

Russian Federation: Selected Issues

This Selected Issues paper for the **Russian Federation** was prepared by a staff team of the International Monetary Fund as background documentation for the periodic consultation with the member country. It is based on the information available at the time it was completed on **April 17, 2003**. The views expressed in this document are those of the staff team and do not necessarily reflect the views of the government of the **Russian Federation** or the Executive Board of the IMF.

The policy of publication of staff reports and other documents by the IMF allows for the deletion of market-sensitive information.

To assist the IMF in evaluating the publication policy, reader comments are invited and may be sent by e-mail to publicationpolicy@imf.org.

Copies of this report are available to the public from

International Monetary Fund • Publication Services
700 19th Street, N.W. • Washington, D.C. 20431
Telephone: (202) 623-7430 • Telefax: (202) 623-7201
E-mail: publications@imf.org • Internet: <http://www.imf.org>

Price: \$15.00 a copy

**International Monetary Fund
Washington, D.C.**

INTERNATIONAL MONETARY FUND

RUSSIAN FEDERATION

Selected Issues

Prepared by Angana Banerji, Mark Lewis, Emil Stavrev, Timo Väilä (all EU2),
Anna Ilyina (ICM), Christian Mulder (PDR), and Nikola Spatafora (RES)

Approved by European II Department

April 17, 2003

	Page
I. Speed of Disinflation and Output Costs in Russia: Implications from the Experience of European Transition Countries	3
A. Summary	3
B. Introduction	3
C. Sources of Moderate Inflation in European Transition Countries	5
D. Disinflation and Output Cost: The Experience of European Transition Countries ...	6
E. Russian Economy Versus European Transition Economies: How Fast to Disinflate?	11
F. Conclusions	15
References	16
II. The Pass-Through from the Nominal Exchange Rate to Inflation.....	17
A. Introduction.....	17
B. Methodology	18
C. Estimation Results	19
References	27
III. The Equilibrium Real Exchange Rate in a Commodity Exporting Country: The Case of Russia.....	28
A. Introduction.....	28
B. Analyzing Russia's Historical Experience: Methodology	29
C. Data Description	31
D. Estimation and Results.....	34
E. Conclusions.....	38
References	39

IV.	The Choice of a Nominal Anchor: Is Russia Ready for Inflation Targeting?.....	42
	A. Introduction.....	42
	B. Monetary Policy in Russia Since 1999.....	43
	C. An Appropriate Nominal Anchor for Russia over the Longer Term.....	47
	D. Pre-Conditions for Inflation Targeting in Russia.....	50
	E. Transition Period.....	56
	References.....	58
V.	Medium-Term Fiscal Stance and the Potential Role of an Oil Stabilization Fund.....	60
	A. Introduction.....	60
	B. Identification of an Appropriate Medium-Term Fiscal Stance.....	62
	C. A Potential Fiscal Rule for Russia.....	65
	D. An Oil Fund for Russia.....	69
	References.....	76
VI.	Russia: Capital Market Developments and Issues.....	77
	A. Government Bond Market.....	77
	B. Corporate Bond Market.....	82
	C. Equity Market.....	88
	D. Local Institutional Investor Base.....	91
	References.....	94
VII.	Russia's Sovereign Credit Ratings and Market Access: A Review and Outlook.....	95
	Introduction and Summary.....	95
	A. Russia's Rating History.....	95
	B. An Empirical Cross-Country Ratings Model to Evaluate Ratings.....	97
	C. Historical Estimates: Were the Upgrades Foreseeable?.....	98
	D. Outlook for Russia's Rating.....	100
VIII.	Structural Reforms.....	103
	A. Introduction.....	103
	B. Progress in 2002.....	104
	C. Assessment.....	108

I. SPEED OF DISINFLATION AND OUTPUT COSTS IN RUSSIA: IMPLICATIONS FROM THE EXPERIENCE OF EUROPEAN TRANSITION COUNTRIES¹

A. Summary

1. **This paper examines the potential costs of faster disinflation in Russia, drawing on the experience of European transition countries (ETC).**² We study this experience, discuss the factors contributing to the persistence of moderate inflation, and quantify the disinflation costs in these countries. Then, we compare the Russian economy with the sample countries and draw conclusions about the sources of inflation and possible disinflation costs in Russia.

2. **The main results of the paper are:**

- The Russian economy is similar to European transition countries in terms of nominal rigidities—a low degree of nominal wage indexation to past inflation and a qualitatively similar role of downward price rigidities in the inflation process;
- A relatively rapid reduction of core inflation from above 10 percent in 2002 to less than 5 percent in 2004 would be beneficial for the Russian economy. It appears that the short-term output costs (less than 1 percent based on the experience of ETC) of faster disinflation are likely to be much smaller than the long-term gains from lower inflation.

B. Introduction

3. **Over the last decade, inflation in Russia has declined substantially, but has settled at moderate levels of 15–20 percent over the past three years.** The start of transition was followed by a surge in inflation to almost 900 percent in 1992. By 1997, inflation had been brought down to around 15 percent. After the 1998 crisis, year-on-year inflation jumped again to over 100 percent in mid-1999, but then dropped to around 20 percent in 2000, and has declined slowly since then, with inflation in 2002 at slightly above 15 percent.

4. **Persistent moderate inflation is costly for the economy.** Prolonged moderate inflation is associated with distortionary and allocative costs that might amount to several percentage points of GDP. Moderate inflation leads to:

¹ Prepared by Emil Stavrev (EU2).

² The following countries are included in the sample: Poland, Hungary, the Czech Republic, and the Baltics (Lithuania, Latvia, and Estonia). We have chosen these countries as a comparator sample instead of considering a larger sample including developing countries as in other studies, because we believe that the experience of European transition countries is more relevant to Russia than the experience of the other countries.

- Uncertainty about the future price level and relative prices impedes and distorts production decisions—Groschen and Schweitzer (1996) calculate that inflation of 10 percent (compared to 2 percent) for a prolonged period leads to a 2 percentage point reduction in the level of GDP;
- Distortions to the tax system resulting from infrequent indexation for inflation. Higher taxation which results from inflation causes misallocation of capital, distorting the labor supply and leading to inappropriate corporate financing decisions—Fischer (1994) calculates that the costs from tax-related distortions associated with an inflation rate of 10 percent over a prolonged period amount to 2–3 percent of GDP;
- Income and wealth redistributions that might result in higher income inequality. It is believed that economic agents that are able to adjust quickly their prices (entrepreneurs and businesses) gain from inflation at the expense of economic agents that are unable to do so (labor). Similarly, the poor find it more difficult to protect their financial savings from inflation. Although difficult to measure, the wealth redistributions resulting from even moderate inflation rates are likely to be economically and politically significant.

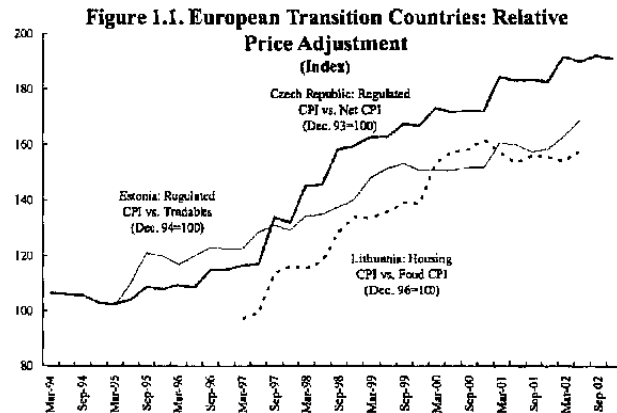
As a result, moderate inflation lowers the level of potential output and increases income inequality, which is a strong argument for ending it.

5. **At the same time, too fast a disinflation from moderate levels might result in significant short-term output and unemployment costs.** For example, Ghosh and Phillips (1998), Blanchard (1998) and Thierry and Griffiths (1998), find that disinflation from moderate inflation levels is costly. In particular, Ghosh and Phillips emphasize the nonlinearity in disinflation costs. They find a threshold of 10 percent for middle income countries below which disinflation is associated with output costs—the results suggest that severe disinflation (halving inflation) is associated with a fall in real GDP growth by 1 percentage point, while reducing inflation by 20–50 percent is associated with a decline in real GDP growth of 0.5 percentage points.

6. **However, too slow a disinflation risks entrenching inflation expectations and could result in lasting moderate inflation.** This is particularly important in Russia, where the authorities have targeted modest disinflation and followed an accommodative monetary policy. This resulted in persistent overshooting of the inflation targets and slower-than-originally planned disinflation over the last four years. The record of overshooting of the inflation targets, combined with the announced relatively unambitious disinflation path for the next two years, risks entrenching inflation expectations and the associated results discussed above.

7. We have chosen ETC as a comparator sample, because of the following similarities in their economies:

- **Substantial relative price adjustments.** These countries, like Russia, faced substantial relative price adjustments during the disinflation process (see Figure 1.1).



- **Massive foreign exchange inflows.** ETC experienced massive foreign exchange inflows against the background of underdeveloped monetary instruments, which prevented full sterilization by central banks. Although the nature of foreign exchange inflows in ETC was different from the one in Russia (capital account origin in ETC versus current account source in Russia) the authorities faced a similar dilemma in terms of monetary policy—either to accept higher inflation or some appreciation of the nominal exchange rate.

C. Sources of Moderate Inflation in European Transition Countries

8. There is a vast empirical and theoretical literature on the sources of moderate inflation and the reasons for its persistence. In summary, the main findings in the literature suggest that the sources of moderate inflation are:

- Excess money growth fueled either by substantial unsterilized foreign exchange inflows or by lax fiscal policy;
- Relative price adjustments resulting from increases of administered prices combined with downward price rigidities;
- Fast real wage growth that is in excess of productivity gains, combined with nominal wage rigidities.

9. **Money growth was an important determinant of inflation in European transition countries.** For instance, Coorey et al. (1997) find that inflation elasticity with respect to money growth is about 0.3 for ETC. Also, they find a relatively rapid inflation response to a monetary shock. Therefore, controlling money growth is important for disinflation.

10. **Relative price adjustments can contribute to the persistence of moderate inflation,** either because adjustment of natural monopoly prices to cost recovery levels or international prices causes inflationary pressures that are not of primary monetary origin, or because monetary policy accommodates these adjustments. Therefore, in a period of

sustained relative price changes, inflation could be higher and sustained at double digits for several years.

11. **Empirical evidence in the literature supports the contribution of relative price adjustments to inflation in ETC.** In the early years of transition, inflation distributions displayed a high degree of variance, indicating significant price adjustments well beyond the ones suggested by price liberalization alone. In addition, there is supporting evidence that these distributions were positively skewed, in line with downward price rigidity and implying that a small number of large price increases led the inflationary process. For example, Coorey et al. find that the skewness of the relative price distribution has significant explanatory power for inflation in ETC. Similar results are obtained by Pujol and Griffiths for Poland, and Surányi and Vinzce for Hungary.

12. **There is mixed empirical evidence about the contribution of nominal wage indexation to inflation.** For example, our estimates of wage indexation (see Table 1.1) show that only Poland had a very high degree of nominal wage indexation to lagged inflation (100 percent); nominal wage indexation in the Baltics and Hungary is below 60 percent, while nominal wages in the Czech Republic appear not to be indexed to lagged inflation.

**Table 1.1. European Transition Countries:
Nominal Wage Indexation 1/**
(Dependent variable: quarterly wage growth)

	Czech Republic	Estonia	Hungary	Latvia	Lithuania	Poland
Constant	0.12 (0.9)	0.08 (1.5)	-0.04 (3.7)	0.01 (1.0)	0.03 (1.0)	0.09 (5.5)
Inflation, lagged	0.01 (0.0)	0.66 (6.5)	0.53 (2.2)	0.58 (11.5)	0.56 (1.7)	1.00 (1.4)
Seasonal dummy 1	-0.3 (20.7)	-0.1 (7.8)	0.2 (2.5)	0.0 (2.3)	-0.1 (1.9)	-0.2 (4.9)
Seasonal dummy 2	-0.01 (1.45)	0.03 (1.0)	0.01 (0.9)	0.05 (1.0)	0.02 (0.6)	-0.09 (4.3)
Seasonal dummy 3	-0.16 (11.4)	-0.12 (18.5)	0.00 (0.2)	0.01 (0.7)	-0.03 (1.1)	-0.11 (4.7)
Adjusted R squared	0.97	0.87	0.96	0.8	0.68	0.72
Number of observations	33	38	39	40	37	38

1/ *t*-statistics are reported in parentheses

13. **In sum, the evidence in the literature shows that monetary policy was the major determinant of inflation in ETC.** At the same time, the empirical results in the literature show that relative price rigidity and increases of administered prices contributed to inflation, but they were not the main driving force of inflation. Finally, our empirical results suggest that with the exception of Poland, nominal wages had a minor contribution to inflation in the sample countries.

D. Disinflation and Output Cost: The Experience of European Transition Countries

14. The existing literature on disinflation suggests that, in order to achieve price stability with limited output and unemployment costs, three essential factors should be in place:

- **Credibility of monetary policy.** This contributes to successful disinflation with limited output costs through its impact on inflation expectations. However, credibility can only be achieved if the commitment of the central bank to disinflation is supported by sound fiscal policies.

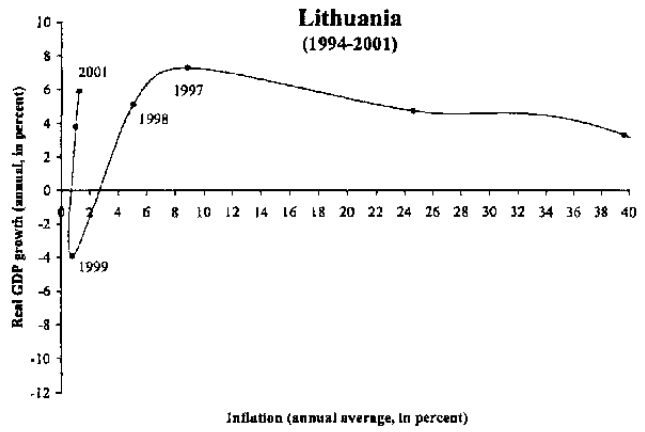
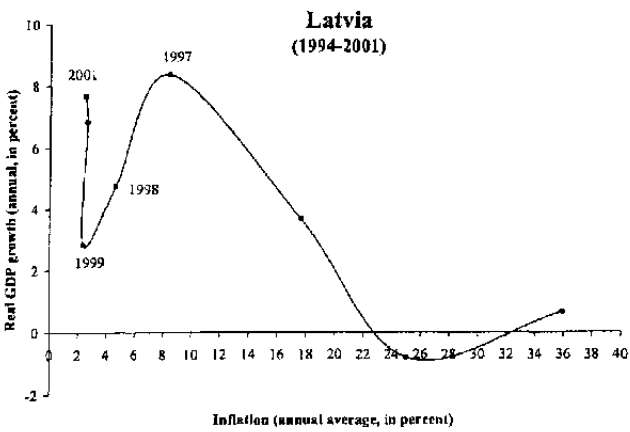
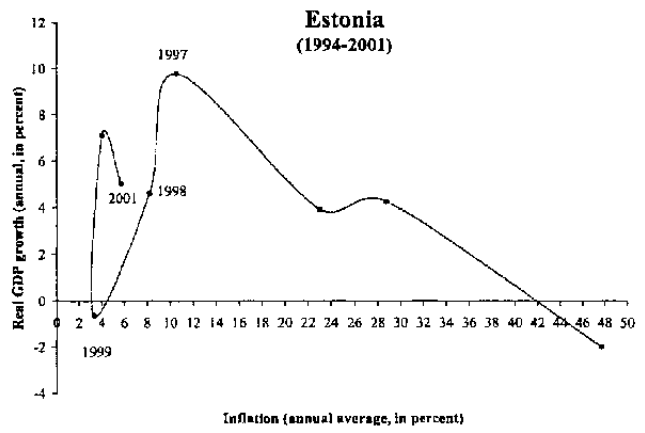
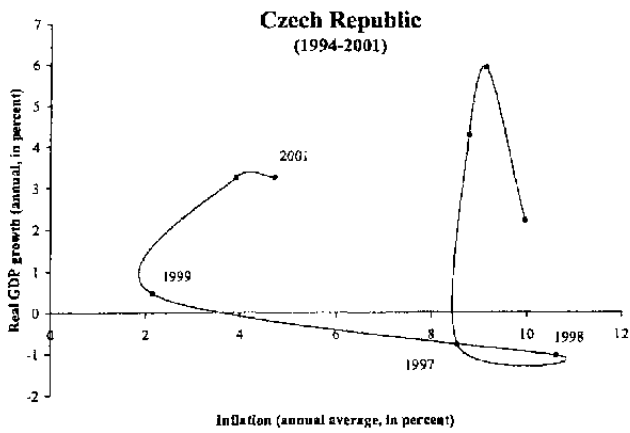
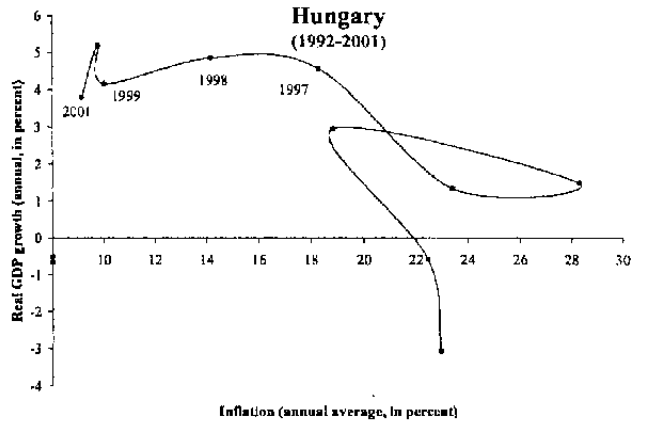
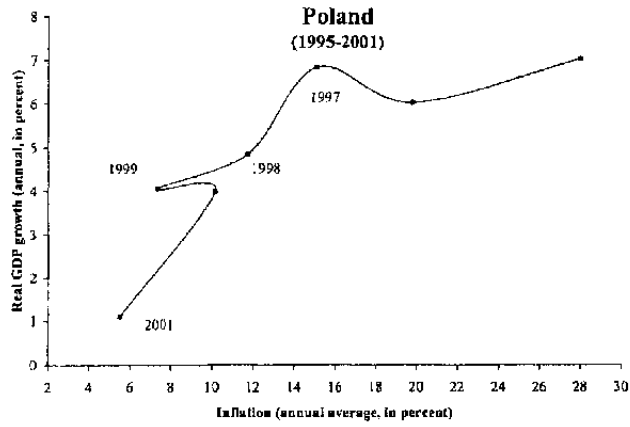
- **Flexibility of nominal wages.** The structure of wage negotiations affects disinflation costs, even with a credible monetary policy. Other things being equal, the less frequent and the more spread-out the individual wage settlements, the harder it will be for wage growth to slow down in line with inflation, and consequently the higher output costs will be.
- **Flexibility of real wages.** Although, in theory, disinflation requires an equal decrease in the growth of wages and prices, and not a decrease in the growth of real wages, in practice, part of the disinflation comes from a reduction of the real wage growth. In this case, the sensitivity of wages to labor market conditions becomes crucial for disinflation costs. If real wages are relatively sticky, because of backward-looking indexation, unemployment may be high for some time in order to achieve disinflation, thereby contributing to higher costs.

15. **We applied three methods to study the output-inflation tradeoff and to quantify the disinflation costs in ETC:** (i) single country inflation-output analysis (Figure 1.2), (ii) pooled sample inflation-output analysis (Figure 1.3), and, (iii) single country analysis accounting for trend output (Ball's method given in Table 1.2). The results of the three methods are discussed below.

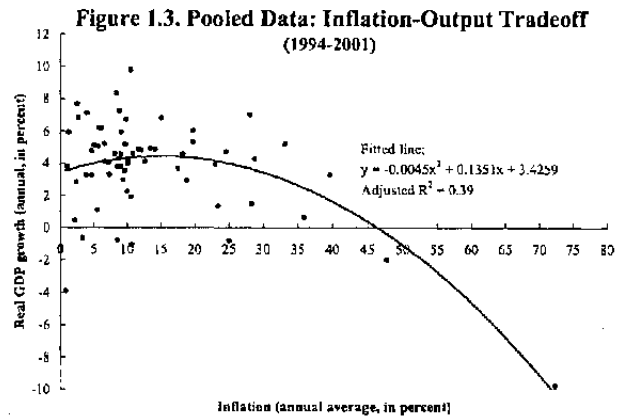
16. **The output-inflation tradeoff in ETC is non-linear.** As shown on Figure 1.2, although the inflation-output pattern for each country is different, two stylized facts are worth mentioning. First, the reduction of inflation from 30–50 percent to about 10–15 percent was generally associated with an increase of growth; and second, further reduction of inflation from 10–15 percent to 3–5 percent was generally associated with some decline of output growth in most of the studied countries, although experience varied considerably.

17. **However, the evidence in Figure 1.2 should be treated with caution, since the relationship between inflation and output might be spurious, due to exogenous shocks that affect both variables.** For example, the degree of the slowdown in GDP growth in Latvia and real GDP decline in Estonia and Lithuania in 1998-99 could be significantly overstated by the 1998 Russian crisis—which had a negative impact on exports to Russia and the rest of the CIS countries and therefore a depressing effect on economic activity in the Baltics. Regarding the decline of output in the Czech Republic, it is overstated by two factors that coincided with the start of the disinflation at the beginning of 1998—first, structural problems in the enterprise sector; and second, significant cuts in government expenditures implemented to address mounting external current account imbalances.

Figure 1.2. European Transition Countries: Inflation-Output Tradeoff



18. **To control for a possible spurious correlation between growth and inflation, we used pooled data.** The estimated nonlinear relationship confirms the findings that inflation reduction from high double digits to around 15 percent is associated with higher growth, while further reduction of inflation below 15 percent leads to a small decline in growth. However, this decline in growth is only during the disinflation period (approximately 2 years on average).



Thus, bringing inflation down to 5 percent from 15 percent lowers output growth by around 0.5 percentage point in the first year, and a cumulative reduction of less than 1 percent over two years.

19. **We further quantify the cost of disinflation in the sample countries by calculating the output loss per percentage point reduction in inflation (sacrifice ratio).** To calculate sacrifice ratios we use a modification of the methodology described in Ball (1994) (see Box 1.1).

Box 1.1. Computation of Sacrifice Ratio For European Transition Countries

Methodology

The sacrifice ratio is computed as the ratio of the cumulative loss of output resulting from disinflation to the size of disinflation. Therefore, in order to compute the sacrifice ratios, we have to identify disinflation episodes and measure output loss.

In the first step, we identify disinflationary episodes as those in which trend inflation declines substantially—by more than 5 percentage points. Trend inflation is defined as the centered four-quarter moving average of actual inflation. This definition smoothes actual inflation and allows us to separate policy induced declines in inflation from smaller fluctuations arising from exogenous shocks.

In the next step, we measure output loss as the deviation of actual output from trend output. As a measure of trend output, we use the Hodrick-Prescott filter, which eliminates transitory shocks.

Application to European transition countries

The above methodology was applied to European transition countries using quarterly data from the first quarter of 1993 to the second quarter of 2002. All steps in computing the sacrifice ratio are provided in Table 1.2.

As Table 1.2 shows, the disinflation in European transition countries continued on average for slightly more than two years, at an annual speed of disinflation of approximately 35 percent.

20. **Computed sacrifice ratios vary substantially across the sample countries.** While the Czech Republic and Poland experienced costly disinflations (for every percentage point decline in inflation, the output loss was 0.5 percent and 0.2 percent correspondingly), Estonia, Hungary, and Lithuania achieved single digit inflation at zero cost, and Latvia gained from the disinflation approximately 0.5 percent.

Table 1.2. European Transition Countries: Sacrifice Ratios

	Duration of Disinflation (in quarters)	Inflation			Annual speed of disinflation (in percent)	Cumulative annual deviation of output from trend (in percent)	Sacrifice ratio
		Start of disinflation (in percent)	End of disinflation (in percent)	Percentage points change			
		1	2	3-1-2			
Czech Republic	9.0	10.6	2.8	7.8	37	-3.7	-0.5
Estonia	9.0	9.7	3.4	6.4	33	0.0	0.0
Hungary	9.0	10.2	4.9	5.3	26	0.0	0.0
Latvia	10.0	12.0	2.6	9.4	39	4.5	0.5
Lithuania	11.0	10.9	0.6	10.2	47	0.0	0.0
Poland	7.0	9.9	3.2	6.7	34	-1.3	-0.2
Average	9.2	10.6	2.9	7.6	36	-0.1	0.0

21. **To summarize, the various methods of computing disinflation costs in European transition countries suggest that disinflation from 10–15 percent to 3–5 percent is associated with relatively small output costs.** The single-equation method does not offer conclusive evidence for disinflation costs, while the pooled data methods suggest that reducing inflation from 15 percent to 5 percent will reduce the level of GDP by cumulatively less than 1 percent over two years, and the method of Ball suggests that the same inflation reduction at an annual speed of 35 percent on average had a negligible effect on output (see Table 1.2).

22. **The disinflation costs in European transition countries are generally lower than in other transition economies.** As discussed above, three conditions have to be met in order for the disinflation to proceed at low costs and it seems that all of them were in place in ETC during the disinflation process—namely:

- Credible commitment by the authorities to a steady and fast disinflation. The fast decline of inflation in these countries could be regarded as a sign of credible monetary policy. For example, during 1995–98 inflation in the Baltics declined on average by nearly a half each year and was brought down to low single digits from the mid forties. Hungary and Poland also experienced fast disinflation—during the same period, inflation declined on average by one quarter each year. The fast disinflation created low inflation expectations and further facilitated the disinflation process;
- Relatively low nominal wage indexation to past inflation, ensuring fast adjustment of nominal wages in line with inflation;
- Flexible labor markets. It appears that the implemented structural reforms helped create flexible labor markets that facilitated real wage adjustments associated with the disinflation process, without increasing unemployment and therefore output costs.

E. Russian Economy Versus European Transition Economies: How Fast to Disinflate?

23. In this section we analyze the determinants of inflation in Russia and compare the results with our findings for European transition countries.

The impact of exchange rate and nominal rigidities on inflation

24. **The policy of continuous nominal exchange rate depreciation has contributed significantly to inflation in Russia.** Empirical estimates of the pass-through suggest that a one percentage point change in the nominal exchange rate leads to roughly ½ percentage point change in inflation (Table 1.3).³ This pass-through effect is relatively high compared to Asian developing countries, but is of a similar magnitude to that of Turkey (see Leigh and Rossi 2002).

Table 1.3. Russia: Pass-Through Effect

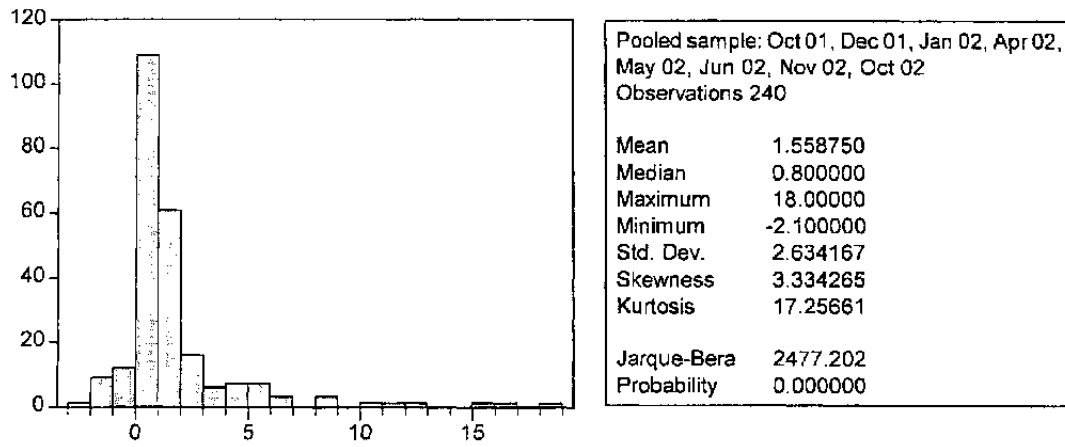
Dependent Variable: Inflation (seasonally adjusted monthly inflation)
 Method: Least Squares
 Sample(adjusted): 1996:01 2002:07
 Included observations: 79 after adjusting endpoints
 Equation: $Inflation = C(1) + C(2)*Inflation(-1) + C(3)*(Change\ in\ Bilateral\ ER + Foreign\ Inflation) + C(4)*(Change\ in\ Bilateral\ ER(-1) + Foreign\ Inflation(-1)) + C(5)*(Change\ in\ Bilateral\ ER(-2) + Foreign\ Inflation(-2))$

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.004	0.00131	3.2409	0.0018
C(2)	0.491	0.09353	5.2502	0.0000
C(3)	0.482	0.01023	47.0842	0.0000
C(4)	-0.254	0.04656	-5.4610	0.0000
C(5)	0.043	0.01019	4.1875	0.0001
R-squared	0.9704	Mean dependent variable		0.0222
Adjusted R-squared	0.9688	S.D. dependent variable		0.0447
S.E. of regression	0.0079	Akaike info criterion		-6.7858
Sum squared residuals	0.0046	Schwarz criterion		-6.6358
Log likelihood	273.0390	Durbin-Watson stat		2.0086

25. **The distribution of relative prices in Russia is positively skewed, suggesting downward price rigidity.** In order to quantify the degree of relative price rigidity in Russia, we studied the statistical properties of the relative price distribution of 30 items from the CPI basket (we used data for eight months of 2001 and 2002). As reported in Figure 1.4, the relative price distribution is positively skewed, suggesting downward price rigidity in the economy. When prices are downward rigid, large increases in the prices of a few goods are accompanied by small price increases (but few price declines) in the rest of the basket resulting in a positive skewness of the distribution.

³ See Chapter II for a fuller discussion.

Figure 1.4. Russia: Relative Price Distribution



26. **Although downward price rigidity contributed to inflation, monetary policy was the main driving force, as in ETC.** As reported in Table 1.4, downward price rigidity (captured by the positive coefficient of skewness of the relative price distribution) has a significant role in explaining Russian inflation. However, the nominal exchange rate and the money supply had a much larger impact. For example, the standardized regression coefficients show that an increase in the skewness of the relative price distribution (equivalent to faster increases in regulated prices) by one standard deviation leads to an increase in inflation by 0.06 standard deviations, while changes in the nominal exchange rate and money supply by one standard deviation result in 0.95 and 0.19 standard deviations changes in inflation respectively. This result suggests that persistent moderate inflation over the last couple of years was a result not only of increases in regulated prices, but also of continued nominal exchange rate depreciation and relatively fast growth of money supply.

Table 1.4. Russia: Contribution of Monetary Policy and Relative Price Variability to Inflation

Dependent Variable: CPI_RUS
 Method: Least Squares
 Sample (adjusted): 1998:02 2002:08
 Included observations: 55 after adjusting endpoints
 Convergence achieved after 7 iterations
 Equation: Inflation = C(1) + C(2)*Skew + C(3)*Variance + C(4)*Nominal ER change + C(5)*Delta M2(-1) + C(6)*Delta M2(-2) + C(7)*Delta M2(-3) + C(8)*Residuals(-1)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.0746	0.3390	0.2202	0.8268
C(2)	0.2376	0.0836	2.8428	0.0068
C(3)	0.0590	0.0518	1.9097	0.0627
C(4)	0.3184	0.0107	29.8856	0.0000
C(5)	0.0963	0.0309	2.7975	0.0076
C(6)	0.1118	0.0360	3.1024	0.0033
C(7)	0.0589	0.0294	2.0010	0.0518
C(8)	0.4092	0.1470	2.7830	0.0079
R-squared	0.9850	Mean dependent var		2.7308
Adjusted R-squared	0.9826	S. D. dependent var		5.4222
S.E. of regression	0.7155	Akaike info criterion		2.3091
Sum squared resid	22.5284	Schwarz criterion		2.5093
Log likelihood	-52.0367	Durbin-Watson stat		1.8453
Inverted AR Roots				0.41

27. Nominal wages show lower inflation indexation than in most European transition countries.

Nominal wages in Russia are only indexed by a quarter to past inflation while in most of European transition

Table 1.5. Russia: Nominal Wage Indexation

(Dependent variable: quarterly wage growth)

	Constant	Lagged wages	Lagged inflation	Seasonal dummy 1	Seasonal dummy 2	Seasonal dummy 3	R2 adj.	No. of observ.
Wage growth	0.05	0.63	0.25	-0.2	0.05	-0.06	0.92	38
(t-statistic)	(3.0)	(5.8)	(2.5)	(-7.4)	(1.8)	(-2.8)		

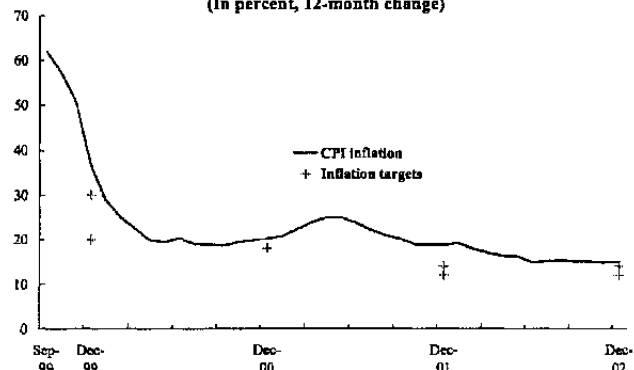
countries the wage indexation is much higher, as shown above. Even accounting for the autoregressive coefficient, the long-run impact of wage indexation in Russia is not higher than the average in the sample countries and is much lower than in Poland.

28. The conclusion is that the Russian economy compares favorably to European transition countries in terms of nominal rigidities. As discussed above, nominal wage indexation is somewhat lower in Russia than in most of the sample countries (25 percent in Russia versus more than 55 percent on average in the sample). Also, our analysis shows that downward price rigidity in Russia has a similar qualitative role in the inflation process as in European transition countries—administered price increases contributed to higher overall inflation as a result of downward price rigidity. However, as discussed in other studies and as implied by the lower sacrifice ratios, downward price rigidities appear to have made a minor contribution to disinflation costs in the sample countries.

The risk of entrenching inflation expectations and inflation costs

29. The Russian economy differs substantially from the ETC economies in respect of the commitment of the authorities to faster disinflation.⁴ With the background of sizable foreign currency inflows, the CBR subordinated its inflation targets to the goal of limiting the pace of real appreciation by accommodating inflationary shocks. This policy resulted in overshooting of the inflation targets over the last four years and, as a result, slow actual

Figure 1.4. Russia: Actual Inflation and Inflation targets
(In percent, 12-month change)



disinflation—the disinflation speed since mid-1999 was on average around 15 percent, which is much lower than the average disinflation speed in ETC (35 percent). The history of accommodative monetary policy,

⁴ For a detailed discussion of the CBR’s monetary policy objectives, see Chapter IV.

combined with somewhat unambitious inflation targets over the next two years, risks entrenching inflation expectations.

The case for faster disinflation

30. To reduce inflation expectations, the authorities need to aim for a faster disinflation over the next two years. The authorities' inflation targets for the next two years imply, however, that overall inflation declines at an annual speed of approximately 20 percent, slower than achieved in ETC. At the same time, net inflation (excluding the impact of regulated prices)⁵ declines at an even slower annual speed—under 20 percent a year. Accounting for the low nominal rigidities in Russia and based on the experience of European transition countries, the authorities could reduce net inflation⁶ at a speed of 30–35 percent a year, with relatively small output cost.

Table 1.6. Russia: Regulated Prices and Speed of Disinflation

	2000	2001	2002	2003 2004	
				projection	
Authorities' targets					
Total CPI inflation, <i>exp.</i> , in percent ^{1/}	20.1	18.6	15.1	12.0	9.0
Average increase in regulated price, in percent ^{2/}	35.9	28.2	26.7	15.3	12.3
Wholesale electricity prices	28.0	35.0	22.4	14.0	12.0
Gas tariffs	21.0	18.0	35.0	20.0	15.0
Railroad freight administered tariffs, in percent	58.6	31.5	22.7	12.0	10.0
Contribution of regulated prices to total CPI inflation, in percentage points					
Direct, weight in the CPI basket—6 percent	2.2	1.7	1.6	0.9	0.7
Indirect, weight in the PPI—20 percent, PPI weight in CPI—60 percent	4.3	3.4	3.2	1.8	1.5
Net CPI inflation (excluding the impact of regulated prices), in percent	13.6	13.5	10.3	9.2	6.8
Speed of disinflation (decline of inflation, in percent)					
Total CPI inflation		-7	-19	-21	-25
Net CPI inflation		-1	-24	-10	-27
Suggested speed of disinflation, in percent					
Implied net CPI inflation, in percent				-35.0	-30.0
Implied total CPI inflation, in percent				6.7	4.7
				9.5	6.9

^{1/} For projection, authorities' inflation target and increase of regulated prices are assumed.

⁵ Several factors limited the accuracy of our calculations of the impact of regulated prices on total inflation both historically and for the projection period: (i) the lack of a precise definition of administered prices in the CPI basket and their weights; (ii) the impact of regulated wholesale (PPI) prices for gas, electricity, and freight transportation on the CPI; (iii) uncertainties with administered prices increases for 2003 and 2004 (administered prices increases for 2003 are included in the government program, but it is uncertain to what extent the authorities will stick to the program; administered prices increases for 2004 are only roughly outlined in the medium term government program accepted in July 2002 and are preliminary—the data are provided by the Economic Expert Group).

⁶ The implied paths for the overall and net inflation are given in Table 1.6.

F. Conclusions

31. **Our analysis suggests that a relatively rapid reduction of core inflation from above 10 percent in 2002 to less than 5 percent in 2004 would be beneficial, since the short-term output costs are likely to be much smaller than the long-term gains from lower inflation.** Given the authorities' planned increases of regulated prices over the next two years, a faster-than-planned reduction in headline inflation could be achieved at a short-term output cost of less than 1 percent. At the same time, opting for a slower disinflation might entrench inflation expectations and lead to persistent moderate inflation over the medium term, which could inflict substantial output losses.

References

- Ball, Laurence, 1994, "What Determines the Sacrifice Ratio?" in *Monetary Policy*, ed. by N.G. Mankiw (Chicago: University of Chicago Press).
- Blanchard, Oliver, 1998, "Optimal Speed of Disinflation: Hungary," in Carlo Cottarelli and György Szapáry (eds.), *Moderate Inflation: The Experience of Transition Economies*, International Monetary Fund and National Bank of Hungary, Washington D.C.
- Christoffersen, Peter, and Peter Doyle, 1998, "From Inflation to Growth: Eight Years of Transition," IMF Working Paper 98/100 (Washington: International Monetary Fund).
- Dornbush, Rudiger, and Stanley Fischer, 1993, "Moderate Inflation," *World Bank Economic Review*, Vol. 7 (January), pp. 1-44.
- Fischer, Stanley, 1994, "Modern Central Banking," in Forest Capie, Charles Goodhart, Stanley Fischer and Norbert Schnadt, eds. *The Future of Central Banking: The Tercentenary Symposium of the Bank of England*. Cambridge University Press: Cambridge, England and New York: 262-308.
- Groshen, Erica L., and Mark E. Schweitzer, 1996, "The Effects of Inflation on Wage Adjustment in Firm-Level Data: Grease or Sand?," Federal Reserve Bank of New York Staff Reports, January 1996, No. 9.
- Leigh, Daniel, and Marco Rossi, 2002, "Exchange Rate Pass-Through in Turkey," IMF Working Paper 02/204 (Washington: International Monetary Fund).
- Thierry Pujol, and Mark Griffiths, 1998, "Moderate Inflation in Poland: A Real Story," in Carlo Cottarelli and György Szapáry (eds.), *Moderate Inflation: The Experience of Transition Economies*, International Monetary Fund and National Bank of Hungary, Washington D.C.

II. THE PASS-THROUGH FROM THE NOMINAL EXCHANGE RATE TO INFLATION¹

A. Introduction

1. **Currency depreciation is an important determinant of inflation in an open economy—the “pass-through” effect.** A change in the exchange rate can affect domestic prices directly by increasing the domestic currency price of tradables, and by shifting activity to/from the tradable sector and thereby inducing a change in relative prices. The extent to which nominal exchange rate changes will be passed to inflation will depend, among other things, on the openness of the economy, expectations, and the degree to which imports are priced to market.
2. **The Russian economy possesses characteristics suggesting a relatively high pass-through effect.** For example, the economy is relatively open, with an import share of over 25 percent of GDP and a share of imported goods in the CPI basket of over 35 percent. In addition, there is anecdotal evidence that as a result of dollarization, exchange rate fluctuations are fully transmitted to many prices.
3. **The nominal exchange rate is highly correlated with tradable goods price inflation and headline inflation in Russia.** Table 2.1 shows that the nominal exchange rate is highly correlated with prices of tradable goods (food and non-food items), while the correlation is negligible for nontradables (services). Moreover, as a result of the high share of tradables in the CPI basket, the nominal exchange rate is highly correlated with headline inflation.

Table 2.1. Correlations between the Nominal Exchange Rate and Various Measures of Inflation 1/

	Rub/USD exchange rate (percent change)	Headline inflation (in percent)	Inflation in food items (in percent)	Inflation in non- food items (in percent)	Inflation in services (in percent)
Rub/USD exchange rate, percent cha	1.00	0.65	0.61	0.72	-0.13
Headline inflation	0.89	1.00	0.97	0.87	0.19
Inflation in food items	0.90	0.98	1.00	0.78	0.12
Inflation in non-food items	0.94	0.97	0.95	1.00	-0.03
Inflation in services	0.06	0.43	0.34	0.29	1.00

1/ Below the diagonal: Jan. 95 - Nov. 02; above the diagonal: Jan. 99 - Nov. 02

¹ Prepared by Emil Stavrev (EU2).

4. **This paper provides empirical estimates of the pass-through from the nominal exchange rate to inflation in Russia.** The main results of the study are:

- The nominal exchange rate pass-through is estimated at between 0.5–0.7 percentage points for a 1 percent change in the exchange rate and is transmitted within roughly two to three quarters.²
- The impact effect of depreciation on inflation (within one quarter) is relatively high (roughly 0.3 percentage points). This result is in line with the share of imported goods in private consumption.

B. Methodology

5. **To estimate the pass-through effect we used two approaches:**

- **Single inflation equations.** We estimated two types of single inflation equations: one in which seasonally adjusted inflation was regressed on lagged inflation and six month distributed lag of changes in the nominal exchange rate, and the other in which seasonally adjusted inflation was regressed on lagged inflation and current and lagged changes in nominal exchange rate and foreign inflation.
- **A three-equation VAR system in first differences.** The system included seasonally adjusted inflation, seasonally adjusted broad money, and the nominal exchange rate, controlling for oil prices and industrial production (the rationale for using oil prices and industrial production is to capture exogenous supply shocks and excess demand/supply pressure respectively).

6. **To identify causality between the nominal bilateral/nominal effective exchange rate and inflation we used a Granger causality test.** The results (see Table 2.2 below) suggest that (at 5 percent) we reject the null hypothesis that the nominal bilateral exchange rate does not Granger cause inflation, but we cannot reject the null hypothesis that the nominal effective exchange rate does not Granger causes inflation.³ A possible interpretation of this finding is that, because of the relatively high dollarization in Russia, inflation expectations and developments are driven by the ruble/U.S. dollar exchange rate. Also,

² A caveat is worth mentioning. Although the estimated cumulative pass-through is less than one this does not imply that monetary policy can be used to target the real exchange rate in the long run. The empirical methodology discussed here captures only the short-run dynamics between inflation and its determinants. Due to short and noisy time series we were not able to estimate the long-run cointegrating relationship between inflation and its determinants.

³ Since the power of Granger causality tests could be low due to short time series and regime changes, in addition to the estimated pass-through from the nominal bilateral exchange rate, we also provide the estimates of the pass-through effect from the nominal effective exchange rate in the Appendix.

the test suggests that since, at the 10 percent level, we cannot reject reverse Granger causality—that inflation causes changes in the nominal bilateral exchange rate—there could be endogeneity problems between the two variables. Therefore, to deal with possible endogeneity problems in the single equations, we also estimate a VAR system.

Table 2.2. Granger Causality Test: The Nominal Exchange Rate Versus Inflation

Pairwise Granger Causality Tests
Sample: 1996:01 2002:09
Lags: 3

Null Hypothesis:	Observations	F-Statistic	Probability
Nominal Bilateral ER does not Granger Cause Inflation	79	4.03580	0.01000
Inflation does not Granger Cause Nominal Bilateral ER		1.53576	0.05501

Pairwise Granger Causality Tests
Sample: 1996:01 2002:09
Lags: 3

Null Hypothesis:	Observations	F-Statistic	Probability
Nominal Effective ER does not Granger Cause Inflation	79	0.29277	0.83050
Inflation does not Granger Cause Nominal Effective ER		1.31292	0.27600

7. **To test for a change of the pass-through over time, we estimated the equations using two sample periods.** The full sample is from January 1996 to July 2002 and includes the 1998 crisis, while the restricted sample excludes the crisis and is from January 1999 to July 2002. The estimation results from the restricted sample were not satisfactory—the estimated pass-through effect was not statistically different from zero. However, we believe that the unsatisfactory results from the restricted sample are due to the small number of observations. The full sample allowed for a better identification of the pass-through effect and these results are more relevant for understanding how the exchange rate affects inflation.

C. Estimation Results

8. **Although the estimation results should be considered with caution, they provide several interesting conclusions.** In particular, the estimated single inflation equations suggest a full pass-through of 0.5–0.7 percentage points for a 1 percent change in the exchange rate, which is transmitted within about half a year. In addition, the immediate impact within a quarter is relatively high—roughly 0.3 percentage points. These findings are also supported by the VAR system estimates, according to which it takes roughly three quarters for approximately 60 percent of the shock from the nominal exchange rate to inflation to be absorbed (see Figure 2.1 in the Appendix).

Econometric Results

1. This appendix discusses the outcomes of the econometric results from the estimated single inflation equations and vector autoregression system.

A. Single Equation Estimates

2. **We estimated two sets of single inflation equations.** In the first group of equations, inflation is explained by lagged inflation and lagged changes in the nominal exchange rate, and in the second group inflation is explained by current and lagged changes in the nominal exchange rate and foreign inflation (a specification in which the coefficient on foreign prices was restricted to be equal to the coefficient on the nominal exchange rate gave the best statistical properties of the model in terms of normality and autocorrelation of the residuals).

3. **What are the implications from the estimated single equations?**

- As Tables 2.2–2.5 suggest, the estimation results do not depend on the exchange rate used (bilateral or nominal effective)—the estimated coefficients are not significantly different.
- The estimated cumulative pass-through¹ without controlling for foreign inflation (Tables 2.2–2.3) is around 0.7. However, the residuals of these regressions are not normally distributed, which might lead to biased estimates of the coefficients.
- When controlling for foreign inflation (Tables 2.4–2.5), the cumulative effect of the nominal exchange rate on inflation (the immediate impact divided on coefficient C(2)) is slightly above 0.5 percentage points for a 1 percent change in the nominal exchange rate and is transmitted within two quarters.
- The immediate impact of the nominal exchange rate on inflation (the sum of coefficients C(1), C(2), and C(3)) is slightly less than 0.3 percentage points for a percent change in the nominal exchange rate and takes place within a quarter.

¹ The cumulative effect is calculated as the sum of the coefficients on the nominal exchange rate divided by one minus the coefficient on lagged inflation.

Table 2.3. Pass-Through from the Nominal Bilateral Exchange Rate to Inflation

Dependent Variable: Inflation (seasonally adjusted monthly inflation)
 Method: Least Squares
 Sample(adjusted): 1996:01 2002:07
 Included observations: 79 after adjusting endpoints
 Inflation = C(1) + C(2)*Inflation(-1) + C(3)*Change in Bilateral ER + C(4)*Change in Bilateral ER(-1)
 + C(5)*Change in Bilateral ER(-2) + C(6)*Change in Bilateral ER(-3) + C(7)*Change in Bilateral ER(-4)
 + C(8)*Change in Bilateral ER(-5) + C(9)*Change in Bilateral ER(-6)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.001497	0.001614	0.927810	0.3563
C(2)	0.809614	0.060690	13.34017	0.0000
C(3)	0.469937	0.014692	31.98692	0.0000
C(4)	-0.405695	0.031762	-12.77285	0.0000
C(5)	0.053279	0.015062	3.537383	0.0007
C(6)	-0.005921	0.015374	-0.385153	0.7011
C(7)	0.010145	0.014960	0.678116	0.4997
C(8)	0.016770	0.014587	1.149649	0.2537
C(9)	-0.004225	0.014466	-0.292067	0.7710
R-squared	0.942823	Mean dependent variable		0.026840
Adjusted R-squared	0.937105	S.D. dependent variable		0.045013
S.E. of regression	0.011289	Akaike info criterion		-6.034372
Sum squared residuals	0.010195	Schwarz criterion		-5.782712
Log likelihood	277.5295	Durbin-Watson stat		2.017665

Table 2.4. Pass-Through from the Nominal Effective Exchange Rate to Inflation

Dependent Variable: Inflation (seasonally adjusted monthly inflation)
 Method: Least Squares
 Sample(adjusted): 1996:01 2002:07
 Included observations: 79 after adjusting endpoints
 Inflation = C(1) + C(2)*Inflation(-1) + C(3)*Change in Effective ER + C(4)*Change in Effective ER(-1)
 + C(5)*Change in Effective ER(-2) + C(6)*Change in Effective ER(-3) + C(7)*Change in Effective ER(-4)
 + C(8)*Change in Effective ER(-5) + C(9)*Change in Effective ER(-6)

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.003170	0.001881	1.685295	0.0958
C(2)	0.771296	0.066028	11.68131	0.0000
C(3)	0.481141	0.016536	29.09710	0.0000
C(4)	-0.410150	0.035638	-11.50874	0.0000
C(5)	0.075604	0.017128	4.414078	0.0000
C(6)	-0.011544	0.017477	-0.660563	0.5108
C(7)	0.027281	0.016813	1.622594	0.1086
C(8)	0.014507	0.016713	0.868005	0.3880
C(9)	-0.006225	0.016481	-0.377708	0.7066
R-squared	0.931064	Mean dependent variable		0.026840
Adjusted R-squared	0.924171	S.D. dependent variable		0.045013
S.E. of regression	0.012395	Akaike info criterion		-5.847354
Sum squared residuals	0.012292	Schwarz criterion		-5.595694
Log likelihood	269.2072	Durbin-Watson stat		2.050150

**Table 2.5. Pass-Through from the Nominal Bilateral Exchange Rate to Inflation
Controlling for Foreign Inflation**

Dependent Variable: Inflation (seasonally adjusted monthly inflation)

Method: Least Squares

Sample(adjusted): 1996:01 2002:07

Included observations: 79 after adjusting endpoints

Inflation = C(1) + C(2)*Inflation(-1) + C(3)*(Change in Bilateral ER + Foreign Inflation)

+ C(4)*(Change in Bilateral ER(-1) + Foreign Inflation(-1))

+ C(5)*(Change in Bilateral ER(-2) + Foreign Inflation(-2))

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.004248	0.001311	3.240863	0.0018
C(2)	0.491052	0.093530	5.250185	0.0000
C(3)	0.481585	0.010228	47.08421	0.0000
C(4)	-0.254281	0.046563	-5.460970	0.0000
C(5)	0.042649	0.010185	4.187549	0.0001
R-squared	0.970438	Mean dependent variable		0.022162
Adjusted R-squared	0.968840	S.D. dependent variable		0.044685
S.E. of regression	0.007888	Akaike info criterion		-6.785799
Sum squared residuals	0.004604	Schwarz criterion		-6.635834
Log likelihood	273.0390	Durbin-Watson stat		2.008554

**Table 2.6. Pass-Through from the Nominal Effective Exchange Rate to Inflation
Controlling for Foreign Inflation**

Dependent Variable: Inflation (seasonally adjusted monthly inflation)

Method: Least Squares

Sample(adjusted): 1996:03 2002:06

Included observations: 76 after adjusting endpoints

Inflation = C(1) + C(2)*Inflation(-1) + C(3)*(Change in Nominal Effective ER + Foreign Inflation)

+ C(4)*(Change in Nominal Effective ER(-1) + Foreign Inflation(-1))

+ C(5)*(Change in Nominal Effective ER(-2) + Foreign Inflation(-2))

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	0.007931	0.002349	3.376405	0.0012
C(2)	0.484197	0.100228	4.830973	0.0000
C(3)	0.457021	0.017409	26.25172	0.0000
C(4)	-0.254268	0.049252	-5.162619	0.0000
C(5)	0.064329	0.017507	3.674409	0.0005
R-squared	0.913671	Mean dependent variable		0.022392
Adjusted R-squared	0.908807	S.D. dependent variable		0.045523
S.E. of regression	0.013747	Akaike info criterion		-5.672458
Sum squared residuals	0.013418	Schwarz criterion		-5.519120
Log likelihood	220.5534	Durbin-Watson stat		2.082458

B. Vector Autoregression Estimates

9. **We estimated a trivariate VAR system with the following specification:** We used as *endogenous variables* seasonally adjusted monthly inflation, nominal effective exchange rate, and seasonally adjusted broad money. As *exogenous variables* we used oil prices and seasonally adjusted industrial output. The VAR system was estimated using monthly log differences of the variables. The ordering of the shocks for the impulse responses and variance decomposition was money, inflation, and nominal exchange rate.

10. **The results of the VAR estimates suggest that:**

- Excess supply/demand (as captured by industrial production growth) is an important determinant of inflation—the effect of industrial production on inflation is significant and close to -1.
- Industrial production has a significant effect on money (roughly 0.40).
- Oil prices have a significant effect on inflation (0.1) and the nominal exchange rate (-0.2), but insignificant impact on money (the effects are calculated as the sum of current and lagged coefficients).

Table 2.7. Vector Autoregression System

Vector Autoregression Estimates
 Sample(adjusted): 1996:01 2002:04
 Included observations: 76 after adjusting endpoints
 t-statistics in []

	Inflation	Nominal ER	Money
Inflation(-1)	1.200084 [3.15072]	-0.931135 [-1.24060]	0.728735 [2.57707]
Inflation(-2)	0.050251 [0.11092]	-0.005726 [-0.00641]	-0.380718 [-1.13197]
Inflation(-3)	-0.141863 [-0.42173]	0.033356 [0.05032]	0.376588 [1.50797]
Nominal ER(-1)	0.465645 [2.43658]	-0.158292 [-0.42035]	0.313300 [2.20823]
Nominal ER(-2)	-0.006723 [-0.02949]	-0.045532 [-0.10137]	-0.172729 [-1.02065]
Nominal ER(-3)	-0.210591 [-1.22749]	0.331137 [0.97950]	0.170772 [1.34076]
Money(-1)	-0.209467 [-1.32028]	0.619442 [1.98140]	-0.074769 [-0.63479]
Money(-2)	-0.166571 [-0.99752]	0.510121 [1.55029]	0.006715 [0.05417]
Money(-3)	-0.185353 [-1.10357]	0.381202 [1.15180]	0.038648 [0.30994]
Oil	0.096885 [2.20491]	-0.183733 [-2.12198]	0.034041 [1.04351]
Oil(-1)	0.020600 [0.45874]	-0.078486 [-0.88698]	-0.030962 [-0.92871]
Oil (-2)	0.065486 [1.46695]	-0.115722 [-1.31554]	0.045560 [1.37470]
Oil (-3)	-0.088937 [-2.00058]	0.152817 [1.74449]	0.008735 [0.26466]
Industrial production	-0.533000 [-2.58831]	1.089298 [2.68446]	0.170684 [1.11645]
Industrial production (-1)	0.105863 [0.48449]	-0.051627 [-0.11991]	0.392264 [2.41812]
Industrial production (-2)	-0.344863 [-1.62557]	0.509189 [1.21803]	-0.090104 [-0.57208]
Industrial production (-3)	-0.157909 [-0.76275]	0.122877 [0.30121]	-0.101346 [-0.65938]
Constant	0.018527 [2.47839]	-0.036067 [-2.44846]	0.014739 [2.65565]
R-squared	0.434141	0.393851	0.392182
Adj. R-squared	0.288389	0.237722	0.235623
Sum sq. resids	0.095375	0.370335	0.052568
S.E. equation	0.038014	0.074908	0.028222
Log likelihood	165.6007	108.6240	190.6208
Akaike AIC	-3.514302	-2.157715	-4.110019
Schwarz SC	-2.993413	-1.636826	-3.589130
Mean dependent	0.025905	-0.010766	0.031110
S.D. dependent	0.045064	0.085796	0.032280

Figure 2.1. Response to Cholesky One Standard Deviation Innovations

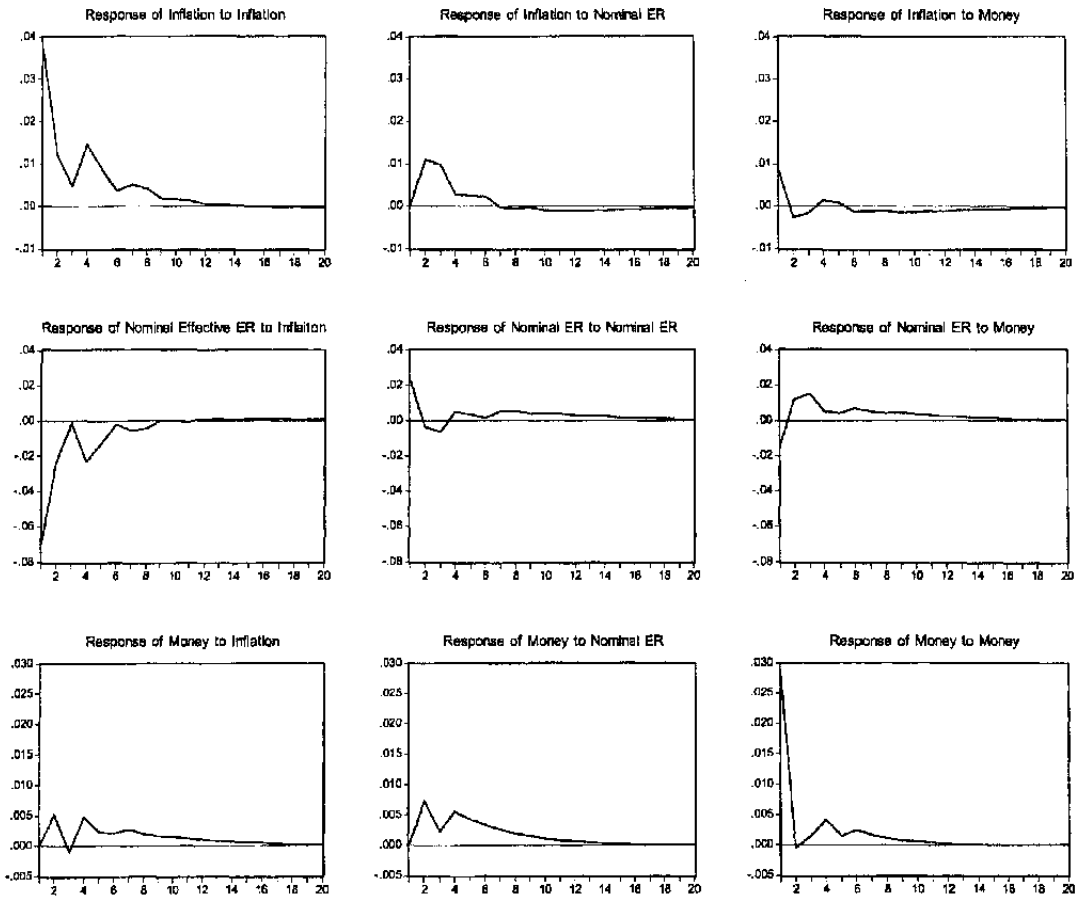
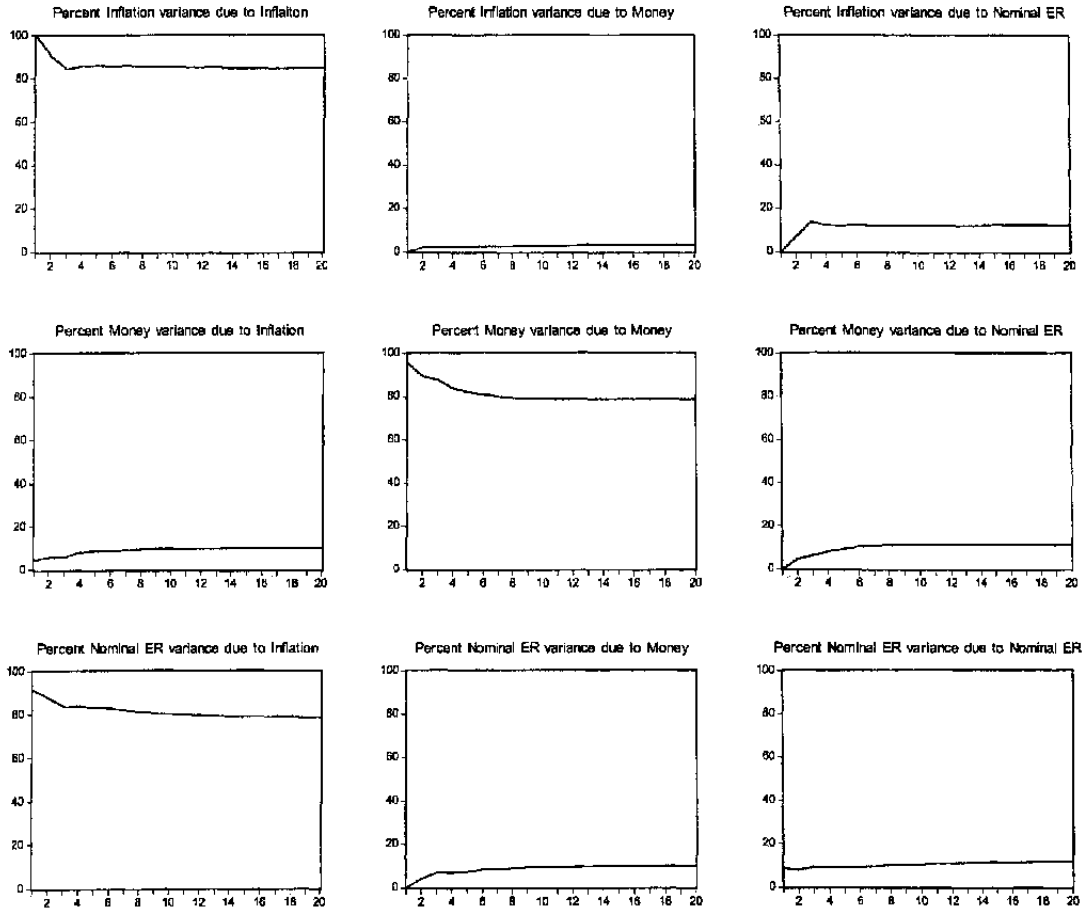


Figure 2.2. Variance Decomposition



References

- Bhundia, Ashok, 2002, "An Empirical Investigation of Exchange Rate Pass-Through in South Africa," IMF Working Paper 02/165 (Washington: International Monetary Fund).
- Billmeier, Andreas, and Leo Bonato, 2002, "Exchange Rate Pass-Through and Monetary Policy in Croatia," IMF Working Paper 02/109 (Washington: International Monetary Fund).
- Leigh, Daniel, and Marco Rossi, 2002, "Exchange Rate Pass-Through in Turkey," IMF Working Paper 02/204 (Washington: International Monetary Fund).

III. THE EQUILIBRIUM REAL EXCHANGE RATE IN A COMMODITY EXPORTING COUNTRY: THE CASE OF RUSSIA¹

A. Introduction

1. Over the last decade, Russia has been on an economic roller-coaster. The start of transition saw a sharp output collapse and prolonged stagnation. This was followed by a tentative recovery in 1997, and a dramatic banking and exchange-rate crisis in August 1998. During 1999–2002, a depreciated real exchange rate (RER), booming world prices for energy (Russia's key export), a tightened fiscal policy, and significant progress in key structural reforms led to high growth rates, a significant recovery in investment, unprecedented fiscal and external current account surpluses, and rising living standards.

2. Not surprisingly, there is much debate regarding the policies needed to sustain rapid growth and complete the transition. Questions about external competitiveness, and the appropriate exchange-rate policy have featured prominently in this debate. Some observers note that the sharp real appreciation which accompanied the start of the transition was eventually followed by a crisis, and suggest that the rapid post-crisis recovery in the RER, unless strongly resisted, will eventually also endanger growth, employment, and fiscal and external sustainability. In contrast, the recent real appreciation has been accompanied by dramatic swings in the terms of trade and the external current account, moderate increase in productivity and some reduction in the non-oil government deficit. It is therefore quite possible that changes in the RER may have reflected movements in the underlying fundamentals, and indeed that further appreciation might be desirable.

3. Taking a somewhat broader perspective, exchange-rate fluctuations can have significant effects, for at least two reasons. First, even short-term RER volatility can impose large welfare costs. Especially in a context of underdeveloped financial markets, such volatility reduces the level of international trade, affects investment decisions, and hinders growth possibilities. Second, such welfare costs are magnified in the case of prolonged and sustained exchange-rate misalignments, which can badly distort resource allocation.

4. From a policy standpoint, it is therefore critical both to understand the main determinants of the RER, and to distinguish between short- and long-term RER movements. Macroeconomic policies can then be used to smooth "excessive" short-term changes.

5. An accurate analysis of the RER is particularly critical in resource-dependent and in transition economies. Such economies often experience large shocks to fundamentals, such as the terms of trade and productivity, and as a consequence very unstable domestic policies. As a result, their RER may be particularly prone to excess volatility.

¹ Prepared by Nikola Spatafora (RES) and Emil Stavrev (EU2).

6. This paper uses empirical evidence both from Russia's experience since the beginning of transition, and from the experience of more advanced transition economies, to estimate the determinants of Russia's RER, and its likely movements over the medium-term. The analysis focuses on estimating the equilibrium RER, that is, the level of the RER consistent with a viable external position. Section B describes the methodology employed to analyze Russia's historical experience. Section C discusses and describes the available data, including in particular different measures of the RER. Section D reviews the econometric results, and derives the equilibrium RER. Section E concludes.

B. Analyzing Russia's Historical Experience: Methodology

7. We start by analyzing Russia's historical experience, following closely the methodology of Edwards (1994) and Mongardini (1998). In order to estimate the equilibrium real exchange rate (ERER), we construct a small structural model tailored to the Russian economy. The key idea is to decompose changes in the actual RER into permanent, fundamental changes, reflecting shocks to the ERER, and more transitory variations, reflecting inter alia shocks to monetary policy. So as to separate these short- and long-term factors, we will estimate a reduced-form equation in an error-correction form.

8. More formally, the structural equation for the ERER is:

$$\ln e^*_t = \alpha_0 + \alpha_1 \ln FUND_t + u_t \quad (1)$$

where e^* is the ERER, and $FUND$ is the vector of fundamental variables, which in particular includes:

- *The world price of Russian Urals oil.* We expect an improvement in the external terms of trade to act to increase the current account balance, and hence appreciate the ERER. Since a terms-of-trade series for Russia is not available, we use as a proxy the price of Russian crude oil. This reflects the fact that exports of hydrocarbons, including oil, oil products, and natural gas, account for a substantial fraction of total Russian exports (over one-half in both 2000 and 2001). Further, oil accounts for most of the hydrocarbon exports, and the prices of other hydrocarbons seem to fluctuate in parallel with oil prices.²
- *Industrial productivity in Russia, relative to its trading partners.* Following the literature on the Balassa-Samuelson effect, we expect increased relative productivity in the economy, particularly in the tradable sector, to lead to an appreciation of the ERER. We focus on industry, as a proxy for tradables, and examine its average labor productivity. In principle, we would like to use total factor productivity, but are

² We tried constructing an aggregate price index for Russian energy exports, using a weighted average of Russian oil and natural gas prices, but this variable failed to improve on the simple Urals oil price.

unable to make the adjustment because data on the capital stock, capacity utilization, and labor quality are too unreliable and only available for a very limited sample.

- *Post-1998-crisis structural break dummy.* We expect a negative coefficient on this dummy, reflecting two factors. First, any pre-crisis RER overvaluation. Second, the post-crisis RER undershooting.

9. In the short-run, we also assume that the actual RER adjusts towards the equilibrium at a speed given by the parameter β , but that changes in other variables, including in particular policy variables, may disturb the adjustment. Formally,

$$\Delta \ln e_t = \beta (\ln e_{t-1}^* - \ln e_{t-1}) + \gamma \ln (TEMP_t / TEMP_t^*) + v_t, \quad (2)$$

where e is the actual RER, $TEMP$ is a vector of variables having a transitory effect on the RER, and $TEMP^*$ is the vector of such variables that is consistent with the ERER. When specifying $TEMP$, we focus on the following policy variables:

- *The excess growth in net international reserves.* Specifically, we use the increase in the reserve cover, that is, the ratio of reserves to monthly imports. This reflects the argument that the build up of international reserves since the crisis reflects the authorities' effort to slow the pace of real appreciation by intervening in the foreign exchange market.
- *The excess supply of domestic credit,* that is, the increase in domestic credit that is unmatched by higher growth in the economy. Specifically, we use the increase in the ratio of ruble broad money to GDP. This is also an attempt to capture shocks to monetary and exchange rate policy.
- *The change in the fiscal position, relative to lagged high-powered money.* A fiscal loosening may have (at least) two opposite effects. First, it may lead to increased spending on nontradables, raising their prices and putting upward pressure on the RER. Second, it may reduce confidence in the sustainability of fiscal, monetary, and exchange rate policy, provoking a reduction in capital inflows and a real depreciation.³

³ We tried including also a debt-stock variable, to capture separately this confidence effect, but received unsatisfactory results. Also, we tried allowing our fiscal variable to affect the ERER too, but received counter-intuitive results.

10. Since theory does not restrict the precise short-run dynamics, we use standard information criteria to determine the lag length for these policy variables, and also include in *TEMP* lagged values of the various fundamental variables.⁴

11. Following an estimation of the above model, we performed a variance decomposition so as to study the sources of RER variability. In particular, this gave us a measure of how much of the variability in the RER is caused by changes in real variables such as the terms-of-trade and productivity.

C. Data Description

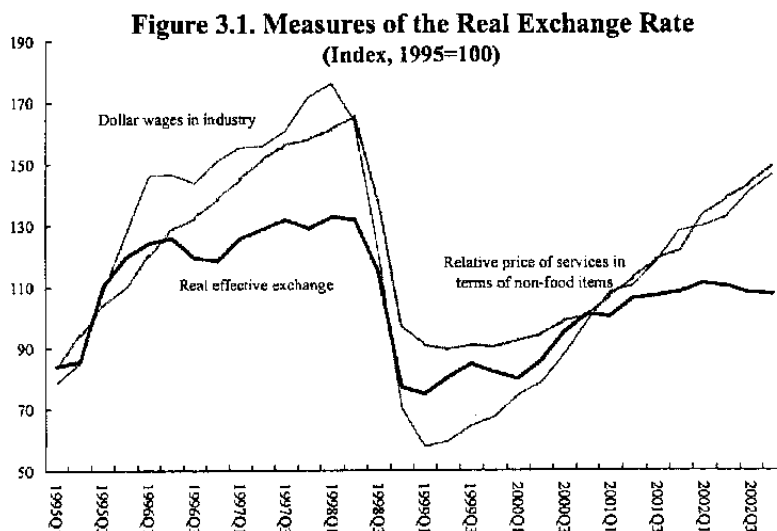
12. We distinguish between two main definitions of the RER. First, we consider the *external RER*—defined as the nominal exchange rate adjusted for price level differences between countries. This measure compares the relative value of currencies by measuring either the relative prices of foreign and domestic consumption or production baskets, or else the relative input costs. We use the following measures of the external RER: the CPI-based effective RER, and the U.S. dollar value of industrial wages.

13. Second, we consider the *internal RER*—defined as the ratio of the domestic price of nontradables to tradables within a single country. This concept captures the internal relative price incentive for producing or consuming nontradables as opposed to tradables. As a proxy for nontradables we use paid services. As a proxy for tradables we use food items and other items from the CPI basket.

14. The external and internal measures of the RER show the same qualitative developments between 1995 and today. All measures appreciated sharply from the beginning of 1995 till the 1998 crisis, collapsed in the wake of the crisis, and have again appreciated strongly since then (see Figure 3.1).

15. Dollar wages, and to a lesser extent the relative price of nontradables, have fluctuated much more widely than the CPI-based real effective exchange rate, owing to a combination of factors. Before the crisis, the much faster increase of dollar wages reflected cost-push pressures against a background of rising competition from imports. The sharp real wage fall during the crisis reflected both nominal wage rigidities, and the fast pass-through from the nominal exchange rate to tradable prices. Finally, the very fast recovery in wages since the crisis is partly a response to their overshooting during the crisis.

⁴ We would have liked to include a measure of net foreign assets (NFA) among the fundamental variables. However, the Lane and Milesi-Ferretti (2001) NFA dataset does not include Russia. We did try including the measure of NFA reported in IFS, but this did not work satisfactorily, likely because of the various problems discussed by Lane and Milesi-Ferretti.



16. Still, the difference between the pre-crisis level and the Q3 2002 level is broadly comparable across all three measures (see Table 3.1). The CPI-based REER is 18 percent below its pre-crisis level, while the other two measures are roughly 15 percent below their pre-crisis levels. Since all three measures give the same qualitative picture about developments in competitiveness, and suggest similar changes from pre-crisis levels, we focus in the rest of the paper on the CPI-based REER. However, we check the robustness of the results by also using the other two measures and comparing the results.

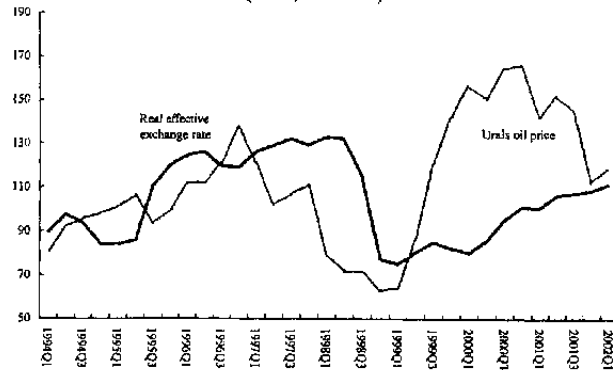
Table 3.1. Change in Competitiveness Indicators, 1995-2002
(In percent)

	Pre-crisis (95 Q1 - 98 Q2)	Crisis (98 Q2 - 99 Q1)	Difference from the pre-crisis level Q3 2002
US dollar value of industrial wages	117	-66	-14
Relative price of nontradables	96	-45	-13
Real effective exchange rate	57	-43	-18

Source: Goskomstat and Fund staff estimate

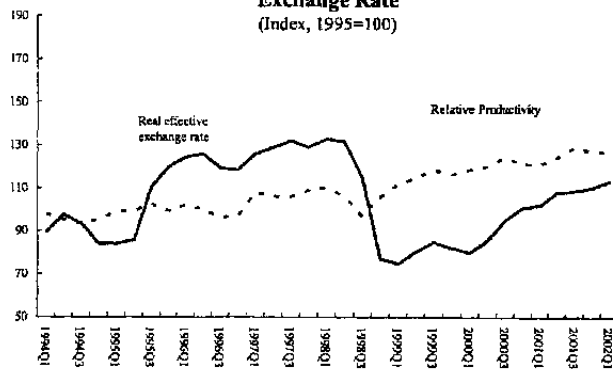
17. Regarding links between the RER and other variables, we note that the RER and oil prices seem to have moved roughly together since 1994, although with lags and by different magnitudes (see Figure 3.2). For instance, the oil price increase during 1994–96 was followed by a real appreciation, and the sharp decline between 1997 and the first quarter of 1998 was followed by a real depreciation of more than 40 percent after August 1998. Finally, after the crisis, the sharp pickup in oil prices has been accompanied by a significant real appreciation.

Figure 3.2. Urals Oil Prices and Real Effective Exchange Rate (Index, 1995=100)



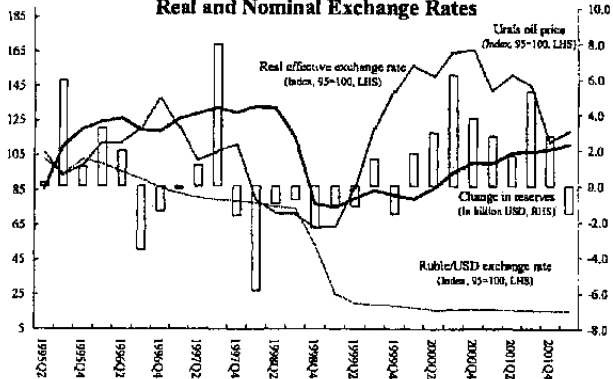
18. Turning to productivity, before the crisis a steady if relatively slow productivity growth rate was accompanied by a steady real appreciation. Likewise, after the crisis, fast productivity growth was accompanied by a fast real appreciation. However, the RER collapse during the crisis far exceeded any movement in productivity (see Figure 3.3).

Figure 3.3. Relative Productivity and Real Effective Exchange Rate (Index, 1995=100)



19. Overall, this suggests the empirical analysis will face two challenges. First, explaining the timing and magnitude of the 1998 RER collapse; this may only be achievable by using a crisis or structural break dummy. Second, accounting for why the post-crisis appreciation was not faster than observed. One option, discussed earlier, is to consider reserve accumulation. As seen in Figure 3.4, the post-crisis increase in oil prices was accompanied by a rapid increase in international reserves, which could plausibly have dampened the pressure for nominal and perhaps real appreciation.

Figure 3.4. Urals Oil Prices, Reserve Accumulation, and Real and Nominal Exchange Rates



D. Estimation and Results

20. We now present the results of estimating the model outlined in Section B, and compare the results of our study with those of other studies for transition economies and commodity-exporting countries. We must emphasize that, given the significant uncertainties involved in specifying and estimating this sort of model, particularly in the context of a transition economy, we engage in a broad specification search, and in particular drop several variables that prove to have the wrong sign. This should be borne in mind when examining the reported standard errors.

21. To estimate the long-run co-integrating relationship, we use the Phillips-Loretan single equation error correction mechanism.⁵ This procedure is appealing in that it offers both a direct way to test the underlying economic theory and simultaneous estimation of the short- and long-run coefficients. However, the procedure does require all variables to have the same order of integration. Therefore, we first check the order of integration of the real exchange rate, oil prices and productivity using the Dickey-Fuller and Phillips-Perron tests. The results (see Table 3.2 below) suggest that we cannot reject the null that all three variables are integrated of order one (I(1)). Of course, such tests have to be treated with caution since in short samples they have extremely low power against economically relevant alternatives.

22. In line with the methodology described above, we decompose the fitted RER into the ERER and into transitory factors. The latter include the short-term effect of monetary, exchange rate, and fiscal policy. In contrast, the ERER only incorporates the impact of changes in productivity and Urals oil prices, as well as the structural break dummy.

⁵ For details, see Phillips and Loretan (1991).

Table 3.2. Unit Root Tests

Null Hypothesis: URALS has a unit root		
Exogenous: None		
Lag Length: 2 (Automatic based on SIC, MAXLAG=9)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.146803	0.6261
Test critical values:		
1% level	-2.630762	
5% level	-1.950394	

Null Hypothesis: URALS has a unit root		
Exogenous: Constant		
Bandwidth: 4 (Newey-West using Bartlett kernel)		
	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-1.935180	0.3131
Test critical values:		
1% level	-3.626784	
5% level	-2.945842	

*Mackinnon (1996) one-sided p-values.

Null Hypothesis: PRODUCTIVITY has a unit root		
Exogenous: Constant		
Lag Length: 2 (Automatic based on SIC, MAXLAG=9)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	0.607692	0.9876
Test critical values:		
1% level	-3.670170	
5% level	-2.963972	

Null Hypothesis: PRODUCTIVITY has a unit root		
Exogenous: Constant		
Bandwidth: 31 (Newey-West using Bartlett kernel)		
	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	0.782416	0.9921
Test critical values:		
1% level	-3.653730	
5% level	-2.957110	

Null Hypothesis: Real effective exchange rate has a unit root		
Exogenous: Constant		
Lag Length: 2 (Automatic based on SIC, MAXLAG=9)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-2.263522	0.1897
Test critical values:		
1% level	-3.670170	
5% level	-2.963972	

Null Hypothesis: Real effective exchange rate has a unit root		
Exogenous: Constant		
Bandwidth: 1 (Newey-West using Bartlett kernel)		
	Adj. t-Stat	Prob.*
Phillips-Perron test statistic	-1.773892	0.3859
Test critical values:		
1% level	-3.661661	
5% level	-2.960411	

23. In order to understand what is driving the estimation results, it is useful to start by discussing the estimated long-run cointegrating relationship between the ERES and its underlying determinants, shown in Table 3.3 below. The estimated long-run coefficients have the anticipated signs and are statistically significant. In particular, the long-run elasticity with respect to productivity is approximately 1.3, which is higher than typically found in other studies. The long-run elasticity with respect to oil prices is 0.31, which implies a RER elasticity with respect to the overall terms of trade of about 0.8, well within the range typically reported.

Table 3.3. Long-Run Cointegrating Relationship 1/

	Constant	Productivity	Urals oil prices	Post-crisis structural break
Phillips-Loretan single equation ECM	3.30 (0.53)	1.30 -(0.46)	0.31 (0.12)	-0.62 (0.13)

1/ Standard errors in brackets

24. We suspect these estimates may be distorted by three problems. First, oil prices are not a perfect proxy for the terms of trade. Second, our chosen policy variables, discussed below, may represent only part of the mechanism through which the response of the RER to oil prices in the post-crisis period was muted. Third, and linked, it may be hard to disentangle the separate effects of productivity and oil prices, given that they both grew strongly after the crisis. Overall, the result of these problems may well be that the coefficient on oil prices is biased downwards, and possibly that some of the impact of oil prices is wrongly attributed to productivity.

25. Subject to these caveats, and as expected, both productivity and oil prices clearly play an important role in explaining movements of the ERES over extended periods. To quantify the economic significance of these factors, we now compute the contribution of productivity and of oil prices to the ERES appreciation between end-1998 and end-2001. The estimated long-run coefficients imply that productivity accounts for roughly 60 percent, and oil prices for 40 percent, of the appreciation of the ERES.

26. One should be extremely cautious in interpreting these results, because the structural break dummy is statistically extremely significant, and also very large. The estimated hemi-elasticity of around 0.60 implies an almost 50 percent drop in the fitted RER immediately after the crisis, even after controlling for all observable fundamentals. To the extent that the dummy reflects (at least partly) post-crisis RER undershooting, rather than

pre-crisis overvaluation, this sharp drop is likely to be corrected in the future.⁶ The critical problem is that, in the absence of forward-looking information, it is hard to gauge what weight to attach to different interpretations of the dummy.

27. Since the beginning of 1999, the overall fitted RER appreciated less than the ERER, reflecting two factors. First, monetary policy, as proxied by the share of reserves in imports, was somewhat successful in the short-term in slowing real appreciation. Second, the RER only adjusts with some lag towards its equilibrium level, likely reflecting real rigidities in the economy. The estimated speed-of-adjustment coefficient implies that, after two quarters, about 70 percent of a shock to the RER has been absorbed.⁷ At this stage, we also note that the estimated coefficients on both excess credit and fiscal policy are insignificant. The former finding suggests that foreign exchange intervention (even if sterilized) may successfully retard real appreciation; the latter finding may not be surprising in view of the offsetting effects of the considerable tightening of fiscal policy, as discussed earlier.

28. Regarding the impact of long-run productivity growth, our results suggest the presence of a strong Balassa-Samuelson effect. The significance of this lies in the fact that such an effect should not be resisted by monetary policy. Over the last three years, average whole economy labor productivity growth in Russia was approximately 4.5 percent, implying a 2–3 percentage point productivity growth differential vis-à-vis the OECD. Assuming that as a result of structural reforms the productivity growth differential will remain 2–3 percentage points, in the long-run the ERER will also continue growing by perhaps 2–3 percent per annum (since the coefficient linking the ERER to relative productivity is close to unity).

29. Finally, the estimation results remain broadly stable, or indeed improve in significance, if one uses alternative measures of the RER. For instance, replacing the CPI-based REER with U.S. dollar wages still implies a large, significant ERER elasticity with respect to productivity, and it *raises* the significance level of the estimated coefficients on oil prices and on monetary policy.

⁶ We tried including a pure “August 1998 crisis dummy,” but this was not significant after controlling for the structural break.

⁷ The speed of adjustment (the coefficient on the disequilibrium term) and the elasticity with respect to monetary policy are given in the following equation, which shows the full dynamics:

$$\Delta \ln e_t = \frac{0.49}{(0.09)} (\ln e_{t-1}^* - \ln e_{t-1}) - \frac{0.07}{(0.05)} \ln (\text{Reserves}/\text{Imports}_t) - \frac{0.31}{(0.12)} \ln (\text{Urals}_{t-2}) + v_t$$

where *Reserves* is gross reserves in dollars, *Imports* is nominal dollar imports, *Urals* is Urals oil price, and numbers in parentheses denote standard errors.

30. The methodology employed so far, while extremely popular, relies on two crucial assumptions. First, that a stable relationship between the RER and its underlying determinants can be gleaned from historical data. Second, that this relationship will continue to hold in the future. In the case of Russia, where the transition process is still very much underway, and given the clear evidence for an in-sample structural break, such assumptions need to be treated cautiously. In particular, the methodology cannot be reliably used to discuss the current or future *level* of the ERER.

31. Therefore, an avenue for future work would be to test the plausibility of the results discussed above by applying alternative methods. One alternative is Williamson's "fundamental equilibrium exchange rate" approach (extended in Isard and Faruqee (1998) and Isard et al. (2001)). A comparison of the outcomes from this method with the results from the econometric approach would ensure a better assessment of the degree of under/overvaluation the real exchange rate with respect to its long-run equilibrium level.

E. Conclusions

32. Any analysis of the equilibrium RER is subject to large uncertainties. However, empirical analysis confirms a link between the ERER and productivity, in both Russia and other transition economies. Dependence of the Russian ERER on oil prices can also be observed, in spite of the authorities' attempts to offset such links through monetary policy and foreign reserve accumulation; the dependence is likely to become even clearer over the long run.

33. Over the long-run, and even after any RER disequilibrium is resolved, the link between the ERER and productivity implies that we should expect both the actual and the equilibrium RER to continue appreciating. The precise rate of productivity-driven appreciation will depend on the speed and determination with which structural reforms are pursued; on average, it has equaled about 2–3 percent per annum in other transition economies.

34. To the extent that the authorities resist nominal appreciation, the real appreciation discussed above would have to occur through increases in domestic prices, particularly of nontradables, and would also show up as higher CPI inflation. It should be emphasized that such appreciation, whether reflecting an adjustment to the current disequilibrium, or the response to continuing productivity growth, should not be viewed as a threat to growth, employment, or external sustainability. Rather, it represents a mechanism which ensures that the Russian people will achieve a standard of living commensurate with their productivity and external environment. The paper did not tackle the question of the optimal speed of RER adjustment, but we would like to finish by emphasizing the standard conclusion that such adjustment could proceed relatively rapidly, so long as (a) structural reforms are pursued diligently, so as to reduce the extent of structural rigidities in the economy; and (b) output, employment rates, and capacity utilizations do not show signs of precipitous declines.

References

- Clarida, R. and J. Gali, 1994, "Sources of Real Exchange Rate Fluctuations: How Important Are Nominal Shocks," NBER Working Paper No. 4658.
- Clark, P., 1994, *Exchange Rates and Economic Fundamentals: A Framework for Analysis*, IMF Occasional Paper No. 115 (Washington: International Monetary Fund).
- , and R. MacDonald, 1999, "Exchange Rates and Economic Fundamentals: A Methodological Comparison of BEERs and FEERs," in MacDonald, R., and J. Stein, eds., *Equilibrium Exchange Rates*.
- , 2000, "Filtering the BEER: A Permanent and Transitory Decomposition," IMF Working Paper 00/144 (Washington: International Monetary Fund).
- De Broeck, M. and V. Koen, 2000, "The Great Contraction in Russia, the Baltics and the Other Countries of the Former Soviet Union: A View from the Supply Side," IMF Working Paper 00/32 (Washington: International Monetary Fund).
- , and T. Sløk, 2001, "Interpreting Real Exchange Rate Movements in Transition Countries," IMF Working Paper 01/56 (Washington: International Monetary Fund).
- Edwards, S., 1985, "Commodity Export Prices and the Real Exchange Rate in Developing Countries: Coffee in Colombia," NBER Working Paper No. 1570.
- , 1986, "Real Exchange Rate Variability: an Empirical Analysis of the Developing Countries Case," NBER Working Paper No. 1930.
- , 1989, *Real Exchange Rates, Devaluations and Adjustment: Exchange Rate Policy in Developing Countries* (MIT Press).
- , 1994, "Real and Monetary Determinants of Real Exchange Rate Behavior: Theory and Evidence from Developing Countries," in Williamson, J., ed., 1994, Ch. 4.
- Elbadawy, I., 1994, "Estimating Long-Run Equilibrium Real Exchange Rates," in Williamson, J., ed., 1994, Ch. 5.
- Faruqee, H., 1995, "Long-Run Determinants of the Real Exchange Rate: A Stock-Flow Perspective," *IMF Staff Papers* 42:1, pp. 80–107 (Washington: International Monetary Fund).
- Feyzioglu, T., 1997, "Estimating the Equilibrium Real Exchange Rate: An Application to Finland," IMF Working Paper 97/109 (Washington: International Monetary Fund).

- Hinkle, L. E., and P. J. Montiel, ed., 1999, *Exchange Rate Misalignment: Concepts and Measurement for Developing Countries*, Oxford University Press.
- IMF, 2002, *Russian Federation—Selected Issues*, IMF Board Paper SM/02/63 (Washington: International Monetary Fund).
- Isard, P., and H. Faruqee, 1998, "Exchange Rate Assessment: Extensions of the Macroeconomic Balance Approach," IMF Occasional Paper No. 167 (Washington: International Monetary Fund).
- , H. Faruqee, G. Russell Kincaid, and M. Fetherston, 2001, "Methodology for Current Account and Exchange Rate Assessments," IMF Occasional Paper No. 209 (Washington: International Monetary Fund).
- Kahn, M., and Ostry, J., 1991, "Response of the Equilibrium Real Exchange Rate to Real Disturbances in Developing Countries," IMF Working Paper WP/91/3 (Washington: International Monetary Fund).
- Lane, P., and G.M. Milesi-Ferretti, 2001, "The External Wealth of Nations: Measures of Foreign Assets and Liabilities for Industrial and Developing Countries," *Journal of International Economics* 55, pp. 263–294.
- , 2002, "Long-Run Determinants of the Irish Real Exchange Rate," *Applied Economics* 34, pp. 549–553.
- , 2002b, "External Wealth, The Trade Balance, and the Real Exchange Rate," *European Economic Review* 46:7.
- MacDonald, R., 1995, "Long-Run Exchange Rate Modeling: A Survey of Recent Evidence," *IMF Staff Papers* 42 (September), pp. 437–498 (Washington: International Monetary Fund).
- , and L. Ricci, 2002, "Estimation of the Equilibrium Real Exchange Rate for South Africa," forthcoming IMF Working Paper (Washington: International Monetary Fund).
- , R., and J. Stein, 1999, *Equilibrium Exchange Rates* (Boston, MA: Kluwer Academics).
- Mongardini, J., 1998, "Estimating Egypt's Equilibrium Real Exchange Rate," IMF Working Paper 98/5 (Washington: International Monetary Fund).
- Paiva, C., 2001, "Competitiveness and the Equilibrium Exchange Rate in Costa Rica," IMF Working Paper 01/2 (Washington: International Monetary Fund).

Phillips, P.C.B., and M. Loretan, 1991, "Estimating Long-run Economic Equilibria", *Review of Economic Studies*, 58, pp. 407–436.

Reinhart, C., 1995, "Devaluation, Relative Prices, and International Trade," *IMF Staff Papers* 42:2 (June), pp. 290–312 (Washington: International Monetary Fund).

Williamson, J., ed., 1994, *Estimating Equilibrium Exchange Rates* (Washington: Institute for International Economics).

IV. THE CHOICE OF A NOMINAL ANCHOR: IS RUSSIA READY FOR INFLATION TARGETING?¹

A. Introduction

1. **This paper examines the conduct of monetary policy by the Central Bank of Russia (CBR) since 1999 and assesses whether and how the policy framework could be modified to keep inflation on a downward path.** Since the August 1998 crisis, the authorities have been successful in steadily reducing inflation while accumulating large balance of payments surpluses generated by high world energy prices. This was made possible by the large budget surpluses which helped partially sterilize the considerable foreign exchange inflows, and a strong recovery in money demand in the aftermath of the crisis. The CBR may find it difficult to continue to rely on these factors in the period ahead if the relaxation of fiscal policy continues, the pace of money demand growth moderates, and the recent decline in net private capital outflows continues. Given the need to bring inflation further down,² the existing monetary framework would need to be modified to deal with these challenges.

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

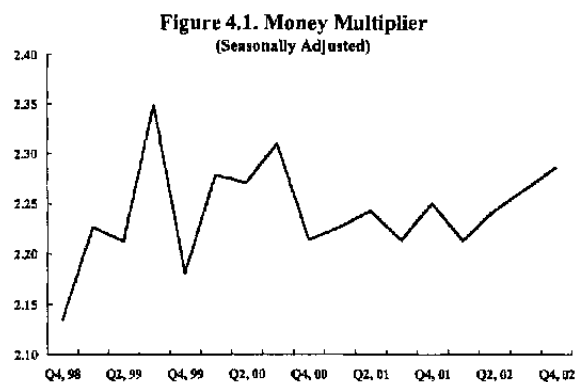
- The authorities should consider adopting a nominal anchor. However, the traditional anchors have several drawbacks which would make them unsuitable for Russia.
- The authorities should consider moving to a full-fledged inflation targeting regime as this would give precedence to the inflation objective over other priorities. This would help anchor inflationary expectations, reduce the scope for discretionary policy changes, and help achieve a faster pace of disinflation.
- Many of the pre-conditions for inflation targeting either already exist in Russia, or can be established without much difficulty, including mechanisms to ensure a supportive fiscal policy. However, the development of effective tools to conduct monetary policy as well as the development of the financial sector may require some time, and therefore, delay the possible introduction of inflation targeting.
- Nevertheless, the CBR should consider beginning the process of transition to such a regime by placing greater emphasis on its inflation reduction objective. Key to this process is the authorities' willingness to make greater use of the interest rate tool and to allow more flexibility in the exchange rate regime.

¹ Prepared by Angana Banerji (EU2).

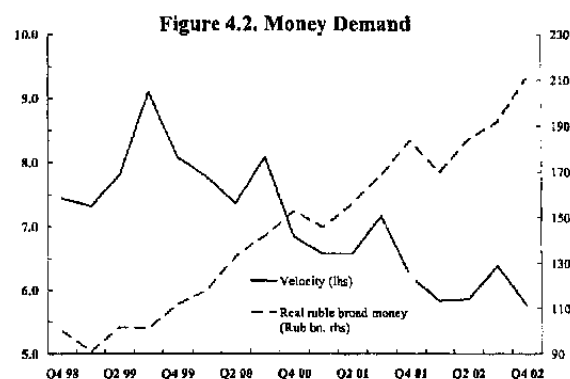
² See Chapter I.

B. Monetary Policy in Russia Since 1999

3. **In principle, the CBR conducts monetary policy on the basis of a reserve money targeting framework.** It specifies intermediate targets in terms of an annual rate of growth of ruble broad money that would be consistent with the inflation objective. Given a multiplier with no clear trend (Figure 4.1), the operational targets are set in terms of reserve money, and operational procedures are based on net international reserves and net domestic assets of the monetary authority.



4. **However, in practice, the CBR pursues multiple objectives.** According to the CBR Law and subsequent amendments, the CBR's monetary operations are to be geared toward meeting the twin objectives of price stability as well as ruble stability. Moreover, since 1999 monetary policy has been guided by several considerations—reducing inflation, slowing the pace of real ruble appreciation in the face of strong balance of payments inflows to preserve growth, and accumulating sufficient foreign exchange reserves to service external liabilities.



Having built up a sizeable reserve cover (\$48 billion, 6.3 months of imports at end-2002), the focus of monetary policy shifted to inflation reduction and limiting the real appreciation of the ruble in recent years. The CBR

Table 4.1. Percentage Change Relative to Beginning Year Base Money

	Dec 99	Dec 001	Dec 01	Dec 02
Base money	54	60	38	30
NIR	61	165	69	69
NDA	-7	-105	-31	-39
Net credit to general government	14	-57	-12	-3
Net credit to banks	-10	-25	0	-10
Other items net	-10	-22	-19	-26

acknowledges that in the coming years monetary policy goals would also include the establishment of stable and "reasonable" short-term interest rates to discourage speculative capital inflows and to establish confidence in the banking sector regarding the availability of ruble liquidity when needed.

5. **Limiting the pace of real appreciation has been of paramount importance to the CBR.** It has sought to accomplish this objective by engineering a gradual nominal depreciation of the ruble through largely unsterilized net CBR purchases in the foreign exchange market (Figure 4.3). Given an estimated inflation path, the nominal exchange rate followed a path consistent with the targeted real appreciation of the ruble. Inflationary pressures generated by this policy have been limited because the liquidity injections by the CBR have, to some extent, been absorbed by a faster-than-expected growth in money demand and a build up in government balances in the central bank as a result of successive years of budgetary surpluses (Table 4.1). Nevertheless, M2 grew even faster and resulted in inflation exceeding targeted levels (Table 4.2), although the extent of overshooting in 2002 was minimal.³

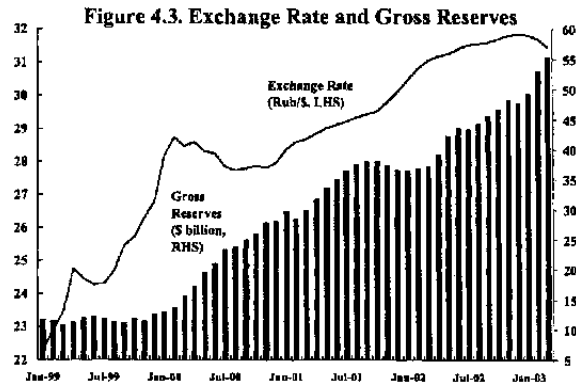


Table 4.2. Russian Federation: The CBR's Targets Versus Outcomes 1/ (In Percent)

	Inflation (e.o.p.)		Annual Ruble Broad Money Growth	
	Target	Outcome	Target	Outcome
1999	20-30	37	18-26	57
2000	18	20	21-25	62
2001	12-14	19	27-34	40
2002	12-14	15	24-28	32

1/ The CBR's "Basic Guidelines of State Integrated Monetary Policy" for relevant years.

³ Money and inflation targets have also been breached due to technical factors. First, an assessment of the strength of money demand has been complicated by the considerable uncertainty and frequent data revisions in estimated GDP growth and the structural break in an estimated money demand equation as a result of the 1998 crisis. Thus, to some extent, the higher than targeted money growth mainly reflects a stronger growth in money demand than originally anticipated. Second, due to a lack of coordination with the government, the CBR has been unable to take into account the effect of administered price adjustments when setting its inflation target. Third, liquidity management has been complicated by the inadequate coordination between the CBR and MOF regarding the timing and amount of budgetary spending which have been characterized by large surges at year-end. Finally, the lack of effective instruments of monetary policy (due, inter alia, to possible balance sheet constraints which have likely eased in recent years) have limited the CBR's ability to effectively sterilize liquidity injections.

Box 4.1. Monetary Policy Instruments in Russia Since 1999

During 1999–2002, the CBR has had access to a number of instruments for conducting monetary policy, although only a few are actually used. The lack of a single policy instrument (interest rate) has hampered the signaling and implementation of monetary policy, which has been further undermined by the CBR's intervention at various points on the yield curve.

Until late 2002, the CBR's liquidity draining instruments comprised:

- **Deposit facility (SF)**, used at the commercial banks' initiative at rates fixed by the CBR for various maturities (overnight to 3 months).¹
- **Foreign exchange swaps (MO)**, mainly used to manage ruble liquidity.
- Other instruments which are seldom used include: (i) outright **government security sales (MO)**, whose use is limited by the small size of the CBR's portfolio of tradable government securities; (ii) **CBR debt instruments sales (OBRs) (MO)**, whose sale is constrained by legal requirements for issuance and unfavorable tax treatment; (iii) **foreign exchange outright sales (MO)**, which are used only to smooth volatility in the foreign exchange market; and, (iv) **modified repo (MO)**, for which there is little demand, involving a sale of government securities at an artificially high price with the issuance of an irrevocable offer to purchase those securities again at some date in the future at a given (even higher) price.²

In November 2002, **biweekly deposit auctions** of a 1-week maturity were introduced as the CBR's main intervention tool in times of excess ruble liquidity. All maturities beyond 1 week for the standing deposit facility were eliminated, with a 3 percent rate set for the maturities between overnight and 1 week. "**Revised modified**" (**reverse**) **repos** were introduced with a 1 month maturity with biweekly auctions.

Until late 2002, the CBR's liquidity providing instrument comprised:

- **Purchase of foreign exchange**, which is frequently used but for exchange rate management rather than ruble liquidity management purposes.
- **Intraday and (automatic) overnight credits if intraday credit is not repaid (SF)**, which is used in relation to payment system. Overnight credits are collateralized and carry a penal interest rate.
- Other, rarely used, instruments comprise: (i) **Lombard credit (SF)**, (ii) **Lombard auctions (MO)** in principle conducted weekly for up to 10-day finance at a fixed rate, and monthly for 90-day finance; (iii) **collateralized refinance credit (SF)**, to stimulate lending to the real economy, as the required collateral is linked to real economy e.g., trade bills; (iv) **Foreign exchange swaps (MO)**, used occasionally by some 10 banks mainly at certain times of the month e.g., when tax payments are due.

In September 2002, a **standing overnight foreign exchange swap facility** was introduced to overcome the segmentation of the ruble money market and to diversify the collateral base. Standard **repo** operations with 1–7 day maturities were also introduced, primarily to develop a repo market for future purposes and to support securities market development.

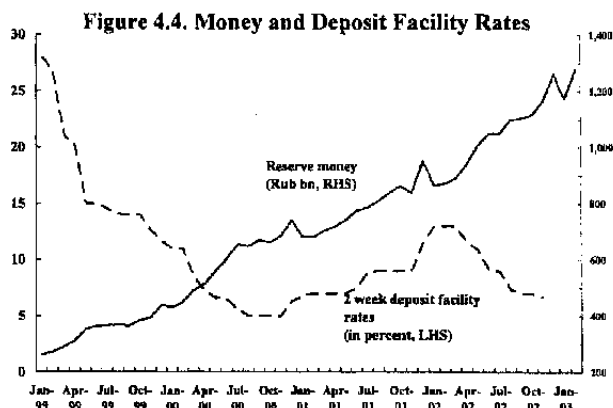
The recent changes are welcome and there is evidence that intra-month volatility in the ruble money market has declined following the introduction of the new instruments, especially foreign exchange swaps to inject overnight ruble liquidity during the last 10 days of a month when ruble liquidity customarily tightens due to tax payments and prudential regulations. Despite the improvement, however, the ruble money market remains segmented and thin, resulting in volatile overnight rates. Moreover, while the deposit auction is supposed to be the main instrument to influence the ruble money market, foreign exchange operations (especially outright purchases) remain frequent, often sending conflicting signals about the stance of monetary policy. This is further complicated by the fact that the CBR continues to over-determine the yield curve by fixing the interest rates for the entire short end (overnight to 1 month).

1/ SF stands for standing facilities, MO for market operation instruments.

2/ The artificially high price allows the CBR to not have to recognize a book loss on its balance sheet (since the securities currently held are valued well above market prices).

6. **In the event of a conflict between the two objectives, the CBR's exchange rate objective has taken precedence over its inflation objective, especially in recent years.**

To this end, the CBR has, on occasions, opted not to deploy its existing monetary policy instruments (Box 4.1) to mop up excess liquidity, preferring to accept the inflationary consequences instead. Most notably, although the CBR limited (or partly reversed) its foreign exchange market



interventions in anticipation of the end-year budgetary spending surges during 2000–02, it chose not to sterilize the excess liquidity more aggressively through a proactive increase in its deposit facility rates (Figure 4.4).^{4 5} Moreover, the CBR's revealed preference has been for limiting the real appreciation of the ruble through a nominal depreciation of the ruble in combination with a higher than targeted inflation. Public statements by high ranking CBR officials would seem to bear out these conclusions. For instance, the CBR has recently indicated that a nominal exchange rate appreciation could be considered only over short periods of time but not over a longer period such as a few months or a year. The monetary policy framework practiced by the Russians can thus be characterized as “inflation targeting lite” (Stone, 2002) as the CBR has used an inflation target to define its monetary policy framework but has not been able to subordinate other objectives to the inflation target.

7. **While the monetary policy framework of the CBR has slowed the real appreciation of the ruble and successfully reduced inflation, the pace of disinflation has been slower than targeted by the authorities.** Some part of the deviation may be explained by the increase in administered prices whose weight in the CPI basket is not public knowledge.⁶ While these adjustments have been economically necessary, the timing and amount of adjustment have been difficult to predict, and it is difficult to estimate the inflationary impact of such adjustments. Other exogenous factors have also had an inflationary impact—for example, staff estimates indicate that a 1 percent increase in world

⁴ Deposit facility rates (1 and 2 week rates) were last increased in January, 2002; however, the increases were modest and the rates continued to remain negative in real terms.

⁵ In this context it must be noted that the CBR's ability to sterilize large amounts of liquidity injections might, to some extent, be limited by its balance sheet constraints, although these constraints have likely eased in recent years.

⁶ In addition to headline inflation, from January 2003, Goskomstat has also started publishing estimates of core inflation on a monthly basis. The excluded items account for 17 percent of the total CPI basket.

oil prices would translate into a 0.1 percentage point increase in inflation. Nevertheless, inflationary pressures generated by the nominal exchange rate depreciation engineered by the CBR have contributed importantly to the breaching of the authorities' inflation target.⁷

C. An Appropriate Nominal Anchor for Russia over the Longer Term

8. **The monetary policy framework that has prevailed has a built-in inflationary bias and is not sustainable over the longer term.** The circumstances which have so far enabled the CBR to simultaneously lower inflation while checking real appreciation in the face of strong balance of payments flows (see paragraph 5) are unlikely to persist over the medium-term; GDP can be expected to grow at a more sedate pace if much needed structural reforms to boost the non-energy sector are not undertaken; oil prices may fall from their current high levels; and the cost of structural reforms—once implemented—could raise the level of budgetary expenditures. Furthermore, the robust growth of money demand after the 1998 crisis is unlikely to continue at the same pace, as key contributing factors—the reduction of non-payments and barter, and the return of macroeconomic and political stability—are unlikely to play as large a role in the future, and, as just noted, high rates of growth are unlikely to materialize in the absence of key structural reforms. Weaker budget surpluses and money demand growth would constrain the CBR's ability to manage monetary and exchange rate policy in a manner which would keep inflation on a downward path while limiting the pace of real appreciation. Monetary and exchange rate policy would be further complicated if the current trend of considerable capital inflows were to continue and strengthen, as this would likely make the usual monetary policy instruments less effective in stemming pressures on the exchange rate.⁸ Looking ahead, therefore, the CBR should consider how best to modify the existing monetary framework to deliver low and steadily declining inflation rates under the changing circumstances.

9. **Under these changing circumstances, a steady pace of disinflation would be facilitated by the adoption of inflation reduction as the primary objective of monetary policy and the selection of a nominal anchor to guide inflationary expectations.**⁹ The choice of inflation as the CBR's primary objective would help influence inflationary expectations by signaling to the market that the CBR gives priority to reducing inflation in the event of conflict between its exchange rate and inflation objectives. Moreover, since inflationary expectations are likely quite entrenched after 5–6 years of double digit inflation

⁷ Staff analysis (Chapter II) show that in Russia the nominal exchange rate pass-through to inflation varies between 0.5–0.7 percentage points for a 1 percent change in the nominal exchange rate and is transmitted within 2–3 quarters. The immediate impact of a depreciation of the nominal exchange rate on inflation is fast (transmitted within one quarter) and relatively high (roughly 0.3 percentage points).

⁸ IMF Resident Representative's Office, Moscow (2002). Also available via the Internet: <http://www.imf.org/external/country/rus/rr/2002/pdf/111402.pdf>

⁹ Chapter I explains why a faster pace of disinflation would be desirable.

and a slow pace of disinflation, the explicit choice of a suitable and credible nominal anchor could also help realign expectations, not least by signaling a change in current policy.

10. **More generally, the extent to which the different regimes are successful in achieving price stability depends critically on their ability to reduce discretionary policymaking.** Policy makers may often have the incentive to pursue time-inconsistent policies—expansionary policies with the aim of producing higher growth and employment in the short-run at the expense of higher inflation but not higher growth or employment in the long run. By acting as a constraint on domestic policy, a nominal anchor would help weaken the time-inconsistency problem so that in the long run, price stability is more likely to be achieved.

11. **The conventional forms of nominal anchor—money and exchange rate—have important drawbacks in the Russian context.**

- **Exchange rate pegging** would have the advantage of linking the Russian inflation rate and expectations to that of the anchor country.¹⁰ It would provide an automatic rule for conducting monetary policy which helps reduce the time-inconsistency problem; and, it is simple, clear and easily understood by the public. Nevertheless, such a strategy would be risky because of Russia's high dependence on natural resources and susceptibility to large terms of trade shocks; the structural and price rigidities in the system which would limit the economy's ability to adjust to large shocks; and the possible absence of supporting (especially fiscal) policies in the future which could lead to large, disruptive corrections. It will remove the signal that the foreign exchange market provides about the stance of monetary policy on a daily basis. Finally, under such a regime, it is difficult to establish the accountability of the central bank unless its balance sheet and actions are fully transparent.
- **Monetary targeting** would allow the CBR to adjust its monetary policy to cope with domestic considerations. Like an exchange rate target, it provides immediate signals to the public and markets about the stance of monetary policy and helps influence expectations. Monetary targets also promote almost immediate accountability for monetary policy and so help constrain the policymaker in making time-inconsistent decisions. However, these advantages can *only* be reaped provided there is a strong and stable relationship between the monetary aggregate and inflation. Given the difficulty in predicting the extent of the remonetization process, projecting money demand in Russia is subject to great uncertainty and, therefore, monetary targeting would be problematic.¹¹

¹⁰ An extreme form of this could be establishing a currency board.

¹¹ Banerji (2002a).

12. **Many countries have recently adopted inflation targeting as their monetary policy regime, given the increasingly complex the relationship between monetary aggregates and inflation.** While inflation targeting shares some of the drawbacks of both exchange rate pegging and monetary targeting, it has several important advantages. Unlike exchange rate targeting, it allows the policy maker to focus on domestic considerations and to respond to shocks to the domestic economy. Unlike monetary targeting, it envisages a reduced role for intermediate targets such as money growth because the monetary policy strategy can no longer rely on a stable money-inflation relationship. Indeed, an inflation target allows the monetary authority to use all available information to determine the best course for monetary policy. Inflation targeting is readily understood by the public and is thus highly transparent and allows for greater accountability of the central bank. Finally, by focusing the political debate on what the central bank can do in the long run (control inflation) versus what it cannot do (raise growth),¹² it reduces political pressure on the central bank to pursue inflationary monetary policy.

13. **The Russian authorities may want to consider moving to a full-fledged inflation targeting regime over the medium term, with the CBR gearing its monetary policy actions toward an explicit inflation target.** An inflation targeting regime would help shift public attention toward low and stable inflation and guide expectations downwards. Given the difficulty of predicting money demand, it would be superior to monetary targeting and would enhance the accountability and discipline of monetary and fiscal policies as the CBR and the government gear their policies to achieve the targeted inflation rate to which they are both committed (see paragraph 17, Section D). In light of Russia's dependence on oil exports, inflation targeting would also be superior to exchange rate pegging because it would allow the CBR to focus on shocks to the domestic economy in the event of a terms of trade shock. While inflation targeting has a potential drawback in that it could exacerbate the impact of a terms of trade shocks on growth, this impact can be moderated by a careful choice of the inflation target (see paragraph 20) and the adoption of a fiscal rule (and/or an oil stabilization fund) to support the inflation target¹³ Moreover it would allow the central bank to respond to short-term deviations without threatening its long-term credibility, and finally, it would motivate institutional reform of the central bank (Section D).

14. **While conditions are not appropriate for an immediate move to inflation targeting, a credible commitment to an inflation targeting may bring forward some of the benefits of a single nominal anchor.** Moreover, public discussion of the benefits of a single anchor can help motivate the fiscal and structural reforms needed to establish

¹² Concerns about real GDP growth are usually reflected in the determination of the pace of disinflation.

¹³ Several resource-based countries (such as Norway, New Zealand, Canada, Chile and Australia) have adopted inflation targeting to anchor monetary policy. These regimes have allowed deviations from the targeted inflation in response to temporary supply shocks (e.g., food and energy prices), indirect tax changes, and imputed rental costs.

credibility. Finally, a period of transition may be needed to lay the institutional groundwork for the new regime (Table 4.3).

Table 4.3. Transition to Full-Fledged Inflation Targeting

	Beginning of Transition to Inflation Targeting	Adoption of Full-Fledged Inflation Targeting
Brazil	June 1999	June 1999
Chile	September 1990	September 1999
Czech Republic	December 1997	December 1997
Israel	December 1991	June 1997
Poland	October 1998	March 1999
South Africa	August 1999	February 2000

D. Pre-Conditions for Inflation Targeting in Russia

15. International experience has shown that several initial conditions would need to be in place in Russia in order to support an inflation targeting framework.¹⁴ These are:

Inflation as the primary objective of monetary policy

16. **It would desirable to amend the Central Bank Law to ensure that price stability is the primary objective of monetary policy.** This would ensure that the CBR has the necessary legal basis to allow the inflation target to take precedence over other objectives. The CBR could still intervene in the foreign exchange market; indeed all inflation targeting central banks explicitly allow for such an option. However, to reinforce its commitment to the inflation target, the CBR would need to publicly commit to limiting interventions in the foreign exchange market to smoothing the effect of temporary fluctuations and attaining the inflation objective.¹⁵ Concerns about competitiveness, growth and external position would be best achieved through fiscal or structural policies.

17. **The CBR would need to have the necessary political support to give priority to the inflation objective over other objectives.** Besides making it a legal requirement for the CBR to place precedence on reducing inflation, another way to ensure the necessary political buy-in would be to involve the government in setting the inflation target. This would

¹⁴ Stone (2002).

¹⁵ In recent years, such interventions among inflation targeting countries have been practiced mainly by emerging market countries with thinly-traded currencies and greater susceptibility to disturbances emanating from the foreign exchange market.

strengthen the credibility of the inflation targeting framework by committing the government to operate fiscal policy—including wage policy—in a manner that would support the achievement of the inflation objective. Moreover, it would give the government the incentive to coordinate the amount and timing of administered price increases.¹⁶

Instrument independence

18. **The CBR Law grants the CBR sufficient discretion in attaining its monetary policy objective (instrument independence).** However, this law has recently been amended to establish a National Banking Council (NBC) comprising representatives from the government, parliament and presidency with the power to approve those aspects of the CBR's budget which relate to personnel, capital investment and other administrative expenditures. The NBC is also empowered to pronounce on the CBR's monetary policy operations and it remains to be seen whether this hinders the CBR's ability to conduct monetary policy.

19. **There may be a need for the government to regularize its financial relations with the CBR in order to enhance the CBR's ability to undertake sterilization operations on a large scale.** While its income position has strengthened¹⁷ with the accumulation of foreign assets and through the restructuring of part of its portfolio of government bonds to market-interest rate terms, a reliable assessment of the CBR's capital position is complicated by valuation issues. These involve both its holdings of government securities that do not pay market interest rates and of precious metals, both of which, consistent with Russian Accounting Standards, are valued at acquisition costs. To ensure that the CBR's financial position does not pose a constraint on its ability to conduct monetary policy, it may be necessary for the government to restructure a sufficient portion of its outstanding liabilities to the CBR.¹⁸

Public accountability

20. **To establish credibility, the CBR must be held publicly accountable and consistently match word to deed.** It is important to achieve a relatively high degree of transparency and accountability, given the long and variable lags between policy actions and inflation outcomes. To this end, the public should be provided with periodic reports to be able to monitor the CBR's performance on an ongoing basis, despite the difficulties posed by policy transmission lags. Efforts in the following areas should help improve public accountability:

¹⁶ There are a number of issues related to the inflation target itself where the role of the government would be very important (see paragraph 20).

¹⁷ The CBR's profit increased from Rub 1.2 bn in 1999 to Rub 9 bn in 2002.

¹⁸ In February 2003, part of the government paper in the CBR's securities' portfolio was restructured into Rub 30 billion of marketable securities.

- The inflation target—the numerical targets, the underlying price index, the underpinning assumptions and the time horizon for its achievement—should be made explicit and public. Inflation forecasts should be published and updated regularly.
- The CBR should target the headline CPI as this measure of inflation is more likely to be understood by the Russian public and is therefore more likely to influence inflation expectations. As in most countries, a target range (rather than a point target) could be specified as it would allow the CBR some flexibility in responding to shocks, with the width of the target adjusted if large shocks are anticipated. Such a mechanism would be superior to the use of “escape clauses” (predefined conditions under which deviations from targets would be tolerated) to enhance the CBR’s credibility.
- The public should have a clear understanding of the principal monetary policy operations that are executed to achieve the inflation target. The signal being conveyed by the CBR should be readily discerned by the public, and therefore, the CBR’s recent efforts to improve the signaling content of its monetary policy instruments (see Box 1) is a step in the right direction.
- The CBR should disclose information about the monetary policy framework in a timely manner to help ensure that the public has enough information to assess its policy performance. While there has been considerable progress in improving transparency of monetary and financial policies, the content and timeliness of disclosures could be further improved through greater disclosure of the financial relationship between the CBR and its various subsidiaries; use of a broader set of disclosure channels; improving the content and timeliness of disclosure; and fuller explanation of the reasons underlying changes in monetary policy, especially the CBR’s transactions with precious metals.¹⁹ The intention of preparing and publishing financial accounts on the basis of the International Accounting Standards would, if implemented, be a considerable improvement.
- An ex-post assessment of the performance of monetary policy would enhance public accountability (e.g., by publishing the minutes of the quarterly discussions of the NBC on the implementation of monetary policy).

21. **The CBR should build expertise in external relations and economic research to achieve greater transparency.** It is important that the information disclosed is timely, consistent, and readily understood by the target audience. Moreover, a clearer understanding of the analytical underpinnings of the inflation process would enable the CBR to better explain its monetary policy stance to the market.

¹⁹ See Financial System Stability Assessment (2003).

Macroeconomic pre-conditions

22. **From the macroeconomic point of view, Russia seems well placed to move toward an inflation targeting regime relatively soon:**

- Some institutional arrangements are already in place to ensure the **absence of fiscal dominance** in Russia. The CBR Law stipulates that fiscal deficits cannot be monetized by the CBR, and, following the 1998 crisis Russia has successfully brought its fiscal house in order, running surpluses since 2000. Additional measures may be needed to ensure that fiscal policy continues to be supportive of the authorities' real exchange rate and inflation objectives in the period ahead. A joint government-CBR commitment to the inflation target would enlist the necessary fiscal support (see paragraph 17). In addition, it will be critical to support the inflation targeting framework through a fiscal rule (and/or an oil stabilization fund) that would insulate the budget from political pressures to raise spending when oil revenue are high.
- Russia's **external position is sufficiently stable** to enable monetary policy to focus on achieving the inflation target over time without being sidetracked by developments in the foreign exchange market. While the external position has not been a major factor in determining the appropriate timing for adopting inflation targeting in other countries, typically most emerging market countries have moved to inflation targeting after several years of external stability (the exceptions being Brazil and Turkey).
- Ideally Russia should adopt an inflation targeting framework after it has succeeded in **lowering inflation** to single digits. International experience shows that most countries adopted full fledged inflation targeting when inflation was on the decline—as is the case in Russia—and when inflation had fallen below the 10 percent mark.²⁰ At the outset of full-fledged inflation targeting, inflation should be low enough to ensure a reasonable degree of monetary control. Countries that adopted inflation targeting with higher rates of inflation and crawling exchange rate regimes disinflated over long periods to limit disruptions to the real economy (e.g., Chile, Israel, and Poland).

Monetary policy tools

23. **The CBR would need to further enhance the effectiveness of its monetary policy instruments in order to be able to steer inflation toward the target.** Recent IMF technical assistance recommended the following measures be taken:

- The existing monetary instruments should be redesigned to improve policy implementation and efficiency and the CBR has recently taken several important steps in this area (Box 4.1). In particular, a short-term deposit auction interest rate was

²⁰ See SM/00/199.

introduced as the CBR's policy intervention open market operation interest rate. International experience indicates that every full-fledged inflation targeting central bank uses a short-term interest rate as its operating tool, ranging in maturity from overnight to three-months.²¹ Moreover, virtually all inflation targeting central banks employ market-based indirect instruments of monetary policy (open market operations and repurchase transactions) involving domestic or foreign securities.

- *Adoption of a formal liquidity forecast procedure* to enhance liquidity management and make monetary policy decision-making more forward looking. In order to improve its ability to forecast the market's liquidity needs, in November 2002, the CBR formalized existing procedures for pooling together all requisite information within the CBR in order to provide estimates of the market's liquidity needs to the Monetary Policy Committee on a daily basis. Plans for improving inter-agency cooperation in this area are also underway. However, problems arising as a result of uncertainties regarding government transactions remain to be addressed.
- *The reform of the payment systems would benefit monetary operations.* Despite substantial improvements over the past ten years, the system remains fragmented and inefficient, and thereby impedes the development of the CBR's monetary and market operations. Recognizing this, the CBR is in the process of assessing progress in implementing the recommendations of the concept paper adopted in 1997 with a view to formally amending the paper.

24. The CBR should further improve and seek to better understand the effectiveness of the transmission mechanism of monetary policy.²² The stronger the transmission links, and the better they are understood, the more effective will changes in monetary instruments be in attaining the inflation target. One of the principal challenges faced by inflation targeting central banks, especially for emerging market countries, is the uncertainty in the transmission of monetary policy to inflation. In Russia, as in other emerging market countries with higher inflation rates, the transmission channels are characterized by downward price stickiness and rapid pass-through from the exchange rate to inflation.²³

25. A well functioning financial system which can respond to the CBR's monetary policy decisions appropriately, is key. Thus, reforms to rebuild confidence in the banking

²¹ A few countries, which are on their way to inflation targeting, used or still use a quantity guide (e.g., Peru) but they plan to move to a short-term interest rate-operating guide in the future.

²² Emerging market countries, however, tend to rely less on statistical models due to data shortfalls and ongoing structural changes (SM/00/199).

²³ See Chapter II.

system and improve competition in the financial system will also help improve the effectiveness of monetary policy.²⁴

- **The CBR should ensure that the financial system is stable before moving to full-fledged inflation targeting.** A stable financial sector would enable monetary policy to pursue the inflation target and not be sidetracked by concerns about the health of the financial sector. Financial system stability has preceded the adoption of inflation targeting by emerging market countries as large bailouts of financial institutions through the provision of central bank liquidity could generate inflation pressures.
- **Well-functioning financial markets facilitate the formulation of monetary policy and also improve the effectiveness of monetary policy operations.** The CBR will need to be able to conduct these transactions in large sizes to implement monetary policy efficiently, manage its balance sheets and the country's foreign exchange reserves, and, when required, supply credit to financial institutions in its role as lender of last resort.

Inflation forecasting

26. **The CBR should further develop its ability to make inflation forecasts using a broad range of available information on the inflationary outlook.** This will enable the CBR to adjust the stance of monetary policy whenever there is evidence that future inflation might differ persistently from the target path, and improve its credibility in the eyes of financial market participants and the public. Thus, the CBR should further broaden the information base on which it undertakes monetary policy decisions;²⁵ develop the necessary expertise for modeling and forecasting purposes, develop "hands-on" experience in working with forward-looking models of inflation, gathering qualitative information on economic conditions, and assessing judgmentally the outlook for inflation and the appropriate policy response in an inflation targeting framework. In addition, the CBR should collect as much information as possible from discussions with private sector officials and financial market participants. These discussions should seek to obtain information on the state of the economy and the implications for future inflation and may also provide additional insight into private-sector inflation expectations. These discussions could be particularly useful in Russia, where economic relationships are changing rapidly, and financial markets are less developed.

²⁴ Banerji (2002b).

²⁵ Even if they have successfully developed models, emerging market central banks must often rely on more qualitative information since these economies are typically subject to more uncertainties than those of industrial countries.

E. Transition Period

27. **Many of the above pre-conditions for moving to full fledged inflation targeting already prevail in Russia, or can be established without undue delay.** Macroeconomic pre-conditions are broadly appropriate and are unlikely to prove a major constraint to the adoption of full fledged inflation targeting if fiscal policy were to be based on an appropriate fiscal rule. The necessary changes in the legal and institutional set up can be made relatively quickly. There has been considerable progress in improving transparency and public accountability in monetary policy operations and further progress can be easily accomplished. The new CBR management has been active in explaining the stance and objectives of its monetary policy operations to market participants. In recent years, the CBR has begun work on improving its analytical understanding of the inflation process; this work should be accelerated and its focus extended to better understand the monetary transmission mechanism.

28. **The speed with which the CBR can adopt full fledged inflation targeting would depend on how quickly it can improve the effectiveness of monetary policy and develop the financial sector.** In both these areas the CBR has recently taken several important initiatives. However, the reform agenda is vast, especially that relating to financial sector reform.

29. **While a full-fledged inflation targeting regime cannot be immediately adopted, the CBR can already begin the process of transition to such a regime by placing greater emphasis on its inflation reduction objective.** Key to this process would be to allow for greater flexibility in the exchange rate regime. In doing so, the CBR should bear in mind that transition countries with open capital markets tend to attract large capital flows and have limited domestic monetary independence (Lipschitz et al., 2002). This makes the economy more vulnerable, especially if the perceived risk premia of investing in the country is unrelated to domestic market developments. In such a situation, fiscal policy becomes the most important tool of stabilization policy even though the exchange rate regime can have a significant influence on market perceptions and behavior, with sufficient variations in the exchange rate providing a significant deterrent to foreign exchange exposure. Other policy tools are institutional in nature—greater transparency can help market participants to make better informed decisions about risk premia; the pace and sequencing of capital account liberalization should be geared toward longer-term flows and should take into account the stability and resilience of the financial markets; and, finally, the prudential and regulatory regime should be sufficiently well developed to be able to properly assess risks.

Table 4.4. Institutional Details Associated with Inflation Targeting--A Cross-Country Comparison

1 Primary objective of monetary policy in central bank law	Price stability: Poland, New Zealand, Norway	Other objectives: Chile (currency), Israel (multiple), Canada (multiple), Australia (multiple)	
2 Target set by	Jointly by government and central bank: New Zealand, Australia, South Africa, Canada	Central bank: Chile, Poland	Government: Norway
3 CPI targeted	Total CPI: Australia (excluding interest charges), New Zealand (excluding interest charges and section prices), Chile, Poland	Underlying CPI: Canada, South Africa, Norway	
4 Escape clause	Yes: Canada, New Zealand, Chile, Poland	No: Australia, South Africa, Norway	
5 Specification of target	Target range: Australia, New Zealand, Canada, Chile, Poland, South Africa	Point target: Norway	
6 Instrument independence	Exists: Chile, Israel, Poland, South Africa, Australia, Canada 1/, New Zealand 2/, Norway	Does not exist:	
7 Exchange rate regime	Floating: Chile, New Zealand, Australia, Poland, South Africa, Norway (managed float)	Other:	
8 Inflation rate when full-fledged inflation targeting adopted	Below 10 percent: South Africa (5.2), Australia (1.7), Canada (4.4) 3/, New Zealand (4.9) 3/, Norway	Above 10 percent: Chile (26), Poland (11.7), Israel (19)	
9 Horizon	More than one year: Norway (24 months), New Zealand (18-24 months), Canada (18-24 months), Australia (on average over the economic cycle), Chile (more than 1 year from 2001 onwards)	Annual targets: Poland, South Africa, Israel	

Source: SM/00/199 and Soikkeli, J. (2002), "The Inflation Targeting Framework in Norway" (IMF Working Paper WP/02/184).

1/ But in exceptional circumstances the Minister of Finance can issue a formal directive to the central bank Governor.

2/ Subject to a requirement that monetary actions be taken with regard to financial system soundness.

References

- Amato, Jeffrey and S. Gerlach, 2001, "Inflation Targeting in Emerging Market and Transition Economies: Lessons After A Decade" (Centre for Economic Policy Research Discussion Paper Series, No. 3074)
- Banerji, Angana, 2002a, "Money Demand", IMF Country Report No. 02/75 Russian Federation: Selected Issues and Statistical Appendix, April
- , 2002b, "Banking Sector Reform", IMF Country Report No. 02/75 Russian Federation: Selected Issues and Statistical Appendix, April, and FSSA.
- Berge, Claes, 2000, "Inflation Forecast Targeting: The Swedish Experience" in Bléjer et al., "Inflation targeting in practice: Strategic and Operational Issues and Application to Emerging Market Economies"
- Bléjer, Ize and A. Leone, 2000, "Inflation targeting in practice: Strategic and Operational Issues and Application to Emerging Market Economies"
- Clinton, K., 2001, "On Commodity-Sensitive Currencies and Inflation Targeting" (Bank of Canada Working Paper 2001-3)
- Debelle Guy, 2000, "Inflation Targeting and Output Stabilization in Australia" in Bléjer et al., "Inflation targeting in practice: Strategic and Operational Issues and Application to Emerging Market Economies"
- International Monetary Fund, 2001, "Establishing the Preconditions for Inflation Targeting"(Monetary and Exchange Affairs Department Operational Paper)
- International Monetary Fund, 2000, "Practical Issues in the Adoption of Inflation Targeting by Emerging Market Countries" (SM/00/199)
- Mourmouras, A., 2002, "Poland's Inflation Targeting Performance: A Peer Group Perspective", IMF Country Report No. 02/128, Republic of Poland: Selected Issues and Statistical Appendix, June
- International Monetary Fund Resident Office in Russia, 2002, "Russia: Trends in Net Private Capital Flows"
- Kongsamut, P., 2001, "Philippines: Preparations for Inflation Targeting" (IMF Working Paper WP/01/99)
- Lipschitz, L., et al., 2002, "Capital Flows to Transition Economies: The Dilemma for Stabilization Policy" (IMF Working Paper WP/02/11)

- Longworth, D, 2000, "The Canadian Monetary Transmission Mechanism and Inflation Projections" in Bléjer et al., "Inflation targeting in practice: Strategic and Operational Issues and Application to Emerging Market Economies"
- Masson, P., et al., 1997, "The Scope for Inflation Targeting in Developing Countries" (IMF Working Paper WP/97/130)
- Morandé Felipe and Klaus Schmidt-Hebbel, 2000, "Monetary Policy and Inflation Targeting in Chile" in Bléjer et al., "Inflation targeting in practice: Strategic and Operational Issues and Application to Emerging Market Economies"
- Mishkin, F.S., 1999, "International experiences with different monetary policy regimes," *Journal of Monetary Economics*, 43, 579-605
- Leiderman Leonardo and Gil Bufman, 2000, "Inflation Targeting Under a Crawling Band Exchange Rate Regime: Lessons from Israel" in Bléjer et al., "Inflation targeting in practice: Strategic and Operational Issues and Application to Emerging Market Economies"
- Research Department, Central Bank of Brazil, 2000, "Issues in the Adoption of an Inflation Targeting Framework in Brazil" in Bléjer et al., "Inflation targeting in practice: Strategic and Operational Issues and Application to Emerging Market Economies"
- Soikkeli, J., 2002, "The Inflation Targeting Framework in Norway" (IMF Working Paper WP/02/184)
- Stone, M., 2002, "Inflation Targeting Lite" (IMF Working Paper WP/02/102)

V. MEDIUM-TERM FISCAL STANCE AND THE POTENTIAL ROLE OF AN OIL STABILIZATION FUND¹

- *Russia's fiscal position appears sustainable over the long term, although severe adverse shocks could result in significant liquidity constraints. Prudent fiscal policy will also be necessary in support of an overall macroeconomic framework that lessens tensions between the exchange rate and inflation objectives.*
- *Accordingly, the authorities should initially target a balanced budget, on the basis of a world oil price of about \$20/bbl. This target could be relaxed to cover the costs of major structural reforms and infrastructure investments once they are initiated in earnest.*
- *To help shield government expenditure from the impact of volatile oil revenues, the budget target could be set out in a fiscal rule as follows: surpluses would be accumulated during periods of high oil prices, and deficits accommodated during periods of low oil prices. The rule may include some flexibility for discretionary policy, and ideally would be asymmetric: underlying fiscal policy would adjust more rapidly to oil price downturns than to increases.*
- *The fiscal rule could be supported by the introduction of an oil stabilization fund. The fund would need to be transparent, fully integrated with the budget, and governed by a sound asset management strategy. Norway's oil fund could serve as a useful model.*

A. Introduction

1. **Russia's economic rebound since the 1998 crisis has been facilitated by a dramatic improvement in the fiscal position, with the general government balance improving by 11 percent of GDP from 1997 to 2001.** A sharp rise in world oil prices supported this improvement, with revenue from the oil and gas sector rising by about 3 percent of GDP over the period. Tightened spending, however, played a larger role in the strengthening of the fiscal balance, with non-interest expenditure of the general government contracting by more than 8 percent of GDP

2. **In 2002, however, the balance of the general government fell by 2½ percent of GDP compared to 2001 due to a similar rise in non-interest expenditure.** For 2003, the overall balance of the general government is expected to improve due to higher oil prices, although non-interest spending is projected to rise by ½ percent of GDP.

¹ Prepared by Mark Lewis (EU2).

3. **This relaxation of fiscal policy—the non-oil balance has deteriorated by 4 percent of GDP since 2000—raises the question of the appropriate medium-term fiscal stance, and whether a looser fiscal policy is appropriate in light of potential shocks and the authorities' overall macroeconomic objectives.** Under current projections, Russia is expected to continue a rapid accumulation of foreign reserves in the near future, and a tighter fiscal policy would help sterilize part of the reserves accumulation and mitigate potential inflationary pressures. In recent years, the rapid remonetization of the economy has muted inflationary pressures. However, the extent of further remonetization is unclear, and the Central Bank of Russia's capacity to assume a much heavier sterilization burden remains limited.

4. **The following section of this paper re-examines Russia's medium term fiscal outlook in light of these concerns, and proposes a baseline fiscal position that addresses the vulnerabilities and potential demands on public expenditure in the period ahead, while ensuring a fiscal stance consistent with the objectives of the macroeconomic framework. The paper then considers whether Russia would benefit from introducing a fiscal rule, specifically one calling for a balanced budget, adjusted for the price of oil.² Russia's budget and the economy have both become more dependent on the oil sector in the last several years, and thus fluctuations in the price of oil could prove destabilizing to the macroeconomic situation. A budget balance adjusted for the oil price would serve a stabilization function; periods of high prices would call for the accumulation of surpluses, and correspondingly, low prices would entail deficits.³**

5. **As an extension of the discussion of a potential fiscal rule, the final part of the paper considers the advantages and disadvantages for Russia of establishing an oil fund, whereby proceeds from the oil sector would be separately identified and managed. Such a fund could help reinforce the benefits of a fiscal rule in neutralizing the effect of oil revenue fluctuations on the budget. An oil fund might also bring some additional political economy advantages in terms of insulating oil revenues from short-term political demands. The paper also examines which type of oil fund might be most appropriate for Russia, and highlights important design issues in setting up such a fund.**

² Unless otherwise indicated, oil prices in this paper refer to the IMF's World Economic Outlook (WEO) composite oil price (simple average of prices for Brent, Dubai, and West Texas Intermediate). The benchmark price for Russian oil is that of Urals crude, which currently represents about 95 percent of the WEO price. Also, references in this paper to the oil sector and oil revenues are inclusive of the gas sector. Movements in world gas prices generally track those of crude oil with a lag of three to six months.

³ The output shocks that have characterized Russia's transition have also obscured any evidence of economic cycles. Coupled with poor data on capacity utilization, this renders efforts to estimate output gaps for Russia, or a cyclically-adjusted fiscal balance, not only difficult but also prone to large errors.

B. Identification of an Appropriate Medium-Term Fiscal Stance

Debt Sustainability and Potential Vulnerability Factors

6. **A debt sustainability analysis carried out last year for Russia (SM/02/63, Sup. 1, 02/22/02) found that Russia's fiscal position will likely be sustainable, but nonetheless remains vulnerable to a sharp downturn in world energy prices.** The analysis concluded that Russia should be targeting a fiscal deficit of 1–2 percent of GDP over the medium and long term; public sector debt ratios would decline fairly rapidly, with federal government debt falling to about 30 percent of GDP by 2005. This scenario was predicated on the assumption that economic developments in Russia would gradually resemble those in advanced transition countries and emerging markets.⁴

7. **An update of this analysis on the basis of a revised macroeconomic framework indicates that Russia's public debt-to-GDP ratio would decline rapidly under a baseline scenario of solid real GDP growth, moderate interest rates, and the world oil price falling to about \$21/bbl, with fiscal policy targeted to be in surplus over the medium term (Tables 5.1 and 5.2).** A tightening of underlying fiscal policy is assumed in 2004, to offset some of the deterioration in the non-oil balance since 2000. Revenue as a share of GDP is projected to decline moderately, and then stabilize over the medium term in line with movements in the world oil price, while noninterest spending as a share of GDP is expected to drop by more than 3 percent of GDP in 2004–05, before rising gradually in the outer years, offsetting the fall in interest payments.

8. **Extending this analysis would also entail consideration of key risk factors that may undermine Russia's debt dynamics.** The most immediate vulnerability factor for the fiscal position is the world price of oil. Russia's fiscal revenues are highly sensitive to world oil prices, particularly following changes to the tax regime introduced in 2002;⁵ a \$1/bbl. drop in prices lowers revenue by 0.4–0.45 percent of GDP.⁶ An additional risk factor for Russia is the possibility of significantly lower economic growth. Contributing factors to lower growth could include a slower pace of reform and correspondingly lower investment levels; a shift in investor sentiment regarding Russia's economic prospects; and a lower oil

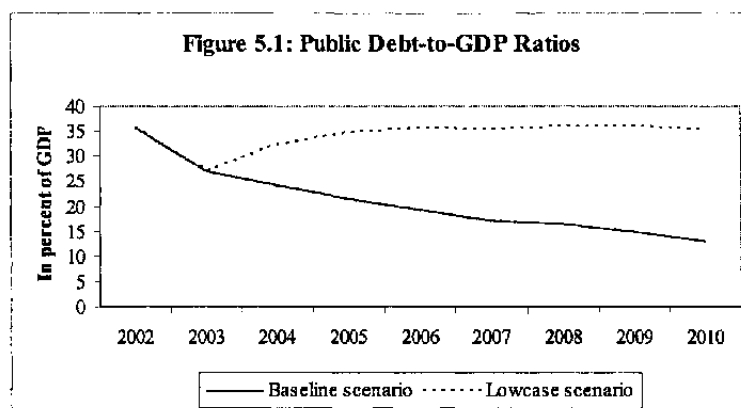
⁴ Key assumptions included: real GDP growth of 5-6 percent; real interest rates of 6½ percent; and a WEO oil price of \$19/bbl.

⁵ Russia derives revenue from the oil and gas sector through a range of taxes and fees, which vary with how sensitive they are to the world price of oil. The oil export tariff and extraction tax are directly linked to world prices, with the export tariff and excises on exports of gas, dividends from state oil companies, and the corporate profit tax from oil and gas companies largely moving in line with world oil prices. Collections from a range of other taxes, including excises on oil products, VAT, and royalties, vary much less with movements in world prices (Kwon, 2003).

⁶ This relationship is nonlinear, with oil price movements having a larger impact on revenue at higher prices, and could shift substantially in the event of large movements in macroeconomic variables such as inflation and the exchange rate.

price.⁷ Although not considered in this paper, other risk factors could include a significant weakening of the fiscal position due to greater political pressure for tax reductions or higher spending, and potential pension liabilities.

9. **The sustainability analysis was also carried out under a lowcase scenario** with the following assumptions: (i) an oil price that falls to \$15/bbl. in 2004, and drops further to \$12/bbl. in 2005, before stabilizing at \$15/bbl. in 2007; (ii) real GDP growth that falls to 2 percent in 2004 and then 1 percent in 2005, before



rising to 3 percent by 2008; and (iii) an exchange rate that adjusts to keep a minimum reserve coverage of 100 percent of short-term debt. Under this scenario, the fiscal deficit widens to 2½ percent of GDP in 2004 due to lower revenues and higher interest payments. Some fiscal adjustment is assumed, with non-interest expenditure falling by a total of about 5½ percent of GDP. Russia's debt-to-GDP ratio initially rises, but remains at about 35 percent of GDP (Figure 5.1, Table 5.3). Thus, **the fiscal position is sustainable over the long term, taking into account potential vulnerability to an oil price decline and contingent on some fiscal adjustment, although Russia would be highly vulnerable to additional shocks.**

Table 5.1. Baseline and Lowcase Scenarios: Projections for 2007

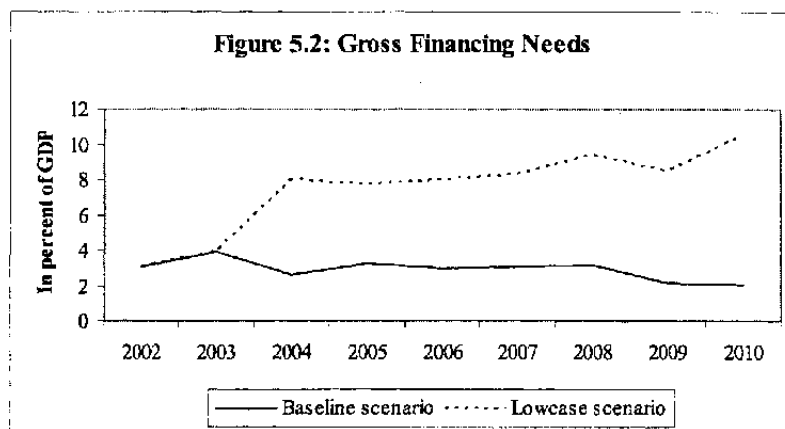
	2002 Estimate	2007 Projections	
		Baseline Scenario	Lowcase Scenario
Assumptions			
WEO oil price (\$/bbl.)	25	21	13
Real GDP growth (% change)	4.3	4.0	2.0
Indicators (percent of GDP)			
Public sector debt	35.6	17.2	35.3
Overall budget balance	0.6	1.1	-0.8
Gross financing needs	3.1	3.0	8.3

⁷ Over the short term, real GDP growth in Russia is strongly correlated with oil export earnings. Over the longer term, this link is less clear and may in fact be the inverse due to the impact of potential Dutch disease effects on growth prospects in the nonoil sector.

Liquidity Constraints

10. Irrespective of the movements in debt ratios over the long term, the risk factors could have a more immediate impact if they result in Russia facing short-term liquidity constraints and a resulting payments crisis. Thus, while the long-term debt position appears sustainable, Russia could be vulnerable to short-term liquidity crunches in the context of adverse shocks.

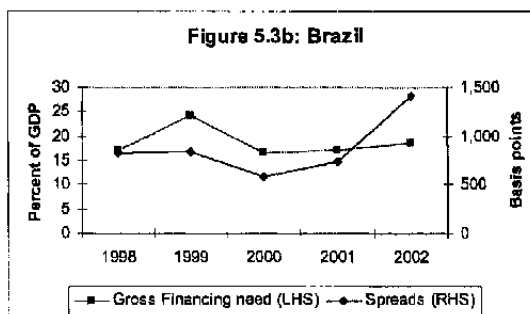
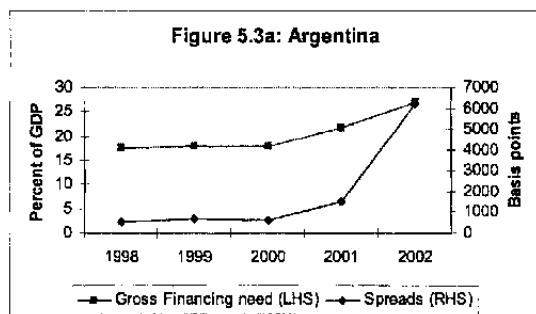
11. Under the baseline scenario, Russia's gross financing needs remain at about 3 percent of GDP (Figure 5.2).⁸ However, under the lowcase scenario, gross financing needs increase to 9 percent of GDP by 2008. In subsequent years, financing needs may increase even further as official debt is replaced with commercial debt and maturities are



shortened under pressure of the uncertainty. Given the small size of the Russia domestic debt market, domestic issuance might only be able to finance a small part of this financing need. Gross financing needs for the budget during the 1996–98 period totaled 7–9 percent of GDP. Although there are some arguments for why Russia could fulfill higher financing needs than before the crisis—for example, the stock of debt as a share of GDP is now lower—Russia may nonetheless face relatively tight financing limits. This suggests limited margin for error, and leaves little room to adjust the fiscal stance through lower taxation or higher expenditure levels in the context of the structural reform agenda.

12. This concern is further underscored by the sensitivity of borrowing costs to financing needs. The recent examples of Argentina and Brazil illustrate the non-linearity of external borrowing costs for many emerging market countries. Small increases in gross financing needs resulted in huge increases in spreads, as market sentiment shifted rapidly. Circumstances for each country differ, including their debt dynamics, sensitivity to shocks, and perceived willingness to adjust. However, these cases suggest that countries, including Russia, should err on the side of caution in considering a widening of gross financing needs.

⁸ Gross financing needs comprise the fiscal deficit, plus amortization on medium and long-term public debt and the stock of short-term public debt.



Medium-term budget target

13. **Russia's debt position is currently sustainable, even under a scenario of a serious shock, most notably to the oil price and growth.** Such a shock could potentially present Russia with significant liquidity constraints and potentially much higher borrowing costs, although a rapid fiscal adjustment would likely be sufficient to reduce financing needs to levels compatible with available financing. However, Russia's important structural reform program could stall in the future if resources were not available to finance needed but costly structural reforms. This would argue for maintaining a more prudent fiscal position to ensure some margin in the event of adverse shocks.

14. **Perhaps of more immediate relevance for Russia, in light of projections under the baseline scenario, is that a restrained fiscal policy in the period ahead is needed to support the overall macroeconomic framework.** The continuation of the good fortune which in part has allowed Russia to pursue multiple and potentially conflicting macroeconomic objectives is uncertain. Fiscal restraint therefore becomes increasingly important in ensuring a continued reduction in inflation and in helping to slow the real appreciation of the ruble by reducing pressures on non-tradable goods prices.

15. **On this basis, a proposed target would be a balanced budget, constructed around an oil price at the long-run average of about \$20/bbl.** This balanced budget target would imply that fiscal policy in 2004—adjusted for oil at \$20/bbl—would need to be tighter than in 2003. The projected surplus would ensure greater consistency with the authorities' macroeconomic objectives, and maintaining this stance over the medium term would allow room for financing the structural reforms and infrastructure investment necessary to modernize and diversify Russia's economy, and ultimately to reduce vulnerabilities.

C. A Potential Fiscal Rule for Russia

Advantages and Disadvantages of a Fiscal Rule

16. **The sensitivity of Russia's budget to fluctuations in oil receipts, and the attractiveness of such receipts for interest groups that might want access to the financial resources, suggests that a rules-based fiscal policy could be an appropriate option for**

Russia. A fiscal rule might lessen discretionary intervention, and support the conduct of countercyclical fiscal policy centered around the fiscal balance target articulated above.

17. **In this respect, the strongest argument for a fiscal rule is based on political economy considerations.** Cross-country evidence suggests that democratic governments have a deficit bias and that a discretionary approach to fiscal policy is often time inconsistent (Kopits, 2001; Taylor, 2000). In the presence of a fiscal rule, public and legislative debate revolves around expenditure priorities and tax structure, but not the overall stance of fiscal policy. Accordingly, the introduction of fiscal rules can depoliticize fiscal policy and restrict the influence of interest groups.

18. **For emerging market economies, the advantages of fiscal rules are stronger.** As the capital account is gradually opened up, the more disciplined policy stance and greater credibility associated with fiscal rules can help a country avoid, or at least better withstand, the rapid shifts in sentiment and capital movements that can lead to a financial crisis (Kopits, 2001). Fiscal rules in Brazil and Peru have, arguably, placed these countries in a better position to weather financial turbulence than if the rules had not been adopted.

19. **Similarly, a fiscal rule would be very useful if Russia were to move towards inflation targeting.** A rules-based fiscal policy would prevent fiscal dominance and could buttress the institutional arrangements to ensure the presence of appropriate conditions for implementation of inflation targeting.

20. **There are several important arguments against fiscal rules.** The first is that some discretion is necessary to achieve fiscal policy goals, in particular in fine-tuning fiscal policy to offset shocks that cannot be fully accommodated by automatic stabilizers. On a more practical level, fiscal rules may be of little significance. Many governments have committed themselves to, and then implemented, sound fiscal policies in the absence of a fiscal rule; this is particularly notable among OECD countries (e.g., the United States during the 1990s). And, many governments have circumvented fiscal rules in place, or pursued unsound fiscal policies in the presence of rules.⁹

21. **Nonetheless, those countries that have successfully maintained sound fiscal policies in the absence of rules have most often had a long history of credible and transparent fiscal policy, coupled with strong public institutions.** In addition, while fiscal rules can be circumvented, this can largely be mitigated by a tighter definition of the rule. Similarly, the fact that rules deprive the authorities of discretion in responding to short-term shocks can be addressed by including adjustors or bands, within which the authorities would have discretion to respond to shocks.

⁹ Many U.S. state governments are required to maintain balanced budgets, which did not prevent them from pursuing very pro-cyclical policies during the 1990s. A number of these governments are now faced with the need to contract fiscal policy in the context of a sluggish economy.

22. **Russia has a very recent history of sound fiscal policy.** Credibility in overall macroeconomic management, in particular in the fiscal area, is gradually being established, but concerns remain both about how durable the political consensus is for sound policy, and the strength of fiscal agencies and institutions.¹⁰ In this light, a fiscal rule is potentially a useful tool in enabling Russia to continue to make progress towards stabilization, and to better ensure in the period ahead a stable fiscal framework and preservation of any windfall gains from the oil sector.

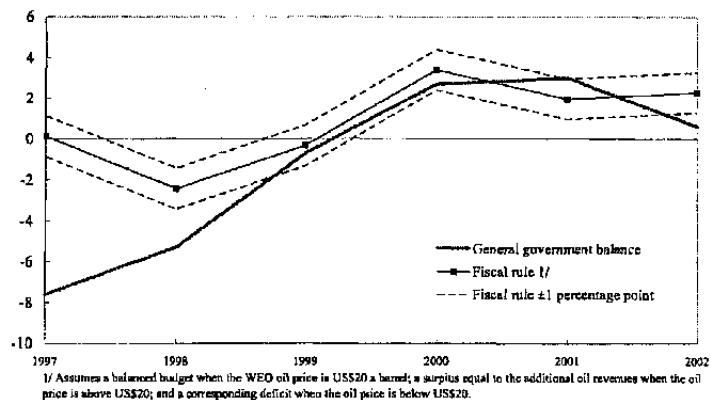
23. **A fiscal rule for Russia could be adopted formally through legislation, which would likely require amending the Budget Code.** This approach would have the benefit of preventing any “escape” from the rule. Alternatively, the rule could be articulated as government policy, without having formal legislative backing. In this case, the rule could underpin the formulation of the budget and the medium-term budget framework, but would not be legally binding. The obvious disadvantage of such a non-binding rule is that policy makers may choose to ignore it.

The Balance Budget Rule

24. **A fiscal rule for Russia would need to reflect Russia’s vulnerabilities to shocks outlined above, and ensure that a mechanism is in place to insulate the budget from fluctuating oil sector receipts.** The proposed target indicator would be the general government budget balance (Box 1). In line with the discussion above on the appropriate fiscal stance, the rule would target a balanced budget under the scenario of oil prices at the 10-year average of about \$20/bbl, pending the initiation of the structural reform program. The baseline oil price would be a moving average—reset, for example, every year—and thus gradually reflect current movements in prices.

25. **The design of the rule would need to insulate the budget from fluctuations in the oil price.** Accordingly, if oil prices exceed \$20/bbl, the resulting gains—as measured by the additional tax receipts directly accruing from the oil sector—would be saved, producing a budget surplus; if prices fall below the target, fiscal policy would target a deficit. This would keep the nonoil budget deficit of the general government constant at about 5 percent of GDP and ensure a stable

Figure 5.4: General Government Fiscal Balance, 1997-2002
(In percent of GDP)



¹⁰ Concerns regarding fiscal agencies at the federal level are multiplied at the regional level.

fiscal policy. There is some evidence that Russia had been implicitly following such a fiscal rule from 1999–2001 (Figure 5.4), but then deviated in 2002, reflecting the loosening of underlying fiscal policy.

Box 5.1. Measures of the Fiscal Balance

The general government budget balance is a comprehensive and simple measure of fiscal performance; it has the benefit of being easily monitorable and understood, and thus as serving as the basis for the fiscal rule. However, a rule could be defined in terms of other fiscal flow or stock indicators. An example of a stock indicator would be the debt to GDP ratio, although this suffers from a range of measurement problems, including valuation changes. For flow indicators, the primary balance has some advantages in that it excludes interest expenses, which are not under the control of the authorities, but it does not have the operational simplicity of the overall balance. A rule on the nonoil balance would better isolate the discretionary policy decisions of the government from developments in the oil/gas sector, but also suffers from potential measurement problems.

Ideally, the rule would target the general government to capture the broadest level of fiscal activity. In Russia, however, the Ministry of Finance only controls the federal government budget, with no direct control over the local and regional government budgets, or the extrabudgetary funds (primarily the pension fund). A mitigating factor is that the subnational governments and extrabudgetary funds have relatively limited borrowing authority, which is broadly controlled by the federal government. Thus, the fiscal rule could target the federal budget alone, or include an adjustor to offset anticipated deficits in local/regional governments and the extrabudgetary funds.

26. A sustained drop in the world price of oil would appear only slowly in the average price on which the budget is based. Accordingly, it would be prudent to ensure that the rule called for some fiscal adjustment in the event that oil prices drop below the long-term average for an extended period. One suggestion would be that the targeted fiscal deficit in the year following the oil price drop reflect a fiscal adjustment equivalent to one half of the difference between the long-term average and the actual oil price.

27. To allow for some discretion in fiscal policy to accommodate fluctuations in the cycle, the rule could also include a band of, for example, ½–1 percent of GDP around the target within which the budget balance could fall. Adjusting the budget balance for the oil price is an imperfect means of mimicking a cyclically-adjusted budget balance approach. The band would allow for some discretionary policy as warranted by macroeconomic conditions.

D. An Oil Fund for Russia

Considerations

28. **A fiscal rule defined in the manner outlined above could be supplemented by the introduction of an “oil fund”, which would serve to further identify and isolate resources accruing from the oil sector.**¹¹ Oil funds are usually established to neutralize the macroeconomic and fiscal impact of fluctuating oil revenues, and/or to boost public savings to smooth out consumption of an exhaustible resource. Although these objectives could just as well be accomplished through rules-based or even discretionary fiscal policy, an oil fund might prove advantageous for Russia, primarily for political economy reasons.¹²

29. **Isolating revenues from the oil sector in an oil fund could serve as a firewall in deterring political interest groups from making claims on the resources and increasing the pressure for procyclical fiscal policy.** By being formally if not institutionally separate, policy makers would be in a stronger position to argue that greater oil revenues should not allow a general loosening of fiscal policy. Similarly, an oil fund could potentially foster greater transparency and accountability in the management of oil receipts by ensuring that they are not mixed with general budgetary resources.

30. **In addition, an oil fund could help mitigate potential Dutch disease effects, a common problem in countries experiencing sustained inflows.** Sustained progress in the nonoil sector would benefit Russia greatly, but this would be hampered by a strong rise in the price of nontradables and associated real appreciation of the ruble induced by a higher nonoil budget deficit. An oil fund could help limit pressure on the real exchange rate during a period of high oil prices, as some of the windfall revenue would be saved. While this could be accomplished by the proposed fiscal rule, a fund would provide greater assurance that oil-related receipts could be managed separately from other budgetary resources.

31. **Some countries, faced with the depletion of natural resources in the not-distant future and with concern for intergenerational equity, have opted for funds to boost savings and smooth consumption over the long term; this was one of the prime motivations of the fund established in Norway.**¹³ However, the exhaustion of Russia’s oil and gas resources is difficult to envisage in the foreseeable future (Box 5.2), and thus the aim of the proposed oil fund would not be to directly serve as a vehicle to steadily accumulate savings over the long term, but rather to help neutralize the impact of fluctuations in oil sector receipts.

¹¹ The macroeconomic justification for oil funds, and their track record, are ambiguous (Davis et al., 2001).

¹² Many of the factors that contributed in recent years to a political consensus in favor of sound fiscal policy may no longer be compelling, as reflected in the weakening of the fiscal position in 2002. In particular, the shock of the 1998 fiscal crisis may be wearing off.

¹³ Skancke (2002); see Davis et al (2001) and Fasano (2000) for other country examples of oil funds.

Box 5.2. Long-Term Prospects for Russia's Oil and Gas Sector

With some of the largest hydrocarbon reserves in the world, there is little threat to the sustainability of Russia's oil and gas output in the foreseeable future. Proved oil reserves currently total about 20 years of current output, and gas reserves total about 80 years of output, almost a third of worldwide gas reserves.¹ These figures—which are significantly higher than the corresponding ratios for OECD hydrocarbon resources—have remained roughly constant in recent years as extraction rates have been offset by the identification of additional reserves.

In addition, the ratio of reserves to output is unlikely to fall significantly in coming years, even as production rises. Not included in these totals are resources already discovered and surveyed in the Soviet period which remain to be assessed and tapped. Key areas where resources have been discovered but not assessed include offshore resources in the Barents and Caspian seas, and onshore resources, for example in Eastern Siberia.² Continued exploration bolstered by ongoing technological improvements will augment discovered resources, and allow their commercial exploitation. These efforts are led by the large Russian petroleum firms, which have ambitious exploration programs in place.

Some caveats apply. If oil prices slump over the long run, the extraction of some identified reserves might not be commercially viable, with a corresponding disincentive for further exploration. Also, long run prospects in the sector will entail Russia boosting export capacity infrastructure for both oil and gas. Some oil sector analysts have suggested that by the end of this decade, as exploration moves to areas that pose more challenging technical difficulties for extraction, Russian oil firms will need to increasingly involve foreign partners for their technical expertise and financial resources. The recent decision by British Petroleum to participate in a Russian venture is an encouraging step in this regard. Analysts have also suggested that continued delays in the restructuring of Gazprom could dampen output and exploration prospects in the gas sector.

¹ British Petroleum (2002).

² Renaissance Capital (2002).

Design of an Oil Fund

32. **This section summarizes the key issues in designing an oil fund** to ensure that the fund serves the macroeconomic stabilization objectives, but does not create governance problems or difficulties in fiscal management. While the precise nature of an oil fund could take several forms, it should be based on full **transparency and accountability**. The operations of the fund should be fully open, based on explicit guidelines, and free from political interference. Accountability would be ensured by requiring regular audits of the fund, which would be submitted to parliament and published.

33. **As outlined below, an oil fund for Russia, paired with the fiscal rule discussed earlier, would likely be most successful as a “virtual fund.”** Such a fund is not a distinct institutional entity; rather it is separate only from an accounting standpoint. Transfers into and out of the fund would reflect solely the budget surplus or deficit stemming from the fiscal

rule discussed above.¹⁴ This would avoid the potential problem encountered in some other countries, where transfers to the fund have to be financed from other sources if the budget balance is insufficient to make the transfers called for by the guidelines governing the fund. Ideally, the fund would be established no later than the beginning of 2004; this would have the benefit of coinciding with the start of the 2004 budget, and, in the current period of high oil prices, ensure that the fund is able to begin by establishing a stock of assets.

34. **Norway's oil fund could serve as a useful example for Russia** (Box 5.3). Institutionally, it is fully integrated within the budget, and thus functions as a virtual fund. The key advantage of Norway's fund is the transparency it brings to resources from the oil sector, which are explicitly identified while remaining integrated within the overall budget.

Oil Fund and the Fiscal Framework

35. **A stabilization fund for Russia should be fully integrated with the budget, and not set up as a separate institution.** This would allow greater coherence in budgetary planning and more effective expenditure control than would exist under a fund separate from the budgetary process. In addition, a fund fully integrated with the budget would enhance transparency by ensuring that the oversight applied to the budget would equally apply to the resources in the fund. Experience in many countries indicates that institutionally-separate funds have not been successful in deterring political pressures for greater public expenditure. Moreover, these funds have led to coordination problems by introducing a dual budget system, and have been particularly susceptible to governance weaknesses.

36. **Similarly, the resources from the fund should not be earmarked for specific expenditure categories.** Spending priorities are best identified in the context of a medium-term budgetary framework, which the Russian authorities now have in place. Earmarking risks the fragmentation of fiscal policy and the rise of extrabudgetary spending, potentially undermining the efficiency of public expenditure.

37. **The fund should be established by law.** Its operating procedures, including rules for transfers to and from the budget, the respective roles of the government ministries, and oversight through audits, should all be specified and approved by parliament. In line with the model of the Norway Fund, the fund should be under the control of the Ministry of Finance. The CBR could be delegated the responsibility of asset management, under the oversight of parliament and, where appropriate, with the use of outside asset managers. The resources of the fund would be in a sub-account of the Ministry of Finance at the CBR.

38. **Debt management should be left outside the rules and operations of the fund.** Thus, while it would not be precluded that resources from the fund could be used to pay down external debts, from the standpoint of optimal debt management, it would be best to

¹⁴ On this basis, income from the fund would accrue to the general government budget, and thus for a given target surplus/deficit, would allow higher expenditure than in the absence of the fund income.

leave these decisions to the Ministry of Finance, which with the approval of the cabinet or parliament, could direct resources from the fund to debt payments on a discretionary basis rather than as determined by a rule. Attempting to design a rule that would govern when resources from the fund would be directed to debt repayment would likely prove extremely complicated, require frequent revisions, and unnecessarily tie the hands of the Ministry of Finance.

Asset Management

39. **The asset management of the fund will need to be fully transparent, and consistent with best practices. Investments of the fund should be restricted to foreign investments** in order to ensure that petroleum inflows are sterilized, prevent the distortion of the local capital structure, and avoid political decisions influencing investment allocations. Other countries with stabilization funds permitting resources from the fund to be invested domestically have encountered low rates of return on domestic investments and significant governance problems.¹⁵

40. **Clear investment guidelines will need to be established to circumscribe the investments of the fund.** Investment guidelines outline the respective shares of fixed income instruments and equities, the maturity and currency profile of investments, and the regional allocation; these guidelines should be made publicly available. In the case of Russia, which would aim for a stabilization rather than savings fund, investments would likely have a short time-horizon. In this respect, investments should be restricted to financial instruments to ensure liquidity of the portfolio, enhance diversification, and allow easier evaluation of fund performance. Also, for diversification reasons, the fund should be prevented from investing in Russian government debt traded on international markets. Financial advisors could be engaged to assist in developing the investment guidelines.

41. **Suitable benchmarks will need to be established, against which performance of the fund could be measured.** This allows a closer evaluation of the risks in the investment decisions, and enables a better assessment of fund performance. While it is proposed that the CBR be responsible for the day-to-day management of the fund, specific investment decisions should be delegated to **outside managers** for the portions of the fund under "active management" (i.e., those parts of the fund not invested in indexes). The performance of outside managers would need to be evaluated on the basis of tightly-defined benchmarks.

¹⁵ Davis, et al (2001).

Box 5.3. Norway's Oil Fund

The Norwegian Government Petroleum Fund is often cited as an example of a successful oil fund and a possible model for Russia. This fund was established in 1990 to smooth short-term fluctuations in revenue, and to ensure that financial resources accruing from the sector are available for future generations.¹ The income of the fund consists of the net cash flow from petroleum activities plus the return on the fund's investments. Expenditures of the fund are the transfers to cover the non-oil budget deficit. The Ministry of Finance is responsible for the fund, and has delegated operational management to the central bank. Operations of the fund are fully transparent and subject to parliamentary oversight.

A central feature of the fund is that revenue from the oil sector accruing to the central government is transferred to the fund; subsequently, deficits in the nonoil budget are financed by transfers from the balances in the fund. The fund is not a distinct institution, and thus the transfers are just transactions between two government accounts at the central bank. Moreover, transactions with the fund are not meant to address the government's short-term borrowing needs, which instead are met through the issuance of short-term government debt.

The fund maintains an explicit asset management strategy to manage any accumulated surpluses. The Ministry of Finance sets the investment guidelines, implemented by the central bank, which also carries out appropriate risk management practices. Assets from the fund are invested only outside Norway, with 60 percent of the fund invested in bonds and 40 percent in equities. Parliament is informed of any significant changes to the investment guidelines, and outside experts are used to carry out independent performance measurements of the fund.

Until 2002, Norway's fund did not maintain any constraints on fiscal policy. Thus, although it was set up to manage surpluses from the oil sector and ensure higher savings, there was no rule to ensure that fiscal policy produced surpluses or generated public savings higher than would be the case in the absence of the fund. However, since 2002 the Norwegian authorities have established a fiscal rule setting the structural deficit of the nonoil central government equal to the real return on the petroleum fund. This change was introduced to clarify the fiscal stance in the period ahead and to address growing political pressures to spend a greater share of the oil wealth. This fiscal rule is aimed at preserving the real value of the financial assets, and is based only on verifiable accumulated financial assets. However, in the event that oil prices do not decline substantially, the rule implies rapidly rising non-oil deficits in line with the income from the increasing stock of assets in the petroleum fund.²

¹ Hovland (2002); Skancke (2002).

² IMF (2002b).

Table 5.2. Russian Federation: Public Sector Debt Sustainability Framework, 1997-2010
(In percent of GDP, unless otherwise indicated)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
	Actual					Prel.	Projections								
Public sector debt 1/	32.4	119.2	87.7	56.2	44.0	35.6	27.0	24.1	21.5	19.2	17.2	16.4	14.9	12.9	
Change in public sector debt	-2.9	86.8	-31.4	-31.5	-12.3	-8.3	-8.6	-3.0	-2.6	-2.3	-2.0	-0.8	-1.5	-2.0	
Identified debt-creating flows (4+7+12)	4.7	70.3	-28.2	-30.8	-10.6	-6.1	-9.2	-4.1	-3.2	-2.8	-2.3	-2.1	-1.8	-1.5	
Primary deficit	3.3	3.4	-2.9	-7.0	-5.7	-2.7	-4.3	-4.0	-3.1	-2.5	-2.2	-2.0	-1.9	-1.7	
Revenue and grants	37.1	32.9	34.0	37.0	37.1	37.3	39.3	36.7	34.6	34.2	34.2	34.2	34.3	34.4	
Primary (noninterest) expenditure	40.4	36.3	31.2	30.0	31.5	34.6	35.0	32.7	31.6	31.7	32.0	32.1	32.4	32.6	
Automatic debt dynamics 2/	1.4	66.9	-25.3	-23.8	-4.9	-3.4	-4.9	-0.3	-0.1	-0.3	-0.1	-0.1	0.1	0.2	
Contribution from interest rate/growth differential 3/	0.0	1.4	-44.5	-26.2	-8.1	-5.3	-4.3	-0.7	-0.7	-0.7	-0.4	-0.2	0.1	0.2	
Of which contribution from real interest rate	0.6	-0.1	-40.8	-21.1	-5.9	-3.7	-3.1	0.1	0.1	0.1	0.3	0.4	0.7	0.7	
Of which contribution from real GDP growth	-0.6	1.4	-3.7	-5.2	-2.3	-1.6	-1.2	-0.9	-0.8	-0.8	-0.7	-0.6	-0.6	-0.6	
Contribution from exchange rate depreciation 4/	1.4	65.5	19.2	2.5	3.2	1.9	-0.6	0.4	0.6	0.4	0.3	0.1	0.0	0.0	
Other identified debt-creating flows	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Residual, including asset changes (2-3)	-7.6	16.5	-3.2	-0.7	-1.7	-2.2	0.6	1.4	0.6	0.6	0.3	1.3	0.3	-0.4	
Public sector debt-to-revenue ratio 1/	87.2	362.7	257.8	151.8	118.5	95.4	68.8	65.6	61.9	56.1	50.3	48.0	43.5	37.6	
Gross financing need 5/	8.0	7.9	3.2	2.7	1.3	3.1	3.9	2.6	3.3	3.0	3.0	3.2	2.2	2.0	
General government budget deficit	8.0	7.9	3.2	-2.7	-3.0	-0.6	-2.5	-2.2	-1.6	-1.2	-1.1	-1.0	-1.0	-1.0	
Key Macroeconomic and Fiscal Assumptions															
Nominal GDP (local currency)	2,479	2,741	4,757	7,302	9,041	10,864	13,104	14,435	15,916	17,546	19,069	20,526	21,987	23,552	
Real GDP growth (in percent)	1.8	-4.9	5.4	9.0	5.0	4.3	4.0	3.5	3.5	4.0	4.0	4.0	4.0	4.0	
Average nominal interest rate on public debt (in percent) 6/	15.6	15.3	8.8	7.6	5.9	5.7	6.1	7.2	7.0	6.6	6.4	6.2	7.6	8.3	
Average nominal interest rate on foreign debt (in percent) 6/	3.1	5.2	2.7	5.7	4.8	4.0	4.0	3.8	3.7	3.9	3.8	3.4	3.6	3.3	
Average real interest rate (nominal rate minus change in GDP deflator, in percent)	2.1	-1.0	-55.9	-33.2	-12.0	-9.5	-9.9	0.7	0.5	0.6	1.9	2.7	4.6	5.3	
Nominal appreciation (increase in US dollar value of local currency, in percent)	-6.7	-71.1	-23.5	-4.1	-6.6	-5.2	2.4	-1.8	-3.2	-2.4	-1.9	-1.0	-0.5	-0.5	
Inflation rate (GDP deflator, in percent)	13.5	16.3	64.7	40.8	17.9	15.2	16.0	6.4	6.5	6.0	4.5	3.5	3.0	3.0	
Growth of real primary spending (deflated by GDP deflator, in percent)	12.7	-14.6	-9.4	5.0	10.0	14.7	5.2	-3.3	-0.1	4.5	5.0	4.5	4.7	4.9	

1/ Gross debt of the general government.

2/ Derived as $[(r - \pi(1+g) - g + \alpha s(1+r))/(1+g+\pi+g\pi)]$ times previous period debt ratio, with r = interest rate; π = growth rate of GDP deflator; g = real GDP growth rate; α = share of foreign-currency denominated debt; and s = nominal exchange rate depreciation (measured by increase in local currency value of U.S. dollar).

3/ The real interest rate contribution is derived from the denominator in footnote 2/ as $r - \pi(1+g)$ and the real growth contribution as $-g$.

4/ The exchange rate contribution is derived from the numerator in footnote 2/ as $\alpha s(1+r)$.

5/ Defined as public sector deficit, plus amortization of medium and long-term public sector debt, plus short-term debt at end of previous period.

6/ Derived as nominal interest expenditure divided by previous period debt stock.

Table 5.3. Russia: Public Sector Debt Sustainability Framework, 1997-2010
(In percent of GDP, unless otherwise indicated)

	Actual					Prel.	Projections								
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Public sector debt 1/	32.4	119.2	87.7	56.2	44.0	35.6	27.0	32.1	34.6	35.6	35.3	35.9	36.0	35.4	
Change in public sector debt	-2.9	86.8	-31.4	-31.5	-12.3	-8.3	-8.6	5.1	2.5	1.0	-0.3	0.6	0.1	-0.6	
Identified debt-creating flows (4+7+12)	4.7	70.3	-28.2	-30.8	-10.6	-6.1	-9.2	3.7	1.9	0.4	-0.7	-0.7	-0.2	-0.1	
Primary deficit	3.3	3.4	-2.9	-7.0	-5.7	-2.7	-4.3	0.6	-0.4	-0.6	-1.0	-0.8	-0.8	-1.0	
Revenue and grants	37.1	32.9	34.0	37.0	37.1	37.3	39.3	30.5	30.0	30.0	30.8	30.8	30.9	30.9	
Primary (noninterest) expenditure	40.4	36.3	31.2	30.0	31.5	34.6	35.0	31.1	29.6	29.5	29.7	30.0	30.1	29.9	
Automatic debt dynamics 2/	1.4	66.9	-25.3	-23.8	-4.9	-3.4	-4.9	3.1	2.3	1.0	0.4	0.1	0.6	0.8	
Contribution from interest rate/growth differential 3/	0.0	1.4	-44.5	-26.2	-8.1	-5.3	-4.3	0.2	0.2	-0.1	-0.1	-0.1	0.5	0.7	
Of which contribution from real interest rate	0.6	-0.1	-40.8	-21.1	-5.9	-3.7	-3.1	0.7	0.5	0.2	0.6	0.9	1.5	1.8	
Of which contribution from real GDP growth	-0.6	1.4	-3.7	-5.2	-2.3	-1.6	-1.2	-0.5	-0.3	-0.3	-0.7	-1.0	-1.0	-1.0	
Contribution from exchange rate depreciation 4/	1.4	65.5	19.2	2.5	3.2	1.9	-0.6	2.9	2.1	1.1	0.4	0.2	0.1	0.1	
Other identified debt-creating flows	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Privatization receipts (negative)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Recognition of implicit or contingent liabilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Other (specify, e.g. bank recapitalization)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Residual, including asset changes (2-3)	-7.6	16.5	-3.2	-0.7	-1.7	-2.2	0.6	1.4	0.6	0.6	0.3	1.3	0.3	-0.4	
Public sector debt-to-revenue ratio 1/	87.2	362.7	257.8	151.8	118.5	95.4	68.8	105.3	115.3	118.5	114.6	116.5	116.6	114.7	
Gross financing need 5/	8.0	7.9	3.2	2.7	1.3	3.1	3.9	8.0	7.8	8.0	8.3	9.4	8.5	10.5	
General government budget deficit	8.0	7.9	3.2	-2.7	-3.0	-0.6	-2.5	2.6	1.7	1.5	0.8	0.9	0.8	0.5	
Key Macroeconomic and Fiscal Assumptions															
Real GDP growth (in percent)	1.8	-4.9	5.4	9.0	5.0	4.3	4.0	2.0	1.0	1.0	2.0	3.0	3.0	3.0	
Average nominal interest rate on public debt (in percent) 6/	15.6	15.3	8.8	7.6	5.9	5.7	6.1	7.2	7.0	6.6	6.4	6.2	7.6	8.3	
Average real interest rate (nominal rate minus change in GDP deflator, in percent)	2.1	-1.0	-55.9	-33.2	-12.0	-9.5	-9.9	2.8	1.7	0.6	1.9	2.7	4.6	5.3	
Nominal appreciation (increase in US dollar value of local currency, in percent)	-6.7	-71.1	-23.5	-4.1	-6.6	-5.2	2.4	-11.9	-7.9	-4.3	-1.7	-1.0	-0.5	-0.5	

1/ Gross debt of the general government.

2/ Derived as $[(r - \pi(1+g) - g + \alpha\varepsilon(1+r)] / (1+g+\pi+gn)$ times previous period debt ratio, with r = interest rate; π = growth rate of GDP deflator; g = real GDP growth rate; α = share of foreign-currency denominated debt; and ε = nominal exchange rate depreciation (measured by increase in local currency value of U.S. dollar).

3/ The real interest rate contribution is derived from the denominator in footnote 2/ as $r - \pi(1+g)$ and the real growth contribution as $-g$.

4/ The exchange rate contribution is derived from the numerator in footnote 2/ as $\alpha\varepsilon(1+r)$.

5/ Defined as public sector deficit, plus amortization of medium and long-term public sector debt, plus short-term debt at end of previous period.

6/ Derived as nominal interest expenditure divided by previous period debt stock.

References

- British Petroleum, *Statistical Review of World Energy*, 2002.
- Davis, J. et al, *Stabilization and Savings Funds for Nonrenewable Resources*, IMF Occasional Paper No. 205, Wash. D.C. (2001).
- Fasano, U., *Review of the Experience with Oil Stabilization and Savings Funds in Selected Countries*, IMF Working Paper No. 00/112, Wash. D.C. (2000).
- Hovland, J., *The Norwegian Government Petroleum Fund*, unpublished note, IMF, Wash. D.C. (2002).
- International Monetary Fund (2002a), Selected Issues Paper SM/02/63, Wash. DC (2002).
- International Monetary Fund (2002b), *Norway: 2001 Article IV Consultation—Staff Report*, SM/02/44, Wash. DC (2002).
- Kopits, G., *Fiscal Rules: Useful Policy Framework or Unnecessary Ornament?*, IMF Working Paper No. 01/145, Wash. D.C. (2001).
- Kwon, G., *Post-crisis Fiscal Revenue Developments in Russia: From an Oil Perspective*, Public Finance and Management, forthcoming (2003).
- Renaissance Capital, *Russia Oil and Gas Yearbook 2002*, Moscow (July 2002).
- Skandck, M., *Fiscal Policy and Petroleum Fund Management in Norway*, paper presented at IMF conference on Fiscal Policy Formulation and Implementation in Oil Producing Countries, Wash. D.C (June 2002).
- Taylor, J., *Reassessing Discretionary Fiscal Policy*, Journal of Economic Perspectives (U.S.), 14, No. 3 (Summer 2000)

VI. Russia: Capital Market Developments and Issues¹

The strong gains in Russian debt and equity markets in 2002 were underpinned by robust macroeconomic performance, prudent fiscal management, strong oil prices, high ruble liquidity and expectations of a sovereign credit rating upgrade. This chapter discusses recent developments and prospects for Russian financial markets as well as related policy issues. Drawing on the experiences of other emerging markets, it highlights some structural weaknesses of Russian financial markets that need to be addressed in order to avoid potential vulnerabilities going forward. The main conclusions are: (1) given that most of the public debt stock is foreign currency denominated, there is a need to speed up the re-development of the government ruble bond market in order to reduce the debt roll-over risk in the event of an unexpected terms of trade shock and/or a temporary loss of access to the international bond market; (2) although the recent pick-up in corporate borrowing (both domestic and external) does not represent a major systemic risk, local investors' credit risk assessment capabilities need to be strengthened and rapid growth of corporate leverage and foreign exchange exposures should be monitored.

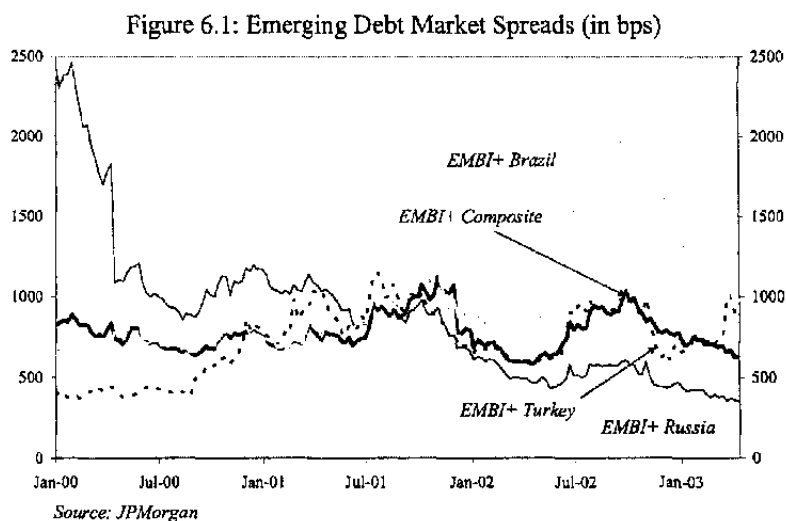
A. Government Bond Market

1. **In 2002, Russia's external debt remained, for a second consecutive year, one of the best performing assets in the emerging debt market (EDM) asset class, with the EMBI+ Russia subindex returning 36 percent (compared to a 13 percent return on the EMBI+ Composite Index).** These gains were underpinned by the continued robust macroeconomic performance, due in part to strong oil prices, and expectations of sovereign rating upgrades, which were partially validated when Moody's and S&P raised Russia's long-term foreign currency rating to just two notches below investment grade in late 2002. At the same time, Russia's external debt demonstrated relative immunity to the EDM spill-over effects from the developments in Brazil and Turkey (Figure 6.1). At present, the Russian benchmark eurobonds are trading at yields that are below those of many similarly rated sovereigns.

2. **Yields on ruble denominated government bonds continued to decline last year in tandem with external bond yields, largely owing to the stability of the ruble and declining inflationary expectations, but also to the abundant banking sector liquidity on the back of strong petrodollar inflows.** In addition, the steep decline of sovereign eurobond yields in the second half of 2002 prompted investors to consider long-dated ruble bonds as an attractive alternative to sovereign eurobonds of similar maturity. As a result, the nominal yields of the most liquid 2006 and 2008 ruble bonds fell from 17–17.5 percent in September 2002 to 14 percent in December 2002, while real yields on shorter-dated bonds remained negative. The government ruble debt duration and market liquidity improved, with the daily turnover in ruble government bond market increasing by 4 times during the last year. These trends have

¹ Prepared by Anna Ilyina (ICM).

continued into 2003, with the Ministry of Finance placing 15-year bonds at an average yield-to-maturity of only 9.7 percent in February.



3. **Near-term technical conditions are likely to remain supportive for both ruble and foreign currency denominated bonds.** In 2003, the sovereign external debt repayment will significantly exceed external borrowing.² An additional eurobond issuance on the order of \$2 billion with respect to the second tranche of the FTO/IB/IBEC debt exchange is expected later this year. However, it is unlikely that the Russian government will have a fiscal need to issue a new eurobond in 2003, though the budget includes a provision for up to \$1.25 billion of new eurobond issuance. The demand for Russian sovereign dollar bonds is expected to be strong due to the likely reinvestment of \$5.5 billion to be received by investors after the redemptions of Russia'03 and MinFin IV bonds and as more foreign investors receive mandates for investing in Russia. As for the ruble bond market, the new demand for government securities from local investors is estimated at around Rb80–100 billion in 2003, which, given that the planned net issuance is less than Rb60 billion, will put additional downward pressure on ruble bond yields.

² Debt service of the Russian government is expected to total around \$17 billion or less in 2003, which is much lower than previously estimated due to the decline in global interest rates as well as to the active liability management operations conducted by the Ministry of Finance during 2001–02, including the buybacks of the Russia'03 and MinFin IV bonds, bilateral debt reschedulings, and arrears-for-bonds offsets with local entities.

Box 6.1. Government Bond Market Structure and Investor Base

Foreign Currency Denominated Bonds

Russia's public foreign currency denominated debt amounted to around \$120 billion (35 percent of GDP) as of end-2002, of which roughly \$45 billion was in the form of government securities denominated in dollars (eurobonds and MinFin bonds).

At the end of 2002, the **investor base for Russian eurobonds and MinFins was almost equally split between foreign and domestic investors**. According to market sources (Troika Dialog, 2002), almost 60 percent of all outstanding eurobonds and MinFin bonds were held by foreigners (which may also include some Russian money invested through off-shore accounts) and about 40 percent by Russian residents. The largest share of foreign investors in Russian dollar bonds are the dedicated emerging debt market (EDM) funds. Going forward, an upgrade of the sovereign foreign currency credit rating even by one notch (which would still leave Russia below the investment grade rating) is likely to increase the demand for sovereign bonds from cross-over investors, i.e., global fixed-income and investment grade funds. Also, Russian institutional investors are likely to become more active buyers of sovereign eurobonds as capital account liberalization moves forward. At present, local institutional investors who wish to invest in foreign currency denominated securities are required to obtain a license from the Central Bank of Russia (CBR).

Ruble Denominated Bonds

The total value of ruble denominated public debt was Rb680 billion or \$21.4 billion (6.3 percent of GDP) as of end-2002. Most of this debt is in the form of non-market instruments held by the CBR. The size of the ruble denominated government bond market was around Rb217 billion as of end-2002 (2 percent of GDP). This is small in absolute terms and by comparison with other emerging markets; for example, the total value of tradable local currency denominated government debt is around 15 percent of GDP in Poland and 25 percent of GDP in Hungary. There are two types of instruments in the government bond market—T-bills (GKOs) and Treasury notes (OFZs). The planned net government bond issuance in 2003—Rb50–60 billion, of which at least half is expected to be placed with the State Pension Fund—is likely to lead to only a modest increase in the amount of tradable bonds available to market participants.

The GKO/OFZ market is dominated by two large players: as of end-2002, Sberbank held 52 percent of tradable debt and the State Pension Fund held 14 percent. The share of Sberbank in the longer-dated bond market segment is smaller, around 20 percent, and it is notably absent from the secondary market. All transactions between the State Pension Fund and the Ministry of Finance are carried out outside the market, at an average market price. According to the Ministry of Finance, the State Pension fund acquired Rb14–16 billion of the ruble denominated government paper in 2002 (by comparison, the total value of tradable bonds increased by about Rb57 billion in 2002). Going forward, the introduction of new pension legislation is expected to significantly increase the potential investor base for government paper, with private pension funds likely to become important players in the government bond market in 2004. The government is currently not looking to attract foreign investors to the ruble denominated government bond market.

4. **Russia's ability to service its debt in the medium-term is seen by market participants as virtually assured under any plausible oil price assumptions**, and some of its external vulnerability indicators (such as gross financing requirement to reserves ratio) are already close to the levels observed in the investment grade countries.³ S&P, for instance, took seven positive rating actions affecting Russia's sovereign credit rating during December 2000–December 2002 and currently has a stable outlook on Russia, which implies that the agency does not expect major improvements in sovereign creditworthiness in the near future. Furthermore, S&P's recent reports suggest that an early and steep upgrade (one notch in 2003 and one more notch in 2004) is unlikely without a visible renewed structural reform effort. In particular, the agency noted that “the absence of a viable banking sector, low labor mobility, slow progress in demonopolizing the economy, and weak institutional structure make Russia vulnerable” (Hessel, 2003).

5. As near-to-medium term debt sustainability has become less of a concern, **the government has shifted its attention to ways of improving the public debt structure and lowering debt service costs**. According to the recently published medium-term debt management paper, the authorities' strategy will be to decrease the non-market portion of public debt (including via conversion of some of the Paris club debts into tradable securities) and to increase the ruble debt stock while reducing the foreign currency denominated debt stock.⁴ Indeed, since the bulk of Russia's public debt is foreign currency denominated (Box 6.1), a relatively more aggressive ruble-denominated bond issuance with the proceeds used to retire some of the external debt would help to achieve a more balanced (in terms of the currency composition) public debt structure within a shorter time frame and to develop domestic bond market into a stable financing source. The latter would help to significantly reduce the roll-over risk in the event of an adverse terms of trade shock and/or an unexpected temporary loss of access to the international bond market.

6. Given that there is no fiscal need for larger local debt issuance, the **Ministry of Finance may experience some difficulties in balancing the objective of developing the domestic bond market with the objective of minimizing the cost of borrowing**. However, if the government takes a longer-term view of the problem (and also takes into account the fact that the development of a deep and liquid market takes time), it is likely to be more willing to accept somewhat higher short-term costs associated with promoting the domestic government securities market. In fact, some countries, such as Chile, Hong Kong SAR, and Singapore made a considerable effort to develop their domestic government bond markets notwithstanding fiscal surpluses (IMF, 2002). The recently approved medium-term debt management strategy indicates that the authorities' thinking is evolving in that direction.

³ For a detailed discussion of Russia's sovereign rating and credit fundamentals see Chapter VII.

⁴ “The Main Objectives of the Medium-Term Debt Management Policy of the Russian Federation: 2003–2005,” Moscow, Ministry of Finance, March 2003 (in Russian).

Separately, the experience of some emerging markets showed that, for instance, setting up an independent debt management agency (like the AKK in Hungary) could be an effective way of achieving better coordination between these objectives.

7. The development of the money market and the longer-dated government bond market will also **increase the number of liquid local currency instruments available to the central bank for conducting open market operations**. In November 2002, the Central Bank of Russia (CBR) introduced several new refinancing and liquidity-management instruments. In particular, the CBR began to conduct daily repo (collateralized lending) operations with the banks (GKO/OFZ dealers) for the purposes of temporary liquidity injections, which increased the demand for government paper and contributed to the decline in government bond yields late last year. More recently, the Ministry of Finance restructured the CBR's portfolio, increasing the portion of tradable instruments to about Rb30 billion, in order to raise the effectiveness of the CBR's open market operations. However, the tradable portion of the CBR's portfolio remains below 10 percent.

8. In many emerging market countries, the development of the local currency-denominated government bond market was motivated by **the need to establish a benchmark yield curve for corporate bond issuance**. In Russia, the benchmark functions for private bond issuance were performed at different points in time by various instruments, such as GKO/OFZs, the CBR's refinancing rate, TNK or Gazprom bonds as well as sovereign eurobonds. However, most of the reference rates had the same shortcomings—high volatility and high sensitivity to supply factors. In addition, the real yields on the ruble denominated government bonds were often (and currently are) negative, which implies that they cannot serve as an effective benchmark for corporate bonds. While in some emerging markets, where the size of the outstanding government bond issues is relatively limited (such as Hong-Kong SAR and Czech Republic), the interest rate swap curve constitutes a more liquid benchmark than the government yield curve, in Russia, the swap market is unlikely to become a viable alternative benchmark in the near future. Firstly, the derivatives still do not have the same legal status as other securities and secondly, most market participants expect a continued decline in yields, implying that an interest rate swap market is likely to remain one-sided/illiquid for a while, as everyone would want fixed-rate assets and floating-rate liabilities.

9. Finally, it appears that **many of the pre-conditions for a successful re-development of the local government bond market in Russia are already in place**. In particular, since the 1998 crisis, the government has made considerable progress towards macroeconomic stability and established a track record of fiscal prudence, while significantly improving the overall fiscal framework. In the area of monetary policy, both transparency and coordination with fiscal policy have increased as well. In some structural areas, however, the progress has been slower. The recent passage of the pension laws and other securities markets related legislation is expected to stimulate growth of the local institutional investor base, which is currently fairly narrow. The banking sector remains highly concentrated and dominated by state banks, while other institutional investors' (insurance companies and pension funds)

development has been constrained by the lack of comprehensive regulatory framework and the dearth of the fixed-income investment opportunities. Separately, the envisaged gradual pace of capital account liberalization, with the government intending to maintain certain restraints on capital flows over the medium-term, means that local bond market is likely to be shielded from the impact of volatile foreign flows at least until it becomes sufficiently deep and liquid. However, this also means that foreign investors will not be able to play a role in increasing the diversity of investor base or improving the liquidity of the government bond market in the near future.

B. Corporate Bond Market

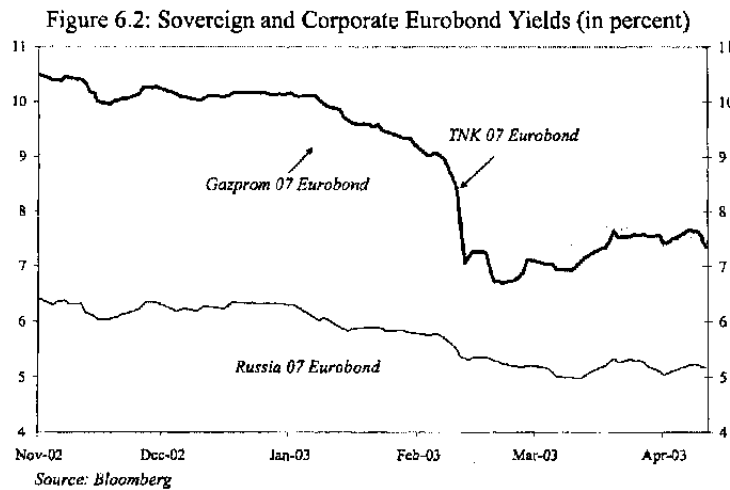
10. **Corporate borrowing from both domestic and international bond markets rose sharply in 2002**, reflecting pent-up demand and favorable costs of borrowing. The ruble-denominated corporate bond market experienced phenomenal growth, albeit from a very low base. The total value of all outstanding bonds (not including the non-market issues) increased from Rb25 billion (\$0.8 billion) as of end-2001 to Rb63 billion (\$2 billion) as of end 2002 and is expected to increase by at least 50 percent in 2003. Along with some positive developments, such as improvements in pricing efficiency and lengthening of maturities, the market continued to experience “growing pains.” In particular, its rapid pace of expansion led to the perceived deterioration of the average credit quality of corporate issuers last year, with more medium and small size companies tapping the market in 2002 compared to 2001. External debt issuance by Russian corporates rose as well. While a lot of it was linked to refinancing and liability management operations, the total net external borrowing reached almost \$6 billion in 2002, approaching the pre-1998 crisis level. Gross eurobond issuance was \$3.4 billion, compared to the previous peak of \$2.2 billion in 1997. This trend is expected to continue. According to market estimates, eurobond placements by Russian companies in 2003 may exceed \$5 billion, with more than \$2 billion already issued since the start of the year.⁵ The majority of Russian eurobond issuers are large exporters, who prefer to finance themselves in the eurobond market because their funding needs (both in terms of the amounts and maturity) cannot be met domestically.

11. **A notable compression of the ruble denominated corporate bond yields during 2002** was generally attributed to the continued decline in government bond yields and a relative shortage of corporate paper, compared to the abundant banking sector liquidity.⁶ At the same time, the average local corporate bond spread over GKO/OFZ tightened to about 300–400 bps at the end of the year. The latter is difficult to square with the perceived increase

⁵ This includes the Gazprom’s \$1.75 billion 10-year bond sale completed on February 21, 2003.

⁶ According to Bank Zenit, the average yield on a bond with the investment period of 1 year fell from 21.1 percent as of end-2001 to 15.8 percent as of end-2002, where investment period is defined as the time to the first put option expiration date or to maturity, depending which yield (yield-to-put option expiration or yield-to-maturity) is the highest.

in the overall credit risk and could be either due to a correction of the previous pricing anomalies (i.e., the re-rating of corporate risk premiums for some borrowers) or due to high ruble liquidity, which might have pushed corporate bond yields below the levels that are consistent with credit fundamentals. Similarly, the **spreads on corporate eurobonds continued to decline in line with sovereign spreads** (Figure 6.2). More recently, BP's decision to invest \$6.75 billion in a venture with TNK (one of Russia's largest oil companies) announced in February 2003 has led to a more rapid compression of corporate spreads, possibly reflecting a re-rating of the corporate credit risk premiums.



12. Notwithstanding the busy issuance calendar, the **technical conditions in the corporate bond market are likely to remain supportive** in the near term. In the local market, the negative real yields on government paper are likely to prompt investors to place more money in corporate bonds. The technical position of corporate eurobonds is likely to remain strong as well, as the government's strategy of gradually reducing the external public debt stock will leave more of the foreign institutional investors' money seeking Russian exposure (including the new mandates) to be allocated to corporate eurobonds.

13. At their present levels, **corporate leverage and foreign exchange exposures do not represent a major systemic risk** for the following reasons:

- corporate leverage in Russia is still fairly modest and according to analysts, the debt-to-capital ratios in most Russian companies are below the optimal level (i.e., the level that minimizes the weighted average cost of capital);⁷

⁷ According to S&P, as of end-2001, the three-year average total debt-to-capital ratios of Gazprom (23 percent) and Sibneft (13 percent) were significantly lower than industry medians (41 percent in Europe, 49 percent in Asia and 43 percent in Latin America for oil sector, and 46 percent for the global gas industry). Analysts believe (continued...)

- given the small size of the ruble corporate bond market, a potential default, even if it triggers a wide-spread liquidity crunch, is unlikely to have systemic implications, and, as some market participants argue, might even be “healthy” for a market that needs to strengthen its credit risk assessment capabilities. However, some analysts believe that the widespread use of put options increases the refinancing risk in the ruble corporate bond market because it effectively creates an additional transmission mechanism of contagion, i.e., an “accidental” default by one company can prompt investors to exercise all puts that expire shortly after the credit event regardless of the credit quality of the underlying bonds;
- the creditworthiness of the major Russian oil companies is unlikely to be seriously affected by oil price swings unless long-term average Brent crude falls below \$15/bbl, which is considered to be the “break-even” price for most Russian oil producers;
- a lot of external borrowing last year was driven by refinancing or liability management, which actually improved corporate debt profiles, according to credit rating agencies;⁸ going forward, the refinancing motive will continue to be an important driver of external borrowing since most of the outstanding corporate eurobonds mature during 2003–07;
- the majority of the Russian firms that tapped the eurobond market are the top-tier companies from the oil and gas sector that are “naturally” hedged by having dollar revenues.⁹

Separately, for the **municipal and regional governments**, the amount of external borrowing each year is currently capped by the amount of repayment.

14. Despite its rapid growth, the **domestic corporate bond market remains very small**—0.6 percent of GDP, compared to an average of 5 percent of GDP for emerging markets. The recent surge in domestic corporate bond issuance in Russia was due to favorable interest rate environment, high ruble liquidity, the dearth of bank financing and at

that even if one takes into account the issues of transparency and corporate governance, there is still room for Russian corporates to increase leverage.

⁸One notable exception was Sibneft that borrowed to finance its acquisition of Slavneft.

⁹ While several analysts expressed concerns about the debt structure and inefficient management of Gazprom, these concerns, however, did not appear to have had much impact on the recent \$1.75 billion bond issue (February 21, 2003). The size of the issue was increased from the originally planned \$750 million and, after having been more than three times oversubscribed, the bonds traded up in the aftermarket. In addition to other factors (Box 6.2), the Gazprom issue was, apparently, well timed, as it shortly followed BP’s acquisition announcement.

the same time, a growing number of banks providing brokerage and underwriting services.¹⁰ Further growth of the market may be constrained by the existing regulatory restrictions, relatively high cost of issuance, the lack of a diverse institutional investor base and developed credit culture. Separately, it should be noted that in many emerging market countries, most notably in Latin America, Hungary and Poland, the “crowding out” by government bond issuance was one of the main impediments to the continued expansion of the domestic corporate bond market (IMF, 2002).¹¹ Thus, the latter may have to be taken into account in the design of the medium-term government bond issuance program.

15. **The elimination of taxes and transaction costs impeding securities transactions**, subject to a review of the impact on government’s fiscal revenue, can promote more efficient functioning and further growth of the corporate bond market. A proposed reduction of the bond registration fee from 0.8 percent to 0.2 percent will be discussed in the Duma later this year. While it is unlikely to have much impact on the budget, this measure will help to accelerate the conversion of the ‘veksel’ market into the corporate bond market,¹² and to reduce the incentives for the Russian companies to use certain financial instruments that are non-transparent and difficult to price (i.e., bonds with put options and variable-rate coupons, where the coupon rate is determined unilaterally by the issuer and announced shortly before the put option expiration date).¹³

¹⁰ Many Russian companies prefer bonds to bank loans because the latter (but not the former) often require posting a collateral and are on average 2–3 percentage points more expensive.

¹¹ The average size of the corporate bond market in Latin America is only 1.5 percent of GDP, while it is around 7.4 percent of GDP in emerging Asia. In Eastern Europe, the largest and most liquid corporate bond market is in the Czech Republic, around 4.8 percent of GDP (IMF, 2002).

¹² A ‘veksel’ is similar to commercial paper but, unlike a standard commercial paper, its legal status is not well-defined and, unlike a corporate bond, it does not have to be registered with the Securities Commission. The capitalization of the veksels market was around \$10 billion as of mid-2002, compared to the corporate bond market capitalization of around \$3 billion (including the non-market issues).

¹³ These instruments appear to be similar to the Brazilian long-term debentures with *repactacion* clauses that allow for a renegotiation of the terms and conditions of the securities every year (IMF, 2002).

Box 6.2. Corporate Bond Market Structure and Investor Base

Foreign Currency Denominated Bonds

The total value of all outstanding corporate eurobonds is about \$7 billion, with most of the bonds denominated in dollars and maturing during 2003-2007. The longest-dated Russian corporate eurobond is currently the one issued by Gazprom in February 2003, which matures in March 2013. As for sector composition, about 81 percent corresponds to the oil & gas sector bonds, about 15 percent to the telecom sector and about 4 percent to banks and other financial institutions.

Corporate eurobonds are mainly held by dedicated foreign investors (emerging debt market funds) and Russian banks. The recently issued Gazprom eurobonds were distributed evenly between the US, European and Russian investors. Some of the demand, reportedly, came from foreign institutional investors, that had only recently received mandates for investing in emerging debt markets, and therefore, were looking to increase their exposure to Russia (which accounts for about 22 percent of the EMBI+ index). Going forward, further credit ratings upgrades of sovereign and corporate bonds will lead to further expansion of the institutional investor base, with more cross-over investors (global fixed-income and investment grade funds) seeking exposure to the Russian corporate eurobonds.

Ruble Denominated Bonds

The total value of all outstanding ruble-denominated corporate bonds (not including the non-market issues) was Rb63 billion (\$2 billion) at the end of 2002. The industry structure of ruble bond market is more diverse, with the oil and gas sector companies accounting for only about 40% of the market. In contrast with 2001, the majority of the ruble bond issuers in 2002 were medium and small-size firms, since many of the large exporters gained access to cheap trade credits abroad as global interest rates fell to new lows. In the second half of 2002, 3-year bonds with a fixed-rate semiannual coupon and imbedded put options at 12 month intervals, became the most commonly used instruments. The average 'investment period' of the ruble corporate bonds increased from 123 days as of end 2001 to 440 days at end-2002 (according to Bank Zenit, see footnote 7). The majority of issuers are unrated and most of the bonds are relatively small and illiquid.

According to local market sources (TIB, Alfa-Bank, Bank Zenit, Troika Dialog), the current structure of the investor base for the ruble corporate bonds is as follows: 45-50 percent – Moscow based banks (most of which are also the underwriters), 20-25 percent – regional banks, 20 percent – insurance companies and non-government pension funds, 10 percent – other (including about 3 percent – retail investors). The top 20 banks are also the main liquidity providers in the secondary bond market, deriving part of their trading income from buying/selling corporate bonds, while most of the medium and smaller-size banks typically hold bonds to maturity. Regional banks that have relatively expensive liabilities typically seek higher-yielding paper. Foreign investors can invest in the ruble denominated corporate bonds using N-accounts (rubles are not freely convertible into foreign exchange) and K-accounts (rubles are freely convertible into foreign exchange for coupon payments). Although until recently foreign investors remained on the sidelines, their participation in selected primary placements (e.g., the UES bond issue) was notable. Asset management companies that invest on behalf of mutual funds are currently not allowed to participate in primary bond placements, because mutual fund regulations explicitly prohibit their managers from investing in securities that do not have a history of quotes. Some buy side market participants note that a relaxation of this restriction would significantly increase their interest in the domestic corporate bond market.

16. **The design of foreign exchange regulations should also take into account their impact on corporate borrowing and financing of productive investment.** For instance, the existence of a surrender requirement makes collateralized borrowing by Russian exporters more difficult and expensive: because of a possibility that the requirement can be adjusted upward at any time, borrowers have to pay a higher risk premium. Moreover, the draft Federal law on Foreign Exchange Regulation and Foreign Exchange Control, which will be discussed in the Duma later this year, proposes the introduction of Chilean-style capital controls on inflows. Although these controls may be a useful policy tool for reducing speculative short-term flows and the probability of a liquidity crisis, it is important to determine carefully their parameters and scope to limit potential negative impact on trade financing and borrowing costs (both externally and domestically) of Russian firms (Box 6.3). In particular, there is some evidence that the imposition of *encaje* (the URR in Chile) made it substantially more difficult for medium and small size firms to obtain external financing for productive investment (Forbes, 2002). For many Russian companies, neither the local banking system, nor the rapidly expanding but still small ruble bond market can yet serve as a viable alternative source of financing, implying that they are already more financially constrained than most other emerging market firms.

17. **The development of a credit information infrastructure is important for improving the overall credit culture of the corporate bond market.** Very few local borrowers are currently rated: S&P has recently introduced a national scale of credit ratings for Russian companies, but has so far awarded such ratings to only a handful of corporate bond issuers. There is currently no correspondence between these ratings and corporate bond spreads. Some analysts noted that increased investor discrimination was manifested in a more pronounced tiering in the corporate bond market last year compared to 2001, with the difference between the yields of the top quality and “junk” bonds actually increasing to a minimum of 5 percentage points (for instance, one of the small/“high-risk” issuers reportedly placed a bond at 40 percent in 2002).

**Box 6.3. The Cost of Unremunerated Reserve Requirement (URR)
For Corporate Borrowers**

The implied cost of URR can be calculated as follows (see Appendix 1, Box 4 in Ariyoshi et al):

$$t = \frac{r(i^* + s)T / (1 - r)}{D}$$

where t is the implied URR tax rate (in percent of loanable funds), r is the URR rate, i^* is the nominal interest rate in the currency in which the URR is constituted, s is the premium applied to the investor when borrowing funds to cover the URR (country plus borrower specific risk premium), T is the duration of the URR, and D is the duration of the foreign investment/borrowing.

Sovereign Eurobond Yields (as of 3/14/03)	Borrowing Duration	URR rate/duration		
		20% for 6 months	20% for 9 months	20% for 12 months
		Cost of URR (in percent a year)		
2.351	3 months	1.38	2.06	2.75
3.842	2-2.5 years	0.24	0.35	0.47
5.079	4-4.5 years	0.16	0.24	0.32
6.344	7 years	0.12	0.18	0.24

Memo: Corporate risk premium = 400 bps

The URR is aimed at discouraging short-term flows: the URR implied tax rate increases with URR rate/duration and decreases with borrowing duration. It is also increasing in the international interest rates and the sovereign/corporate risk premium, meaning that whenever the cost of dollar funds goes up or the sovereign/corporate spread widens, the URR rate/duration have to be adjusted downward in order to maintain the same implied URR cost.

C. Equity Market

18. During 2002, the Russian stock market significantly outperformed the emerging equity markets asset class, with the MSCI Russia index up 14 percent and the MSCI EMF Index down 9 percent. The local benchmark RTSIS Index, which is more diversified than the MSCI Russia index and has more medium- and small size non-oil stocks, returned 38 percent for the year.¹⁴ By comparison to the bond market, the scale of primary market activity in the Russian equity market was fairly modest—only \$1.3 billion (mainly ADRs/GDRs), of

¹⁴ However, the reasons for the diverging performance of these indices in 2002 appear to have been stock specific, i.e., related mainly to different weightings of large stocks in the MSCI Russia and RTSIS Indices.

which \$775 million accounted for by the privatization IPO of the government's 6 percent stake in Lukoil in December 2002. Market analysts believe that primary market activity in equities is not likely to pick up significantly until Russian companies achieve their optimal leverage levels and/or equity valuations become sufficiently 'rich' for the original owners to have incentives to sell their stakes.

Box 6.4. Equity Market Structure and Investor Base

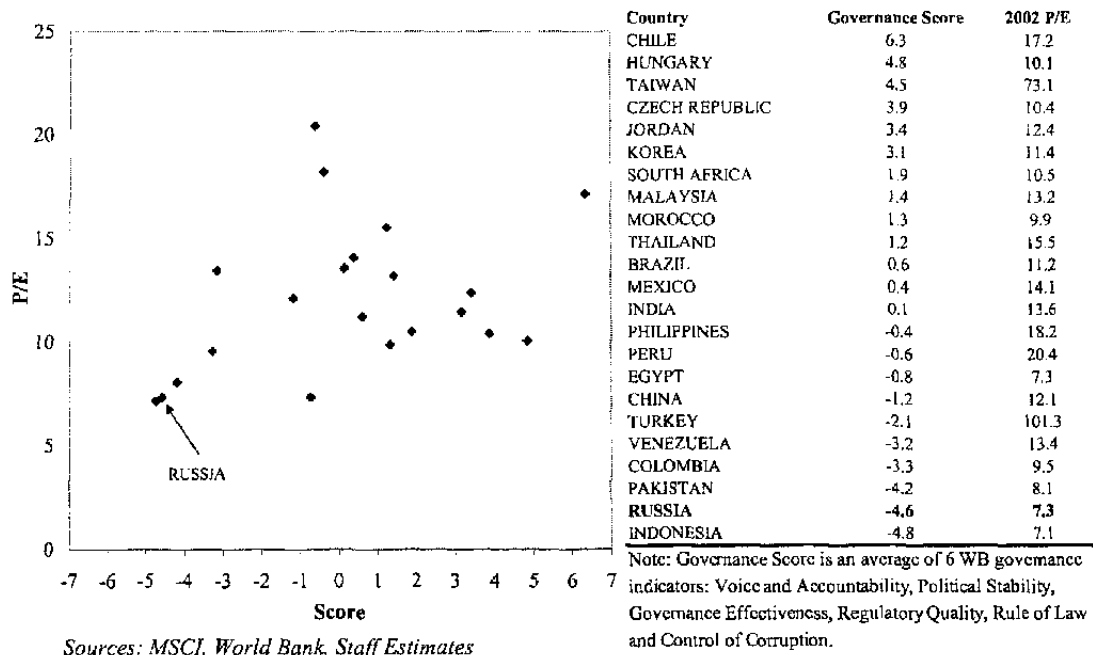
Total capitalization of the Russian equity market is currently \$78.3 billion (according to the MSCI), with oil and gas sector stocks accounting for more than 70 percent of the market. There are two main organized exchanges for trading equities in Russia — the Russian Trading System (RTS) and the Moscow Interbank Currency Exchange (MICEX). Stock market liquidity is fairly low, due to large block holdings and cross-shareholdings, with the free-float (tradable shares) amounting to less than 30 percent of market capitalization. In addition, many Russian companies have active ADR/GDR programs, with the total value of all outstanding ADRs/GDRs estimated at about \$3 billion (BEL/Capital data). The most widely held ADRs are those issued by Lukoil, Surgut, VimpelCom and MTS (around 50 percent of the total). According to legislation introduced last year, Russian companies are required to be listed locally for at least 180 days before they can issue ADRs/GDRs.

The investor base for Russian stocks is dominated by local investors (more than 60 percent, including individuals, large corporates and banks). Even a significant part of ADRs/GDRs is reportedly held by off-shore accounts that invest on behalf of their Russian clients. Some 30 percent is almost equally split between European and US dedicated emerging equity market funds. There is no general regulation that limits foreign investor participation in the local equity market, but there are some special cases— Gazprom, UES and Sberbank shares—where the government has imposed limits on foreign ownership. The much anticipated entry of global equity funds into the Russian stock market has not happened yet, as many global equity funds were unnerved by the increased risk of the emerging equities asset class, high geopolitical uncertainty and increased redemptions last year. As a result, they were forced to retreat from high-risk assets (including those that are oil-sensitive). Also, contrary to market expectations at the start of 2002, hedge fund activity has not picked up in any significant way either.

19. Despite a significant run-up in equity prices since the 1998 crisis, average **equity valuation measures** for the Russian stock market are still below those of its asset class (emerging equity markets) or industry (oil) comparators. For example, the price-earnings ratio (P/E) of the MSCI Russia index (6–7) is still only about a half of the P/E ratio of the MSCI EMF index.¹⁵ Even if one takes into account the quality of business environment and governance, Russian equity valuations do not appear to be excessively high (Figure 6.3).

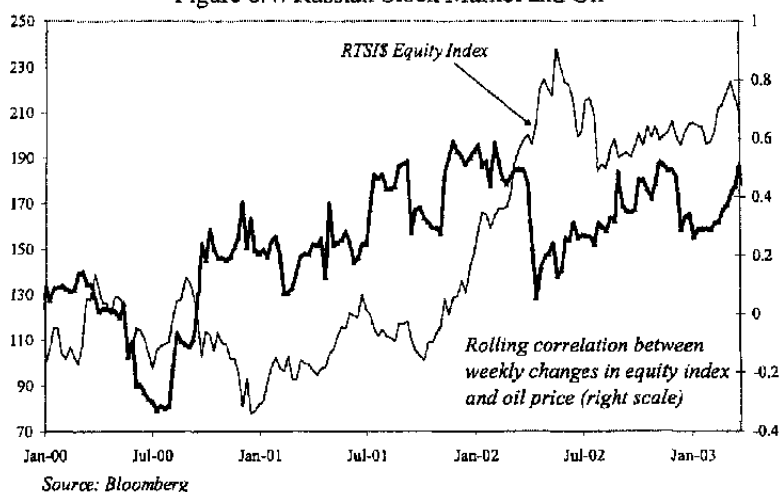
¹⁵ For detailed discussion of the Russian equity valuations, see *The Role of Local Securities Markets*, IMF Occasional Paper, forthcoming.

Figure 6.3: Emerging Market Equity Valuations and Governance



20. **The oil price is viewed as the main risk factor driving investor sentiment in the near term.** Indeed, since early 2003, the correlation between the Russian stock market index and oil has risen (Figure 6.4). However, the Russian equity market may decouple from oil as soon as the Iraq-related volatility in oil spot and futures markets declines. This is because the probability that the long-run average level of Brent crude will dip below \$15/bbl (the level at which the Russian oil companies are said to break even) is low, both as seen by most analysts and as implied by futures prices. Also, the equity market performance in the second half of 2002, with only telecoms and Sberbank posting positive returns, suggests that when gains in oil stocks are capped by high oil price volatility, the domestically-oriented stocks can drive the market.

Figure 6.4: Russian Stock Market and Oil



21. The **slowing down of structural reforms** ahead of the elections is seen as the second most important risk factor for the Russian stock market outlook. Slow progress in the energy and gas sector reform is constraining much needed corporate restructuring. At the same time, there have been fewer improvements in corporate governance last year compared to 2001.¹⁶

22. Going forward, **key changes that are needed to lift the constraints on further growth of the stock market capitalization and free float in Russia** include the diversification of the economy and decisive improvements in corporate governance that would reduce high equity risk premiums and increase enthusiasm on the part of foreign institutional investors. The ongoing “chaebolization” of the Russian economy, with many large oil companies reportedly using their excess cash reserves to acquire local energy distribution companies (‘energos’), also limits growth of market capitalization. Finally, the introduction of enabling regulations to allow securitization of real estate and establishment of real estate investment trusts (REITs) will help to increase the capitalization of Russian stock market as well.

D. Local Institutional Investor Base

23. **The development of a diverse institutional investor base will help to create a stable demand for sovereign and corporate bonds** as well as to improve the “credit culture” of the local corporate bond market. At present, the investor base for ruble-denominated bonds remains very narrow and includes mainly large and medium-size

¹⁶ For detailed discussion of the corporate governance and market infrastructure issues, please see *Russian Federation: Financial Sector Stability Assessment*, (Washington, IMF), forthcoming, and “The Development of the Securities Markets in the Russian Federation,” 2002 (materials for discussion), Moscow, FCSM (in Russian).

banks. In many emerging markets, banks dominate the short-end of the government bond market, as they often hold short-term government paper to meet liquidity requirements. However, mainly the pension funds and insurance companies represent a stable and in many cases steadily growing source of demand for longer-dated government securities (for instance, pension funds hold 10 percent of all outstanding government bonds in Hungary and 25 percent in Mexico (IMF, 2002)). In Russia, the on-going pension reform is expected to result in a significant inflow of pension money into the government bond market starting from 2004. At present, the total investible resources of pension funds and insurance companies are fairly small (Table 6.1).

Table 6.1: Investment Potential of Local Institutional Investors, as of July 1, 2002

Investor	Indicator	Value, in Rb billion
Enterprises and Organizations	Accumulated financial reserves	1,962
Commercial Banks	Investments in local securities	617
Insurance Companies *	Insurance premiums	298
Non-government Pension Funds	Pension contributions	40
Pension Fund of the Russian Federation **	Accumulated contributions	7
Investment Trust Funds	Net Assets	12
Mutual Funds	Net Assets	3

*as of January 1, 2002

** for Q1 2002; Rb32.1 bn for 2002

Source: Federal Commission for the Securities Markets, Russian Federation

24. **A consistent and comprehensive legal and regulatory framework is one of the necessary conditions for stable growth of various collective investment schemes.** To this end, the Federal Commission for the Securities Markets (FCSM) and other regulatory bodies that currently oversee the activities of unit trust funds, asset management companies, pension funds and insurance companies should be encouraged to work together. The FCSM has recently published its medium-term strategy for the development of local securities markets (FCSM, 2002), where, among other things, it expressed concern about the potential impact of pension reform on the development of the investment fund industry. The law on investment of pension contributions in securities, which was approved by the Duma in July 2002, envisages that a limited number of asset management companies (that are to be appointed in an open tender) will be managing the investment of a portion of mandatory contributions into financial markets starting from 2004. The FCSM is concerned that this will limit competition in the investment management industry going forward.

25. **Other issues related to investor protection** deserve some consideration as well. For example, the appropriate regulatory bodies have to establish and enforce clear rules preventing a potential conflict of interest between asset management and investment banking arms of local banks. In addition, since many large corporates in Russia run their own pension funds, going forward, regulators should put in place safeguards to avoid the situation when the owners of largest institutional investors (pension funds or trust funds) are also among the most active issuers of corporate bonds. In Korea, for instance, corporate bond issuance picked up sharply in 1999–2000, but was mainly concentrated in the Big Five chaebols, which also owned the largest investment trust companies (ITCs). The subsequent collapse of one of the chaebols resulted in a run on ITCs and a sell-off in the corporate bond market, forcing the Korean authorities to introduce market stabilization measures to prevent spill-overs into other sectors of the economy (GFSR, 2002).

References

- Ariyoshi, A. et al. "Capital Controls: Country Experiences with Their Use and Liberalization," IMF Occasional Paper 190, Washington DC, 2000.
- Forbes, K., "One Cost of the Chilean Capital Controls: Increased Financial Constraints for Small Firms," 2002, MIT-Sloan School of Management and NBER, unpublished.
- Hessel, H., "Russia: Is the Future Investment-Grade?," Standard and Poors, January 16, 2003.
- International Monetary Fund, 2002, *Global Financial Stability Report*, "Emerging Local Bond Markets," Chapter IV, September (Washington: International Monetary Fund).
- , forthcoming, *The Role of Local Securities Markets*, IMF Occasional Paper (Washington: International Monetary Fund).
- , forthcoming, *Russian Federation: Financial Sector Stability Assessment*, (Washington: International Monetary Fund).
- Kudrin, A. and J.Fenkner, "Corporate Bonds: Russia's New Revolution," Troika Dialog, December 2002.
- "The Main Objectives of the Medium-Term Debt Management Policy of the Russian Federation: 2003–2005," Moscow, Ministry of Finance, March 2003 (in Russian).
- "The Development of the Securities Markets in the Russian Federation," 2002 (materials for discussion), Moscow, FCSM, (in Russian).
- World Bank and IMF, 2001, *Developing Government Bond Markets: A Handbook* (Washington, World Bank).

VII. RUSSIA'S SOVEREIGN CREDIT RATINGS AND MARKET ACCESS: A REVIEW AND OUTLOOK¹

Introduction and Summary

1. After being assigned default status by one major credit rating agency and drastically downgraded by others in 1998, Russia's fortunes have turned rapidly. Since the second half of 2000, Russia has been upgraded at an almost unprecedented speed by the main rating agencies. This note reviews whether these upgrades could have been foreseen, whether further upgrades might be in the pipeline and what the risks to Russia's market access are from a dip in the oil prices. The note uses estimations from a recent IMF Working Paper, which contains consistent estimates for ratings.²

2. The main conclusions are:

- the recent upgrades were indeed foreshadowed by improvements in the fundamentals;
- under a well-managed response to a sharp oil price decline, fundamentals would still be consistent with the current ratings;
- fundamentals do not quite warrant expectations of a two-notch upgrade to investment grade. This, interestingly, is supported by an unusual review by one of the main rating agencies of Russia's chances for an upgrade. Such an upgrade appears to require more of a track record in handling adversity (notably low oil prices), given the present political system, undiversified economy, and inadequate financial institutions.

A. Russia's Rating History

3. All major rating agencies assign sovereign credit ratings to Russia—Table 7.1 explains the ratings scales used by the agencies and the linear transformation used in subsequent tables. Regarding the two largest ratings agencies:

- Standard and Poor's (S&P) initiated coverage of Russia soon after the collapse of the Soviet Union, in 1992, with a rating of BB- for long-term sovereign foreign currency

¹ Prepared by Christian Mulder (PDR).

² Christian Mulder and Roberto Perrelli, *Foreign Currency Credit Ratings for Emerging Market Economies*, IMF Working Paper WP/01/191, explore the economic factors behind ratings. The explanatory power of the identified factors is relatively high with an adjusted R-squared of about 0.8. The model has been estimated for 25 countries covering the period 1992–99, using a linear scale for ratings of both Moody's and Standard and Poor's (see Table 1, column 4). The estimation technique in this paper is focussed on ensuring robust estimators in the presence of the high degree of auto correlation observed in ratings.

debt, and a stable outlook.³ BB- is three notches into speculative grade territory. It maintained this rating until the first half of 1998, when it was downgraded one notch before plummeting deep into default territory in August following Russia's default. After two years in default status, S&P commenced to upgrade Russia, in unusually rapid succession to two notches below investment grade, BB (with a stable outlook), for long-term foreign currency debt.⁴

Table 7.1. Mappings of Ratings to Risks

S&P's Fitch	Moody's	Interpretation	Linear mapping
Investment grade:			
AAA	Aaa	Highest quality	1
AA+	Aa1	High quality	2
AA	Aa2		3
AA-	Aa3		4
A+	A1	Strong payment	5
A	A2	Capacity	6
A-	A3		7
BBB+	Baa1	Adequate payment	8
BBB	Baa2	Capacity	9
BBB-	Baa3		10
Speculative grade:			
BB+	Ba1	Likely to fulfill	11
BB	Ba2	Obligations	12
BB-	Ba3	Ongoing uncertainty	13
B+	B1	High risk obligations	14
B	B2		15
B-	B3		16
Default grade:			
CCC+	Caa1	Current vulnerability	17
CCC	Caa2	to default or in default	18
CCC-	Caa3		19
C	Ca	In bankruptcy or default	20
D	D		21

³ Long-term ratings are the key ratings market participants focus on. The long-term sovereign ratings generally impose a country ceiling on ratings that borrowers within a country can receive without external collateral, but the specific practices differ across agencies.

⁴ Russia's long-term foreign currency rating was upgraded to speculative (from default) on December 8, 2000, to B (from B-) on June 27, 2001, to B+ on December 19, 2001, to BB- on July 26 2002, and BB in December 5, 2002.

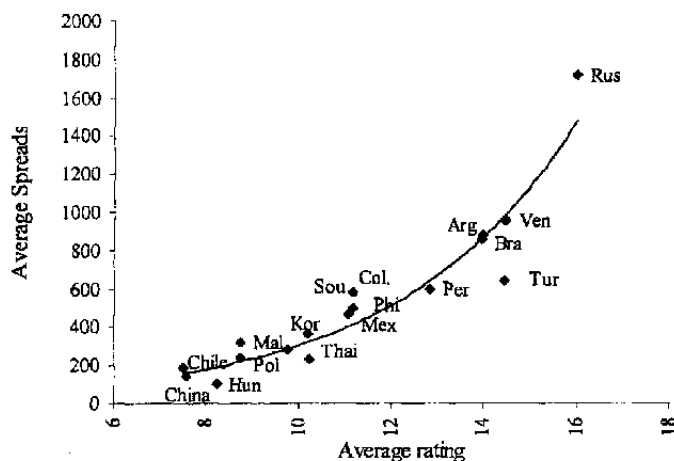
- Moody's commenced rating Russia only in the second half of 1996. Like S&P, Moody's commenced down grading Russia in the first half of 1998, but in contrast to S&P, it never assigned a default rating to Russia, but only the lowest speculative grade at the time the crisis broke, taking the view that Russia never defaulted on its external bonds. Like S&P, Moody's rapidly upgraded Russia to the rating it first assigned to Russia: Ba2 with a stable outlook. This rating is comparable to that assigned by S&P.

B. An Empirical Cross-Country Ratings Model to Evaluate Ratings

4. Markets have been rife with expectations of a further upgrade in Russia's ratings, given the rapid succession of upgrades and continued favorable performance. The general expectation in the market is eventually for a further upgrade of two notches to the lowest investment grade rating (BBB- or Baa3). Spreads, in March 2003 hovering at about 400 basis points for the EMBI, do not seem to anticipate an upgrade to investment grade—a 10 on the linear scale; see Figure 7.1 for a historic relation between ratings and spreads.

5. Do fundamentals suggest an upgrade? Ratings often appear to react sluggishly to underlying events and sometimes overreact to actual capital flows.⁵ This indicates there is scope to predict ratings based on underlying models of the ratings and that there is scope to evaluate the market expectations for the ratings.

Figure 7.1 Sovereign Bond Spreads and Average Credit Ratings
(July 1997 to Dec 2001)



⁵ Giovanni Ferri, Li-Gang Liu, and Joseph Stiglitz *The Procyclical Role of Rating Agencies: Evidence from the East Asian Crisis*, Economic Notes, 1999; and Briec Monfort and Christian Mulder *Using Credit Ratings for Capital Requirements on Lending to Emerging Market Economies: Possible Impact of a New Basel Accord*, IMF Working Paper WP/00/69.

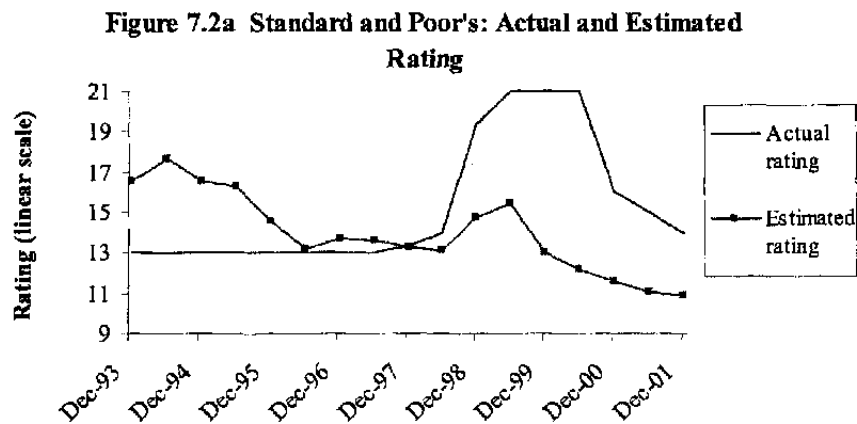
6. The ratings model mentioned above can be used to evaluate ratings. The factors that were empirically identified to explain the ratings match key data and developments monitored by rating agencies and include:

- The rescheduling history;
- The ratio of short-term debt to reserves as an indicator of liquidity;
- Various variables on the prospects of the economy (GDP growth and investment over GDP);
- Variables representing the sustainability of policies (external debt over exports and the budget deficit); and
- The stability of economic management (inflation).

7. The factor that stands out compared to other estimations in the literature is investment over GDP. Models such as these are widely used by investment banks. For example, Citigroup maintains a similar model, although few estimates are consistent in light of the auto-correlation displayed by ratings, which creates havoc in the usual estimation techniques.

C. Historical Estimates: Were the Upgrades Foreseeable?

8. The first rating issued by S&P for Russia was much more favorable (about four notches) than implied by model estimates (Figure 7.2a, Table 7.2a). In particular, inflation and the fiscal deficit were still high at that time. However, over the course of several years, inflation declined, and so did nominal budget deficits, and the estimated rating converged by late 1997 with the actual ratings that remained stable up to that point. The favorable rating in the early years contrasts sharply with the crisis years, when the actual rating worsened to the lowest default rating—at its peak actual ratings were about five notches worse than model estimates.

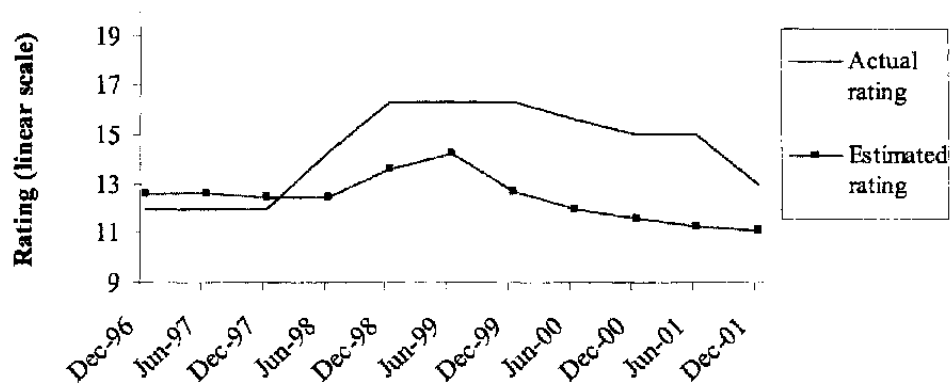


9. The initial rating issued by Moody's (B2) was about one notch better than the rating based on estimated parameters (Figure 7.2b, Table 7.2b). Moody's rating was issued in a

relatively favorable environment in 1996. This contrasts sharply with the crisis, when Moody's downgraded Russia to the lowest speculative grade, implying at that time a mark-up of two notches worse than model estimates.

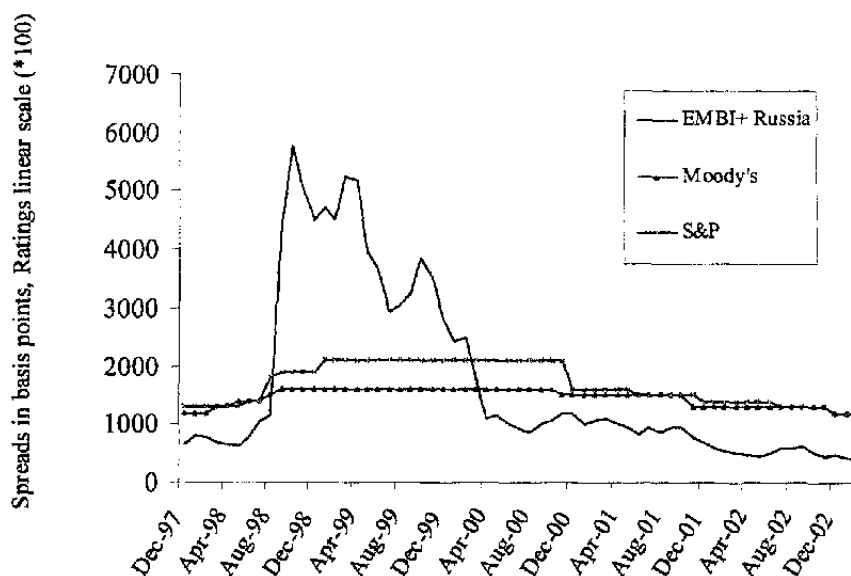
10. Could the recent spate of upgrades have been foreseen? Basically, yes. By end-1999, fundamentals had already recovered and by early 2000, the rating implied by fundamentals was only one notch away from its current level. Therefore, before upgrades were granted starting in the second half of 2000, fundamentals had already significantly improved, although there was still considerable uncertainty as to the durability of the improvements.

Figure 7.2b Moody's: Actual and Estimated Rating



11. The relation with spreads (Figure 7.3) does not yield at face value a clear conclusion about whether spreads or ratings foresaw the crisis and the subsequent recovery better. A test of Granger causality (controlling for overall EMBI changes) suggests that spreads changes precede ratings changes in the case of Russia by about 3 months.

Figure 7.3 Russia: Ratings and Spreads



D. Outlook for Russia's Rating

12. At present, model estimates suggest an upgrade of about one notch (i.e., to about 1 grade below investment grade, or 11 on the numerical scale) on the basis of historic fundamentals. The same conclusion is warranted if a range of fundamentals is used that is in line with the IMF's baseline medium-term outlook (inflation and debt stocks down, investment up, but lower fiscal surpluses and growth). At the same time, a significantly lower oil price could significantly harm Russia's fundamentals if the exchange rate is not allowed to dampen the external effects and the budget does not offset a substantial portion of the revenue decline. An adequate response to a decline in the oil price would, however, avoid much of a deterioration in the fundamentals: adequate exchange rate flexibility and manageable fiscal adjustment could prevent a debt explosion; a sound monetary response could prevent high inflation from becoming endemic; and these policies, combined with a sufficient pace of structural reforms, could ensure an adequate level of investment and thus support future growth prospects. With a modest deterioration in the fiscal position and growth, consistent with a sound response to a sharp oil price decline, the model estimations imply a broadly unchanged rating from its current level.

13. The estimated scope for an upgrade does not take into account the apparent switch in assessment by the rating agencies, from a relatively favorable rating early on to a more unfavorable view at the time of the crises. Ratings estimations suggest that countries that have defaulted once continue to be penalized for a long period.

14. Interestingly, S&P has issued a thorough analysis explaining why it is not upgrading Russia at present, which seems designed to limit the market expectations for further upgrades.⁶ S&P highlights the following considerations:

- *Political risk:* Russia is still not a “competitive democracy,” political, legal, and institutional frameworks are still relatively weak, and a lasting track record has not been established.
- *Economic structure and growth prospects:* “the diversification of the economy has been very slow”, and the “economic growth remains vulnerable to an oil price decline. “Industries controlled by powerful insiders and oligarchs account for 80 percent of exports” while “Russia’s crippled banking sector remains a serious constraint.”
- *Fiscal flexibility and debt burden:* “the consolidation of public finances remains Russia’s most important accomplishment,” but its rating is “undermined by a shallow domestic market [for public debt].”
- *Monetary stability:* “The CBR is bureaucratic and opaque,” “Given the shallow financial intermediation in Russia, however, monetary policy instruments are limited. Monetary and exchange rate management therefore remains difficult.” Nevertheless, it is noted that the higher inflation of Hungary and Poland did not prevent these countries’ upgrade.
- *External flexibility:* While “Russia’s liquidity ratios are strong,” “the sensitivity of Russia’s external accounts to oil prices is high, however, and, given its short track record, the country’s external flexibility has not achieved investment-grade level.”

In other words, the economy is not sufficiently diversified and the track record is insufficient against the background of the present political system to have sufficient confidence in how another oil price shock will be handled, to warrant an upgrade to investment grade. Nonetheless, a one-notch upgrade after the elections cannot be ruled out, especially when Russia is able to demonstrate that it can handle a much lower oil price, but a two notch upgrade appears unlikely in the near future.

⁶ “Russia: Is the Future Investment-Grade,” January 16, 2003, Standard and Poor’s Ratings Direct website

Table 7.2a: Contributions of Different Variables to Standard & Poors' Russia Rating

Variable	S&P's rating (linear scale)	Estimated rating	Log Inflation	GDP growth	Fiscal balance/ GDP	Investment as a share of GDP	External debt over exports	Rescheduling history	R/STD	Constant
	SPW	E(SPW)	Ln(INF)	GRGDP	FBGDP	IGDP	DEBTX	RSCH	STDR	
Dec-93	13	16.6	3.1	2.7	0.9	-2.0	0.9	0.0	0.1	10.8
Jun-94	13	17.6	2.3	2.7	0.7	-1.8	0.8	2.0	0.2	10.8
Dec-94	13	16.6	1.5	2.4	1.0	-2.1	0.7	2.0	0.4	10.8
Jun-95	13	16.3	1.6	2.2	1.0	-2.2	0.7	2.0	0.3	10.8
Dec-95	13	14.6	1.2	1.6	0.3	-2.0	0.7	2.0	0.2	10.8
Jun-96	13	13.2	0.6	1.1	0.0	-2.0	0.6	2.0	0.2	10.8
Dec-96	13	13.7	0.3	1.7	0.2	-2.0	0.5	2.0	0.3	10.8
Jun-97	13	13.6	0.2	1.7	0.2	-2.0	0.6	2.0	0.2	10.8
Dec-97	13.3	13.3	0.1	1.5	-0.1	-1.9	0.5	2.0	0.3	10.8
Jun-98	14	13.1	0.1	1.4	-0.2	-1.8	0.6	2.0	0.3	10.8
Dec-98	19.3	14.8	0.8	1.5	0.3	-1.7	0.8	2.0	0.2	10.8
Jun-99	21	15.4	1.1	1.5	0.5	-1.6	0.9	2.0	0.2	10.8
Dec-99	21	13.1	0.4	1.0	-0.4	-1.5	0.7	2.0	0.1	10.8
Jun-00	21	12.1	0.3	0.7	-0.7	-1.4	0.5	2.0	0.1	10.8
Dec-00	16	11.6	0.3	0.2	-0.6	-1.6	0.5	2.0	0.1	10.8
Jun-01	15	11.1	0.3	-0.2	-0.7	-1.6	0.5	2.0	0.1	10.8
Dec-01	14	10.9	0.2	-0.4	-0.4	-1.8	0.5	2.0	0.1	10.8

Table 7.2b: Contributions of Different Variables to Moody's Russia Rating

Variable	Moody's rating (linear scale)	Estimated rating	Log Inflation	GDP growth	Fiscal balance/ GDP	Investment as a share of GDP	External debt over exports	Rescheduling history	R/STD	Constant
	MDW	E(MDW)	Ln(INF)	GRGDP	FBGDP	IGDP	DEBTX	RSCH	STDR	
	Actual	Estimated								
Dec-96	12	12.6	0.1	0.2	0.8	-2.5	1.0	1.8	0.1	11.0
Jun-97	12	12.6	0.1	0.2	0.8	-2.4	1.1	1.8	0.1	11.0
Dec-97	12	12.4	0.0	0.0	0.7	-2.3	1.1	1.8	0.1	11.0
Jun-98	14.3	12.4	0.0	-0.2	0.7	-2.2	1.1	1.8	0.2	11.0
Dec-98	16.3	13.6	0.3	0.3	0.7	-2.1	1.5	1.8	0.1	11.0
Jun-99	16.3	14.2	0.3	0.4	0.7	-1.9	1.7	1.8	0.1	11.0
Dec-99	16.3	12.7	0.1	-0.3	0.5	-1.8	1.3	1.8	0.1	11.0
Jun-00	15.7	12.0	0.1	-0.6	0.3	-1.7	1.0	1.8	0.0	11.0
Dec-00	15	11.6	0.1	-0.5	0.1	-1.9	0.9	1.8	0.0	11.0
Jun-01	15	11.3	0.1	-0.5	-0.1	-1.9	0.9	1.8	0.0	11.0
Dec-01	13	11.1	0.1	-0.3	-0.2	-2.2	0.9	1.8	0.0	11.0

VIII. STRUCTURAL REFORMS¹

A. Introduction

1. *The pace of structural reform slowed down in 2002 as only two priority legislative initiatives (bankruptcy and agricultural land laws) were enacted and as the implementation of the broader reform agenda encountered delays. Reform areas that are most central to the improvement of the business and investment climate are either at an early stage (banking, civil service) or delayed (natural monopolies) which, together with the long implementation schedules envisaged, suggests continued slow diversification away from natural resource dependence.*

2. **Following rapid progress on structural reform in 2001, the government approved an ambitious reform agenda for 2002.** As described in SM/02/63 (Chapter VI), major reform initiatives were enacted in 2001 in the areas of tax reform; urban land reform; labor reform; deregulation of economic activities; pension reform; and judicial reform. The reform agenda approved by the government for 2002 aimed to complete these reforms initiated in 2001 and to launch reforms in other areas. As described in EBS/02/26 (Section C), the legislative priorities of this agenda included a new bankruptcy law; customs code and other legislation related to WTO accession; law on the electricity sector; agricultural land law; and legislation on mandatory medical and social insurance.

3. **The reform agenda for 2002 was based on the government's medium-term structural reform program.** Approved in summer 2001 for the period through 2004, the broad medium-term program emphasizes the improvement of the business and investment climate for the private sector and the achievement of long-term sustainability in public finances. To these ends, the program contains measures to deregulate business activities; strengthen property rights; enhance financial intermediation; reform Russia's natural monopolies in the energy and transportation sectors; and pursue fiscal reforms in the areas of tax policy, public expenditure management, and the pension system.

4. **This chapter reviews the reform record in 2002 in detail.** In addition to describing the progress on advancing the legislative priorities listed above and on advancing the broader structural reform agenda, the chapter also contains a brief assessment of possible causes and consequences of the observed slowdown in reform implementation.

¹ Prepared by Timo Vällilä (IMF Resident Representative in Russia).

B. Progress in 2002

Priority areas

5. **A new bankruptcy law, marking an overhaul of Russia's bankruptcy regime, was enacted in October 2002.** As detailed in Box 8.1, the new law aims to rectify deficiencies in the old law that made it a vehicle for asset-stripping and hostile take-overs instead of for orderly restructuring or exit of distressed enterprises. The new law will necessitate the enactment of supporting legislation, which will delay the effective implementation of the new bankruptcy regime until at least the second half of 2003.
6. **An agricultural land law was enacted in July 2002.** The law represents an important step in the effort to strengthen property rights, even though it leaves it to individual regions to decide when to start implementing the law and does not allow the purchase of agricultural land by foreigners. However, effective implementation of both the agricultural land law and the Land Code approved in 2001 requires supporting legislation, including to delineate the ownership of publicly owned land between different levels of government. Other obstacles to the implementation of the land reform have so far included unwillingness of some local governments to sell urban land and also deficiencies in the land cadastre system.
7. **Progress toward WTO membership continued despite slippages in passing relevant legislation.** Both the U.S. and the EU granted Russia market economy status in the course of 2002. Accession negotiations continued, with the most difficult areas including implicit energy subsidies; budgetary subsidies to agriculture; and protection of the automotive and aircraft industries as well as services, including financial services. However, neither the draft customs code nor other major legislation was passed in 2002.
8. **As regards the introduction of mandatory medical and social insurance, the government decided that it is premature at this stage and removed this item from the agenda for 2002.**
9. **Reform of the electricity sector encountered delays.** The package of six draft laws (including the draft law on the electricity sector) and amendments that constitute the legal foundation for the reform of the electricity sector was adopted after several postponements in March 2003 and enacted in April 2003. The delays were caused by controversies concerning the substance of the laws, but also by uncertainty caused by the unexpected accumulation of stakes in RAO UES, the state-controlled vertically integrated electricity monopoly, at end-2002 by—that time—unknown domestic investors. The adopted laws deviate somewhat from the reform's original aims, including by envisaging an open-ended schedule for tariff liberalization, as opposed to the original target date of spring 2004. The implementation of the broader sector restructuring program, including the preparation of technical, organizational, and regulatory changes, has also been delayed pending the approval of reform legislation.

Box 8.1. Reform of the Bankruptcy Regime in Russia

The old bankruptcy law was adopted in 1998, but it soon became clear that there was considerable scope to abuse the law for corrupt and predatory purposes, including asset-stripping and hostile corporate take-overs. Deficiencies in the old bankruptcy law included an inherent bias in favor of creditors (facilitating hostile take-overs by means of a bankruptcy process) and a lack of transparent mechanisms to manage the debtor's assets (facilitating asset-stripping). In addition, the law granted arbitration managers a strong status which, together with the absence of effective regulation, reduced their accountability and created incentives and opportunities for illegal activities.

The new bankruptcy law aims to correct these failures. The status and independence of arbitration managers will be curtailed, and their regulation will be overhauled by transferring it to self-regulating organizations, which will also carry the responsibility of training and examining arbitration managers. These self-regulating organizations will in turn be regulated by the Federal Bankruptcy Service. Furthermore, the bias in favor of creditors will be removed by making it more difficult to initiate a bankruptcy process and by providing the debtor with better possibilities to settle or restructure any overdue obligations, thus reducing the scope for misusing the bankruptcy process for hostile take-over purposes. Finally, the valuation and management of the debtor's assets will be moved to independent and professional evaluators, and a public auction will be the only approved method of asset liquidation.

In addition, the coverage of the bankruptcy law will be extended to include all sectors of the economy, such as agriculture, the defense industry, one company towns, securities' markets, and insurance, all of which were excluded under the old law. Also, anomalies in the hierarchy of creditors will be corrected by depriving the state of its priority status and by strengthening the rights of secured creditors. Other changes to the role of the state as a creditor will be introduced, including by requiring that the state be represented in bankruptcy proceedings by only one body and by allowing the state to participate in an amicable agreement.

While the new law appears thus to address the main deficiencies in the old law, it has not been uncontroversial. One of the aspects in the new law that has been questioned is whether self-regulating organizations can be established quickly enough and fulfill their regulatory role rigorously enough given the absence of any previous experience with them in Russia. Also, the amount of supporting legislation required, including a law on self-regulation organizations, and amendments to the tax and civil codes, has precipitated fears that it will be a long time before the new bankruptcy regime can function effectively.

Broader reform agenda

10. **A new regime for small business taxation was enacted in July.** The new regime will simplify and lower the taxation of small businesses—thereby potentially promoting the growth of the SME sector (see Box 8.2). However, the new regime's generous definition of what qualifies as a small business leaves scope for larger enterprises to abuse the new small business tax by evading taxation.

11. **The legislative framework for judicial reform was completed in 2002.** The framework consists of a dozen laws and amendments to laws related to court procedures; the status of judges; and the status of attorneys. The enactment of this package will enable the government to implement its judicial reform program, including significant salary increases for judges and a strengthening of the court infrastructure, which will run through 2006 on current plans.

Box 8.2. SME Sector in Russia

SMEs in the U.S. and Western Europe account roughly for between one-half and three-quarters of employment and more than one-half of value added. SMEs in the most advanced Eastern European transition economies have roughly doubled their share in employment and value added in the past 5–10 years, reaching one-half of both by the late 1990s.

Statistical problems hamper the analysis of the SME sector in Russia, but it is clear that its growth potential has not been unleashed yet. Statistical problems include the definition of SMEs (which has changed several times in the past decade and remains different from that used by, e.g., the OECD as for the retail trade sector) and the coverage of SME data (they exclude sole proprietorships; besides, a large number of unaccounted small enterprises is presumed to operate in the shadow economy). The number of small businesses has remained broadly stable in absolute terms since 1995 and declined during the same period as a share of all enterprises from 40 percent to around 25 percent. The small business sector accounts currently for 10–20 percent of both employment and value added, with the latter showing a declining trend since the mid-1990s. While these figures likely underestimate the relative size of the sector, it appears nevertheless to have stagnated rather than grown since the mid-1990s. Besides, small businesses are heavily concentrated both sectorally (with trade and catering accounting for one-half and industry and construction around 30 percent of all small businesses) and geographically (with Moscow alone accounting for 30 percent of all small businesses).

Deficiencies in the business and investment climate have hit the SME sector especially hard. Small enterprise surveys conducted by the World Bank and the OECD suggest that the main culprits responsible for the stagnation of the SME sector have included the tax regime and its implementation; lack of financing; red tape and administrative harassment; and the absence of a predictable and fair legal and regulatory environment. Recent surveys by the Center for Economic and Financial Research and the World Bank suggest, however, that the implementation of the deregulation package enacted in 2001 is showing some positive results in lowering administrative barriers (licensing, inspections) to small business development.

The government has recognized the importance of the SME sector in broadening and diversifying the base for investment and economic growth. In addition to reforming the taxation of small businesses, the government has drawn up a multi-year program to promote the SME sector. The program emphasizes the importance of improving the general business climate. It also envisages financial support from the federal budget of Rub 2.5 billion in 2003, up from Rub 20 million in 2002.

12. **There was some progress in advancing financial sector reforms, notably as regards the government's efforts to strengthen the capacity to fight money laundering and the financing of terrorism.** A Financial Intelligence Unit started operating in February 2002, and the law on anti-money laundering, enacted in 2001, was amended to expand its coverage. As a result, Russia was removed from the FATF's list of non-cooperative countries and territories in October 2002. Furthermore, the government, together with the CBR, prepared new draft laws on deposit insurance and foreign exchange regulation, with the latter passed in first Duma reading in March 2003.

13. Reforms of the civil service and public administration remain at an early stage.

A presidential decree outlining the objectives of civil service reform during 2003–05 was issued in November 2002. Work has commenced in a few priority segments of the reform, including the drafting of a new law on civil service; preliminary work on streamlining the division of labor both within and between ministries and federal agencies; preparation of pilot projects in selected regions (which will last several years); and drafting of ethical norms for civil servants. As regards the reform of the state apparatus, a draft law on local self-government and draft amendments to the law on regional governments, aimed at streamlining the political and financial relationships between different levels of government, were passed in first Duma reading in February 2003.

14. The pension reform was implemented starting January 1, 2002, although some of its modalities remain open. The transitory period during which the state pension fund will administer all three pillars—including a basic pay-as-you go pillar; a notional defined-contribution pay-as-you-go scheme; and a fully funded pillar—of the new pension system will last until 2004. Only then will private pension funds be able to compete freely for the management of funds accumulated in the fully funded pillar. While the necessary amendments to this effect to the law on non-state pension funds have been adopted, the criteria for selecting private asset management companies remain to be established. Also, the choice of Vnesheconombank as the manager of pension assets accumulated by the state pension fund has been controversial, as Vnesheconombank is also the government's external debt agency, thus creating a potential conflict of interest between these two roles.

15. Reform of the railway sector encountered delays. The package of laws and amendments to laws that constitute the legal framework for the reform was submitted to the Duma in April 2002, rather than in October 2001, as originally planned, and enacted in early 2003. This, together with delays in implementing other elements of the broader reform program, delayed the creation of a temporary holding company to take over the railways ministry's core business assets and operations relative to the original schedule (end-2002). Moreover, the unification of railway cargo tariffs, which was initiated in 2001, was put on hold, leaving anomalies and loopholes in the tariff structure.

16. Housing and communal services reforms appeared to risk dilution. The draft legislation related to these reforms was approved in first Duma reading before end-2002 and in second reading in March 2003, and it seemed clear that the legislation will not include a time-bound plan for achieving cost recovery in the provision of housing and communal services. Similarly, the streamlining of exemptions from housing and communal services payments will be much less far-reaching than initially intended.

17. **There was little progress on gas sector reform.** The government received several competing plans for gas sector restructuring in December 2002, but no decisions have yet been taken. Also, the plans to liberalize the trade in Gazprom's shares by removing the ring-fence separating the domestic and ADR markets were not implemented. The government consolidated its control over Gazprom, with the combination of its direct shareholding (38 percent) and Gazprom shares held on the company's own books now accounting for a majority stake.

C. Assessment

18. **Several factors are likely to have contributed to the slowdown in the pace of structural reform.** The approaching parliamentary and presidential elections at end-2003 and early 2004, respectively, have made it increasingly difficult to adopt reforms that have short-term costs for large segments of the society. The recent slowdown in reform pace is also likely to reflect a more fundamental difficulty in advancing the reform agenda, which consists of increasingly unpopular reforms, with the popular reforms, most notably tax reforms, well advanced. In addition, many of the remaining reforms are at early stages of preparation, making them susceptible to slippages due to technical reasons.

19. **Opposition to reforms is in many cases related to the fact that they affect a specific interest group, even though they have longer-term benefits for the economy at large.** Reforms of natural monopolies as well as housing and communal services would lead to significant tariff increases to households and enterprises alike, with the benefits in terms of improved resource allocation and more reliable and higher quality service provision only appearing over the long term. Similarly, civil service reform is expected to lead to large layoffs, particularly at subnational levels of government, while the benefits in terms of better public service provision and effective implementation of, e.g., reforms to deregulate business activities would take longer to materialize. As regards Russia's WTO accession, there is a conflict between those powerful segments of the enterprise sector which would benefit from it directly and the few that would face direct costs (automotive and aircraft industries, financial services).

20. **Delays have hit some of the key reforms to improve the business and investment climate and to encourage the emergence of a dynamic SME sector.** The main structural problems inhibiting business activity, including SME creation and development, and investment in the Russian economy include excessive state intervention and the associated rent-seeking, both by incumbent enterprises seeking to protect themselves from competition and bankruptcy and by civil servants. Key reforms to reduce state intervention and to encourage economic diversification include reforms of the civil service and public administration; the banking system; and Russia's natural monopolies that currently extend implicit subsidies to often unviable segments of the enterprise sector. These key reforms have either remained at an early stage (civil service, banking) or encountered delays (natural monopolies). Even according to original plans all of them have long implementation periods stretching over half a decade or more.

21. **The slowdown may have adverse consequences for Russia's structural transformation and, consequently, for the medium-term growth outlook.** There is no doubt that broad-based investment and a dynamic SME sector are needed to reduce Russia's dependence on raw material exports and its vulnerability to volatility in world commodity markets. Any delays in adopting and implementing reforms needed to diversify the economy will therefore serve to push back the point where the economy can support high and lasting growth without being a hostage to external developments.