3	-0.3
Far East	-96.8	-66.3	-63.6	-63.3	-57.0	-36.6
Sakha republic (Yakutiya)	-19.6	-13.5	-16.4	-18.1	-14.2	-7.2
Primorye Krai	-10.8	-7.8	-8.3	-7.8	-8.7	-6.1
Khabarovsk Krai	-11.5	-8.5	-4.8	-5.4	-5.8	-1.9
Amur Oblast	-3.7	-4.9	-5.5	-5.9	-5.1	-3.9
Kamchatka Oblast	-12.3	-8.4	-7.2	-6.6	-6.3	-4.4
Koryak Autonomous Okrug	...	1.3	-1.0	-0.9	-0.8	-0.7
Magadan Oblast	-20.4	-11.8	-6.4	-6.1	-6.3	-5.2
Sakhalin Oblast	-18.9	-11.2	-11.3	-9.8	-7.1	-4.5
Jewish Autonomous Oblast	1.4	1.5	...	...	0.1	-0.2
Chukotsk A. Oblast	-1.0	-1.6	-3.7	-3.6	-3.5	-3.1

Source: Goskomstat.

1/ A positive entry indicates a net inflow.

Table 15. Russian Federation: Consumer Price Inflation, 1995-2001

	Overall CPI	Food 1/	Nonfood 2/	Paid Services 3/
(Percentage change, end of period)				
1995	131.3	123.4	116.3	232.2
1996	21.8	17.7	17.8	48.4
1997	11.0	9.1	8.1	22.5
1998	84.4	96.0	99.5	18.3
1999	36.5	35.9	39.2	34.0
2000	20.2	17.9	18.5	33.7
2001	18.6	17.1	12.7	36.9
(Percentage change, month-on-month)				
1998				
Jan	1.5	2.1	0.5	1.7
Feb	0.9	1.2	0.3	1.0
Mar	0.6	0.7	0.2	1.2
Apr	0.4	0.3	0.2	1.0
May	0.5	0.6	0.1	1.1
June	0.1	0.0	0.0	0.6
July	0.2	-0.1	0.1	1.2
Aug	3.7	2.4	7.1	1.2
Sep	38.4	39.5	54.3	3.4
Oct	4.5	3.9	7.4	1.6
Nov	5.7	7.6	4.3	1.3
Dec	11.6	17.1	6.3	1.8
1999				
Jan	8.4	10.3	6.2	4.1
Feb	4.1	4.4	4.0	3.2
Mar	2.8	2.8	3.2	1.9
Apr	3.0	2.6	4.0	3.1
May	2.2	2.0	2.7	2.1
June	1.9	1.7	1.6	3.5
July	2.8	3.2	1.9	3.1
Aug	1.2	0.5	2.4	1.9
Sep	1.5	0.8	2.7	2.0
Oct	1.4	0.9	2.2	2.0
Nov	1.2	1.0	1.5	1.7
Dec	1.3	1.4	1.1	0.9
2000				
Jan	2.3	2.2	2.2	3.4
Feb	1.0	0.5	1.3	3.0
Mar	0.6	0.1	1.4	1.5
Apr	0.9	0.3	1.5	2.1
May	1.8	2.2	1.1	1.3
June	2.6	3.3	0.8	3.0
July	1.8	1.8	0.8	3.8
Aug	1.0	0.3	1.4	3.0
Sep	1.3	0.6	2.1	2.8
Oct	2.1	2.1	1.9	2.4
Nov	1.5	1.5	1.5	1.6
Dec	1.6	1.9	1.2	1.6
2001				
Jan	2.8	3.1	1.4	4.6
Feb	2.3	2.3	1.3	4.3
Mar	1.9	1.8	1.3	3.4
Apr	1.8	2.0	0.9	2.8
May	1.8	2.3	0.9	1.8
June	1.6	1.9	0.6	2.5
July	0.5	-0.3	0.5	2.9
Aug	0.0	-1.0	0.8	2.3
Sep	0.6	-0.2	1.2	2.6
Oct	1.1	0.7	1.3	1.9
Nov	1.4	1.5	1.1	1.5
Dec	1.6	2.0	0.9	1.4
Memorandum items:				
1995 weights	100	52.5	37.8	9.7
1996 weights	100	56.6	30.2	13.2
1997 weights	100	54.4	29.0	16.6
1998 weights	100	51.9	32.1	16.0
1999 weights	100	59.9	27.2	12.9
2000 weights	100	58.7	27.9	13.4
2001 weights	100			

Source: Goskomstat.

1/ Includes food, beverages, and tobacco.

2/ Includes clothing and footwear, household goods, medicines, recreation, education, culture, and personal care and effects.

3/ Includes rent, water, fuel and power, transport, and communication.

Table 16. Russian Federation: Industrial Producer Prices, 1995-2001

	Overall PPI Index	Electricity	Fuel	Ferrous Metallurgy	Chemicals	Machinery	Construction Materials	Light Industry	Food Industry
(Percentage change, end of period)									
1995	175.0	199.0	187.0	185.0	168.0	178.0	171.0	163.0	156.0
1996	26.0	35.0	40.0	16.0	18.0	24.0	34.0	20.0	22.0
1997	7.0	9.0	11.0	1.0	4.9	8.7	8.0	10.0	12.0
1998	23.2	2.6	0.8	11.0	25.9	29.2	12.6	44.4	52.9
1999	67.0	14.0	135.0	89.0	44.0	50.0	37.0	56.0	63.0
2000	32.0	40.0	55.0	29.0	27.0	28.0	37.0	22.0	19.0
2001	10.7	30.2	2.2	3.5	19.8	16.5	19.5	10.9	15.0
(Percent change, month-on-month)									
1998 Jan	0.9	1.2	1.1	0.4	1.1	0.9	1.0	1.0	0.9
Feb	0.5	1.7	0.0	0.5	-0.8	1.2	0.6	0.9	0.3
Mar	-0.1	-0.3	-0.7	0.8	-1.2	0.4	0.4	0.6	0.4
Apr	0.0	1.7	-1.9	0.5	-1.0	0.4	0.6	0.3	-0.1
May	-0.9	-1.8	-3.4	-1.0	0.8	0.7	0.0	0.1	-0.2
Jun	0.0	1.0	-1.6	0.1	0.5	0.4	0.1	0.1	-0.5
Jul	-0.8	0.1	-4.9	1.0	0.6	-0.1	0.3	-0.2	-0.2
Aug	-1.2	-2.1	-5.6	-1.7	-0.3	0.1	0.3	0.2	-0.2
Sep	7.4	1.2	1.8	2.4	8.3	8.6	3.6	10.5	21.1
Oct	5.9	1.4	5.3	2.9	7.5	3.8	2.7	9.2	5.1
Nov	5.1	-0.9	7.3	1.9	4.5	5.9	1.0	8.2	7.6
Dec	4.8	-0.5	4.2	3.2	3.9	4.1	1.6	7.3	11.3
1999 Jan	6.9	1.3	6.0	6.2	4.9	8.6	3.2	6.6	9.2
Feb	5.6	3.8	3.4	4.9	3.2	5.8	1.6	8.3	8.7
Mar	3.9	0.2	3.9	7.6	3.2	3.3	1.9	5.4	6.2
Apr	3.7	0.7	3.9	4.4	4.0	3.6	1.6	2.6	4.2
May	3.6	1.4	8.2	5.7	1.5	3.3	1.8	2.2	2.6
Jun	3.7	1.3	6.4	6.6	1.8	2.2	2.0	2.5	2.1
Jul	3.1	0.7	7.8	3.2	4.4	3.0	3.5	1.8	2.9
Aug	4.7	0.0	12.1	6.5	0.8	1.9	3.9	2.8	5.4
Sep	5.9	1.7	15.0	7.1	3.6	2.3	3.8	3.5	4.5
Oct	5.5	0.6	15.2	5.1	2.5	2.7	3.0	3.8	2.6
Nov	3.9	0.7	5.8	4.9	5.9	2.3	4.0	3.5	0.9
Dec	2.2	1.2	1.9	3.3	1.4	2.2	1.9	2.5	0.7
2000 Jan	4.0	2.0	9.6	5.0	1.7	3.8	2.5	1.3	1.0
Feb	3.7	4.4	5.6	5.1	1.4	3.8	2.5	2.3	0.8
Mar	2.6	4.7	2.3	3.4	3.0	2.6	2.8	1.9	0.5
Apr	1.6	0.3	2.4	0.9	1.9	3.0	1.8	3.1	0.1
May	1.7	2.7	1.5	0.9	3.0	2.3	2.9	0.7	1.2
Jun	2.3	4.6	1.3	2.5	3.3	2.4	2.8	1.0	2.0
Jul	3.4	8.7	6.2	0.7	2.0	1.2	3.6	1.4	3.3
Aug	1.7	3.5	2.1	0.1	0.9	1.8	3.5	1.9	1.6
Sep	1.9	1.3	2.9	2.8	2.0	1.7	2.2	2.0	1.4
Oct	2.7	0.0	8.6	2.3	1.6	1.5	2.4	2.6	1.8
Nov	1.2	1.3	0.6	2.2	1.5	1.0	2.7	1.8	2.1
Dec	1.0	1.0	2.3	0.2	1.8	0.1	2.0	0.6	1.3
2001 Jan	1.8	1.8	1.4	0.7	6.1	2.5	2.4	1.4	1.8
Feb	1.7	5.6	-1.3	0.5	4.8	2.9	3.1	1.9	3.0
Mar	1.1	4.6	-1.3	0.1	3.5	1.5	1.6	1.1	1.4
Apr	0.9	1.7	1.0	-0.4	0.8	1.5	2.0	0.4	1.7
May	0.9	1.2	0.8	0.0	0.0	2.0	1.2	0.4	1.1
Jun	2.0	2.1	6.2	1.5	-0.2	0.9	1.9	0.6	1.0
Jul	0.9	4.5	1.5	-1.2	1.3	0.6	1.0	0.1	0.7
Aug	0.0	1.9	-0.8	-0.4	1.4	0.3	1.1	1.8	0.5
Sep	-0.1	1.3	-2.3	0.5	0.6	1.1	1.0	0.7	0.5
Oct	0.4	0.5	0.2	0.6	1.3	0.9	1.0	1.0	0.9
Nov	0.3	0.4	0.3	1.1	-0.1	0.6	0.6	0.7	0.8
Dec	0.2	1.2	-3.3	0.6	-0.9	0.6	1.0	0.5	0.7

Source: Goskomstat.

Table 17. Russian Federation: Wages, Pension and Per Capita Income, 1995-2001

	1995	1996	1997	1998	1999	2000	2001 1/
(In rubles per month)							
Average monthly wages	472	790	950	1,052	1,523	2,223	3,262
Minimum wage	42.5	73	84	84	84	108	250
Pensions	188	302	328	399	449	694	1,023
Income per capita	515	766	934	999	1,609	2,151	2,878
(Annual percentage change 2/)							
Real wages	-28.0	6.4	5.7	-13.3	-22.0	20.9	19.8
Minimum wage	-18.6	15.7	0.0	-21.7	-46.1	6.9	90.9
Pensions	-19.5	8.7	-5.4	-4.8	-39.4	28.0	21.4
Real income per capita	-16.1	0.4	5.9	-16.4	-13.6	10.2	7.2

Source: Goskomstat.

1/ Preliminary data.

2/ CPI deflated numbers.

Table 18. Russian Federation: Wage Arrears in Industry, Agriculture, and Construction, 1995-2001

	Industry		Agriculture		Construction	
	Nominal 1/	Real 2/	Nominal 1/	Real 2/	Nominal 1/	Real 2/
End year 1992	15	3.6	6	1.4	8	1.9
End year 1993	364	9.2	287	7.2	115	2.9
End year 1994	2,170	17.4	1,301	10.4	729	5.8
End year 1995	7,734	26.8	2,572	8.9	1,941	6.7
End year 1996	22,149	63.0	5,913	16.8	6,467	18.3
End year 1997	26,607	67.1	7,965	20.1	7,457	18.8
End year 1998	32,471	45.2	9,398	13.1	9,600	13.4
End year 1999	17,058	17.4	7,859	8.0	5,622	5.7
End year 2000	11,893	10.1	7,816	6.6	4,043	3.4
End first half 2001	12,681	9.5	8,703	6.5	4,090	3.1
1998 Jan	28,011	70.9	8,285	21.0	7,989	20.2
Feb	29,541	74.1	8,393	21.0	7,769	19.5
Mar	30,746	76.6	8,388	20.9	7,870	19.6
Apr	31,812	79.0	8,331	20.7	8,026	19.9
May	33,542	82.8	8,504	21.0	8,363	20.7
Jun	34,963	86.3	8,848	21.8	8,387	20.7
Jul	36,474	89.8	9,240	22.8	8,802	21.7
Aug	39,106	92.9	9,645	22.9	9,469	22.5
Sep	39,264	67.4	9,909	17.0	10,095	17.3
Oct	36,879	60.5	10,040	16.5	10,280	16.9
Nov	35,807	55.6	9,747	15.1	10,181	15.8
Dec	32,471	45.2	9,398	13.1	9,600	13.4
1999 Jan	32,122	41.2	9,866	12.7	9,238	11.9
Feb	30,078	37.1	9,623	11.9	8,943	11.0
Mar	27,929	33.5	9,348	11.2	8,471	10.2
Apr	25,948	30.2	9,159	10.7	7,895	9.2
May	25,226	28.7	9,047	10.3	7,518	8.6
Jun	23,665	26.4	9,191	10.3	7,050	7.9
Jul	23,485	25.5	9,301	10.1	7,032	7.6
Aug	22,291	23.9	9,257	9.9	6,640	7.1
Sep	21,174	22.4	9,046	9.6	6,603	7.0
Oct	20,635	21.5	8,885	9.3	6,533	6.8
Nov	19,832	20.5	8,566	8.8	6,455	6.7
Dec	17,058	17.4	7,859	8.0	5,622	5.7
2000 Jan	17,493	17.4	7,806	7.8	5,989	6.0
Feb	17,170	16.9	7,820	7.7	5,777	5.7
Mar	16,407	16.1	7,744	7.6	5,465	5.4
Apr	16,107	15.6	7,742	7.5	5,133	5.0
May	15,995	15.2	7,843	7.5	4,978	4.7
Jun	15,991	14.8	8,134	7.5	4,906	4.6
Jul	16,591	15.1	8,512	7.8	4,923	4.5
Aug	15,124	13.6	8,663	7.8	4,715	4.3
Sep	15,203	13.5	8,875	7.9	4,878	4.3
Oct	14,454	12.6	8,872	7.7	4,805	4.2
Nov	14,198	12.2	8,605	7.4	4,609	4.0
Dec	11,893	10.1	7,816	6.6	4,043	3.4
2001 Jan	12,146	10.0	7,851	6.5	4,529	3.7
Feb	12,636	10.2	7,870	6.3	4,439	3.6
Mar	12,347	9.8	7,831	6.2	4,337	3.4
Apr	12,338	9.6	7,837	6.1	4,212	3.3
May	12,578	9.6	7,938	6.1	4,216	3.2
Jun	12,627	9.5	8,382	6.3	4,023	3.0
Jul	12,681	9.5	8,703	6.5	4,090	3.1
Aug	12,223	9.1	8,698	6.5	3,817	2.9
Sep	12,761	9.5	8,935	6.6	4,024	3.0
Oct	12,782	9.4	9,124	6.7	4,242	3.1
Nov	13,013	9.4	8,970	6.5	4,343	3.1
Dec	11,355	8.1	8,299	5.9	3,561	2.5

Source: Goskomstat; and Fund staff estimates.

1/ In millions of rubles.

2/ In constant March 1992 prices, deflated by CPL.

Table 19. Russian Federation: Summary Operations of the Enlarged Government, 1995-2001 1/

	1995	1996	1997	1998	1999	2000	2001		
							Q1	Q2	Q3
(In billions of rubles)									
Federal government balance	-89	-180	-180	-158	-204	62	76	83	40
Federal government primary balance	-34	-53	-62	-37	83	379	167	120	121
Revenues	198	268	310	299	608	1,128	318	395	396
Expenditures	287	448	490	457	812	1,066	242	312	356
of which: interest	55	127	118	122	288	317	91	36	81
Transfers to local govt.	85	127	181	162	277	424	111	129	134
Local government balance	-5	-8	-22	-33	-1	62	2	25	12
Revenues	240	351	467	436	719	1,129	251	363	361
of which: transfers	29	64	85	53	81	123	55	76	68
Expenditures	245	359	489	469	721	1,068	249	338	348
Extrabudgetary funds balance	0	-3	3	-24	56	106	9	12	13
Revenues	124	174	251	234	391	604	148	174	184
of which: federal transfers	7	9	23	12	18	27	9	9	9
Expenditures	123	177	248	258	335	498	139	162	171
Enlarged government balance (-deficit)	-93	-190	-199	-215	-150	229	87	121	66
Enlarged government primary balance	-39	-64	-81	-94	138	565	180	163	150
Revenues 2/	526	720	920	903	1,619	2,711	653	847	864
Expenditures 2/	619	910	1,119	1,119	1,769	2,482	566	727	798
Financing of the enlarged government	93	190	199	215	150	-229	-87	-121	-66
Foreign	-3	15	40	56	9	-89	-33	-31	-33
Domestic	96	176	148	92	29	-210	-71	-86	-26
Monetary authorities	26	49	30	127	29	-242	-72	-77	-26
Commerical banks	54	109	14	-68	13	43	2	6	3
Other	17	18	104	34	-13	-11	-1	-16	-3
Arrears and rescheduling	...	...	10	68	112	70	17	-4	-6
Domestic expenditure	...	...	10	52	-13	-65	14	-1	-6
Foreign interest	...	...	0	15	125	135	3	-3	0
(In percent of GDP)									
Federal govt overall balance	-5.7	-8.4	-7.3	-5.8	-4.3	0.9	4.0	3.9	1.6
Federal govt primary balance	-2.2	-2.5	-2.5	-1.3	1.8	5.4	8.9	5.6	4.9
Revenues	12.9	12.5	12.5	10.9	12.8	16.0	16.8	18.5	16.1
Expenditures	18.6	20.9	19.8	16.7	17.1	15.1	12.8	14.6	14.5
Local govt overall balance	-0.3	-0.4	-0.9	-1.2	0.0	0.9	0.1	1.2	0.5
Revenues	15.6	16.4	18.8	15.9	15.1	16.0	13.3	17.0	14.7
of which: transfers	1.9	3.0	3.4	1.9	1.7	1.7	2.9	3.6	2.8
Expenditures	15.9	16.7	19.7	17.1	15.1	15.1	13.2	15.8	14.2
Extrabudgetary funds balance	0.0	-0.1	0.1	-0.9	1.2	1.5	0.5	0.6	0.5
Revenues	8.0	8.1	10.1	8.5	8.2	8.6	7.9	8.1	7.5
of which: federal transfers	0.5	0.4	0.9	0.4	0.4	0.4	0.5	0.4	0.3
Expenditure	8.0	8.2	10.0	9.4	7.0	7.1	7.4	7.6	6.9
Enlarged govt overall balance	-6.1	-8.9	-8.0	-7.9	-3.1	3.2	4.6	5.7	2.7
Enlarged government primary balance	-2.5	-3.0	-3.3	-3.4	2.9	8.0	9.6	7.6	6.1
Revenues 2/	34.1	33.5	37.1	33.0	34.0	38.4	34.6	39.7	35.1
Expenditures 2/	40.2	42.4	45.1	40.8	37.2	35.1	30.0	34.1	32.4

Source: Ministry of Finance, CBR, Goskomstat, and Fund staff estimates.

1/ On a cash basis before 1996, commitment basis thereafter. In 1997, includes wage arrears, arrears in transfers to the Pension Fund, and accumulation of all federal spending arrears. In 1998, includes local wage and pension arrears. In 1999, includes accumulation of civilian arrears.

2/ Consolidated revenues and expenditures (excluding intragovernmental transfers) and including both cash and noncash items.

Table 20. Russian Federation: Federal Government Budget Execution, 1995-2001

	1995	1996	1997	1998	1999	2000	2001		
							Q1	Q2	Q3
(In billions of rubles)									
Revenue	198	268	310	299	608	1,128	318	395	396
Cash revenue	169	194	252	243	608	1,128	318	395	396
Noncash revenue 1/	29	74	59	56	0	0	0	0	0
Tax Revenue	172	234	261	253	505	965	297	365	363
Profit taxes	41	35	33	37	79	179	35	68	58
Personal income taxes	3	5	2	0	20	27	1	1	1
VAT	71	113	117	117	219	372	126	143	155
Excises	18	49	50	57	84	131	43	57	41
Taxes on trade	24	23	28	34	86	229	77	81	90
Import tariffs	8	15	28	34	47	65	21	28	28
Export taxes	16	8	0	0	39	164	56	53	62
Other (incl. natural resource taxes)	15	9	31	8	17	27	16	15	18
Non-tax revenue	10	12	11	19	48	70	17	28	28
Budgetary funds	15	23	38	26	55	93	4	2	4
Expenditure	287	448	490	457	812	1,066	242	312	356
Expenditure (cash) 1/	287	448	480	430	671	994	236	314	357
Non-interest expenditure	232	321	372	335	525	749	151	275	274
Government administration	4	5	10	10	15	25	6	9	9
International activity	21	21	4	9	36	37	5	10	8
Defense	48	64	80	61	116	191	41	65	63
Law enforcement and justice	19	29	44	36	60	114	26	35	37
Sectoral expenditures	39	44	55	26	41	72	12	32	33
Education	9	11	14	14	21	38	7	13	12
Health and emergency management	6	8	15	13	18	26	4	7	7
Social policy	4	10	23	37	49	66	24	27	28
Culture and mass media	3	2	3	2	5	11	2	3	4
Net lending	23	20	18	9	9	-18	-2	0	-2
Intergovernmental transfers	38	65	79	63	89	137	59	75	71
Budgetary funds	14	16	29	24	55	97	2	2	5
Other 1/	4	26	-1	31	10	-48	-37	-3	-1
Interest payments	55	127	118	122	288	317	91	36	81
External debt	17	23	24	56	214	246	73	28	65
Domestic debt	38	104	94	66	74	71	18	9	16
Primary Balance (deficit -)	-34	-53	-62	-37	83	379	167	120	121
Primary Balance (cash)	-34	-53	-51	-25	100	316	170	121	120
Overall balance (deficit -)	-89	-180	-180	-158	-204	62	76	83	40
Overall Balance (cash)	-89	-180	-169	-131	-63	134	82	82	39
(In percent of GDP)									
Revenue	12.9	12.5	12.5	10.9	12.8	16.0	16.8	18.5	16.1
Cash	11.0	9.0	10.2	8.9	12.8	16.0	16.8	18.5	16.1
Noncash	1.9	3.4	2.4	2.0	0.0	0.0	0.0	0.0	0.0
Expenditure	18.6	20.9	19.8	16.7	17.1	15.1	12.8	14.6	14.5
Interest	3.6	5.9	4.8	4.4	6.0	4.5	4.8	1.7	3.3
Noninterest	15.1	15.0	15.0	12.2	11.0	10.6	8.0	12.9	11.1
Primary balance	-2.2	-2.5	-2.5	-1.3	1.8	5.4	8.9	5.6	4.9
Primary balance (cash)	-2.2	-2.5	-2.1	-0.9	2.1	4.5	9.0	5.7	4.9
Overall balance	-5.7	-8.4	-7.3	-5.8	-4.3	0.9	4.0	3.9	1.6
Overall balance (cash)	-5.7	-8.4	-6.8	-4.8	-1.3	1.9	4.3	3.8	1.6

Sources: Ministry of Finance; and Fund staff estimates.

1/ Includes ruble offsets (decree 71) and tax offset in 1996, ruble offsets (decree 20) reverse monetary offsets in 1997, and targeted financing in 1998.

Table 21. Russian Federation: Federal Government Quarterly Budget Operations, 2000-01

	2000				2000	2001		
	Q1	Q2	Q3	Q4		Q1	Q2	Q3
	(In billions of rubles)							
Revenue	222	286	276	375	1,128	318	395	396
VAT	85	92	93	98	372	126	143	155
Excises	26	38	26	41	131	43	57	41
Profit and income taxes	32	57	51	70	206	36	68	59
Taxes on trade	48	55	59	104	229	77	81	90
Other	31	44	47	63	190	37	45	50
Expenditure	181	220	220	373	994	236	314	357
Interest	40	54	52	36	182	88	40	81
Domestic interest	16	22	20	14	71	18	9	16
External interest	25	33	32	22	110	70	31	65
Noninterest	141	166	169	337	812	148	274	276
Primary balance (cash)	81	120	107	38	316	170	121	120
Overall balance (cash)	41	66	55	2	134	82	82	39
Rescheduled interest	35	27	23	29	135	3	-3	0
Change in domestic arrears	-20	-11	-11	-27	-63	3	1	-11
Expenditure Float	0	0	0	0	0.0	-9	-9	-9
Primary balance (commitments)	101	131	118	64	379	176	129	140
Overall balance (commitments)	26	50	43	0	62	85	93	58
Financing (cash)	-41	-66	-55	29	-134	-82	-82	-39
Foreign	-6	-33	-17	-5	-61	-29	-26	-28
Disbursements	10	7	10	13	40	2	3	3
Repayments	16	39	27	18	101	31	29	31
Domestic	-35	-34	-38	34	-73	-53	-55	-11
Bank financing	-33	-23	-11	23	-44	-49	-37	-2
Monetary authorities	-32	-37	-38	-12	-118	-55	-58	-18
Commercial banks	-2	14	27	34	74	6	21	17
Nonbank financing	-2	-11	-27	11	-28	-4	-19	-9
Privatization & precious metals	11	8	11	44	75	6	3	8
Privatization	1	2	3	21	27	1	3	7
Precious metals	10	6	8	23	48	5	1	1
Securities held by nonbank	...	...	...	...	-119	-10	-22	-25
New securities for arrears clearance	...	...	...	...	16	0	0	0
	(In percent of GDP)							
Revenue	15.2	17.4	13.7	19.2	16.0	16.8	18.5	16.1
VAT	5.8	5.6	4.6	5.0	5.3	6.7	6.7	6.3
Excises	1.8	2.3	1.3	2.1	1.9	2.3	2.7	1.7
Profit and income taxes	2.2	3.5	2.6	3.6	2.9	1.9	3.2	2.4
Taxes on trade	3.3	3.4	2.9	5.3	3.2	4.1	3.8	3.7
Other	2.1	2.7	2.4	3.2	2.7	1.9	2.1	2.0
Expenditure (cash)	12.4	13.4	11.0	19.1	14.1	12.5	14.7	14.5
Interest	2.8	3.3	2.6	1.8	2.6	4.7	1.8	3.3
Noninterest	9.6	10.1	8.4	17.2	11.5	7.8	12.8	11.2
Primary balance (cash)	5.6	7.3	5.3	1.9	4.5	9.0	5.7	4.9
Overall balance (cash)	2.8	4.0	2.8	0.1	1.9	4.3	3.8	1.6
Primary balance (commitments)	6.9	8.0	5.9	3.3	5.4	9.3	6.0	5.7
Overall balance (commitments)	1.8	3.0	2.2	0.0	0.9	4.5	4.3	2.4
Memorandum item:								
GDP (billions of rubles)	1,461	1,642	2,004	1,956	7,063	1,886	2,137	2,464

Sources: Ministry of Finance; and Fund staff estimates.

Table 22. Russian Federation: Regional and Local Government Operations, 1995-2001

	1995	1996	1997	1998	1999	2000	2001		
							Q1	Q2	Q3
(In billions of rubles)									
Revenue	240	351	467	436	719	1,129	251	363	361
Profit tax	76	64	69	61	139	221	49	90	82
Personal income tax	33	51	73	71	97	147	48	59	66
VAT	28	40	55	52	66	85	0	0	1
Excises	7	8	12	15	24	35	8	9	10
Sales and imputed taxes	0	0	0	0	25	47	14	15	17
Property tax	16	37	47	47	52	63	6	31	24
Other tax revenue	30	48	72	62	90	143	28	32	30
Nontax revenue	11	13	16	20	35	61	17	21	21
Budgetary funds 1/	11	25	37	55	110	203	26	30	42
Transfers 2/	29	64	85	53	81	123	55	76	68
Expenditure 3/	245	359	489	469	721	1,068	249	338	348
Government administration	7	12	19	20	32	48	12	17	17
Law enforcement	6	11	14	12	19	27	7	9	9
Sectoral expenditures 4/	38	47	59	46	69	106	26	53	64
Education	48	72	94	84	126	176	43	66	49
Health	37	52	66	59	93	136	31	41	42
Housing	61	89	106	94	125	199	47	54	60
Social security	17	27	32	28	43	60	17	26	26
Budgetary funds 1/	14	30	42	61	112	203	23	31	35
Interest payments	...	...	...	...	...	19	2	5	3
Other 3/	18	20	55	64	102	94	42	36	44
Overall balance (- deficit)	-5	-8	-22	-33	-1	62	2	25	12
(In percent of GDP)									
Revenue	15.6	16.4	18.8	15.9	15.1	16.0	13.3	17.0	14.7
Profit tax	4.9	3.0	2.8	2.2	2.9	3.1	2.6	4.2	3.3
Personal income tax	2.2	2.4	3.0	2.6	2.0	2.1	2.6	2.8	2.7
VAT	1.8	1.8	2.2	1.9	1.4	1.2	0.0	0.0	0.0
Excises	0.4	0.4	0.5	0.6	0.5	0.5	0.4	0.4	0.4
Sales and imputed taxes	0.0	0.0	0.0	0.0	0.5	0.7	0.7	0.7	0.7
Property tax	1.0	1.7	1.9	1.7	1.1	0.9	0.3	1.4	1.0
Other tax revenue	1.9	2.2	2.9	2.3	1.9	2.0	1.5	1.5	1.2
Nontax revenue	0.7	0.6	0.7	0.7	0.7	0.9	0.9	1.0	0.9
Budgetary funds 1/	0.7	1.2	1.5	2.0	2.3	2.9	1.4	1.4	1.7
Transfers 2/	1.9	3.0	3.4	1.9	1.7	1.7	2.9	3.6	2.8
Expenditure 3/	15.9	16.7	19.7	17.1	15.1	15.1	13.2	15.8	14.2
Government administration	0.5	0.6	0.8	0.7	0.7	0.7	0.7	0.8	0.7
Law enforcement	0.4	0.5	0.6	0.4	0.4	0.4	0.4	0.4	0.4
Sectoral expenditures 4/	2.5	2.2	2.4	1.7	1.5	1.5	1.4	2.5	2.6
Education	3.1	3.4	3.8	3.1	2.7	2.5	2.3	3.1	2.0
Health	2.4	2.4	2.7	2.1	2.0	1.9	1.6	1.9	1.7
Housing	3.9	4.1	4.3	3.4	2.6	2.8	2.5	2.5	2.4
Social security	1.1	1.3	1.3	1.0	0.9	0.9	0.9	1.2	1.1
Budgetary funds 1/	0.9	1.4	1.7	2.2	2.4	2.9	1.2	1.5	-1.8
Interest payments	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.3	0.1
Other 3/	1.1	0.9	2.2	2.3	2.1	1.3	2.2	1.7	5.0
Overall balance (- deficit)	-0.3	-0.4	-0.9	-1.2	0.0	0.9	0.1	1.2	0.5

Sources: Ministry of Finance, CBR and Fund staff estimates.

1/ Including all territorial road funds.

2/ Including net budgetary loans.

3/ Individual expenditure categories shown on a cash basis. Domestic expenditure arrears accumulation is included in "other" expenditure.

4/ Including research; industry, energy and construction; agriculture and fishing; transport and communications; environment.

Table 23. Russian Federation: Extrabudgetary Fund Operations, 1995-2001

	1995	1996	1997	1998	1999	2000	2001		
							Q1	Q2	Q3
(In billions of rubles)									
Revenue	124	174	251	234	391	604	148	174	184
Pension Fund	85	127	181	162	277	424	111	129	134
Employment Fund	6	7	9	8	13	20	0	0	0
Social Insurance Fund	18	25	32	33	52	87	19	22	25
Medical Insurance Fund	15	15	30	31	49	73	18	23	25
Expenditure	123	177	248	258	335	498	139	162	171
Pension Fund 1/	86	127	177	190	235	341	104	121	132
Employment Fund	6	7	9	8	10	16	0	0	0
Social Insurance Fund	17	25	30	32	43	70	19	22	23
Medical Insurance Fund	15	15	29	32	47	71	16	21	18
Float	0	3	3	-3	0	1	1	-3	-2
Balance, total extrabudgetary funds	0	-3	3	-24	56	106	9	12	13
Financing	0	3	-3	24	-56	-106	-9	-12	-13
of which: monetary authorities	0	0	-2	-1	-10	-107	-11	-11	-6
of which: pension arrears	...	...	...	26	-29	-2	0	0	0
(In percent of GDP)									
Revenue	8.0	8.1	10.1	8.5	8.2	8.6	7.9	8.1	7.5
Pension Fund	5.5	5.9	7.3	5.9	5.8	6.0	5.9	6.1	5.5
Employment Fund	0.4	0.3	0.4	0.3	0.3	0.3	0.0	0.0	0.0
Social Insurance Fund	1.1	1.2	1.3	1.2	1.1	1.2	1.0	1.0	1.0
Medical Insurance Fund	0.9	0.7	1.2	1.1	1.0	1.0	1.0	1.1	1.0
Expenditure	8.0	8.2	10.0	9.4	7.0	7.1	7.4	7.6	6.9
Pension Fund 1/	5.6	5.9	7.1	6.9	4.9	4.8	5.5	5.7	5.4
Employment Fund	0.4	0.3	0.4	0.3	0.2	0.2	0.0	0.0	0.0
Social Insurance Fund	1.1	1.2	1.2	1.1	0.9	1.0	1.0	1.1	0.9
Medical Insurance Fund	0.9	0.7	1.2	1.2	1.0	1.0	0.9	1.0	0.7
Float	0.0	0.2	0.1	-0.1	0.0	0.0	0.0	-0.1	-0.1
Balance, total extrabudgetary funds	0.0	-0.1	0.1	-0.9	1.2	1.5	0.5	0.6	0.5
Financing	0.0	0.1	-0.1	0.9	-1.2	-1.5	-0.5	-0.6	-0.5
of which: monetary authorities	0.0	0.0	-0.1	0.0	-0.2	-1.5	-0.6	-0.5	-0.3
of which: pension arrears	...	...	...	1.0	-0.6	0.0	0.0	0.0	0.0

Source: Extrabudgetary funds; and CBR.

1/ Measured on a cash basis prior to 1998.

Table 24. Russian Federation: Monetary Authorities' Accounts, 1996-2001
(In billions of rubles, unless otherwise indicated) 1/

	1996 Dec.	1997 Dec.	1998 Dec.	1999 Dec.	2000					2001			
					Mar.	June	Sept.	Dec.	Dec. revalued	Mar.	June	Sept.	Nov.
Base money	131	165	210	324	319	397	438	520	520	500	583	650	651
Currency issued	109	137	198	289	269	341	372	447	447	424	501	560	558
Required reserves on ruble deposits	22	28	13	36	50	57	66	73	73	76	82	90	93
Net international reserves (NIR) 2/ (In billions of US\$)	10 1.7	22 3.7	-175 -8.4	-77 -2.8	34 1.3	205 7.6	338 12.5	429 15.9	458 16.3	507 18.0	662 23.5	753 26.7	794 28.2
Net domestic assets (NDA)	121	142	385	401	285	193	99	91	62	-7	-79	-103	-143
Net credit to enlarged government	162	192	276	309	240	171	113	75	119	47	-29	-56	-79
Net credit to federal government	166	200	283	333	302	265	235	224	268	213	155	137	101
CBR net credit to the federal government 3/	112	135	177	206	196	185	167	173	173	139	95	75	55
VEB credit (In billions of US\$)	...	...	40	138	138	138	146	145	189	189	189	189	189
Ruble counterpart 4/	54	65	66	-11	-32	-58	-78	-94	-94	-114	-128	-127	-143
CBR net credit to local government	-2	-4	-2	-9	-17	-29	-34	-27	-27	-34	-41	-43	-45
CBR net credit to extrabudgetary funds	-2	-5	-5	-15	-44	-65	-88	-122	-122	-132	-143	-150	-136
Net ruble credit to banks	-11	-21	-24	-46	-91	-123	-145	-128	-128	-107	-94	-87	-84
Gross credit to banks	6	10	16	27	27	27	26	23	23	23	22	22	21
Gross liabilities to banks and deposits	-18	-31	-40	-73	-118	-150	-171	-151	-151	-130	-116	-108	-105
OIN	-29	-28	133	137	135	145	132	143	70	52	44	39	20
o/w required reserves on foreign currency deposits	-4	-4	-8	-29	-40	-41	-45	-51	-51	-54	-57	-60	-62
Memorandum items:													
Exchange rate (official, end-period)	5.6	6.0	20.7	27.0	28.5	28.1	27.8	28.2	28.2	28.7	29.1	29.4	29.7
Gross reserves (US\$ bln) 5/	15.4	17.8	10.9	12.5	15.6	21.1	25.3	28.2	28.0	29.9	35.3	37.9	37.4
CBR	14.8	17.2	10.8	11.9	15.2	20.6	24.8	27.6	27.4	28.9	34.0	37.0	36.1
MinFin	0.5	0.6	0.1	0.5	0.4	0.5	0.6	0.6	0.6	1.0	1.2	1.0	1.3
Reserve liabilities (US\$ bln)	13.6	14.0	19.4	15.3	14.4	13.5	12.8	12.3	11.7	11.9	11.8	11.2	9.2
CBR	1.1	0.0	4.0	3.0	3.0	3.0	3.0	3.1	2.9	3.4	3.5	3.2	1.4
MinFin	12.5	14.0	15.3	12.3	11.4	10.6	9.8	9.3	8.8	8.5	8.2	8.0	7.8

Sources: CBR; and Fund staff estimates.

1/ Presentation differs from IFS in: the definitions of "federal government", "local government", and "extrabudgetary funds"; the treatment of VEB credits extended for debt service; and the coverage of international reserves. Due to the adoption of a new chart of accounts in 1998, data not strictly comparable to earlier periods.

2/ 1996-99 at end of period exchange rates. Mar-Dec 2000 and Mar-Nov 2001 calculated at accounting exchange rates of Rub27/US\$ and US\$1.372/SDR and Rub28.2/US\$ and US\$1.303/SDR respectively. The revalued series for Dec. 2000 are calculated at end of period exchange rates.

3/ Beginning December 1999 includes government securities held by the CBR's pension fund.

4/ Represents the government's use of NIR resources and calculated in flow Ruble terms using the exchange rate in effect at the time of the transaction.

5/ Beginning December 1998, excludes all amounts held with domestic banks and at CBR-owned banks abroad.

Table 25. Russian Federation: Monetary Survey, 1996-2001 1/
(In billions of rubles unless otherwise indicated)

	1996 Dec.	1997 Dec.	1998 Dec.	1999 Dec.	2000					2001			
					Mar.	June	Sept.	Dec.	Dec. revalued	Mar.	June	Sept.	Nov.
Net foreign assets 2/	24	-19	-158	71	231	413	561	647	686	819	984	1025	1057
NIR of monetary authorities	10	22	-175	-76	34	205	338	429	458	507	662	753	794
NFA of commercial banks	14	-41	17	148	196	208	223	218	228	313	322	272	262
NDA	341	474	798	923	838	823	825	900	879	806	799	879	896
Domestic credit	528	656	857	1132	1088	1110	1175	1304	1369	1374	1408	1547	1605
Net credit to general government	301	365	470	551	465	397	361	360	413	343	273	249	212
Net credit to federal government 3/	307	370	465	575	541	519	516	539	592	543	507	505	451
Net credit from the monetary authorities	166	200	283	333	302	265	235	224	268	213	155	137	101
(o/w ruble counterpart)	54	65	66	-11	-32	-58	-78	-94	-94	-114	-128	-127	-143
Net credit from commercial banks	140	170	181	242	240	254	281	315	324	330	352	368	350
Ruble credit	124	148	77	81	72	81	93	106	106	109	126	133	123
Foreign currency credit	16	23	105	161	168	173	188	210	219	222	226	235	227
Net credit to local government and EBFs	-6	-5	5	-24	-76	-122	-156	-179	-179	-200	-234	-256	-239
Net credit from monetary authorities	-4	-8	-7	-24	-61	-94	-123	-148	-148	-166	-185	-193	-180
Net credit from commercial banks	-2	3	12	0	-15	-28	-33	-31	-31	-34	-49	-63	-59
Credit to the economy	227	290	387	582	623	704	814	944	956	1030	1135	1298	1393
Loans in foreign currency 2/	78	97	220	230	231	240	269	269	280	293	305	330	353
(In billions of US\$)	14.0	16.3	10.6	8.5	8.6	8.9	9.9	10.0	10.0	10.4	10.8	11.7	12.5
Ruble loans	149	193	167	351	392	464	546	675	675	737	831	968	1040
Other items (net)	-187	-181	-59	-209	-250	-279	-350	-404	-490	-568	-610	-668	-709
Broad money	365	455	640	995	1069	1235	1386	1547	1564	1626	1783	1904	1952
Ruble broad money	295	370	448	705	751	892	992	1144	1144	1149	1294	1414	1439
Currency in circulation	104	131	188	267	252	322	351	419	419	399	475	531	527
Ruble deposits 4/	191	240	261	438	500	570	641	725	725	750	820	883	912
Foreign currency deposits 2/	69	85	191	290	318	343	394	403	420	476	488	489	513
(In billions of US\$)	12.5	14.3	9.2	10.7	11.8	12.7	14.6	14.9	14.9	16.9	17.3	17.4	18.2

Sources: CBR; and Fund staff estimates.

1/ Presentation differs from IFS in: the definitions of "federal government", "local government", and "extrabudgetary funds"; the treatment of VEB credits extended for debt service; and the coverage of international reserves. Due to the adoption of a new chart of accounts in 1998, data not strictly comparable to earlier periods.

2/ 1996-99 at end of period exchange rates. Mar-Dec 2000 and Mar-Nov 2001 calculated at accounting exchange rates of Rub27/US\$ and US\$1.372/SDR and Rub28.2/US\$ and US\$1.303/SDR respectively. The revalued series for Dec. 2000 are calculated at end of period exchange rates.

3/ Inclusive of valuation gains and losses on holdings of government securities.

4/ Includes demand deposits at the CBR.

Table 26. Russian Federation: Key Monetary Indicators, 1996-2001

	1996 Dec.	1997 Dec.	1998 Dec.	1999 Dec.	2000				2001			
					Mar.	June	Sep.	Dec.	Mar.	June	Sep.	Nov.
Velocity												
Ruble broad money velocity 1/	8.3	7.4	7.3	8.1	7.8	7.4	8.1	6.8	6.6	6.7	7.1	6.9
% change compared to year earlier	-6.9	-10.6	-1.5	10.8	6.3	-5.7	-11.2	-15.4	-15.2	-9.2	-12.2	...
Ruble broad money velocity (seasonally adj.) 1/	8.0	7.1	7.0	7.8	7.9	7.4	7.5	6.7	7.0	7.0	6.5	6.6
% change compared to year earlier	-6.9	-10.7	-1.6	10.6	1.0	-10.6	-11.2	-13.9	-11.3	-5.5	-13.5	...
Broad money including forex deposits 1/	6.7	6.0	5.1	5.9	5.5	5.3	5.8	5.1	4.7	4.9	5.3	5.1
% change compared to year earlier	-5.8	-10.2	-14.8	15.1	8.6	-3.9	-11.5	-14.4	-14.7	-8.8	-8.9	...
Ruble money multiplier												
Currency-to-deposit ratio	2.25	2.25	2.15	2.11	2.36	2.25	2.27	2.20	2.30	2.22	2.18	2.21
Reserves-to-deposits ratio	0.54	0.54	0.71	0.56	0.50	0.56	0.55	0.58	0.53	0.58	0.60	0.58
Reserves-to-deposits ratio	0.12	0.11	0.05	0.08	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Currency held by banks to deposits ratio	0.03	0.03	0.04	0.10	0.03	0.03	0.03	0.04	0.03	0.03	0.03	0.03
Currency ratios												
Forex deposits-to-total deposits ratio	0.27	0.26	0.42	0.37	0.39	0.38	0.38	0.36	0.39	0.37	0.36	0.36
Forex credit-to-total credit ratio	0.34	0.34	0.55	0.40	0.38	0.35	0.34	0.29	0.29	0.27	0.26	0.26
Real measures of monetary aggregates 2/												
Real currency in circulation	1.03	1.17	0.91	0.95	0.86	1.04	1.09	1.24	1.10	1.25	1.38	1.33
Real ruble deposits	1.11	1.25	0.75	0.91	1.00	1.08	1.16	1.25	1.21	1.25	1.33	1.34
Real ruble broad money	1.08	1.22	0.81	0.92	0.95	1.07	1.14	1.25	1.17	1.25	1.35	1.34
Real forex deposits	0.66	0.73	0.89	0.88	1.04	1.07	1.17	1.14	1.26	1.23	1.21	1.24
Real credit (incl. Forex) to the economy	0.66	0.76	0.55	0.60	0.64	0.68	0.75	0.83	0.84	0.88	0.99	1.04
Real ruble credit to the economy	0.62	0.73	0.35	0.53	0.56	0.63	0.72	0.84	0.86	0.92	1.05	1.11
Contributions to monetary growth												
1. Monetary authorities 3/												
Base money growth	26.2	25.7	27.9	54.1	-1.6	22.5	34.9	60.2	-3.8	12.3	25.1	25.4
NDA	51.5	15.8	65.2	6.1	-35.8	-64.2	-92.9	-95.5	-13.3	-27.1	-31.8	-39.4
Net credit to enlarged government	49.1	22.7	51.7	13.7	-21.3	-42.7	-60.7	-72.1	-13.9	-28.6	-33.6	-38.2
NIR	-25.3	9.9	-37.3	48.0	34.2	86.7	127.9	155.8	9.4	39.3	56.8	64.8
2. Banking system 4/												
Broad money	32.1	24.9	41.3	50.8	7.5	24.1	39.3	55.5	5.1	15.2	23.1	26.2
NDA	42.4	36.6	42.1	16.9	-8.6	-10.1	-9.9	-2.3	-6.1	-6.6	-1.4	-0.3
Net credit to enlarged government	49.6	17.7	32.4	9.3	-8.6	-15.5	-19.1	-19.1	-1.1	-5.7	-7.2	-9.6
NFA	-10.3	-11.7	-0.8	33.9	16.0	34.3	49.2	57.8	11.1	21.8	24.4	26.5
Credit aggregates—stocks 5/												
Total credit to the economy	10.6	11.5	14.4	12.2	9.0	10.1	11.6	13.5	11.5	12.7	14.5	15.6
Ruble-denominated credit to the economy	6.9	7.6	6.3	7.4	5.5	6.6	7.7	9.6	8.2	9.2	10.7	11.5
Credit to government from commercial banks	6.5	6.9	7.2	5.1	3.2	3.2	3.5	4.0	3.3	3.3	3.4	3.2
Credit aggregates—flows 5/												
Total credit to the economy	1.4	2.5	3.6	4.1	0.8	1.9	3.4	5.3	0.9	2.1	3.9	5.1
Ruble-denominated credit to the economy	1.1	1.7	-1.0	3.9	0.6	1.6	2.8	4.6	0.7	1.7	3.2	4.0
Credit to government from commercial banks	4.0	1.4	0.8	1.0	0.0	0.0	0.3	0.9	0.1	0.2	0.2	0.1
Prices												
Inflation from end of previous year	21.8	11.0	84.4	36.7	3.9	9.5	14.1	20.1	7.2	12.8	14.2	17.1

Sources: CBR; and Fund staff estimates.

1/ Based on annualized end-period quarterly GDP.

2/ End-1994 = 1.00. Deflated by the CPI, stocks of foreign currency-denominated items converted into rubles at prevailing exchange rates.

3/ Change as a percent of beginning of year stock of base money. Changes in NIR include valuation effects arising from exchange rate movements.

4/ Change as a percent of beginning of year broad money (including foreign exchange deposits). Changes in NFA include valuation changes arising from exchange rate movements

5/ Relative to annual GDP.

Table 27. Russian Federation: CBR Instruments, 1996-2001
(In billion rubles)

	Required reserve balances			Correspondent accounts			Deposit facility			OBR's	Gross credit to banks				
	Total	Ruble	Foreign exchange	Total	Moscow banks	Regional banks	Total	Moscow banks	Regional banks		Total 1/	Lombard	Rehabilitation	Foreign exchange 2/	Other
1996 Dec	26	22	4	18	...	...	11	...	...	0	6				
1997 Dec	36	28	9	31	...	...	0	...	...	0	10	6			
1998 June	38	26	13	14	...	...	0	...	...	0	12	8			
July	37	25	12	14	...	...	3	...	...	0	4	1			
Aug	32	21	12	10	...	...	0	...	...	0	22	5			
Sep	20	13	7	21	...	...	1	...	...	2	17	2			
Oct	18	13	5	22	...	...	8	...	...	2	9	1			
Nov	19	14	5	28	...	...	10	...	...	2	11	1			
Dec	21	13	8	33	16	17	5	5	0	2	29	0	7	13	8
1999 Jan	24	14	10	29	14	15	11	11	0	3	30	0	7	14	8
Feb	25	14	11	33	16	17	15	15	0	0	34	0	8	15	11
Mar	35	19	16	44	17	27	15	15	0	0	34	0	9	13	12
Apr	37	20	17	45	26	20	14	14	0	0	37	0	10	13	14
May	40	22	18	60	35	25	22	22	0	0	37	0	11	13	13
June	51	29	22	52	29	23	16	16	0	0	32	0	12	6	13
July	53	30	23	49	28	21	19	19	0	0	34	0	14	7	13
Aug	53	31	23	49	25	24	23	23	0	0	34	0	14	7	13
Sep	56	32	24	55	31	24	10	10	0	0	34	0	14	7	13
Oct	58	32	26	65	39	26	9	9	0	0	34	0	14	7	13
Nov	61	34	27	65	36	29	19	18	1	0	34	0	14	7	13
Dec	65	36	29	66	32	34	4	4	1	0	32	0	14	6	13
2000 Jan	80	45	35	62	32	30	22	21	1	0	33	0	14	6	13
Feb	83	46	37	67	36	31	26	26	0	0	33	0	14	6	13
Mar	90	50	40	75	43	32	48	48	0	0	33	0	14	6	13
Apr	93	52	40	65	36	30	43	43	0	0	32	0	14	5	13
May	96	54	42	82	48	34	59	59	0	0	33	0	14	6	13
June	98	57	41	81	47	33	70	70	0	0	33	0	14	6	13
July	102	60	42	90	54	36	92	92	0	0	33	0	14	6	13
Aug	107	63	44	86	50	35	77	77	0	0	33	0	14	7	12
Sept	111	66	45	92	58	35	79	79	0	0	33	0	14	7	13
Oct	117	70	46	92	55	37	64	64	0	0	31	0	11	7	13
Nov	121	71	50	98	59	39	65	65	1	0	30	0	11	7	12
Dec	124	73	51	130	74	56	21	21	0	0	30	0	11	7	12
2001 Jan	128	76	53	86	47	39	48	48	0	0	36	0	11	13	12
Feb	126	75	51	77	43	35	48	48	0	0	36	0	11	13	12
Mar	130	76	54	85	49	36	46	46	0	0	36	0	11	13	12
Apr	135	78	56	76	39	37	28	28	0	0	36	0	11	13	12
May	137	80	56	95	55	40	26	26	0	0	36	0	11	13	12
June	139	82	57	91	53	38	25	24	1	0	35	0	10	13	12
July	143	84	59	86	46	40	18	18	0	0	35	0	10	13	12
Aug	146	87	59	98	59	39	11	11	0	0	35	0	10	13	12
Sept	150	90	60	93	54	39	15	15	0	0	35	0	10	13	12
Oct	153	93	60	89	52	36	38	38	0	0	35	0	10	13	12
Nov	155	94	62	87	53	34	18	18	0	0	34	0	9	13	12

Source: CBR.

1/ From December 1998 includes foreign exchange credits to banks excluding VEB for debt service.

2/ Excluding VEB debt service.

Table 27 (continued). Russian Federation: CBR Instruments, 1996-2001
(In percent of end-month base money)

	Required reserve balances			Correspondent accounts			Deposit facility			OBR's	Gross credit to banks				
	Total	Ruble	Foreign exchange	Total	Moscow banks	Regional banks	Total	Moscow banks	Regional banks		Total 1/	Lombard	Rehabilitation	Foreign exchange 2/	Other
1996 Dec	19.8	17.0	2.7	13.6			8.7			0.0	4.9				
1997 Dec	22.1	16.7	5.4	19.1			0.2			0.0	6.0	3.9			
1998 June	23.3	15.6	7.7	8.6			0.1			0.0	7.3	4.8			
July	23.1	15.4	7.7	8.6			2.1			0.0	2.5	0.9			
Aug	20.1	12.9	7.2	6.2			0.1			0.0	13.7	3.3			
Sept	11.5	7.7	3.9	11.9			0.6			0.9	9.8	1.0			
Oct	9.6	7.0	2.7	12.0			4.3			1.0	4.7	0.6			
Nov	10.0	7.4	2.5	14.5			5.3			1.0	5.7	0.3			
Dec	9.9	5.9	3.9	15.5	7.5	8.0	2.2	2.2	0.0	1.1	13.8	0.0	3.5	6.3 4.0	
1999 Jan	11.7	6.8	4.9	14.4	6.7	7.6	5.5	5.5	0.0	1.3	14.6	0.0	3.7	6.8 4.1	
Feb	12.1	6.9	5.2	16.0	7.6	8.5	7.4	7.4	0.0	0.0	16.4	0.0	3.8	7.2 5.4	
Mar	17.0	9.4	7.6	21.5	8.3	13.3	7.5	7.5	0.0	0.0	16.7	0.0	4.5	6.2 6.0	
Apr	16.3	9.0	7.3	19.8	11.2	8.6	6.0	6.0	0.0	0.0	16.4	0.0	4.4	5.9 6.1	
May	16.6	9.2	7.4	24.7	14.5	10.3	9.0	9.0	0.0	0.0	15.5	0.0	4.7	5.5 5.3	
June	19.7	11.1	8.6	20.0	11.2	8.8	6.1	6.1	0.0	0.0	12.2	0.0	4.7	2.5 5.0	
July	20.1	11.5	8.6	18.7	10.5	8.1	7.3	7.3	0.0	0.0	12.9	0.0	5.3	2.6 4.9	
Aug	20.4	11.7	8.7	18.8	9.7	9.1	8.8	8.8	0.0	0.0	12.9	0.0	5.3	2.6 4.9	
Sept	21.5	12.2	9.4	21.3	12.0	9.2	3.8	3.8	0.0	0.0	13.0	0.0	5.4	2.7 5.0	
Oct	21.6	12.1	9.6	24.2	14.5	9.8	3.3	3.3	0.0	0.0	12.6	0.0	5.2	2.6 4.8	
Nov	22.8	12.7	10.2	24.4	13.4	10.9	7.0	6.6	0.4	0.0	12.7	0.0	5.2	2.6 4.9	
Dec	19.9	11.0	8.9	20.3	9.9	10.4	1.3	1.1	0.2	0.0	10.0	0.0	4.3	1.7 4.0	
2000 Jan	27.0	15.2	11.8	20.9	10.9	10.0	7.4	7.2	0.2	0.0	11.0	0.0	4.7	2.0 4.4	
Feb	27.2	15.1	12.1	22.0	11.7	10.3	8.4	8.4	0.0	0.0	10.8	0.0	4.5	1.9 4.3	
Mar	28.1	15.7	12.5	23.5	13.4	10.1	15.1	15.1	0.0	0.0	10.3	0.0	4.4	1.9 4.1	
Apr	26.5	14.9	11.6	18.6	10.2	8.4	12.2	12.2	0.0	0.0	9.2	0.0	4.0	1.5 3.7	
May	26.4	14.9	11.5	22.7	13.4	9.3	16.3	16.3	0.0	0.0	9.2	0.0	3.8	1.8 3.6	
June	24.7	14.3	10.4	20.3	11.9	8.4	17.5	17.5	0.0	0.0	8.3	0.0	3.5	1.6 3.2	
July	24.6	14.4	10.2	21.7	12.9	8.7	22.1	22.1	0.0	0.0	7.9	0.0	3.3	1.5 3.1	
Aug	25.2	14.9	10.3	20.1	11.8	8.3	18.1	18.1	0.0	0.0	7.7	0.0	3.2	1.6 2.8	
Sept	25.3	15.0	10.3	21.1	13.2	7.9	18.1	18.1	0.0	0.0	7.6	0.0	3.1	1.6 2.9	
Oct	26.3	15.8	10.5	20.8	12.5	8.3	14.4	14.4	0.0	0.0	6.9	0.0	2.5	1.6 2.8	
Nov	26.8	15.6	11.2	21.8	13.2	8.6	14.4	14.4	0.2	0.0	6.7	0.0	2.5	1.6 2.7	
Dec	23.9	14.1	9.9	25.0	14.3	10.7	4.0	4.0	0.0	0.0	5.8	0.0	2.1	1.4 2.3	
2001 Jan	26.7	15.8	10.9	17.9	9.7	8.2	9.9	9.9	0.0	0.0	7.5	0.0	2.3	2.6 2.5	
Feb	25.9	15.4	10.5	15.9	8.8	7.1	9.9	9.9	0.0	0.0	7.3	0.0	2.2	2.6 2.4	
Mar	25.9	15.1	10.8	17.0	9.8	7.2	9.2	9.2	0.0	0.0	7.1	0.0	2.2	2.6 2.4	
Apr	24.9	14.5	10.4	14.1	7.3	6.8	5.1	5.1	0.0	0.0	6.6	0.0	2.0	2.4 2.2	
May	25.1	14.7	10.3	17.4	10.1	7.4	4.7	4.7	0.0	0.0	6.5	0.0	2.0	2.4 2.1	
June	23.8	14.0	9.7	15.6	9.1	6.5	4.2	4.1	0.2	0.0	6.0	0.0	1.7	2.2 2.0	
July	23.7	14.0	9.7	14.2	7.5	6.6	3.1	3.0	0.1	0.0	5.8	0.0	1.7	2.2 1.9	
Aug	23.4	13.9	9.5	15.7	9.5	6.3	1.8	1.8	0.0	0.0	5.6	0.0	1.6	2.1 1.9	
Sept	23.1	13.9	9.2	14.4	8.3	6.0	2.3	2.3	0.0	0.0	5.4	0.0	1.5	2.0 1.8	
Oct	23.4	14.2	9.2	13.6	8.0	5.6	5.8	5.8	0.1	0.0	5.3	0.0	1.5	2.0 1.8	
Nov	23.8	14.4	9.5	13.3	8.1	5.2	2.8	2.8	0.0	0.0	5.3	0.0	1.4	2.1 1.8	

Source: CBR.

1/ From December 1998 includes foreign exchange credits to banks excluding VEB for debt service.

2/ Excluding VEB debt service.

Table 28. Russian Federation: Domestic Debt, 1997-2001 1/
(In billions of rubles)

	1997	1998	1999	2000	2001 2/
Short-term treasury bills (GKO)	273	17	7	3	20
Medium and long-term government bonds (OFZ's)	163	460	515	506	470
OFZ-PD (fixed coupon)	116	347	402	359	308
OFZ-FK (fixed coupon)	0	113	112	123	139
OFZ-PK (variable coupon)	48	0	0	24	24
Nonmarket bonds (OGNZ)	2	3	3	20	21
Savings bonds (OGSZ)	13	15	5	3	0
Short-term bank loans	0	0	15	0	0
Other 3/	40	36	34	26	21
Total	491	530	578	557	531

Source: Ministry of Finance.

1/ Ruble denominated debt. Includes instruments held by nonresidents.

2/ Preliminary data.

3/ Includes targeted bond issues, various government guarantees, and enterprise/sector debts assumed by the government.

Table 29. Russian Federation: Indicators of Concentration in the Banking System, September 2001 1/
(In percent)

	Sberbank	1 to 10	11 to 50	51 to 100	101 to 500	501 to 1308
Total assets	26.8	28.9	21.6	6.0	13.5	3.1
Gross credit to government	61.7	19.5	10.2	1.9	5.9	0.8
o/w government securities	63.0	19.5	9.8	1.8	5.3	0.7
Loans to nonbank private sector 2/	19.9	6.3	3.3	0.6	1.9	0.3
o/w past due	40.6	26.2	15.7	3.3	10.5	3.7
Deposits of nonbank private sector 2/	41.1	23.6	15.4	4.7	12.2	2.9
o/w households	74.8	6.9	7.2	3.0	6.5	1.7
o/w enterprises	14.0	37.0	22.1	6.1	16.8	3.9
Capital	19.3	30.2	19.0	7.3	18.5	5.7

Source: Interfax and staff calculations.

1/ Expressed relative to the total for the banking sector.

2/ Includes state enterprises.

Table 30. Russian Federation: Balance of Payments, 1997-2001
(In billions of U.S. dollars, unless otherwise indicated)

	1997	1998	1999	2000					2001	
				Q1	Q2	Q3	Q4	Year	Q1	Q2
Current Account	-0.4	-1.6	22.7	10.6	10.3	11.1	13.2	45.3	10.1	9.3
Trade Balance	17.0	16.9	36.1	14.4	14.6	15.6	16.1	60.7	14.5	13.0
Exports	89.0	74.9	75.7	24.4	25.0	26.7	29.5	105.6	25.6	26.6
Non-energy	50.5	46.9	44.7	11.3	12.7	13.4	15.3	52.7	11.7	13.1
Energy	38.5	27.9	31.0	13.0	12.3	13.4	14.1	52.8	13.9	13.6
Oil	22.1	14.5	19.6	8.3	8.8	9.9	9.2	36.2	8.4	9.5
Gas	16.4	13.4	11.4	4.7	3.6	3.5	4.9	16.6	5.5	4.1
Imports	-72.0	-58.0	-39.5	-10.0	-10.4	-11.1	-13.4	-44.9	-11.1	-13.6
Services (net)	-17.1	-18.1	-14.0	-3.8	-4.4	-4.4	-2.8	-15.5	-4.4	-3.8
Nonfactor services	-5.9	-4.0	-4.3	-1.6	-2.1	-2.2	-1.9	-7.7	-2.0	-2.5
Factor services	-11.2	-14.1	-9.7	-2.3	-2.3	-2.2	-0.9	-7.8	-2.4	-1.2
Public sector interest	-10.0	-12.3	-8.6	-2.1	-2.1	-2.2	-0.9	-7.3	-2.5	-1.0
Other factor services	-1.2	-1.9	-1.2	-0.2	-0.2	0.0	0.0	-0.5	0.1	-0.2
Current transfers	-0.4	-0.4	0.6	0.1	0.1	0.0	0.0	0.1	0.0	0.1
Capital account	27.9	-6.5	-16.6	-6.4	-3.8	-5.3	-6.6	-22.0	-6.4	-2.3
Public sector capital	42.2	7.1	-1.7	-0.9	-0.6	-2.4	-1.6	-5.5	-1.5	-0.1
Budgetary	1.3	0.4	-2.3	-0.7	-0.6	-1.5	-0.5	-3.2	-1.4	-0.4
Disbursements	9.0	8.7	2.1	0.5	0.2	0.4	0.1	1.1	0.1	0.1
Amortization	-7.7	-8.3	-4.4	-1.1	-0.8	-1.9	-0.6	-4.4	-1.5	-0.5
Non-budgetary	40.9	6.8	0.6	-0.2	0.0	-0.9	-1.1	-2.3	0.0	0.3
Private sector capital	-14.3	-13.6	-14.9	-5.5	-3.1	-2.9	-5.0	-16.6	-5.0	-2.2
Errors and omissions, net	-5.7	-9.0	-7.0	-2.1	-0.8	-2.8	-3.6	-9.3	-2.4	-1.5
Overall balance	21.8	-17.1	-0.9	2.1	5.8	3.0	3.0	14.0	1.2	5.4
Financing	-21.8	17.1	0.9	-2.1	-5.8	-3.0	-3.0	-14.0	-1.2	-5.4
Net international reserves	-2.0	10.2	-5.4	-4.1	-6.3	-4.9	-3.3	-18.7	-1.7	-5.5
Gross reserves (- increase)	-2.4	5.7	-1.7	-3.2	-5.4	-4.2	-2.9	-15.8	-1.9	-5.4
Net Fund liabilities	1.5	5.3	-3.6	-0.9	-0.9	-0.7	-0.6	-3.0	-0.3	-0.2
Purchases	2.0	6.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repurchases	-0.5	-0.9	-4.2	-0.9	-0.9	-0.7	-0.6	-3.0	-0.3	-0.2
Other liabilities	-1.1	-0.7	-0.1	0.0	0.0	0.0	0.1	0.1	0.5	0.1
Valuation adjustment	1.6	0.3	0.1	0.1	-0.7	0.3	0.2	-0.2	0.1	0.5
Exceptional financing 1/	-21.4	6.6	6.3	1.9	1.3	1.6	0.1	4.9	0.4	-0.4
Memorandum items:										
Current account (in percent of GDP)	-0.1	-0.5	11.8	20.6	17.8	15.4	18.8	18.0	15.3	12.6
Gross reserves	17.8	10.9	12.5	15.6	21.1	25.3	28.0	28.0	29.9	35.3
(in months of imports of GNFS)	2.9	2.5	2.4	3.1	3.4	4.0	4.2	4.6	6.0	5.7
Russian oil price (\$/barrel)	16.3	10.5	14.7	23.8	23.5	24.9	25.9	24.5	21.7	22.8
World oil price (\$/barrel)	19.3	13.1	18.0	26.6	26.8	29.8	29.7	28.2	26.8	26.7
External debt service payments 2/	20.5	24.1	17.2	4.0	4.8	4.5	3.2	16.4	6.3	4.0
(percent of exports of goods and services)	19.8	27.6	20.3	15.2	17.4	15.3	9.9	14.3	22.8	13.8

Sources: Russian authorities; and Fund staff estimates. Data are presented on a due basis.

1/ Includes arrears, debt rescheduling, and debt deferrals. Consists of interest capitalization by commercial banks, according to the London Club agreement, and debt reschedulings from uninsured suppliers and non-Paris Club creditors.

2/ Excludes payments on short-term debt.

Table 31. Russian Federation: Destination of Exports, 1995-2000 1/

	1995	1996	1997	1998	1999	2000
(In millions of US dollars)						
Total exports	77,595	83,979	85,077	71,389	72,453	102,998
CIS	14,365	15,452	16,583	13,546	10,689	13,785
Belarus	2,940	3,046	4,632	4,646	3,761	5,535
Kazakhstan	2,656	2,556	2,472	1,881	1,222	2,246
Ukraine	6,898	7,583	7,239	5,531	4,786	5,024
Other	1,871	2,267	2,240	1,488	920	980
Non-CIS	63,230	68,527	68,494	57,843	61,765	89,213
Europe	42,055	45,803	47,365	38,806	41,188	64,485
Czech Republic	2,073	1,743	1,823	1,382	1,323	1,745
Finland	2,377	2,618	2,774	2,063	2,379	3,105
France	1,516	1,611	1,626	1,456	1,218	1,913
Germany	6,079	6,734	6,531	5,697	6,178	9,231
Hungary	1,609	1,802	1,854	1,487	1,547	2,405
Ireland	2,552	2,833	2,500	638	600	288
Italy	3,292	2,808	3,564	3,203	3,690	7,258
Netherlands	3,183	3,317	4,554	3,930	3,520	4,340
Poland	1,605	2,122	2,514	2,173	2,606	4,452
Slovak Republic	1,194	1,865	1,740	1,368	1,426	2,121
Switzerland	3,739	3,952	3,732	3,216	3,468	3,976
UK	3,103	3,176	2,846	2,927	2,843	4,663
Other	9,735	11,224	11,307	9,264	10,390	18,989
Asia	11,432	11,760	10,471	7,579	9,142	12,076
China	3,377	4,684	3,982	3,144	3,476	5,233
Japan	3,173	2,905	2,935	2,171	2,109	2,766
Other	4,882	4,172	3,555	2,263	3,557	4,077
Western Hemisphere	7,270	7,593	6,827	8,104	8,243	9,075
US	5,092	6,411	4,951	5,995	6,433	7,972
Other	2,179	1,182	1,876	2,108	1,810	1,103
Middle East and Africa	1,933	2,203	2,124	2,340	2,770	3,450
Other	541	1,168	1,706	1,015	422	127
(In percent of total exports)						
Exports to:						
CIS	18.5	18.4	19.5	19.0	14.8	13.4
Belarus	3.8	3.6	5.4	6.5	5.2	5.4
Kazakhstan	3.4	3.0	2.9	2.6	1.7	2.2
Ukraine	8.9	9.0	8.5	7.7	6.6	4.9
Other	2.4	2.7	2.6	2.1	1.3	1.0
Non-CIS	81.5	81.6	80.5	81.0	85.2	86.6
Europe	54.2	54.5	55.7	54.4	56.8	62.6
Czech Republic	2.7	2.1	2.1	1.9	1.8	1.7
Finland	3.1	3.1	3.3	2.9	3.3	3.0
France	2.0	1.9	1.9	2.0	1.7	1.9
Germany	7.8	8.0	7.7	8.0	8.5	9.0
Hungary	2.1	2.1	2.2	2.1	2.1	2.3
Ireland	3.3	3.4	2.9	0.9	0.8	0.3
Italy	4.2	3.3	4.2	4.5	5.1	7.0
Netherlands	4.1	3.9	5.4	5.5	4.9	4.2
Poland	2.1	2.5	3.0	3.0	3.6	4.3
Slovak Republic	1.5	2.2	2.0	1.9	2.0	2.1
Switzerland	4.8	4.7	4.4	4.5	4.8	3.9
UK	4.0	3.8	3.3	4.1	3.9	4.5
Other	12.5	13.4	13.3	13.0	14.3	18.4
Asia	14.7	14.0	12.3	10.6	12.6	11.7
China	4.4	5.6	4.7	4.4	4.8	5.1
Japan	4.1	3.5	3.4	3.0	2.9	2.7
Other	6.3	5.0	4.2	3.2	4.9	4.0
Western Hemisphere	9.4	9.0	8.0	11.4	11.4	8.8
US	6.6	7.6	5.8	8.4	8.9	7.7
Other	2.8	1.4	2.2	3.0	2.5	1.1
Middle East and Africa	2.5	2.6	2.5	3.3	3.8	3.3
Other	0.7	1.4	2.0	1.4	0.6	0.1

Source: IMF Direction of Trade Statistics.

1/ Based on exports according to the Direction of Trade Statistics, which differ somewhat from those compiled by the Central Bank of Russia and shown in Table 30 and those compiled by the State Customs Committee and shown in table 32.

Table 32. Russian Federation: Composition of Merchandise Exports, 1995-2000

	1995	1996	1997	1998	1999	2000
Total exports (f.o.b.) (including Belarus)	78,290	85,107	85,036	71,313	72,885	103,055
Total exports (f.o.b.) 1/ (excluding Belarus)	63,728	81,585	80,363	66,643	69,119	97,467
Food, beverage, tobacco and agricultural products	1,332	1,688	1,407	1,187	764	1,299
Stone and ore	943	757	784	821	579	712
Fuel products	30,440	38,215	38,061	27,649	30,601	52,142
Oil and oil products	17,291	22,449	20,819	13,619	18,828	34,361
Crude	12,403	15,012	13,689	9,456	13,469	23,644
Oil products	4,888	7,436	7,130	4,162	5,359	10,717
Gas	11,410	13,992	15,644	12,696	10,850	16,118
Coal	1,012	1,005	821	622	432	1,136
Other	727	769	777	712	492	528
Chemicals (including pharmaceuticals and rubber)	7,453	7,006	6,577	5,588	5,677	6,801
Leather	307	361	383	372	187	237
Wood and paper products	4,320	3,493	3,502	3,406	3,594	4,276
Textiles and clothing	1,071	901	826	726	694	655
Gems and precious metals	5,356	3,861	3,145	4,308	4,343	4,881
Metals	15,280	16,179	16,715	14,708	14,147	16,682
Machines, equipment (including cars) and instruments	8,333	7,875	8,176	7,317	7,257	8,394
Other, including ceramics and glass	3,456	1,251	786	562	1,275	1,388
Total exports (f.o.b.) 1/ (excluding Belarus)	100	100	100	100	100	100
Food, beverage, tobacco and agricultural products	1.7	2.1	1.8	1.8	1.1	1.3
Stone and ore	1.2	0.9	1.0	1.2	0.8	0.7
Fuel products	38.9	46.8	47.4	41.5	44.3	53.5
Oil and oil products	22.1	27.5	25.9	20.4	27.2	35.3
Crude	15.8	18.4	17.0	14.2	19.5	24.3
Oil products	6.2	9.1	8.9	6.2	7.8	11.0
Gas	14.6	17.2	19.5	19.1	15.7	16.5
Coal	1.3	1.2	1.0	0.9	0.6	1.2
Other	0.9	0.9	1.0	1.1	0.7	0.5
Chemicals (including pharmaceuticals and rubber)	9.5	8.6	8.2	8.4	8.2	7.0
Leather	0.4	0.4	0.5	0.6	0.3	0.2
Wood and paper products	5.5	4.3	4.4	5.1	5.2	4.4
Textiles and clothing	1.4	1.1	1.0	1.1	1.0	0.7
Gems and precious metals	6.8	4.7	3.9	6.5	6.3	5.0
Metals	19.5	19.8	20.8	22.1	20.5	17.1
Machines, equipment (including cars) and instruments	10.6	9.7	10.2	11.0	10.5	8.6
Other, including ceramics and glass	4.4	1.5	1.0	0.8	1.8	1.4

Source: State Customs Committee.

1/ Excludes shuttle trade and other adjustments to the customs data that are included in Table 30.

Table 33. Russian Federation: Origin of Imports, 1995-2000 1/

	1995	1996	1997	1998	1999	2000
(In millions of U.S. dollars)						
Total imports	46,399	44,504	52,400	42,939	30,286	33,853
CIS	13,450	14,153	14,080	11,122	8,338	11,648
Belarus	1,957	2,695	4,627	4,514	3,236	3,764
Kazakhstan	2,742	3,041	2,743	1,877	1,391	2,197
Ukraine	6,616	6,256	3,981	3,219	2,523	3,647
Other	2,135	2,161	2,729	1,512	1,188	2,040
Non-CIS	32,949	30,351	38,320	31,816	21,948	22,204
Europe	24,670	21,139	26,403	20,527	13,986	14,354
Czech Republic	438	531	586	519	343	366
Finland	2,041	1,666	1,873	1,432	947	958
France	1,074	1,267	1,592	1,578	1,181	1,188
Germany	6,537	5,158	6,640	5,404	4,195	3,896
Hungary	842	655	920	607	313	403
Ireland	323	316	409	294	190	106
Italy	1,851	2,316	2,651	1,787	1,157	1,211
Netherlands	1,646	1,006	1,206	905	688	738
Poland	1,322	919	1,066	1,032	602	715
Slovak Republic	294	263	286	193	106	105
Switzerland	697	500	535	426	315	279
UK	1,100	1,121	1,481	1,205	663	860
Other	6,507	5,422	7,158	5,146	3,287	3,528
Asia	3,543	4,237	4,898	4,298	2,793	2,964
China	865	996	1,261	1,146	889	948
Japan	763	968	985	810	455	572
Other	1,916	2,273	2,652	2,341	1,449	1,444
Western Hemisphere	3,933	4,275	5,890	6,030	3,912	3,791
US	2,651	2,896	4,061	4,052	2,387	2,703
Other	1,282	1,380	1,829	1,979	1,525	1,087
Middle East and Africa	556	459	802	608	620	584
Other	246	241	328	354	637	512
(In percent of total imports)						
Imports from:						
CIS	29.0	31.8	26.9	25.9	27.5	34.4
Belarus	4.2	6.1	8.8	10.5	10.7	11.1
Kazakhstan	5.9	6.8	5.2	4.4	4.6	6.5
Ukraine	14.3	14.1	7.6	7.5	8.3	10.8
Other	4.6	4.9	5.2	3.5	3.9	6.0
Non-CIS	71.0	68.2	73.1	74.1	72.5	65.6
Europe	53.2	47.5	50.4	47.8	46.2	42.4
Czech Republic	0.9	1.2	1.1	1.2	1.1	1.1
Finland	4.4	3.7	3.6	3.3	3.1	2.8
France	2.3	2.8	3.0	3.7	3.9	3.5
Germany	14.1	11.6	12.7	12.6	13.9	11.5
Hungary	1.8	1.5	1.8	1.4	1.0	1.2
Ireland	0.7	0.7	0.8	0.7	0.6	0.3
Italy	4.0	5.2	5.1	4.2	3.8	3.6
Netherlands	3.5	2.3	2.3	2.1	2.3	2.2
Poland	2.8	2.1	2.0	2.4	2.0	2.1
Slovak Republic	0.6	0.6	0.5	0.5	0.4	0.3
Switzerland	1.5	1.1	1.0	1.0	1.0	0.8
UK	2.4	2.5	2.8	2.8	2.2	2.5
Other	14.0	12.2	13.7	12.0	10.9	10.4
Asia	7.6	9.5	9.3	10.0	9.2	8.8
China	1.9	2.2	2.4	2.7	2.9	2.8
Japan	1.6	2.2	1.9	1.9	1.5	1.7
Other	4.1	5.1	5.1	5.5	4.8	4.3
Western Hemisphere	8.5	9.6	11.2	14.0	12.9	11.2
US	5.7	6.5	7.8	9.4	7.9	8.0
Other	2.8	3.1	3.5	4.6	5.0	3.2
Middle East and Africa	1.2	1.0	1.5	1.4	2.0	1.7
Other	0.5	0.5	0.6	0.8	2.1	1.5

Source: IMF Direction of Trade Statistics.

1/ Based on imports according to the Direction of Trade Statistics, which differ somewhat from those compiled by the Central Bank of Russia and shown in Table 30 and those compiled by the State Customs Committee and show

Table 34. Russian Federation: Composition of Merchandise Imports, 1995-2000

	1995	1996	1997	1998	1999	2000
Total imports (c.i.f) (including Belarus)	46,614	46,034	53,039	43,581	30,297	33,933
Total imports (c.i.f) 1/ (excluding Belarus)	33,166	43,010	48,258	38,971	27,056	30,142
Food, beverage, tobacco and agricultural products	13,041	11,168	12,715	10,266	7,674	6,977
Stone and ore	1,028	732	764	590	426	671
Fuel products	1,584	1,721	1,870	1,416	723	1,383
Chemicals (including pharmaceuticals and rubber)	4,857	6,309	7,019	5,941	4,446	5,621
Leather	144	149	155	96	58	89
Wood and paper products	1,066	1,446	1,738	1,531	956	1,137
Textiles and clothing	2,345	1,967	1,936	1,268	1,150	1,451
Gems and precious metals	426	577	105	32	37	56
Metals	3,396	3,748	3,311	2,665	1,955	2,492
Machines, equipment (including cars) and instruments	18,222	13,672	16,939	13,909	8,773	9,227
Other, including ceramics and glass	505	1,521	1,708	1,259	857	1,040
Total imports (c.i.f) 1/ (excluding Belarus)	100	100	100	100	100	100
Food, beverage, tobacco and agricultural products	28.0	26.0	26.3	26.3	28.4	23.1
Stone and ore	2.2	1.7	1.6	1.5	1.6	2.2
Fuel products	3.4	4.0	3.9	3.6	2.7	4.6
Chemicals (including pharmaceuticals and rubber)	10.4	14.7	14.5	15.2	16.4	18.6
Leather	0.3	0.3	0.3	0.2	0.2	0.3
Wood and paper products	2.3	3.4	3.6	3.9	3.5	3.8
Textiles and clothing	5.0	4.6	4.0	3.3	4.3	4.8
Gems and precious metals	0.9	1.3	0.2	0.1	0.1	0.2
Metals	7.3	8.7	6.9	6.8	7.2	8.3
Machines, equipment (including cars) and instruments	39.1	31.8	35.1	35.7	32.4	30.6
Other, including ceramics and glass	1.1	3.5	3.5	3.2	3.2	3.4

Source: State Customs Committee.

1/ Excludes shuttle trade and other adjustments to the customs data that are included in Table 30.

Table 35. Russian Federation: Foreign Currency Disbursements to the Federal Government, 1995-2000
(In millions of U.S. dollars)

Creditors	1995	1996	1997	1998	1999	2000
Multilateral	6,351	4,911	4,782	7,434	1,204	574
IMF 1/	5,482	3,753	2,023	6,142	643	0
World Bank	824	1,099	2,694	1,227	538	540
EBRD	45	59	65	65	22	34
Other	0	0	0	0	0	0
Bilateral and suppliers/other commercial	1,668	3,494	2,300	2,201	1,490	570
Tied	1,668	1,083	2,300	2,201	1,058	370
Untied	0	2,411	0	0	432	200
Bonds	0	1,000	3,584	11,296	0	0
resident purchases	0	0	0	3,711	0	0
nonresident purchases	0	1,000	3,584	7,585	0	0
Total	8,019	9,405	10,666	20,931	2,694	1,144
(excluding IMF)	2,537	5,652	8,643	14,789	2,051	1,144
Memorandum items:						
Minfin bonds	0	3,500	0	0	0	0
OGNZ				680		
Nonresident purchases of GKO/OFZs (net) 2/		1,035	7,462	-4,705	-329	-792
Issue					3,202	143
Redemption					-3,531	-935
Total including Minfins, OGNZ and nonresident GKO/	8,019	13,940	18,128	16,906	2,365	352
(excluding IMF)	2,537	10,187	16,105	10,764	1,722	352
Total disbursements from nonresidents,						
including GKO/OFZs, excluding Minfins	8,019	10,440	18,128	16,226	2,365	352

Source: Russian authorities.

1/ Full amount of Fund purchases. In 1998 part of this amount was disbursed directly to the CBR.

2/ Including secondary market in 1996-1998. Other securities transactions exclude secondary market.

Table 36. Russian Federation: Nonsovereign Sector Capital Account, 1995-2000 1/
(In millions of U.S. dollars)

	1995	1996	1997	1998	1999	2000
Direct investment	1,460	1,657	1,681	1,492	1,102	-494
Abroad	-606	-923	-3,184	-1,270	-2,208	-3,208
In Russia	2,066	2,579	4,865	2,761	3,309	2,714
Portfolio investment	-1,611	2,140	2,198	878	-253	31
Assets	-1,705	-172	-156	-257	254	-380
Equity	-42	-117	32	-10	5	-9
Debt securities	-1,663	-56	-189	-247	249	-371
Liabilities	94	2,312	2,354	1,135	-507	411
Equity	59	2,152	1,265	714	-287	150
Banks	47	50	93	33	-10	2
Nonfinancial enterprises	12	2,102	1,172	681	-277	148
Debt securities	35	160	1,089	421	-220	261
Local governments	0	0	872	533	-175	-427
issue	0	0	867	499	0	0
redemption	0	0	-36	-82	-118	-258
secondary market	0	0	-2	0	-190	-273
interest reinvestment	0	0	43	116	133	104
Banks	7	76	110	-262	-97	527
Nonfinancial enterprises	28	84	107	150	52	160
Other investments	1,803	-21,661	-18,555	-15,044	-14,868	-15,594
Assets	6,264	-28,880	-34,134	-14,395	-13,448	-14,960
Cash foreign currency and deposits	4,141	-9,695	-13,112	1,804	-2,763	-4,128
Trade credit	8,351	-9,154	-6,701	-6,883	-5,250	-4,180
Loans	-364	278	-3,114	-707	150	-486
Banks	-360	361	-2,639	-334	279	-440
Nonfinancial enterprises	-4	-83	-475	-373	-129	-45
Arrears	-4	-28	22	-289	-97	49
Banks	-4	-28	22	-148	-40	188
Nonfinancial enterprises	0	0	0	-140	-56	-139
Changes in the stock of nonrepatriated						
Export proceeds and nonrepatriated						
Import advances	-5,239	-10,119	-11,591	-7,959	-5,051	-5,293
Other	-621	-162	363	-361	-438	-923
Liabilities	-4,461	7,219	15,578	-649	-1,420	-634
Cash foreign currency and deposits	1,388	1,656	4,278	-2,975	111	727
Trade credit	-8,090	-759	-64	322	291	0
Loans	1,800	5,101	10,833	1,983	-1,958	-1,599
Local governments	0	6	358	392	7	-267
Banks	661	1,705	3,840	-3,407	-1,517	-397
Nonbank financial organizations	0	1,516	-1,516	0	0	0
Nonfinancial enterprises	1,139	1,874	8,152	4,997	-448	-935
Arrears	0	0	3	698	337	42
Banks	0	0	3	698	337	42
Nonfinancial enterprises	0	0	0	0	0	0
Other	441	1,220	529	-677	-200	196
Total (net)	1,652	-17,865	-14,676	-12,675	-14,019	-16,057

Source: Central Bank of Russia.

1/ Data are on an accrual basis and therefore differ from those shown in Table 30.

Table 37. Russian Federation: External Debt, 1995-2000 1/
(In billions of U.S. dollars)

	1995	1996	1997	1998	1999	2000
I. SOVEREIGN DEBT						
A. <u>Russian-era foreign currency debt (post 1/1/1992)</u>	17.4	27.7	35.6	59.2	55.1	71.2
Medium and long term	...	...	...	55.9	51.9	68.0
Multilateral Creditors	11.4	15.3	18.7	25.9	22.3	18.6
IMF (including loans to the Central Bank of Russia)	9.6	12.5	13.2	19.4	15.3	11.6
World Bank	1.5	2.6	5.3	6.3	6.7	6.8
Other	0.3	0.2	0.2	0.2	0.2	0.2
Official creditors	6.0	7.9	7.6	9.7	9.9	8.6
Eurobonds	0.0	1.0	4.5	16.0	15.7	36.4
OGNZ	...	...	...	0.6	0.4	0.0
Minfin bonds (Minfins VI, VII and VIII)	0.0	3.5	3.5	3.5	3.5	4.4
Commercial creditors (includes financial institutions)	0.0	0.0	1.3	0.2	0.1	0.0
Short term 1/	...	...	...	3.3	3.2	3.2
B. <u>Soviet-era foreign currency debt (pre 1/1/1992)</u>	110.6	108.4	99.0	101.7	102.4	71.5
Medium and long term	...	...	...	101.7	102.4	71.5
Multilateral Creditors	0.0	0.0	0.0	0.0	0.0	0.0
Official creditors	62.6	61.9	56.9	58.3	57.1	58.5
Paris Club	41.6	42.3	37.6	38.6	37.3	38.8
COMECON (including clearing accounts)	16.6	15.4	14.9	14.9	14.8	14.3
Other, including non-Paris Club bilateral	4.4	4.2	4.4	4.7	5.0	5.4
of which: arrears	...	...	...	4.0	4.8	5.3
Commercial creditors	38.3	37.8	33.9	35.3	36.9	5.8
Financial institutions	33.0	32.5	29.7	31.3	32.2	1.0
of which: arrears	...	...	...	2.1	1.1	1.0
Other	5.3	5.3	4.2	4.1	4.7	4.8
of which: arrears	...	...	...	4.1	4.6	4.8
Eurobonds	1.1	0.1	0.1	0.0	0.0	0.0
Credits contracted by entities other than VEB	1.0	1.0	0.5	0.5	0.8	0.8
Minfin bonds (Minfins III, IV and V)	7.6	7.6	7.6	7.6	7.6	6.4
of which: arrears	0.0	0.0	0.0	0.0	1.3	0.1
Short term	...	...	...	0.0	0.0	0.0
C. <u>Total sovereign foreign currency debt (= A + B)</u>	128.0	136.1	134.6	160.9	157.5	142.7
(In percent of GDP)	37.9	32.6	31.4	50.1	82.0	56.8
D. <u>Total sovereign debt to nonresidents (= C - E - F + G)</u>	...	...	...	155.6	147.3	129.1
(In percent of GDP)	...	...	...	49.2	80.3	51.3
E. Residents' Minfin bonds	...	...	...	7.3	8.7	8.8
F. Residents' eurobonds 3/	...	...	...	3.7	5.0	6.4
G. Nonresidents' GKO/OFZs (ruble denominated)	...	...	...	5.8	3.6	1.6
II. NONSOVEREIGN DEBT						
Local governments	...	...	1.1	2.4	2.0	1.2
Medium and long term	...	...	1.1	2.2	1.9	1.2
of which: Nonresident's Eurobonds	0.0	0.0	0.9	1.4	1.1	0.6
Short term	...	...	...	0.2	0.1	0.0
of which: arrears	...	...	...	0.2	0.1	0.0
Banks 3/	5.2	9.2	19.2	10.1	8.2	9.3
Medium and long term	...	...	...	2.8	2.7	1.8
Short term	...	...	...	7.3	5.5	7.5
Nonbank corporations (including arrears)	...	...	13.6	19.6	21.1	21.7
H. <u>Total</u>	...	...	33.9	32.1	31.3	32.2
(In percent of GDP)	...	...	7.8	10.0	16.3	12.8
III. TOTAL EXTERNAL DEBT (to nonresidents) (= D + H)						
(In percent of GDP)	...	...	...	58.5	93.0	64.1

Source: Russian authorities.

1/ Government securities are reported at face value.

2/ Includes balances of clearing accounts and indebtedness on Current account transactions.

3/ Applies to all Eurobond issues.

4/ Includes Central Bank of Russia except for the reserve assets and liabilities to the Fund.