Research of LCR Determinants for Russian Banks

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A B S T R A C T

The Basel III standards include a liquidity-coverage-ratio (LCR) constraint that creates a link between bank balance-sheet and month-term cash outflows. The calculation of this ratio involves great amount of components and increases operating costs for the bank, which already calculate liquidity ratio N3 for reporting needs. This research comprises collecting 2016-2017 quarterly RAS balance sheet, N3 and LCR data of Russian banks and building a regression model to determine drivers of LCR. The previous Russian liquidity ratio N3 is also collected and modeled to understand whether LCR is an excessive measure by comparing drivers and models. As a result, statistically significant drivers proved to be the same and pooled model was constructed.

Keywords: Basel III, LCR, liquidity ratio, regression

JEL codes: G10, G20, G18, G28.

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1. Introduction

The liquidity ratio shows the degree of coverage of the company's liabilities with company's assets that can be converted into cash at the dates corresponding to the maturity of liabilities. This indicator shows the solvency of any firm and enterprise. The higher this value, the solvent the company in terms of liquidity.

As a reaction to the global financial crisis, the Basel Committee on Banking Supervision (BCBS) decided that the current model of international banking regulation submitted by the BCBS in 2004 needs reformation. In 2010 an updated and up-to-date version of the recommendations on banking supervision "Basel III" were published. In latter accord, a new standard for assessing the bank's liquidity Liquidity Coverage Ratio (LCR) was established. The LCR is the ratio of the value of highly liquid assets to the value of the net expected cash outflow from bank operations within 30 calendar days. Based on these recommendations, the Central Bank of the Russian Federation (hereinafter CBR), in 2014, invited banks to assess the PKL [421-p, CBR, 2014], which was, basically, a copy of Basel's LCR. Afterwards, in 2015, CBR formulated the standard to be obligatory evaluated starting from 1Q2016 [510-p, CBR, 2015]. This standard (hereafter LCR) is based on PKL with country-specific modifications. The obligation to measure this ratio on a quarterly basis, is relevant only for systemically important banks (hereinafter - SIB). The list of SIB, banks, which have great influence on Russian financial sector, could be found on CBR website and is reviewed every year. Starting from the 1st quarter of 2016, the minimum requirement for the lower bond of this ratio was 70%, with an annual increase of 10% to 2019, similar to the requirements of the BCBS. In parallel, another liquidity ratio Current Liquidity Ratio (N3) is computed [CBR, 2012]. This ratio, similar to the LCR, evaluates bank's liquidity in 30 days' period, but methodologies of the ratios are different. Because of different methodologies and extensive number of components, both ratios take great effort for banks to calculate. Moreover, the information, used by the banks, to calculate LCR is available exclusively to the regulator. It is impossible for banks' stakeholders and potential investors to review it, as it is not included in financial statement.

The latter implies that obligation to calculate LCR add significant cost to the banks and lacks transparency for the public. Also, if financial statement contains not enough information to measure LCR, then the hypothesis rise whether it reflects the current bank's situation correctly and extensively and whether it needs to be updated. Thus, it is unclear, if regulatory benefits overweight additional cost pressure on the sector, while keeping the obligation to measure N3 unchanged. In the scope of this research, the authors will use Russian Accounting Standards (RAS) data in order to try to determine main drivers of LCR. The positive result will provide industry with the knowledge that RAS data still applicable for liquidity analysis among banks. Additionally, authors will derive drivers of N3 and conduct analysis, whether drivers of LCR and N3 are identical. Similar drivers will indicate potential similarity of both liquidity ratios, which will mean that N3 is already an exhaustive indicator.

This research contributes science in at least three ways. This is the first research to collect all available Russian LCR data and analyzing it. Secondly, the empirical drivers of LCR and N3 are extracted out of the scope of RAS data. Thirdly, the similarity of the ratios is determined.

The research is organized as follows. Section 2 describes the theoretical models of LCR and N3. Section 3 assumes which models should be evaluated for empirical study. Section 4 reviews the existing literature on the topic. Section 5 shows data inputs. Section 6 derives results and Section 7 concludes.

2. Methodology of the Liquidity Coverage Ratio and N3

The LCR is:

$$LCR = \frac{HQLA}{CF_{out} within\ 30\ days} \quad (1)$$

where HQLA – high quality liquid assets, CF_out within 30 days – projected cash outflow within one month period. In Russian version, the formula has been adjusted and is the following:

$$LCR = \frac{HQLA + LICL + FCA - A}{NetCF_{out} within\ 30\ days} \quad (2)$$

where LICL - limit (limits) of an irrevocable credit line,

FCA - highly liquid assets of a banking group (a credit institution) denominated in certain foreign currencies, in excess to the net expected cash outflow in the same foreign currency;

A - the amount of adjustment for highly liquid assets of a banking group (a credit institution);

$$netCF_{out} within\ 30\ days = CF_{out} within\ 30\ days - CF_{in} within\ 30\ days \quad (3)$$

CF_out within 30 days - projected cash outflow within one month period;

CF_in within 30 days - projected cash inflow within one month period.

High quality liquid assets are divided into liquidity groups. To get the filling of the HQLA, the brief overview of the components is listed in Annex Part 9.

The original formula for the N3:

$$N3 = \frac{1\ M\ Assets}{1\ M\ Liabilities} \quad (4)$$

Where 1M assets – assets with maturity within 1 month;

1M liabilities – liabilities with maturity within 1 month.

The detailed components of N3 could be found in the corresponding CBR documents.

There is an assumption, that N3 and LCR have the same determinants, despite different formulas.

3. Regression models

It can be mathematically deducted, that for the greater fit the following models should be evaluated:

$$\ln\left(Y_{it}^{LCR}\right) = a_0 + a_1 * \ln(HQLA_{it}) + a_2 * \ln(CF^{out30}{}_{it}) + e_{it} \quad (5)$$

$$\ln\left(Y_{it}^{N3}\right) = b_0 + b_1 * \ln(1M\ Assets_{it}) + b_2 * \ln(1M\ Liabilities_{it}) + e_{it} \quad (6)$$

Where t – element from the T dimensional vector of time periods;

i – element from the K dimensional vector of banks;

Y_{it}^{LCR} – LCR observation for the *t* time period and *i* bank;

Y_{it}^{N3} – N3 observation for the *t* time period and *i* bank;

$a_0, a_1, a_2, b_0, b_1, b_2$ – are coefficients for the corresponding variables and constant.

Although, in order to check dependence other models are assessed as well:

$$Y_{it}^{LCR} = a_0 + a_1 * HQLA_{it} + a_2 * CF^{out30}{}_{it} + e_{it} \quad (7)$$

$$Y_{it}^{N3} = b_0 + b_1 * 1M\ Assets_{it} + b_2 * 1M\ Liabilities_{it} + e_{it} \quad (8)$$

4. Literature review

The topic of our work is widely discussed, however few articles and academic works are available as LCR was introduced recently. Therefore, works about liquidity ratios in general were reviewed in the scope of the work. For example, [Riedler, Brückbauer,2017] develop an extensive agent-based (commercial and investment banks) model of the financial sector. They introduce a decision-making model, which comprises several crucial balance-sheet drivers and LCR restriction, and allow for complex dynamics to emerge. Their work can contribute to mine in following ways. Authors theoretically derive drivers of the LCR for commercial and investment banks. For commercial banks, HQLA is cash only. According to the research, drivers for outflows are deposits, short-term debt and long-term debt. Drivers for the inflows are loans. On the other hand, the model for investment banks is far more complex. For investment banks, non-bank-securities can be classified as HQLA as well. On the other hand, [Hong, Huang, Wu, 2014] manually calculated LCR and NSFR of U.S. commercial banks, according to the initial formulae. Therefore, examine links between Basel III liquidity risk measures and bank failures. They found, that both the NSFR and the LCR have limited effects on bank failures. From their point of view, the systemic liquidity risk was an important contributor to bank failures in 2009–2010. There are massive amount of articles that discuss applicability of the LCR and its effect on the global banking system.

[Hartlage, 2012] concludes that the Liquidity Coverage Ratio requirement, may work to undermine the goals of effective liquidity regulation and instead contribute to issues of systemic risk. However, opposite opinions exist. For example, [Gomes, Khan, 2011] argue, that although the new liquidity rules will result in higher costs, they will undoubtedly produce a net benefit to society by reducing the probability and impact of devastating financial crises.

5. Data

The 2016-2017 quarterly data for the research was collected from CBR website and from the published reports on the Banks' websites. The table with LCR data could be found in Annex Part 1. Balance sheet items were consolidated to the 19 variables according to the rule, which can be found in Annex Part 2. The consolidation was conducted according to the sense of the nature of included accounts for the convenience purpose. The descriptive statistic is shown below (Figure 1). The data shown is only for those bank and dates that have LCR.

Variable	Obs.	Mean	St. Dev.	Min.	Max.
LCR	75	99,24	40,40	33,47	359,55
N3	75	165,61	59,73	65,91	346,18
Cash and equivalents	69	4,13	9,51	-	36,30
Current accounts	69	9,75	14,50	0,10	57,80
Foreign bank loans with 30 days maturity	53	0,10	0,36	-	2,45
Local bank loans with 30 days maturity	69	4,03	6,75	-	3,88
Issued deposits certificates	30	0,53	1,08	-	2,90
Issued time bills	51	0,26	0,48	-	1,78
Issued bills with 30 days maturity	32	0,10	0,19	-	0,59
Issued time bills	61	5,16	5,93	-	22,20
Foreign corporate loans with 30 days maturity	62	1,06	2,34	-	8,03
Local corporate loans with 30 days maturity	67	2,13	2,34	-	9,57
PI loans with 30 days maturity	69	5,41	2,10	-	46,00
Liabilities to CBR with 30 days maturity	21	6,70	13,40	-	50,00
Local SME loans with 30 days maturity	55	0,04	0,08	-	0,33
Foreign government securities	35	-	-	-	-
Russian government securities	69	16,20	29,00	0,02	111,00
Time foreign corporate loans	51	0,14	0,17	-	0,84
Time local corporate loans	62	11,30	13,70	-	50,70
Time foreign PI loans	31	0,08	0,02	-	0,05
Time local PI loans	48	0,79	1,97	-	7,20

Figure 1

It can be deducted, that there are a total of 75 observations of LCR. Although for some of the banks, that have reported LCR, there is no accounting data available, as there is only 69 cash and equivalents observations. LCR has a mean in 99% among all time periods, which is consistent with the minimum lower bond of 70% in 2016 and 80% in 2017. N3 mean is 156% with minimal lower bond of 50%. That shows, that SIB in Russia are solvent. The difference of maximum and minimum

observation is high for every variable. The latter implies, that size of the banks are very diverse and that some banks might not use one or another way of classification, as there are sometimes zero values are occurred.

5.1 LCR and N3

From the collected data, it can be seen that means of both ratios act more less the same except the end of 3rd quarter of 2016 (Figure 2). N3 exposes relative stability of 1M assets and 1M liabilities, therefore we can assume, that projected 1M cash outflow was drastically lower than average. One of the assumptions why we observe such phenomena is that agents anticipated appreciation of rubles as a result of political actions (USA president elections, Syria actions). Mean of LCR fluctuates around 100% (minimal lower bond 70% for 2016 and 80% for 2017), while mean of N3 fluctuates around 350% (minimal lower bond 50%) with greater dispersion. It can be assumed, that LCR line is less smooth due to the limited amount of observations. Figure 3 exhibits scatter plot of codependence of N3 and LCR.

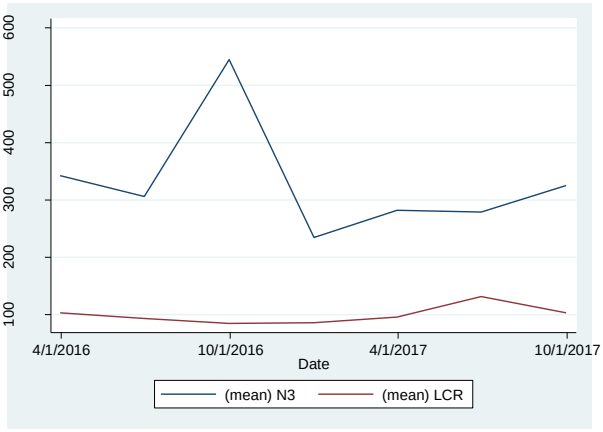


Figure 2

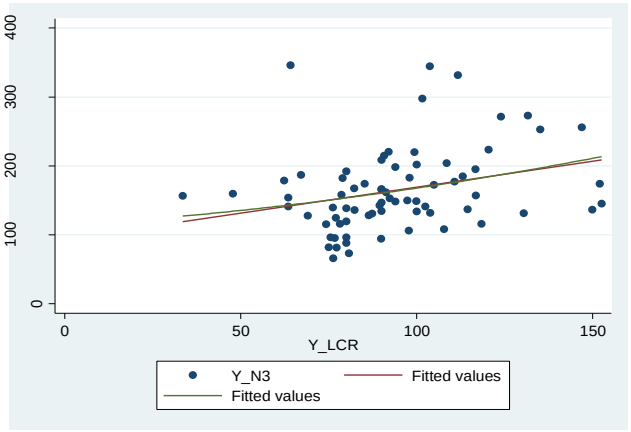


Figure 3

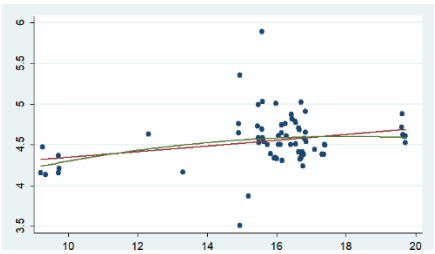
5.2 Balance sheet items

Balance sheet items are combined into 19 variables. The list of variables can be found in Annex 2. The consolidation of accounts was conducted for convenience reasons. All account were consolidated to the 19 variables according to the sense of the nature of accounts.

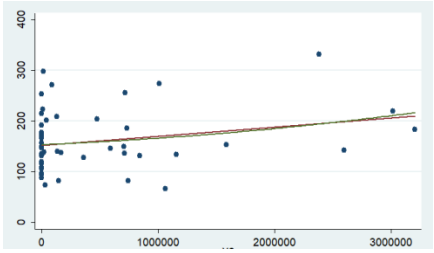
From the literature review it can be deducted that LCR is affected by loans, short-term debt, long-term debt, equity, deposits and cash, but, in the scope of this research, there are only short-term assets and liabilities considered. The selection process involved graphical analysis of the correlation of ratios and variables. As the nature of dependence in not obvious, either it linear, logarithmic or appears in some other form, several variations of dependence was analyzed. Following pairs were analyzed:

1) LCR or N3 and Variables;
2) Ln(LCR) of Ln(N3) and Variables;
3) LCR or N3 and ln(Variables);
4) Ln(LCR) or ln(N3) and ln(variables).

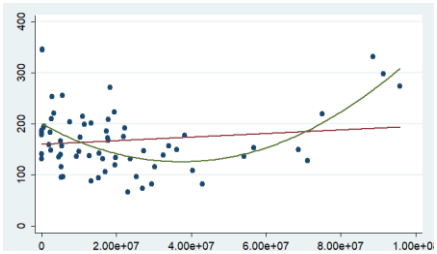
The best interpretable results are represented on Figures 4. For example, it can be seen, that dependence of N3 and Local corporate loans with 30 days maturity is clearly quadratic. N3 indicates codependence with foreign bank loans with 30 days maturity, local corporate loans with 30 days maturity, issued time bills, current accounts, local bank loans with 30 days maturity, time local PI loans, russian government securities. LCR exhibits linkage to cash and equivalents. Based on this analysis the list of all variables shortened to influential ones, which are cash and equivalents, current accounts, foreign bank loans with 30 days maturity, local bank loans with 30 days maturity, local small and medium enterprises loans with 30 days maturity, foreign government securities, Russian government securities, time local private individuals loans.



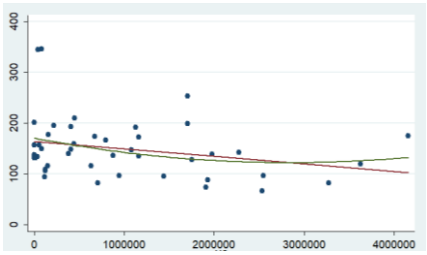
(a) Ln(LCR) ~ Cash and equivalents



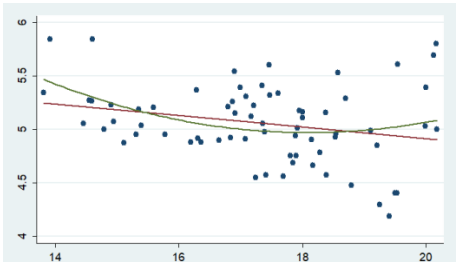
(b) N3 ~ Foreign bank loans with 30 days maturity



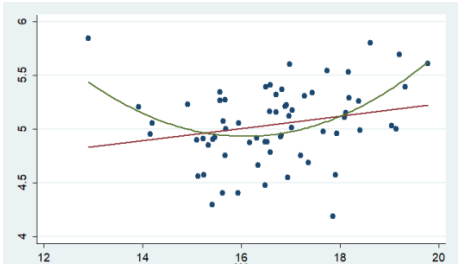
(c) N3 ~ Local corporate loans with 30 days maturity



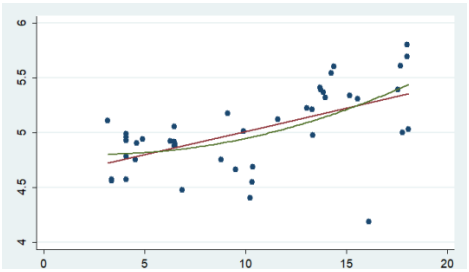
(d) N3 ~ Issued time bills



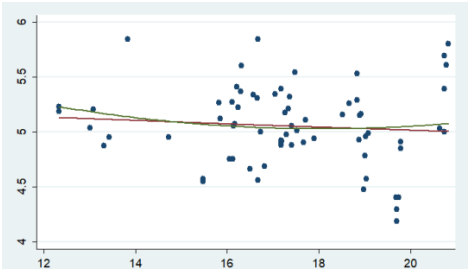
(e) Ln(N3) ~ Current accounts



(f) Ln(N3) ~ Local bank loans with 30 days maturity



(g) Ln(N3) ~ Time local PI loans



(h) Ln(N3) ~ Russian government securities

Figure 4

6. Results

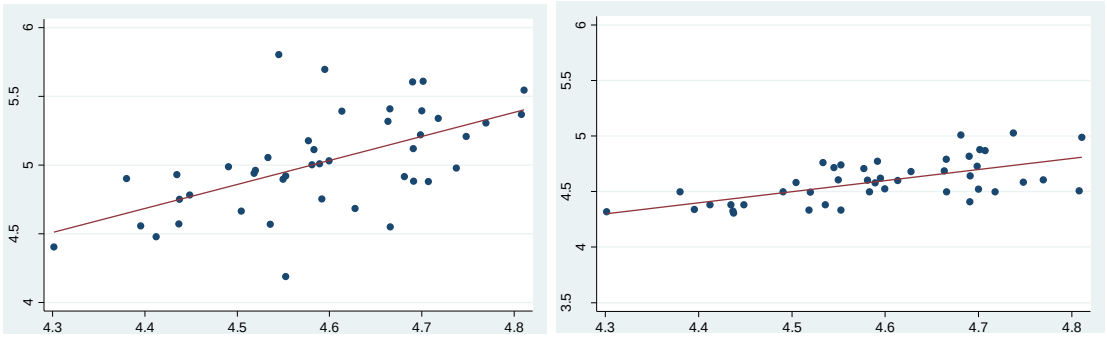
The empirical analysis on significant variables has been conducted. The answers on the initial question and hypothesis were found.

6.1 Model fitting

Best fit of the model includes such drivers as Current Account and Local bank loans with 30 days maturity and time local private individuals loans with 30 days maturity. Original information can be seen at Annex part 3. The R2 value (0.2451 for N3 model and 0.1696 for LCR model) is relatively high for the empirical research. All coefficients of variables for both models are statistically significant for at least on 1.5% level of significance. Therefore, it can be concluded, that empirical models are:

$$LCR = \frac{LBL^{0.13}}{CA^{0.08}} \tag{9}$$

$$N3 = \frac{LBL^{0.16}}{CA^{0.15}} \tag{10}$$



(a) Ln(N3) ~ ln(Variables) (b) Ln(LCR) ~ ln(Variables)

Figure 5

From the previous step, it was highlighted that drivers for LCR and N3 were found and they are the same. Chow test was used to check on structural difference. From the Figure 5a (for N3 model) and Figure 5b (for LCR model) it can be seen, that little structural difference is the case.

The regression used in Chow test is presented in Annex part 4. The results of Chow test showed, that there is no structural difference between models of LCR and N3 as the probability of mistake if one reject null hypothesis is 90.98%.

Therefore, two models (9) and (10) could be consolidated into one model. Which is:

$$Liquidity\ ratio = \frac{LBL^{0.1944}}{CA^{0.1451}} \quad (11)$$

7. Conclusion

Although, the research faced many constraints and have technical limitations the results are achieved. The constraints are:

- Small LCR Sample;

  Due to the recent publication of LCR document, it is only possible to collect up to 80 LCR observations (2 years quarterly by 10-11 SIB). This implies that population is relatively small for the empirical research, although results were obtained.
- Lack of the analysis of components of variables;

  RAS balance sheet account were consolidated into 19 variables according to the sense of their nature. This is convenient for the research, as the decision of how to allocate exposure among the account codes is primarily banks' concern. However, it is possible, that some accounts influence liquidity ratios more or less, which is unclear from this research.
- Lack of the off-balance variables;

  This research includes only on-balance accounts. In reality, off-balance exposure could be as important as on-balance.
- No analysis of the long-term assets and liabilities;

  As it was indicated, in literature review, theoretical modelling of LCR includes long-term debt (liability). It is possible, that long-term assets are significant for the simulation of LCR.
- Goodness of fit without goodness of forecast.

  In the scope of the research, the best fit of the LCR and N3 was found. To accept the predictability of the model the goodness of forecast should be implemented. In the scope of this research there is no goodness of fit part, because of the limited amount of data available.

This research proved, that LCR and N3 could be explained by means of RAS accounting reports. Therefore, accounting data is still enough for the stakeholders, banks and regulators to determine the latter liquidity ratios.

Secondly, the determinants of LCR and N3 are identical. That implies, that LCR and N3 shows similar information and therefore, big amounts of operational cost, which banks undergo, while calculating LCR can be avoid. Moreover, the research showed that the empirical model does not include liabilities. However, this may indicate that banks' liquidity management is stable and consistent and covers their liabilities and cash outflows in constant proportion. Two determinants of liquidity ratios are assets, which are current account and foreign bank loans. Both shows the importance of the interbank lending market impact on liquidity of Russian banking sector.

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Annex

1. LCR data

Bank name	31.03.2016	30.06.2016	30.09.2016	31.12.2016	31.03.2017	30.06.2017	**Average**
Alfa Bank	77%	79%	78%	86%	91%	90%	**84%**
Otkritie Bank	90%	98%	118%	108%	97%	111%	**104%**
VTB	81%	76%	75%	77%	69%	82%	**77%**
Gasprombank	80%	80%	80%	80%	90%	90%	**84%**
Promsvyazbank	74%	76%	77%	76%	90%	90%	**80%**
Raiffeisen Bank	82%	120%	91%	124%	90%	100%	**101%**
Rosbank	130%	117%	104%	100%	114%	150%	**119%**
Rosgosstrah Bank	211%	117%	33%	48%	94%	360%	**144%**
Rosselkhoz Bank	85%	80%	105%	94%	135%	152%	**109%**
Sberbank	92%	100%	99%	102%	112%	132%	**106%**
Tinkoff Bank	87%	67%	62%	64%	64%	79%	**70%**
Unicredit Bank	153%	113%	98%	92%	109%	147%	**119%**
Avarage	**104%**	**94%**	**85%**	**86%**	**96%**	**132%**	**99%**

2. Data aggregation

Variable	Definition	Balance sheet items
Y_LCR	Liquidity coverage ratio	-
Y_N3	N3 Russian liquidity ratio	-
X1	Cash and equivalents	20202, 20203, 20209, 20210, 20206, 20207, 20208, 20302, 20303, 20305, 20308, 20311, 20312, 20315, 20316, 20317, 20318, 20319, 20320, 20401, 20402, 20403
X2	Current accounts	30102, 30104, 30106, 30224
X3	Foreign bank loans with 30 days maturity	32101, 32102, 32103, 32104, 32110, 32301, 32302, 32303, 32304
X4	Local bank loans with 30 days maturity	32001, 32002, 32003, 32004, 32010, 32201, 32202, 32203, 32204
X5	Issued deposits certificates	52101, 52201, 52403, 52404
X6	Issued time bills	52301, 52406
X7	Issued bills with 30 days maturity	52302
X8	Issued time bills	52001, 52002, 52003, 52004, 52005, 52006, 52401
X9	Foreign corporate loans with 30 days maturity	45601, 45607, 45608, 47301, 47302
X10	Local corporate loans with 30 days maturity	45101, 45103, 45109, 45201, 45203, 45209, 45301, 45303, 45309, 47001, 47002, 47101, 47102, 47201, 47202

X11	PI loans with 30 days maturity	45502, 45508, 45509, 45701, 45707, 45708
X12	Liabilities to CBR with 30 days maturity	31201, 31202, 31203, 31210, 31213, 31214, 31215, 31216
X13	Local SME loans with 30 days maturity	45401, 45403, 45409
X14	Foreign government securities	50108, 50209, 50309
X15	Russian government securities	50104, 50105, 50116, 50205, 50206, 50214, 50305, 50306, 50313
X16	Time foreign corporate loans	42502, 44002
X17	Time local corporate loans	42002, 42102, 42109, 42202, 43702, 43802, 43902
X18	Time foreign PI loans	42602, 42610
X19	Time local PI loans	42302, 42310

3. LCR and N3 original regression results

Source	SS	df	MS
Model	2.41090132	2	1.20545066
Residual	6.3532847	66	.096261889
Total	8.76418601	68	.128885088

Number of obs	= 69
F(2, 66)	= 12.52
Prob > F	= 0.0000
R-squared	= 0.2751
Adj R-squared	= 0.2531
Root MSE	= .31026

Y_N3	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X2	-.1449486	.0308283	-4.70	0.000	-.2064992	-.0833979
X4	.1601175	.0361631	4.43	0.000	.0879155	.2323196
_cons	4.915353	.464854	10.57	0.000	3.987242	5.843464

Source	SS	df	MS	Number of obs =	69
				F(2, 66) =	6.74
Model	1.20834732	2	.604173661	Prob > F =	0.0022
Residual	5.91571426	66	.089632034	R-squared =	0.1696
				Adj R-squared =	0.1445
Total	7.12406158	68	.104765612	Root MSE =	.29939

Y_LCR	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X2	-.0747416	.0297477	-2.51	0.014	-.1341348	-.0153483
X4	.1281061	.0348956	3.67	0.000	.0584348	.1977774
_cons	3.724939	.4485605	8.30	0.000	2.82936	4.620519

4. Chow test results

Source	SS	df	MS	Number of obs =	69
				F(5, 63) =	13.62
Model	6.3156281	5	1.26312562	Prob > F =	0.0000
Residual	5.84201537	63	.092730403	R-squared =	0.5195
				Adj R-squared =	0.4813
Total	12.1576435	68	.178788875	Root MSE =	.30452

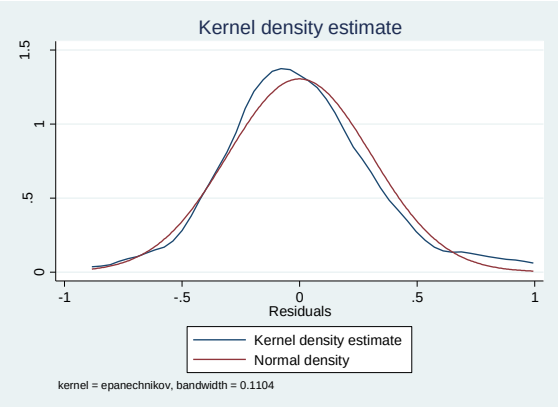
pool	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X2	-.1489683	.0428507	-3.48	0.001	-.2345986	-.0633381
X4	.1716819	.0515944	3.33	0.001	.0685787	.2747852
sample2	-.8374834	.9207867	-0.91	0.367	-2.677529	1.002562
pX2	.0054513	.0605184	0.09	0.929	-.115485	.1263877
pX4	.0182995	.0712798	0.26	0.798	-.1241418	.1607408
_cons	4.790839	.6856853	6.99	0.000	3.420606	6.161071

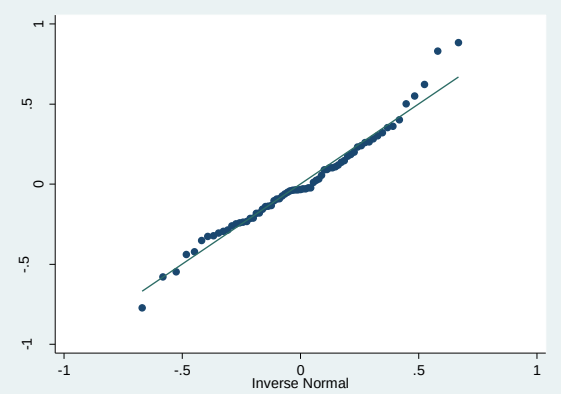
```
( 1)  pX2 = 0
( 2)  pX4 = 0

      F(  2,     63) =    0.09
           Prob > F =    0.9098
```

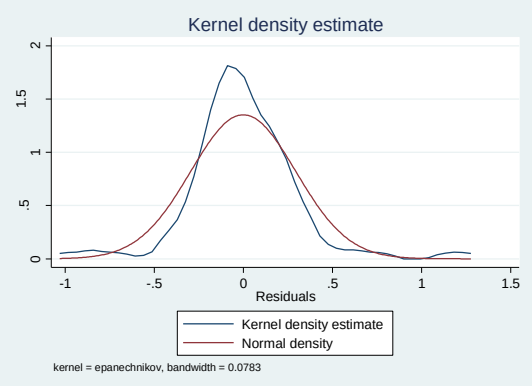
5. Normality of the residuals

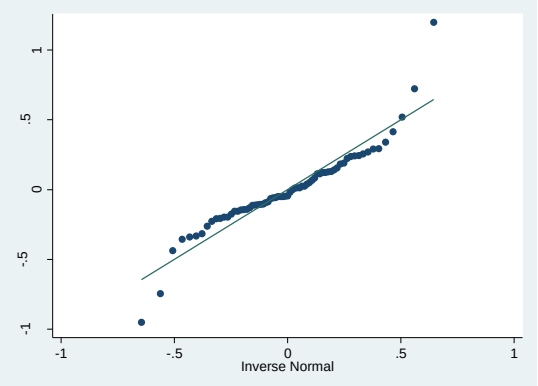
N3





LCR





6. Heteroscedastity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of Y_N3

         chi2(1)      =     0.09
         Prob > chi2  =   0.7687
```

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of Y_LCR

         chi2(1)      =     2.80
         Prob > chi2  =   0.0943
```

7. Final model

Source	SS	df	MS
Model	2.99411377	2	1.49705688
Residual	9.1635297	66	.138841359
Total	12.1576435	68	.178788875

Number of obs	= 69
F(2, 66)	= 10.78
Prob > F	= 0.0001
R-squared	= 0.2463
Adj R-squared	= 0.2234
Root MSE	= .37261

pool	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X2	-.1451186	.0370238	-3.92	0.000	-.2190391	-.0711981
X4	.1944601	.0434309	4.48	0.000	.1077476	.2811726
_cons	4.122106	.5582758	7.38	0.000	3.007472	5.23674

8. Other examples

Source	SS	df	MS
Model	2.54464695	3	.84821565
Residual	3.19443352	40	.079860838
Total	5.73908047	43	.133466988

Number of obs	= 44
F(3, 40)	= 10.62
Prob > F	= 0.0000
R-squared	= 0.4434
Adj R-squared	= 0.4016
Root MSE	= .2826

Y_N3	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X2	-.1294014	.0496715	-2.61	0.013	-.2297913	-.0290115
X4	.1370344	.0570501	2.40	0.021	.0217319	.2523369
X19	.0325434	.0108683	2.99	0.005	.0105778	.0545091
_cons	4.672684	.8070418	5.79	0.000	3.041592	6.303777

Source	SS	df	MS
Model	.626979972	3	.208993324
Residual	1.00329851	40	.025082463
Total	1.63027848	43	.037913453

Number of obs	= 44
F(3, 40)	= 8.33
Prob > F	= 0.0002
R-squared	= 0.3846
Adj R-squared	= 0.3384
Root MSE	= .15837

Y_LCR	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
X2	-.1152271	.0278372	-4.14	0.000	-.1714882	-.0589661
X4	.0761485	.0319723	2.38	0.022	.01153	.140767
X19	.0115069	.0060909	1.89	0.066	-.0008033	.023817
_cons	5.243882	.4522871	11.59	0.000	4.329776	6.157988

9. Assets classification

1st level HQLA include:

1) Cash:

   cash currency and checks (including traveler's checks); funds on the accounts of credit institutions (branches) in the cash maintenance of structural units, as well as funds for cash service of credit institutions (branches), which is carried out at the place of opening of the correspondent account (sub-account).
2) Funds in the Bank of Russia and in the authorized bodies of other countries in terms of the following assets:

   Amounts deposited in the Bank of Russia institutions to obtain cash the next calendar day;

   On correspondent and deposit accounts in the Bank of Russia with the remaining maturity of one day;

   Amounts of overpayment to be returned to the bank from the accounting accounts, obligatory reserves in the Bank of Russia and in the authorized bodies of other countries;
3) High rated securities;

2nd level HQLA include:

1) Investment grade securities, except high rated securities;
2) Housing bonds with mortgage cover issued by legal entities - non-residents having a long-term credit rating on the international scale, assigned by rating agencies at a level no lower than "AA";
3) Ordinary shares included by the exchange in the lists for calculation The MICEX Index 50 and the RTS Index 50.