

GPB-Ipoteka MBS bond: Relative value analysis

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In this report we will analyze the GPB-Ipoteka bond, the first Russian RUB denominated domestic MBS deal. The emphasis will be on an analysis of delinquencies, foreclosures and defaults.

Key Points

In November 2006 Sovfintrade bank closed the first public RMBS transaction in Russia; the first public securitization of RUB denominated mortgage loans and the first domestic securitization transaction. On December 29, 2007 the issuer SPV (GPB-Ipoteka) paid the fifth quarterly coupon.

Interest Coverage Ratio (ICR) of the Class A Bond coupon is 1.65 with effective bond factor 0.769 (the proportion of bond's principal that is yet to be repaid). ICR is an important coverage measurement that depicts SPV's (and collateral) ability to fulfill its outstanding bond interest payments. It was estimated by calculation of interest received from the December 2007 collateral performance data and coupon payment due on December 29, 2007. Class A bonds benefit from a full sequential amortization (i.e. all principal collections are applied to repay Class A bonds before other classes). Excess spread is used to replenish the reserve fund deficit (if any) and the remaining excess spread is used to accelerate Class A bonds amortization. Because of this we expect that the ICR ratio would go up. In addition the reserve fund, currently 19.5% of the total bond outstanding amount, provides a very good coverage of class A bonds interest and principal payments.

Prepayment speed of the collateral stabilized and even slightly decreased to 19% CPR in December. We think that this should be expected for a seasoned pool with an average loan age of 30 months. We expect that prepayment speeds will slow down in the current market when mortgage rates started to increase and real estate prices stabilize.

We think that Class A bond priced at 98.20 is deeply undervalued. It has a duration of 1.64 with WAL 2.03. The bond has a high credit rating equal to domestic government bonds rating (Baa2/BBB). We compared it with other fixed income instruments with similar credit rating and WAL including AHML Class A bonds. We expect that accelerated amortization and further increase in credit support should move its price above par.

Class A bond is trading with 345bps spread over Russian treasury curve. This is 270-280bps wider than spreads of comparable bonds of government sponsored/owned corporations with similar WAL and credit rating. In our opinion this spread is two times more than is needed to compensate for prepayment and liquidity risks. Prepayment speed of GPB-Ipoteka deal collateral has fluctuated from 13% to 21% CPR since the issue date. This could justify only for 65bps of additional spread. To come up with this number we calculated implied spreads for the Class A bond with *max* and *min* historical prepayment speeds. The trading volume (liquidity) of GPB-Ipoteka is low but again it is not much lower than volume of AHML bonds (186bps over treasury curve).

Capital Structure

Class	Rating	Amount (RUB, millions)	% of Bonds	Coupon
A	Baa2	3,000.00	100.00	8.00%, fixed
Total:		3,000.00	100.00	

- **Class A Bond (Baa2).** This is the senior and the only note in the capital structure. It pays 8.00% fixed coupon on a quarterly basis. Its credit support consists of the reserve fund. The reserve fund size was formed at closing and will not amortize until the maturity of the Class A bonds. That means that the Class A bond credit support should be going up significantly.
- **Clean-up Call.** Class A bonds may be paid down early via a clean-up call. The Issuer may decide on early redemption at par when the current outstanding balance of Class A bond will drop below 20% of its face value. The clean-up call might be executed on or immediately after 15 August 2011 (assuming that current prepayment speed remain unchanged at the CPR 19%).
- **Reserve Fund.** The non-amortizing reserve fund of RUB 450 million (15.0% of the initial bond balance) was fully funded at closing. Available excess spread will be used to bring the reserve to its initial target level where there have been drawings in earlier collection periods. The required reserve amount will remain at the same level until the final maturity of the bonds. Drawings on the reserve may be used to meet shortfalls in available revenue receipts in order to pay the required interest on the Class A bonds, as well as to cover credit losses.

Waterfall

The Bonds interest priority of payments

- 1) Taxes
- 2) Third party expenses (costs of regulatory compliance, Issuer's bank accounts fees, etc.)
- 3) *Pari passu* and *pro rata* to the Management Company and to the Accounting Company
- 4) *Pari passu* and *pro rata* to:
 - a) The Paying Agent
 - b) The Custodian
 - c) The Special Depository
 - d) The Auditor and
 - e) The Rating Agency
- 5) To the Servicer
- 6) Coupon to Class A Bonds
- 7) Reserve Fund Ledger (in case Reserve Fund was drawn on the previous periods)
- 8) Redemption of Class A bonds

Bonds Principal Priority of Payments

- 1) Reserve Fund Ledger (in case Reserve Fund was drawn on the previous periods)
- 2) Redemption of Class A Bonds

Collateral

Description

The collateral pool initially consisted of an aggregate amount of RUB 3 billion of receivables arising from 6,015 mortgage loans denominated in RUB that were secured by mortgages on properties located in more than 30 regions of the Russian Federation.

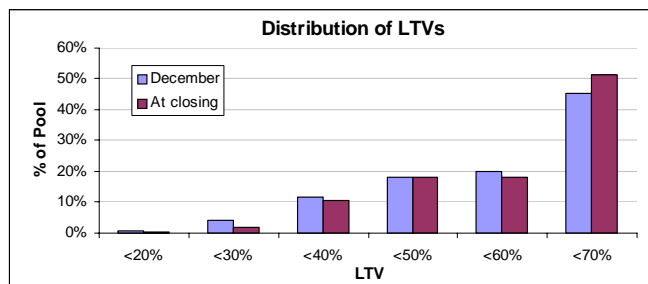
All loans in the pool have been originated by Sovfintrade bank or were purchased from a range of local regional banks located in various regions of the Russian Federation in accordance with standards set by Sovfintrade.

The collateral pool consists of fixed-rate level-pay mortgage loans and had an initial WAC (Weighted Average Coupon) of 13.81% (13.78% as of December collateral report) and no interest rate reset until maturity. The underlying loan conditions for the majority of loan agreements allow borrowers to prepay without penalty following the expiry of a six-month period after its disbursement.

All loans in the pool are benefiting from property insurance, life and disability insurance for the entire life of the loan. The beneficial rights under the insurance policies have been transferred to GPB-Ipoteka, and cash received by the SPV under the insurance policies is included in the security pool and therefore pledged in favor of bondholders.

LTV

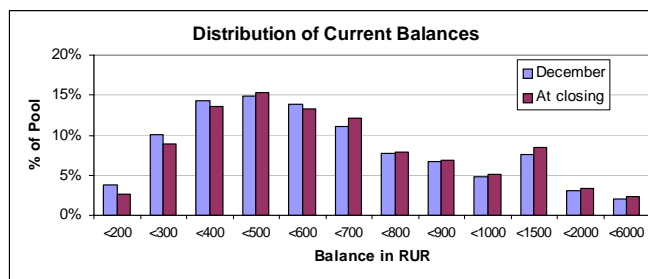
The collateral pool had a moderate LTV (Loan-To-Value) ratio of 56.26% at closing. According to December 2007 collateral report it is 49.88%. The following diagram depicts changes in LTV distribution occurring in the period from cut-off date to the last report period. As we can see the biggest drop happened in the percentile of loans with high LTVs (70% and above). In our view that would definitely benefit the current credit support and reduce the risk of losses in case of loan default.



Source: VTB Analytical Dept

Current Outstanding Amount

The other important parameter of the collateral pool is the current loan outstanding amount (balance). The next diagram depicts the distribution of current loan outstanding balances in the pool. Due to scheduled pool amortization and the relatively high speed of prepayments the distribution has shifted left towards the lower end of the range.



Source: VTB Analytical Dept

We believe that this is also a positive change in the Class A bonds support that reduces value at risk in case of foreclosure.

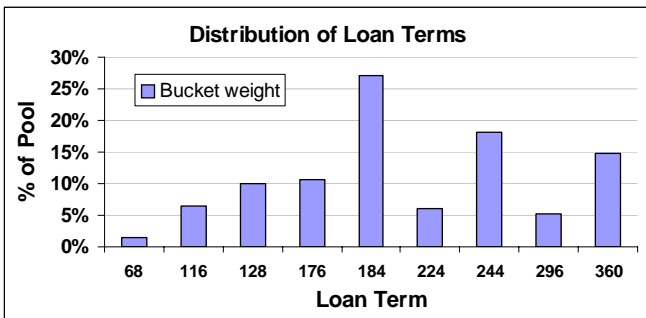
Bucket method

Before we continue with the analysis of the GPB-Ipoteka bond and its collateral we would like to introduce a methodology used to model deal collateral. The main idea of this method is to take a loan pool with heterogeneous parameters and separate it into buckets with homogeneous characteristics. In other words we take, for example, all loans with 12% interest rate and maturities from 176 to 184 months and put them in one bucket, while loans with 14% rate and maturity from 224 to 244 would go into another bucket. After separating the whole pool into a number of buckets we use the total bucket outstanding amount to calculate its averaged weight in the pool. Then we model each bucket by fixed rate mortgage (FRM) loan with averaged parameters of loans in the bucket. The outstanding amount of this FRM is set proportionally to its bucket weight. We assume that the portfolio of such FRMs could be used to model the performance of the deal collateral. This model produces pool cashflows that are closely approximating the observed historical cashflows of the deal pool.

Maturity

Initial WAM (Weighted Average Maturity) of the collateral pool was 198 months. The December 2007 pool WAM increased to 203. This is a very unusual trend comparing to the performance of US and European mortgage pools. The explanation is simple. The composition of the GPB-Ipoteka

collateral pool is different. Level-pay loans with short maturities amortize faster than with long maturities. The following diagram shows the distribution of loan maturities using bucket model.

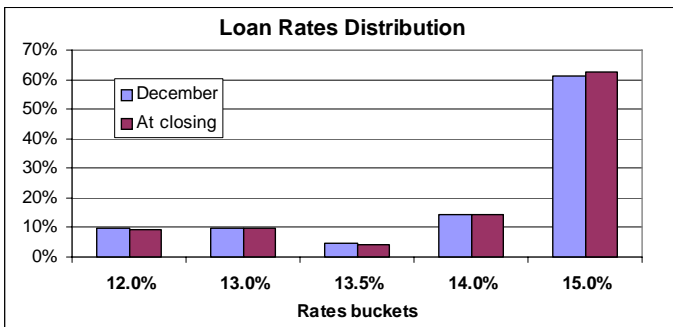


Source: VTB Analytical Dept

Mortgage pools used to secure RMBS in US, Europe, and Australia are generally homogeneous. Loans included in such pools have similar parameters: coupon, maturity, vintage, etc. In contrary to this practice the GPB-Ipoteka pool includes a blend of very different loans: rates (from 12% to 15%), maturities (from 7 to 360 months) and so on. The amortization profile of the pool with such parameters could be different from conventional pools. Accelerated amortization of loans with short maturities could therefore explain an unusual trend in the pool WAM.

Loan Rate

Let us take a look at the distribution of loan rates. Sovfintrade reviewed every mortgage loan in the pool for compliance with its origination standards. These standards allow mortgages with the following interest rates: 12%, 13%, 13.5%, 14%, and 15%. The following diagram depicts the weights of different rate buckets in GPB-Ipoteka pool.



Source: VTB Analytical Dept

As can be seen on the diagram the pool is dominated by loans with 14% rate.

Pool Loan Buckets

Now we can introduce the set of buckets that was used throughout this report to evaluate collateral pool performance and price GPB-Ipoteka bond under different scenarios. The following table depicts the set of 37 two-dimensional buckets (rate-maturity) that represents the deal collateral pool. Using bucket weights one could adjust current outstanding balances of FRMs representing buckets in a way that the total outstanding amount of buckets would match current outstanding amount of the real pool exactly.

		Term								
		68	116	128	176	184	224	244	296	360
Rate	12.0	0.17	0.41	1.04	0.60	5.81				
	13.0	0.21	0.74	1.46	1.18	10.06	0.11	0.18	0.08	0.33
	13.5		0.01				0.11	0.87	0.24	1.71
	14.0	0.91	4.40	6.35	7.69	10.04	5.31	13.80	4.14	12.03
	15.0	0.22	0.88	1.23	1.24	1.17	0.56	3.29	0.71	0.73

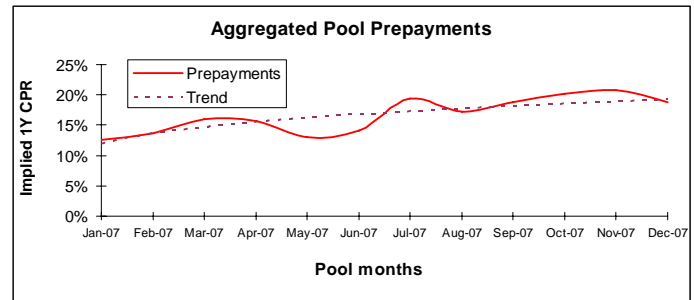
Source: VTB Analytical Dept

For example, the bucket containing 20 years to maturity loans with 14% rate have been assigned a higher weight because these loans are dominating in the deal collateral pool.

Source: VTB Analytical Dept

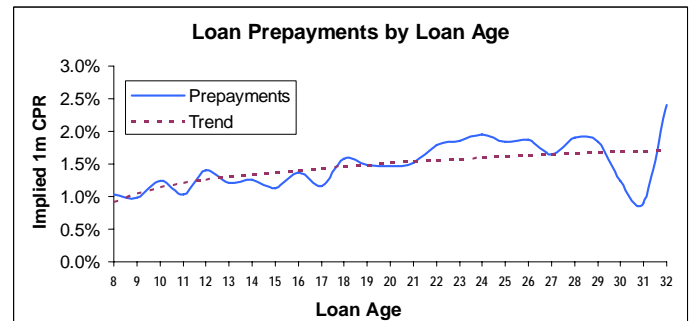
Prepayments

Since the inception of GPB-Ipoteka deal its collateral pool has paid a total sum of RUB 543M of principal including scheduled amortization, unscheduled and voluntary prepayments. There are two ways of looking at the pool prepayments. In the first one can calculate the average monthly amount of prepayments from the loans in the pool through the historical period of the pool. The implied one year CPR calculated for GPB-Ipoteka pool is depicted on the following diagram.



Source: VTB Analytical Dept

The other way to look at the prepayments is to express it as a function of loan age. One could aggregate pool's loans by the loan age and calculate average prepayments for each term. Now we can estimate averaged prepayments through the whole life of the loan. As a matter of fact we use this way of prepayment speed modeling in our calculations. GPB-Ipoteka prepayments as a function of loan age are depicted at the following diagram.

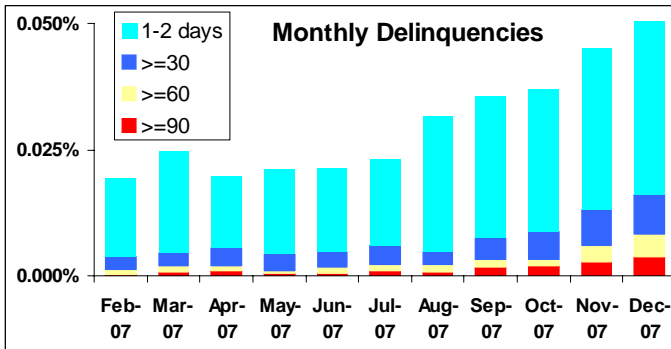


Source: VTB Analytical Dept

Two jumps at the end of the graph could be explained by the lack of statistical data for 2+ years old loans. The regular mortgage business has started in Russia only three years ago.

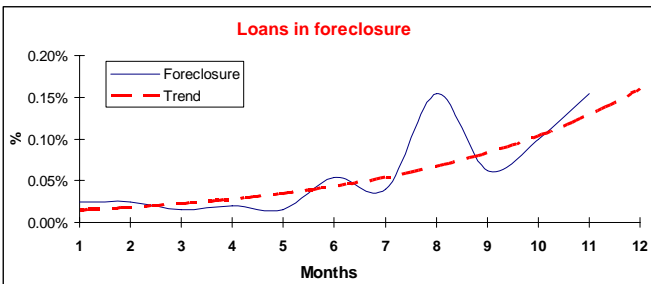
Delinquencies and defaults

Firstly we would like to percentile the plain statistical data of delinquencies in the GPB-Ipoteka collateral pool.



Source: VTB Analytical Dept

In order to estimate how delinquencies may affect the price of Class A bond we divide them into two parts. The first part would represent the amount of money that is delinquent on a monthly basis. In order to come up with an estimation of expected delinquent values we calculated the monthly delinquencies as a percentage of the current outstanding balance.



Source: VTB Analytical Dept

To estimate the expected future rate of new defaults we used the same approach as for monthly delinquencies. We calculated trend and standard deviation. Usually it is expressed in the form of MDR (Monthly Default Rate). The implied MDR rate for the GPB-Ipoteka collateral is 0.17%.

The other two important parameters in the foreclosure procedure are MTR (Months Till Recovery) and SVR (Severity Rate). MTR is time to liquidation after the loan first misses a payment. For example, 0 months to liquidation means that liquidation proceeds are received in the month the loan first becomes delinquent. In Russia a loan generally goes to foreclosure in 90 days or after it misses three consecutive periodic payments. The SVR is a measure of loss severity. Loss severity is defined as a loss amount divided by the principal balance of the loan at the time it goes into default. The loss rate should include all costs: foreclosure costs, servicer interest advances and principal advances. The higher the SVR rate, the smaller portion of loan principal balance will be repaid and the higher losses or writedowns will be.

On the US and European mortgage markets usually (but not always), servicer advances are made. If principal and interest are advanced, the amount of principal advanced each month is equal to the amount of amortization from defaulted mortgages, and the amount of interest advanced exactly compensates for the lost interest. The result is that investors receive all expected amortization and expected interest regardless of the amount of new defaults and loans in foreclosure. If principal and interest are advanced, they are

assumed to be advanced every month through to liquidation of the collateral. There is yet no practice on the Russian market to make servicer advances.

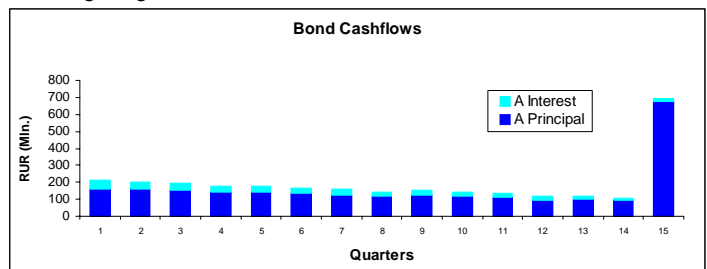
Collateral cashflows

In order to calculate our "fair value" of the price of the GPB-Ipoteka bond we had to evaluate collateral pool performance. As usual, prepayments are the other major factor affecting the collateral cashflows. Because the capital structure of the GPB-Ipoteka deal is rather simple the main structural factors affecting the bond price should be delinquencies and defaults. First we put together a static collateral pool model in the form of a portfolio of FRMs with weighted outstanding amounts (see bucket methodology above). The issue date of FRM representing each bucket was adjusted to the bucket's average loan age. We applied a prepayment speed curve based on the loan age prepayment model. We assumed that starting 32nd month from the FRM issue date the prepayment speed will stay constant until maturity with an annual 19% CPR.

We assumed that monthly delinquency; default and recovery rates will follow historical patterns and trends with some adjustment using standard deviation. We also have to estimate MTR value. The base case scenario has the following parameters:

- MTR: 18 months
- MDR: 0.17% of the pool current outstanding balance
- SVR: 0.0%

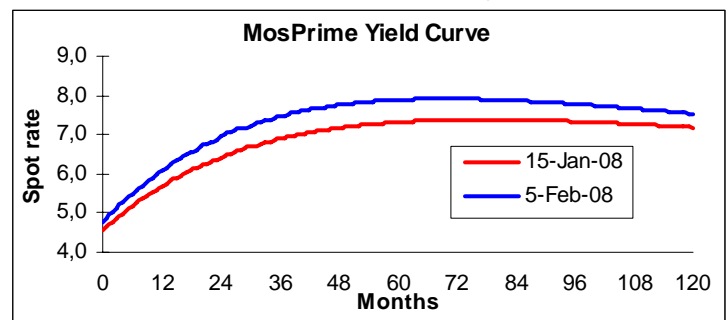
We modelled collateral pool, prepayments, delinquencies and defaults to calculate cashflows from the deal collateral pool. We reverse engineered GPB-Ipoteka's deal waterfall to estimate cashflows of the Class A bond. We assumed that the Class A bond would be redeemed early by the exercising of clean-up call when bond's current outstanding balance would drop below 20% of its face value. The expected cashflows for the bond are depicted on the following diagram.



Source: VTB Analytical Dept

Yield Curve

The Mosprime yield curve was used to discount future bond cashflows. We used the curve as of February 5th closing. The curve used is shown on the following diagram. The December 14th curve was calculated for demonstration purpose only.



Source: VTB Analytical Dept

In order to get a sense of relative value of GPB-Ipoteka Class A bond we compared it with corporate bonds and treasuries. We used comparable domestic RUB denominated bonds of Gazprom (GAZ) and Russian Railways (RZD).

Issue	Maturity	Coupon	Price	Sprd	WAL
GAZ - 6	Aug-09	6.95	100.14	117	1.51
GAZ - 7	Nov-09	6.79	100.20	78	1.74
GAZ - 4	Feb-10	8.22	102.81	65	2.03
RZD - 5	Jan-09	6.67	100.10	140	0.97
RZD - 3	Dec-09	8.33	102.75	77	1.84
RZD - 6	Nov-10	7.35	100.79	56	2.78
T25060	Feb-09	5.80	100.15	48	0.99
T25057	Jan-10	7.40	102.58	0	1.97
T25061	May-10	5.80	99.80	-30	2.25
GPB-Ip	Dec-36	8.00	98.20	345	2.03

Source: www.cbonds.info

Based on the collateral pool model and our assumptions we calculated Class A bond's and residual bond financial characteristics. The table below depicts deal tranche numbers in the most likely scenario and base assumptions.

Name	Base Price	Duration	WAL
Class A bond	98.20	1.64	2.03
Residual bond	124.20	3.01	3.40

Source: VTB Analytical Dept

Delinquency and Default Sensitivity

As we mentioned before the key structural factors that should affect GPB-Ipoteka bond our "fair value" pricing are delinquencies and defaults. Below is the table with different scenarios and assumptions. We calculated our estimation of "fair value" for Class A bond and for residual bond. From the analysis we observe that the Class A bond has very stable price and good credit protection while the residual bond value has fluctuated a lot.

MTR	MDR	Severity Rate					
		0%		10%		50%	
12	0.17%	98.24	126.76	98.23	125.49	98.20	120.40
	0.50%	98.42	117.57	98.40	114.19	98.18	99.07
18	0.17%	98.21	124.20	98.20	123.19	98.18	119.12
	0.50%	98.19	110.07	98.17	107.16	97.98	104.21
24	0.17%	98.18	121.43	98.18	120.69	98.17	117.74
	0.50%	98.11	102.31	98.11	100.18	97.73	90.62

Price of Class A bond is depicted in red, residual bond value - in blue

Source: VTB Analytical Dept

It would be interesting to compare three extreme cases:

- with zero defaults;
- when residual bond is worth nothing and SVR=100%;
- when residual bond is worth nothing and MDR=2%.

In case with no defaults the Class A bond "fair value" price is 98.22 and the residual bond value is 132.42. Price for the Class A bond looks a bit strange. It is lower than some of the prices with defaults and losses. The explanation for this is simple. If there are no defaults and delinquencies, then the all the excess spread goes towards redemption of the Class A bond. As a result Class A might have slightly shorter WAL comparing to some scenarios with defaults. In this case its total interest could be less than in scenarios with longer WAL.

Now let us take a look at the second extreme scenario. We set the severity rate to 100%, which means that the balance of each and every foreclosed loan will be lost completely. Then we calculated the implied default rate that would bring the residual bond value to zero. The resulted monthly default rate is 1.16% without losses of principal and interest.

Now let us take a look at the last extreme scenario. We multiplied the observed historical default rate by a multiple of ten and adjusted the severity rate to the level when the residual bond value is zero: with a 2% monthly default rate the Class A bond can sustain up to a 62% severity rate without losses of principal and interest.

Liquidity

Due to the novelty of domestically issued RUB denominated MBS, regular trading volumes of Class A bonds are low. To provide some liquidity Gazprombank used to take GPB-Ipoteka bonds on repo. It stopped doing this after the global liquidity crisis occurred and trading volumes of GPB-Ipoteka bond have dropped substantially.

The low liquidity of the paper is probably the highest risk related to GPB-Ipoteka bonds.

There are several legal legislative issues in the process of resolution that should help to make high quality Russian MBS more liquid:

- As of today the State Pension Fund does not have a legal right to invest in MBS. The list of financial instruments it may invest in is restricted to government papers or papers that have government guarantees. The Federal Financial Markets Service (FFMS) might remove the constraint in the nearest future. The State Pension Fund could become one of the largest institutional investors in Russian ABS/MBS;
- It is possible that some state-controlled institutional investors involved in development of Russian economy and financial market would consider buying Russian MBS;
- Driven by recent liquidity crisis the Central Bank of Russia (CBR) is considering a revision of its so-called "lombard list". This list includes securities that could be taken by CBR as collateral in repo lending. It is expected that certain MBS bonds may be included in this list.

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