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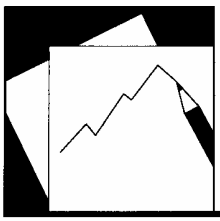

IMF Working Paper

Measuring the Performance of Fiscal Policy in Russia

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Measuring the Performance of Fiscal Policy in Russia

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Abstract

This paper evaluates the performance of fiscal policy in Russia since the 1998 crisis along several dimensions, using a variety of indicators. Russia has progressed tremendously in recent years on public debt sustainability, largely thanks to the fact that the real interest rates on public debt have been negative and growth has been high. However, the constant oil-price balance shows a progressive worsening starting in 2001, with a modest reversal in 2004. The analysis of the non-oil fiscal balance shows that Russian fiscal policy has had a mixed record. Part of the windfalls were spent before the introduction of the oil stabilization fund, but most of the oil revenues have been saved during the last two year. This poses an important challenge for future years when the automatic saving mechanism provided by the oil stabilization fund will be weakened by the approved increase in the reference oil price. The standard fiscal impulse shows that budget policy has not contributed to the increase in aggregate demand since 2003. However, the fiscal position was not tight enough to contain the inflationary effects of the exceptional oil windfalls on the economy as a whole.

JEL Classification Numbers: E61, E62

Keywords: Russia, fiscal performance, optimal fiscal policy, exhaustible resources.

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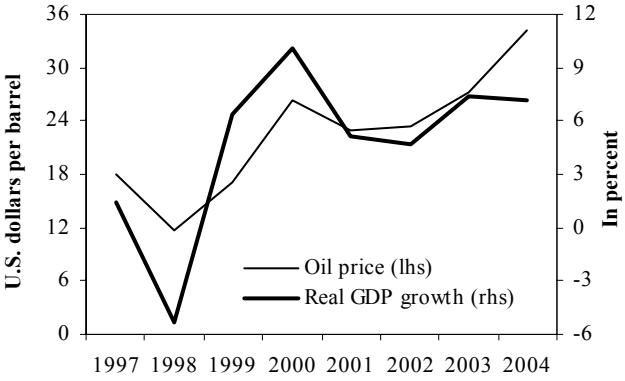
I. INTRODUCTION

The Russian economy has made impressive progress since the 1998 crisis. This rebound has clearly been facilitated by a high oil price (see Figure 1) but it has also been supported by improved economic policies, including fiscal policy. After the crisis, fiscal policy increasingly became a tool for promoting macroeconomic stabilization and long-term growth. This paper reviews the evolution of fiscal policy since 1998, including its contribution to aggregate demand.

Figure 1. GDP Growth and Oil Prices



Sources: Authorities; and Fund staff estimates.

Fiscal policy has been important not only in managing demand but also in improving the business environment. Before the crisis of 1998, political interference characterized the process of tax collection, creating a climate of business uncertainty; unclear division of competences between federal and local authorities led to confusion in tax administration and expenditure responsibilities; and corruption was pervasive. Especially in the two years following the crisis, the government made remarkable progress in correcting these shortcomings. While these factors played a fundamental role in creating the conditions for the rebound after the crisis (see Owen and Robinson, 2003), the goal of this paper is limited to examining how the fiscal policy stance has contributed to the management of aggregate demand since 1998.

Several measures are available to evaluate the performance of fiscal policy, depending on the purpose of the analysis. The debt-stabilizing primary surplus is the most appropriate measure to evaluate the long-term sustainability of public debt.[1] The constant oil price balance is the appropriate measure to evaluate how fiscal policy responds to the oil cycle. The non-oil fiscal balance is the appropriate measure to evaluate how the fiscal position is affected by oil revenue and to indicate how actual fiscal policy differs from optimal fiscal policy in the presence of exhaustible resources. The standard fiscal stance and fiscal impulse are the appropriate measures to evaluate how much fiscal policy has contributed to changes in aggregate demand.

[1] The debt sustainability exercise also presents this measure and simulates the future debt-to-GDP ratio under various shocks, including an increase in interest rates, slowdown in economic growth, and fall in the terms of trade.

The focus of this paper is on how fiscal policy was conducted after the 1998 crisis, with a particular emphasis on demand management. Thus, we will deal mainly with the latter fiscal indicators, the fiscal stance and impulse. The other measures are also discussed below because they are widely used in the policy debate and because they provide useful benchmarks for other fiscal issues. Finally, we consider how the fiscal authorities have reacted to "unexpected" oil windfalls.

II. DEBT-STABILIZING PRIMARY SURPLUS

The debt-stabilizing primary surplus is defined as the level of primary surplus that stabilizes debt as a share of GDP. The dynamics of the debt stock are described by the following equation:

$$D_t = r_t D_{t-1} - PS_t \,, \tag{1}$$

where D_t is the debt level at time *t*, r_t is the interest rate at time *t*, and PS_t is the primary surplus at time *t*. Debt as a share of GDP is constant if and only if

$$\frac{D_t}{GDP_t} = \frac{D_{t-1}}{GDP_{t-1}}, \text{ for all } t. \tag{2}$$

Substituting the definition of constant debt in the equation for debt dynamics, it is possible to obtain the debt-stabilizing primary surplus:

$$PS^*{}_t = \left(r_t - \frac{GDP_t}{GDP_{t-1}} \right) D_{t-1} \,. \tag{3}$$

In terms of a share of GDP, this can be expressed as:

$$\frac{PS^*{}_t}{GDP_t} = \left(\frac{r_t}{GDP\ growth_t} - 1 \right) \frac{D_{t-1}}{GDP_{t-1}} \,. \tag{4}$$

Note that GDP growth, and interest rates are expressed in nominal terms.

Table 1 presents the debt-stabilizing primary surplus calculated using the formula above.[2]

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[2] All the ratios, including $\frac{r_t}{GDP\ growth_t}$, have the same values if both the numerator and denominator are expressed in nominal or in real terms. To make cross-time comparison easier, we present the table in real terms.

Table 1. Debt-Stabilizing Primary Surplus for Enlarged Government

	1998	1999	2000	2001	2002	2003	2004
Public sector debt	75.4	96.1	55.8	42.2	34.8	27.5	20.2
Real GDP growth	-5.3	6.3	10.0	5.1	4.7	7.3	7.1
Real interest rate 1/	-8.7	-58.0	-30.8	-10.6	-9.7	-7.5	-13.0
Actual primary surplus	-3.6	2.9	7.5	5.4	2.7	2.6	4.7
Debt-stabilizing primary surplus 2/	0.3	-7.6	-3.9	-1.7	-1.3	-0.7	-0.8

Notes: All variables excluding real interest rate are expressed as a share of GDP. A negative sign means that a primary deficit would have stabilized the debt.

1/ Average real interest rate (nominal rate minus change in GDP deflator; in percent).

2/ The debt-stabilizing primary surplus is calculated using the formula in the text.

Because the actual primary surplus has always been above the debt-stabilizing primary surplus since 1998, public debt as a share of GDP has gradually declined. The real interest rates (calculated as the implicit effective nominal rates on public debt minus the GDP deflator) have been negative over this period, so that even a small *deficit* would have stabilized public debt. Given that substantial primary surpluses were generated in this period, the debt-to-GDP ratio decreased quite dramatically starting in 1999.[3]

III. Constant Oil Price Balance

The constant oil price fiscal balance is an alternative measure of fiscal sustainability that takes, as a benchmark, the oil price rather than debt. The implicit assumption underlying the constant oil price balance is that, because the price of oil tends to revert to this long-term benchmark, an "optimal" fiscal policy should aim at balancing the fiscal position around it. This measure has two main advantages:

- *The constant oil price balance can be calculated relatively easily and objectively* because it depends on the tax legislation, which is known ex ante; and

- *The price of oil is exogenous, so that changes in the fiscal balance reflect only discretionary policy*, including increases in expenditure or changes in oil taxation.

Despite its simplicity and widespread use, the constant oil price balance must be interpreted with caution:

[3] The debt sustainability exercise shows that the debt will continue to decline in the next few years, barring exceptional falls in oil prices to well below US$20 per barrel and/or a dramatic increase in public expenditure.

- *The constant oil price balance does not reflect taxation of the total oil windfall to the economy*, which is the most obvious instrument to control the impact of the windfall itself on aggregate demand.

- *The constant oil price balance is also affected by changes in tax legislation that have no fiscal impact on budget revenues at current oil prices*. For instance, the changes in oil taxation in 2005, which made oil revenues more sensitive to oil prices, would have worsened the 2004 constant oil price balance by 0.2 percent, even if total oil revenues had remained unchanged. These "notional" changes, while important to understand oil taxation, may be misleading if used in macroeconomic analysis.

- *The constant oil price balance is typically calculated using an oil price that is not the best predictor of future prices as a benchmark*. For instance, the oil stabilization fund has used the "arbitrary" price of US$20 per barrel, which is not the best approximation for future prices (futures prices themselves may be used instead). In this view, the constant oil price balance is not a "true" sustainability index. For illustrative purposes and somewhat paradoxically, note that according to some studies the best predictor of next year's price is the current price level (see Cashin, Liang, and McDermott, 2002).

- *The constant oil price balance is usually calculated by keeping constant the quantity of oil and gas produced*. However, large price movements could also have an impact on production volume. Therefore, a fall in the oil price could generate a larger decline in fiscal revenues than the coefficients in Table 2 imply, if production in some marginal oil fields is discontinued.

Despite these shortcomings, the constant oil price balance has, because of its simplicity and intuitive appeal, been widely used in policy debates to measure the long-term sustainability of a given fiscal position. For these reasons, it is commonly used in the discussions concerning the oil stabilization fund.

Kwon (2003) has calculated the impact of a change in the price of oil on federal revenues (see Table 2, which updates the original numbers in Kwon, 2003).[4] Over the past years, the

[4] The main taxes included in the calculations are oil export tariff and mineral extraction tax (since January 2002), oil export tax, dividends from state oil companies, profit tax from oil and gas companies, oil product excises, oil product export tariff (until December 2002), and oil and gas export tariff (in 1996). Keeping constant the volume of production, the statutory rates are used to calculate the sensitivity of revenues to changes in oil prices. The analogous numbers for the general government are slightly higher because they include taxes that go to local authorities.

sensitivity of revenues with respect to changes in the oil prices has increased, especially for prices above US$24 per barrel. Moreover, since 2005 the sensitivity of revenues to oil prices below US$24 has decreased substantially.[5]

Table 2. Sensitivity of Federal Revenues to a One-Dollar Increase in Price of Urals 1/

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Within range of $12-$16 /barrel	0.10	0.06	0.08	0.14	0.12	0.16	0.23	0.21	0.26	0.23
Within range of $16-$20 /barrel	0.10	0.06	0.08	0.24	0.17	0.27	0.31	0.35	0.35	0.29
Within range of $20-$24 /barrel	0.10	0.06	0.08	0.24	0.17	0.27	0.31	0.35	0.35	0.33
Higher than $24 per barrel	0.10	0.06	0.08	0.24	0.17	0.27	0.31	0.35	0.37	0.40
Memorandum item:										
Urals price, c.i.f. ($/barrel)	20.1	18.1	11.8	17.1	26.4	23.0	23.5	27.3	34.3	47.3

1/ The table is adapted and extended from Kwon (2003). Sensitivities are expressed in terms of GDP percentage points.

Using the values of Table 2, it is possible to examine the counterfactual evolution of the fiscal accounts if the price of oil had been constant at US$20 per barrel in different years. Table 3 presents the results.

Table 3. Constant Oil Price Balance 1/
(In percent of GDP)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Actual Federal Balance (commitment base)	-8.9	-7.7	-6.0	-4.2	0.8	2.7	1.3	1.6	4.4	7.5
Federal Surplus at constant US$20/barrel	-9.0	-7.6	-5.4	-3.5	-0.2	1.9	0.2	-1.0	-0.8	-2.6

1/ The table is calculated using the numbers in Table 2.

With the dramatic improvements since 1996, the federal fiscal balance at a constant oil price has slowly but continuously worsened after 2001. This trend is likely to continue in 2005; using the assumptions of the 2005 budget, the constant oil price federal balance will be below -1.5 percent of GDP this year, even excluding possible amendments that would further increase expenditure.

[5] Starting in 2005, oil taxation has become much more sensitive to the level of oil prices.

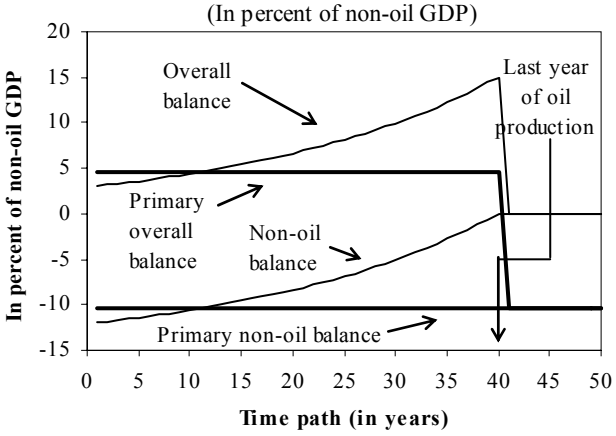
IV. NON-OIL FISCAL BALANCE

An alternative measure of long-term fiscal sustainability and optimal fiscal policy in a country endowed with exhaustible resources is the non-oil fiscal balance. This measure, discussed by Barnett and Ossowski (2003), has the appeal that it is based on a clearly specified optimization problem. In order to maximize welfare over the long term, a country endowed with a known amount of exhaustible resources should smooth consumption and nonexhaustible resource taxation; revenues coming from oil should first be partly accumulated and used after the depletion of the natural resources.[6] The implication of this optimal policy is that the non-oil primary balance should be constant over time. Note that the non-oil primary balance should always be constant even though the specific level of the optimal primary balance depends on many variables, including the amount of exhaustible resources in the ground and the social discount rate. This fact provides a relatively assumption-free benchmark to gauge the optimality of fiscal policy: the more variable the non-oil primary balance, the less optimal fiscal policy.[7]

The optimal path for fiscal policy can be summarized in Figure 2.

Figure 2 is drawn using the ideal situation of knowing exactly the amount of reserves available. Furthermore, the optimality of invariant non-oil primary balance is valid only under a set of technical assumptions regarding, inter alia, the discount rate, and the rate of growth in the non-oil sector of the economy. Because this set of assumptions is probably not satisfied, the conclusions of this exercise should be taken only as a theoretical benchmark.[8]

Figure 2. Optimal Path of Fiscal Variables in Presence of Exhaustible Resources
(In percent of non-oil GDP)



Source: Barnett and Ossowski, 2003.

[6] The basic argument was exposed by Hotelling (1931).

[7] These conclusions are valid if the fiscal authorities do not have other discretionary reasons, including the standard stabilization role of Keynesian policy, to change the fiscal stance.

[8] Changes to the set of assumptions can lead to quite different policy implications. For instance, Takizawa, Gardner, and Ueda (2004) show that it is optimal for a country that starts with a low level of capital, and in the presence of positive externalities of public spending on productivity and consumption, to invest oil revenues in physical capital rather than in financial assets.

Both the non-oil overall and primary balances display similar behavior: they improved dramatically between 1996 and 2000 and they have worsened steadily in the following years, with the exception of 2004. Table 4 presents a set of overall and non-oil balances since 1996.

Table 4. Non-Oil Balance (General Government) 1/

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Oil-related revenues	5.4	4.5	2.8	3.9	7.5	7.5	7.5	8.7	11.1	15.9
Non-oil revenues	30.4	34.8	31.5	29.6	29.4	29.8	30.1	28.0	27.5	27.4
Share of oil revenues over total revenues	15.0	11.3	8.1	11.7	20.2	20.1	20.0	23.6	28.7	36.7
Overall balance	-8.9	-7.7	-6.0	-4.2	0.8	2.7	1.3	1.6	4.4	7.5
Primary balance	-2.6	-2.6	-1.4	1.7	5.2	5.4	3.4	3.3	5.6	8.6
Non-oil overall balance	-12.2	-10.0	-7.5	-6.4	-3.9	-2.9	-4.4	-4.7	-3.9	-4.8
Non-oil primary balance	-5.9	-5.0	-2.8	-0.4	0.4	-0.2	-2.3	-3.0	-2.7	-3.7
Non-oil GDP 2/	84.1	84.1	84.1	79.0	73.7	78.8	80.4	78.6	77.0	75.0
Non-oil overall balance (in terms of non-oil GDP)	-14.5	-11.9	-8.9	-8.0	-5.3	-3.7	-5.5	-6.0	-5.0	-6.4
Non-oil primary balance (in terms of non-oil GDP)	-7.0	-5.9	-3.4	-0.5	0.6	-0.2	-2.9	-3.9	-3.5	-4.9

1/ The oil-related revenues are the revenues from excises and export taxes on oil, gas, oil products, and the mineral resource tax and part of the profit and income taxes. They also include revenues of the road fund before 2003. All variables are in terms of share of total GDP, unless otherwise indicated.

2/ There are not reliable data for non-oil GDP before 1998. We use the ratio in 1998 to calculate the non-oil balance for years before 1998.

As is common in the literature, we report the non-oil balances in terms of non-oil GDP. However, because there is large uncertainty about the relative sizes of the oil and non-oil economies, we also report the non-oil balance as a share of total GDP.

Optimal fiscal policy under the conditions discussed above has two implications: (i) the non-oil primary fiscal balance should be constant, and (ii) there should be no correlation between the non-oil balance and oil-related revenues. On both accounts, the record of Russian fiscal policy is mixed. The standard deviation of the non-oil primary balance is different from zero, even excluding the years of fiscal crisis, indicating that the fiscal authorities did not follow strictly the optimal fiscal policy (Table 5). At the same time, the correlation between oil-related revenues and the non-oil primary balance was negative, because the authorities were financing the non-oil primary deficit with oil revenues.

Table 5. Volatility of Non-Oil Balance (General Government) 1/

	Standard Deviation		Correlation with Oil Revenues	
	1996-2004	1999-2004	1996-2004	1999-2004
Oil related revenues	2.6	2.3	1.0	1.0
Non-oil revenues	2.1	1.1	-0.7	-0.7
Overall balance	4.9	2.9	0.8	0.9
Primary balance	3.4	1.5	0.8	0.7
Non-oil overall balance	3.6	1.4	0.6	0.6
Non-oil primary balance	2.6	1.9	0.1	-0.6

1/ The standard deviations are calculated using the values of Table 4. The non-oil balances are calculated as a share of non-oil GDP. All other variables are calculated as a share of GDP.

V. Fiscal Stance and Impulse

The simple headline fiscal balance is not an accurate measure of the impulse that fiscal policy imparts to the economy for several reasons: (i) tax revenues are to a certain extent endogenous; (ii) different sources of financing may have different impacts on aggregate demand; and (iii) similarly, different tax and expenditure categories may also have different impacts on aggregate demand. To address these issues, fiscal impulse measures have been used for a long time to evaluate the impact of the fiscal budget on aggregate demand (Blejer and Cheasty, 1993). While the current measures of fiscal stance deal with the issue of endogeneity of fiscal revenues, reasons (ii) and (iii) are typically not taken into consideration because the estimations of differential effects of financing sources and expenditure categories are generally not sufficiently reliable.[9]

The simplest and most common way to address the endogeneity of fiscal revenues is to assume that revenues have unitary elasticity with respect to income; under this assumption, the revenue stance is defined as[10]

$$RS_t = \frac{R_o}{Y_o} Y_t - R_t , \tag{5}$$

where R_t are revenues in year t, Y_t is GDP in year t, R_o are revenues in the base year, and Y_0 is actual GDP in the base year.

Given the dependency of Russia on the energy sector, which accounts for about one-fourth of GDP, a possible alternative is to correct the measure above for oil revenues:

$$RS^*_t = \frac{R_o}{Y_o} Y_t - R_t + OR_t - OR_o , \tag{6}$$

where OR_t and R_t are respectively oil and non-oil revenues at time t. This "enhanced" measure of revenue stance follows the same logic of correcting for the business cycle while also

[9] The standard measures of fiscal impulse may underestimate the effect of fiscal policy—for example, when the increase in public expenditure is concentrated on raising minimum wages and pensions, which, in principle, have a large fiscal multiplier. In the past, when it was possible to estimate different multipliers with sufficient precision, measures of the fiscal stance also took into consideration other factors, including the composition of expenditure.

[10] Under a more sophisticated methodology, one could calculate the elasticities of every tax. While this methodology could deliver a more accurate number for a stable tax system, the Russian tax system has changed considerably in the past few years, and a disaggregated methodology is not easily applicable.

controlling for the oil cycle. The year 2001, during which the average price for Urals was US$23 per barrel, is taken as the base year.

The expenditure stance is usually defined with reference to potential output, under the assumption that outlays have unitary elasticity with respect to potential output:

$$ES_t = E_t - \frac{E_o}{PY_o} PY_t , \qquad (7)$$

where E_t is expenditure in year *t*, PY_t is potential output in year *t*, E_o is expenditure in the base year, and PY_0 is potential output in the base year. However, the level and the growth rate of potential output are extremely difficult to estimate, which makes the estimation of fiscally neutral expenditure problematic. Table 6 shows two output gaps: the baseline output gap, which is calculated in Oomes and Dynnikova (2005), and an alternative output gap, which is calculated using two simple hypotheses: potential output grows at 6 percent a year and the output gap is closing in 2005. This alternative measure of output gap, which is quite simplistic, provides a useful benchmark to assess how much the measure of the fiscal stance depends on the calculation of potential output.

Table 6. Measures of Output Gap 1/

	1999	2000	2001	2002	2003	2004	2005
Output gap baseline	-12.6	-9.2	-5.5	-3.3	-0.4	0.6	1.4
Output gap (alternative)	1.3	0.7	3.5	1.7	-0.5	-0.1	0.0

1/ The estimation of the output gap is done in the selected issue paper "The Utilization-Adjusted Output Gap: Is the Russian Economy Overheating?" All variables are expressed as a share of GDP.

The fiscal stance, which is defined as the sum of the expenditure and the revenue stances **(** $FS_t = RS_t + ES_t$ **),** is a synthetic indicator of the contribution of the fiscal account to aggregate demand. Table 7 gives a summary of three fiscal stances, calculated using different assumptions on potential output and including or excluding the energy sector.[11] The three measures of total fiscal stance differ because they are based on different assumptions about the potential output of the economy and the treatment of the energy sector.

[11] The stance for 2005 is calculated using the baseline staff projections and includes exceptional revenues linked to Yukos. Without the "Yukos effect" the revenue stance would be less restrictive.

However, despite these differences, the measures show a similar qualitative pattern. After a phase of positive fiscal stance between 1999 and 2003, the fiscal stance has turned negative. Note that the slowdown of public expenditure in 2004 is captured by both measures of the expenditure stance.[12]

Table 7. Fiscal Stance (General Government)
(In percent of GDP)

	1999	2000	2001	2002	2003	2004	2005
Revenue stance	3.8	0.5	0.0	-0.3	0.6	-1.3	-5.9
Revenue stance (w/o oil)	-0.2	-0.4	0.0	0.3	-1.8	-2.3	-2.5
Expenditure stance (benchmark)	6.4	2.3	1.9	3.6	1.1	-1.2	0.5
Expenditure stance (alternative) 1/	1.6	-1.1	-1.2	1.9	1.2	-0.9	1.0
Total stance (benchmark)	10.2	2.8	1.9	3.3	1.8	-2.5	-5.4
Total stance (alternative) 1/	5.4	-0.6	-1.2	1.6	1.8	-2.2	-4.9
Total stance (benchmark w/o oil)	6.2	1.9	1.9	3.9	-0.7	-3.5	-2.0

1/ The alternative measure of fiscal stance in constructed using the alternative measure of potential output described above.

The fiscal impulse is defined as the yearly change of the fiscal stance ($FI_t = \Delta FS_t = \Delta RS_t + \Delta ES_t$). By construction, the fiscal impulse, as opposed to the fiscal stance, does not depend on a base year, which is very useful in the case of Russia given the uncertainty surrounding the estimates of potential output. Table 8 reports the fiscal impulses calculated using the different assumptions we used for the fiscal stance in this section.

Table 8. Fiscal Impulse (General Government)
(In percent of GDP)

	1999	2000	2001	2002	2003	2004	2005
Revenue impulse	0.8	-3.3	-0.5	-0.3	1.0	-1.9	-4.6
Revenue impulse (w/o oil)	-1.9	-0.2	0.4	0.3	-2.1	-0.5	-0.2
Expenditure impulse (benchmark)	6.4	-4.1	-0.4	1.7	-2.5	-2.3	1.7
Expenditure impulse (alternative)	1.6	-2.7	-0.1	3.1	-0.7	-2.1	1.9
Total impulse (benchmark)	7.2	-7.4	-0.9	1.4	-1.5	-4.2	-2.9
Total impulse (alternative)	5.4	-6.0	-0.6	2.8	0.2	-4.0	-2.7
Total impulse (w/o oil)	4.5	-4.3	0.0	2.0	-4.6	-2.8	1.5

[12] We also tried other measures of the fiscal stance, based on alternative assumptions of potential output. Within reasonable parameters of constant annual growth in potential output of 3-8 percent, the fiscal stance has the same qualitative behavior. For the year 2005, we use the Fund staff's baseline forecasts to calculate the fiscal stance.

The calculation of the fiscal impulses shows that, after a sizable positive impulse in 2002, the fiscal impulse has been negative since 2003. Three caveats are in order for a proper interpretation of this result:

- *The fiscal impulse is meant to measure the contribution of the public sector to the economy and is not to be confused with the fiscal position that guarantees a nonaccelerating inflation*. In particular, the Russian economy during the past three years has benefited from large oil windfall gains; if the public sector had had to sterilize the entire amount of oil windfall accruing to the economy, the fiscal position would have been tighter.

- *The data for 2005 are based on projections* and may eventually turn out to be substantially different, especially if public expenditure is increased through an amendment to the budget in the second half of the year.

- *The revenue impulse is very negative in 2005 also because of the effect of the exceptional revenues from Yukos.*

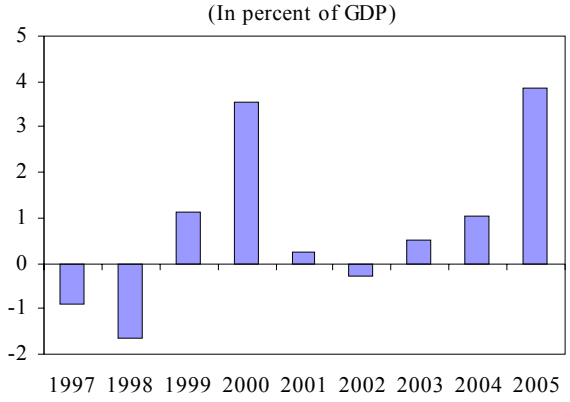
As a complement to the standard fiscal impulse, therefore, we propose another rough measure of the fiscal stance to evaluate how much of the oil windfall to the *entire* economy was sterilized by fiscal policy. The standard fiscal impulse calculated above evaluates the impact of fiscal policy by taking into account only the share of oil revenue that goes to the budget, not how much accrues to the economy overall and should be absorbed by the budget. Table 9 shows how fiscal policy has sterilized (or neutralized) total oil windfalls.

Table 9. Oil Revenue Windfalls and Fiscal Policy, 2002-05

	2002	2003	2004	2005
	(In percent of GDP)			
A. Change in energy exports in percent of GDP	1.2	4.9	5.7	6.3
B. Change in overall balance	-2.1	0.5	3.9	2.7
A-B (- indicates fiscal tightening exceeding windfall)	3.3	4.4	1.8	3.6
	(In billions of rubles)			
C. Change in net international reserves	496	804	1,240	1,921
D. Change in net credit to government	87	-172	-679	-1,145
D/C (-indicates fiscal sterilization of windfall)	0.18	-0.21	-0.55	-0.60

Fiscal policy has "taken away steam" only in a limited way because the overall fiscal balance has cumulatively improved only by 3.5 percent of GDP since 2001; while, during the same period, the increase in oil windfalls has contributed more than 18 percent to the economy. This means that, in the last four years, aggregate demand has increased more than 15 percent thanks to the energy boom net of an insufficiently restrictive fiscal policy.

Figure 3. Size of Oil Fiscal Shocks
(In percent of GDP)



Sources: Authorities; and Fund staff estimates.

VI. How the "Unexpected Oil Windfalls" Were Used

Beyond the standard issue of the appropriateness of the fiscal stance, it is interesting to examine how the fiscal authorities reacted to unexpected oil revenues. Raising this issue begs the question of what are "unexpected oil revenues." Using as a benchmark assumption the finding that oil prices are generally believed to follow a random walk (Cashin, Liang, and McDermott, 2002), the best predictor of oil revenues next year is the amount of oil revenues this year. Therefore, we can use the year-to-year changes in the oil balance as a proxy for unexpected oil revenues.[13] Figure 3 shows the size of the oil windfall shocks defined in such a way. Starting in 2003, the oil windfall shocks have been increasingly positive. In 2005, at the current level of oil prices, the oil-related revenues will be almost 5 percent larger than in the previous year.

In response to a fall in oil revenues, fiscal authorities may respond in three ways: (i) increase non-oil revenues; (ii) decrease expenditure; or (iii) increase the public deficit. These possible responses are all constrained by the following identity:

$$\Delta(Budget\ balance) = \Delta(oil\ revenues) + \Delta(non-oil\ revenues) - \Delta(expenditure).$$

Rearranging, we obtain:

$$\Delta(oil\ revenues) = -\Delta(non-oil\ revenues) + \Delta(expenditure) + \Delta(Budget\ balance).$$

Table 10 shows the responses of the fiscal variables in each year from 1999 to 2005 using the decomposition above. The data for 2005 are based on staff's projections.

[13] Oil revenues can also change because of the legislation concerning oil taxation and because of changes in the quantity produced.

Table 10. Fiscal Response to Oil Revenue Shocks

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Oil shock 1/	-0.9	-1.7	1.1	3.5	0.0	0.0	1.1	2.4	4.8
Non-oil revenue reaction 2/	-4.4	3.3	1.9	0.2	-0.4	-0.3	2.1	0.5	0.2
Expenditure reaction	2.5	-5.2	-5.9	-2.9	0.9	2.5	-1.5	-2.0	2.0
Savings 3/	1.0	0.3	5.1	6.2	-0.4	-2.1	0.5	3.9	2.7

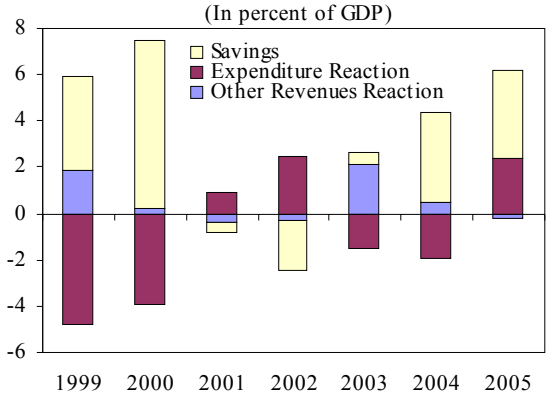
1/ An oil shock is defined as a variation in oil related revenues.

2/ Non-oil revenue reaction is defined as a decrease in non-oil related revenues (a positive number means a decrease in non-oil taxation).

3/ Savings are defined as a change in the overall fiscal balance.

The use of oil windfall is best evident in Figure 4. The increase in oil windfalls has been mostly used to add to fiscal savings, while the decrease in non-oil revenues has played a smaller role, with the exception of 2003 and, to a lesser extent, 2005. A possible explanation for this behavior is that changes in taxation or expenditure, which are typically decided the previous year, are implemented with a lag, so that fiscal authorities cannot respond to an unexpected increase of oil fiscal revenues by immediately decreasing taxation or raising expenditure. This may explain why large changes in oil fiscal windfalls are saved. This mechanism was institutionalized with the introduction of the oil stabilization fund (OSF) in 2004. In this context, it is useful to compare the year 2003, when a large increase in oil windfall was largely offset by a decrease in non-oil taxation, with 2004, when most of the increase in windfall was saved in the OSF. As the OSF reached the statutory cap of Rub 500 billion, below which all oil-related revenue above the reference price is earmarked for the OSF, this automatic saving mechanism could well be weakened and increases in expenditure and/or decreases in non-oil taxation may play a larger role.

Figure 4. Fiscal Response to Oil Fiscal Shocks
(In percent of GDP)



Sources: Authorities; and Fund staff estimates.

VII. CONCLUSIONS

Fiscal policy played a fundamental role in the stabilization of the Russian economy after the 1998 crisis. The oil price boom in recent years has helped the authorities reach a sustainable fiscal equilibrium but also poses new challenges. In particular, the exceptional oil revenues that Russia has received starting in 2003 have raised the question of whether the non-oil sectors of the economy are developed enough to absorb the new expenditure capabilities. This paper has evaluated how fiscal policy performed after the 1998 crisis. It has used a variety of indicators to answer a number of questions.

Russia has progressed greatly in recent years on public debt sustainability, largely because the real interest rates on the public debt have been negative and growth has been sustained. However, the fiscal authorities have also been able to save a consistent part of the oil windfall and generate a large primary surplus.

Regarding sustainability with respect to the oil price, the constant oil price balance worsened progressively starting in 2001 but showed a modest reversal in 2004. This reversal was partly due to the oil legislation, which made oil revenues more sensitive to the oil price, and to the decrease in non-oil revenues and slight increase in expenditure relative to GDP. While fiscal accounts will show a surplus within a reasonable range of oil prices, this tendency could be dangerous, especially if proposals to increase aggressively public expenditure, as well as to decrease non-oil taxation, are implemented.

As to optimal fiscal policy in a country endowed with exhaustible resources, the analysis of the non-oil fiscal balance shows that Russian fiscal policy has had a mixed record. Although Russia has spent a large part of the oil revenue windfalls in the past; since the establishment of the OSF, it saved most of the oil revenues in 2004 and is expected to save additional oil revenues in 2005. However, the automatic saving mechanism provided by the OSF will be weakened by the approved increase in the reference oil price and this poses important challenges for the future.

In evaluating how the fiscal balance has interacted with aggregate demand, the fiscal impulse shows that budget policy has not contributed to the increase in aggregate demand since 2003**.** However, the fiscal position has not been tight enough to contain the inflationary impact from the exceptional oil windfalls for the economy as a whole.

Even though it has not contributed to aggregate demand in the traditional sense, fiscal policy has not been restrictive enough in the past four years to sterilize the impact of the oil windfall on the entire economy. Since 2002, the economy-wide oil windfall has cumulatively been more than 18 percent of GDP, while the fiscal stance has tightened only by 3.5 percent of GDP.

Finally, our analysis of the effectiveness of fiscal policy in dealing with the unexpected oil fiscal windfalls confirms that the OSF has been effective in offsetting exceptional increases in the oil revenue windfalls in 2004. At the same time, it raises the question of how future oil revenues will be offset without an appropriate automatic saving mechanism.

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