

Russian Federation: Selected Issues Paper

This selected issues paper on 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 August 4, 2011. 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.

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International Monetary Fund
Washington, D.C.

INTERNATIONAL MONETARY FUND

RUSSIAN FEDERATION

Selected Issues

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Approved by the European Department

August 4, 2011

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I. LEADING INDICATORS FOR INFLATION IN RUSSIA¹

The focus of monetary policy in Russia is shifting towards inflation targeting. This note develops two distinct but closely related analytical tools to inform monetary policy: trimmed mean core inflation and a leading indicators model (LIM) for inflation forecasting. The trimmed mean core inflation measure tracks trend inflation in Russia better and is less volatile than the Russian Federal Service of State Statistics (Rosstat) core inflation measure. This core inflation measure indicates that the recent surge in headline inflation is not entirely attributable to food price shocks as broad inflationary pressures are also evident. The LIM identifies a group of leading indicators that best fit Russia's headline and core inflation dynamics during 2003–11. The model suggests that headline inflation is strongly associated with past developments of broad money and food prices. These findings suggest that inflation at end-2011 will remain well outside the CBR's targeted range of 6–7 percent.

A. Introduction

1. **The focus of monetary policy in Russia is shifting toward low and stable inflation.**

Like many other central banks, the Central Bank of Russia (CBR) has been charged with several objectives—ensuring a stable exchange rate, low inflation and, in practice, supporting high growth.² These objectives can be difficult to achieve simultaneously with the exclusive use of monetary policy instruments. When facing policy conflicts over the past few years, the inflation target was often compromised to achieve other objectives. However, there has been a notable shift in the focus of monetary policy recently toward greater exchange rate flexibility and stronger commitment to inflation targeting. Relevant for the transition toward full-fledged inflation targeting, this chapter conducts two distinctive but closely related analyses of core inflation and inflation forecasting in Russia.

2. **Specifically, this chapter seeks a set of leading indicators for inflation.** As monetary policy affects inflation with long and variable lags, central banks should take a view on future evolution of inflation to ensure that the intended effect of policy decisions materializes at the right time. In this respect, finding a stable empirical relation between current data and future (trend) inflation would help inform monetary policy decisions. The remainder of the note is organized as follows. Section B proposes a new measure of core inflation, which estimates the trend component of monthly inflation using real-time data. Section C presents short-term inflation forecasts for Russia derived from a LIM. Section D concludes with some policy implications.

¹ Prepared by Daehaeng Kim and Nandaka Molagoda.

² According to the Constitution of the Russian Federation (Article 75), the CBR's main function is “to protect the ruble and guarantee its stability.” The objectives of the CBR's policy are also stipulated in the Federal Law on the Central Bank of the Russian Federation and other federal laws. While not explicit in the laws, the CBR's monetary policy has in practice also been geared at ensuring growth momentum.

B. Core Inflation

3. **Core inflation is meant to be a good indicator for trend inflation and a viable target for monetary policy.** A measure of core inflation usually smoothes out temporary price fluctuations to uncover the trend component of inflation. By allowing policymakers to see through temporary or potentially misleading fluctuations, core inflation measures can guide the direction of monetary policy. Further, as temporary price fluctuations are often caused by non-monetary forces, core inflation is generally considered to be more controllable by monetary authorities than headline inflation. Given these advantages, core inflation is closely monitored and often used as an implicit monetary policy target by central banks.

4. **A core inflation measure can also improve policy effectiveness by providing a useful tool for transparent public communication.** Core inflation could help clarify why policymakers are or are not reacting to fluctuations in headline inflation rates. Public communication through a core inflation measure would also direct public attention to trend inflation, bringing public focus in line with the focus of the monetary authorities. This would be important for Russia: given the highly persistent inflation in the past, successful inflation targeting would require anchoring inflation expectations. To the extent that the focus on core inflation reduces the pass through of temporary shocks to inflation expectations, the variability of inflation would be further reduced.

5. **The main objective of this section is to develop an estimate for trend inflation with “real-time” data.** As transitory forces can only be known with the benefit of hindsight, the true trend inflation cannot be recovered with certainty until after the fact. A variety of methodologies are used for the computation of core inflation, as an estimate for trend inflation, reflecting country-specific circumstances. There are three types of core inflation measures, depending on how volatile price movements are smoothed out.

- *Exclusion method:* the core CPI of this kind excludes a predetermined list of CPI components—typically, volatile (and seasonal) food and energy prices. Some central banks exclude “administered” services prices, reflecting country-specific circumstances.
- *Trimmed mean method:* the core CPI of this kind excludes a fraction of the most extreme price movements in both tails of the “cross-section” price distribution. This method shares the same idea with the exclusion method in the sense that it leaves out more volatile short-term price movements. However, unlike the former, the trimming is purely statistical, and the CPI components that are trimmed vary over time.
- *Moving average method:* the core CPI of this kind is calculated as a moving average of past monthly headline inflation rates.

6. **The estimation method and the use of core inflation measures differ across countries.** The Russian Federal Service of State Statistics (Rosstat) compiles a core inflation measure using an exclusion method and publishes it on a monthly basis along with headline inflation. Currently, the exclusion method is more widely used than the other two methods, as it is more transparent and easier to communicate to the public. However, the trimmed mean method is also widely used for analytical purposes and as a robustness check of core inflation measures (Box 1).

Box 1. Core Consumer Price Index in Selected Countries

Rosstat calculates core CPI by excluding a predetermined list of goods and services—fruit and vegetable, fuel, and administered service prices—from the headline index. The share of excluded items in the 2005 CPI basket was 21 percent. The core inflation rate is published on a monthly basis along the headline inflation and its breakdown for food, non-food goods, and services. The CBR’s end-year inflation target is set in terms of headline inflation.

The Central Bank of Brazil estimates core inflation as a trimmed mean, leaving out 20 percent of weights from both tails, which scores the best fitting with 13-month centered moving average of monthly inflation. Core inflation is published in the quarterly Inflation Report.

The Bank of Canada (BOC) calculates core inflation by excluding food and energy prices and the effects of changes in indirect taxes from the headline index. While formal inflation targets are expressed in terms of the headline CPI, the BOC explicitly focuses on the core measure in seeking to implement the targets. The trimmed mean method is also used, though not formally adopted, for robustness check and analytical purposes.

The Central Bank of Turkey publishes two core inflation measures in its quarterly Inflation Report. Core inflation measures are calculated using the exclusion method and called H or I core, depending on the items excluded. H core inflation excludes unprocessed food products, energy, alcoholic beverages, tobacco, and gold; I core inflation excludes broader food items than H core inflation. Other methods, including the trimmed mean method, are used for robustness check.

The U.S. Federal Reserve compiles core personal consumption expenditure (PCE) price index by excluding volatile and seasonal food and energy prices from the PCE price index, which is a U.S.-wide indicator of the average increase in prices for all domestic personal consumption. Some Federal Reserve Banks uses the trimmed mean method (Dallas) or the moving average method (New York) for the calculation of core inflation.

Other central banks that calculate core inflation by excluding food and energy prices include the European Central Bank, the Reserve Bank of India, and the Bank of Korea.

7. **The trimmed mean method of a core inflation measure has several important advantages.** Given a secular change in the relative price of volatile and seasonal items (e.g., food), the trimmed mean method ensures that estimated core inflation moves closely

with trend headline inflation. This is different from the exclusion method, where there could be persistent gaps between trend inflation and core inflation.³ Further, the trimmed mean method is flexible in handling the skewness of the cross-section price distribution. Given that a typical cross-section distribution of component price changes is skewed to the right—meaning headline inflation tends to be more influenced by extreme positive price changes, the asymmetric trimming of extreme values would ensure smoother core inflation than the moving average method, which implicitly assumes symmetry of extreme price movements.

	Advantage	Disadvantage
Exclusion method	Easy to calculate, understand, and communicate (e.g., core = headline net of food prices).	May fail to exclude some highly volatile components, while throwing out some useful information. Would have a persistent gap from trend inflation when there is a secular change in the relative prices of the excluded items.
Trimmed mean method	Maximum use of information and less room for discretion. Trimming criteria will be derived as an optimal solution.	More challenging to calculate, understand, and communicate.
Moving average method	Easy to calculate. Transparent.	Backward looking or only available well after the fact. Could be more volatile than trend inflation if the cross-section price distribution is skewed.

Data and methodology⁴

8. **Based on the trimmed mean method, this note estimates core inflation in Russia.** Disaggregated CPI components and the corresponding weights for the period from January 2005 to May 2011 are used for the estimation. Seasonally-unadjusted series are used for the baseline cases, while seasonally-adjusted series are also examined for robustness tests.⁵ The seasonal adjustments are made using X12-ARIMA.

9. **Specifically, two trimming methods are used in this note which turn out to generate similar results.**

³ When there is a secular increase (decrease) in food prices, core inflation based on the exclusion method will underestimate (overestimate) trend inflation.

⁴ See Appendix 1 for technical details.

⁵ Seasonal adjustments of individual price indexes may be redundant, as the trimmed mean method leaves out seasonal effects as well. As expected, seasonal adjustments of component price indexes reduce the total amount trimmed. However, the seasonal adjustments make little difference in the estimated core inflation, and thus only the baseline cases are presented in this note.

- *Fixed-weight approach* drops extreme values of a certain percentage of weights from each tail of the cross-section price distribution of 46 CPI components in each month. As the typical price distribution is skewed, the cutoff weights are not constrained to be symmetric.
- *Standard deviation approach* drops the extreme values that are a certain standard deviation away from the average in each month. This trimming does not need to be symmetric, either.

As these trimming methods leave out most volatile price movements in each month, the list of excluded CPI components varies each month. Further, unlike the fixed-weight approach, where the weights of excluded components are fixed throughout the sample period, the excluded weights under the standard deviation approach vary each month. This flexibility makes the standard deviation approach trim less information than the other approach to generate a smooth measure of core inflation.

	Components excluded each month	Weights of excluded components
Fixed-weight approach	Varying	Fixed
Standard deviation approach	Varying	Varying

10. **The trimming points are chosen to minimize the root mean square distance between the trimmed mean and trend inflation.** The proxy for the trend inflation is a centered 24-month moving average of seasonally unadjusted monthly inflation rates.⁶ As seen in Figures 1–2, the centered moving average is quite stable, and averaging a longer time span makes little difference in the optimal trimming points.

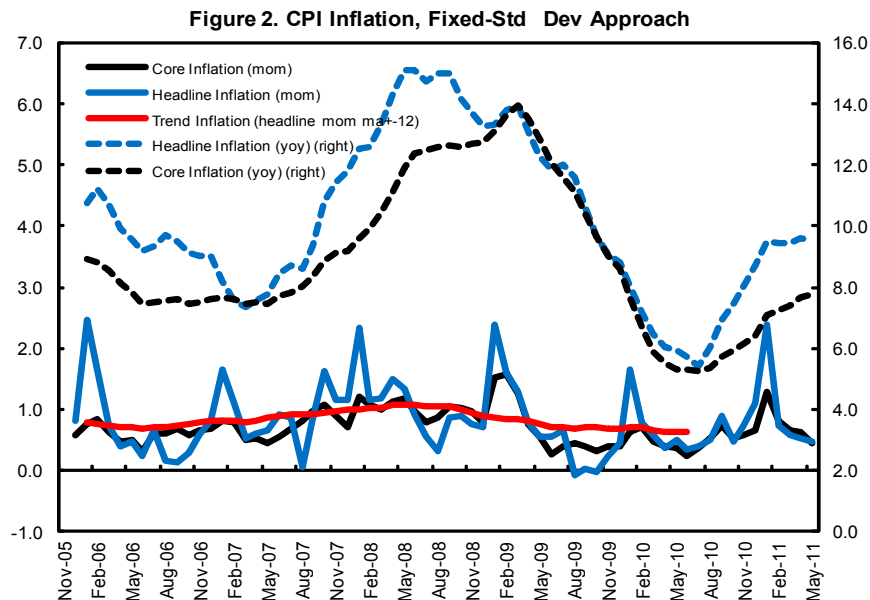
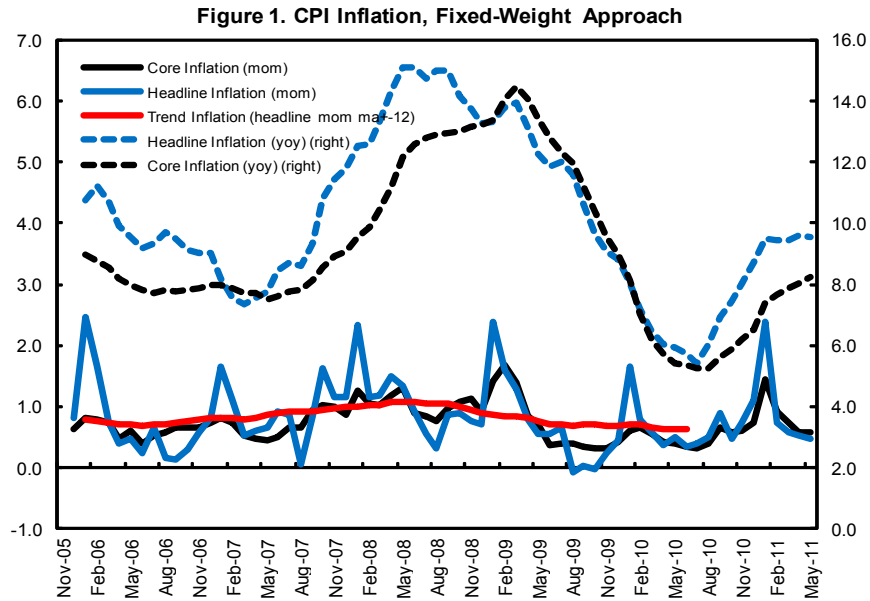
Estimation results

11. **The fixed-weight approach trims out 23 percent of weights from the right tail and 41 percent from the left tail.** Consistent with our prior, the “most-often-excluded” components for the sample period include food, energy, and administered prices such as fruits and vegetables, eggs, sugar, gasoline, and passenger transport. However, communication devices and services are also frequently trimmed from the left tail, possibly reflecting the effect of fast technological progress and more intense competition.

12. **Core inflation based on the fixed-weight approach suggests that trend inflation has been picking up considerably since August 2010 (Figure 1).** Following a significant decline from 14.5 percent in March 2009 to 5.3 percent in July-August 2010, the 12-month

⁶ The centered 24-month moving average of any given month is the average of that month’s inflation rate together with the inflation rates of the prior 12 months and those of the subsequent 12 months.

core inflation rate increased gradually to 8.2 percent in May 2011. This increase in core inflation is less striking than the acceleration of headline inflation from 5.4 percent in July 2010 to 9.6 percent in May 2011. However, the evident upward trend in the core measure indicates that the acceleration of headline inflation was not entirely attributable to supply shocks to food prices.



13. **The standard deviation approach generates similar results (Figure 2).** The 12-month core inflation increased from 5.3 percent in July 2010 to 7.8 percent in May 2011, suggesting a rising trend inflation. The optimal trimming under this approach drops price movements that are 1.6 standard deviation above the sample mean (from the right tail) and

1.0 standard deviation below the mean (from the left tail). For the sample period, on average, 4.1 percent of weights are trimmed from the left and 4.5 percent from the right (total 8.6 percent). The top 10 “most-often-excluded” items include fruits and vegetables, eggs, sugar, other food, gasoline, communication devices, cheese, health rehabilitation services, other services, pasta and cereals—mostly food items with a few service and nonfood items.

Top Ten Most Volatile Components

Ranking	Item	Weight ('11)	Ranking	Item	Weight ('11)
1	Fruits and vegetables	4.18	6	Communication devices	0.50
2	Eggs	0.52	7	Cheese	1.05
3	Sugar	0.70	8	Pasta and cereals	0.96
4	Other foods	2.38	9	Health services	0.49
5	Gasoline	2.45	10	Other services	3.13

14. **Core inflation measures based on the trimmed mean methods are consistently less volatile than Rosstat’s measure throughout the sample period (Figures 3–4).** Despite the large gap in the amount of information used for the estimation—the fixed-weight approach trims 64 percent of total weights while the standard deviation approach trims only 8.6 percent on average, the two trimming methods generate remarkably similar results. However, as can be seen from the peak-to-trough variations of year-on-year rates and the short-term volatility of monthly rates, the Rosstat’s core inflation is more volatile than the trimmed mean inflation and sometimes more than the headline inflation. This high volatility makes Rosstat’s core inflation less attractive as a leading (or real-time) indicator of trend inflation.

Figure 3. Core Inflation Rates, 12-month rate

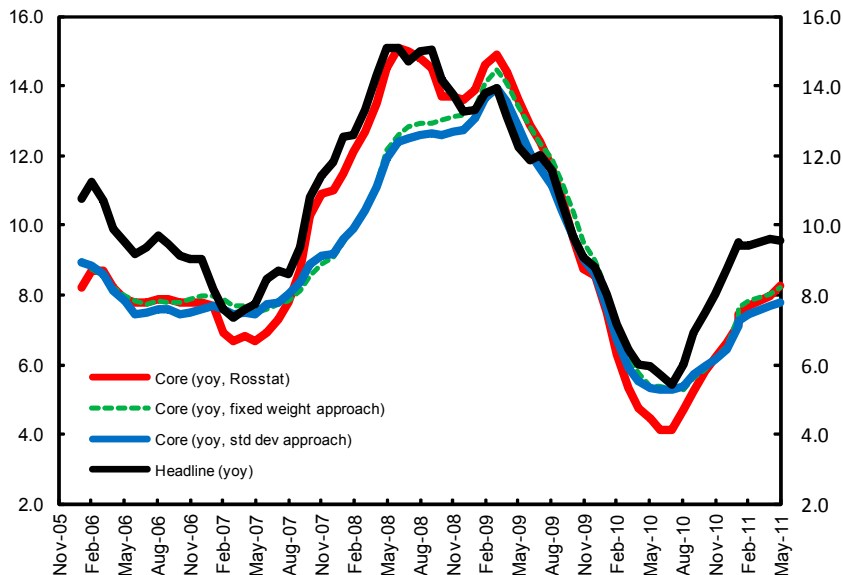
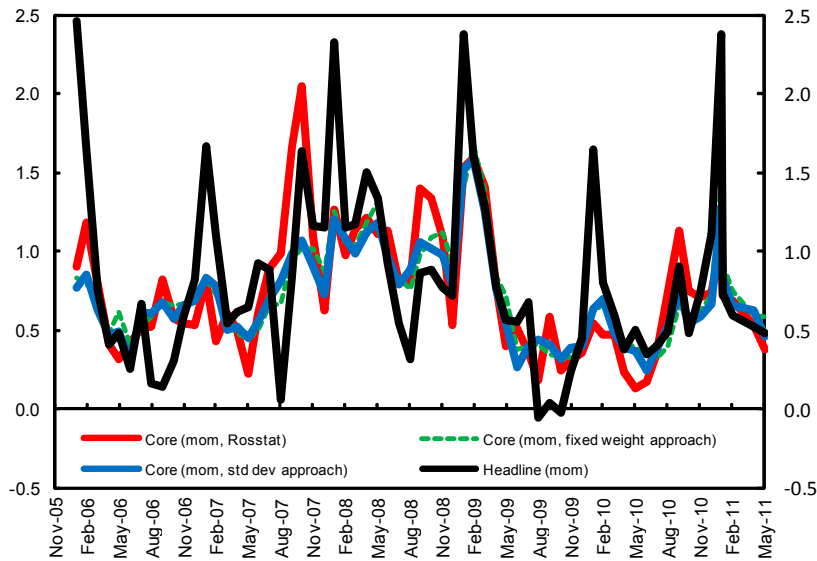


Figure 4. Core Inflation Rates, month-on-month rate



15. **Core inflation can inform monetary policy by revealing the evolution of trend inflation.** The proposed core inflation measures indicate that the recent surge in headline inflation is not entirely attributable to food price shocks, as broader inflationary pressures are also evident. This suggests that monetary tightening would be needed to bring headline inflation under control. As a next step, an inflation forecasting model is presented to provide a better understanding of the relationship between current economic variables and future inflation. The model provides a more focused view of future inflation dynamics, and policy implications for inflation targeting.

C. Inflation Forecasting: Leading Indicators Model

16. **A more explicit econometric analysis for short-term inflation forecasting is a useful tool to inform and guide monetary policy.** This section identifies a group of leading indicators for monthly inflation rates between 2003 and 2011. Estimated empirical relations between the leading indicators and inflation are then used to project inflation 6–12 months ahead.

17. **LIMs are widely used for inflation forecasting.** LIMs rely on empirical correlations between selected economic variables and actual inflation, and do not impose explicit causal relationships between them. This flexibility improves the forecasting accuracy in some cases, but at the cost of not establishing structural relationships and thus making policy implications less tractable. For this reason, LIMs are often used as a complement to a fully-fledged structural model estimation, which explicitly addresses issues relating to the monetary policy transmission mechanism.

18. **However, it is well accepted that LIMs are particularly useful in detecting turning points in inflation.** LIMs translate turning points of leading indicators into those of future inflation. This study finds that LIMs accurately capture the timing of sustained upward and downward movements in the headline inflation rate in February 2007, July 2008, and June 2010.

19. **An autoregressive distributed lag model (ADL) is estimated for the period from July 2003 to April 2011.** The general-to-specific algorithm in Ox Metrics is used to narrow down the set of possible leading indicators from a larger dataset. Then, various metrics, including significance tests, statistics measuring the ex-post forecast quality, and consistency with economic theory, are considered to choose the benchmark model. The sample period is constrained by a structural break and availability of key variables. Separate models for headline and core monthly inflation are estimated.⁷ The results of the two regressions are presented in Table 1 and Table 2 below.

20. **The following variables are considered as potential leading indicators, in line with other empirical studies:**

- Interest rates: Interbank 3-month offer rate, 5-year generic bond yield, deposit rate;
- Asset prices: housing prices, equity price index;
- Real activity: real GDP, industrial production index, unemployment rate;
- Monetary aggregates: Monetary base, M2, private sector credit;
- External variables: US Federal Fund rate, world commodity prices (food and beverages), partner country inflation, crude oil prices, gold prices;
- Exchange rates: RUB/\$ exchange rate, NEER;
- Others: General government revenue, average wages, business confidence index.

21. **Lagged headline inflation, broad money growth, nominal effective exchange rate and food price inflation are leading indicators of headline inflation (Table 1).** Broad money growth (M2) is positively correlated with inflation with 7 to 12-month lags, which is broadly in line with other empirical studies on Russia. Exchange rate pass-through also affects inflation significantly

Table 1. Dependent Variable: Headline CPI Inflation, mon, SA

	Coefficeint	Std. Error	t-value
Inflation (headline)			
lagged 3 months	0.06	0.05	1.21
lagged 6 months	0.17	0.05	3.82
NEER appreciation			
lagged 1 months	-0.03	0.01	-4.41
lagged 2 months	-0.03	0.01	-3.96
lagged 4 months	-0.03	0.01	-2.99
lagged 6 months	-0.03	0.01	-2.93
M2 growth			
lagged 7 months	0.03	0.01	3.67
lagged 12 months	0.02	0.01	3.28
Inflation (food)			
lagged 0 months	0.32	0.02	14.9
Constant	0.20	0.05	3.88

⁷ Starting from 2005, core inflation is estimated based on the standard deviation approach. For the earlier period, Rosstat's official core inflation measure is used in the regression.

with a lag of 1-6 months. Food inflation is estimated to have an immediate impact on headline inflation, with the estimated coefficient close to its weight in the CPI basket.

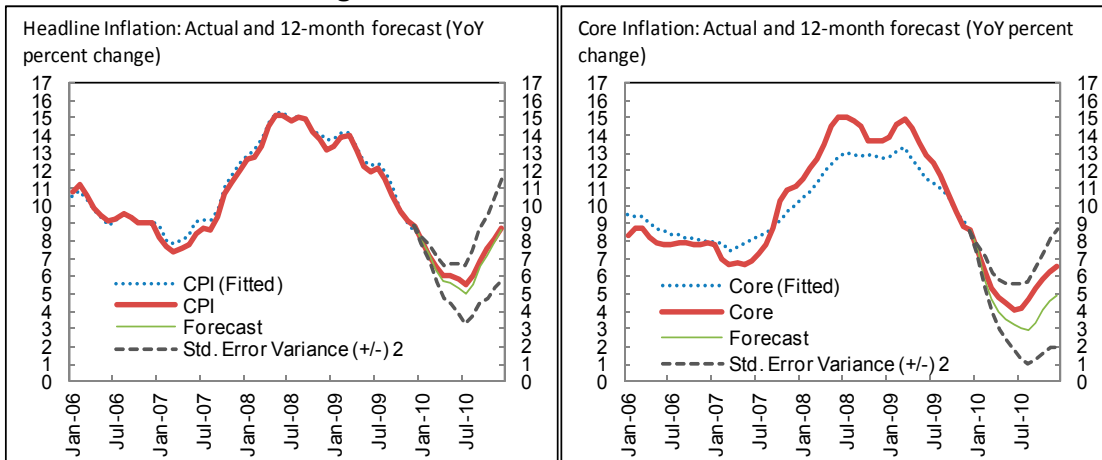
22. **The same set of leading indicators is found for core inflation (Table 2).** The lags between M2 and core inflation are similar to those found between M2 and headline inflation. However, the exchange rate pass-through to core inflation is estimated to be larger and more persistent than that to headline inflation. Food inflation also has a persistent effect on core inflation, possibly reflecting its impact on inflation expectation and second-round effect on core inflation.

Table 2. Dependent Variable: Core CPI Inflation, mon, SA

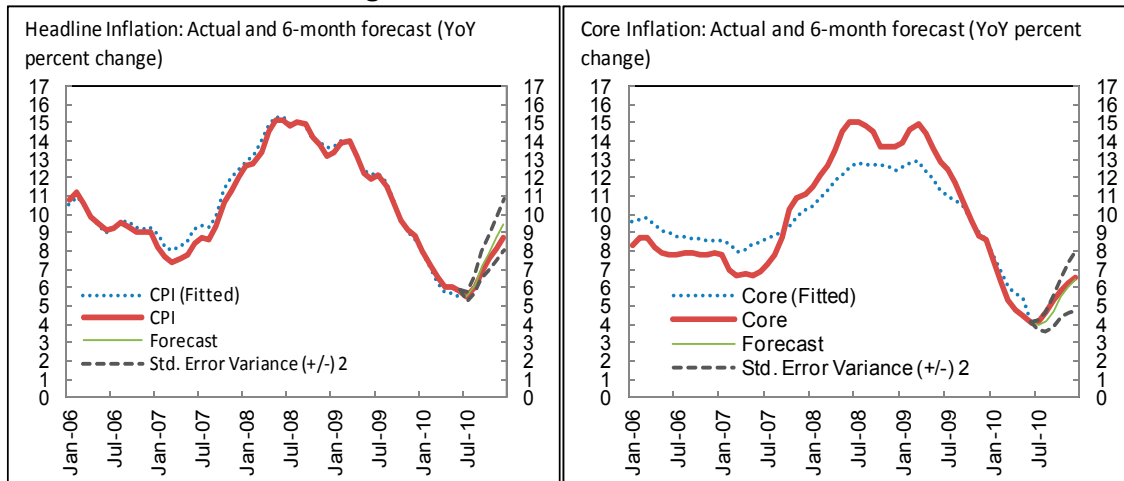
	Coefficient	Std. Error	t-value
Inflation (food)			
lagged 1 month	0.25	0.04	6.78
lagged 5 months	0.06	0.04	1.48
lagged 9 months	0.06	0.04	1.67
lagged 13 months	0.09	0.04	2.50
NEER appreciation			
lagged 1 month	-0.07	0.01	-5.28
lagged 3 months	-0.04	0.02	-2.73
lagged 5 months	-0.04	0.02	-2.98
lagged 7 months	-0.02	0.02	-1.03
lagged 9 months	-0.03	0.02	-2.02
lagged 11 months	-0.04	0.02	-2.71
M2 growth			
lagged 5 months	0.05	0.01	3.4
lagged 9 months	0.02	0.01	1.79
lagged 12 months	0.03	0.02	1.98
lagged 13 months	0.01	0.01	0.66
Constant	0.04	0.08	0.60

23. **The 12-month ex-post forecasts correctly predict the turning point of both headline and core inflation in August 2010.**⁸ While the 12-month forecast for core inflation underestimated the core inflation rates throughout the forecasting horizon, the headline inflation forecasts predict the actual inflation very closely (Figure 5). Forecasting accuracy for core inflation improves in a shorter-forecasting horizon. The LIMs predict the rising headline and core inflation in the second half of 2010 with a remarkable accuracy (Figure 6).

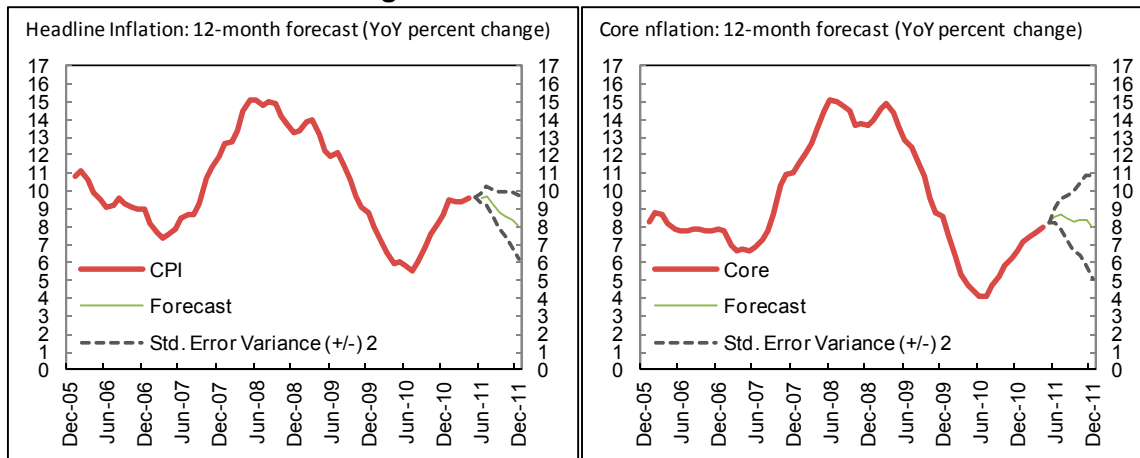
Figure 5. Twelve-Month Ex-Post Forecasts



⁸ The 12-month ex-post forecasts are the inflation projections that the models would make for 2010 at end-2009. Specifically, the ex-post forecasts use pre-2010 data for the regression, and the forecasts are compared with the 2010 inflation outturns.

Figure 6. Six-Month Ex-Post Forecasts

24. **The LIMs project that headline inflation will start to decelerate from August 2011 (Figure 7).** The projected turning point reflects the assumed M2 growth, as well as the base effect of high inflation in the second half of 2010. Specifically, the out-of sample forecasts are based on the following assumptions for 2011: (i) food price inflation at 7.8 percent with favorable weather conditions, (ii) NEER appreciation at 3.0 percent, and (iii) M2 growth at 25 percent.⁹

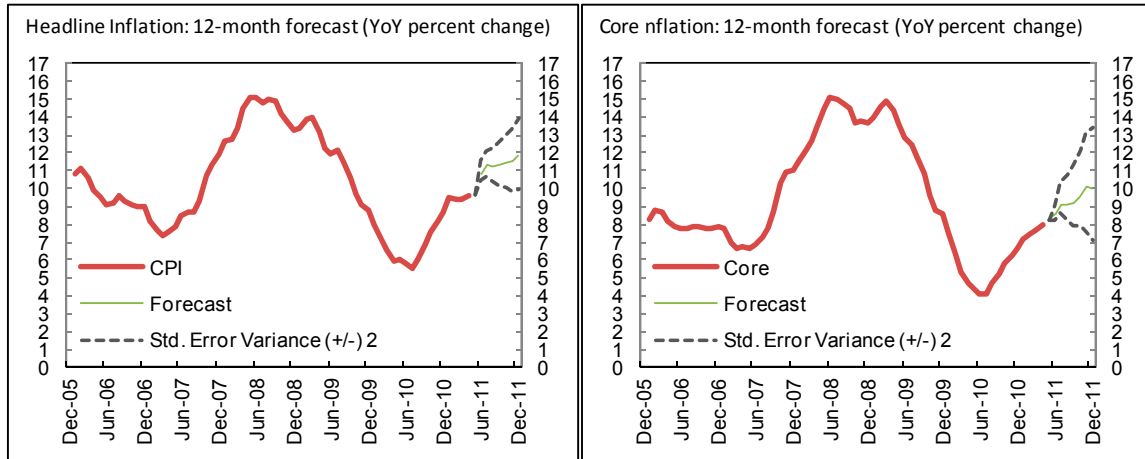
Figure 7. Inflation forecasts for 2011

25. **The model predicts headline inflation at 8.0 percent and core inflation at 7.9 percent at end-2011 (Figure 7),** with a relatively wider margin of error for core inflation forecasts. The model suggests that food price inflation is the key risk to the inflation outlook (Figure 8). When Russia's food prices are assumed to increase at the same pace as the world

⁹ These assumptions are broadly in line with the latest staff projections for 2011.

food prices (21.8 percent in the May 2011 WEO Global Assumptions), both headline and core inflation are projected to keep rising in 2011 to double-digits.¹⁰

Figure 8. Inflation forecasts for 2011 with WEO Global Assumptions for food prices



D. Policy Implications

26. **Both core inflation and LIMs suggest that the recent surge in inflation is not attributable only to food price increases since the summer of 2010.** The proposed estimates of core inflation indicate that the rising headline inflation in recent months has been triggered mainly by food inflation, but broader inflationary pressures are also evident. LIMs also suggest that the surge in inflation is strongly associated with the past developments of monetary aggregates.

27. **These findings suggest that inflation at end-2011 will remain well outside the CBR's targeted range of 6–7 percent.** While stable food price is key to lowering inflation, some moderation of M2 growth—through limited intervention in the foreign exchange market and higher policy rates—will be needed to bring inflation under control. However, given the 7–12 month transmission lags, the effect of policy tightening would likely be felt only in 2012. In addition, it should also be noted that there is limited scope to use LIMs to analyze monetary policy in more detail, particularly, due to the lack of explicit considerations on the monetary policy transmission mechanism. In this respect, further studies with a structural model are warranted to investigate causal relationships between inflation and other economic and policy variables.

¹⁰ The baseline assumption of 7.8 percent food price inflation reflects a deceleration of fruit and vegetable price inflation in Russia, which was one of the main drivers of the recent inflation hike, and the limited integration with world grain markets. Government measures, such as the export ban and the possible release of grain reserves, also helped mitigate the pressures on domestic food price inflation.

Appendix I. Statistical Properties of CPI Components and Trimming Method

The estimation of core inflation uses disaggregated CPI series and their weights for 46 items for the period from January 2005 to May 2011 (15 foods, 19 nonfood goods, and 12 services items). The weights in the CPI basket are revised each year. The average weight for an item in the CPI basket is 2.2 percent, with the maximum of 10.7–9.6 percent for meat and the minimum of 0.1–0.2 percent for hospitality service.

Statistical Properties: Cross-Section

Data allows us to examine the cross-section distribution of 46 CPI components in each month for the sample period. When $\pi_t = \sum_{i=1}^N \omega_{it} \cdot \pi_{it}$ and $\sigma_t = \sqrt{\sum_{i=1}^N \omega_{it} \cdot (\pi_{it} - \pi_t)^2}$, where ω_{it} and π_{it} are the weight and price change of CPI component i , respectively, the kurtosis of the distribution is $K_t = \frac{\sum_{i=1}^N \omega_{it} (\pi_{it} - \pi_t)^4}{\sigma_t^4}$. The kurtosis of a standard normal distribution is equal to 3. Skewness is defined as $S_t = \frac{\sum_{i=1}^N \omega_{it} (\pi_{it} - \pi_t)^3}{\sigma_t^3}$, which is 0 for a standard normal distribution.

- Kurtosis: Higher kurtosis implies fatter tail, meaning greater influence of extreme values. This establishes the usefulness of the trimmed mean.
 - Over the sample period, the average kurtosis is 1,887 for seasonally unadjusted (cross-section) distributions and 1,413 for seasonally adjusted distributions. This is very large, suggesting greater influence of extreme values on Russia's inflation dynamics. For the U.S. during 1977–2004, the average kurtosis of monthly inflation was 40.6.
- Skewness: Positive (negative) skewness implies longer right (left) tail. The presence of skewness is not essential to the statistical case for trimming, which is based on the presence of excess kurtosis. However, a finding of skewness suggests that we should not constrain our trim to be symmetric.
 - Over the sample period, the average skewness is 39 for both seasonally unadjusted and seasonally adjusted distributions. (For the U.S. during 1977–2004, the average skewness was 0.36.) This implies that on average, monthly inflation is affected more by positive extreme values. However, it is fickle with positive skewness in 61 percent of the sample months and negative skewness in the rest. Seasonal adjustment makes little difference in this pattern. The large variation of skewness reflects volatile food items and administered service prices as well as the small number of components—in other country cases, much more detailed breakdown of CPI is used, which usually improves the stability of price distributions.

Statistical Properties: Time-Series

Standard deviations of the time series of each component reveal which items in the CPI basket drive the swings of monthly headline inflation. In general, food inflation is most volatile, as we expected, followed by service inflation.

This pattern survives seasonal adjustments of each series, implying seasonal effects are not the main forces driving higher volatility of these prices.

Optimal Trimming

More accurate description of the trimming methods proposed in Section B is as follows:

- Fixed weight approach: Drop α percent of the weights from the left tail of each month's distribution and β percent of the weight from the right tail.

When the N components of CPI are ordered such that $\pi_{1t} \leq \pi_{2t} \leq \dots \leq \pi_{Nt}$ with the corresponding weights (ω_{it}), let $l_t(x) = \min \{i: \sum_{j=1}^i \omega_{jt} \geq x\}$. Then, the trimmed inflation is $\pi_t^{(\alpha, \beta)} = \frac{100}{100 - \alpha - \beta} \sum_{i=l_t(\alpha)}^{l_t(1-\beta)} \omega_{it} \pi_{it}$.

- Standard deviation approach: Drop the components that are λ standard deviation below the average inflation in each month and ρ standard deviation above the average inflation.

When $\bar{\pi}_t = \text{average}\{\pi_{it}\}_{i=1}^N$ and $\sigma_t = \text{std}\{\pi_{it}\}_{i=1}^N$, the trimmed inflation is $\pi_t^{(\lambda, \rho)} = \frac{100}{100 - \omega_t(l) - \omega_t(r)} \sum_{i=L}^R \omega_{it} \pi_{it}$, where $L = \min \{i: \pi_{it} \leq \bar{\pi}_t - \lambda \cdot \sigma_t\}$, $R = \min \{i: \pi_{it} \geq \bar{\pi}_t + \rho \cdot \sigma_t\}$, $\omega_t(l) = \sum_{i=1}^L \omega_{it}$, and $\omega_t(r) = \sum_{i=R}^N \omega_{it}$.

Then the optimal trimming chooses the parameters (α, β) or (λ, ρ) to minimize the distance

from the trend inflation, i.e. $\text{Min}_{(\alpha, \beta)} \sqrt{\sum_{t=1}^T (\pi_t^{(\alpha, \beta)} - \bar{\pi}_t)^2}$ or $\text{Min}_{(\lambda, \rho)} \sqrt{\sum_{t=1}^T (\pi_t^{(\lambda, \rho)} - \bar{\pi}_t)^2}$,

where the centered 24-month moving average as a proxy for the true core inflation is

$$\bar{\pi}_t = \text{average}\{\pi_s\}_{s=t-12}^{t+12}.$$

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II. IMPROVING THE MONETARY OPERATIONS FRAMEWORK OF THE CENTRAL BANK OF RUSSIA ¹

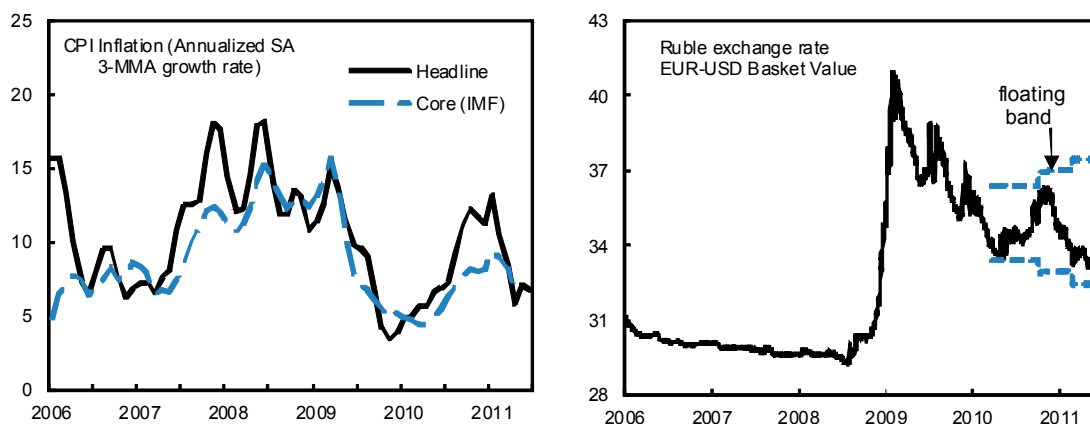
In the face of sharply rising inflation, the Central Bank of Russia (CBR) has tightened monetary policy against the background of welcome recent advances in ruble flexibility. However, the tightening measures taken so far have been largely ad hoc and have sometimes lacked consistency. As a result, the signals provided to the markets and the general public may have been confusing, thereby undermining the effectiveness of the measures. The recent experience highlights that a simpler and more effective framework for monetary operations is needed. The CBR is aware of the limitations of the existing framework and is seeking its reform. Against this background, this chapter suggests several improvements to the monetary policy framework that should allow for a more effective implementation of monetary policy. Moving to a consistent framework is also essential to facilitate a move to formal inflation targeting—the authorities’ medium-term goal for which preparations are ongoing.

A. Background and Motivation

1. **The authorities’ general approach to monetary policy has been ambivalent.** For most of the past decade, Russia’s monetary policy has tried to serve two largely incompatible objectives: low inflation and a stable exchange rate (informally, output growth has at times appeared a third goal). Where these objectives conflicted, the exchange rate objective prevailed in practice, with high and volatile inflation as a result (text figure). At the same time, the authorities’ have been preparing for the introduction of formal inflation targeting. But due to the ambivalence regarding the ultimate policy objective, the practice of monetary policy implementation has remained far removed from this goal.
2. **Recent progress on ruble flexibility should allow monetary policy to focus on inflation.** Encouragingly, in recent periods, the authorities have permitted a significant and progressive increase in exchange rate flexibility. Although the commitment to a flexible exchange rate policy remains to be tested in an environment that involves a sharper trade-off between inflation and nominal exchange rate objectives, in principle this development should facilitate a much-needed shift in the focus of monetary policy toward inflation control.
3. **The response to the recent uptrend in inflation, however, has been haphazard and highlights key problems with monetary policy implementation.** A large and structural surplus of bank reserves renders many instruments in the CBR’s monetary policy toolbox presently ineffective. Partly as a result, recent CBR tightening attempts have been largely ad hoc and focused on secondary instruments (the deposit rate and reserve requirements) with only a limited role for its main policy rate. This practice makes for distorted policy signals and is not likely to be effective at achieving the CBR’s inflation

¹ Prepared by David Hofman. The author thanks Simon Gray (MCM) for helpful discussions and suggestions.

objectives. The experience highlights the need to come to a simpler and more effective framework for monetary operations.



Sources: Federal Statistics Office; Haver, and IMF staff calculations.

4. **Aware of the issues, the CBR is seeking to reform the monetary operations framework.** The authorities recognize the limitations of the current framework and intend to simplify and rationalize it, including with a view to preparing for the envisaged move to inflation targeting.

5. **This chapter suggests improvements to the operational framework, which would promote a more effective policy implementation.** The chapter builds on the technical assistance that the IMF has provided to Russia during the past five years, and provides specific recommendations that can be implemented now.² The recommendations are aimed at the implementation of monetary policy in normal times. Liquidity management during periods of financial stress falls outside the scope of this chapter and is the subject of separate work undertaken in the context of the 2011 Financial Sector Assessment Program (FSAP). The chapter is organized as follows. Section B provides a brief overview of the current framework and section C highlights its main problems. Then, section D discusses several recommended improvements and section E offers an outline of how the improvements could be phased in while simultaneously tightening monetary policy. Finally, section F briefly discusses means to deal with the potential challenge of capital inflows.

B. The Current Framework

6. **The CBR uses a large set of monetary policy instruments.** The authorities' framework for the implementation of monetary policy is extensive and complex. The CBR

² For useful general discussions of the various aspects of monetary operations, see Bindseil and Jablecki (2011), Borio (2001), Gray (2011), Gray and Talbot (2006), and Kahn (2010).

employs a relatively large number of standing facilities (SF), at various different interest rates, and for a wide range of maturities (O/N to 30 days, text table). It maintains a similarly wide variety of instruments for open market operations, including repos, Lombard loans, government securities, central bank notes (OBRs), and FX sales and purchases. Separately, the CBR also uses changes in reserve requirements as a short-term instrument to control market liquidity. And the CBR manages deposit auctions on behalf of the Ministry of Finance, which also affect liquidity.

Monetary Policy Instruments of the CBR (as per June 1, 2011)

Purpose	Type	Instrument	Term	Interest rate	Frequency	
Provide liquidity	Open Market Operations	Lombard Auctions	7 days-3 months	Set by auction	Weekly	
		Direct Repos	1, 7, 90 days; 6, 12 months	Set by auction 1/	Daily	
		Purchase of OBRs or government securities	-	-	As needed	
		Purchase of FX	-	-	As needed	
	Standing Facilities	Credits	Intraday		0	Continuous
			Overnight		8.25%	Continuous
		Lombard Loans	1-30 days	6.75%	Continuous	
	FX swaps					
Absorb liquidity	Open Market Operations	Deposit Auctions	4 wks, 3 mts	Set by auction 1/	Weekly	
		Sale of OBRs	up to 6 months	Set by auction	As needed	
		Sale of government securities	-	-	As needed	
		Sale of FX	-	-	As needed	
	Standing Facilities	Deposit Operations	Overnight (T+0)		3.50%	Continuous
			Tom-next (T+1)		3.50%	Continuous
			Spot-next (T+2)		3.50%	Continuous
			1 week (T+0)		3.50%	Continuous
			Spot-week (T+2)		3.50%	Continuous
			Demand (call)		3.50%	Continuous

1/ Minimum and or maximum rates apply

Source: Central Bank of Russia

7. **The policy interest rate corridor is relatively wide.** With the overnight deposit rate currently at 3.5 percent and the overnight refinancing rate at 8.25 percent, the spread between the lowest and the highest rate in the CBR's policy rate corridor is 475bp. While this is considerably narrower than a few years ago—when the difference exceeded 1000bp—the corridor is very wide compared to that in countries with well-functioning frameworks. For instance, the corridor is 200bp wide in the euro area, the UK (pre-crisis), and Hungary, 100bp wide in Norway, Sweden, New Zealand, Indonesia, Thailand and South Africa, and 50bp wide in Australia, Canada, and Malaysia.

8. **The refinancing rate is used as the reference rate for the monetary policy stance.** The interest rate on overnight credits under the CBR's standing facility—the refinancing rate—is routinely referred to in CBR policy communications as the headline policy rate, and thought to be indicative for the overall stance of monetary policy.

9. **Reserve requirements are at a low level, and not binding.** Following three recent increases, reserve requirement ratios are 4 percent for banks' liabilities to domestic parties and 5.5 percent for liabilities to corporate nonresidents. At these levels, however, required reserves remain lower than they were pre-crisis (5.5–8.5 percent) and not high by international standards (text table). Also, for the system as a whole, the rates are nowhere near being binding: at end-June 2011, required reserves accounted for less than 20 percent of the funds held by the banks at the CBR. Vault cash is counted toward the reserve requirement, and monthly averaging is allowed over 60 percent of the reserve balance. Required reserves are unremunerated.

10. **The differentiation of the reserve requirements is designed to deter potential capital inflows.** As the recent increases in reserve requirement ratios have been asymmetric, the CBR reintroduced differentiation between the reserve requirements pertaining to liabilities of residents and those of nonresidents. This measure was motivated by the wish to (preemptively) discourage any speculative capital inflows that might follow from recent increases in oil prices. The differentiation was also present in Russia before the crisis.

Required Reserve Ratios in Emerging Economies

Country	Single ratio	Range of ratios		Comments
		Lower	Upper	
Argentina	...	0.00	20.00	Average = 15.67. Demand deposits and savings accounts = 19% (20%) for local currency (FX); Time Deposits (30-60 days) = 11% (15%); Time Deposits (90-180 days) = 2% (5%); Time Deposits (180-360 days) = 0% (2%)
Brazil*	...	4.00	42.00	
Chile	6.60	...	...
China*	...	14.00	16.00	
Colombia	...	0.00	11.00	11% Checking Accounts, Sight Deposits and Savings Accounts; 4.5% CD and bonds with maturity <=18 months; 0% CD and bonds with maturity > 18 months
Hungary	...	2.00	5.00	As of November 2010, the Central Bank allows banks to choose what reserve requirement ratio they want from a range of 2%, 3%, 4%, or 5%. The goal is to facilitate bank liquidity management. Raised April 2010 from 5.75
India	6.00	...	...
Indonesia*	...	1.00	7.50	
Israel	...	0.00	10.00	As of January 27, a 10 percent reserve requirement will apply to NIS/foreign exchange swap transactions (FX Swaps) and NIS/foreign exchange forwards.
Malaysia	1.00	...	...
Mexico	0.00	...	...
Peru		9.00	60.00	The minimum unremunerated stands now at 9 percent. The marginal stands at 25 percent for domestic currency deposits of residents and 120 percent for non-residents deposits. The marginal reserve requirement for FX deposits is currently 55 percent. The reserve requirements on FX foreign liabilities with maturity less than two years is currently at 60 percent (reduced from 75 percent in January). The (upper) RRR was raised in January, 2011, by 50 bps. The previous 3.0 percent rate was held since July, 2009.
Poland	...	0.00	3.50	
Russia	...	4.00	5.50	RRs on liabilities to corporate nonresidents are at 5.5 percent, while RRs on the other liabilities are 4 percent.
South Africa	2.50	...	...	The effective percentage held varies but is somewhat lower because banks are allowed to exclude certain liabilities from the base amount.
Thailand	6.00	...	...
Turkey	...	5.00	12.00	Local Currency (5-12 percent) depending on maturity, since Jan 2011.

Source: National Authorities

* Data from MCM's "Information System for Instruments of Monetary Policy"

11. **The CBR issues short policy statements on a monthly basis.** The schedule of CBR Board meetings at which monetary and interest rate policy are discussed is broadly known to the public (meetings take place at the end of each month). Following each of these policy meetings, the CBR issues a short policy statement that communicates the Board's view on

recent monetary and economic developments and the prospects for inflation, and announces any key policy decisions taken, together with a concise motivation.

C. Problems with the Current Framework

12. **The money market is highly segmented and not effective at redistributing liquidity across the system.** With an unsecured deposit market that only includes the 20 largest banks (out of a total of about 1000 banks), and with collateral constraints weighing heavily on the scope for trading with and among the many smaller banks, the interbank market is fragmented and not effective at playing its normal role in liquidity redistribution. As a result, the CBR simultaneously lends to and borrows from the banking system, and the interbank market interest rate has been prone to volatility even in the face of net liquidity surpluses for the system as a whole. The fragmentation of the Russian money market is a problem because a more unified and liquid money market would better transmit monetary policy signals to other markets and to retail interest rates. Having a well-functioning money market is thus important for an effective implementation of monetary policy.

13. **The set of monetary policy instruments is convoluted and overly large.** With more than 20 different windows, encompassing a wide range of maturities and interest rates, the CBR's set of instruments is sprawling and complex. This complexity obscures the monetary policy stance, including because the relative importance of the different individual instruments varies according to circumstances. The segmented approach to liquidity management is also not conducive to a proper functioning money market. While, arguably, the large number of different CBR facilities is itself the reflection of the fragmented state of the money market, the many instruments also facilitate and reinforce this fragmentation since they reduce—or even eliminate—the incentives for banks to trade among themselves.

14. **The wide corridor promotes interest rate volatility and discourages interbank trading.** While there is no established way to determine the optimal width of the interest rate corridor, Russia's current 475bp spread would seem too wide. Having too wide a corridor has considerable downsides. In particular, it provides scope for high interest rate volatility, which has been a significant problem in Russia in recent years (even though rates have been more stable during 2010). Such volatility distorts the policy signal and thus reduces the effectiveness of monetary policy. Also, a large spread between deposit and lending rates will lead banks to be very conservative in the use of reserve funds, since the cost of running short is high. As a result, an overly wide corridor tends to discourage interbank trading, thus hampering the proper function of the interbank market.³

³ It should be noted that, of course, too narrow a corridor may ultimately also discourage interbank trading—as the benefits become too small—and may result in the central bank unduly intruding in normal interbank market activity. Thus, determining the right width of the interest rate corridor is something of a balancing act.

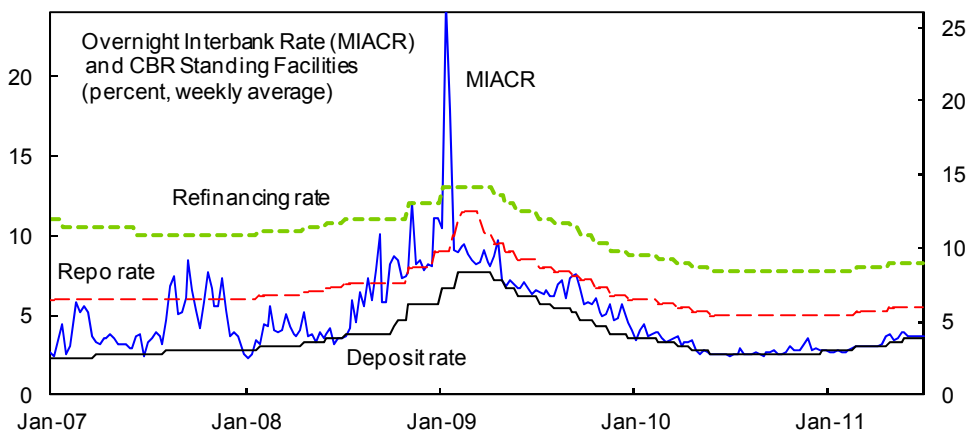
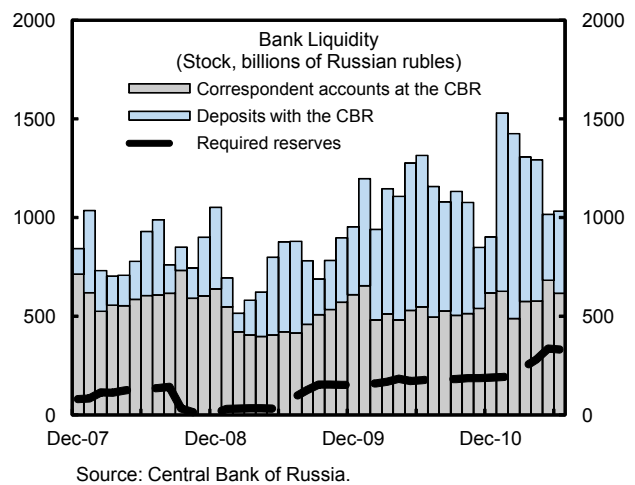
15. **Policy interest rates provide confusing information about the policy stance.**

Interest rates on the various CBR instruments are often changed independently, without implications for the other rates in the policy rate corridor (e.g., in December 2010, overnight deposit rates were raised while other rates were left unchanged, and in February 2011 the refinancing rate and selected deposit rates were raised, but Lombard loan rates and some repo rates were not adjusted). As a result, despite the CBR's consistent reference in its policy statements to the "refinancing rate" as its main policy rate, in practice the framework suffers from a lack of clear signaling instruments.

16. **The "refinancing rate," the CBR's headline policy rate, is not binding.** Like several other countries, Russia faces a situation of surplus reserve balances with the banking system (text figure). This structural

liquidity surplus is the result of unsterilized foreign reserve accumulation and, in recent years, the monetization of fiscal deficits. The structural reserve surplus significantly weakens the effectiveness of the CBR's interest rate policy. Since the banks' excess reserves typically exceed the amount they need for transaction purposes, the liquidity surplus makes that there is effectively no marginal demand for CBR money. Under these circumstances, the CBR's lending rates do not have traction, and it is instead the

deposit rate that is often the binding rate in the system as banks deposit their excess funds at the CBR. Consequently, the interbank market rate tends not to align with the refinancing rate, the official target. Rather it tends to fluctuate in the bottom half of the corridor, and in recent periods it has aligned almost perfectly with the CBR deposit rate (text figure).



17. **Reserve requirements are changed frequently, contributing to uncertainty about the policy stance.** Required reserve ratios have been changed frequently in previous years in apparent attempts to affect bank liquidity with a short- to medium-term horizon. Reserve requirements are thus being used as a substitute for open market operations, which may be a more precise and effective instrument to effect such changes (see below). Reserve requirement changes are also seemingly used to implement tightening or loosening of the monetary policy stance—in combination with, and sometimes instead of, policy rate changes—which contributes to confusion regarding what the CBR’s main effective policy instruments are, and what the overall stance of monetary policy is.

D. Improvements to the Framework

18. **More coherent implementation of monetary policy would increase its effectiveness.** As highlighted in the previous section, the existing monetary operations framework is ill equipped to steer key market interest rates and deliver clear signals about the stance of monetary policy to the markets and the general public. Improving the operations framework is therefore important for a more effective monetary policy implementation and for successful inflation control. This section offers recommendations for improvements to the framework and monetary policy implementation. The recommendations build on the practice in various advanced economies and some emerging markets that are generally considered to have well-functioning systems.

Policy instruments

19. **Rationalizing and streamlining the set of policy instruments would enhance transparency.** As recommended in previous IMF technical assistance reports, instead of using a large variety of multiple duration instruments to manage liquidity conditions and a large set of standing facilities with different interest rate conditions and maturities, the CBR should narrow the set of instruments and focus its interest rate signal unmistakably on one short-term instrument. Longer-term instruments could still be used, but only for structural liquidity adjustments and these operations should be conducted at market rates, thus moving away from maximum or minimum rates. The IMF 2008 report made specific recommendations as to how to simplify and rationalize the set of monetary instruments which are summarized in Annex 1. While a few of these recommendations seem to have been implemented since, new differentiations in instruments have been added and considerable scope for further streamlining remains.

20. **Eliminating niche instruments would also foster money market development.** The many different facilities in the current framework effectively accommodate and entrench the fragmentation of the interbank market since they encourage banks to rely for their liquidity management on the CBR, rather than on other banks. Reducing the number of specific facilities is therefore key to providing incentives for the development of the market. Complementary initiatives to develop the money market could help capitalize on these

improved incentives and facilitate the transition (see forthcoming Financial Sector Stability Assessment and accompanying documents).

Policy interest rate and the corridor

21. **A narrower corridor would help limit interest rate volatility and promote interbank trading.** As highlighted in the previous section, Russia’s current 475bp spread seems too wide in light of the relatively high interest rate volatility (in the pre-crisis period) and the lack of interbank activity. To improve incentives for banks and increase the effectiveness of policy signals, the CBR should aim to gradually reduce the width of the corridor to a spread of no more than 200bp, a width that is consistent with that in countries with more advanced frameworks and well-functioning markets. Depending on experiences with this spread, further adjustments (in either direction) may be considered over time.

22. **Switching to a relevant policy target would allow for a better communication of the monetary policy stance.** The current situation in which the official policy rate is at 8.25 percent, while the operating target—the O/N interbank market rate (MIACR)—hovers around 3.5 percent is undesirable as it makes for a highly distorted policy signal. Indeed, for communication purposes, it is preferable that the announced policy rate bears close relationship to the targeted market rate. It is unclear that the overnight refinancing rate can fulfill this function in a system that tends toward having surplus liquidity. Although, alternatively, the deposit rate could conceivably be used to steer market rates under these circumstances—as it effectively is at present—it is less straightforward how the transmission via the deposit rate affects the economy. Also, when steering the market rate through deposit operations, the funds remain fully liquid which carries the risk of compounding any pressures on the exchange rate in situations where depreciation fears take hold, thus contributing to exchange rate volatility.

23. **A policy rate at the center of the corridor would provide for an optimal transmission.** Better than having the policy rate set at either of the SF rates is to announce a target for the interbank rate that is broadly in the center of the prevailing interest rate corridor, and to aim at conducting open market operations (OMO) at this rate. The benefit of steering the target market rate toward the middle of the corridor is that at that point market liquidity will be broadly in balance (with minimum resort to the CBR’s standing facilities), which is conducive to interbank trading and reliable market price formation, thereby providing for an optimal transmission of the monetary policy signal.

24. **Surplus liquidity needs to be drained to make the policy rate binding.** Once an interest rate target (henceforth “the policy rate”) has been established, the CBR would need to drain surplus reserves from the system until the market rate has reached the target level. Note that this may not be a gradual process. Indeed, the initial liquidity absorption is likely to have only very limited effect on market rates, while at the end of the process—when liquidity constraints become binding—the adjustment could be sharp. To drain liquidity, the CBR can

use the various OMO instruments in its arsenal including repos, OBRs, and foreign exchange transactions, while, at the margin, reserve requirements may also help (see below).

Absorbing the liquidity surplus is essential to establish some positive demand for central bank reserves and to create a situation in which the central bank's lending rates become relevant, which facilitates the effective implementation of monetary policy.

25. **Reducing liquidity will come at a cost to the CBR.** It needs to be realized that the draining of liquidity will involve a (likely significant) cost for the CBR because it will have to pay higher rates on the OMO instruments than it currently pays on deposits. While this cost should be set against the benefits in terms of monetary policy effectiveness, to avoid unwelcome surprises, the future losses should be calculated in advance and the long-term implications for the CBR balance sheet should be properly assessed. The costs to the CBR of reducing excess reserves could be lower to the extent that the government would effectively help absorbing liquidity through the issuance of ruble-denominated debt. Thus, CBR operations would need to be closely coordinated with the Ministry of Finance.

26. **To ensure a consistent policy signal, all CBR rates should move in lockstep.** Once the corridor has been narrowed to the desired width, any change in the policy rate should be accompanied by immediate corresponding changes to the interest rates on the standing facilities, so that the desired width of the corridor is maintained and all interest rates in the corridor provide the same policy signal. A useful way of automating this practice—used by many countries with corridor systems—is by defining the interest rates on the standing facilities in terms of spreads relative to the policy rate. Thus, assuming a 200bp corridor, the deposit rate would be set as the policy rate minus 100bp, while the refinancing rate is set as the policy rate plus 100bp.

Reserve requirements

27. **Reserve requirements should not be used to effect incremental changes in the monetary stance.** While reserve requirements directly affect bank liquidity and could in principle be used to effect changes to the monetary policy stance, in practice such use has significant drawbacks. In particular, it is difficult to estimate the impact of changes in reserve requirements as each change will affect individual depository institutions in different ways, depending on each institution's deposit base. By the same token, reserve requirement changes can also be more disruptive. For these reasons, open market operations (such as repo auctions) are generally considered as a preferable and more precise tool for liquidity management. In most advanced systems, reserve requirements are changed rarely, if at all.

28. **They could, however, be raised structurally by a small amount.** At 4–5½ percent, the reserve requirement ratios in Russia are not very high, and from this perspective there may be some scope to raise them in a structural manner (i.e., on a permanent basis). This could help, at the margin, with absorbing the structural liquidity surplus in the system. However, it must be realized that the reserve requirement cannot do all the heavy lifting in

terms of liquidity absorption. In particular, given the current huge amount of excess reserves in the system, reserve requirements would need to be raised to very high levels before sufficient impact would be felt. Such high reserve ratios—assuming that they would remain unremunerated—would effectively act as a heavy tax on the banking system, which would stifle long-term financial sector development and impose a high cost on the economy. In addition, reserve requirements are a relatively inflexible instrument and should not be set too high since this may cause a need for (frequent) future changes if liquidity conditions change. For these reasons, it is preferable to raise reserve requirements by a moderate amount—say, 1–2 percentage points—and to rely on open market operations to drain the remaining excess reserves. Barring exceptional circumstances, (see section V), reserve requirements should not discriminate between residents and nonresidents.

Communication

29. **The CBR’s communication practices could be further improved.** The CBR’s recent practice of issuing short statements after its monetary policy meetings is commendable and should be continued. To optimally support interest rate policy, it is important that the policy statements are sufficiently candid and timely in conveying concerns about inflation, so as to build credibility and prepare the public for impending policy actions. Thus, the situation that occurred in late 2010, when the CBR policy statements were sanguine on the inflation outlook up to the moment that actual tightening began, should be avoided. To further support the CBR’s policy communication, it would also be useful to start publishing information on inflation expectations, and to publish the CBR’s medium-term inflation forecast. Such information will help the public understand the context of policy decisions. It will also reinforce the message that the main focus of monetary policy is on inflation.

E. Upgrading the Framework while Tightening Policy

30. **Improvements to the framework and monetary tightening can be implemented simultaneously.** As noted at the outset of this chapter, Russia currently faces two separate but closely related challenges: first, rising inflation and a corresponding need for monetary tightening, and second, the need to improve the monetary operations framework to increase the effectiveness of monetary policy. The two issues can, and should, be addressed in parallel because a more effective operations framework would greatly enhance the CBR’s capability to organize a coherent and adequate policy response to the increasing inflationary pressures. The precise sequencing of measures deserves attention.

31. **A plan of action could involve the following steps, to be completed in a 6–12 month timeframe.** The steps provide an example of what the transition to an improved framework and a simultaneous policy tightening could look like. Note, however, that the precise timing and modalities of each step will depend on circumstances (which may change along the way), and that the degree of tightening that the steps involve would need to be commensurate with the inflation outlook.

- *Step 1. Plan and communicate carefully.* At the outset, it is important to decide on a detailed strategy as to how to phase in the changes to the framework, to avoid policy uncertainty and volatility. While the strategy needs to be flexible enough to adapt to changing circumstances (e.g., with respect to the degree of monetary tightening), the main outline of the plan needs to be agreed in advance, and supported by the main relevant policy makers. Once the strategy has been determined (which should be a matter of weeks, not months), the CBR needs to prepare the banks, the markets and the public by carefully communicating the (thrust of) the intended changes and the envisaged timeline.
- *Step 2. Start draining liquidity without delay.* The CBR should start with draining excess reserves via increased repo operations and/or OBR issuance at market rates. Mopping up the existing amount of excess reserves may take some time. This is because banks need to adjust and reorganize their own liquidity management in response to the change in CBR policy, and therefore need to be granted a reasonable transition period—3 to 6 months should be sufficient—during which the higher volume of CBR open market operations is phased in. Given that it will take some time before the draining of reserves will reach its full envisaged effect, it is important to start draining liquidity soon and to gradually but decisively step up open market operations in the months ahead. At this time, the CBR could also start retiring redundant facilities and streamlining the set of policy instruments.
- *Step 3a. Raise deposit rates substantially.* While the increasing open market operations are starting to drain liquidity, the deposit rate will likely remain the binding rate in the system for some time. To effectuate a monetary tightening during this period, the deposit rate should be raised. This could probably be done in fairly large steps of 50–75bp each. This policy would simultaneously serve to help narrow the corridor towards the desired 200bp.
- *Step 3b. Raise refinancing rate to clearly signal tightening.* During the first phase of the policy tightening it is also important to raise the refinance rate as this provides the clearest signal to the public that the CBR is embarking on a tightening cycle. In order not to undermine the efforts to narrow the corridor, however, the increases in the refinance rate should be appreciably smaller—say, 25bp—than the increases in the deposit rate. In any event the increase in the refinance rate will be mostly symbolic at this point as the rate will remain not binding during this phase.
- *Step 4. Raise reserve requirement (optional).* If it is decided that the required reserve ratio should be raised structurally, this would also best be done early on because of its implications for the amount of open market operations needed to eliminate the remaining liquidity overhang. Depending on the desired level of reserve requirements and the precise timing of the increase, the transition could be broken up in a few smaller steps, if needed to allow banks sufficient time to adjust.

- *Step 5. Announce new policy rate.* Once excess reserves have been drained to the point that the interbank market rate aligns with the OMO rate, the CBR would announce a new policy target—effectively equal to the OMO rate—to replace the refinancing rate as the “signaling” policy rate in the monetary policy framework. Since the new policy rate would be lower than the refinancing rate, the technical nature of the change should be communicated clearly to the public so as to avoid the possible perception of policy relaxation. Any further tightening (or loosening) of monetary policy from here would be effected by raising (lowering) the new policy rate, and conducting OMO as needed to align the interbank market rate with the newly announced policy target.
- *Step 6. Complete transition to narrow corridor.* To the extent that the corridor width at this point would continue to exceed 200bp, the refinancing and deposit rates should now be further adjusted so that they are set 100bp above and below the policy rate, respectively. Such changes would again be largely technical in nature, and this should be communicated clearly. Any subsequent changes in the policy rate would from now on be accompanied by corresponding changes to the SF rates so that the width of the corridor is maintained at 200bp.

F. Complementary Policies: Dealing with Capital Inflows

32. **Higher interest rates may have the effect of attracting capital inflows.** Although Russia has not experienced significant capital inflows in the post-crisis period, it is conceivable that a tightening of monetary policy would, at some point, elicit renewed capital inflows. If such inflows were to be sizable, they can pose a significant policy challenge since they have the potential of fueling credit and inflation (as in the pre-crisis period), thereby ultimately undermining the effectiveness of monetary policy.

33. **But monetary policy should focus on inflation, not on managing capital flows.** In the face of rising inflationary pressures, keeping policy rates low to discourage capital inflows is not a viable policy option as this will eventually result in high inflation. It is therefore key to use other policy tools to effectively address capital flow issues, so as to make room for monetary policy to focus squarely on inflation control.

34. **Exchange rate flexibility and fiscal policies are best placed to address inflows.** The first line of defense against renewed capital inflows should be to allow the exchange rate to adjust freely. Greater exchange rate flexibility should help discourage speculative inflows and contain inflation. Beyond this, an appropriate macroeconomic policy mix geared to containing domestic demand is also key. In this context, with monetary policy focusing on inflation, fiscal policy should be the main tool for mitigating pressures on the real exchange rate in the face of rising oil prices—that is, it will need to be sufficiently countercyclical to do so.

35. **Other complementary policies may also be needed.** In particular, prudential regulations should be shored up to limit the risks of credit booms. This could include counter-cyclical regulatory requirements, restrictions on foreign currency lending, and differentiated reserve requirements (preferably by currency or maturity, not residency) to reduce currency and maturity risks. Improved supervision will also be key—this implies the need for greater powers for the central bank to supervise not only banks, but also their affiliates.

36. **In certain circumstances, capital controls might be considered, but these are no substitute for an appropriate macroeconomic policy response.** In an environment of surging capital inflows, standard macroeconomic and prudential tools may not be sufficient or appropriate. For example, an excessive appreciation of the exchange rate could damage competitiveness. Reserve accumulation can be costly, and—if not sufficiently sterilized—can stoke inflation. And a strong fiscal position, particularly if accompanied by low public debt and robust international reserves, can perversely end up attracting even greater inflows. In such an environment, capital controls may be a legitimate component of a broader package of policies responding to surges in capital inflows. However, controls are not a panacea—they can be difficult to enforce (especially outside the banking system), they can be circumvented, and their effectiveness is unclear. Moreover, they cannot serve as a substitute for appropriate macroeconomic policies and reforms that allow the economy to respond more flexibly to the impacts of sustained capital inflows.

ANNEX I

Russia: Monetary Policy Instruments of the Central Bank of Russia—Suggested Simplification

Type	Term	Rate	Mechanism	Periodicity
OMO +	Overnight	6.5 percent (= Policy rate)	Repo (FX swap if collateral is tight)	Daily
	7 days		Collateralized credit (Lombard; Lombard list collateral only)	Weekly
OMO +	Outright	Market rate	Purchase of foreign currency	As needed
OMO +	7–28 days	Market rate	MoF deposit auction Minimum rate of Policy rate plus 100 bps as uncollateralized	As needed
OMO -	28 days	Market rate	Deposit auctions	Weekly, or As needed
OMO -	Up to 6 months	Market rate	Bank of Russia bonds (OBRs)	Weekly or less often
OMO -	Outright	Market rate	Sale of government securities or foreign currency	As needed
SF +	Intraday	0%	Lombard	permanent
SF +	Overnight or 7 days	Policy rate +200 bps	Repo, FX swap or Lombard; Policy rate +400 bps in the case of intraday credit which is not repaid on time	permanent
SF +	28 days	Policy rate +250 bps	Lombard; 100 bps add-on for collateral not on the Lombard list	permanent
SF -	Overnight	Policy rate - 300 bps	Deposit	permanent

Source: IMF (2008), Russia—The Collateral Framework for Central Bank Operations.

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III. A FINANCIAL CONDITIONS INDEX FOR RUSSIA¹

This chapter presents new Financial Conditions Index (FCI) for Russia. By providing a meaningful aggregate measure of monetary and financial conditions, the FCI is an analytical tool that can potentially contribute to the understanding of macro-financial linkages in the Russian economy. The FCI indicates that after a sharp rebound from the nadir of the recession, overall financial conditions in Russia have become moderately positive, thereby providing some support for the recovery. However, conditions have fluctuated considerably over the past year and in the first months of 2011 the FCI declined owing mostly to weakness in house prices.

A. Introduction

1. **This chapter presents a Financial Conditions Index (FCI) for Russia.** The objective of the FCI is to provide an aggregate measure of monetary and financial conditions in the Russian economy and to analyze their impact on macroeconomic performance. Relative to the more widely-used Monetary Conditions Indices (MCI), the FCI considers a broader set of financial variables that may impact aggregate demand conditions and that may capture important additional channels in the transmission of monetary policy.
2. **The FCI is an analytical tool that can potentially contribute to our understanding of macro-financial linkages in the Russian economy.** For instance, the FCI provides information on credit conditions and on the relative level of asset prices and how these affect the economy at large. Few existing indicators provide such information, and at present relatively little is known about these relationships in Russia. FCIs are sometimes also used as an input into macroeconomic forecasting models. As a new measure, the results of the Russian FCI need to be interpreted with some caution. The FCI is not intended as an operational tool, and even less so as an operational target. To inform policy decisions, the information from the FCI would need to be complemented with that from broader set of key macroeconomic indicators (for example, monetary policy should be focused on developments in projected inflation, something that is not directly addressed by the FCI).

B. Methodology

3. **The FCI aggregates financial variables weighed by their statistical impact on GDP.** To construct the FCI, a selection of financial variables is analyzed with respect to each variable's impact on real GDP. The most significant variables are selected and aggregated with their respective weights determined by their statistical contribution to developments in real GDP. Note that although FCI's can be used as a leading indicator for economic growth, being a precise forecaster of GDP is not its primary objective. Rather, the measure aims at saying something about financial conditions and the degree to which they support economic activity.

¹ Prepared by David Hofman.

Thus, the FCI excludes nonfinancial variables, such as the oil price, even though their inclusion might improve the overall fit of the model.

4. **To analyze the impact of the variables on GDP, a vector autoregressive model (VAR) is employed.** There are various possible approaches to constructing FCIs.² In this chapter, following Goodhart and Hofmann (2001) and Swiston (2008), among others, a VAR is used to estimate the coefficients of the FCI. The key advantage of the VAR approach is that it allows for the incorporation of the complex, endogenous two-way interactions between the financial variables and economic activity, and between the financial variables themselves. The FCI weights are determined using impulse response functions from the VAR system.

C. Constructing the FCI for Russia

5. **Any statistical analysis of Russian data faces significant challenges which qualify estimation results.** The first challenge—owing to the relatively short history of the Russian Federation—is the availability of only very short time series data, with few continuous data series going back beyond the mid-1990s and many financial data series starting only in the 2000s. Also, two major financial crises (1998, 2008–09) during the past 15 years make that segments of the data can be very volatile. The period further coincides with Russia’s structural transformation from an economy in which the financial sector plays a relatively small role, to one in which financial conditions are having an increasing impact on economic performance.

6. **Alleviating the constraint of short time series, monthly data are used for a range of financial variables.** This approach is facilitated by the fact that the Russian Ministry of Economy produces monthly GDP estimates that are consistent with the official national accounts data. The financial variables that are tested in the different specifications are the (i) real effective exchange rate of the ruble (REER), (ii) the real U.S. 10 year t-bill rate, (iii) the real 3-month MOSPRIME interest rate, (iv) the real average deposit interest rate, (v) real broad money, (vi) the real RTS and MICEX equity indices, (vii) real house prices (existing homes), and (viii) the Russian Economic Barometer (REB) index of borrowing conditions.³ All data are in logs, with the exception of the U.S. and Russian interest rates.

7. **Data availability limits the final sample to 2002–10, but the benefits of a longer sample would likely have been modest.** The data with respect to house prices, broad money, the MICEX, and the MOSPRIME rate impose constraints on the sample size as they are only available from 2000–02 onwards. Dropping these variables would allow the data sample to start around end-1996. However, experimentation with various specifications of the model suggests that estimations of longer time-periods do not yield more significant results than those based on shorter samples (possibly this finding reflects the increase in the relative impact of financial

² See Beaton et al. (2009) and Hatzius et al (2010) for useful overviews of the FCI literature and existing FCIs.

³ The REB index of borrowing conditions is based on a survey and measures the share of Russian companies that report an improvement in their borrowing conditions over the preceding month.

conditions over time, rendering more recent periods more significant). Against this background, in its final specification, the model is estimated based on a relatively short sample of 2002–10 data, with no constraints on the availability of variables.

8. **Data were analyzed both in first derivatives and in deviations from equilibrium (“gaps”).** Data were tested in two distinct forms. First, data were analyzed in simple annual percent changes, related to *GDP growth*. And second, data were tested as deviations from their equilibrium values (or their long-term trend), related to the *output gap*. The latter approach should be more meaningful since for many financial variables (e.g., interest rates), their relative or absolute levels may matter more for economic growth than changes at the margin.

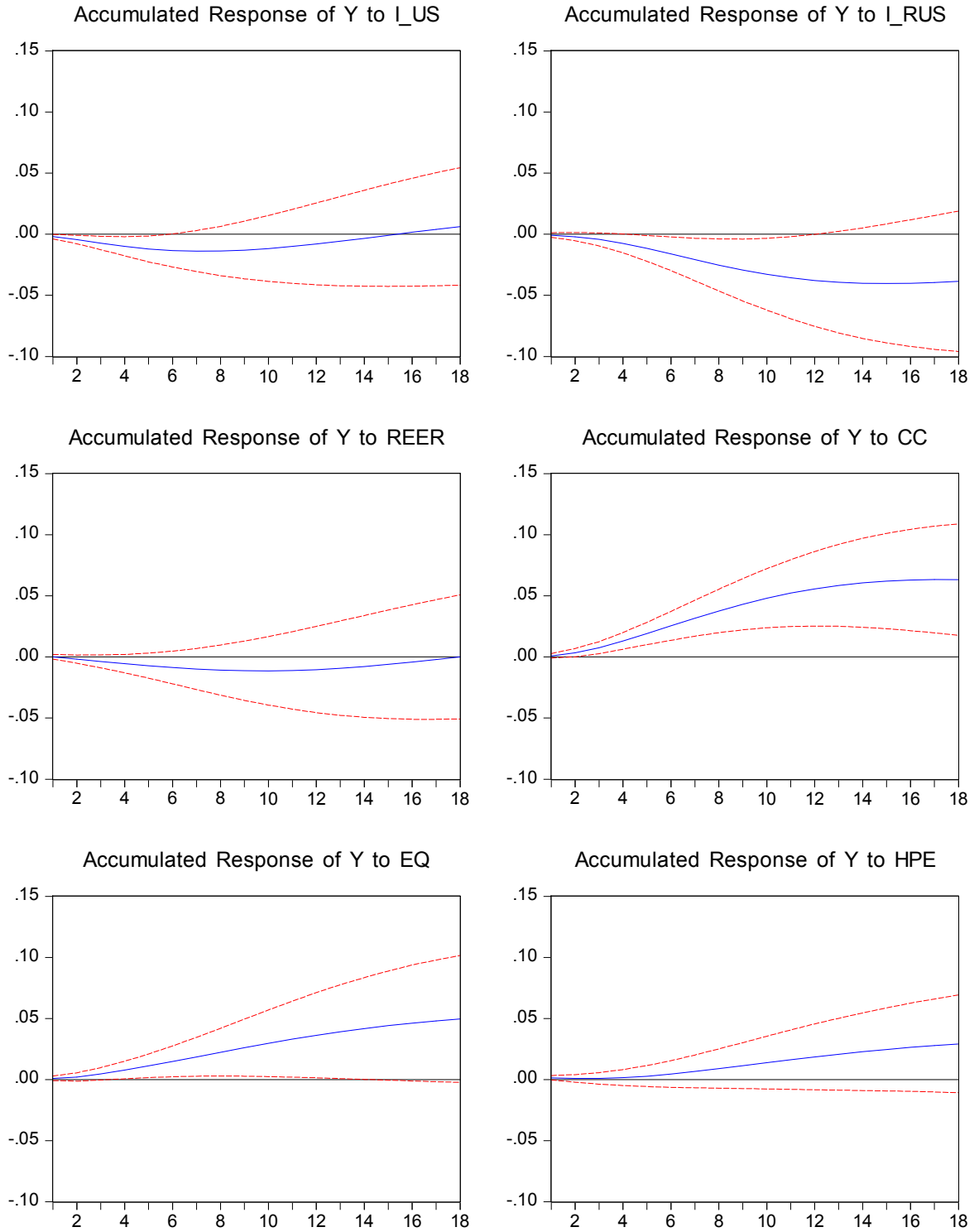
9. **To facilitate the gap approach, equilibrium values were determined for each of the variables.** For GDP, the trend—or “potential” growth—is estimated using a modified LRX filter. For the Russian short-term interest rate, consistent with theory, the same trend GDP growth is also used as a proxy for the equilibrium rate, but using a higher smoothing parameter so as to reduce the impact of short-term fluctuations in potential growth. For the REER and house prices, linear trends are calculated, while the equilibrium for the REB credit conditions index is approximated by its all-time historic average. Time-varying trends for the remaining variables were estimated using standard HP filters.

10. **In line with expectations, the gap approach was found to yield more significant results, and the findings discussed below are based on this approach.** The broad money variable proved insignificant in all model specifications and was therefore eliminated.⁴ For the domestic interest rate and the stock market index, the best performing measures (MICEX and MOSPRIME, respectively) were selected at the expense of competing similar measures.

D. Estimation Results and FCI

11. **Impulse response functions show that the selected variables have a significant impact on the output gap.** The chart on the following page shows the results from impulse-response functions (IRF) with respect to the output gap for the remaining variables in the final VAR system. Each of the variables is shown to have a significant impact on the output gap (Y), and with the anticipated, correct sign. The sole exception is the house price variable (HPE), which does have the correct sign but just fails to be significant at a 95 percent confidence interval. House prices are nonetheless maintained in the system because of their theoretical importance as a key financial indicator, and because the variable typically turned significant in alternative specifications of the model. The IRFs illustrate how each of the variables relate to GDP.

⁴ This result contrasts with that of Akerli et al. (2010) at Goldman Sachs, who find a significant relationship between broad money and output growth and include broad money as one of the variables in their FCI for Russia.

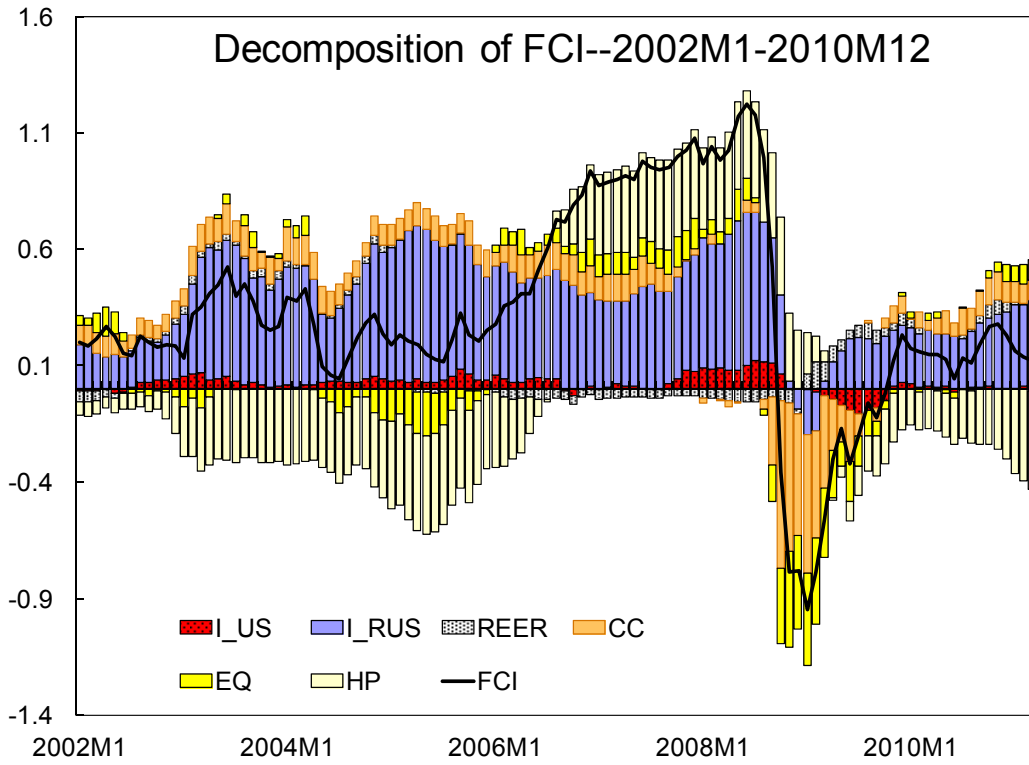
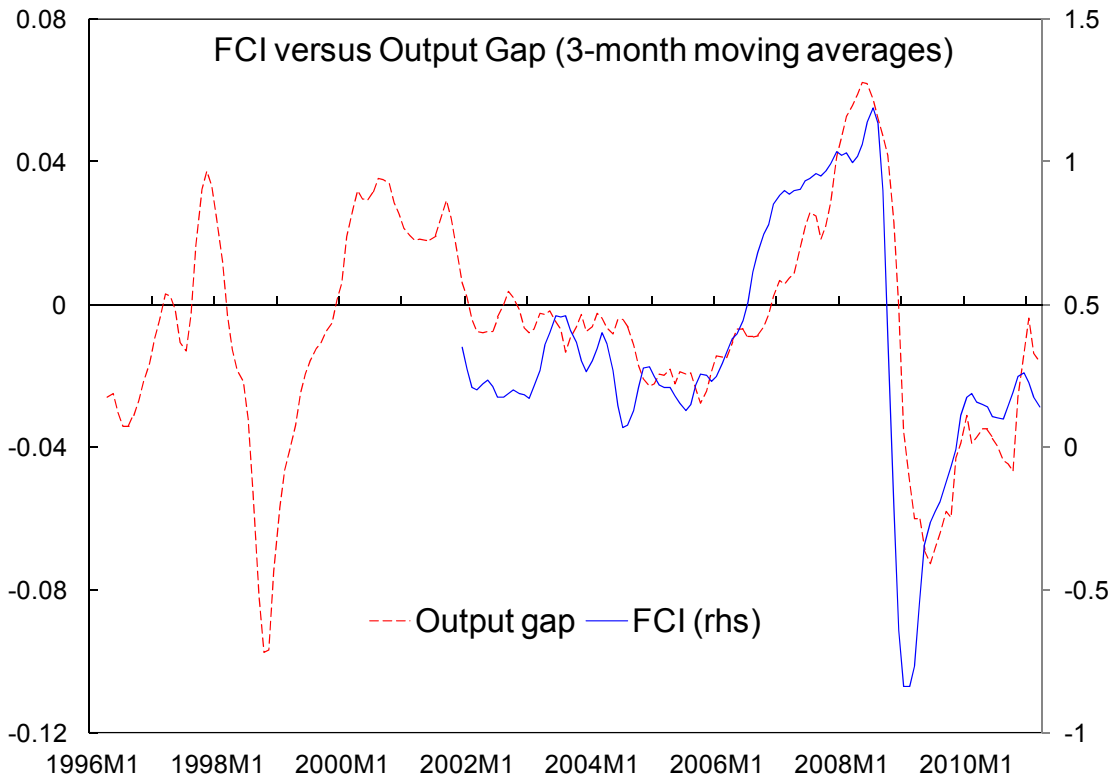
Accumulated Response to Cholesky One S.D. Innovations ± 2 S.E.

- Higher levels of the US long-term interest rate (I_US) and the Russian money market rate (I_RUS) have a clear negative effect on GDP growth, although the effect becomes insignificant relatively quickly for the U.S. interest rate.
- Broader credit conditions, as measured by the REB index of borrowing conditions (CC), have a particularly strong and significant effect on GDP, suggesting that this measure contains important additional information with respect to credit conditions over and above that contained in interest rates (in particular, information on credit worthiness of borrowers and selectivity of lenders).
- Asset price increases are also shown to have a positive impact on economic activity, with the impact of share prices (EQ) materializing somewhat faster than that of house prices (HP). Regarding house prices, it should be noted that in the Russian context their impact on economic activity is less likely to come about via the household consumption channel (as, for instance, in the U.S.) since the retail mortgage market is less developed in Russia. Rather, house prices appear to feed through mainly via housing construction activity.

12. **Using the accumulated responses of the variables to determine the weights of the individual variables, an FCI is constructed for Russia.** Although the maximum (significant) accumulated impact of each of the variables is reached with somewhat different lags, we base the weights on the accumulated response after 12 periods balancing considerations of size and significance of impact across the 6 variables. The resulting FCI is shown on the following page, together with a chart depicting a decomposition of the FCI into its individual components.

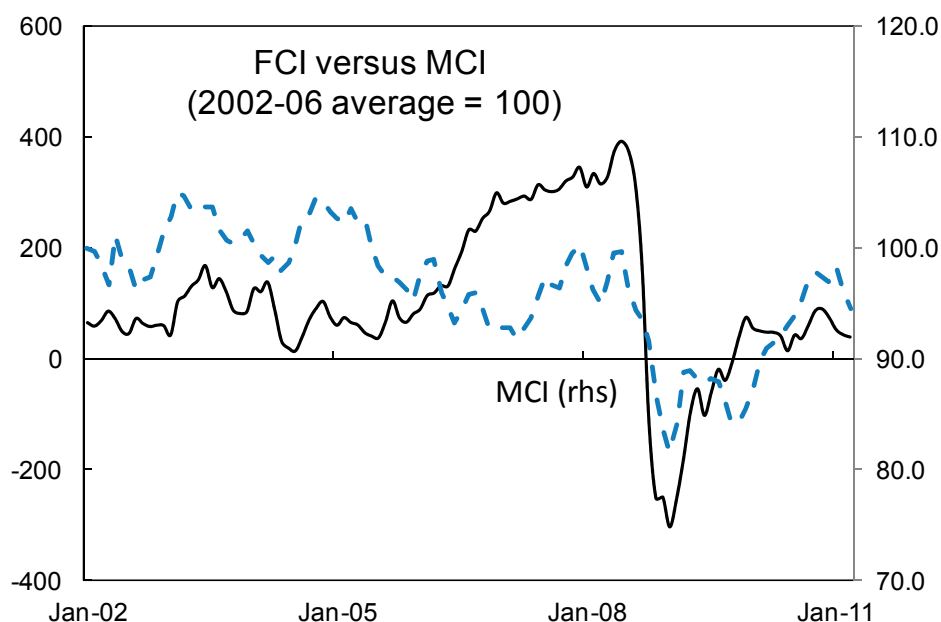
13. **The FCI performs well and provides an insight into the role of financial conditions in recent cyclical developments.** The estimated FCI tracks the output gap well, with a relatively high correlation of 0.75. The charts show how financial indicators loosened appreciably during 2006–08, in particular on the back of low (negative) real interest rates and sharply rising home prices. Conditions deteriorated dramatically when the global crisis hit in late 2008. A sharp tightening of credit conditions—owing to higher real interest rates and, likely, increased differentiation by lenders—was the main driver of this deterioration, compounded by the deep slump in the stock market. From the first quarter of 2009, financial conditions improved sharply, in particular on account of a reduction in real interest rates and easing overall credit conditions. These improvements in financial conditions led the recovery in the real sector.

14. **Following the strong rebound from the crisis, more recently overall financial conditions have weakened somewhat, owing to disappointing house price developments.** Following a temporary setback in the summer of 2010—owing to the international market upheaval surrounding the financial problems in Greece—the FCI continued improve in the second half of 2010. More recently, however, conditions have tightened somewhat as renewed weakness in the housing market weighed on the FCI. Against this background, financial conditions currently provide only moderate support for the recovery.



E. The FCI Versus the MCI

15. **The FCI is better placed to explain the recent boom and bust than a traditional MCI.** To gauge the extent of additional information offered by the FCI over a simpler Monetary Conditions Index (MCI), the chart below shows our new FCI next to the MCI that has been used by the Fund staff as an analytical tool in recent years, and that is based on developments in real interest rates and the REER only. The comparison is illustrative.



- It is clear from the chart that the MCI provides relatively little insight in the conditions that led to the boom years during 2006–08. Indeed, “monetary conditions,” as measured by the MCI actually tightened for much of this period (owing to an appreciating ruble and rising real interest rates). In contrast, the FCI reveals—by virtue of the inclusion of the REB credit survey and house prices—that broader financial conditions loosened significantly during these years, arguably contributing to the rapid GDP growth and eventual overheating.
- The FCI also appears to capture better the dire conditions during the recession in 2008/09, when sharply tightening credit standards and plummeting stock prices made financial conditions particularly tight. The MCI, while also falling, shows a considerably less dramatic picture during this period (including because in this index the depreciation of the ruble compensates for much of the spike in real interest rates). Finally, looking at current conditions, the MCI shows a sharp, continuous improvement during 2010, bringing monetary conditions broadly back to pre-crisis levels. The FCI, by contrast, suggests that at the same time overall financial conditions have improved much less, owing to a drag from falling housing prices.

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IV. STRENGTHENING RUSSIA'S FISCAL FRAMEWORK¹

A. Summary

- 1. A more ambitious fiscal consolidation plan would promote economic stability and fiscal sustainability.** The sizeable fiscal stimulus implemented during the recent crisis knocked Russia's public finances off a sustainable path. Current consolidation plans do not go sufficiently far in reversing the stimulus, leaving the underlying fiscal balance well above its sustainable level and raising concerns that as the economy recovers fiscal policy will become procyclical, fueling real appreciation and inflation, and undermining competitiveness. And the growth-unfriendly measures in the medium-term budget will further undermine economic prospects.² As a result, Russia's fiscal position is now more vulnerable than in the pre-crisis period, despite high oil prices.
- 2. These vulnerabilities are further exacerbated by weaknesses in the policy framework.** Though many aspects of the policy framework are close to best practice on paper, actual practice in recent years has been moving away from best practice. In particular, the continued focus on the overall, rather than the nonoil balance and the regular use of supplementary budgets to spend windfall oil revenue contribute to procyclicality of fiscal policy, risking costly boom-bust cycles. Moreover, with the Reserve Fund at a low level, Russia will increasingly need to rely on market financing to finance its large projected overall deficits.
- 3. Conversely, a strengthened fiscal framework, combined with a more ambitious fiscal consolidation, would provide many benefits.** Reduced fiscal vulnerabilities and enhanced credibility of fiscal policy will boost investor confidence and attract durable and productive foreign investment with positive knock-on effects on growth. As an additional benefit, lower vulnerabilities would mean less need to hold a buffer in the Reserve Fund. Any "excess" holdings in the Reserve Fund could then be transferred into the National Wealth Fund to finance long-term pension liabilities, further reducing Russia's fiscal vulnerabilities.
- 4. Against this background, this note suggests several improvements to the framework for fiscal policy,** including: (i) focusing on the nonoil balance as the anchor for fiscal policy; (ii) using a Permanent Oil Income Model (POIM) rule to set targets compatible with long-term fiscal sustainability; (iii) avoiding excessive use of supplemental budgets; and (iv) replenishing the Reserve Fund (designed as a "rainy day" fund). A strengthened fiscal framework, alongside a more ambitious fiscal consolidation, would create a virtuous circle of reduced fiscal (and economic) vulnerabilities, increased credibility, and higher growth.

¹ Prepared by Charleen Gust and Daria Zakharova.

² See next chapter.

B. Introduction

5. **As an oil-producing country, Russia faces important challenges to its fiscal management.** Oil revenue tends to show high volatility and uncertainty compared with other fiscal revenues owing to the volatility of oil prices and the uncertainty associated with the size and exhaustibility of oil reserves.³ As a result, today's choices about the size of investment in oil production capacity, the rate of extraction of oil, and the use of oil revenue are likely to have significant long-term economic implications. In addition, as oil revenue largely originates from abroad in the form of export receipts, it can have a significant impact on the real exchange rate and the country's competitiveness depending on how the inflows of foreign currency are managed.
6. **Against this background, Russia has to consider a number of critical questions regarding fiscal policy and the management of oil revenues and wealth.** These include: how to accurately assess the fiscal stance to better inform policy decisions; how to shield public expenditures and the non-oil economy from the high volatility in (and uncertainty about) oil revenue; and how to address sustainability and intergenerational equity issues.
7. **In recent years, however, Russia has not met these challenges as well as it could have.** Fiscal policy has focused on the overall balance, rather than the nonoil balance. This has led to procyclical fiscal policies, which amplified the boom leading up to the crisis. With ongoing pressures to spend windfall oil revenues, sustainability and intergenerational equity issues have taken a back seat.
8. **A well-designed and consistently applied fiscal framework is needed to promote more effective policy implementation.** Given the massive fiscal stimulus Russia undertook in response to the crisis, there is an urgent need to unwind the crisis-related measures and return to a sustainable fiscal position now that the crisis has abated and oil prices are high. A strengthened fiscal framework, alongside a more ambitious fiscal consolidation, would create a virtuous circle with reduced fiscal (and economic) vulnerabilities, increased credibility, and higher growth.
9. **This chapter suggests improvements to strengthen Russia's fiscal framework.** It includes specific recommendations to strengthen Russia's fiscal framework to bring it in line with best practice, and is organized as follows. Section C discusses international best practice. Section D provides an overview of the current framework, and assesses how it compares to best practice. Finally, section E presents recommendations to bring the framework in line with best practice.

³ In Russia, natural gas is also abundant. However, for the sake of simplicity, this paper uses "oil" as shorthand for "oil and gas" when referring to Russia.

C. Best Practice⁴

Assessing the macro-fiscal stance

10. **The special nature of oil revenue complicates the evaluation of the macro-fiscal stance in oil producing countries (OPCs) such as Russia.** Conventional fiscal indicators and tools, such as the overall and cyclically-adjusted primary balances (CAPBs) and debt sustainability analysis (DSA) are not sufficient to make a full assessment of the short-term fiscal stance or longer-term fiscal sustainability.

- *Overall balance and CAPBs.* CAPBs are generally more useful in assessing the direction of a country's fiscal policy than an overall balance, since they exclude net interest payments (which are not at the short-term discretion of policymakers) and the effect of automatic stabilizers (changes in government revenues and expenditures in response to a change in the cyclical position of the economy—see Box 1) on the overall balance. As such, CAPBs represent the discretionary part of fiscal policy. However, while an improvement in the CAPB would generally signal a discretionary fiscal tightening, such an improvement in an OPC could be associated with higher oil prices and higher oil revenues used to finance an increase in expenditure, and thus masking a fiscal impulse. When output is above potential, such a fiscal impulse could lead to a pro-cyclical fiscal stance and economic overheating.
- *DSA.* Traditional DSAs mainly focus on the level of gross debt and achieving a sustainable primary fiscal balance—usually defined as the balance that maintains a constant debt-to-GDP ratio over the medium term. However, strategies aimed at stabilizing a positive net debt-to-GDP ratio will not generally be optimal or even consistent with fiscal sustainability in OPCs, since they could result in explosive debt dynamics when oil is exhausted, if the underlying fiscal deficit is large and nonoil growth is weak.

Box 1. Automatic Stabilizers

Automatic stabilizers are changes in government revenues and expenditures in response to a change in the cyclical position of the economy. In a recession, tax revenue from personal income and corporate profits usually fall faster than national income. Under a progressive income tax system, tax revenue tends to fall faster than household income as taxpayers move into lower tax brackets during a recession. Similarly, corporate profits usually fall faster than turnover, causing profit taxes to fall as a share of GDP. On the expenditure side, unemployment and welfare payments automatically increase as unemployment rises in a recession. Taken together, these factors result in an “automatic” worsening of the budget balance in a recession, helping to cushion economic activity.

⁴ This section draws on Medas and Zakharova (2009).

11. **For these reasons, traditional fiscal indicators and tools for OPCs should be complemented by nonoil indicators and analysis of the long-term dynamics of the government’s net wealth, including oil reserves in the ground.** Nonoil fiscal indicators, such as the nonoil balance, should play a key role in guiding fiscal policy in OPCs since they can reveal the true underlying fiscal stance. The three most useful indicators for Russia are changes in real expenditures, the non-oil primary balance (NOPB), and the cyclically-adjusted nonoil primary balance (CANOPB). Long-term fiscal sustainability and oil wealth management issues are discussed in Section C.

- *Changes in real expenditures.* Though a traditional indicator, changes in real expenditures (i.e. nominal expenditures deflated by some price indicator such as the government consumption deflator, the GDP deflator, or the consumer price index) can show more clearly the evolution of government spending than simply looking at nominal expenditures alone, especially when inflation is high as in Russia.
- *NOPB.* In addition to excluding net interest payments, this indicator excludes oil revenue and is therefore a better measure of the impact of discretionary fiscal policy on domestic demand than the overall balance. Ideally the NOPB should be expressed in percent of nonoil GDP, but in the absence of reliable estimates of nonoil GDP, as in Russia, a ratio to total GDP could be used.⁵
- *CANOPB.* This indicator excludes the effect of automatic stabilizers on the non-oil balance and therefore adjusts the measured fiscal stance for the impact of the business cycle. As with the NOPB, it should be expressed in percent of nonoil GDP. Norway is an example of a country that uses the CANOPB in percent of nonoil GDP as its fiscal anchor. Chile also uses a version of a cyclically-adjusted balance but does not express it in terms of non-resource GDP. However, for Russia, estimates of automatic stabilizers should be interpreted with some caution, since the estimation of potential GDP is complicated by the lack of reliable data on nonoil GDP and the large structural changes that have occurred in the economy over the past decade.⁶ For this reason, it is advisable to consider a range of indicators—including the NOPB and changes in real expenditures—when assessing the fiscal stance in Russia

⁵ This is because total GDP in OPCs with large oil sectors tends to fluctuate together with oil prices and production, causing the ratios of nonoil fiscal variables to vary significantly over time. Using total GDP to scale the nonoil balance may thus cloud the assessment of the fiscal position, if movements in the ratio are largely due to the changes in the denominator.

⁶ These estimates point in the right direction but their size may be overestimated. This is because, given the data limitations (including structural breaks) mentioned above, IMF staff has based its calculation of the size of automatic stabilizers in Russia on revenue elasticities observed in other countries. These elasticities, which were estimated for countries with progressive tax systems, may overestimate the size of automatic stabilizers for Russia given its flat income tax.

12. **Figure 1 below illustrates how a range of indicators can be helpful to assess fiscal policy in Russia.** In particular, overall surpluses are not necessarily a sign of prudent fiscal policy as it is possible to run overall surpluses even when the nonoil balance is deteriorating.

- The top chart shows that fiscal surpluses are not necessarily a sign of prudent fiscal policies. As oil prices were increasing from 2004–08, traditional indicators such as the overall balance of the federal government (shown as bars) suggested that the fiscal position was deteriorating—as witnessed by the steady decline of the fiscal surplus. This deterioration is seen even more clearly if one looks at the nonoil overall balance of the federal government (shown as the red line).
- These conclusions are reinforced by developments in the CANOPB. The 2nd chart shows very clearly that the stance of fiscal policy has been procyclical over the 2004–10 period, with the exceptions of 2004 and 2009 (global financial crisis), as the fiscal impulse—defined as the change in the CANOPB—was positive (negative) when the output gap was positive (negative). Fiscal policy was appropriately countercyclical during the crisis and in 2004.
- The third chart shows that developments in the cyclically-adjusted nonoil indicators (CANOPB) and indicators not adjusted for the cycle (NOPB) point to the same conclusion in regard to Russia’s fiscal stance—both indicators show the deterioration of the fiscal position over 2005–09.
- Last, to show the value of looking at a range of indicators to assess the stance of fiscal policy, the fourth chart shows how real primary expenditures at the general government level have been increasing in step with oil prices, further illustrating how procyclical policies fuelled overheating in Russia prior to the crisis.

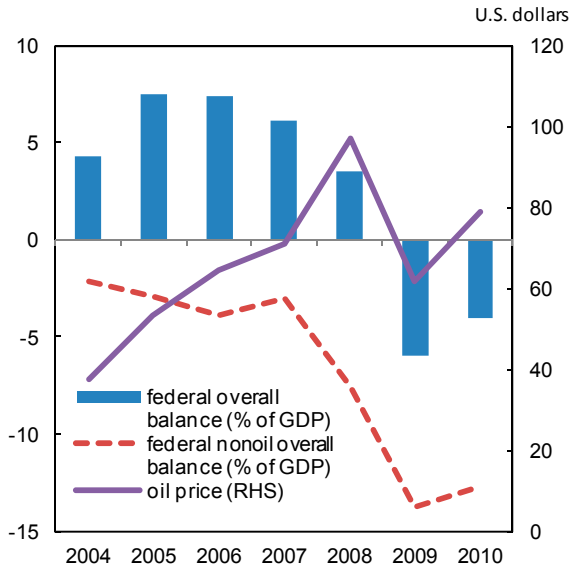
Managing oil price volatility and uncertainty

13. **Oil price volatility poses particular challenges for macroeconomic management in OPCs.**⁷ Foreign exchange inflows associated with oil revenue often result in real exchange rate appreciation through nominal appreciation or higher inflation, depending on the exchange rate regime. Exchange rate appreciation may in turn undermine nonoil tradable goods sectors by reducing their competitiveness (Dutch disease), leaving the economy vulnerable to a sudden drop in oil prices. This loss of competitiveness, combined with higher inflation, could have serious negative consequences for the nonoil economy. These problems may be further aggravated by asset price bubbles which can form as a result of positive wealth effects of oil revenues, increasing financial sector vulnerability.

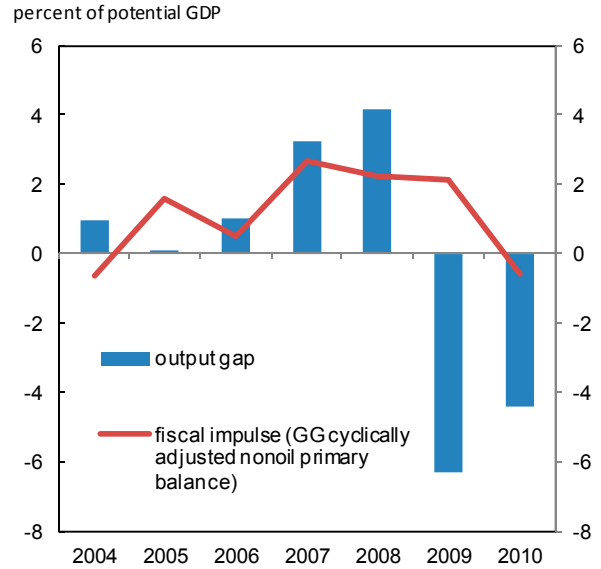
⁷ Though not discussed in this paper, the rate of oil extraction is another important factor that can also pose challenges for macroeconomic management.

Figure 1. Russia: Traditional and Nonoil Fiscal Indicators, 2004–10

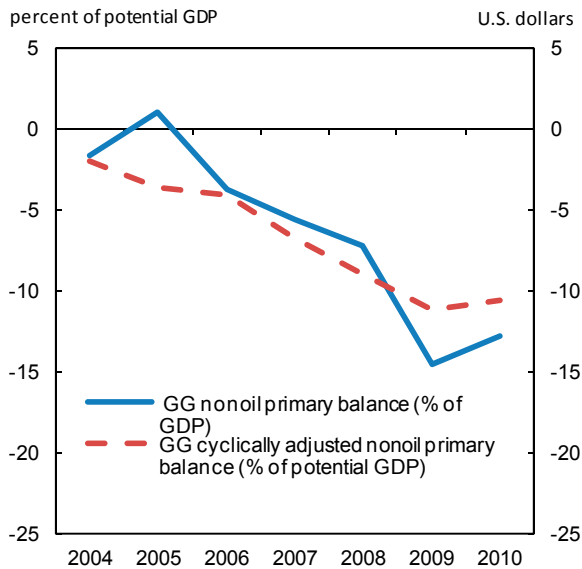
A deterioration in fiscal position despite rising oil prices...



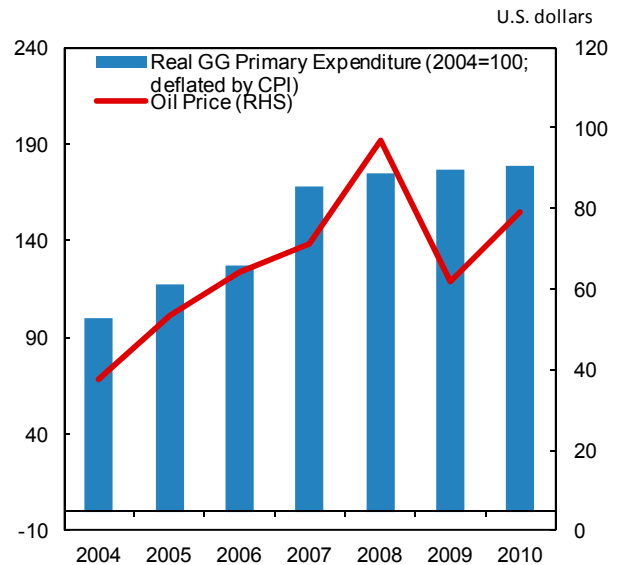
...led to procyclical policies.



Nonoil and cyclically adjusted indicators tell the same story...



...as do real expenditures.



Source: WEO; and IMF staff estimates.

14. **To mitigate these challenges, expenditure decisions should be gradually de-linked from oil price volatility.** This would require saving some of the oil revenue during an oil boom, and would enable the government to draw on savings to protect public services in a (temporary) downturn, contributing to a more stable macroeconomic environment. Spending decisions should be based on a longer-term perspective. In this context, a sustainable level of the nonoil balance could serve as a useful anchor for fiscal policy, for example as a sustainability benchmark embedded in a medium-term fiscal framework (MTFF—see Box 2 below). The framework should include an “escape clause” to allow temporary deviations of the nonoil balance from its sustainable level (e.g., Norway has an escape clause built into its fiscal rule so as to avoid ad hoc responses to unanticipated downturns in oil prices).⁸ In the case of Russia, best practice would be to: (i) anchor fiscal policy in a credible MTFF focused on the NOPB and based on conservative oil price assumptions, and include an escape clause to permit temporary deviations from the sustainable NOPB; and (ii) maintain a buffer for a rainy day by replenishing the oil funds (see Section IIIA).

Box 2. The Role of MTFFs in Managing Oil Revenue Uncertainty

The need for a longer perspective and fiscal risk management in OPCs underscores the importance of MTFFs. An MTFF typically contains a statement of fiscal policy objectives and a set of integrated medium-term macroeconomic and fiscal targets and projections, which are consistent with the overall macroeconomic and development goals of the government.

An MTFF can help to link the annual budget to sustainability objectives and to improve risk analysis in OPCs by:

- Developing explicit strategies for managing external shocks (particularly oil price and exchange rate shocks) to facilitate a less disruptive adjustment process;
- Adequately planning for contingency reserves to smooth spending over the medium term in the face of shocks, including by conducting stress tests; and
- Ensuring that future generations benefit from the use of a nonrenewable resource by encouraging multi-year planning and focusing on delivering a stable and consistent level of public services.

Ensuring long-term fiscal sustainability

15. **Assessing the sustainability of macro-fiscal policy in OPCs is both crucial and highly complex.** The difficulties arise from having to assess the long-term consequences of current policies and from the high degree of uncertainty, particularly relating to the economic value of oil reserves. A central policy consideration is how conservative should countries be when managing oil wealth, given the uncertainty and long-term considerations.

16. **There are several broad approaches to long-term management of oil wealth.** While some liquidity-constrained governments with no (or very limited) access to financing sources or with relatively small oil reserves and revenue may choose to spend all current period oil revenue, best practice can be described by the approaches below. The desirability of each approach depends on a country’s specific circumstances, and the role of country institutions also influences which approach would be best for any country. The rules below are listed from most

⁸ Sustainable levels of the nonoil balance are discussed in more detail in the sub-section that follows on ensuring fiscal sustainability.

conservative to least conservative. Best practice calls for a periodic (e.g. annual) reassessment of the long-term target implied by these rules, based on oil-price stress tests and developments in the oil markets, oil price futures, and probable reserves estimates.⁹ In the short run, the level of spending would also need to be consistent with maintaining macro-stability, implying that the NOPB could be allowed to temporarily deviate from its sustainable level—for example to allow a temporary fiscal stimulus in an economic downturn—as long as the government has a clear and credible plan on how to return to a sustainable fiscal position over the medium term. The particular institutional set-up in a country also plays an important role in influencing which approach to long-term management of oil wealth is most applicable for that country.

- *“Bird-in-hand.”* A “bird-in-hand” rule is one where countries would save all oil revenue as financial assets, with only the yield from the accumulated financial assets spent. Norway broadly follows such an approach. The “bird in hand” rule is usually seen as the most conservative and tends to be restrictive, particularly in the early years of oil exploration when the accumulated financial wealth is low. For this reason, it is better suited for countries where there is a strong preference for transferring a substantial share of the oil wealth to future generations (e.g., due to aging of the population) or where there are sustainability concerns.¹⁰ In this regard, the “bird-in-hand” rule works well for countries that already have adequate public infrastructure in place and do not require large-scale government investments to boost productivity and growth potential. Thus, even though the rule appears to be well-suited for Norway, it may not be optimal for emerging markets, such as Russia.
- *POIM.* Countries may target a level of spending guided by the return on overall net government wealth—net financial assets plus oil wealth (this approach is also known as the Permanent Oil Income Model (POIM)). Under a POIM approach, governments consume a constant share of the net government wealth (e.g. as a percent of nonoil GDP—or in the case of Russia where nonoil GDP is not available, total GDP) every year to ensure a constant share for each generation. A standard POIM approach implies a stable nonoil deficit on average over time and could be attractive to countries that would like to keep the size of government constant in relation to the size of their economies. However, the rule also implies that wealthier future generations (assuming nonoil GDP grows over time) will receive a larger share of the oil wealth in real terms. This rule tends to be less restrictive in the early years of oil extraction than the “bird-in-hand” rule, but becomes more restrictive over time, when accumulated financial wealth allows for higher consumption under the “bird-in-hand” rule. When governments have large social

⁹ This is done, for example, in Chile where an independent panel of experts (the “copper panel”) meets annually to define the long-term copper price that determines the budget envelope for the following year. See Dabán (2011).

¹⁰ The “bird-in-hand” rule also substantially reduces the impact of oil price movements in the annual budgets. The nonoil deficit is linked to the size of returns from the accumulated financial assets. However, the rule can introduce another kind of volatility to the budget, as the returns on the assets could have a high degree of volatility (depending on the investment strategy and size of the assets).

and infrastructure needs, as is the case in Russia, spending more of the net wealth than the return on financial wealth would likely be more appropriate and politically feasible.

- *POIM-real criterion.* Countries may also use a POIM-real criterion approach where the objective is to maintain the purchasing power of the wealth distributed each year, with government spending remaining constant in real terms (adjusted by a deflator). A POIM-real criterion rule implies a declining annuity over the years as a share of GDP, as long as real GDP is growing. As a result, the size of government declines in relation to the size of the economy, but the government continues to provide the same value of services in real terms over the years. This rule is less restrictive in the early years of oil exploration than the standard POIM approach, but becomes more conservative in the outer years. The POIM-real criterion rule could therefore be well suited to countries, like Russia, that prefer to frontload the spending of their oil wealth to invest in public goods that could boost future output. At the same time, these countries would need to be comfortable with a diminishing role of the public sector in the economy over time.
- *DSA.* A standard debt sustainability (DSA) approach could also be used. This approach (common in Fund-supported programs for non-oil producing countries) targets a primary balance that stabilizes public debt at a certain level, once oil runs out. The DSA is usually considered ill-suited for resource-rich countries because it implies that the oil wealth is spent upfront, ignoring intergenerational equity aspects. Depending on how the oil wealth is used, such frontloaded spending could trigger inflation and excessive real exchange rate appreciation, undermining short-term macroeconomic stability and exacerbating Dutch disease. Nevertheless, an argument can be made in favor of the upfront use of oil wealth, especially in developing countries where significant investments in physical and human capital are needed to improve long-term growth prospects. These considerations, however, should be carefully balanced against the strength of public financial management procedures in the country in question and with the need to address long-term fiscal risks, including from population aging. In particular, in the case of Russia, this approach may not be appropriate since long-term fiscal risks—stemming from potentially sizable future pension and healthcare outlays—are not trivial (see Box 3), suggesting caution in relying on public debt to finance long-term government spending. Moreover, the experience of some advanced countries in the recent financial crisis also shows that public debt could increase to unsustainable levels almost overnight when countries are hit by large and unexpected shocks.

Box 3. Long-Term Fiscal Risks in Russia

As many other countries, Russia faces long-term fiscal risks from future healthcare and pension spending, partly owing to population aging.

- *Pensions.* The potential costs of future public pension liabilities are estimated to be high:
 - Hauner (2008) estimates that, absent other reforms such as an increase in the retirement age, stabilizing the replacement rate for pensions at 30 percent (which is still 10 percentage points below the minimum in OECD countries), would require an increase in federal government transfers to the pension fund by more than 4 percent of GDP until approximately 2030, then declining to still 3 percent of GDP in 2050.
 - Gurvich (2010) underscores the high costs of future pension liabilities, estimating that to keep the pension replacement rate at its 2010 level of 38 percent would require a substantial increase in the size of federal government transfers to the pension fund: in 2026 it will exceed 5 percent of GDP, in 2036 it will rise above 7 percent of GDP, and by the end of the period it will reach 10.6 percent of GDP. On average, the transfer will have to be increased by 1 percentage point of GDP every five years during 2010–50.
 - The Russian Ministry of Health has also produced a report on pension reform (see <http://www.minzdravsoc.ru/docs/mzsr/insurance/6> for the Russian version) which concludes that pension reform is necessary to reduce the deficit of the pension fund and stabilize the volatility of the pension replacement rate
 - *Healthcare.* IMF (2010) estimates that public healthcare spending could increase by between 0.7 and 1.6 percent of GDP between 2010 and 2030. About a quarter of this increase will come from aging, with the remainder stemming from excess cost growth (i.e. the growth in public health spending in excess of GDP growth after controlling for the effect of aging).

17. **From the four rules considered above, the POIM or the POIM-real criterion rules would be most appropriate for Russia.** These rules are most appropriate since: (i) they are sufficiently conservative to address the considerable fiscal risks facing Russia in the long run—including the potentially large fiscal costs of pension reform and the long-term spending pressures from rising healthcare costs; and (ii) a similar rule—stabilizing the nonoil deficit in percent of GDP—has already been incorporated into Russia’s budget code, signaling the authorities’ preference for the welfare criteria underlying the rule. Recently however, the authorities have indicated that they are exploring whether to replace the POIM-type nonoil deficit rule with an oil-price rule. Staff continue to see either the POIM or POIM-real criterion rules as most appropriate for Russia (Box 4). A more conservative rule would also allow time to strengthen public financial management systems and to improve the quality of spending going forward. A comparison of the four rules discussed above with the current 2011–13 budget, however, suggests that current policies are inconsistent with all but the DSA approach, which staff does not view as appropriate for Russia. On the positive side, the authorities’ current long-term non-oil deficit target of 4.7 percent of GDP is broadly consistent with the POIM-real criterion rule, if reached by 2015. This, however, would require a more ambitious fiscal consolidation than currently planned (Box 5).

Box 4. Fiscal Rules: POIM Rule vs. Oil-Price Rule

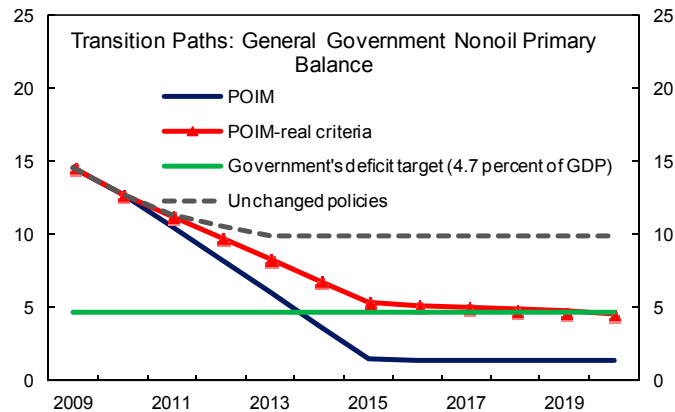
International experience suggests that a fiscal rule, backed by strong political support, can help to anchor fiscal policy and achieve balanced economic growth. Russia is currently considering whether to reinstate the long-term nonoil deficit target that was suspended during the global financial crisis or to replace it with an oil-price rule, where revenue above a certain oil price is saved in the oil funds. Staff continue to see the long-term nonoil deficit target as the best anchor for fiscal policy in Russia. An oil-price rule can seem appealing because it is easy to communicate and could help to delink government expenditure and the economy from oil price volatility. However, it would still be a second-best alternative to the nonoil deficit rule since it does not necessarily preserve the wealth from oil for future generations as a nonoil balance target does. Moreover, to be an effective fiscal anchor, the oil-price rule must be supplemented with a ceiling on expenditure to avoid procyclical fiscal policy.

Box 5. Alternative Specifications for Anchoring Long-Term Fiscal Policy in Russia

Staff's calculations, based on oil price assumptions from the July 2011 WEO suggest that the POIM approach would be consistent with a general government nonoil primary deficit of about 1½ percent of GDP by 2015 (see text chart) and as such would imply a rather large consolidation in the medium-term, but would allow a higher level of consumption of oil wealth in the outer years (i.e. after the oil runs out) than under the POIM-real criterion rule.

In contrast, the POIM-real criterion rule would allow greater consumption of oil wealth up-front with a smaller (though still sizeable) fiscal consolidation in the medium-term to about 5½ percent of GDP by 2015 (see chart), but would mean a lower level of consumption of oil wealth in the outer years than under the POIM rule. Stress tests suggest that the results from both the POIM and POIM-real criterion rule are fairly robust to the impact of alternative assumptions.

Nevertheless, a significant drop in long-term oil prices (compared to the current relatively optimistic forecast of US\$104/barrel) would require a stronger adjustment. For example, if long-term oil prices were to fall to US\$55/barrel—which oil futures price data imply has a 10 percent probability of happening—the sustainable NOPD would fall to about 3¾ percent of GDP in 2015.



Source: IMF staff estimates.

Further simulations of the POIM-real criteria model suggest that the authorities' current deficit target of 4.7 percent of GDP (note that this target refers to the federal budget) would be sustainable at a long-term oil price of about US\$82 under a POIM-real criteria rule. Currently, oil futures data imply there is about a 40 percent probability that the oil price would fall to this level by 2013—which suggests that the authorities' target is prudently conservative, given the inherent high volatility of oil prices. However, under either the standard POIM or the POIM-real criterion approach, a more ambitious fiscal consolidation is needed in order to achieve long-term sustainability.

Complementary fiscal institutions

18. **Fiscal responsibility laws (FRLs) and independent fiscal agencies tasked with the monitoring and assessment of fiscal developments may be useful complements to the fiscal rules discussed above.** FRLs are a subset of the wider set of budget-related laws that encompass all budget principles. They are defined as a limited-scope law that elaborates on the rules and procedures relating to three budget principles: accountability, transparency, and stability.¹¹ Similarly, an independent fiscal agency or a fiscal council can help in the formulation and implementation of sound fiscal policies, and also play a monitoring and analytical role. The desirable form of such an agency (or a fiscal council) is country-specific and depends on the nature of the fiscal situation and on the country's political environment, including the constitutional setup, the legal tradition and policymaking customs.

19. **International experience suggests that to be effective such agencies should include two essential components:** (i) an explicit and transparent characterization of what the government views as a desirable (unbiased) fiscal policy and (ii) ways to enhance the (political or reputational) costs of deviations from unbiased policy.¹² In addition, strong public financial management systems and a credible political commitment to sound overall macro-fiscal policies are necessary to ensure the effective use of oil resources in OPCs, regardless of the institutional set-up.¹³

20. **An independent fiscal agency that conforms to best practice, both on paper and in practice, can complement the role played by existing institutions and enhance the effectiveness of fiscal rules.** Such an agency—tasked with conducting impartial fiscal analysis and assessment of fiscal policy implementation—could help to increase transparency and accountability of fiscal policy, and raise the political cost of inappropriate policy. One role of a fiscal agency that would be particularly useful for Russia would be to provide an independent view on the oil price consistent with the fiscal rule (or vice versa).¹⁴ Such an independent determination of the appropriate oil price could help to provide consistency in the oil price used to guide both fiscal and monetary policy.

¹¹ As in Lienert (2010).

¹² See Debrun, Hauner, and Kumar (2009).

¹³ See Medas and Zakharova (2009) and Ossowski, Villafuerte, and Medas (2008).

¹⁴ For example, as previously noted in footnote 9, Chile relies on an independent panel of experts to define the long-term copper price that determines the budget envelope for the following year.

D. How Russia's Current Fiscal Framework Compares to Best Practice

The current framework

21. Russia's legal fiscal framework goes in the right direction and includes the following elements.

- First, it relies on the nonoil balance as a key fiscal indicator. The budget code includes a long-term nonoil deficit target of 4.7 percent of GDP, though the target was suspended in April 2009 (as a result of the global financial crisis) through end-2013.¹⁵
- Second, to manage macroeconomic volatility and uncertainty and to account for the longer-term consequences of spending decisions, Russia uses a medium-term fiscal framework, underpinned by rolling three-year budget plans, to set fiscal policies.
- Third, Russia maintains two oil funds (see Box 6 below), the Reserve Fund (which operates as a "rainy day" fund) and the National Wealth Fund (which is oriented towards long-run saving and creates a store of value for future generations).
- And finally, to ensure long-term fiscal sustainability, the (currently suspended) nonoil deficit target incorporated into Russia's budget code is similar to a POIM rule in that is aimed at supporting intergenerational equity objectives.

How it compares to best practice

22. Table 1 below shows how Russia's fiscal framework compares to best practice.

While on paper, many aspects of the framework are in line with best practice, actual practice in recent years has been moving away from best practice. This move away from best practice is due in part to the crisis, but even before the crisis, persistent spending pressures acted to weaken the application of the legal framework.

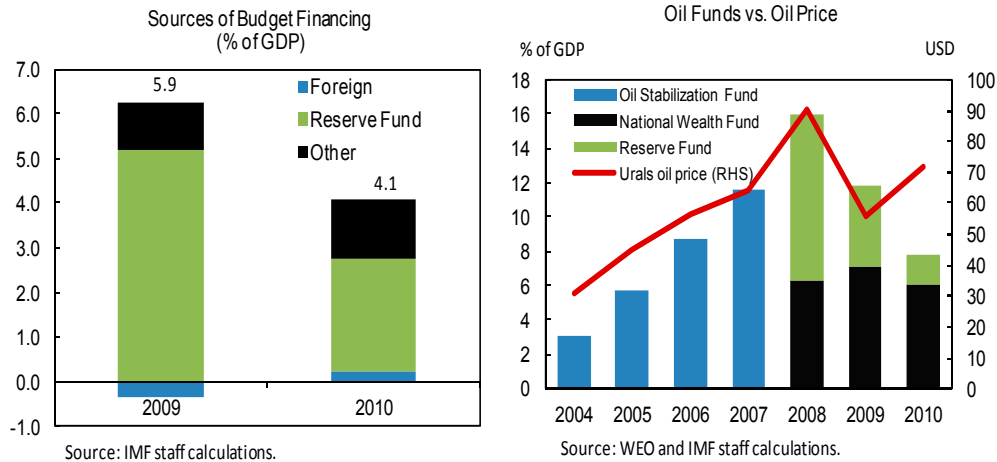
¹⁵ The target was suspended initially until January 1, 2013 and in September 2010, the suspension was extended until January 1, 2014.

Box 6. Russia's Oil Funds

Russia established an oil fund in 2004, known as the Oil Stabilization Fund (OSF), reflecting the government's desire to shield itself from the volatility and uncertainty of oil prices, to accumulate reserves to pay off foreign debt, and to curb inflation. Over the period 2005–07, the OSF and other budget sources were deployed for early debt repayment of US\$47 billion in total, saving at least US\$13 billion in interest payments and smoothing budget expenses.

In 2008, the OSF was split into the Reserve Fund (RF) and the National Wealth Fund (NWF) and started to accumulate not only oil revenues but also natural gas revenues. As of March 1, 2009, the RF and NWF had reached US\$136 billion and US\$84 billion, respectively, in assets under management. The objective of the RF is to finance federal budget deficits in periods of unfavorable world oil and gas prices, and the NWF's mission is to co-finance the voluntary pension savings of Russians and to maintain a balanced budget for the Pension Fund of Russia.

During 2009–10, the Russian government used, for the first time, a sizeable part of the assets of its oil funds to respond to the effects of the global financial crisis.



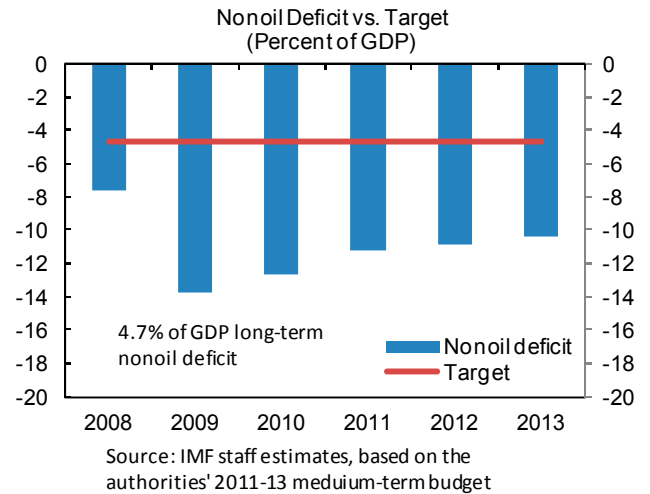
As of August 1, 2011, the RF had dwindled to only US\$27 billion, while the NWF stood at US\$93 billion. Unless replenished, the RF could run out this year.

Sources: Kazakevitch and Trishkina (2010) for description of the oil funds, data on oil fund balances from the Russian Ministry of Finance's website (www.minfin.ru), oil prices from the WEO database, and staff estimates.

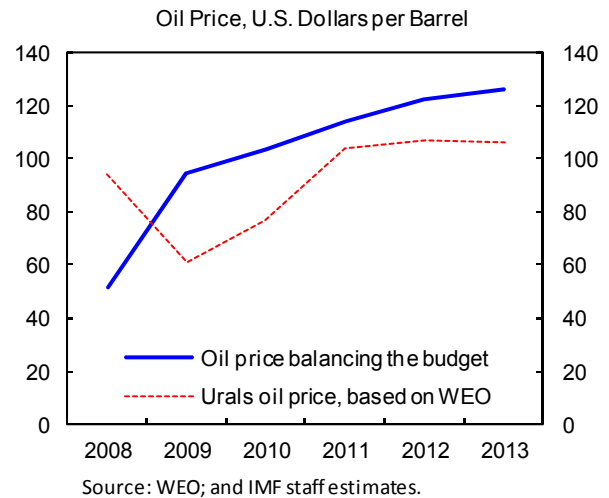
Table 1: Best Practice vs. Russia's Fiscal Framework

	Best practice	Russia legal framework	Russia actual practice
Assessing the macro-fiscal stance	Use of nonoil indicators such as (cyclically adjusted) nonoil primary balance as key indicator	The nonoil balance is specified as the fiscal anchor in the budget code and is published in the annual budget document.	The nonoil balance was used as the main fiscal indicator prior to the crisis, but the focus has since shifted to the overall balance as fiscal deficits emerged in the aftermath of the crisis
Managing macroeconomic volatility and uncertainty	Delink expenditure decisions from oil revenue volatility by anchoring fiscal policy in credible medium-term fiscal framework focused on NOPB (or CANOPB) and maintaining buffers to ameliorate external shocks (e.g. oil funds as "rainy day funds")	MTFF exists, underpinned by rolling three-year budget plans. Russia maintains two oil funds: the Reserve Fund (which serves as a "rainy day" fund) and the National Welfare Fund (which is focused on long-term intergenerational equity).	Excessive use of supplementary budgets undermines the MTFF. The Reserve Fund has served Russia well as a "rainy day fund", but it is now nearly depleted.
Ensuring long-term fiscal sustainability	Implement fiscal rule based on POIM approach to support intergenerational equity and preserve fiscal sustainability	Russia's budget code does have a long-term nonoil deficit target that is broadly in line with a POIM approach.	Target was suspended during the crisis.
Complementary fiscal institutions	Independent fiscal agency can help in formulation and implementation of sound fiscal policies	Does not have independent fiscal agency	Does not have independent fiscal agency

- Assessing the macro-fiscal stance.* As recommended by best practice, Russia's budget code includes the use of the nonoil balance as a long-term target for fiscal policy and the nonoil balance was indeed used as the main fiscal indicator prior to the global financial crisis. However, the focus of fiscal policy has since shifted to the overall balance as fiscal deficits emerged in the aftermath of the crisis and the nonoil deficit target has been suspended through 2013. The chart at right shows that the current medium-term consolidation plans through 2013 leave the nonoil deficit well in excess of the 4.7 percent of GDP target.



- Managing macroeconomic volatility and uncertainty.* In line with best practice, Russia has a medium-term fiscal framework to help delink expenditure decisions from short-term variations in oil revenue. However, supplementary budgets have been passed in every year since the 1998 crisis, reflecting persistent spending pressures. Since 2004, with the exception of the recent crisis, the changes implied by the supplementary budgets have invariably increased the procyclicality of fiscal policy.



Furthermore, when the crisis was abating in 2010 and oil prices were recovering, the authorities continued to draw on the Reserve Fund to finance the overall deficit rather than embarking on a removal of crisis-related stimulus. As such, Russia's fiscal finances are now more vulnerable than in the pre-crisis period—the oil price that balances the budget is now much higher than pre-crisis (see chart at right) and with the Reserve Fund now all but exhausted, Russia will have to meet its financing needs in the market over the next few years.¹⁶

¹⁶ This is especially true if no further consolidation is taken after 2013.

- *Ensuring long-term fiscal sustainability.* Again in line with best practice, Russia has a long-term nonoil deficit target that is broadly in line with a POIM approach. However, this target was suspended during the crisis which has left Russia without a medium-term anchor for fiscal policy.
- *Complementary fiscal institutions.* Russia does not have an independent fiscal agency, as would be best practice. The Audit Chamber is charged with evaluating the government's performance against its fiscal targets as part of the evaluation of the Federal Budget execution, but there is no requirement that the government acts on the Audit Chamber's evaluation.

How it compares to other countries

23. **International experience confirms that strong frameworks are not enough to ensure success—strong implementation of the framework is essential.** Table 2 below shows Norway, as an example of a success story with its fiscal framework, and Nigeria, as a cautionary tale. Norway is aligned with best practice for many aspects of its framework. Though it does not have a MTFE, or an independent fiscal agency, there is strong commitment to the implementation of the “4 percent rule”. Russia compares favorably to Norway on its legal fiscal policy framework, but as discussed in Section B above, the framework has been undermined by inconsistent implementation. Nigeria is an example of a country that has seen its policy framework undermined recently (since 2010) by weak implementation. Its oil fund (the Excess Crude Account) has been all but depleted, prompting the specter of a ratings downgrade.¹⁷ With Russia's weak implementation of its framework and the Reserve Fund at low levels, Nigeria's experience is illuminating.

E. Recommended Improvements to the Framework

24. **Assessing the fiscal stance: focus on the nonoil balance as a fiscal anchor.** Consistent use of the nonoil deficit as the key indicator of fiscal policy would provide an anchor for fiscal policy, independent of volatile commodity prices. As reliable estimates of nonoil GDP for Russia become available and estimates of potential output growth are refined, Russia should use the CANOPB definition to guide fiscal policy.

¹⁷ Fitch Ratings revised the outlook on Nigeria's rating from stable to negative in October 2010.

Table 2: Some Examples of International Experience

	Best practice	Norway	Nigeria
Assessing the macro-fiscal stance	Use of nonoil indicators such as (cyclically adjusted) nonoil primary balance as key indicator	Nonoil structural central government deficit is key indicator for fiscal policy. It is enshrined in law and consistently implemented.	Does not use nonoil indicators. Uses oil price-based fiscal rule, which is part of the Fiscal Responsibility Act. Since implementation of the rule is not enshrined in law, the rule has not been consistently implemented in recent years.
Managing macroeconomic volatility and uncertainty	Delink expenditure decisions from oil revenue volatility by anchoring fiscal policy in credible medium-term fiscal framework focused on NOPB (or CANOPB) and maintaining buffers to ameliorate external shocks (e.g. oil funds as "rainy day funds")	No multi-year approach to budgetary planning, but budget documents include three-year rolling projections. Norway maintains the Government Pension Fund Global (GPF), whose purpose is to support long-term management of petroleum revenues. Proceeds from the fund are used to finance the nonoil deficit.	Uses Medium-Term Expenditure Framework. Nigeria maintains the Excess Crude Account but it has been nearly depleted as a result of weak implementation of the fiscal rule in recent years.
Ensuring long-term fiscal sustainability	Implement fiscal rule based on POIM approach to support intergenerational equity and preserve fiscal sustainability	Nonoil deficit target is broadly in line with a "bird-in-hand" approach ("4 percent rule" stipulates that the nonoil structural deficit should average, over time, 4 percent of the value of the GPF).	Fiscal rule based on oil-price rule, not POIM rule.
Complementary fiscal institutions	Independent fiscal agency can help in formulation and implementation of sound fiscal policies	Does not have independent fiscal agency	Does not have independent fiscal agency

Source: IMF (2011) and OECD (2010).

25. **Ensuring long-term fiscal sustainability: use a POIM rule.** Staff's analysis suggests that the authorities' current nonoil deficit target of 4.7 percent of GDP could serve as a sustainable long-term fiscal anchor for Russia. Achieving this target by 2015 and maintaining the nonoil deficit at a sustainable level thereafter would be broadly in line with the POIM-real criterion approach.¹⁸ Accordingly, the target should be reinstated and the government should articulate an ambitious and credible fiscal consolidation plan to reach the target by 2015.

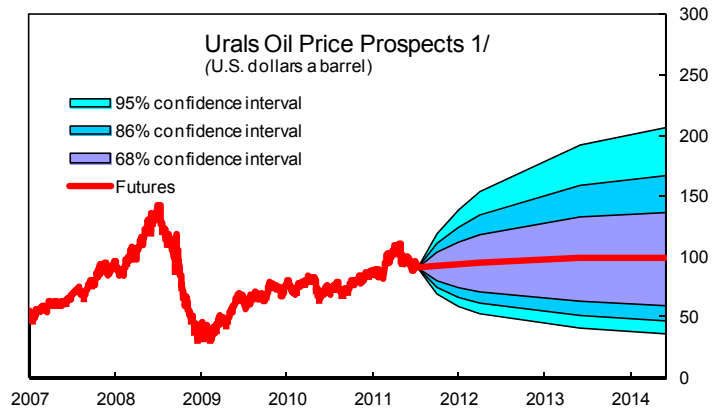
26. **Managing macroeconomic volatility and uncertainty: avoid excessive use of supplemental budgets, use conservative oil price assumptions in the budget, and replenish the Reserve Fund.**

- Russia should make a decisive break with its past practice of excessive use of supplemental budgets—this practice undermines the credibility and usefulness of the medium-term fiscal framework and can contribute to the procyclicality of fiscal policy.
- It should also use conservative oil prices in the budget, as was done until 2010, and introduce an escape clause into Russia's fiscal rule to allow for temporary deviations from the medium-term deficit target.
- Last, the Reserve Fund should be replenished in order to allow it to continue to play its helpful shock-absorbing role for the Russian economy. As such, the authorities' plans to use some of the oil revenues in 2011 to replenish the Reserve Fund are welcome. Replenishing the Reserve Fund would reduce near-term vulnerabilities as Russia would not need to rely on potentially fickle external funding sources to finance the current projected overall budget deficits. Staff's analysis suggests that the authorities' current benchmark of keeping 10 percent of GDP in the Reserve Fund to hedge the financing of the budget against a sudden drop in oil prices is broadly adequate, given Russia's high nonoil deficit. But the difficulties of reaching this target should not be underestimated—even with prudent fiscal policies and the high oil prices assumed in the WEO, it would only be possible to reach this level by 2016 (Box 7). The good news is that as Russia's fiscal framework is strengthened and fiscal vulnerabilities are reduced, there would be less need to hold money in the Reserve Fund to insure against downturns. Any "excess" holdings in the Reserve Fund could then be transferred into the National Wealth Fund to fund long-term fiscal liabilities, which would further reduce Russia's fiscal vulnerabilities.

¹⁸ The POIM-real criteria approach suggests that a continued very gradual fiscal consolidation would be required beyond 2015 (e.g., to about 2 percent of GDP by 2049, when oil runs out). See Appendix I for further detail.

Box 7. Replenishing the Reserve Fund

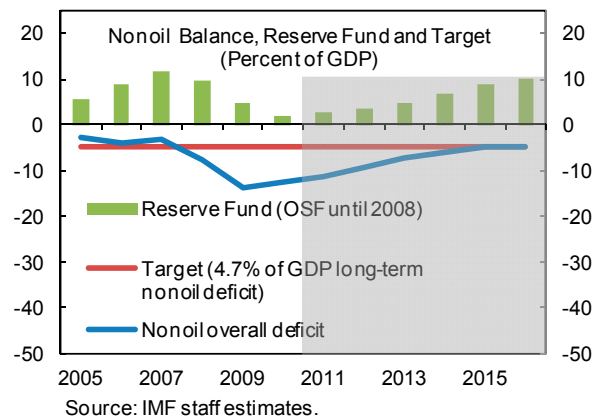
As noted in Box 6, the Reserve Fund played an important role in cushioning Russia from the impact of the global financial crisis. However, unless it is replenished, the Reserve Fund could be exhausted this year. How much should be kept in the Reserve Fund in order to allow it to play its shock-absorbing role? One way to answer this question is to look at futures prices for oil and the probabilities of observing these prices. Using West Texas Intermediate (WTI) crude prices less a constant spread as a proxy for Urals oil prices, it is possible to construct a fan chart showing the probability of observing any particular future oil price. This fan chart is based on the historical mean and standard error of the data and the top and bottom of the ranges correspond to the 95 percent confidence interval. That is, with 95 percent confidence, we would expect to see oil prices by mid-2014 somewhere between US\$37/barrel and US\$207/barrel.



Sources: Bloomberg; and IMF staff calculations.
1/ Derived from prices of futures options on July 11, 2011, minus constant spread of \$3/barrel.

Taking a modified value-at-risk approach, IMF staff have estimated the gross financing need of the federal government using two tail risk scenarios where oil prices drop to the bottom of the 90 percent confidence interval (i.e. oil prices of US\$70 in 2011 and US\$61 in 2012) and the 95 percent confidence interval (i.e. oil prices of US\$60 in 2011 and US\$48 in 2012). Tail risk scenarios are used since the Reserve Fund is meant to be used as a rainy day fund, not as an everyday financing fund. Assuming the Reserve Fund should be able to cover about 18 months worth of gross financing needs in the face of an adverse event (which may be on the conservative side considering that Russia drew on its Reserve Fund to finance two years worth of fiscal deficits given adverse market conditions in the aftermath of the global financial crisis), staff's scenarios suggest that somewhere between 9 and 12 percent of GDP should be kept in the Reserve Fund. Against this backdrop, the authorities' target of keeping 10 percent of GDP in the Reserve Fund thus appears appropriate.

In terms of how to replenish the Reserve Fund, Russia should undertake a more ambitious, credible, and growth-friendly fiscal consolidation than what is contained in the 2011–13 budget. Budget scenario simulations which assume that the Reserve Fund is replenished to 2.7 percent of GDP in 2011 as planned by the authorities, and that a front-loaded consolidation is undertaken in order to reach the 4.7 percent of GDP nonoil deficit target by 2015 and keep the deficit at a sustainable level thereafter, suggest that it would be possible to have about 10 percent of GDP in the Reserve Fund by 2016. This level would allow the Reserve Fund to cover about 18 months of gross financing needs starting in 2016 under the tail risk scenarios discussed above. However, under unchanged policies (i.e. fiscal consolidation as in the 2011–13 budget), the Reserve Fund would stand at 3.0 percent of GDP by 2015. Were the Reserve Fund to be drawn down to zero by end-2011 to finance the deficit under the baseline scenario, it would only have 0.9 percent of GDP in it by 2015.



Source: IMF staff estimates.

27. **Complementary fiscal institutions: create an independent fiscal agency.** Currently, there is no independent agency responsible for producing or evaluating the macroeconomic and fiscal projections in the budget, or evaluating the government's proposed fiscal policies. An independent fiscal agency should be established to provide the government with alternative macroeconomic and fiscal forecasts, analysis of fiscal policy under various scenarios, and independent assessments of compliance with the fiscal rule. This agency could be established either outside or within the Ministry of Finance. However, good rules and fiscal agencies cannot be a substitute for fiscal discipline as rules can be abandoned or circumvented, underscoring the need for political support for such arrangements.

28. **Other complementary reforms.** An important complementary reform planned by the authorities is to prepare a comprehensive accounting of tax expenditures and make this part of the annual budget documents. This would increase transparency and provide a better basis for prioritization for use of budget resources. The increased transparency could also build public support for rationalization of tax incentives. Better assessment, disclosure and management of fiscal risks—for instance the risks stemming from contingent liabilities, such as the deposit insurance scheme and risks associated with government stakes in non-financial enterprises—are also needed. The authorities' work to date to develop a methodology for assessing the sustainability of borrowing of state-controlled enterprises and to introduce limits on the size and profile of external borrowing by these enterprises are positive steps in this regard.

Appendix I: A Permanent Oil Income Model (POIM) for Russia

In recent years, the POIM and its alternative specifications have become standard tools for assessing long-term fiscal policy in resource-rich countries. Operational aspects of the basic model are discussed in Barnett and Ossowski (2002) and policy implications, including the pros and cons of the approach, are discussed in Sachs (2007). Over the past few years, the approach (with various modifications) has been applied by IMF teams (e.g. IMF 2007a, IMF 2007b, and IMF 2007c), the World Bank (2010), and external experts. This appendix provides more background on the assumptions used and results obtained for Russia from similar approaches based on POIM and standard debt sustainability analysis.

Table 1 lists the assumptions underpinning the illustrative numerical simulations that apply the four approaches discussed in Section IV above to Russia, whereas Figure 1 and Table 2 summarize the results. 2010 is assumed as a starting year for the simulations, based on an estimate of the general government's nonoil primary deficit and initial financial wealth. The results from the four approaches are fairly robust to the impact of alternative parameter assumptions, such as oil prices and reserves.

Table 1. Russia: Permanent Oil Income Model Assumptions

Parameters	
Net financial assets (NFA; percent of GDP) 2010 1/	-4
Real return on assets (percent)	4
Long-term GDP growth rate (percent)	3
Long-term Ural's oil price (U.S. dollars per barrel; based on WEO prices)	101
Long-term gas price (per 1000 cubic meters, WEO)	264
Calculations	
Oil sector	
Proven/unproven reserves (Billions of barrels) 2/	152
Years until depletion	38
Present value 2008 of future oil cash flow accruing to government (Billions of U.S. dollars)	3501
Gas sector	
Proven reserves (Billions of cubic meters) 3/	44380
Years until depletion	80
Present value 2008 of future gas cash flows accruing to government (Billions of U.S. dollars)	477
Total	
Energy wealth (Billions of U.S. dollars)	3974
NFA (Billions of U.S. dollars)	-67
Total net wealth (NFA plus energy; percent of GDP)	264

Source: IMF staff calculations.

1/ Reserve and National Welfare oil funds net of public debt.

2/ Estimated based on proven oil reserves: 74.2 billions of barrels in 2009 (BP Statistical Review of World Energy, June 2010), and undiscovered reserves: 77.4 billions of barrels in 2000 (The U.S. Geological Survey, 2000).

3/ BP Statistical Review of World Energy, June 2010.

“Bird-in-hand”. The “bird-in-hand” rule requires the steepest adjustment in the first few years to achieve a sustainable level of consumption consistent with the rule. The model implies a sharp adjustment in the general government nonoil primary deficit from 12.8 percent of GDP in 2010 to about ½ percent of GDP by 2015. However, as government financial wealth is gradually accumulated and the real return on this wealth increases, the rule allows for a gradual increase in government consumption to some 3.7 percent of GDP in 2049, when oil reserves are depleted. Over time, as the country runs out of oil and the accumulation of the government financial wealth slows, the sustainable nonoil deficit begins to decline as a share of growing GDP. In the outer years (not shown on the chart), as the economy continues to grow, the level of the sustainable non-oil primary deficit converges to zero.

POIM. A standard POIM approach that stabilizes the nonoil balance in percent of GDP implies a somewhat less restrictive spending profile in the early and outer years than the “bird-in-hand” rule. The nonoil primary balance is stabilized in the steady state at about 1½ percent of GDP from 2015 on.

POIM-real criteria. A POIM approach based on real criteria allows for a higher consumption in the early years than either the “bird-in-hand” or the standard POIM approach. In the medium term, the nonoil primary deficit declines from 12.8 percent of GDP in 2010 to about 5½ percent of GDP by 2015, then gradually declines to about 2 percent of GDP by 2049 when oil runs out, and continues to slowly decline thereafter. The average implied nonoil deficit during 2010–49 is about 4¼ percent of GDP. However, in the very long run, similar to the “bird-in-hand” scenario, as net government wealth plateaus in real terms against the backdrop of growing GDP, the sustainable nonoil deficit converges to zero as a share of GDP.

DSA. This scenario assumes that the public-debt-to-GDP ratio is stabilized at 30 percent when the country runs out of oil in 2049.¹ Under the standard assumption of an interest-growth differential of 1 percent² this implies that Russia would need to run a primary surplus of 0.3 percent of GDP from 2051. As oil and gas run out, the nonoil primary balance should be stabilized at this level. The illustrative simulation calibrates the medium-term adjustment in the NOPB to reach the targeted level of debt by 2049, whereas the longer-term gradual adjustment is calibrated to achieve a smooth transition to the primary surplus of 0.3 percent of GDP by 2049. This scenario implies an initial adjustment in the NOPB of the general government from the current deficit of 12.8 percent of GDP to about 9 percent of GDP by 2015 and a gradual convergence to the NOPD of 0.3 percent of GDP by 2049.

¹ Recent studies have identified a threshold of 40 percent of public debt to GDP (compared to end-2010 ratio of some 10 percent of GDP in Russia) to mark the limit where the risk of debt distress significantly increases (IMF (2003)). The debt-to-GDP benchmark of 30 percent was chosen conservatively, in light of serious long-term fiscal risks facing Russia.

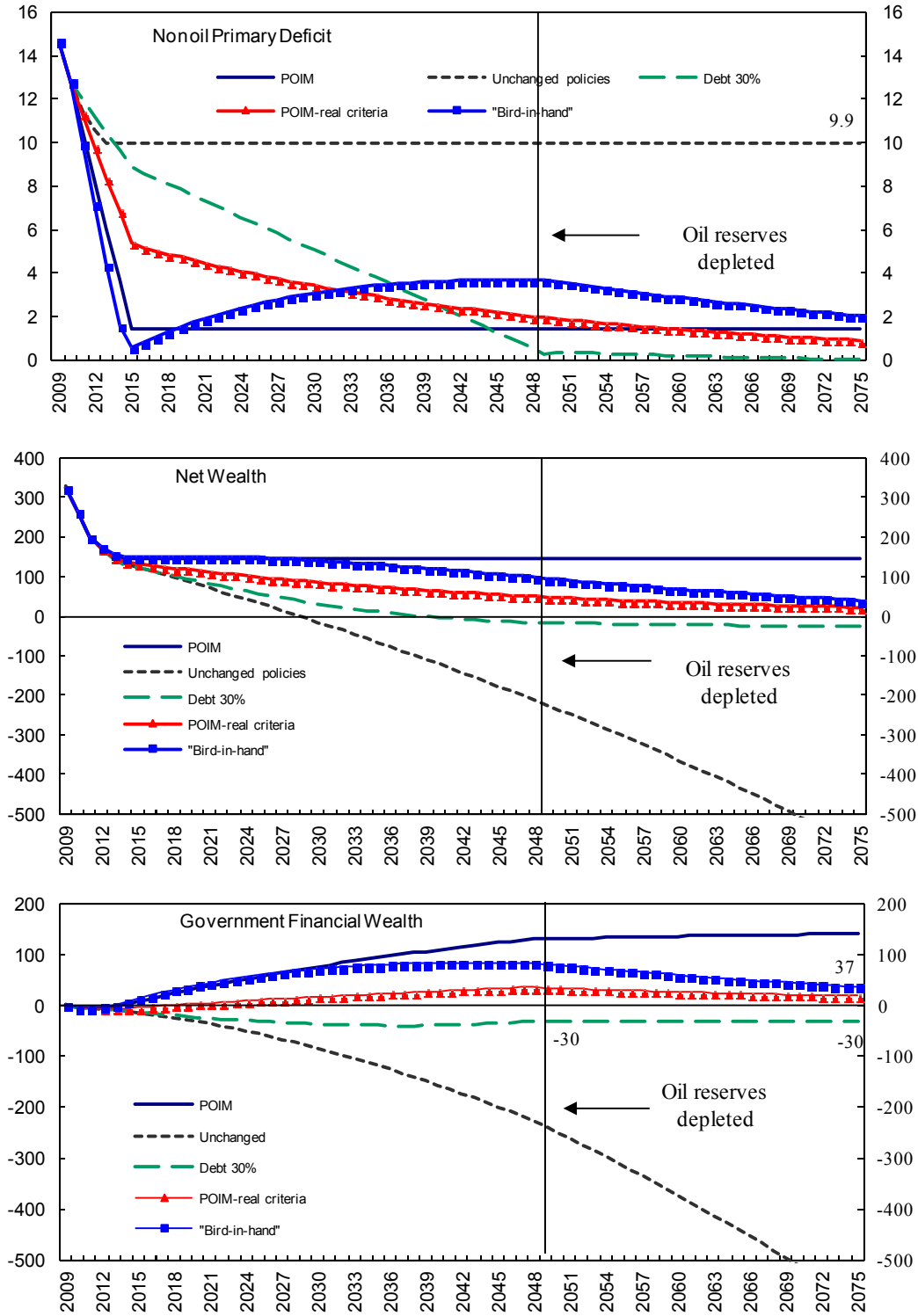
² For further discussion, see paragraph 41 in IMF (2009b).

Table 2. Russian Federation: General Government Balances and Financial Wealth

	2010	2015	2010-15	2049	2010-49	2110
Nonoil primary balance						
"Bird-in-hand"	-12.8	-0.6	-6.1	-3.7	-3.4	-0.8
POIM	-12.8	-1.4	-7.1	-1.4	-2.3	-1.4
POIM-real criteria	-12.8	-5.4	-9.1	-2.0	-4.2	-0.3
Debt 30	-12.8	-8.9	-10.8	-0.3	-5.4	0.3
Unchanged	-12.8	-9.9	-10.8	-9.9	-10.1	-9.9
Net financial wealth						
"Bird-in-hand"	-4.0	13.8	2.1	81.6	58.0	-0.1
POIM	-4.0	7.8	-0.6	131.1	68.9	144.8
POIM-real criteria	-4.0	-3.6	-5.0	35.1	15.5	8.0
Debt 30	-4.0	-13.6	-8.6	-30.0	-28.9	-30.0
Unchanged	-4.0	-13.4	-7.8	-237.9	-94.5	-1226.7

Source: Russian authorities; and IMF staff estimations.

Figure 1. Russian Federation: General Government Balances and Wealth, 2009–75 1/ (Percent of GDP)



Source: IMF staff calculations.

1/ Simulations are based on the July 2011 WEO oil prices; the "Unchanged policies" scenario assumes that the general government non-oil deficit stabilizes at its 2013 level, implied by the medium-term budget; "Debt 30%" scenario assumed that public debt is stabilized at 30 percent, once oil reserves are depleted; POIM-real criteria stabilizes government consumption in real terms; "bird-in-hand" rule sets the nonoil deficit equal to a 4 percent real return on financial wealth.

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V. IS RUSSIA'S 2011–13 BUDGET GROWTH-FRIENDLY?¹

This chapter uses the IMF's Global Integrated Monetary and Fiscal Model to examine the growth impact of the 2011–13 budget. It also examines an alternative package that would deliver the same amount of consolidation using growth-friendly instruments, and a more ambitious consolidation (“reform”) scenario, using the same instruments, to return the nonoil deficit to the government's long-term target of 4.7 percent of GDP.

The model results suggest that the 2011–13 budget is unfriendly to growth as it relies mainly on increasing the payroll tax and cuts to government investment to achieve the planned consolidation. Were the government to rely instead (for example) entirely on cuts to transfers and government consumption, the same amount of consolidation could be achieved with a much smaller near-term output loss and a positive growth effect in the medium term. Finally, were the government to undertake a more ambitious consolidation (using growth-friendly instruments) to reach its long-term nonoil deficit target by 2015, there would be a positive impact on growth in the medium term.

A. Introduction

1. **Russia implemented a massive (9 percent of GDP) fiscal expansion over 2007–09, which is being only partially reversed by the 2011–13 budget.** Looking ahead, the composition of the fiscal consolidation in the 2011–13 budget is not supportive of long-term growth, as the budget adjustment relies mainly on an increase in the payroll tax and cuts in investment. The adverse impact of a higher payroll tax on the labor market would likely at least partially offset the positive effect of lower real interest rates from smaller deficits. Moreover, the current large nonoil fiscal deficit is incompatible with the government's goals of economic modernization, macroeconomic stability, and fiscal sustainability. Accordingly, a reinvention of long-stalled public-sector reforms (including in pensions and health care) are called for to reduce the nonoil deficit to the government's long-term target of 4.7 percent of GDP.

2. **This chapter uses the IMF's Global Integrated Monetary and Fiscal Model (GIMF) to examine the growth impact of Russia's 2011–13 budget.** It also examines an alternative package that would deliver the same amount of consolidation using growth-friendly instruments, and a more ambitious consolidation (“reform”) scenario, using the same instruments, to return the nonoil deficit to the government's long-term target.

¹ Prepared by Charleen Gust with Daehaeng Kim. Thanks are due to Vladimir Klyuev and Stephen Snudden for graciously sharing the source code for the model shocks in Klyuev and Snudden (2011) and for helpful discussions, Oksana Dynnikova for invaluable assistance in mapping the 2011–13 budget, and Derek Anderson for providing technical assistance for TROLL.

B. The Model

3. **This paper uses an annual six-country version of GIMF calibrated for Russia.**

The complete description of the model and the underlying theory can be found in Kumhof et al (2010); the main features relevant for fiscal consolidation can be summarized as follows.

- The model is micro-founded with optimizing behavior by households and firms. Labor and capital supplies are endogenous in the model, allowing it to capture the impact of distortionary taxes and crowding out of private demand. In particular, government deficits crowd out private investment and net foreign assets in the long run and can lead to a higher real world interest rate, which is endogenous in GIMF.
- There are two types of households, both of which consume final goods and supply labor. First, there are overlapping generations households with finite planning horizons as in Blanchard (1985). Second, there are liquidity-constrained consumers who do not have access to financial markets and who are consequently forced to consume their after tax income in every period. Both types of households experience a constant probability of death in each period and experience labor productivity that declines at a constant rate over their lifetimes. As a result, fiscal policies can have non-Ricardian effects (i.e. agents treat part of government debt as wealth, rather than realizing that higher (lower) future debt will be paid for via higher (lower) future taxes).
- There are seven different instruments that can be used in GIMF for fiscal policy (Box 1). They are government consumption, government investment, consumption taxes, labor taxes, capital taxes, general transfer, and transfers to liquidity-constrained households.
- There is a fiscal policy rule in the model that has two main functions. The first is to stabilize the government debt-to-GDP ratio, which eliminates the possibility of default and ensures dynamic stability. Second, the fiscal rule reacts as an automatic stabilizer to the business cycle to replicate the properties of the deficit in business cycles.
- Credibility plays a very important role in the model (Box 2). Fiscal consolidation in general has a short-term contractionary effect through its direct impact on aggregate demand. At the same time, the reduction in the government deficit also stimulates private sector activities—particularly labor and investment decisions—by lowering future tax obligations and real interest rates. However, the magnitude of the expansionary effect of fiscal consolidation depends on whether agents believe the fiscal authority will follow through on its announced plans and there will be a sustained effect on the debt level. If agents perceive the consolidation as credible, they start to respond today to the future benefits of consolidation, for instance by

raising consumption and investment, which will offset the drag on domestic demand from the fiscal consolidation. If agents perceive the consolidation as not credible, they expect that the improvement in the fiscal stance will be reversed in the future. In this case, agents will not respond to the positive side of fiscal consolidation until it becomes a fact, and the contractionary effect of fiscal consolidation will prevail in the short term.

Box 1. Fiscal Instruments in GIMF

There are seven fiscal instruments in GIMF that can be used to achieve fiscal consolidation.

Government investment. Government investment accumulates into a stock of public infrastructure (e.g. roads, schools, and health facilities) that affects the productivity of the domestic final good. A decrease in government investment will be harmful to growth as the productive capacity of the economy would be reduced.

Government consumption. Like government investment, government consumption accumulates into a stock of public durable goods (e.g. government employees and services, legal services, police, and school teachers) that affects the productivity of the domestic final good. However, the elasticity of aggregate output with respect to public durable goods is assumed to be much lower than for public infrastructure. As such, cuts to government consumption will not be as harmful to growth as cuts to government investment.

General transfers. In the model, these are lump-sum transfers (e.g. pensions) that are extracted directly from the budget constraint of both types of households based on their share of total consumption in the economy. Since the overlapping generations households have access to financial markets, they can adjust their labor and savings decisions in response to a cut in these transfers. Liquidity-constrained households cannot (see below). These transfers are considered to be non-distortionary since they do not directly affect the factors of production in the economy and as such, cutting them would be considered a growth-friendly way to achieve fiscal consolidation.

Transfers to liquidity-constrained households. These are transfers directly to liquidity-constrained consumers (e.g. social welfare programs). As liquidity constrained consumers consume their total income in each period, they respond to a cut in these transfers by an immediate reduction in consumption in the period when it occurs. The only offsetting reaction is a small increase in their labor supply (to try to earn extra income to offset the reduction in transfers).

Labor taxes. These taxes (e.g. payroll taxes, personal income taxes) affect the decisions of agents in the economy to supply labor. An increase in these taxes will induce agents to supply less labor, reducing the number of hours worked and thus, reducing the productive capacity of the economy.

Consumption taxes. These taxes (e.g. sales taxes, VAT, excises) are considered to be non-distortionary since they do not affect agents' decisions to supply labor or capital.

Capital taxes. These taxes (e.g. corporate income tax) distort investment decisions. An increase in these taxes will lead to a fall in the level of investment and a reduction in the capital stock, which will reduce the productive capacity of the economy.

Box 2. The Role of Credibility in GIMF

The credibility of policies plays a very important role in the model. When policies are announced, households can either see them as immediately credible, only credible after some time has passed, or never credible. The extent to which policies are credible matters for their growth impact. For instance, fiscal consolidation in general has a short-term contractionary effect through its direct impact on aggregate demand. But when an announced fiscal consolidation is seen as immediately credible, the negative impact on growth will be ameliorated as market participants immediately expect that lower future real interest rates (from lower future overall deficits and debt stock) will lead to smaller primary deficits and create room for higher government spending or lower taxes, prompting them to smooth consumption and raise investment today, even before the full benefits of such policies are realized. Liquidity-constrained households do not have access to financial markets and cannot borrow to smooth consumption or investment, so their response to the announced fiscal consolidation is the same in both cases—that is, by reducing consumption if the level of transfers to these households is reduced, and increasing the number of hours of labor they supply to offset any income shortfalls.

C. The Growth Impact of the 2011–13 Budget and an Alternative Consolidation Package

4. **The 2011–13 budget targets a reduction in the federal government primary nonoil deficit by 2.8 percent of GDP by 2013** (compared to the 2010 outturn), with nearly three-quarters of the consolidation coming from an increase in the payroll tax (from 26 percent to 34 percent, effective January 1, 2011) and cuts to the federal investment program.² The remainder of the consolidation comes from reductions in government expenditures and transfers. Tables 1 and 2 below show the composition of the consolidation measures and how they are mapped into GIMF instruments.

² Ideally, the general government nonoil primary balance should be used to assess the effect of fiscal policy on growth. However, as the budget for the general government is not available on an economic classification basis, we have used the second-best option of the federal government nonoil primary balance.

Table 1: Consolidation measures in 2011-13 Budget

GIMF Instrument	Measure	% GDP	Details
	Revenue	1.6	
tau_l	Increase in payroll tax	1.6	Increase in payroll tax rate from 26 to 34% to finance pension fund
	Expenditure	0.7	
govcons	Labor compensation and payroll contribution	0.9	Planned 20% reduction in civil service, but not backed by specific measures
govcons	Compensation for works and services	0.0	
ignore	Servicing of government (municipal) debt	-0.5	
govcons	Unrequited transfers to entities	0.4	Includes subsidies to municipal and private sector entities
govcons	Unrequited transfers to budgets	1.4	Includes transfers to regional governments
transfer	Social security	0.2	
govinv	Investment	0.4	Cuts to federal investment program
govcons	Other expenditures	-2.1	Includes undistributed items for 2012 and 2013
	Total	2.3	
	Total ex. interest increase	2.8	

1/ GIMF instruments are: tau_l = labor tax; govcons = government consumption; govinv = government investment; transfer = general transfer

Source: Ministry of Finance and IMF Staff estimates

Table 2: 2011-13 Budget Consolidation Measures by GIMF Instrument
(percent of GDP)

	2011	2012	2013	3-year total	Share of total consolidation
Labor tax	1.600	0.000	0.000	1.600	57.0
Government consumption	0.254	0.047	0.286	0.587	20.9
Government investment	-0.226	0.436	0.222	0.432	15.4
General transfers	0.134	-0.021	0.077	0.190	6.8
Total	1.762	0.462	0.585	2.809	100.0
<i>Memorandum items:</i>					
Federal nonoil primary deficit	-10.5	-10.0	-9.5	2.8	
Federal nonoil deficit	-11.2	-10.9	-10.4	2.3	

Source: Ministry of Finance and IMF Staff estimates

5. **For the simulation of the growth effects of the 2011–13 budget, the instruments used are as follows:**

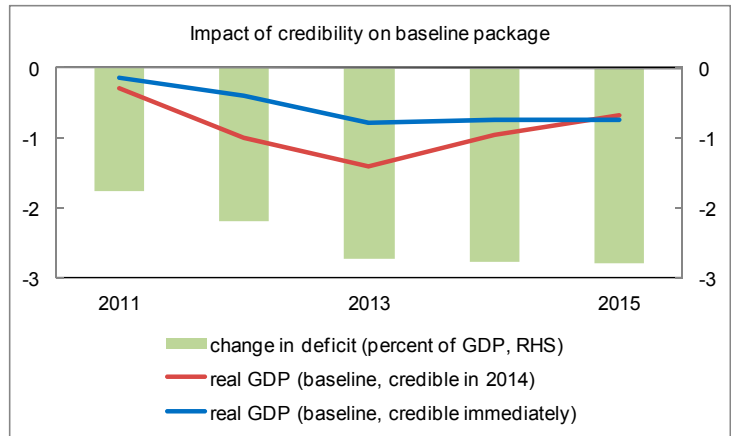
- *Increase in labor tax.* This is a direct mapping from the increase in the payroll tax.
- *Decrease in government consumption.* The 2011–13 budget includes plans for a 20 percent reduction in the civil service, which contributes to a 0.9 percent of GDP reduction in the government’s wage bill. The budget also includes a reduction in subsidies to municipal and private sector entities (“unrequited transfers to entities” in the economic classification presentation of the budget) of 0.4 percent of GDP, which we have mapped into government consumption. Transfers to regional governments will be reduced by 1.4 percent of GDP, which is mapped into government consumption since we assume that regional governments will reduce their consumption by the same amount. Finally, the 2011–13 budget includes undistributed items in 2012 and 2013 which amount to a 2.1 percent of GDP increase in government consumption.³ The net impact of all these measures together is 0.6 percent of GDP over three years, or about one-fifth of the total consolidation.
- *Decrease in government investment.* This is a direct mapping from the cuts to the federal investment program.⁴
- *Decrease in transfers.* The decrease in transfers is a cut in social security expenditures, which we have assumed maps into a cut in general transfers.⁵

³ This also includes 0.5 percent of GDP to ensure that the total amount of consolidation over 2010-13 sums to the change in the nonoil deficit over this period.

⁴ Since government investment in Russia may not be as productive as in other countries as a result of inefficiencies in planning and implementation and weak governance, the model results may overstate the negative impact of the budgeted cut in investment. To fully realize the productive impact of government investment spending, Russia should improve public procurement processes and public financial management.

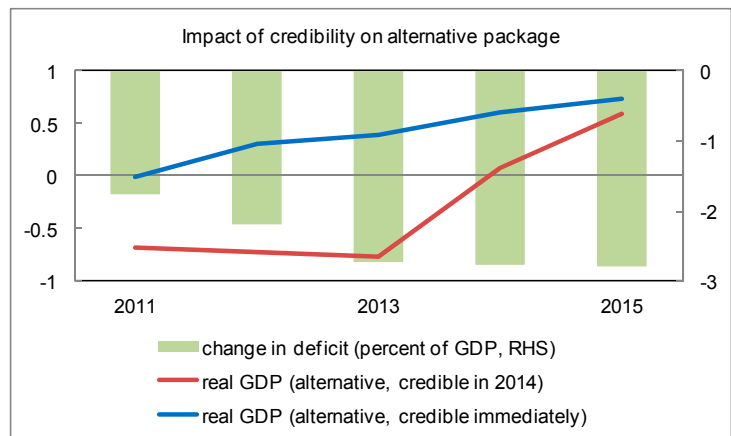
⁵ World Bank (2011a) notes that social assistance is not well-targeted to the poor and this is why we map the cut in social security into general transfers, rather than transfers to liquidity-constrained households.

6. **As the government intends to keep the 2011–13 budget measures in place in subsequent years as well, we model the adjustment in the overall deficit as permanent.** As discussed above, credibility plays an important role in the assessment of fiscal policy efforts (text chart). We examine, as upper and lower bounds on the growth impact of the consolidation package, scenarios where the package is seen as credible immediately or credible only in 2014 (i.e., each year agents in the economy see the consolidation but expect it to be fully reversed the subsequent year, until the entire amount of the announced consolidation is in place at the end of 2013).



7. **The initial impact of the consolidation is contractionary, as one would expect.** In the fully credible scenario, the near-term impact on growth is more muted than in the scenario where the package becomes credible in 2014, since agents are able to foresee the entire reduction in the deficit and adjust their decisions accordingly (e.g., by adjusting savings, investment, consumption, labor supply, etc). But since the adjustment relies mainly on growth-unfriendly instruments like the increase in the payroll tax and cuts in government investment (recall the discussion in Box 1), the negative effects on growth are not reversed in the medium term.

8. **It is possible to construct an alternative scenario that delivers the same size and phasing as the 2011–13 budget, but uses more growth-friendly instruments.** Indeed, the authorities have recently proposed to reduce, from 2012, the distortionary increase in the payroll tax that was introduced in the 2011 budget. In the alternative scenario modeled here, about three-quarters



of the consolidation is achieved through cuts to transfers, with the remaining one-quarter coming from cuts to government consumption. If the package were seen as credible in 2014, the growth impact would be less negative than the baseline scenario in the short run, and would become positive in 2014 (see text chart). If the package is seen as immediately credible, there would be an instantaneous positive impact on growth.

D. The Impact of Further Consolidation

9. **Russia's current federal government nonoil primary deficit is 8.4 percent of GDP above the government's long-term target of 4.7 percent of GDP, which is consistent with fiscal sustainability and equitable intergenerational use of the oil wealth.**⁶ To reduce the nonoil deficit to its long-term target by 2015, while relying on growth-friendly instruments to do so, the authorities could choose from a menu of the following measures that would yield more than the needed 8.4 percent of GDP in savings (Table 3):

- *Further reduce transfers.* World Bank (2011b) estimates that gradually phasing out poorly targeted social assistance programs could yield savings of 1 percent of GDP.⁷ Pension reforms to increase the pension age to 65 for both men and women could yield significant savings (2-3 percent of GDP, based on expert estimates, though these savings would mainly be realized in the long run. Hauner (2008) and Gurvich (2010) come to broadly similar conclusions). There also seems to be scope to reduce early pension payments (i.e. pensions paid to those who have not yet reached the legal retirement age). The Ministry of Health notes that the number of recipients of early pensions has now reached 34 percent of old-age pensioners and is continuing to grow.⁸ Potential savings from reducing such early pensions is on the order of 0.7 percent of GDP, based on estimates from the authorities. Further savings could be achieved by further elimination of tax expenditures (beyond the World Bank recommendation to minimize VAT exemptions and reduced rates). Current estimates by government officials put the cost of tax expenditures at 5 percent of GDP, so there is scope for significant savings if their use were curtailed.⁹
- *Improve the efficiency of government investment.* World Bank (2011b) estimates that improving capital budgeting practices (e.g. introducing performance-based contracting in road maintenance and increasing competition in road maintenance contracts) could yield expenditure savings of nearly 0.5 percent of GDP.

⁶ As discussed in the previous chapter.

⁷ We model this in GIMF as a reduction in general transfers, given that they are not currently directed exclusively to liquidity-constrained households.

⁸ See <http://www.minzdravsoc.ru/docs/mzsr/insurance/6> for the Russian version.

⁹ These are preliminary estimates and will need to be confirmed through a more rigorous inventory of tax expenditures, as planned by the authorities in the next few months. Until this data is available, tax expenditures (other than for VAT) are assumed to be coded as general transfers in the model. Once the data on tax expenditures becomes available, it will be possible to properly assign these as effective increases in the respective tax rate.

- *Further reduce government consumption and improve efficiency.* The government should maintain the currently planned cuts in government consumption, and further reduce subsidies to support public or private enterprises. World Bank (2011b) estimates that there is scope to reduce such subsidies by a further 0.9 percent of GDP, while improving the efficiency of expenditures at the regional level could yield savings of just over 1.0 percent of GDP.
- *Increase consumption taxes.* The government should replace the lost revenue from the planned partial reversal of the distortionary increase in the payroll tax. For instance, excise taxes on tobacco, alcohol and gasoline could be increased to the average levels of G20 countries. VAT revenues could also be increased by improving tax administration, eliminating exemptions and unifying the reduced and standard rates at 18 percent. The World Bank (2011b) estimates that the combined impact of these measures would be 1.7 percent of GDP, which would more than offset the 1.6 percent of GDP generated by the increase in the payroll tax.

10. **As a final scenario, we examine the effects of a front-loaded consolidation (“reform” scenario) of 8.4 percent relying on growth-friendly instruments (Table 4).** Specifically, the reform scenario relies on reaching the government’s long-term nonoil deficit target by 2015. As in the alternative growth-friendly scenario above, the bulk of the consolidation (nearly three-quarters) is achieved through a reduction in transfers, with the remainder coming from a reduction in government consumption. As the consolidation is front-loaded, it builds credibility and quickly reduce current fiscal vulnerabilities (for instance, as recommended in IMF (2011, forthcoming)).

Table 3. Potential Fiscal Savings

Measure	GIMF instrument	Savings (in percent of GDP)	Notes
Gradually phase out poorly-targeted social assistance programs	transfers	1.0	
Increase pension age to 65 for both men and women	transfers	2.0-3.0	Short-run savings would be lower
Reduce early pensions	transfers	0.7	
Reduce/eliminate tax expenditures	transfers (and tau_l, tau_k if applicable)	< 4.0	As noted by Finance Minister Kudrin in 2010. Excludes potential savings estimated by WB from unifying VAT rates and reducing VAT exemptions, reported separately below
Improve capital budgeting practices	govinv	0.4	
Reduce wages as part of civil service reform	govcons	0.9	Already in 2011-13 budget
Further reduce subsidies to support public or private enterprises	govcons	1.3	Originally part of crisis-related stimulus. Includes 0.4 percent of GDP already in 2011-13 budget
Improve efficiency of expenditures at regional level	govcons	1.1	
Increase excise taxes on tobacco, alcohol and gasoline to average level in G20 countries	tau_c	0.7	
Improve VAT tax administration, minimize VAT exemptions and reduced rates	tau_c	1.0	
Total		< 13.1-14.1	

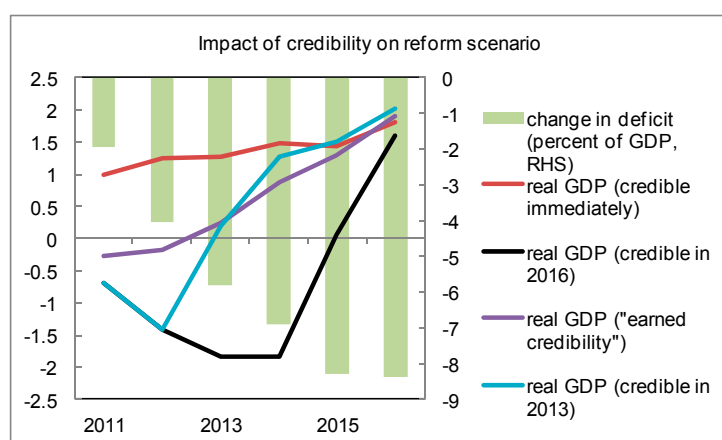
Source: Ministry of Finance, expert, IMF and World Bank estimates

Table 4. Additional Budget Consolidation Measures by GIMF Instrument To Reach Nonoil Deficit Target
(percent of GDP)

	2011	2012	2013	2014	2015 5-year total	Share of total consolidation	
Government consumption	0.471	0.576	0.498	0.288	0.367	2.2	26.2
General transfers	1.329	1.624	1.402	0.812	1.033	6.2	73.8
Total	1.800	2.200	1.900	1.100	1.400	8.4	100.0

Source: IMF staff estimates

11. **As in the baseline scenario, the credibility of the package matters greatly for the effects on growth** (see text chart). In a scenario where the package is immediately credible, among other effects, agents perfectly foresee the reduction in interest rates that would follow such a consolidation and immediately increase consumption and investment



which boosts growth. A more realistic assumption might be for agents to fully believe that the amount of consolidation they see each period is permanent (also called “earned credibility”). In this case, the initial contractionary effects of the consolidation package are muted (since the consolidation is front-loaded and agents perfectly foresee the benefits of the consolidation). In Russia, since the fiscal policy framework needs strengthening given where it is now, it is more likely that the authorities would have to build “credibility by doing”.¹⁰ In this case, agents see the consolidation as credible starting in 2013. The impact on growth is initially more negative than in the “earned credibility” case, but becomes positive in 2013 and converges to the “earned credibility” case subsequently. Last, if agents only believe that the consolidation package is credible once the entire package has been put in place (i.e., in 2016), the short-term contractionary growth effects are the largest. But even in this case, the impact on growth is positive once credibility has been achieved.

12. **Compared to the baseline scenario, the reform scenario has a strongly positive impact on growth.** This is as a result of the front-loaded and large adjustment undertaken, and the fact that the adjustment relies on growth-friendly instruments. Indeed, even when the

¹⁰ The term “fiscal policy framework” refers to the collection of rules and institutions that influence how the government sets its budget. See previous chapter for a discussion of the current fiscal policy framework in Russia and recommendations to improve it.

government has to earn credibility (“credibility by doing”), there is a positive impact on growth already in 2013. The credibility of the fiscal authorities could be improved by strengthening the fiscal framework (see IMF (2011, forthcoming). This would lead to a virtuous circle where near-term fiscal vulnerabilities are reduced (as the overall deficit moves into surplus), and the positive effects on growth from the fiscal consolidation package could be realized sooner than if the framework were not strengthened.

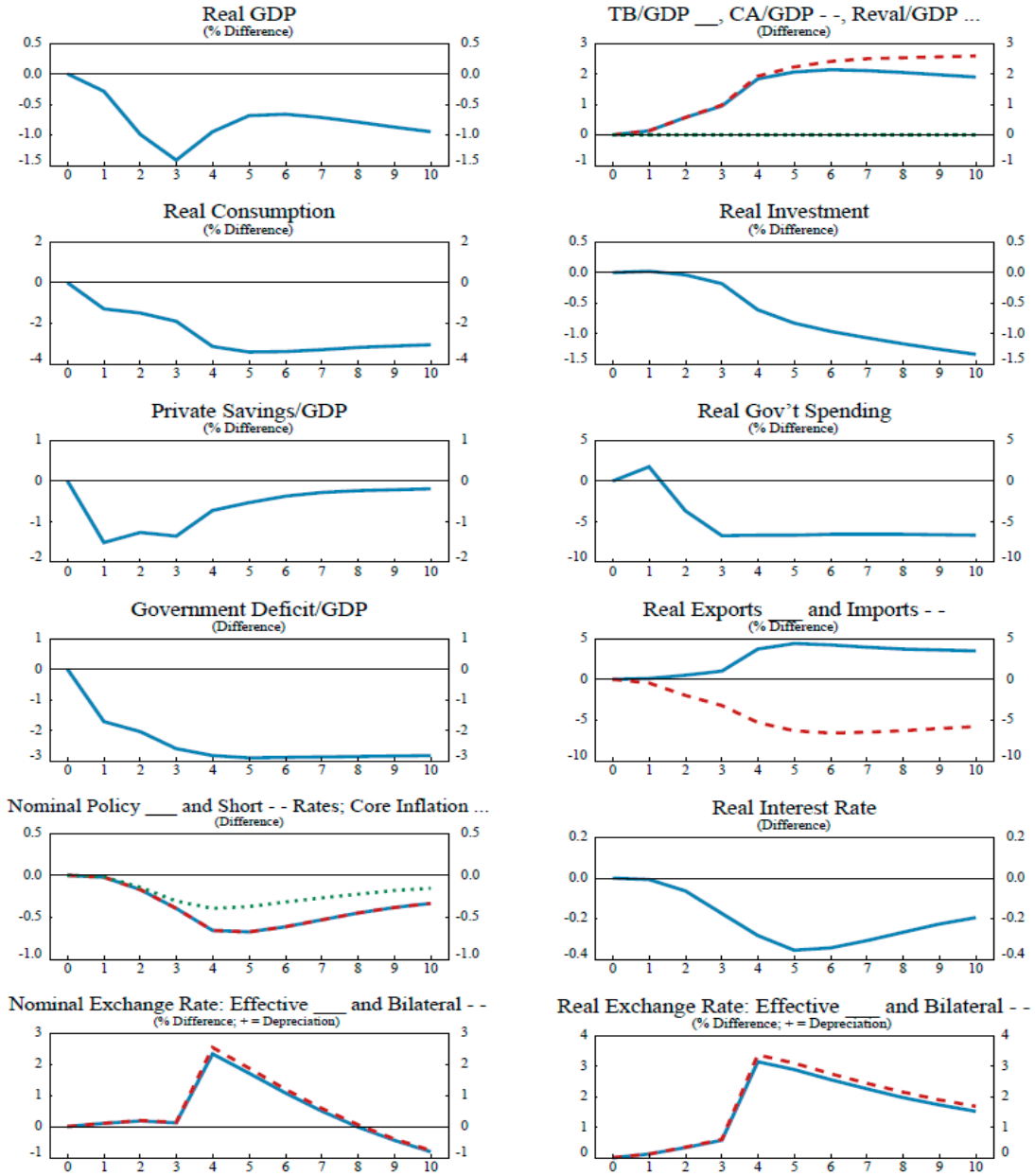
E. Conclusions and Recommendations

13. **The results of the model simulations suggest that the 2011–13 budget is unfriendly to growth.** The simulations also suggest it would be possible to design an alternative package, using growth-friendly instruments, to achieve the same amount of consolidation as in the 2011–13 budget which would minimize the near-term drag on growth and have a positive impact on growth by 2014. Finally, the results of a reform scenario where the nonoil deficit is reduced to the government’s long-term target by 2015 suggest that, if this consolidation relied on growth-friendly instruments, was front-loaded, and accompanied by a strengthened fiscal policy framework, it could have a positive impact on growth as early as 2013. It is worth noting, however, that the credibility effects for the simulations presented here may be overstated, given the absence of a debt overhang in Russia. Moreover, expansionary fiscal contractions have become controversial lately—as noted in IMF (2010), the idea that fiscal austerity triggers faster growth in the short-term finds little support in the data. However, fiscal consolidation is likely to be beneficial over the long term as lower debt is likely to reduce real interest rates and the burden of interest payments, allowing for future cuts to distortionary taxes. These effects will likely crowd in investment and increase output in the long term.

14. **Given these findings, IMF staff recommend the following:**

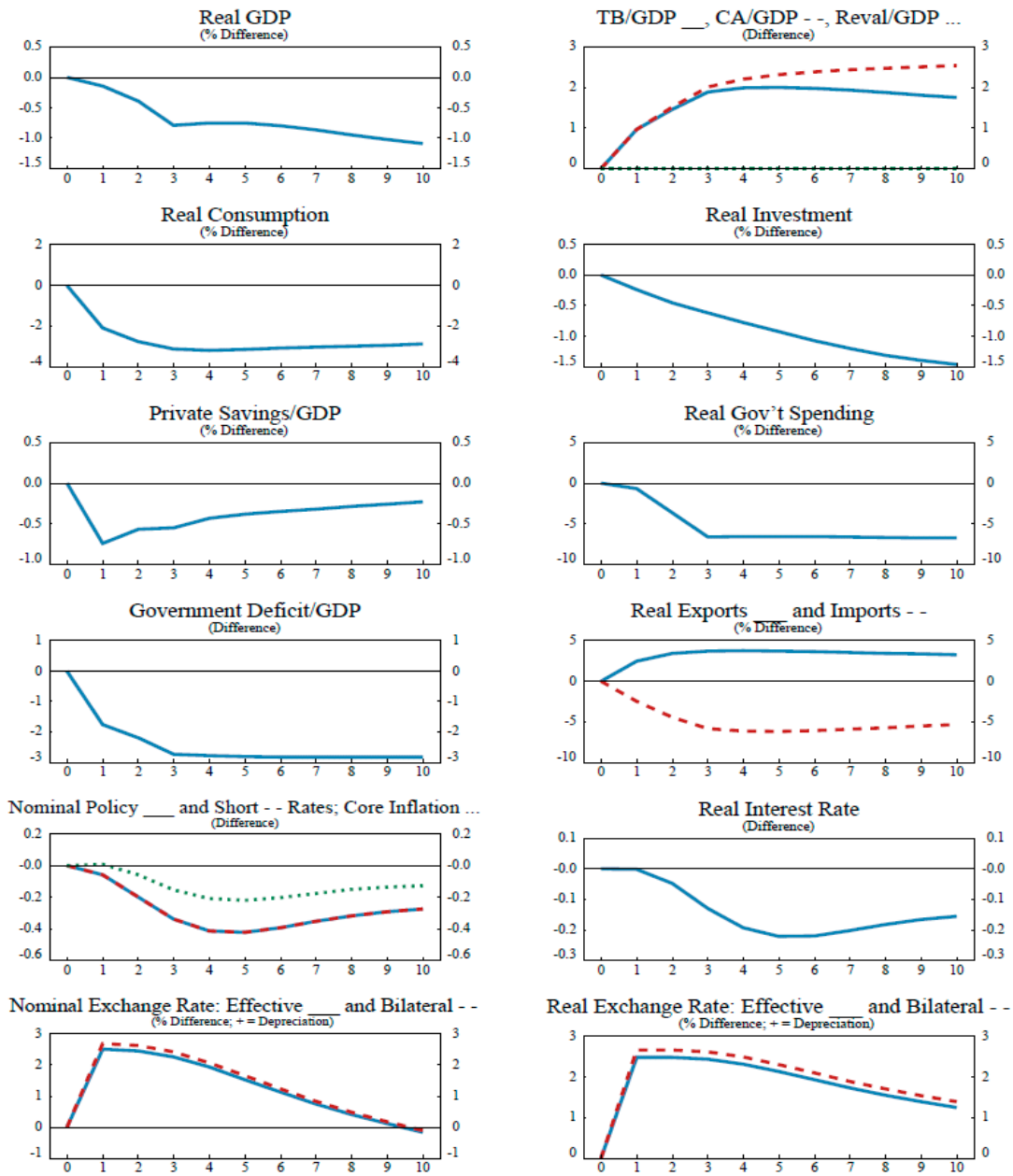
- The growth-unfriendly and distortionary increase in the payroll tax, as well as cuts to government investment should be replaced with growth-friendly alternatives such as decreases in general transfers, government consumption, or an increase in the consumption tax.
- The fiscal framework should be strengthened to enhance the credibility of adjustment. As recommended in IMF (2011, forthcoming), this would include focusing on the nonoil deficit as the anchor for fiscal policy, avoiding excessive use of supplemental budgets, and replenishing the Reserve Fund.
- The government should implement a more ambitious fiscal consolidation than planned in the 2011–13 budget to reduce the nonoil deficit to the government’s long-term target by 2015. If this were to be done credibly and using growth-friendly instruments, there could be a significant positive impact on growth already in the short-to-medium run.

Appendix I: Model Results
 Russia: Russia 2011-13 Consolidation Package; Credible from 2014
 Russia: Survey



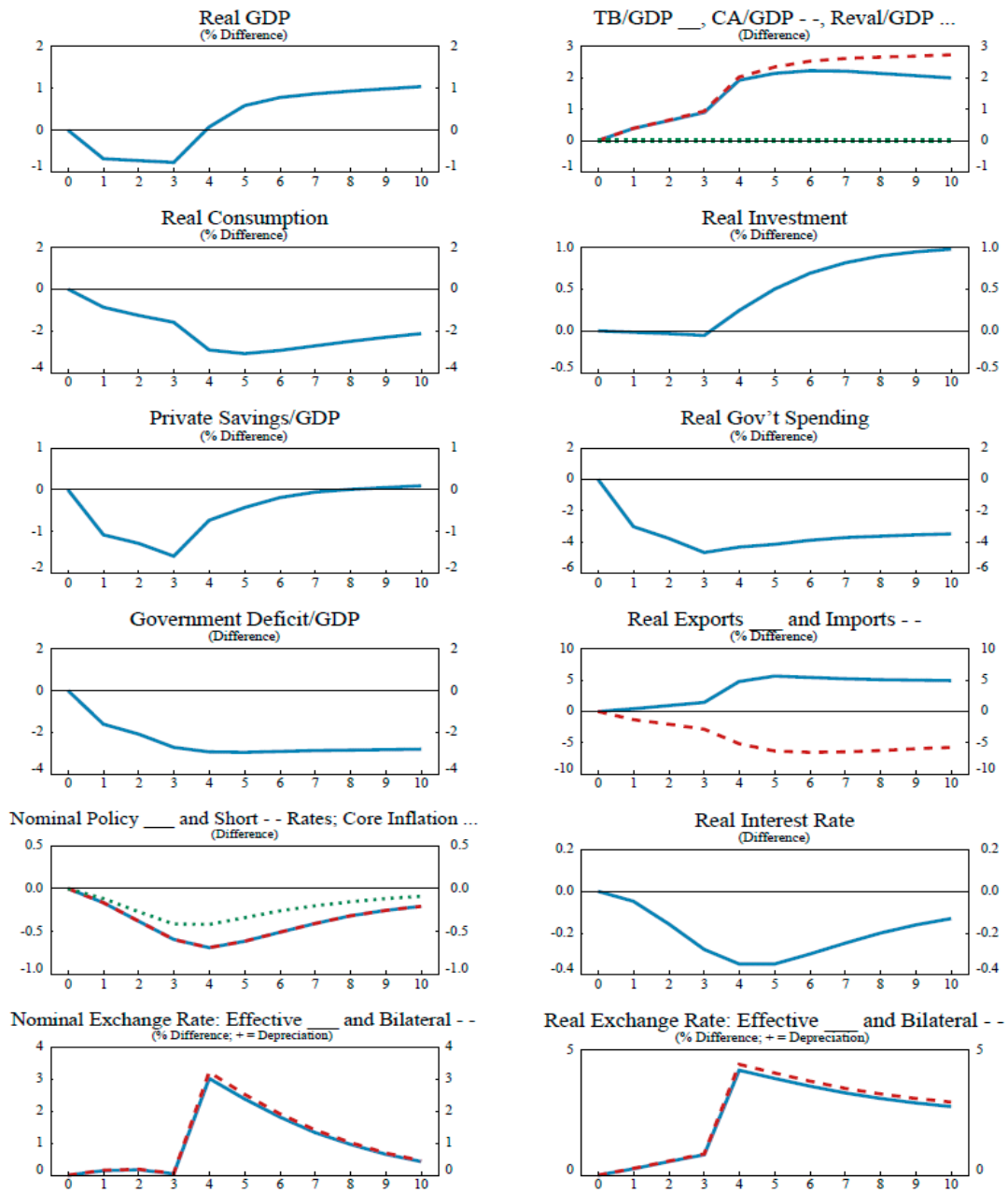
Russia: Russia 2011-13 Consolidation Package; Credible immediately

Russia: Survey



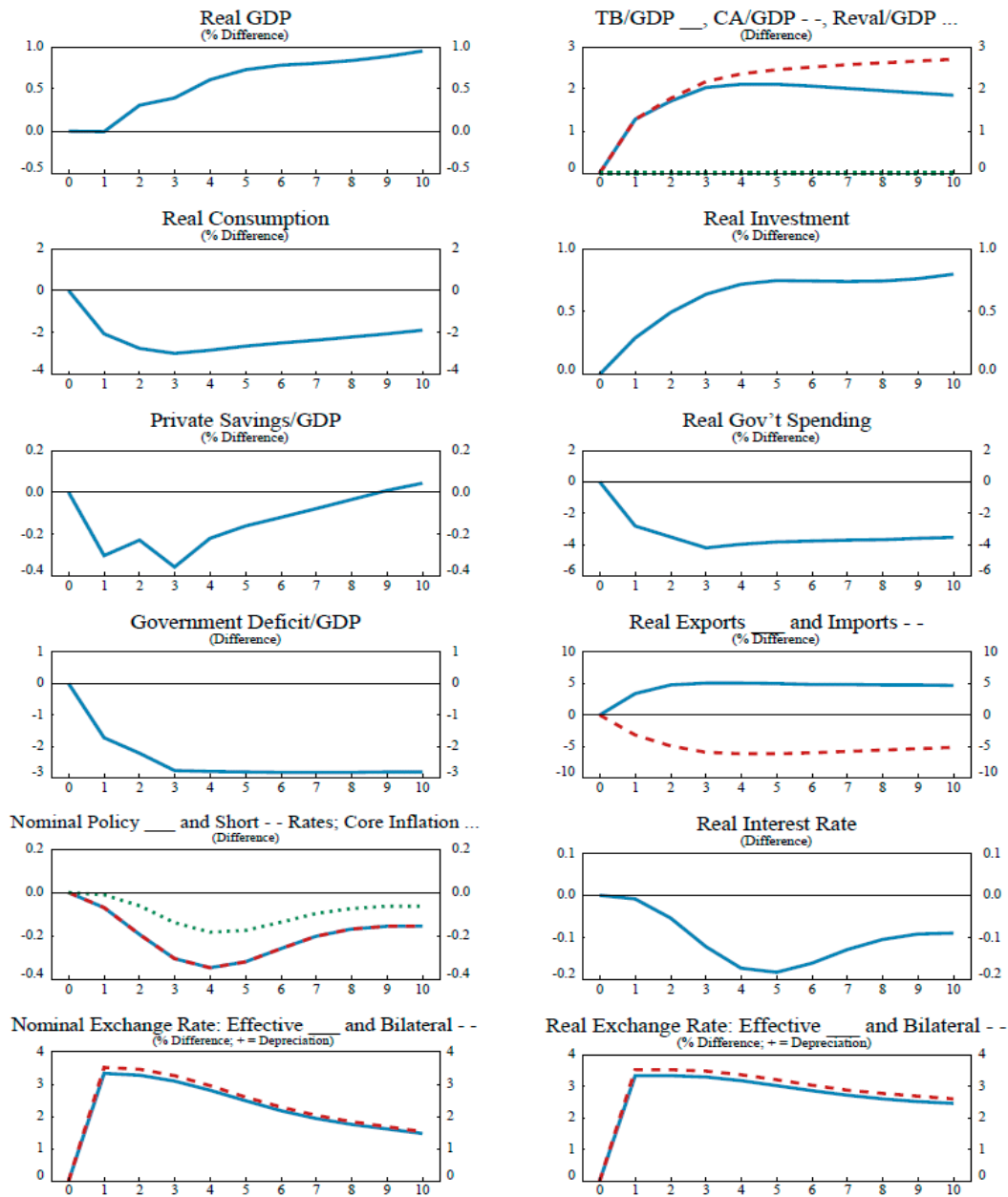
Russia: Russia 2011-13 Growth-Friendly Consolidation Package; Credible from 2014

Russia: Survey

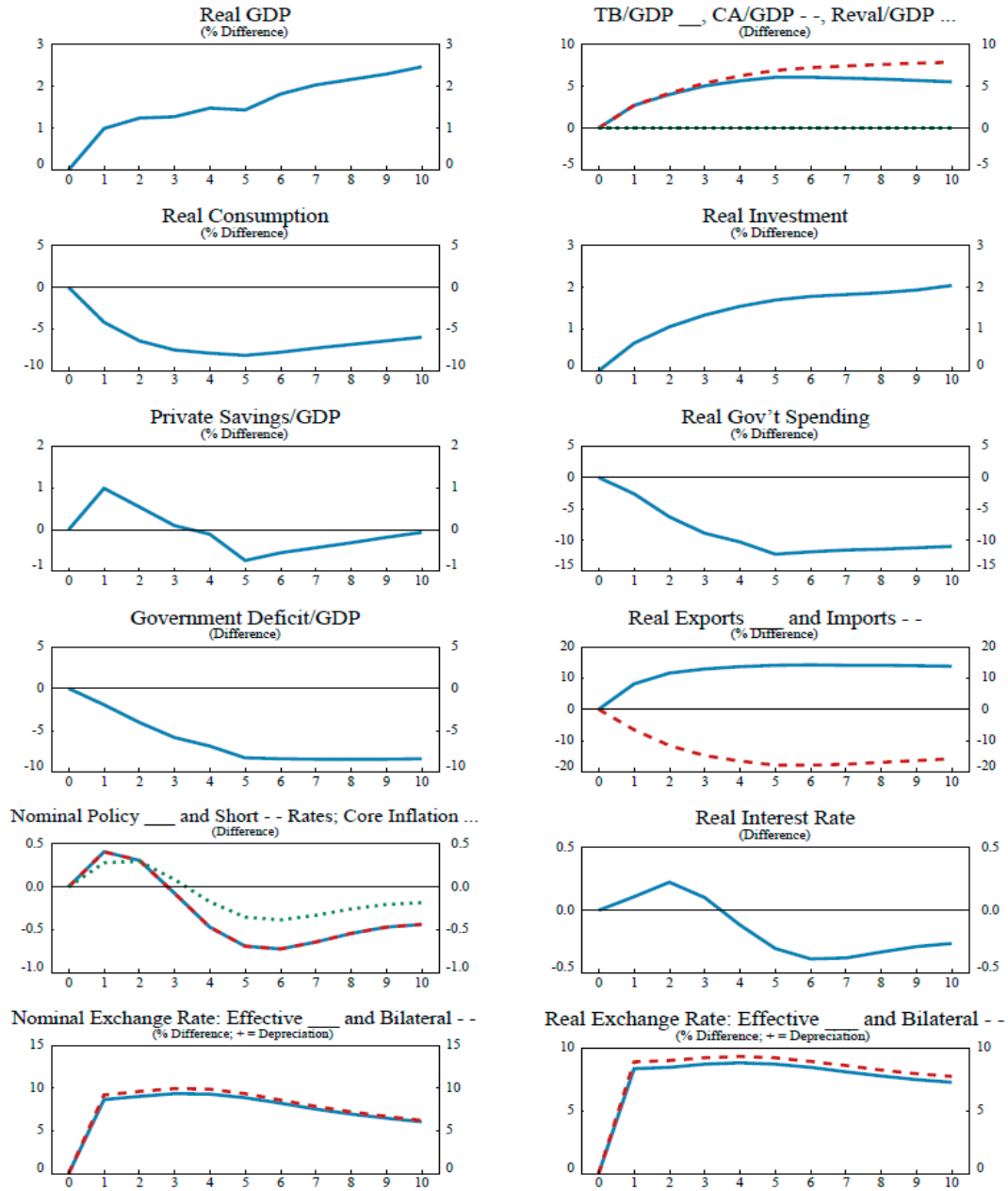


Russia: Russia 2011-13 Growth-Friendly Consolidation Package; Credible immediately

Russia: Survey

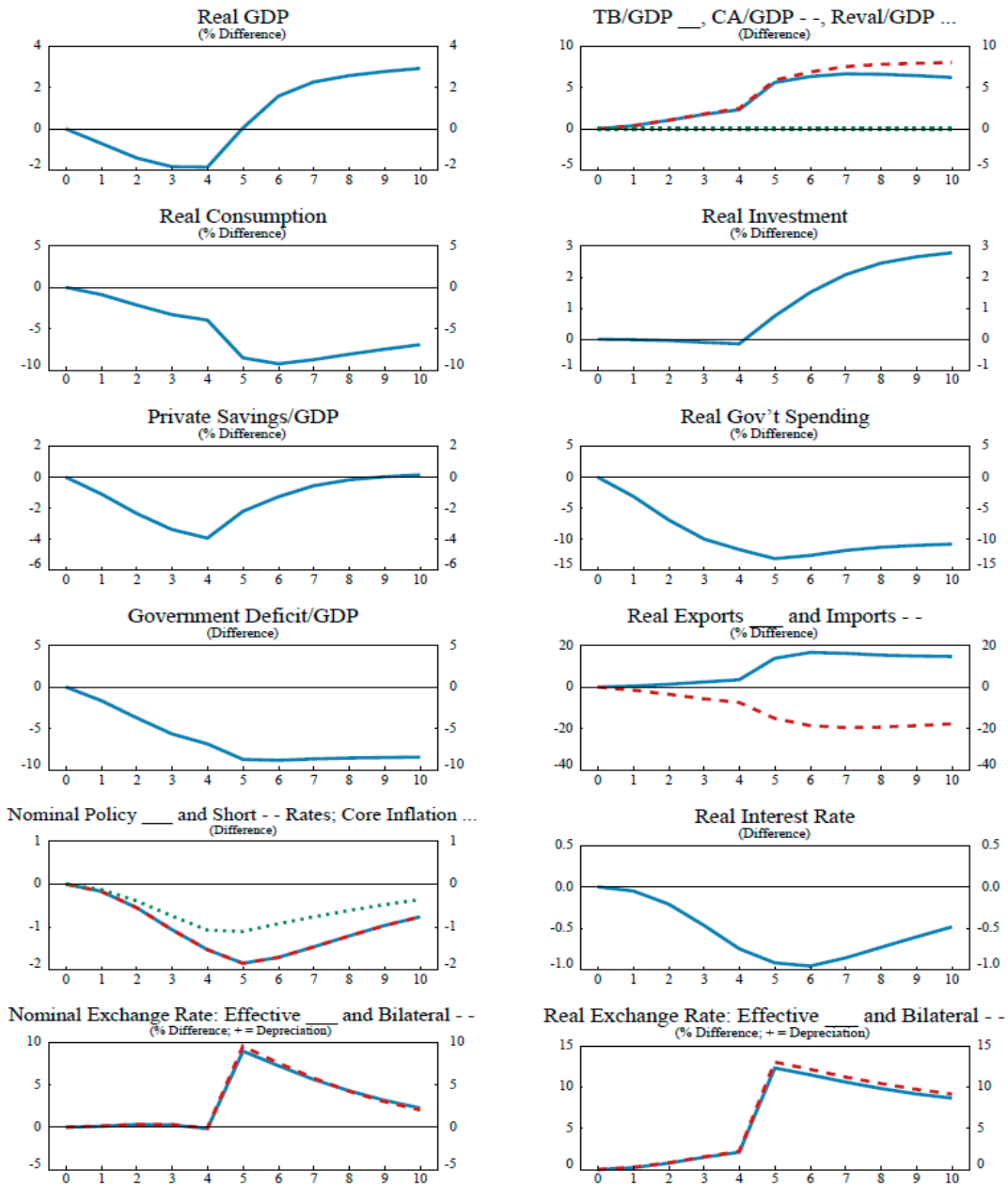


Russia: RUS 5-yr Consolidation to Reach Nonoil Deficit Target; Credible immediately
 Russia: Survey



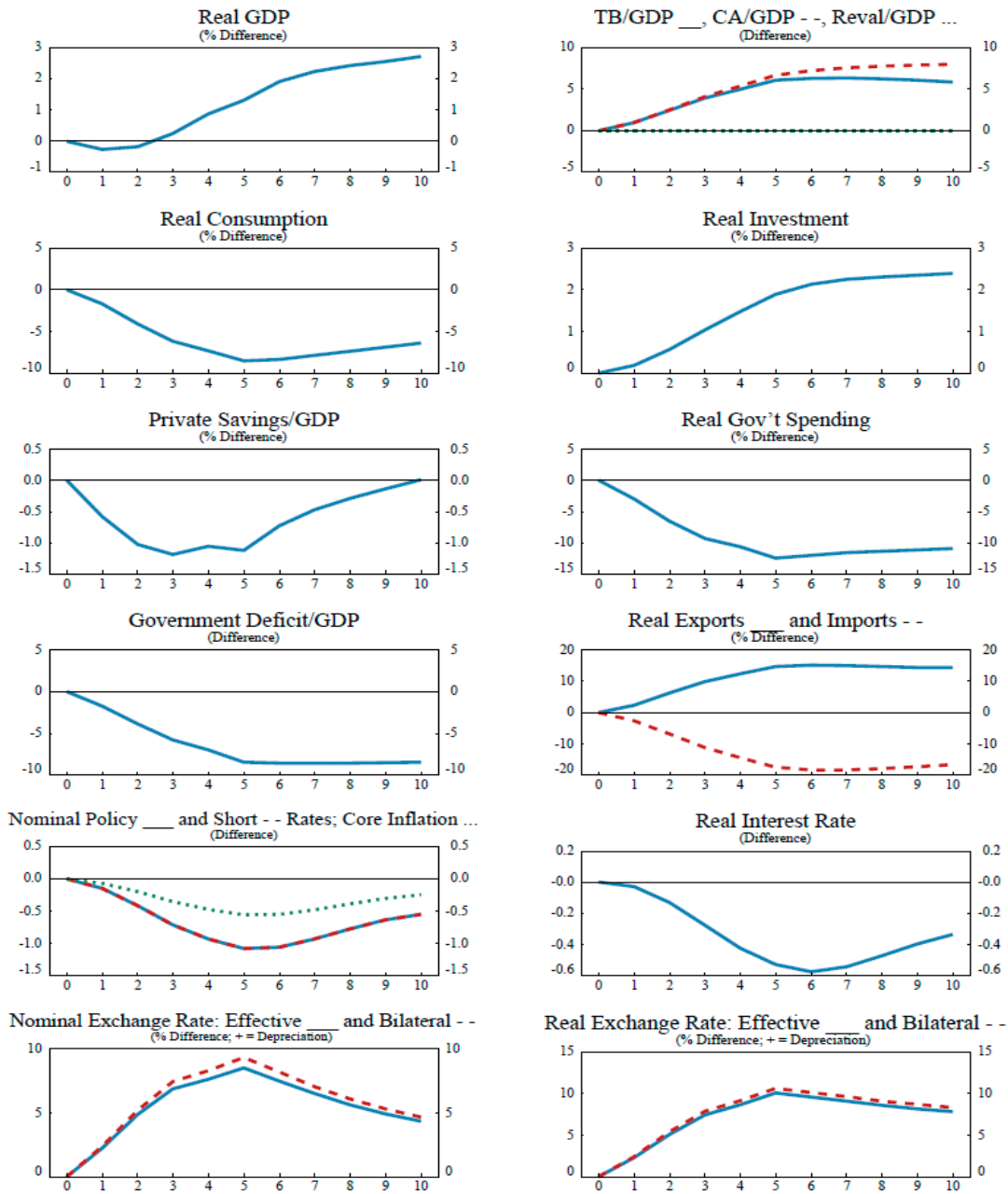
Russia: RUS 5-yr Consolidation to Reach Nonoil Deficit Target; No Credibility

Russia: Survey



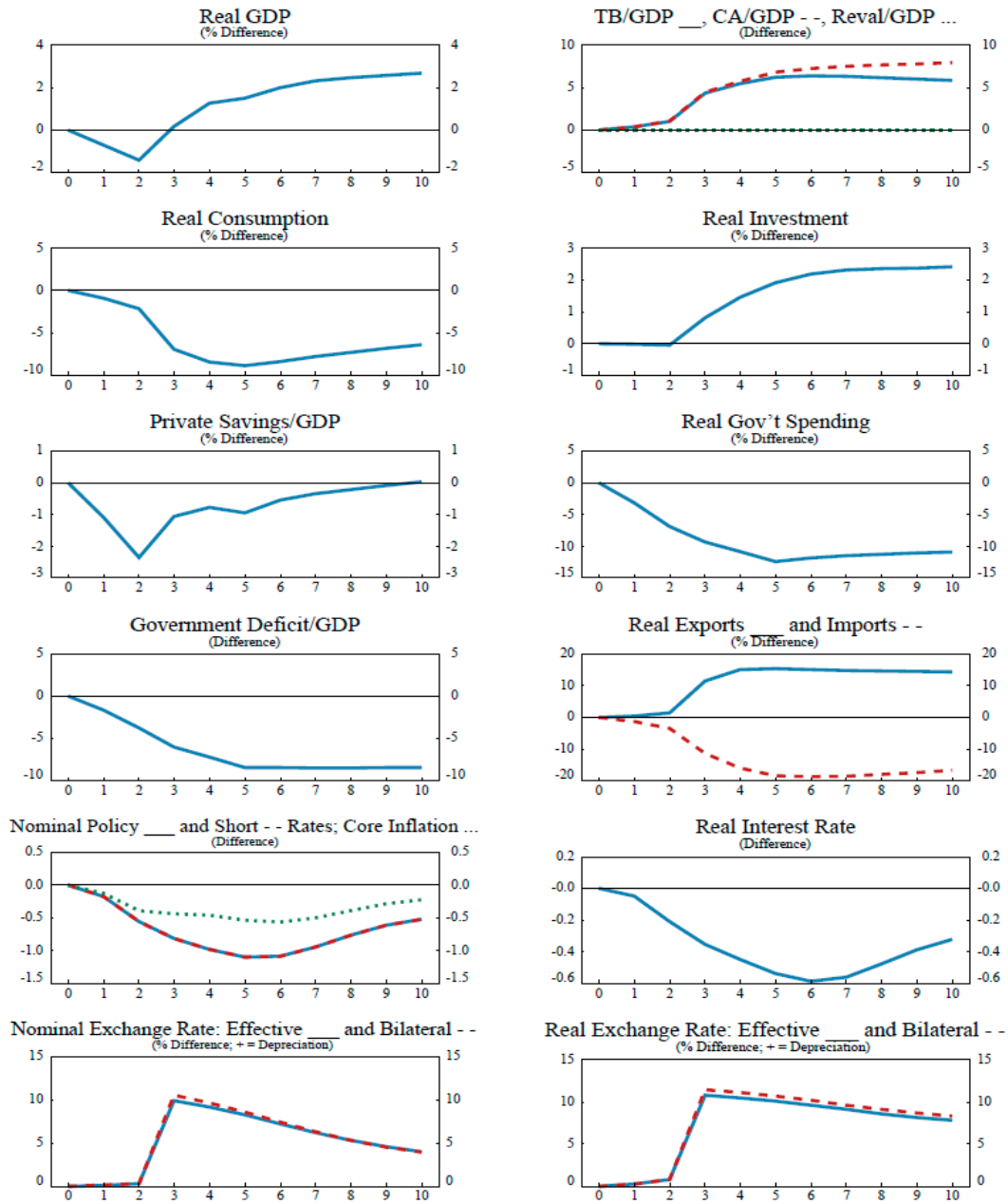
Russia: RUS 5-yr Consolidation to Reach Nonoil Deficit Target; Earned Credibility

Russia: Survey



Russia: RUS 5-yr Consolidation to Reach Nonoil Deficit Target; Fully credible from 3rd year

Russia: Survey



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