

BOFIT Online
2012 No. 3

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Russian financial markets and monetary policy instruments



EUROJÄRJESTELMÄ
EUROSYSTEMET

Bank of Finland, BOFIT
Institute for Economies in Transition

BOFIT Online
Editor-in-Chief Iikka Korhonen

BOFIT Online 3/2012

Seija Laine and Alexey Ponomarenko: Russian financial markets and monetary policy instruments

3.4.2012

ISSN 1456-811X (online)

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Seija Lainela* and Alexey Ponomarenko**

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Abstract

The Russian financial markets are small for an economy the size of Russia, and in many respects underdeveloped. This restricts the Central Bank of Russia's scope for conducting monetary policy. In this paper we provide an overview of the Russian financial markets and the CBR's variegated collection of monetary policy tools and their effectiveness. The Russian monetary and exchange rate policy framework is currently in the process of change. During most of the 2000s, the CBR tightly steered the ruble's external value, which left little room for active monetary policy. After the 2008–2009 crisis, the bank began to loosen the reins of exchange rate management with the aim of moving gradually to a regime of inflation targeting. Since the monetary policy tools are still not highly effective, the big challenge for monetary authorities is improve the tools.

Keywords: Russia, monetary policy, exchange rate policy

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The authors express their gratitude to Zoya Kuzmina of the Central Bank of Russia for providing useful information.

Macroeconomic developments

In 2011 the Russian economy continued to grow rather briskly, at over 4 %; for 2012 and 2013 numerous forecasts see a slight slowing of GDP growth to somewhat below 4 %. The economy's pronounced dependence on energy exports renders it vulnerable to developments in the international commodity markets.

GDP growth is based largely on private consumption, which grew by over 6 % in 2011. Investment growth has been somewhat slower, and lags far behind its average annual growth rate of 15 % for the years preceding the 2008 financial crisis. The share of investment in Russian GDP has been 21–22 % in the past few years, which is normal for a developed economy but far below the rates needed for upgrading and modernising the economy – currently the widely proclaimed aim of economic policy in Russia.

Russia continues to run significant trade and current account surpluses, although relative to GDP these have declined since the mid-2000s. The 2011 current account surplus amounted to over 5 % of GDP. The values of both exports and imports have been growing by some 30 % y-o-y. Rising commodity prices is the main reason for the growth of export value; export volumes are constrained by limited production capacity and increased domestic consumption (e.g. in the case of crude oil). In contrast, the growth of import value is to a great extent due to increased volumes. Strong GDP growth translates into import expansion, as Russian industry is unable to produce many of the goods that are demanded when living standards rise.

Inflation has been slowing since 2009. In 2011 Russia posted its lowest inflation rate of the post-soviet period, 6 %.

A relative strength of the Russian economy lies in its robust government finances. Thanks to reserve funds accumulated over the years of expensive oil, Russia weathered the 2008–2009 crisis without foreign borrowing. However, the situation is changing. During the past few years fiscal policy has been eased, and budget balancing now depends on the price of the Russian Urals grade oil remaining well above 110 dollars per barrel. The average price of Urals oil was 110 in 2011, and in early 2012 it has stayed between 110 and 120 dollars per barrel. The price is now exceptionally high; e.g. in 2006–2010 it averaged 72 dollars per barrel.

Overview of financial markets

The Russian financial markets are small and underdeveloped for an economy the size of Russia. After rapid economic growth in the 2000s, Russia has in the past few years ranked around tenth in the world in terms of GDP level. Although the financial sector has grown rapidly, its development is deterred by several structural legacies from the past as well as institutional weaknesses.

Foreign exchange market

The Russian ruble became convertible in 2006 when the remaining restrictions on cross-border transfers were abolished. However, certain controls are still in place. The Central Bank of Russia (CBR) has made commercial banks responsible for checking the validity of trade-related currency

transfers abroad, in an effort to discourage currency outflows related e.g. to tax evasion and covered up with false documents.

Foreign currency trading takes place via Russia's main stock exchange, the MICEX-RTS. The average daily trading volume amounted to some 10 billion dollars in the first half of 2011, while the average interbank currency market volume amounted to 53 billion dollars (Bank Rossii (2011c)).

Although the Russian ruble's share in international currency trade increased rapidly in the 2000s, in 2010 it still accounted for only 0.9 % of the world's total currency trade (BIS (2010)).

Money market

Due to the fragmented structure of the banking sector, interbank markets fail to allocate liquidity evenly among banks. Only some 30 of the biggest banks are active in interbank markets and able to borrow there without collateral, while a large number of other banks have no access to the market and have to secure most of their necessary short-term financing using collateral and from other sources, mainly the CBR. At the end of 2010, the share of the 30 biggest banks in interbank market borrowing was 63 %. The geographical concentration is even higher; the share of Moscow-based banks in interbank markets was 80 %. (Bank Rossii (2011a))

A host of interbank market reference rates is calculated in Russia. The CBR calculates MIBOR (Moscow Inter-bank Offer Rate), MIBID (Moscow Inter-bank Bid Rate), MIACR (Moscow Inter-bank Actual Credit Rate), and MIACR-IG (Moscow Inter-bank Actual Credit Rate – Investment Grade). Maturities range from one day to one year. The CBR also calculates RUONIA (Ruble Overnight Index Average), which is the rate of unsecured overnight loans of best banks. The National Currency Association calculates MosPrime, which consists of offer rates of ten leading banks for maturities ranging from overnight to 6 months. The large number of rates affords ample options as to which rate to monitor. MIACR covers the largest number of banks while RUONIA and MIACR-IG have the narrowest coverage and may therefore be preferable due to their homogeneity. On the other hand, MIACR has the longest time series.

Interbank rates have traditionally been significantly below the inflation rate, but the margin has been squeezed as inflation subsided markedly in 2011. One-day MIACR rates were around 4.3 % in early 2012 while inflation ran at a rate below 5 %. Only deals with the shortest maturities, from one to seven days, are concluded daily. The interbank market volume averaged some 225 billion rubles (56 billion euros) a day in early 2012. (Bank Rossii (2012a).)

Both the CBR and the federal government issue short-term bonds that are traded at MICEX-RTS. The government bonds are called GKO (Gosudarstvennoye kratkosrochnoye obyazatelstvo, Government Short-term Commitment) and the CBR's bonds OBR (Obligatsiya Banka Rossii, Bank of Russia bond).

Capital market

The Russian capital market consists of government, regional (including municipal) and corporate bond markets as well as equity markets. All these markets are rather small and shallow and suffer from significant volatility, due in part to deficient infrastructure. The markets are highly sensitive to developments in international financial markets and the domestic liquidity situation.

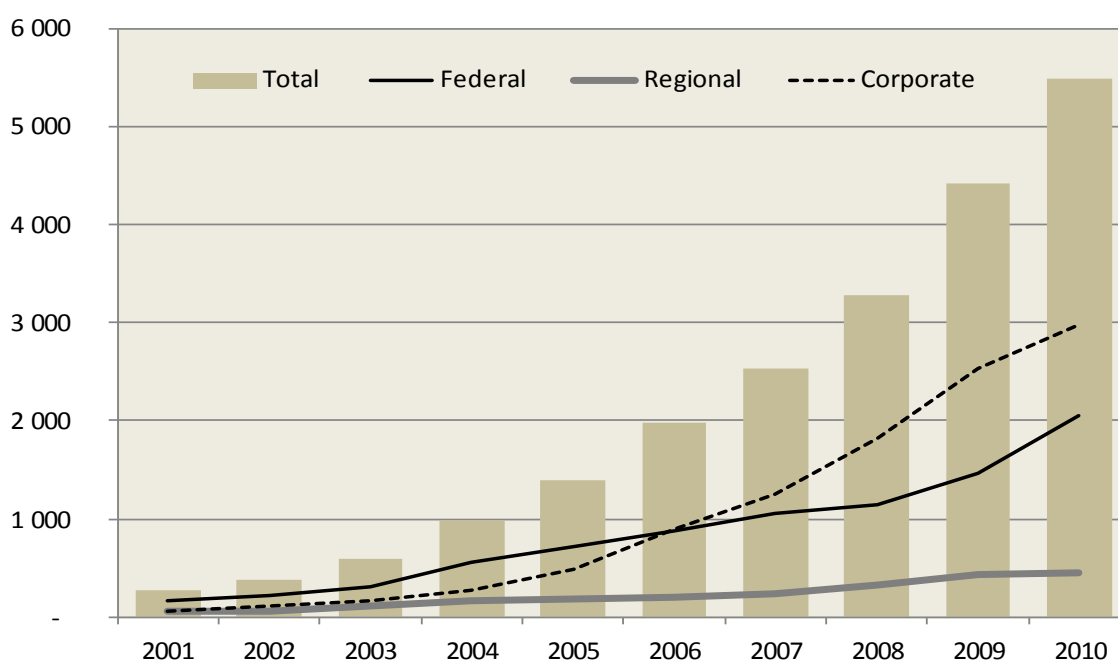
The lack of institutional investors is one factor holding up the development of markets. The majority of bonds are bought by the biggest state-owned banks and banks with foreign ownership. Practically the only institutional investors in the market are Vnesheconombank and the Pension Fund of Russia, which invest pension money. Foreign investors' role is small, and they regard Russian bonds mainly as instruments for short-term investment. One factor limiting foreign investors' interest is that they can buy government bonds only through a Russian broker and using a Russian depository. The market also lacks adequate hedging instruments. The trading venue for bonds is the MICEX-RTS exchange.

The federal government bonds are called OFZs (Obligatsiya federalnogo zaima, Federal Loan Obligation). Their maturities range from 1 to 30 years. The government also issues non-marketable fixed-rate savings bonds, GSOs (Gosudarstvennaya sberegatel'naya obligatsiya, Government Savings Bond), which are aimed at institutional investors. They are not issued very actively and their role remains somewhat unclear.

Although the federal government bond market has grown briskly during the past two years it is still quite small. The main reason for its limited size is that the federal budget ran surpluses from 2000 till 2008, which made borrowing unnecessary. During that time federal government borrowing amounted only to some 170–250 billion rubles annually (Ministerstvo finansov (2011)). Bonds were issued mainly to maintain a domestic government debt market and provide the bond market with a reference rate.

The situation changed in 2009 when the federal budget turned to deficit, and 2010 saw another deficit. Although the year 2011 ended with a small surplus, the government expects the budget to be in the red from 2012 till at least 2014. However, if the high oil price of the early 2012 prevails, the budget may well show a surplus in 2012. In 2009 and 2010 government bond issues amounted to 401 and 716 billion rubles, respectively. In the first half of 2011, bonds worth 600 billion rubles were issued, with an average maturity of five years. (Bank Rossii (2011c).)

Graph 1 Bond market volumes by bond type, 2001–2010, billion rubles



Source: Bank Rossii (2011a)

Regional bond issues amounted to 105 billion rubles in 2010, somewhat below the previous year. Although the number of issuers has been on the increase, the city of Moscow continues to occupy the leading position among issuers. In 2010, 56 % of regional bonds on the markets were issued by Moscow. (Bank Rossii (2011a))

The corporate bond market has varied significantly during the past few years with economic boom years showing increases in issues and bust years less activity. In 2010 corporate bond issues totalled 875 billion rubles (Bank Rossii (2011a)).

In 2010, OFZs accounted for 37 % of the Russian bond market volume while regional bonds accounted for 8 %. The rest, 55 %, comprise corporate bonds. In 2008 the volume of corporate bonds for the first time exceeded the combined volumes of government and regional bonds.

The EBRD regularly issues ruble denominated bonds in Russia in order to promote development of the market. Since 2005 the bank has raised some 40 billion rubles via nine issues, with an average maturity of 6 years (EBRD (2011)).

Equity market

Russia's two major stock exchanges, the Russian Trading System (RTS) and the Moscow Interbank Currency Exchange (MICEX) merged in December 2011. The merger was initially only nominal, as actual amalgamation of operations will take place gradually during 2012 and 2013. Trading in RTS is conducted in dollars; in MICEX, in rubles. The headline index for the Russian stock markets is the RTS index. The creation of a single trading venue is expected to improve the functioning of the market and strengthen its infrastructure. Another major improvement is the creation of a central securities depository, which is seen as an important prerequisite for the Russian markets to attract foreign investors. The Duma approved the related law in November 2011, and the central depository will start up in 2013.

Equity trading volumes as well as the number of listed enterprises are rather small in the Russian exchanges. Total market capitalisation amounted to 67 % of GDP in 2010, up from depressed levels in 2008 and 2009, but still well below the peak in 2007, when it reached 98 % of GDP.

Table 1 Stock market capitalisation in 2001–2010, billion rubles

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
2 499	3 650	5 807	6 867	13 549	25 315	32 617	11 017	23 091	30 189

Source: Bank Rossii (2011a)

Due to the concentration of listed enterprises in a few sectors, namely oil and gas and banking, index volatility is higher than in many other stock exchanges in the world. Oil, gas and electricity sector companies accounted for 42 % of turnover in Russian stock exchanges in 2010. Another 42 % was attributed to banking sector, 10 % to metals and 3 % to telecommunications. The share of the two latter has been increasing over the past few years. (Bank Rossii (2011a))

The biggest equity investors are banks. Only one per cent of households invest in equity. Free float forms only some 20 to 35 % of market capitalisation, as most of the big investors tend to keep the shares in their portfolios.

Banking sector and other financial intermediaries

Banks

The Russian banking sector is underdeveloped in terms of its size relative to GDP. At end-2010, the ratio of the sector's total assets to GDP was 75 %, and own-capital-to-GDP 11 %. Deposits are also fairly limited; household deposits amounted to 22 % of GDP and deposits of non-financial enterprises and organisations to 25 %. Lending to households and non-financial enterprises equalled 40 % of GDP. (Bank Rossii (2011b))

The Russian economy has experienced several crises over the past ten years or so, but its financial sector as a whole seems not to have suffered greatly as a result. The exception is the 1998 crash, when the sector was in difficulties already before the crisis. After each crisis, commodity prices have recovered quickly, reviving export earnings and helping the economy to recover. During the 2008–2009 crisis the CBR's quick emergency assistance was also instrumental in supporting banks.

Due to the underdeveloped state of the banking sector, no domino effects of bank failures have occurred. There are only a few banks of systemic importance and they are primarily majority state-owned. In 2010–2011 the sector experienced some serious bank failures where illegitimate activity was revealed. However, the failed banks were relatively small and unconnected with other banks. Exceptions are Bank of Moscow and Mezhprombank, two relatively big banks, whose rescue has required significant sums of money. As a result, discussions as to the effectiveness of banking supervision have again intensified, and the CBR is preparing changes in the system.

Rather than severely damaging the banking sector, the crises have helped to improve its functioning by making authorities realise the necessity of enhancing regulation and supervision. The crises have also helped in ridding the sector of small questionable entities.

At the end of 2011, there were about 980 banks operating in Russia (Bank Rossii (2012b)). The large number of banks is a legacy of the post-Soviet economic and political environment of the 1990s, when banking business first emerged in modern Russia. Regulation and supervision were inadequate while liberalisation of the economy provided ample opportunities for various kinds of financial initiative. In particular, hundreds of small firms calling themselves banks were established to service related companies and deal with securities transactions, capital exports, and currency exchange, i.e. activities that were poorly regulated and hugely profitable. The number of banks is slowly declining, due to bank mergers and cancellation of operating licences. During the past five years some 10 to 20 banks have left the market annually. In 2011, the number of operating banks declined by about 30, in part due to the increase in banks' minimum capital requirement that entered into force at the start of 2012. Although improved regulation and supervision has made it possible to get rid of the biggest irregularities, the overall structure of the sector has remained largely unaltered.

One of the important changes in the sector's structure over the past 10 years took place in the second half of the 2000s when the consolidation of market shares of the biggest banks intensified. The driving forces behind the process were the state and state-owned banks. State banks benefited from the 2008–2009 economic crisis, serving as agents for distributing crisis financing to the economy. They also received direct capital injections from the state and acquired some of the troubled private banks. The leading position of state banks is a feature that singles out Russia from the other European former planned economies.

In 2010, the combined share of the 200 biggest banks in banking sector's total assets was 94 %, while the share of the five biggest banks was 48 %. A large part of the concentration is

explained by Russia's biggest bank, state-owned Sberbank, which alone commands 27 % of assets (Bank Rossii (2011b)). Of the top-ten banks by asset value, six were state-owned, two were private domestic banks and two were foreign-owned. The six state-owned banks' combined share in total assets of the sector was 52 % (Banki.ru).

Most of small banks are insignificant for the sector and operate as enterprises' pocket banks. However, there is also a host of small regional banks that are important in often being the only providers of banking services in their regions. In November 2011 the Duma approved a law raising the minimum capital requirement for banks at the start of 2012 from 90 million rubles to 180 million rubles (4.5 million euros). In 2015 the capital requirement will be further increased to 300 million rubles (some 7.5 million euros).

Foreign banks cannot have branch offices in Russia; in order to be present in the market, foreign banks have to establish subsidiaries. This restriction will stay in force even after Russia's accession to the WTO. The maximum allowable share of foreign capital in the Russian banking sector's total capital is 50 %.

In practice, the banking sector consists of several subsectors with few links with each other. One reason for the fragmented structure is the lack of trust among banks. This lack of trust is common to the Russian enterprise sector in general and stems from problems in law enforcement and protection of property rights. For instance, the lack of trust is evident in the interbank market, which is practically closed for smaller banks. The fragmented structure hampers normal functioning of the financial system and limits the effectiveness of Central Bank's monetary policy. E.g., while some banks may experience a lack of liquidity, there are others that have ample liquidity.

There are big differences in banks' access to deposit financing. About 50 % of all deposits are with the state-owned Sberbank, and the combined share of the ten biggest banks in deposits is two-thirds. Hence, most of the banks have to seek other funding sources.

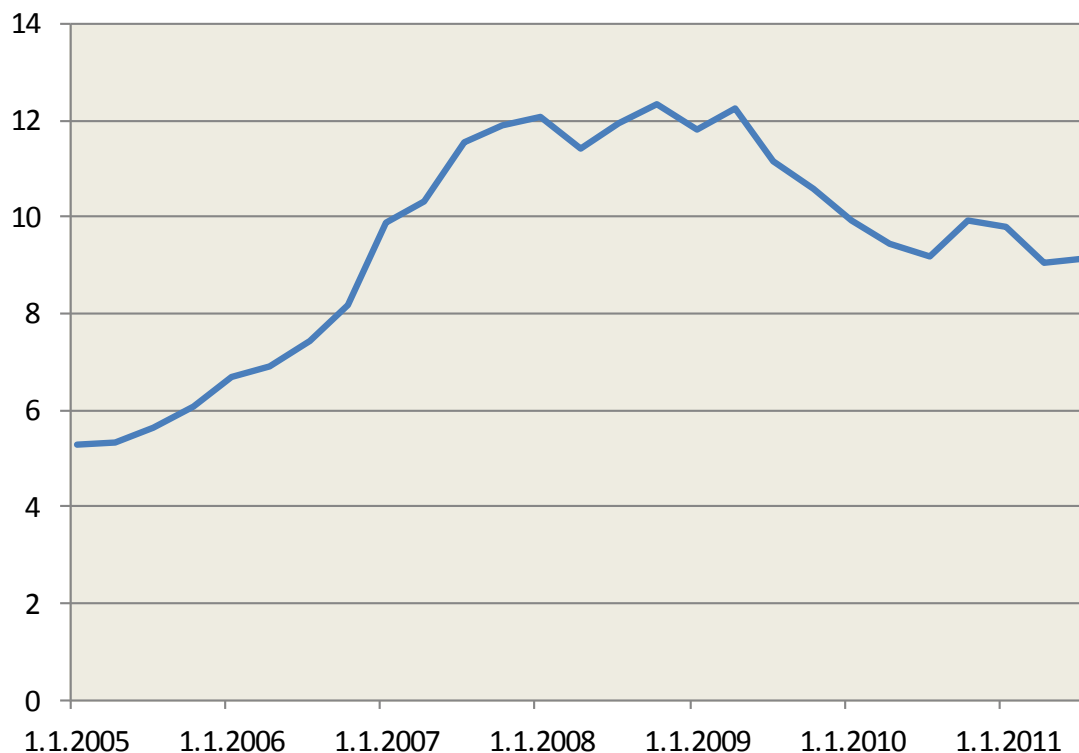
At the end of 2011, household deposits made up 28 % of the banking sector's combined liabilities. The share of corporate deposits and accounts was 33 %, and credits and other placements from other banks 11 % of liabilities (Bank Rossii (2012c)).

Russian banks' foreign indebtedness increased quickly before the 2008 crisis but has subsequently diminished. Even though the level of combined foreign indebtedness of the sector is small by international standards, some mid-sized and smaller banks have significant foreign debt burdens.

Due to the abundance of liquidity in the banking sector that prevailed for the most part of the 2000s, banks have kept significant amounts of money at the CBR, in correspondent accounts or as deposits. At the start of the 2011, the share of bank assets kept at the CBR was 5 %. The situation changed in 2011, as the liquidity situation tightened. At the end of 2011, 3 % of banks' combined assets were in CBR accounts, 44 % were granted as credits to non-financial enterprises, 13 % were credits to households and 10 % credits to other banks. Bond holdings made up 14 % of assets (Bank Rossii (2012c)).

Dollarization has declined during the past decade as the Russian economy has stabilised. At the end of 2011, foreign currency denominated credits granted by banks and banks' other foreign currency placements amounted to 26 % of their total credits and placements. The share of households' debt that was foreign currency denominated was 6 %, and the share of foreign currency deposits in total household deposits was 19 % (Bank Rossii (2012d)).

Graph 2 Foreign debt of banking sector, 2005–2011, % of GDP



Source: CBR, Rosstat

Nonbanks

The level of development of Russia's nonbank financial institutions is even lower than that of the banking sector.

Like the banking sector, the insurance sector is highly fragmented, although consolidation is in progress. At the end of 2011 there were about 580 insurance companies (Federalnaya sluzhba po finansovym rynkam (2012)). The sector consists of a hard core of relatively large entities and a large number of small ones. In 2010, the ten largest companies collected 54 % of total insurance premia, while the 50 largest ones collected 83 % (Federalnaya sluzhba po finansovym rynkam (2011)). An indication of the small size of the sector is that insurance premia amounted to just 1 % of GDP in 2011.

The minimum capital requirements for insurance companies were increased markedly as from the start of 2012. For example, the minimum own capital of a life insurance company rose from 60 million rubles (1.5 million euros) to 240 million rubles (6 million euros). The new minimum capital requirement for a reinsurance company is 480 million rubles. The law on enhanced capital requirements was adopted in 2010, which afforded some time for insurance companies to adapt. In 2010, more than half of all insurance companies lacked sufficient capital according to the new minima.

Russia's insurance sector is mainly in the hands of private companies. The government gave up its remaining stake in the country's largest insurer, Rosgosstrakh, in 2010. The second largest insurer, Ingostrakh, was privatised in the 1990s. The third largest company, Sogaz, which controls about 9 % of the market, belongs to the state gas monopoly Gazprom.

Unlike foreign banks, foreign insurance companies are allowed to establish subsidiaries in Russia. But the market has not attracted significant sums of foreign capital, although the share of foreign capital in the total sector capital is 22 %. In the accession negotiations to the WTO, Russia agreed to increase the maximum allowable share of foreign capital in the sector from 25 % to 50 %.

Insurance companies, as well as private pension funds, are not strong enough to act as institutional investors, which seriously hampers the development of capital markets. Private investment funds other than pension funds are few in number.

Central Bank objectives and instruments

According to the Law on the Central Bank of Russia, the bank's monetary-policy objective is to maintain the stability of the ruble. In practice, the CBR has since 2009 been gradually relaxing ruble exchange rate targeting in favour of inflation targeting. Other objectives of the CBR are the development and strengthening of the banking system and ensuring the effective and reliable functioning of the payments system. (Rossiiskaya federatsiya (2002)).

In its monetary policy decisions the CBR is less independent than many other central banks. Although the Law on the Central Bank states that the CBR performs its duties independently of other state organs, the law also says that the CBR plans and carries out monetary and financial policy in cooperation with the Russian government. The CBR annually prepares a basic outline of monetary and financial policy for the following three years, which is submitted to the government for discussion and presented to the Duma. Its basic assumptions are consistent with the government's economic forecasts.

The CBR's monetary policy tools are listed in the Central Bank Law: 1) interest rates on CBR operations, 2) reserve requirements, 3) open market operations, 4) refinancing of credit organisations, 5) currency interventions, 6) setting of money-supply targets, 7) direct quantitative restrictions, 8) bond issues.

Due to the importance of state-owned banks in the banking sector, the CBR or the government can use unofficial persuasion to influence the behaviour of a significant part of the sector. During the 2008–2009 recession, the government asked state-owned banks to increase lending to domestic businesses (see Fungáčová et al (2011) for a discussion of relevant effects). It seems, however, that the orders are not always followed and banks have ways to circumvent them.

Operating environment

Being a country dependent on exports of raw materials – especially crude oil and natural gas – Russia has to deal with significant volatility in export earnings relating to commodity price developments in international markets. For most of the 2000s, crude oil and other commodity prices have been rising and so has Russia's export income. Russia's current account has registered large surpluses during the past 10 years; in 2006–2011 surpluses averaged over 5 % of GDP. Moreover, higher interest rates than abroad and an appreciating ruble have attracted foreign capital to Russia, often brought in by Russian banks. During the past five years Russia has enjoyed significant foreign direct investment inflows, on average 3 % of GDP annually. (In fact, however, FDI inflows consist largely of Russian capital returning home.)

In these circumstances the CBR has fought against two evils: a strengthening ruble and rapid inflation. The bank – along with the government – has given preference to preventing ruble appreciation, realised via interventions in the forex market – selling rubles against foreign currencies. However, the tools at the CBR's disposal to sterilise the ensuing increase in ruble supply have proved inadequate, and the result has been abundant liquidity in the banking system and rapid inflation.

One tool used by the CBR to limit capital inflows is a set of reserve requirements differentiated according to residency. The highest reserve requirements apply to commercial-bank liabilities to foreign entities. Another instrument that could be used is a tax on interest payments on bonds emitted abroad. This measure was proposed by the ministry of finance in early 2012. Direct capital controls have not been under serious consideration. The CBR did not even revert to them during the peak years of capital inflows before the 2008–2009 crisis. Free capital movements are seen in Russia as a cornerstone of the ruble's international credibility.

The crisis years 2008–2009 were exceptional in that the ruble experienced depreciation pressures. A managed devaluation of the ruble took place at the end of 2008 and early 2009, with the CBR spending around 200 billion dollars of its forex reserves to smooth the currency's depreciation, which amounted to about a third vis-à-vis the dollar. With the subsequent recovery of the economy, the CBR again at times intervened in the markets to buy currencies. In the autumn of 2011, as the world economic situation worsened, the CBR again reverted to buying rubles to prop up their value.

It is generally expected that Russia's now-strong current account will weaken in the coming years as the value of imports increases at a faster pace than that of exports. The value of exports depends almost solely on the development of energy prices, which are currently at a high level. (Due to the slow growth in crude oil extraction and increasing domestic consumption in Russia, oil export volumes are not expected to grow over the next few years). This should diminish appreciation pressure on the ruble.

Exchange rate policy

A definite change occurred in CBR exchange rate policy after the 2008–2009 crisis. Before the crisis the CBR had tightly steered the external value of the ruble, whereas after the crisis the CBR began to gradually withdraw from active intervention. This change in policy has long been recommended to Russia by international financial institutions, and the CBR has on several occasions cited it as a final aim. The CBR states in its basic outlines of monetary and financial policy for 2012–2014 that the main task of the bank during the period in consideration is to consistently reduce its direct influence on the ruble exchange rate and to move to a floating exchange rate regime (Bank Rossii (2011f)).

Russia's current currency regime can be classified as a managed float. The CBR steers the ruble's exchange rate vis-à-vis a currency basket consisting of 55 dollar cents and 45 euro cents. After the 2008–2009 crisis the CBR introduced a rule for managing the rate. Accordingly, the ruble exchange rate vis-à-vis the basket is to move within a corridor rather freely in line with supply and demand. When necessary, the CBR intervenes in the market to keep the rate inside the corridor. Whenever the bank's accumulated interventions aimed at keeping the exchange rate within the corridor exceed a certain amount of dollars, the CBR moves the position of the corridor by 0.05 rubles in response to what it considers a permanent change in the operating environment. In

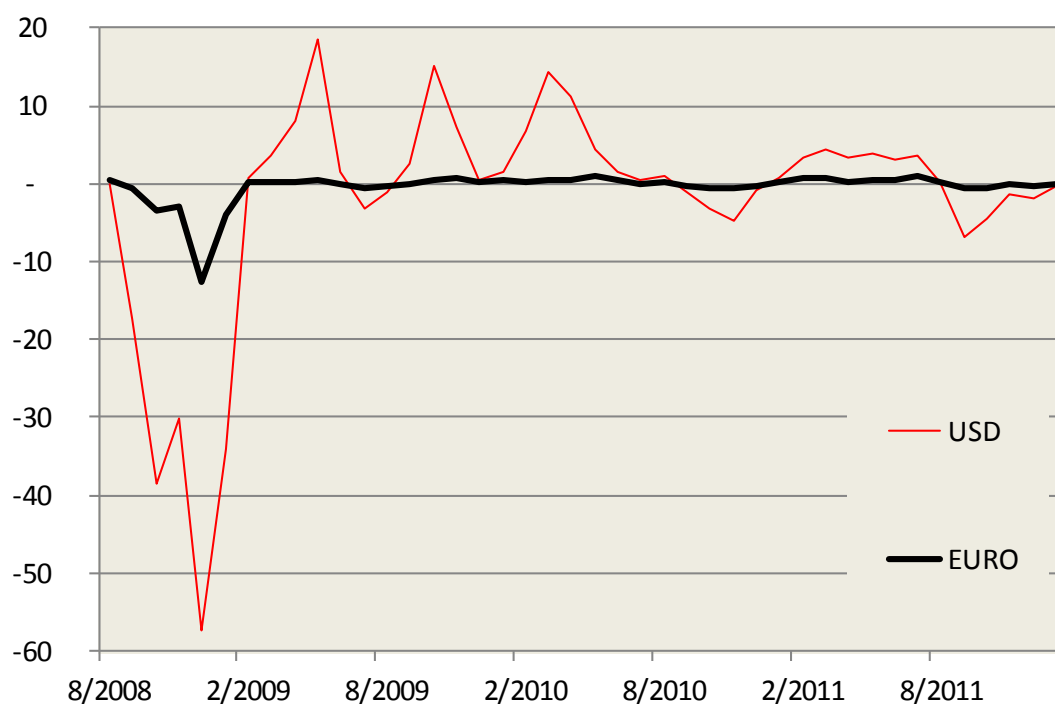
November 2011 the CBR for the first time officially disclosed these exchange rate policy parameters (Bank Rossii (2011e)).

The CBR has gradually widened the fluctuation corridor and eased the rule for adjusting it. In 2011 the CBR twice widened the corridor and twice lowered the amount of accumulated interventions necessary for shifting its position. In early 2012, the width of the corridor was 6 rubles, with boundaries at 32.20 rubles and 38.20 rubles, and the amount of interventions necessitating a shift of the corridor was 500 million dollars.

The CBR also carries out so-called targeted interventions, aimed at offsetting market participants' expectations of exchange rate movements caused by short-lived changes in the international economic situation. E.g. the CBR can carry out interventions in response to a temporarily high oil price. Targeted interventions are not included in interventions that cause the exchange rate corridor to be shifted (Bank Rossii (2011e)).

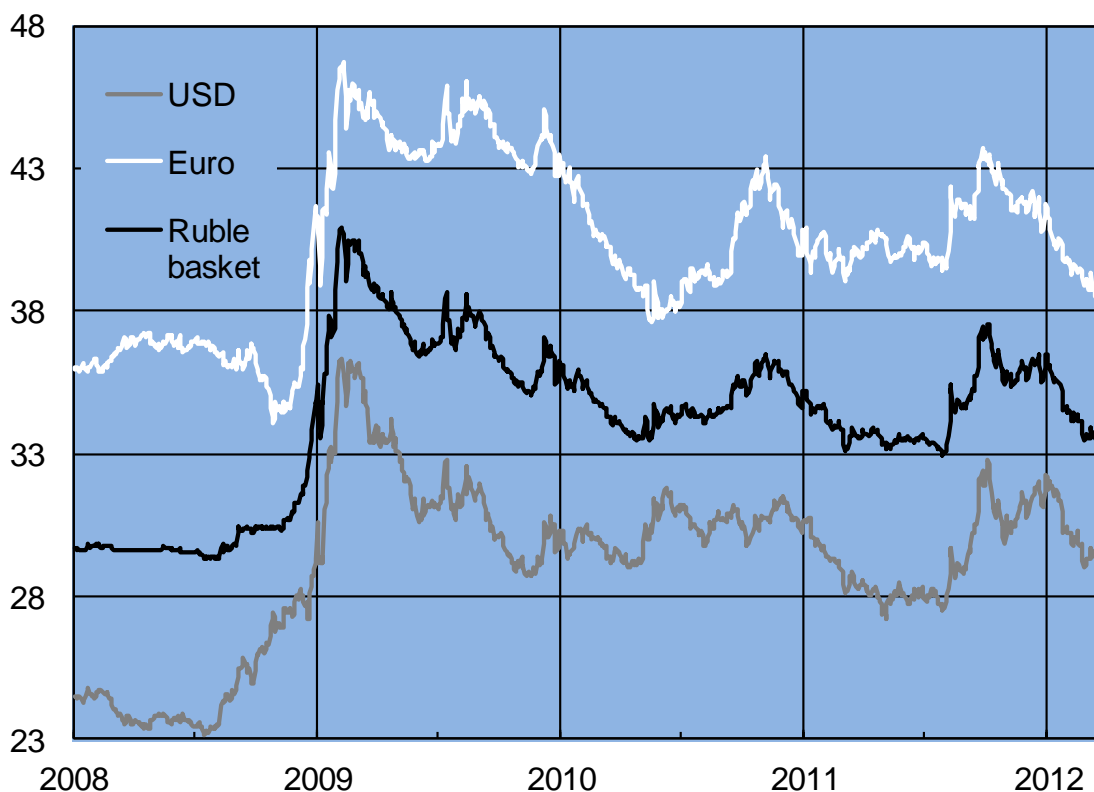
The main currency that the CBR uses in interventions is the dollar, although euros are also used. Interventions to support the ruble were significant during the 2008–2009 crisis. Since then, the CBR has intervened in the currency markets mainly to limit the appreciation of the ruble. Since the summer of 2010, interventions have been markedly less frequent. The relaxing of exchange rate targeting can be seen in the greatly increased volatility of the ruble exchange rate since 2009.

Graph 3 CBR net purchases of currencies, Aug 2008-Jan 2012, billion dollars/euros



Source: Bank Rossii (2012e)

Graph 4 Ruble exchange rates vs dollar, euro and currency basket, 2006–2011



Source: Bloomberg

Monetary policy

As the situation in the Russian financial markets is very volatile, both liquidity absorption and liquidity supply tools are actively used by the CBR. To absorb or provide liquidity the CBR uses several different types of tools (see Bank Rossii (2011f)). The CBR explains their number by the heterogeneous structure of the banking sector. The different financial instruments are used to target different bank groups. The CBR admits that its monetary policy toolkit should be simplified in order to enhance its efficiency, and over the past couple of years the bank has withdrawn some of its tools and unified some of its interest rates.

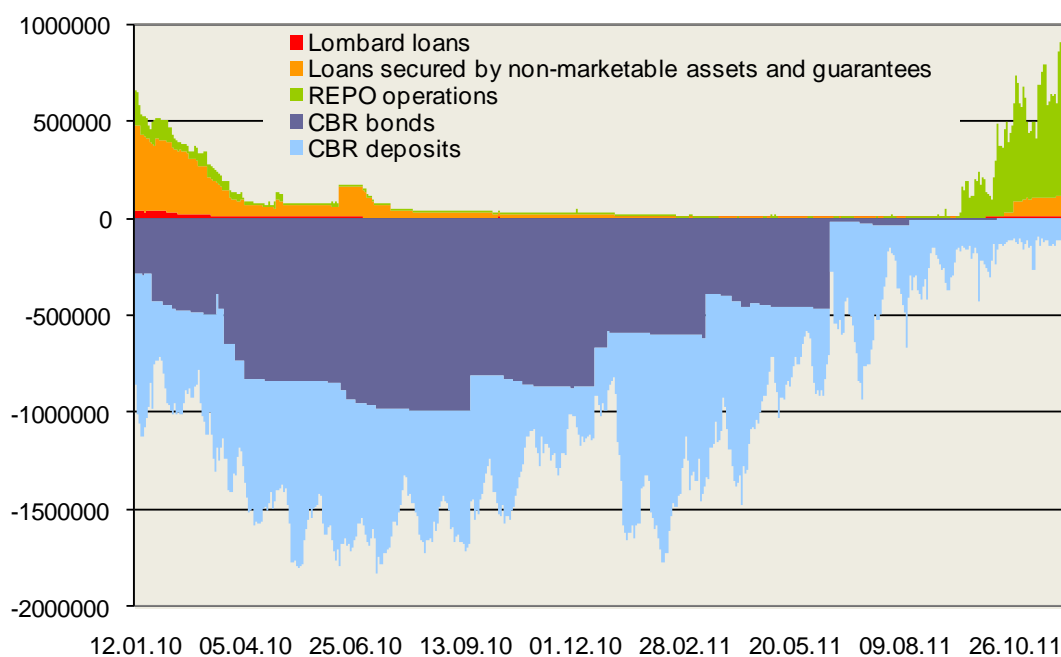
Liquidity absorption

For liquidity absorption the CBR uses deposit operations, bond sales and reserve requirements. The CBR's standing facility deposits carry fixed interest rates and maturities ranging from overnight to seven days. The bank's open market operations consist of deposit auctions with one-month maturity. For longer maturities, the CBR issues its own debt papers, OBRs. In 2010 the maturity of OBRs was shortened from six to three months. The demand for OBRs was fairly stable from 2010

till the summer of 2011, when it practically dried up due to the tightening of the banks' liquidity situation.

The CBR can also revert to sales of government securities from its portfolio without buy-back obligation, although in the recent past it has seldom done so. Liquidity can also be absorbed using federal government short-term bonds (GKOs).

Graph 5 CBR liquidity absorbing and providing operations, 2010–2011, million rubles



Source: CBR

Liquidity supply

CBR credits can be divided into two main categories according to the required guarantee: a marketable paper included in the CBR's so-called Lombard list of acceptable collateral or a non-marketable paper (e.g. letter of credit of a non-financial organisation). During the 2008–2009 crisis the CBR significantly relaxed requirements for the quality of guarantees and even started to grant credits without collateral, a novel measure that turned out to be important in providing relief to banks.

Since the crisis the CBR has reinstated the earlier standards for collateral quality and has discontinued its non-collateralised lending. The CBR also suspended the granting of credits under several of its longer-term financing instruments whose maturities range from seven days to one year. However, the instruments are in place and can be taken into active use should the need arise. Since the autumn of 2011, with international economic prospects turning gloomier, the CBR has repeatedly expressed its readiness to support banks if the need arises. As a precautionary measure, the CBR relaxed requirements concerning the quality of loan guarantees in November 2011 (Bank Rossii (2011g)).

To smooth out the changes in banks' liquidity positions, the CBR offers standing facility fixed rate credits that banks can obtain on demand. The facility includes overnight credits, one-day currency swaps, and one-day repo and Lombard credits.

The CBR also offers standing facility credits for longer periods. These are mainly intended for situations of tight liquidity when standard tools are not sufficient. Credits with non-marketable guarantees are granted for up to six months (the maximum duration was extended from three to six months in November 2011 as the banking sector liquidity situation tightened). In August 2011 the CBR introduced a new facility that uses gold as collateral. In November the maximum duration of the credit was extended from three to six months. The introduction of a new form of credit can be seen as preparation for a tightening liquidity caused e.g. by a worsening of the international economic situation. However, there are very few banks that can pledge gold as collateral.

CBR open market credit operations are carried out in the form of repo and so-called Lombard auctions, for which the bank sets minimum interest rates. In February 2012 repo credits were provided with maturities of one and seven days and three months and Lombard credits for maturities of seven days and three months. The CBR suspended the granting of six and twelve month credits in 2010. The most important CBR source of financing for banks is the one day repo auction.

Table 2 Interest rates for CBR operations, % pa

Purpose	Type of instrument	Instrument	Term	Rate since 28.02.11	Rate since 03.05.11	Rate since 31.05.11	Rate since 15.09.11	Rate since 26.12.11
Liquidity provision	Standing facilities (fixed rates)	Overnight loans	1 day	8.00	8.25	8.25	8.25	8.00
		FX swaps (rouble rate)	1 day	8.00	8.25	8.25	8.25	8.00
		Lombard loans, REPO	1 day, 7 days ¹⁾	6.75	6.75	6.75	6.50	6.25
		Lombard loans	30 days ²⁾	6.75	6.75	6.75	6.50	6.25
		REPO	12 months ²⁾	7.75	8.00	8.00	7.75	7.75
		Loans secured by gold	Up to 90 days	—	—	—	6.75	6.75
			From 91 to 180 days	—	—	—	—	7.25
		Loans secured by non-marketable assets and guarantees	Up to 90 days	7.00	7.25	7.25	7.00	7.00
	From 91 to 180 days ³⁾		7.50	7.75	7.75	7.50	7.50	
	From 181 to 365 days ²⁾		8.00	8.25	8.25	8.25	8.00	
	Open market operations (minimum interest rates)	REPO auctions	1 day	5.25	5.50	5.50	5.25	5.25
		Lombard and REPO auctions	7 days	5.25	5.50	5.50	5.25	5.25
			3 months	6.75	7.00	7.00	6.75	6.75
			6 months ²⁾	7.25	7.50	7.50	7.25	7.25
	12 months ²⁾	7.75	8.00	8.00	7.75	7.75		
Liquidity absorption	Open market operations (maximum interest rates)	Deposit auctions	1 month	5.00	5.25	5.50	5.50	5.50
			3 months ²⁾	6.00	6.25	6.50	6.50	6.50
	Standing facilities (fixed rates)	Deposit operations	1 day, 7 days, call	3.00	3.25	3.50	3.75	4.00
Memo item:								
Refinancing rate				8.00	8.25	8.25	8.25	8.00

1) 7 days fixed rates REPO operations have been suspended.

2) Operations have been suspended.

3) Operations were suspended from 10 February 2011, resumed from 1 November 2011.

Source: Bank Rossii (2011h)

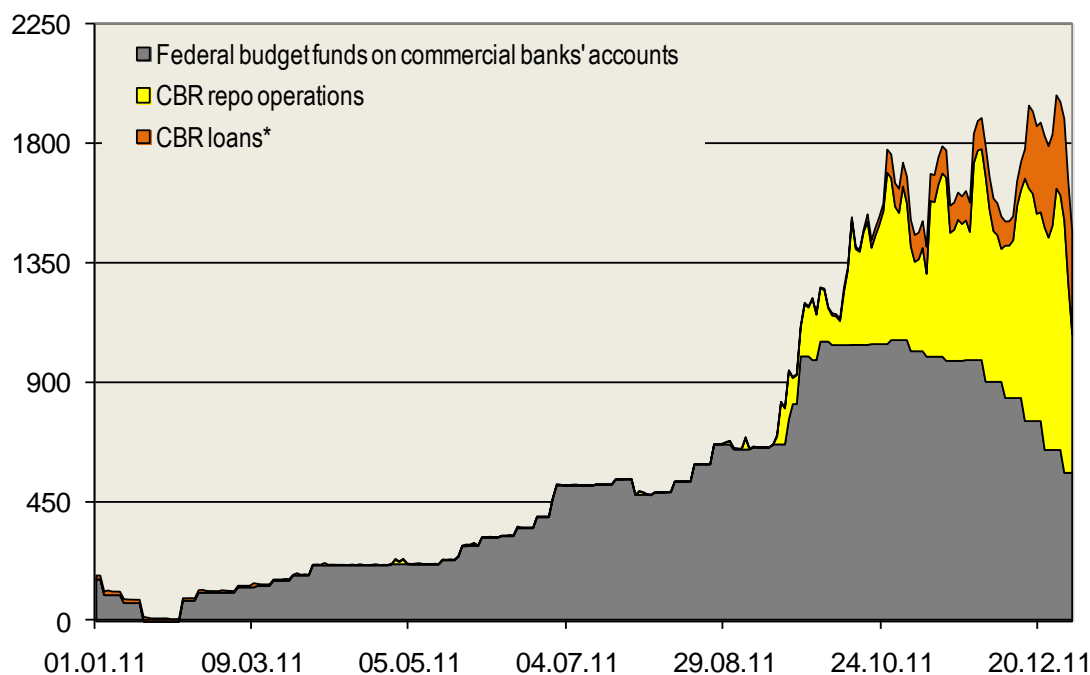
Repo and Lombard credits differ in how they are acquired. Repo credits are available only at the MICEX-RTS exchange and only banks with access to the exchange can obtain them. Lombard credits are offered in addition to MICEX-RTS also in local branches of the CBR. Furthermore, while MICEX operates according to Moscow time, CBR branches operate according to local time – an important distinction in a country that stretches over two continents. As a result, repo credits are used more often by large Moscow-based banks and Lombard credits by smaller regional banks. Both repo and Lombard credits require collateral included in the CBR's Lombard list.

In addition to the CBR, liquidity is provided by the ministry of finance. Due to the uneven timing of budget expenditures that tend to concentrate on the last quarter of the year while budget revenues accrue more evenly over the year, the ministry of finance has ample resources during most of the year. The ministry started to place these temporarily free resources in commercial banks as short-term deposits in April 2008. When the financial crisis hit, the monies became important liquidity sources for banks.

Deposit auctions of free budget monies are organised by the CBR. Only the 30–35 best banks are allowed to participate.

In 2011, deposit placements of finance-ministry budget monies were the banks' most important source of liquidity. Both the CBR and the finance ministry indicated at the start of 2012 that ministry deposit placements are to be downsized in 2012 and that the CBR will be the main supplier of liquidity.

Graph 6 CBR and finance ministry liquidity providing operations, 2011, billion rubles



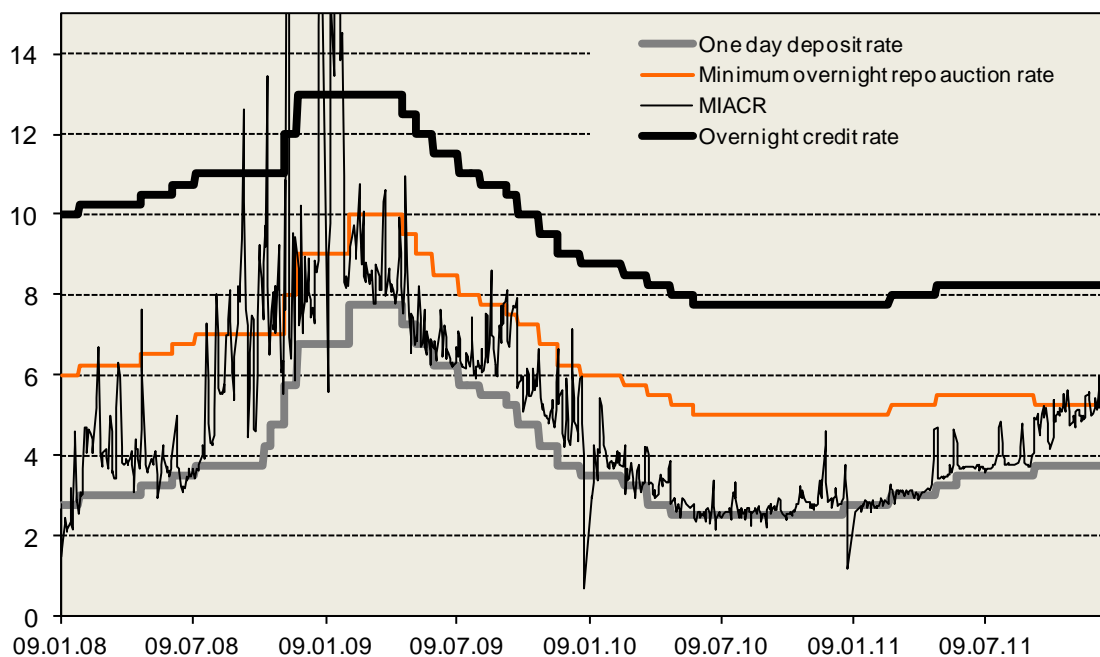
*Including overnight and lombard loans and loans extended against non-marketable securities

Source: CBR

The overnight standing facility credit rate forms the upper limit for interbank market interest rates while the one-day standing facility deposit rate forms their lower limit. In practice, however, the upper limit is formed by the minimum one-day repo auction rate. The margin between credit and deposit rates has traditionally been wide in Russia, but the CBR has been reducing it since the

2008–2009 crisis. In December 2011 the spread between the overnight standing facility credit rate and the standing facility deposit rate was cut to 4.0 percentage points by simultaneously lowering the credit rate and raising the deposit rate. By squeezing the margin the CBR aims to diminishing the significant volatility of interest rates that has been customary for the Russian interbank markets during periods of tight liquidity in particular.

Graph 7 CBR main interest rates and interbank MIACR, 2008–2011, % pa



Source: CBR

The CBR quotes the so-called refinancing rate, which is in principle the reference rate for financial markets and is equal to the CBR's overnight credit rate. In practice, however, the refinancing rate is devoid of any monetary policy significance. The refinancing rate serves e.g. as the basis for the calculation of various penalty interest rates for overdue payments. The rate is also used as a reference for the maximum deposit interest rates that banks are allowed to offer to households. (According to a bill prepared by the ministry of finance in autumn 2011, the CBR would be empowered to limit banks' deposit rates to two thirds of the refinancing rate in order to rein in banks' unhealthy competition for deposits.)

Given the gradual relaxation of ruble exchange rate targeting in favour of inflation targeting, the significance of interest rate policy is increasing. Interest rate changes are not very effective yet, due to the underdevelopment of the banking sector and financial markets in general, as well as the abundance of liquidity that the banking sector has enjoyed until recent years. The various financing tools that the CBR uses and their differing interest rates weaken the signalling role of interest rate changes. Furthermore, the CBR does not change all the rates simultaneously. On the other hand, the heterogeneous and underdeveloped banking system may require more case-by-case treatment in liquidity management than would a more developed system.

Reserve requirements

Due to the limited role of interest rates as monetary policy tools, the CBR's reserve requirements have retained some of their importance as a steering tool. The CBR divides reserve requirements into three groups: requirements for banks' liabilities to foreign banks in both rubles and foreign currencies, requirements for ruble liabilities to domestic households, and requirements for all other liabilities. The requirements have most often been changed in tandem although their levels vary from group to group. The highest requirement has always been that for liabilities to foreign banks, as the CBR has tried to limit the inflow of foreign capital to Russia. Only during the crisis of 2008–2009 were all three rates equal.

The requirements were at their lowest at 0.5 % during the culmination of crisis between October 2008 and April 2009. Since then, the CBR has gradually raised them. In 2011, there were three increases. Since April 2011, reserve requirements for liabilities to foreign banks have been 5.5 %, for liabilities to households 4 %, and for other liabilities 4 %.

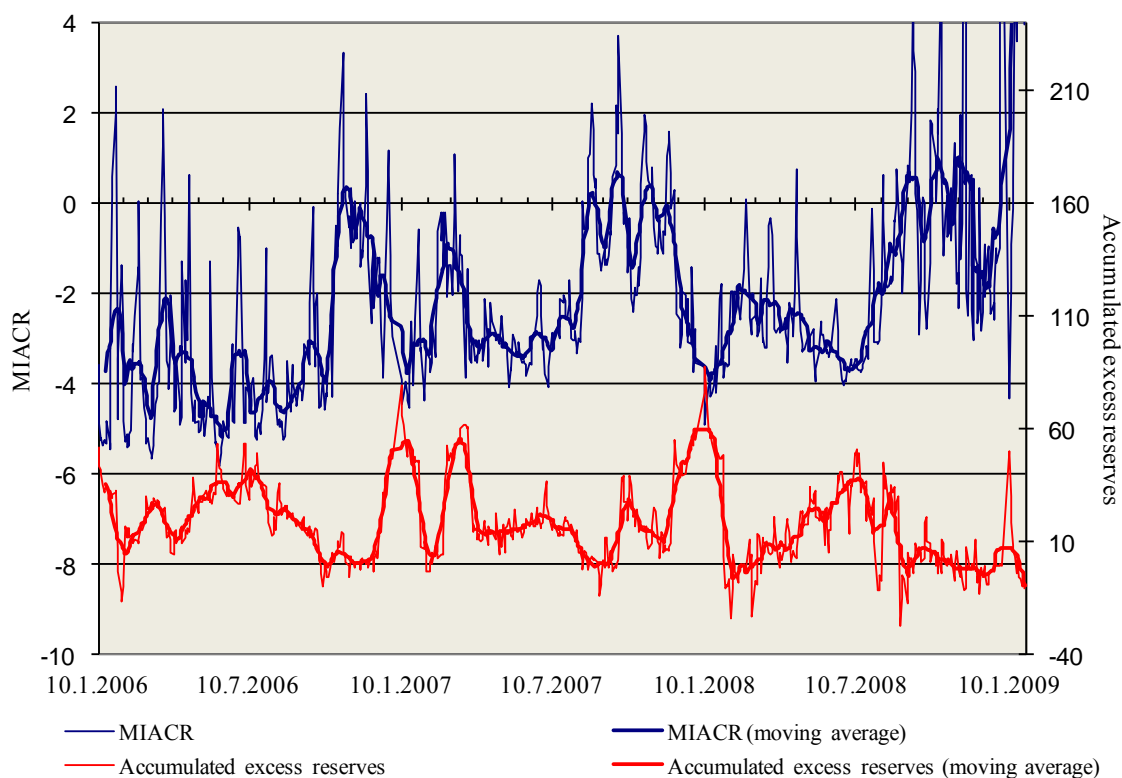
Reserve requirements have limitations as a policy tool because banks' reserves and deposits with the CBR as a rule have exceeded required reserves by a large margin.

Transmission of monetary policy to market interest rates and the real economy

The short-term interbank interest rate is usually viewed as the first link in the chain of indicators that the central bank uses to implement its interest rate policy. Most central banks are disposed to implementing interest rate policy by steering the overnight interest rate towards a certain level. Usually (although not always) there is one instrument that is more important than others for market participants, and market interest rates become closely attached to this interest rate. In the case of Russian interbank money markets, the interest rate on the CBR's one-day standing facility deposits can be viewed as such an instrument (see e.g. Bank Rossii (2011i)).

In conditions of excess liquidity, interest rates are driven to the lower boundary of the interest rate band. But that is not always the case. Over the last decade Russia's exchange rate regime of a managed float and ensuing changes in the volume of foreign currency purchases have led to frequent changes in liquidity. These factors (together with some specific institutional features of the Russian banking system, such as segmentation) resulted in increased volatility of interbank interest rates. Following episodes of transition from surplus liquidity to liquidity deficit, market interest rates have detached themselves from the standing facility deposit rate and gyrated widely. Graph 8 shows that (at least before the crisis of 2008) a large portion of the fluctuations in the short-term interbank rate within the CBR's interest rate corridor can be associated with changing levels of liquidity.

Graph 8 Overnight MIACR interest rates (deviation from mid-point of CBR interest rate band, p pts) and accumulated excess reserves (deviation from trend, %), 2006-2009¹



Source: Vasilieva et al. (2009)

Another factor that could impede the pass-through from the CBR's interest rate to market interest rates is the inflexible exchange rate regime. In these conditions interest rates in the Russian money market could become linked to their foreign counterparts (see Sokolov (2010)). The increased exchange rate volatility after the 2008–2009 crisis may have helped to weaken the link between foreign and domestic interest rates.

The impact of another CBR marketable instrument – CBR bonds – is also difficult to gauge. By design, the main applications of this tool are to absorb excess liquidity and help to sterilize foreign currency interventions. The overall degree of macroeconomic efficiency of such sterilization is not clear since (as discussed in Mohanty and Turner (2005)) these relatively short-term securities, despite being less liquid than the bank reserves they absorb, still represent potential liquidity in the commercial banks' balance sheets – which the banks could use for supporting future

¹ The accumulated excess reserves indicator was estimated as $\sum_{i=1}^{t-1} CA_i + CA * (T-t) - RR * T$, where CA stands for banks' current accounts, RR stands for reserve requirements, t stands for current period, T stands for end of reserve maintenance period. This indicator shows how large the reserves held in excess of reserve requirements will be by the end of the reserve maintenance period if the current account volume remains at present level during the rest of days of the reserve maintenance period. In the graph, the indicator is in deviations from the non-linear trend (see Vasilieva et al. (2009) for details).

The mid-point of the CBR's interest rate band was estimated as the average between one-day deposit and overnight standing facility credit interest rates.

lending operations. It is therefore unlikely that CBR bond issuance could have a direct restrictive effect on monetary and credit growth. Moreover, interest payments on such securities continue to fuel bank reserves, adding to the challenges for central banks' monetary management.

On the other hand, in conditions of excess liquidity the issuance of CBR bonds can potentially be a powerful tool for steering the money markets. In fact its impact may not be limited to the short-term segment of the money market. There could be an effect on the longer-term money market segment and on private and public bond markets. There have, however, been only few instances where the Bank of Russia has used the CBR bonds to change the monetary stance. The likely motivation behind the CBR bond issuance has more often been to provide banks with an opportunity to park excess reserves without causing any major disturbances to the financial markets and to facilitate their smooth functioning. The issuance of CBR bonds in late 2009, when obviously no monetary stance tightening was intended (the Bank of Russia was cutting its policy rates during that period) may be regarded as an example of such a course of action. The estimates presented in the Appendix confirm that there was no distinct effect on the financial markets stemming from CBR bonds issuance (or at least that this tool was not used in the manner that would have produced such an impact).

As for macroeconomic effects, existing studies usually provide only vague evidence of the effectiveness of CBR interest rate policy. For example Yudaeva and Sinyakov (2011) do find a significant impact for changes in the interest rate on CBR one-day repo operations on output (but not on inflation). They also note however that this finding is not robust to the model setup and should be interpreted cautiously. One of the reasons for the low effectiveness of CBR interest rate policy could be the relatively insignificant role of domestic money markets (before the crisis – even in comparison with international money market) in the total composition of banks' liabilities. For example, in analyzing the bank lending channel Juurikkala et al. (2011) and Deryugina and Ponomarenko (2011) find that banks' lending does react to monetary stance, but only when the latter is proxied not by interest rates but by a more general variable such as money stock (an indicator which is outside of direct CBR control).

It is therefore possible to conclude that CBR interest rate policy has yet to gain importance for the macroeconomy (which is actually plausible since market-based means of providing liquidity are expected to become prevalent in the years ahead).

On the other hand, exchange rate developments seem to have had a significant impact on macroeconomic variables such as output and inflation (see Rautava (2009); Granville and Mallick (2010)). One caveat in assessing the effectiveness of CBR exchange rate policy is the questionable ability to control the *real* exchange rate in the long run.

Conclusions

The Central Bank of Russia faces a demanding task in conducting monetary policy in an environment characterised by underdeveloped financial markets and large and volatile capital flows. For almost the whole of the 2000s, the CBR was restrained in its monetary policy by exchange rate targeting and significant excess liquidity of the banking sector. Under these circumstances, the interest rate policy of the CBR has not been very effective, nor has the emitting of CBR bonds, as regards the absorption of extra liquidity. As the monetary and exchange rate policy framework is gradually changing with the CBR moving towards inflation targeting and increasingly relying on interest rate policy, enhancing the effectiveness of its instruments is becoming ever more important.

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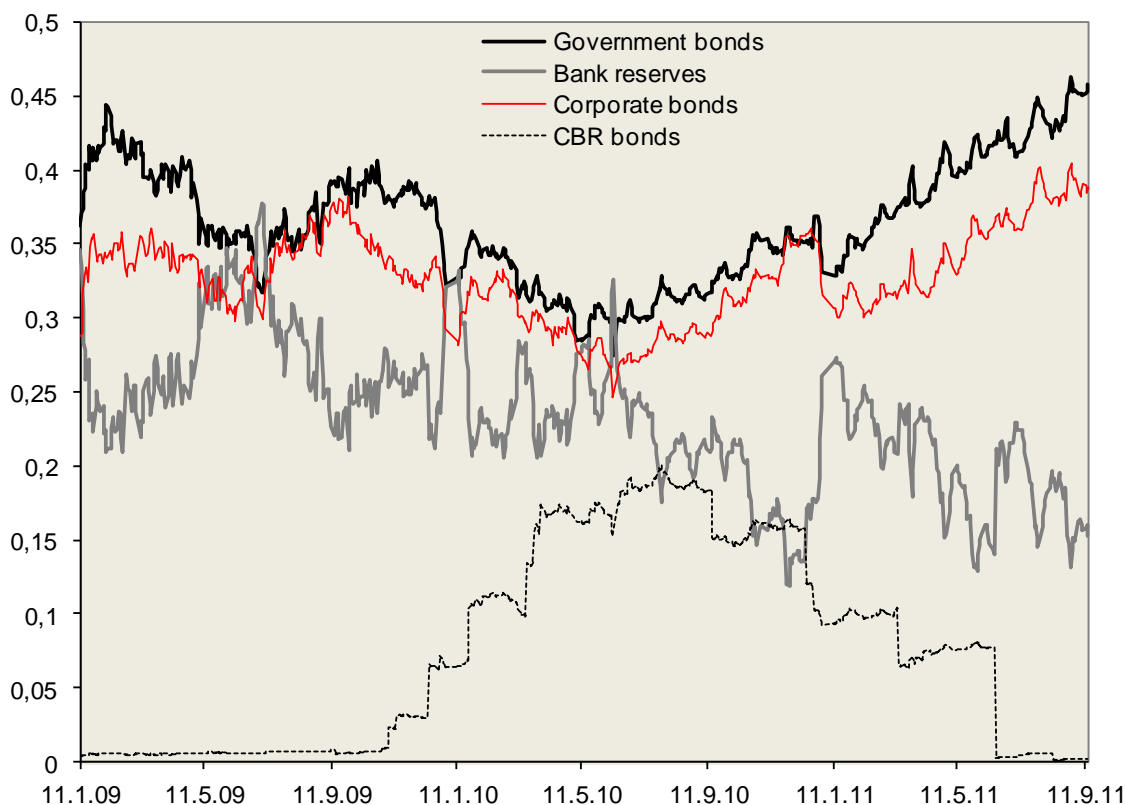
Appendix

The most common way in which the central bank steers the financial markets is by setting interest rates on its liquidity providing and absorbing operations. As regards the Bank of Russia however, some less orthodox tools have also been employed on a regular basis. One of these is bonds issuance. In conditions where liquidity growth originates from FX purchases or sovereign fund utilization to finance the fiscal deficit, CBR bonds may be effective in mopping up the excess liquidity and bringing the money market under control. In this appendix we estimate the empirical model to trace the actual effect of CBR bond issuance on the financial markets.

For this purpose we use the portfolio model setup outlined in Joyce et al. (2011). This approach implies modeling the interaction between the financial assets supply and their returns. We model developments in the government and corporate bond markets and in the interbank money market, along with the CBR bond issuance variable.

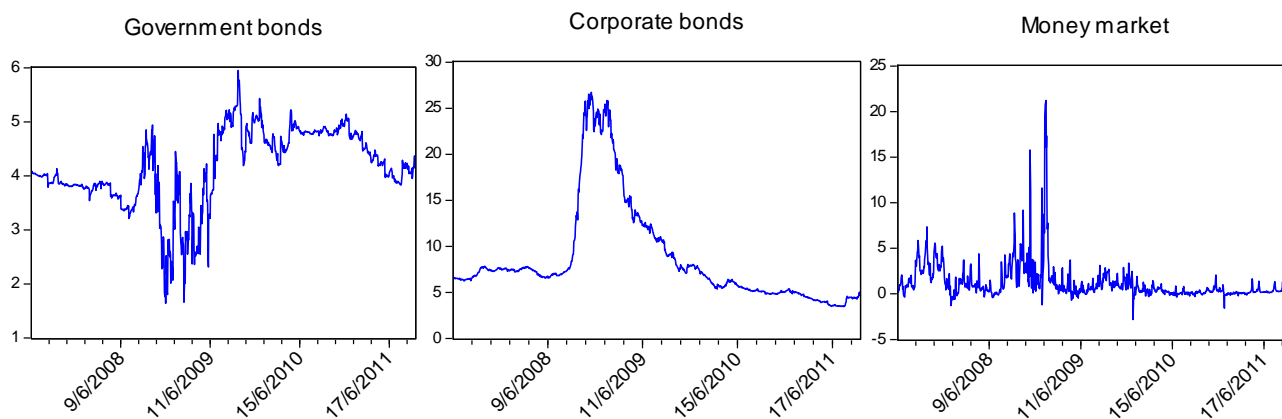
We use the following indicators to proxy the financial assets supply: GKO and OFZ market volumes, the market capitalization indicator (estimated by Bank of Moscow research department) for the corporate bond market, free bank reserves (that is banks' current accounts plus one-day deposits in the Bank of Russia) and CBR bond market volume. All variables are expressed as shares of the improvised portfolio, which is the sum of all four indicators.

Graph 1 Asset shares, 2007-2011



We use OFZ portfolio effective yield, corporate bond yield indicator estimated by Bank of Moscow, and the overnight¹ MIACR interest rate to represent returns for the corresponding financial markets. All variables are expressed as excess returns relative to the CBR one-day deposit interest rate.

Graph 2 Asset excess returns, 2008–2011, p pts



Our time-series sample is determined by data availability and runs from 8 June 2007 to 14 September 2011 and so includes the crisis period. Admittedly this may have a distorting effect on the results. On the other hand by excluding the crisis observations and estimating the model over pre- or post-crisis period we would limit the analysis to just one phase of financial cycle. We therefore proceed to estimate the model over the whole sample. We add two exogenous variables to the model to control for additional factors that presumably played important roles in financial market developments during the crisis: the variance of RTS stock market index returns over the 20-day rolling periods (as the metric for uncertainty) and the proxy for expected ruble depreciation against the bi-currency basket derived from the forward rates. Re-estimating the model on the post crisis sample does not materially affect the results.

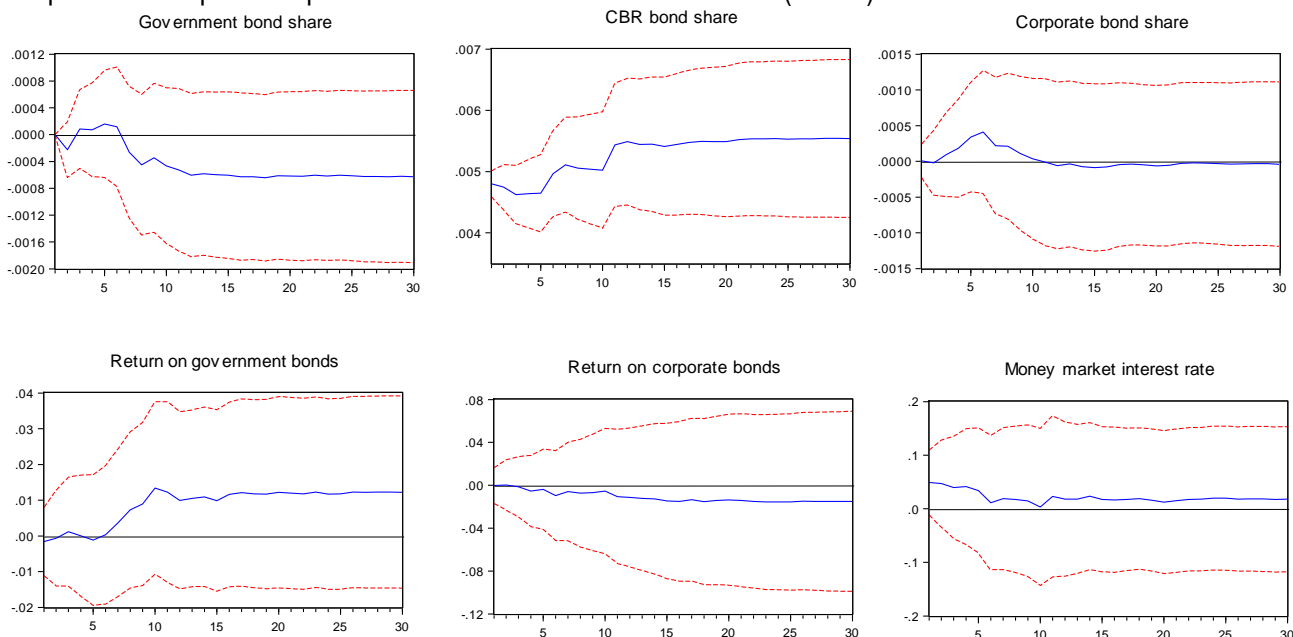
We estimate a VAR model² with lag lengths of ten, using first differences of the variables to ensure stationarity and proceed with the impulse responses analysis³.

¹ As we model relatively long-term segments of the financial markets it may seem fitting to use longer-term money market interest rate here. Another case against using the overnight interest rate is that its interrelationship with other variables could be highly non-linear since its fluctuations were restricted by the lower boundary of the CBR interest rate corridor formed by the one-day deposit rate. The caveat is that the longer-term segment of the Russian money market is relatively inactive and cannot therefore be considered fully representative. We estimated the model using the three-month Mosprime interest rate and obtained similar results. We therefore report the results for the more credible benchmark model.

² Employing a VAR-GARCH model does not change the results.

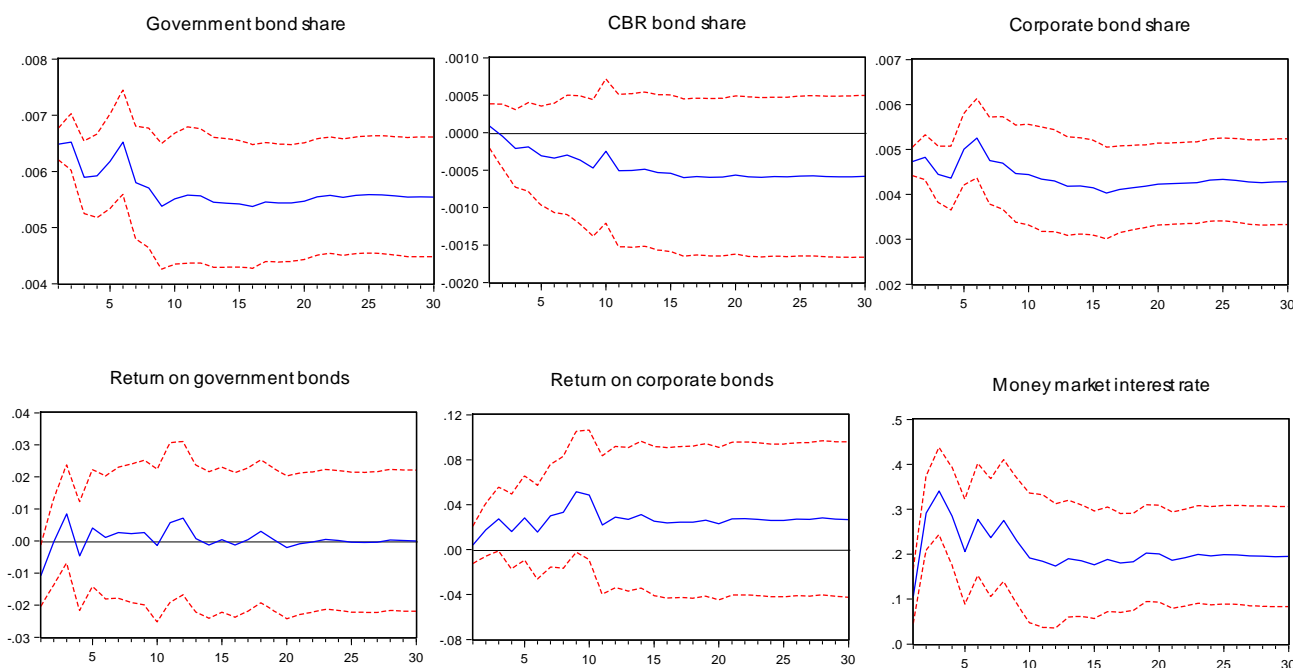
³ We use the Choleski decomposition with the following ordering: government bond share, CBR bond share, corporate bond share, government bond returns, corporate bond returns, money market interest rate.

Graph 3 Impulse responses to innovation in CBR bond share (± 2 SE)



The results show that there is no clear link between CBR bond issuance and the analyzed financial variables. The increase in CBR bond supply has an apparent prolonged positive effect on government bond returns and an immediate positive effect on money market interest rate, although none of these are statistically significant. There is therefore only weak evidence that CBR bond issuance was associated with monetary stance tightening.

Graph 4 Impulse responses to innovation in government bond share (± 2 SE)



In comparison, the impulse responses to the increase of government bonds supply show more pronounced positive effects on the corporate bond return and particularly on the money market interest rate (something that could be expected due to the crowding out effect). There is also some evidence of negative association between shares of government and CBR bonds, which may indicate that banks regard these assets as substitutes.

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