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„Excessive risk-taking in the Russian banking sector: the cases of FC Otkritie and B&N Bank“

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ARCO	Agency for the Restructuring of Credit Organizations
BSCF	Banking Sector Consolidation Fund
bn	billion
CAR	Capital Adequacy Ratio
CBR	The Central Bank of Russian Federation
DIA	Deposit Insurance Agency
DIS	Deposit insurance system
EUR	Euro
FAS	Federal Antimonopoly Service
FFMS	Federal Financial Markets Service
GDP	Gross Domestic Product
IFRS	International Financial Reporting Standards
LCR	Liquidity coverage ratio
mio	million
NPF	Non-government pension fund
OFZ	*Obligatsii Federalnogo zaima* (Federal Loan Bonds)
trln	trillion
RAS	Russian accounting standards
RUB	Russian ruble
SIFI	Systemically important financial institutions
USD	U.S. dollar
VEB	Bank for Development and Foreign Economic Affairs

1. Introduction

After the collapse of the Soviet Union and the dismantlement of the planned economy the Russian banking system experienced dramatic changes and went through the periods of rapid development interrupted by full-scale financial crises. It represents a relatively young and dynamic banking landscape and its history is full of bankruptcies of financial institutions as well as rehabilitation of troubled entities.

In this sense, the new page in the Russian history provides rich material for the analysis of banking development as well as failures of financial institutions that, in their turn, are closely linked with the concept of risk-taking.

Although many Russian banks failed and were consequently liquidated or put under rehabilitation during the stressful period caused by the default on sovereign debt in 1998 and global financial crisis in 2008-2009, there are two cases of large scale that took place only recently– in August-September 2017 FC Otkritie Bank and B&N Bank, privately-owned entities ranked among 15 largest Russian credit institutions, were taken over by the Central Bank for the financial rehabilitation. It is also remarkable that at that period the Russian economy was not already showing any signs of the crisis and was actually in the recovery stage.

So, the main purpose of this study is to analyze the risk-taking of Russian banks on the basis of FC Otkritie and B&N Bank cases and answer the question whether the increase in the risk appetite led in the end to the economic failure of these institutions or whether other factors might have played a decisive role.

The paper is structured in the following way. First, the overview of the development and structure of the Russian banking system is presented with the separate section focused on the role of Central Bank of Russia as well as currently available mechanisms of financial recovery. Second part is devoted to the existing research on bank risk-taking with the specific focus on Russian banks and also presents the list of risk indicators that were applied for the analysis of FC Otkritie and B&N Bank. Third section provides the assessment of FC Otkritie and B&N Bank cases that are first analyzed separately, followed by their comparison. At the moment when this paper is being written the financial rehabilitation of both institutions is going on and, therefore, most recent developments are presented too.

2. Russian banking sector

Before moving to the main part of the paper it is crucial to give an overview of an economic and legal environment where Russian banks operate.

This section is structured in the following way. First, the chronological overview of the Russian banking sector is presented, covering the period from the collapse of the Soviet Union and emergence of first commercial banks until two most recent events that are the main topic of this paper – economic failures of FC Otkritie Bank and B&N Bank as well as their subsequent takeover and rehabilitation by the regulator. This time period of over 25 years includes several significant events that shaped the Russian banking system – among others, the debt crisis in 1998; rapid expansion at the beginning of XXI century that coincided with economic growth and high commodity prices; global financial crisis in 2008-2009; the start of banking regulation tightening accompanied by the clean-up of the sector in 2013; annexation of Crimea followed by increasing tensions with Western economies as well as the currency crisis in 2014.

Next part of this section is focused on the structure of the Russian banking system – its size and institutional framework as well as the number and classification of banks. Besides that, the development of the asset and funding structure as well as sector concentration are covered too.

The picture of the Russian banking system is incomplete without understanding the role and functions of its regulator, the Central Bank of Russia (CBR). The role of CBR in financial regulation and supervision has increased over time, having received new impulse with the creation of megaregulator on the basis of the Central Bank in 2013.

The last part of this section is devoted to the rehabilitation mechanisms of troubled credit institutions in Russia – there are two types of rehabilitation procedures at the moment. First one was the only available option until 2017 that included the participation of Deposit Insurance Agency (DIA). The second mechanism came into existence in spring 2017 and implies the active participation of CBR through specially created Banking Sector Consolidation Fund (BSCF). The new mechanism remained idle for a short time because it has been applied for the rehabilitation of FC Otkritie Bank already in August 2017 and shortly after, at the end of September, for B&N Bank.

2.1 Russian banking sector: history and development

During the last 30 years, the Russian banking system with the whole economy experienced radical transformations that were associated, first of all, with the collapse of the Soviet Union, dismantlement of the planned economy and start of the transition period towards the market system.

Before the reforms in the late 80s, the Soviet banking system played a rather passive role and its main functions included government debt financing and money channeling towards state corporations (Johnson, 1994). It was a monobank structure with Gosbank as a core institution that, in its turn, controlled three other specialized entities each having a designated function: Stroibank providing funds for government investments; Sberbank acting as a household savings banks; and Vneshtorgbank (Foreign Trade Bank) in charge of financing trade between the members of the Soviet block and Western economies (Johnson, 1994).

In 1987-1988 massive reforms took place and, as a part of them, the two-tier banking system was established with the Central Bank, Gosbank, being responsible for the monetary policy and certain commercial banking activities. The second tier of banks comprised five so-called *spetsbanki* that took over most of other banking functions. Two of them – former Vneshtorgbank that was renamed into Vnesheconombank as well as Sberbank – remained under control of the Central Bank and did not have substantial adjustments to their functions, while former Stroibank transformed into three new entities – Promstroibank, Agroprombank, and Zhilsotsbank. The focus of Promstroibank was construction and infrastructure; Zhilsotsbank covered light industry, while Agroprombank (in 1992 being renamed in Rosselkhozbank, or Russian Agricultural Bank) provided financing for agricultural segment (Johnson, 1994; Berger et al, 2010; Berkowitz et al, 2012).

December 25, 1991, was officially the last day of the Soviet Union, and the next day the Russian Federation emerged as a new state (Berkowitz et al, 2012).

In January 1992 the Russian government launched market reforms and subsequent years for the local banking system was characterized by unsystematic development, massive and spontaneous withdrawal of state, excessive number of banks as well as general regulatory weakness (Vernikov, 2012; Karminsky and Kostrov, 2014).

The privatization that was one of the key components of that period was mostly unorganized, and it allowed former top managers and other insiders of Soviet state enterprises to acquire their assets and infrastructure with no serious complications and for the prices well below the market. That happened, for instance, with many local divisions and branches of spetsbanki – mainly Promstroibank, Agroprombank, and Zhilsotsbank – which, as a result, were transformed into private commercial banks (Johnson, 1994).

In addition to the structural transformation of former state banks, a large number of new commercial institutions was founded by individuals, local and municipal governments, enterprises as well as corporations due to prevailing weak legal and supervisory system. Many of these banks, however, were operating mainly as pocket banks serving shareholders' interests, being relatively small by size and receiving funds from their owners or trying to attract funds from the population by offering deposit rates well above market average (Johnson, 1994; Clayes and Schoors, 2007; Barisitz, 2008). Berkowitz et al. (2012) also point out that the participation of former *spetsbanki* and commercial banks in lending towards private sector was very modest at that time – main focus was on speculation activities.

So, the number of banks has been growing aggressively – from 6 institutions as of end-1998 it rose to 1.700 banks at the end of 1991 and then reaching absolute-high of 2.456 banks by the end of 1994 (Barisitz, 2008; Berger et al., 2010). The number of banks started to decline in 1995 following the interbank money market crisis the same year and intensified regulation from the Central Bank (Clayer and Schoors, 2007; Berger et al., 2010). Then the banks got a new hit from the Russian debt crisis in 1998. This year is also considered by some researchers as the end of first formation period of the Russian banking sector (Karminsky and Kostrov, 2014).

Despite its rapid development at first glance, the Russian banking sector remained relatively small in relation to the whole economy in 1998. For instance, total assets of Russian banks accounted only for 35% of GDP as of mid-1998 (Komulainen, 1999; Barisitz, 2008). At the same time, banks remained primarily exposed towards sovereign risk – in spring 1998, approximately one third of their assets was represented by sovereign securities, while their lending towards private sector remained very low (ca. 35-40% of total assets) (Komulainen, 1999). Massive investments into sovereign debt were one of the channels via which local banks were affected by the sovereign debt

crisis. In August 1998 the Russian government defaulted on its debt, conducted the ruble devaluation, stopped payments on the debt denominated in rubles and announced a 90-day moratorium on any payments from commercial bank to foreign investors (Chiodo and Owyang, 2002; Barisitz, 2008).

Separate research might be devoted to the analysis of causes and consequences of the Russian debt crisis, and there is already a vast amount of literature focused on this event. In general, a combination of factors including chronical state budget deficit and weak financial regulations led to the default, while the trigger was the Asian crisis accompanied by the decline in prices for commodities which were and still actually are the significant share of Russian exports (Komulainen, 1999).

As a result of the debt crisis, banking supervision has been strengthened and the cleaning of the sector has been conducted – until the end of 1999 the number of banks declined by about 250 that included license withdrawals from several sizable credit instituttions as Promstroibank and Mosbusinessbank, two successors of former state banks (Clayes and Schoors, 2007; Barisitz, 2008). For financial cleaning and managing the rehabilitation processes of troubled banks, the Agency for the Restructuring of Credit Organisations (ARCO) was established, and that is considered to be first systemic state attempt to participate in recovery processes (Leonov and Zaernyuk, 2015; Clayes and Schoors, 2007). The agency participated all together in the financial rehabilitation of 21 institutions, but in the early 2000s the necessity for banking sector cleaning decreased and ARCO was liquidated in 2004.

The lessons from the 1998 crisis were learned at least partially and the period from 2000 and until the outbreak of the global financial crisis in 2008 is viewed as the rapid development of the Russian economy, in general, as well as of the banking sector, in particular (Karminsky and Kostrov, 2014). The banking system fully recovered from the crisis by the end of 2001 and went through the transformation - traditional banking functions gained more importance and banks started to play a more significant role as financial intermediaries (Barisitz, 2004; Egorov and Kovalenko, 2013). In addition to a favorable macroeconomic situation, it became possible thanks to the banking sector reforms. Among others, new general bankruptcy law was approved in October 2002 that improved earlier 1998 legislation, increasing the transparency of bankruptcy proceedings. Strengthening

creditors' rights and security, regulation improvement on banks' rights over pledged collateral and the introduction of limited reporting requirements based on IFRS standards are other characteristics of this period (Barisitz, 2004; Berglof and Lehmann, 2009).

Despite all these reforms, the trust of the population towards the banking system remained relatively weak and found its confirmation in the liquidity crisis in 2004. The trigger was the intervention of the Central Bank in Sodbiznesbank in May 2004 and shortly after in Novocherkassk City Bank that further gave rise to the rumors about the list of weak banks targeted by the Central Bank. As a result of uncertainty and mistrust governing the sector, the interbank market almost ceased to function in June 2004, and the deposit outflow from the banks has started. The first victim was Guta-Bank, at that time 22nd largest bank in Russia that collapsed on July 6. After that, Alfa-Bank began to experience liquidity problems, but CBR stepped in at this point (Camara and Montes-Negret, 2006; Barisitz, 2008).

The package of measures launched by the CBR included the cut in minimum reserve requirement for deposits from 7% to 3.5%, freeing up additional liquidity for banks; the acquisition of Guta-Bank by VTB, one of the largest state-owned banks; and dispelling the rumors about systemic problems with clear message to the public about the isolated nature of financial difficulties inside few banks (Camara and Montes-Negret, 2006). In addition to that, on July 10, the Russian parliament passed a special law providing an interim limited guarantee for all bank deposits of private individuals up to RUB 100.000. This guarantee applied to deposits within the whole banking system, irrespective of whether banks qualified for the recently established deposit insurance system (DIS) or not (Camara and Montes-Negret, 2006; Barisitz, 2008). These measures allowed to calm down the market.

These events bring us to another milestone of the Russian banking system, and that is the introduction of explicit deposit insurance. It is worth noting out two specific features of the banking sector prior to the introduction of deposit insurance system (DIS). First of them was the existence of implicit full state guarantee for depositors of Sberbank, the largest state-owned bank in the country. The second one, as already mentioned, was generally low trust towards private banks that was caused by numerous bankruptcies in the system. Taking into account these facts, it was not surprising that at the beginning of 2004 Sberbank accounted for 64.5% of total population deposits (Turbanov, 2010).

On December 23, 2003, the federal law "On insuring natural persons' deposits made with banks of the Russian Federation" was approved and the deposit insurance system came into existence with clearly set-up rules for the banks willing to enter the system. The participation of banks in the DIS was compulsory if they wanted to attract funds from the population – the entities that failed to enter the DIS with the first application could not attract new retail funds, however, kept the right to serve existing ones and could apply for DIS membership again in 2 years after the initial rejection (Fungacova and Solanko, 2008; Chernykh and Cole, 2011; Oskolkova, 2016).

One of the primary functions of the deposit insurance system was to improve the protection of individual depositors' interests and rights. The second function was the stabilizing one – the existence of the system should prevent the massive outflow of deposits when negative news hit the market. Besides that, DIS should facilitate the attraction of population savings into the domestic banking system (Camara and Montes-Negret, 2006; Turbanov, 2010).

In order to secure the functioning of DIS, the Deposit Insurance Agency (DIA) was established in January 2004, and its initial tasks included the operational management of the Deposit Insurance Fund, calculation of deposit insurance premium, collection of payments from banks-members as well as distribution of payouts to depositors in case of bank failures (Camara and Montes-Negret, 2006).

According to DIA annual report (2016), at the end of 2004, the number of banks participating in DIS stood at 381, while their number increased to 934 entities towards the end of 2006. Most of the banks that were rejected were relatively small and in 2006-2007 CBR gradually revoked the licenses from them in order to channel the remaining deposits into DIS (Fungacova and Solanko, 2008).

After the establishment of DIS, the initial insured volume of deposit was RUB 100.000, however in the subsequent years it increased several times – first to RUB 190.000 in August 2006, then to RUB 400.000 in March 2007 and to RUB 700.000 in October 2007. The last increase from RUB 700.000 to RUB 1.4mio took place in December 2014 that became effective for all insurance case after December 29, 2014 (DIA, 2007; 2008; 2014).

Alongside with the creation of the deposit insurance system, the period between 2004 and 2008 was characterized by general stability, continuing reforms (for instance, at the beginning of 2007

the level of minimum paid-in capital for banks was increased from EUR 1mio to 5mio) and growing presence of foreign banks in the Russian sector. A number of credit institutions entered the market, including Banca Intesa in 2005 (via purchase of 75% stake in KMB Bank); Raiffeisen Bank (acquisition of Impeksbank) and OTP Bank (purchase of Investsberbank) in 2006; Societe Generale (starting with the acquisition of 20% stake in Rosbank in 2006 and then increasing it to 50% in 2007); KBC Bank (purchase of Absolut Bank). The year 2007 was also marked by initial public offerings for minority stakes of Sberbank and VTB Bank (Barisitz, 2008).

This period for the banking sector came to an end in 2008 with the outbreak of the global financial crisis that affected Russia in two ways. The first impact was the liquidity shortage, early signs of which appeared in the Russian interbank market in September 2008, accompanied by a reversal of capital flows as well as stock market meltdown. Secondly, the economic downturn worldwide resulted in lower demand for commodities which in turn led to a sharp decline of the oil price (from USD 140 per barrel in July 2007 to USD 90 per barrel in mid-September) (Barisitz, 2008; Fidrmuc and Süß, 2010).

As Barisitz (2008) and Fidrmuc and Süß (2010) point out, especially small and medium-sized credit institutions were in a risk zone because of their high reliance on short-term foreign borrowing as a funding source due to their weak deposit base given the domination of state-owned banks.

In order to calm down the financial markets and stabilize the banking system, the Russian Government and the Central Bank implemented a package of measures. First set was launched in September 2008 and included as monetary policy measures the increase of funds available to the sector through repo operations and the cut in reserve requirements for all bank liabilities by four basis points that allowed to free up additional RUB 300bn (ca USD 11.8bn) of liquidity in the interbank market. Besides that, the state injected RUB 60bn (USD 2.3bn) of capital into AHML (Agency for Home Mortgage Lending) and announced plans to allocate up RUB 1.5trln (USD 59bn) of short-term deposits at selected banks. All these steps were focused on improving the liquidity situation in the market (Bogetic, 2008; Fidrmuc and Süß, 2010).

Despite all these measures, the liquidity situation remained tight, especially for small and medium-sized banks– mistrust and fear of counterparty risk still dominated the sector, and funds allocated at large state-owned banks did not make their way to the interbank market (Bogetic, 2008).

At the end of September-beginning of October, the state authorities introduced the second package of anti-crisis measures. One step included the support of selected Russian banks and corporations with the repayment of their foreign debt – for that purpose, CBR placed USD 50bn of deposits with the Bank for Development and Foreign Economic Affairs (VEB) that, in its turn, channeled these funds to the respective entities. In addition to that, RUB 950bn (USD 37.4bn) were provided to the banking system in the form of subordinated debt – the Central Bank itself injected RUB 500bn, while the remaining RUB 450bn originated from the National Welfare Fund. Within this program, Sberbank, VTB, and Russian Agricultural Bank received RUB 500bn, 200bn and 25bn of subordinated loans respectively (Bogetic, 2008; Barisitz, 2008; Fidrmuc and Süß, 2010).

Initial intention of the state was to support only a limited range of large banks, however, since the financial standing of small- and medium-sized entities was not improving due to the dry-up of the interbank market and large state entities were hoarding the liquidity, the government changed its approach and showed to the market that it would prevent even smaller banks from going bankrupt (Fidrmuc and Süß, 2010).

For instance, two medium-sized banks – Sviaz and Globex - were bailed out by the state development institution, VEB. Sviaz received a capital injection of USD 2.5bn from CBR, while Globex – USD 2bn. CBR additionally recapitalized VEB by RUB 75bn (USD 2.9bn) (VEB annual report, 2008). Another bank, Sobinbank, got the support of USD 0.5bn and was taken over by Gazenergoprombank (Bogetic, 2008).

At the end of October 2008, the Russian parliament passed a law "On additional measures to stabilize the banking system during the period up to 31 December 2011" which gave the right to the Deposit Insurance Agency (DIA) to participate in the bail-out and rehabilitation of troubled banks. DIA received for that purpose RUB 200bn (USD 7.9bn) from the federal budget (Bogetic, 2008; Fidrmuc and Süß, 2010).

As another measure for the support of financial markets, the Russian government placed RUB 175bn (USD 7bn) from the National Welfare Fund at VEB that planned to act as an investment agent on the stock market preventing stock prices from further decline (Bogetic, 2008; Fidrmuc and Süß, 2010).

So, the active intervention of authorities alongside with the participation of state-controlled banks as well as relatively low leverage ratio of the sector served as supporting factors for Russian banks during the economic recession in 2009-2010. In 2011 economic growth resumed and consumer lending boomed (Mäkinen and Solanko, 2017).

The Russian economy demonstrated steady growth in 2011-2012 accompanied by a successful performance of the banking sector as well as active credit expansion both to corporations and households; however, the economic growth started to stall in 2013 (World Bank, 2012; 2013a; 2013b; Mäkinen and Solanko, 2017). It was caused by several issues such as weak demand and structural problems of the Russian economy that gained their relevance (World Bank, 2013b).

The second part of 2013 was also marked by the creation of megaregulator – CBR took over the functions of Federal Financial Markets Service (FFMS) and became the supervisor over all financial markets and its participants – accompanied by the change in regulator's top management and switch to tighter supervision with banking sector clean-up start (World Bank, 2015a; 2015b; Mäkinen and Solanko, 2017; Mamonov, 2017).

In 2014 economic slowdown in Russia continued to deepen and turned into full economic crisis fueled by three main factors – serious geopolitical tensions between Russia and Western countries that resulted in several rounds of sanctions; intensifying structural problems of the Russian economy and substantial decline in oil prices in the second half of 2014 (World Bank, 2015b; Mau, 2016; OSW, 2015).

Tensions with Western economies started to increase in March 2014 due to the annexation of Crimea by Russia and its conflict with Ukraine. As the first step, U.S., EU, and other Western states imposed sanctions against a specified list of Russian individuals and entities, freezing their assets and banning operations. It was followed by the second round of sanctions targeting military, energy and financial sectors of Russia. For instance, six Russian state-controlled banks including Sberbank, VTB Group, and Russian Agricultural Bank got their access to Western financial markets severely limited – starting from September 12, 2014, they were allowed to borrow funds with maturity not more than 30 days (World Bank, 2014; 2015b).

Sanctions had several consequences. First, the access of large Russian banks and enterprises to international financial markets and, therefore, cheap funding was severely limited. Second,

international investors' trust towards Russia diminished dramatically, causing massive capital outflows, increasing tensions in the foreign exchange market and weakening the national currency. Ruble came especially under pressure at the end of December 2014 when a large tranche of external debt (ca USD 35bn) had to be repaid (World Bank, 2014; Barisitz, 2015; OSW, 2015).

Another factor that turned out to be unpleasant for the Russian economy was the dramatical drop in oil prices in 2014-2015 – the price of Urals grade crude declined from USD 105 per barrel in July 2014 to around USD 45 per barrel in January 2015 – and that contributed to worsening terms of trade and the sharp decline of ruble. During 2014, the ruble weakened by 46% against USD (World Bank, 2015a; 2015b; Barisitz, 2015).

The volatility in the Russian financial system was especially high in December 2014 and had its culmination on "Black Tuesday", 16th of December when the ruble collapsed and hit the record level of 80 RUB/USD (OSW, 2015). However, in the following days, the situation calmed down thanks to the swift reaction of the government and the Central Bank that announced a package of anti-crisis measures. At the same time, as a response against surging inflation, the Central Bank tightened the monetary policy significantly, increasing the key interest rate by 6.5 percentage points from 10.5% to 17% (Barisitz, 2015; World Bank, 2015c; OSW, 2015).

However, it is necessary to point out that geopolitical tensions, as well as the plunge in oil prices, would not have such a dramatic impact on the Russian economy without a third component – structural and institutional problems that were gaining significance since 2012. The main issue was that the existing resource-based economy had already reached its full potential and could not develop further without reforms and sufficient investment. It was magnified by weak legal and investment environment, enormous bureaucracy and corruption. The combination of all these factors led in the end to the economic crisis (Barisitz, 2015; OSW, 2015; Mau, 2016).

The anti-crisis package of actions provided by the government and Central Bank included several steps. First, during the period of high volatility, the Central Bank increased its funding to the banking sector, especially foreign exchange one via FX swaps. As a result, as it is reflected in Figure 3 showing the banking sector funding structure, the share of CBR facilities increased significantly towards the end of 2014 (CBR, 2015a; Barisitz, 2015).

Second, in late December 2014 the Russian parliament approved a state capitalization program - initially amounting to RUB 1trln, however later decreased to RUB 840bn (approx. EUR 12bn), that corresponded to 13% of the sector's aggregate capital – under which a list of selected banks received capital injections via Deposit Insurance Agency. Within this program, until the end of 2015 twenty banks received capital support in the total volume of RUB 730bn, while 70% of these funds were allocated to state-owned banks – Sberbank, VTB Bank and Russian Agricultural Bank (World Bank, 2015c; 2016b; Barisitz, 2015).

In addition to that, in December 2014 the Central Bank introduced a number of forbearance measures in order to reduce the pressure on banks' regulatory ratios from the sharp depreciation of the Russian ruble and the rise in interest rates (World Bank, 2016b). Initially, these adjustments were planned to be lifted in June 2015, however since the situation in the banking sector remained under pressure, the measures were prolonged, and the last of them were dismantled only in spring 2016. The forbearance package affected the valuation of securities (the requirement to recognize the negative valuation changes for securities portfolio was eliminated); FX-denominated assets and liabilities (in order to limit the impact of FX depreciation on the regulatory measures, it was allowed to measure FX items at fixed exchange rate as of October 1, 2014) as well as loan loss provisioning (the classification of loans, restructuring, and provisioning was made more flexible) (World Bank, 2015c; 2016b; Barisitz, 2015).

With all these anti-crisis steps, the authorities prevented the banking sector falling into deeper crisis, however during 2015 it remained under pressure accompanied by the recession in the Russian economy, and the same situation was observed in 2016. The Russian economy returned to the growth only in 2017 that had positively affected the banking system (World Bank, 2016b; 2017).

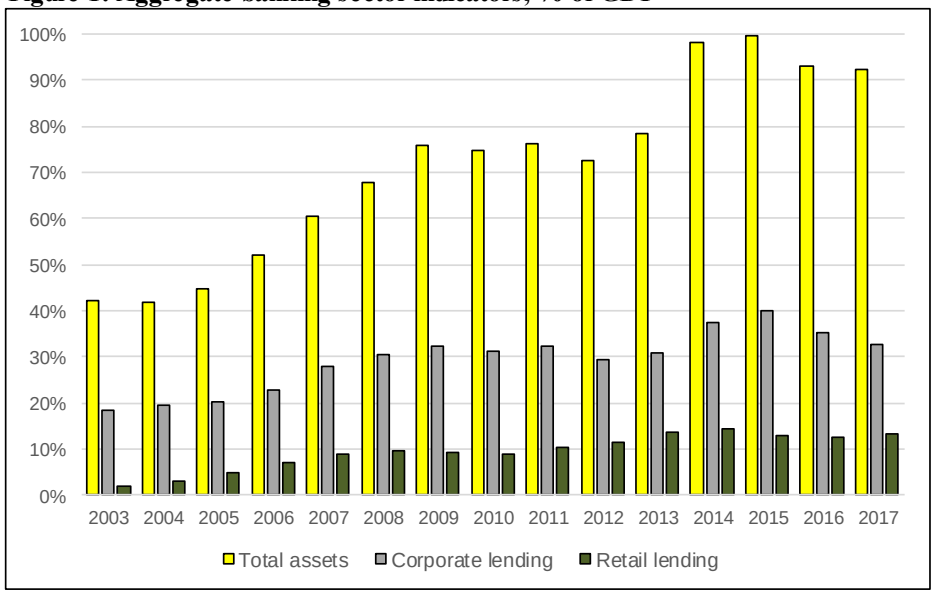
2.2 Financial structure and dynamics of the banking sector

The following section is focused on the financial structure of the Russian banking system as well as its dynamics.

In regards to the financials of the banking system, it is obvious that its significance for the Russian economy increased with the passage of time, however still remains relatively moderate (IMF, 2016).

Figure 1 shows that total assets grew from slightly above 40% of GDP in 2003 to almost 100% in 2015, however since then they remained relatively stable in a range between 90% and 100%. Corporate and retail lending activity generally followed the same trend, while the growth in retail lending share during the observation period was more prominent.

Figure 1: Aggregate banking sector indicators, % of GDP

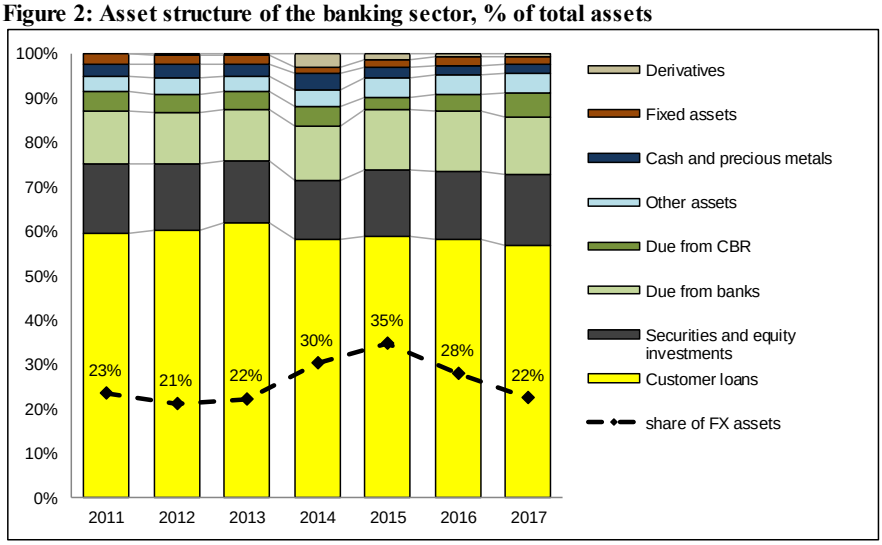


Source: CBR data

Talking about the aggregate asset dynamics of the sector visible in Figure 2, the following points should be outlined.

First, the overall structure remained stable during the observation period, with only modest fluctuations – during 2016 and 2017 the share of loan portfolio declined slightly, giving more weight to interbank activities as well as operations with the Central Bank. Second, fluctuations in the share of assets denominated in foreign currency are more significant – the increase between 2014 and 2015 can be explained by the weakening of the Russian ruble during that period.

Figure 2: Asset structure of the banking sector, % of total assets

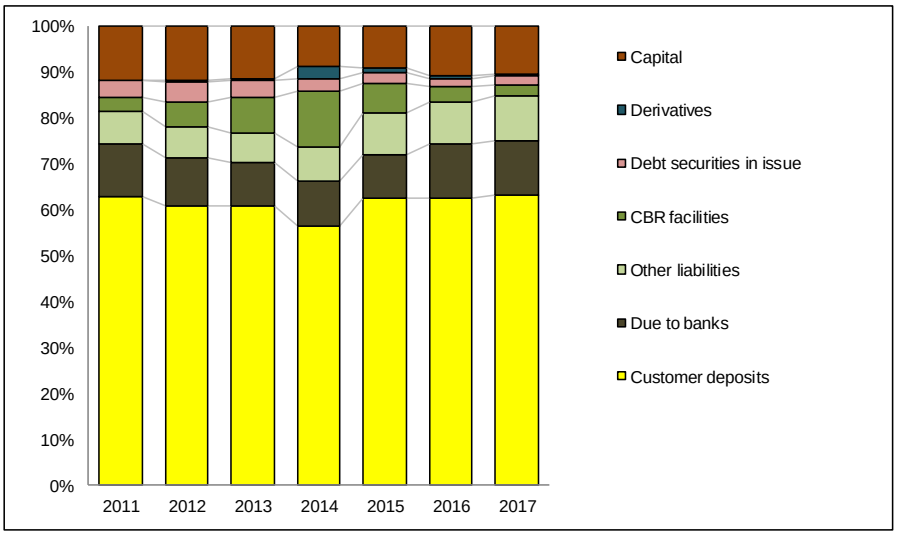


Source: CBR data

The subsequent decline in FX share is mainly driven by CBR policy that is focused on the de-dollarization of the banking sector as well as existing EU/US sanctions that limit the capability of selected Russian banks to borrow abroad.

In case of funding, it can be pointed out that there is gradual increase in the reliance on interbank facilities that reached almost 12% of b/s in 2017, while customer deposits' share remained flat. The usage of Central Bank funding facilities is relatively volatile, with its share increase coinciding with the period of stress following the introduction of Western sanctions as well as active phase of banking sector cleaning by CBR.

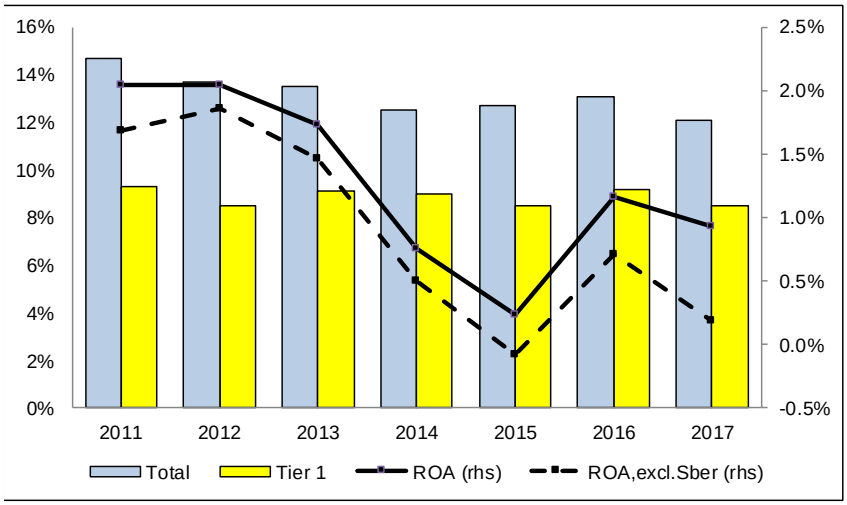
Figure 3: Liabilities structure of the banking sector, % of b/s



Source: CBR data

Capitalization metrics showed slightly different dynamics – while total capital ratio has been decreasing starting from 2011, Tier 1 ratio remained on the same level. Profitability has decreased significantly during the crisis in 2014-2015 but has recovered during last 2 years. In addition to that, the share of Sberbank, the largest Russian bank, in the profit of the segment has substantially increased in 2016 and even more in 2017.

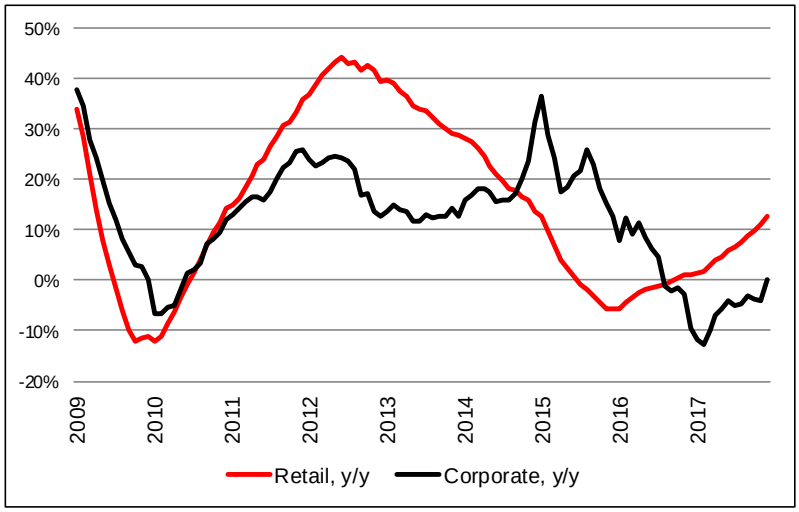
Figure 4: Capitalization and profitability of the banking sector



Source: CBR data

The lending activity is very volatile – in 2009-2010 there was a significant decline in the lending growth followed by the contraction due to the global financial crisis. After that, both corporate and retail lending had recovered and grown during three subsequent years when the new crisis broke this trend. During 2017 retail lending has developed very actively, showing more than 10% increase on a yearly basis, while corporate activity remained stagnant so far.

Figure 5: Sector's growth in corporate and retail lending, y/y change



Source: CBR data

2.3 The institutional structure of the Russian banking system

The institutional structure of the Russian banking sector has several significant characteristics. One of the key ones is the dominant role of state-controlled banks in the market.

Although the state decreased its share in the banking sector after the collapse of the Soviet Union, the scope of this privatization was not comparable with the one that took place in Central and Eastern Europe at the same time (Fungacova et al., 2010; Mahlberg, 2011). Besides that, the state retained the control over core state entities such as Sberbank, VTB Bank and Rosselkhozbank (Russian Agricultural Bank) (Fungacova et al., 2010).

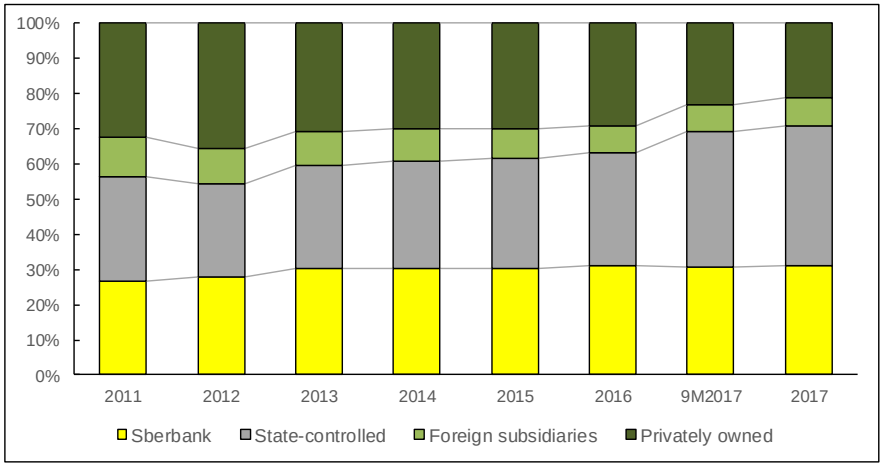
Talking about bank ownership categories, it is necessary to clarify which types of banks belong to each group. In case of state-controlled banks, this category includes institutions that are under either direct or indirect state control. The former assumes the ownership of controlling stake by government bodies as well as municipal and regional entities – Sberbank, VTB Bank, and Russian Agricultural Bank are the most significant examples of this category. Indirect control includes the ownership by state corporations such as Gazprom, Rosneft, and Russian Railways as well as state-controlled banks themselves. For instance, Gazprombank (under control of Gazprom, state gas giant), Russian Regional Development Bank (owned by Rosneft), Pochta Bank (a joint venture of VTB and Russian Post), Cetelem (under Sberbank Group) belong to this group (Vernikov, 2012; Kirdina and Vernikov, 2013).

Initially, the state market share was declining, and this process continued until 1999 when it reached the record-low level of 36%, but after that the trend had reversed - the presence of state-controlled banks started to increase gradually, driven by both organic growth as well as takeovers of private entities (Vernikov, 2012). Every stress period in the economy – the Russian default in 1998, liquidity crisis in 2004, the global financial crisis in 2008-2009 – resulted in a growth of public banking sector. Another reason behind this growth was the financial support that was received by state banks during the crisis periods as well as the fact that state corporations such as DIA and Vhesheconombank increased their participation in takeovers of failed institutions on behalf of the government and received funding for these rescue operations (Vernikov, 2012; Kirdina and Vernikov, 2013).

The most recent increase in state share took place in 2017 and is directly connected with the main topic of this paper. In summer 2017 CBR applied the new rehabilitation mechanism with the participation of Banking Sector Consolidation Fund (BSCF), and two large private banking groups – Otkritie Group (incl. FC Otkritie Bank, RGS-Bank, and Trust) and B&N Group (B&N Bank and Rost Bank) – were taken over. Since the new rehabilitation process includes the direct participation of CBR, these entities belong currently to the category of state-controlled banks.

The following graph represents the development of market share of different bank groups during 2011-2017, aggregated by ownership type. Sberbank, as the largest institution in the country, is represented separately.

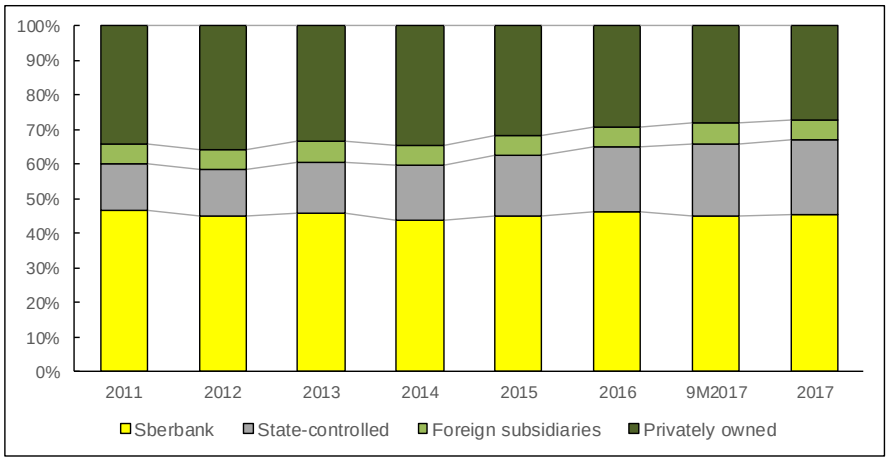
Figure 6: Banking sector assets aggregated by ownership type, % of total assets



Source: CBR data

Overall, the banking sector might be divided into 3 main categories based on ownership type – state-controlled banks, foreign subsidiaries and privately-owned institutions.

Figure 7: Allocation of retail deposits across banks groups, % of total retail funds



Source: CBR data

It is visible that, with the exception of 2012, the public share in the banking sector was on the rising trend, gaining new momentum during 2017 and reaching in total 71% of segment's total assets at the end of the year. The share of foreign subsidiaries declined moderately over this period, standing at 8% at the end of December 2017, while private banks demonstrated more substantial decline – from 32% in 2011 to 21% in 2017.

The allocation of individuals' savings across different bank categories demonstrates similar dynamics – in 2017, 67% of retail funds were placed at state-controlled entities (where Sberbank alone accounted for 45% of deposits), while the shares of private banks and foreign entities stood at 27% and 5.8%, respectively.

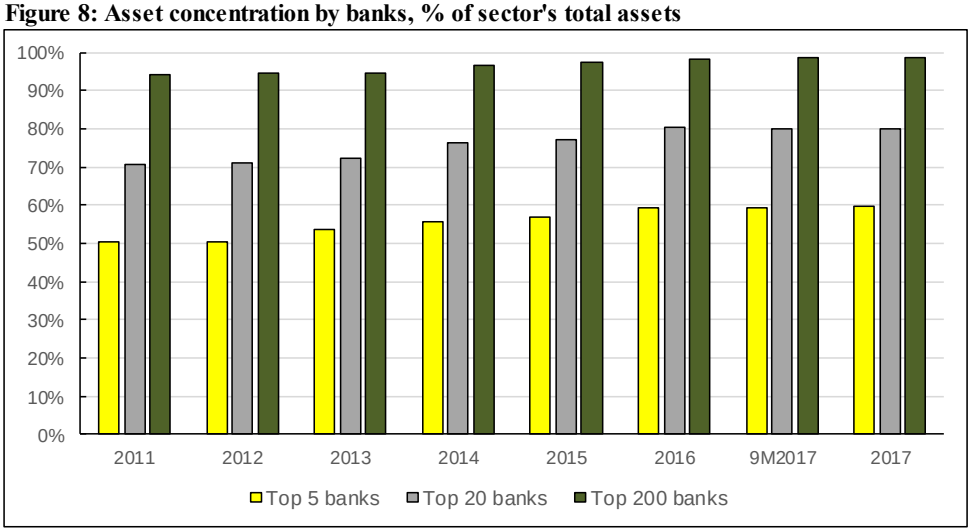
It is also crucial to look at the structure of the Russian banking system from another angle – formally, it consists of two tiers, the top one represented by the Central Bank and second one consisting of all commercial banks. Vernikov (2012) and Kirdina and Vernikova (2013) point out that Russian banking sector is in reality a three-tier system, with the intermediate layer represented by core state-controlled banks. These include Sberbank, VTB Group, Russian Agricultural Bank and potentially also Gazprombank, although the state does not control it directly, but through Gazprom corporation.

These core state-controlled entities represent an interesting phenomenon in the Russian banking landscape since they are a kind of hybrid institutions, acting, on the one hand, as commercial banks focused on profit maximization, while, on the other hand, exhibiting functions common for development banks. For instance, they act as liquidity channels into the system, participate in financial rehabilitation of weaker institutions as well as support the money exchange and the stock market (Vernikov, 2012). In addition to that, they engage in financing of socially important infrastructure and construction projects such as Olympic Games in Sochi 2014, Soccer World Cup 2018, APEC summit and others. Russian Agricultural Bank, in line with its name, is focused on financing of agricultural segment (Kirdina and Vernikov, 2013).

It is also noteworthy that, alongside with core state-controlled banks, there is the main development bank, Vnesheconombank (VEB) whose functions and activities partially overlap with those of core state banks (Kirdina and Vernikov, 2013).

Another feature of the Russian banking system is its concentration level – despite relatively large number of credit institutions (at the end of 2017, there were 561 active banks), the system is concentrated both in terms of total assets as well as retail deposits. Figures below show the share of total assets and retail deposits allocated at top 5, top 20 and top 200 Russian banks ranked by their size.

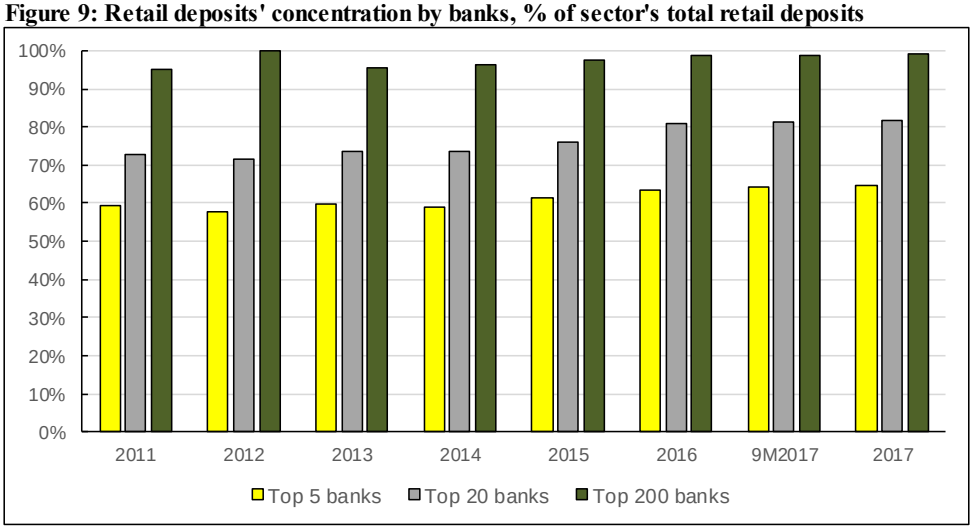
Figure 8: Asset concentration by banks, % of sector's total assets



Source: CBR data

Both graphs demonstrate that there is a gradual increase of top 5 banks' share in both total assets as well as deposits. It is also a view from another angle on the increase in the public share in the sector since five largest banks are all core state-controlled banks – Sberbank, VTB, VTB24, Russian Agricultural bank and Gazprombank.

Figure 9: Retail deposits' concentration by banks, % of sector's total retail deposits



Source: CBR data

At the beginning of 2017, ten largest entities included also four private banks – FC Otkritie Bank, Alfa Bank, Credit Bank of Moscow and Promsvyazbank – and one foreign subsidiary, AO Unicredit Bank, however at the end of 2017 the landscape has dramatically changed – there are only two private banks left, Alfa-Bank and Credit Bank of Moscow, while the number of state-controlled entities increased to seven.

Top 200 banks represent at the end of 2017 98.5% of total assets and 99.1% of retail deposits, leaving for the remaining 361 active institutions very negligible part of the market.

2.4 Central Bank of Russia – its role and functions

The picture of the Russian banking sector is incomplete without understanding the role and functions of its regulator.

After the collapse of the Soviet Union supervisory and regulatory responsibilities over banking and other financial markets were initially split between the Ministry of Finance and Central Bank of Russia (CBR) (Dolmatovich and Gromov, 2013). CBR (formerly the State Bank of the RSFSR; was renamed into the Central Bank of Russia in November 1991) was founded as a result of a transformation of the Russian Republican Bank of the USSR Gosbank in July 1990 and comprises the first level of the Russian Banking System (Nefedov, 2014).

While CBR always remained the key supervisory element focused on the banking system, there was also a number of other entities involved in the supervision of other segments. For instance, supervision over financial and securities markets was performed by the Federal Commission on Securities Markets until 2003 when its functions were transferred to newly created Federal Financial Markets Service (Dolmatovich and Gromov, 2013).

As such, supervisory and regulatory functions were split between the Central Bank covering banking sector; Federal Financial Markets Service being in charge of financial and securities markets and Federal Service of Insurance Supervision. However, starting from 2004 the steps were made in the direction of higher centralization of functions (Dolmatovich and Gromov, 2013)

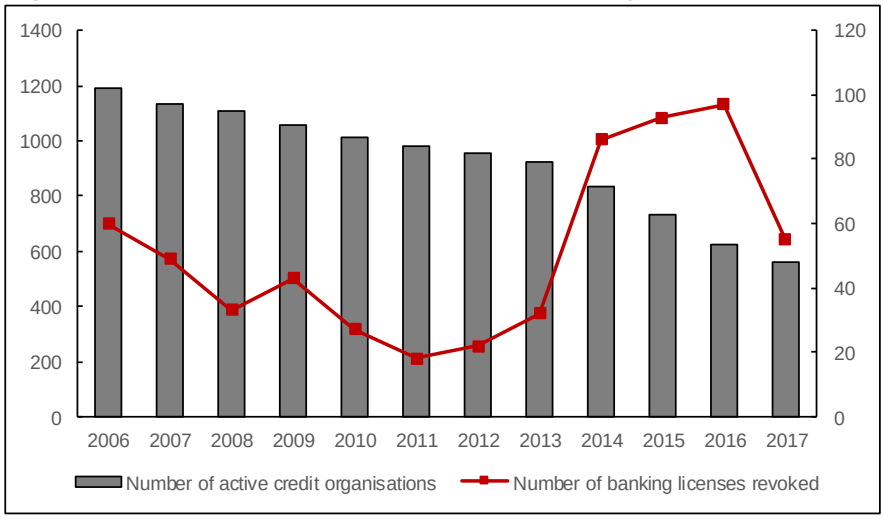
The significant change took place in 2011 when Federal Service of Insurance Supervision was liquidated and its functions were transferred to Federal Financial Markets Service (Vavulin and Simonov, 2014). Work on further centralization continued afterwards, and its results were visible

in 2013 when it was decided that Federal Financial Markets Service will be dissolved and all supervisory functions will be transferred to the Central Bank.

Thus, the crucial change took place in the banking sector in 2013 – starting from September, CBR turned into a single megaregulator covering the whole range of financial markets and its participants – banks, non-credit institutions, insurance companies, brokers, other stock market participants as well as microlenders and pension funds (Dolmatovich and Gromov, 2013; Nefedov, 2014; Vavulin and Simonov, 2014; Mäkinen and Solanko, 2017). The topic of whether the creation of the megaregulator was a right step is widely discussed among researchers, with an extensive amount of pros and cons brought up.

In addition to that, there were changes in the management – in June 2013 Elvira Nabiullina substituted Sergei Ignatiev as the chairman of CBR – and the period of supervision tightening and cleaning of the banking sector started (World Bank, 2014; Mäkinen and Solanko, 2017; Mamonov, 2017).

Figure 10: The number of active banks and of banking licenses revoked



Source: Deposit Insurance Agency; CBR

According to the statements from the authorities, the necessity of the banking sector clean-up was caused by the fact that there was still a lot of weak credit institutions as well as others that were involved into money laundering and fraudulent reporting. In 2014 the number of banking license withdrawals increased substantially and reached its all-time high in 2016 when 97 credit institutions lost their licenses. The year 2017 was more modest one in terms of license revocations, however it involved several large-scale cases such as "Jugra Bank". According to most recent

statements of Elvira Nabiullina, the active phase of sector clean-up will last two years more (TASS, 2017; RIA, 2017).

The next step taken by CBR on its way to tightening supervision of the banking sector was the establishment of the list of systemically important credit institutions (SIFI) that was originally published in summer 2015. The initial list that has to be reviewed on an annual basis included ten banks that at that moment accounted for more than 60% of Russian banking sector assets – AO Unicredit Bank, Gazprombank, VTB Bank, Alfa-Bank, Sberbank, FC Otkritie Bank, Rosbank, Promsvyazbank, Raiffeisenbank and Russian Agricultural Bank (CBR, 2015c). In 2017 the list was extended, and Credit Bank of Moscow was included as well (CBR, 2017b). Despite its size and activity on the market, B&N Bank was not classified as SIFI.

Banks classified as SIFI are subject to stricter capital and liquidity requirements that gradually phase in during 2016-2019. In terms of liquidity, SIFIs are obliged to keep Liquidity Coverage ratio (LCR) – starting from 1.01.2016 the minimum requirement for LCR was set at 60%, gradually increasing by 10% annually and reaching 100% as of January 1, 2019 (CBR, 2015b).

Capital requirements include conservation buffer applicable for all credit institutions (set at 0.625% as of 1 January 2016 and increasing to 2.5% as of January 2019) and applicable only for SIFI additional capital surcharge of 0.15% starting from January 2016 and gradually increasing to 1% as of January 2019 (CBR, 2015b).

2.5 Recovery of troubled banks and old rehabilitation mechanism

The aspect of financial recovery of troubled banks gained its significance with the outbreak of global financial crisis in 2008. As one of the measures taken, DIA took over functions on financial rehabilitation and received necessary rights as well as resources for that (Leonov and Zaernjuk, 2015).

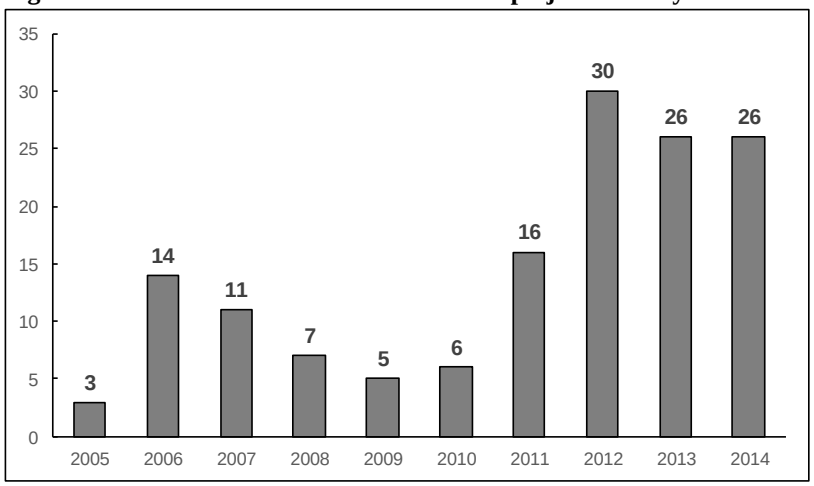
According to the federal law "On additional measures for improving the banking sector stability during the period until December 31, 2011" Deposit Insurance Agency received the competences for bankruptcy prevention of financial institutions that were the members of deposit insurance system. Important factor in these bankruptcy prevention measures was the possibility of participation of private investor. Generally, first option available for DIA in case of rehabilitation

process included the financial support of private investor in case of its participation in recovery process – DIA would provide funds if the rehabilitator was purchasing either shares of rehabilitated bank or its liabilities and property. Second option was the direct participation of DIA – in this case DIA would become a shareholder of troubled entity and provide financial support for its recovery. In addition to that, temporary administration of troubled entities was also one of the core functions of DIA (DIA, 2008).

The direct participation of DIA as a shareholder was not as common as the option with a private investor – the most significant case of such kind of rehabilitation was the acquisition and subsequent recovery of commercial bank "Rossiysky Kapital" in 2009 (DIA, 2009).

The graph below shows the number of active rehabilitation projects in which DIA was participating at the end of each year. First increase in a number of rehabilitation coincided with the worsened situation in the banking sector due to the global financial crisis. Second surge in activity that started in 2014 was due to the kickoff of CBR campaign for financial sector cleanup.

Figure 11: The number of active rehabilitation projects at the year-end



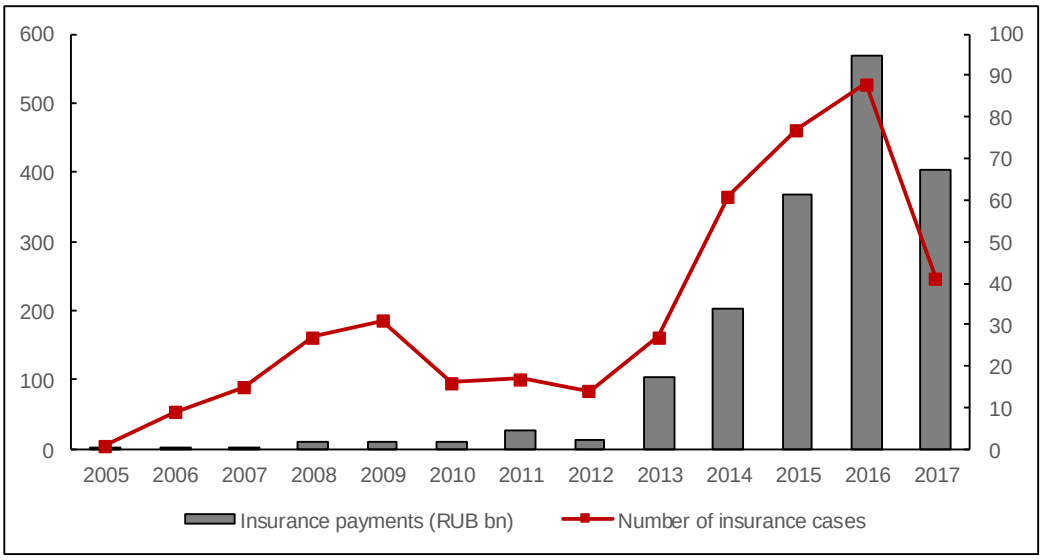
Source: Deposit Insurance Agency

As of December 31, 2016, DIA spent RUB 1575 bn for the financial rehabilitation of troubled entities – a substantial part of which (RUB 1308 bn) was provided by the Central Bank in a form of loans. The remaining part was in a form of property contribution from the Russian Federation towards DIA as well as own funds of deposit insurance fund (DIA, 2017). Towards the end of 2017 the volume spent on financial rehabilitation of banks continued its growth, reaching in total RUB 1817bn (DIA, 2017).

Starting from 2014 there were also cases of financial rehabilitation of banking conglomerates when a number of banks under one shareholder was undergoing the financial recovery. For instance, this practice was applied to ROST Group (Rost Bank, SKA-Bank, Commercial Bank Kedr, Tveruniversalbank and AKKOBank) as well as Russian Financial Corporation (Mosoblbank, Finance Business Bank, Inserbank). In all ongoing recovery processes, alongside with DIA, large universal banks are participating as private investors (VTB Group, Otkritie Group and B&N Bank) (Leonov and Zaernjuk, 2015).

In addition to that, DIA participated in the capitalization program of Russian banks via OFZs (*Obligatsii Federalnogo zaima, or* Federal Loan Bonds) in 2015 when all together 34 banks received a capital injection from the state in the total volume of RUB 840bn (TASS, 2015; DIA, 2017).

Figure 12: The number of insurance cases under DIA and the volume of payments, RUB bn



Source: Deposit Insurance Agency

The chart above shows the number of insurance cases in which DIA had to step in and pay out deposits insured by the system as well as the yearly amount of payments. A substantial increase in payments volume starting from 2013 coincides with the start of CBR campaign of cleaning the financial sector. Although the number of cases decreased drastically in 2017, to 41 from 88 in 2016, the volume of payments declined only to RUB 404bn vs. RUB 568bn in FY16. This is due to the fact that 2017 witnessed the failure of large market players that kept a significant amount of retail deposits as their funding. The largest one was the license revocation of "Jugra Bank" at July 10, 2017, that resulted in RUB 173bn of DIA payments towards retail depositors (DIA, 2017).

However, with the passage of time, the old rehabilitation mechanism gained more and more criticism as being ineffective and incomplete, and that resulted in the creation of the new rehabilitation procedure under direct control of the Central Bank (Ryabov, 2017).

Among main weaknesses of the old rehabilitation mechanism were named non-transparent criteria of choosing the bank-sanator; unclear timeline of the recovery without precisely defined milestones; weak supervision of cheap funding provided to bank-sanators for rehabilitation purposes allowing them to use these funds on their own goals. Fitch, for example, even provided estimates that the costs of rehabilitation of 27 banks that are currently undergoing this procedure exceed potential costs on their liquidation by approximately RUB 500bn (Ryabov, 2017; RBC, 2017).

2.6 New rehabilitation mechanism

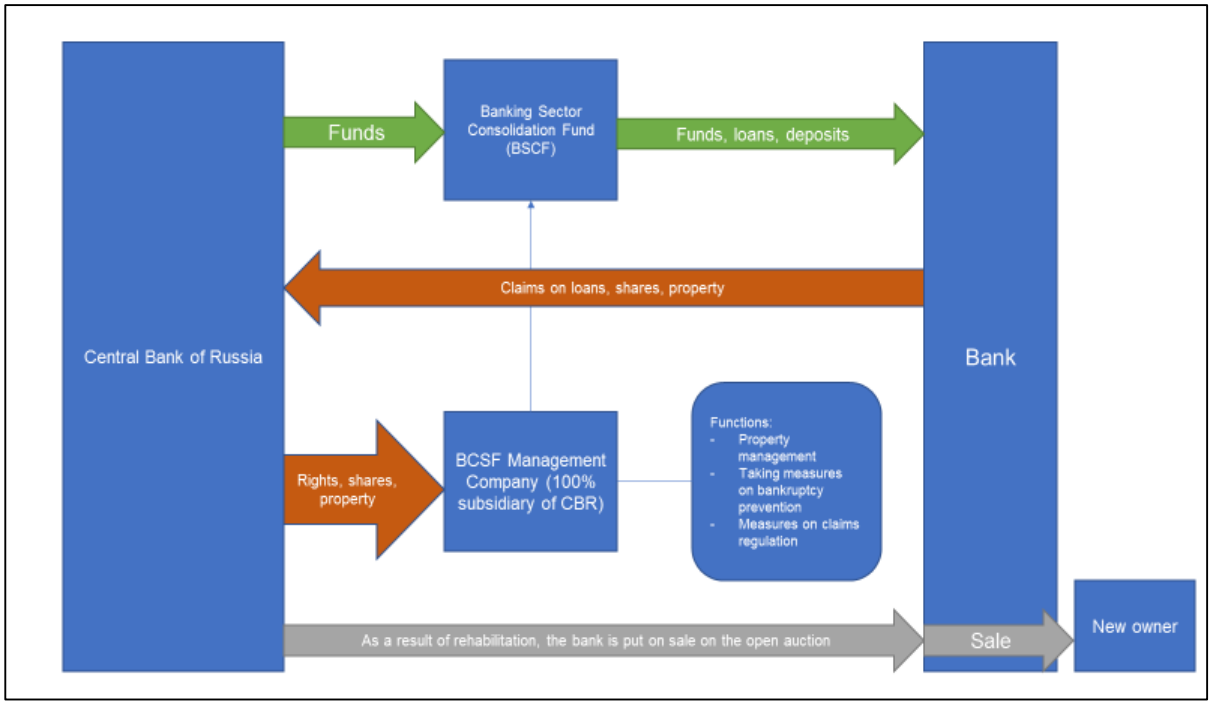
So, in 2016 CBR announced the intention to create new rehabilitation procedure.

In the first quarter of 2017 the regulator brought more clarity to the new mechanism. The main goals of new procedure were the reduction of costs for the recovery by CBR with simultaneous increase in rehabilitation costs' control efficiency; in addition to that, the rehabilitation process would not depend anymore on the financial condition of the bank-sanator since, under new mechanism, the procedure would be conducted by the CBR itself (CBR, 2017a). For that purpose, Banking Sector Consolidation Fund (BSCF) was planned to be created out of separate funds of CBR that would be governed by the Management Company acting on behalf of CBR and controlled by CBR – at the moment of creation and till now deputy chairman of CBR, Vasily Pozdyshev, was in charge of BSCF and the Management Company (CBR, 2017a; Kommersant, 2017).

The main purpose of BSCF was the recapitalization and other forms of financial support towards rehabilitated banks within the financial recovery program. The ultimate goal of the rehabilitation program is to bring the rehabilitated bank to a proper financial condition and sell it to private investors (CBR, 2017a)

The following figure provides the overview of the new mechanism:

Figure 13: New rehabilitation mechanism with the participation of BSCF



Source: CBR presentation, 2017

BSCF is a new institution and was set ready for use only in July 2017 when the Management Company was finally established. However, since that time, BSCF has already participated in two rehabilitation processes – those of FC Otkritie Bank and B&N Bank.

3. Risk-taking by banks

After the overview of the Russian banking system, its structure, and regulatory environment, this part is devoted to the aspect of bank risk-taking that provides the foundation for the analysis of two cases of economic failure of Russian banks. First, the existing research about risk behavior of Russian banks is briefly examined. After that, the study focuses on the list of relevant indicators needed for the analysis as well as the definition of the economic failure itself.

The banking history across the world is rich with financial crises and individual bank failures – last 25 years alone provided us with East Asian financial crisis, Russian sovereign debt failure, global financial crisis of 2007-2009, European sovereign crisis – and each of these events gave birth to a vast range of literature trying to explain the origin, development, and consequences of these crises and failures from both macroeconomic as well as microeconomic perspectives.

The primary focus of this paper is on microeconomic, bank-level factors and indicators. The reason for that lies in the view shared by a number of existing research that bank-level problems are usually the original cause of bank failures, and macroeconomic shocks just reveal these accumulated issues (Malyutina and Parilova, 2001). In fact, a vast range of existing literature is devoted to bank-level data (Arena, 2008; Gonzalez-Hermosillo, 1999; Bongini et al., 2001; Betz et al., 2013; Fidrmuc and Süß, 2010; Fungacova and Solanko, 2008; Foos et al., 2010).

Most of existing research about the risk-taking by Russian banks focuses on earlier events such as Russian debt crisis in 1998, the introduction of deposit insurance system in 2004 and the global financial crisis of 2008-2009 (Konstandina, 2006; Lanine and Vennet, 2006; Fungacova and Solanko, 2008; Fidrmuc and Süß, 2010; Peresetsky et al, 2011; Karminsky and Kostrov, 2014). Only moderate part describes more recent events, and the most prominent of these papers is Mäkinen and Solanko (2017).

For instance, Constandina (2006), estimating in her work a model of bank failure for Russian banks and covering the period until 2003, develops two models for failure prediction – multivariate logit model and proportional-hazard model and comes to the conclusion that bank-level aspects are more relevant for understanding the nature of bank failures and survivals, while systemic indicators do not play any significant role. Most significant indicators include bank efficiency, asset quality aspects as a share of non-performing loans and holding of government securities as well as liquidity (Constandina, 2006). It is similar to the results of Lanine and Vennet (2006) that focus on the 1990s and especially the Russian banking crisis in 1998 and show that liquidity, asset quality, and capital adequacy are the critical determinants of the bank failure.

Peresetsky et al. (2011), in their turn, focus on the econometric analysis of failures in the Russian banking sector during 1997-2003 and find out that models based on the historical data of bank defaults have relatively high predictive power. This research was further developed in Karminsky and Kostrov (2014) that used a binary logit regression for estimation of default probabilities and found out “a quadratic U-shaped relationship between a bank's capital adequacy ratio and its probability default” (Karminsky and Kostrov, 2014).

Analysing Russian banks in the period between 1999 and 2007, Fungacova and Solanko (2008) investigate whether bank characteristics such as location, ownership, and size are associated with

risk-taking and come to the conclusion that large banks, foreign-owned banks as well as banks located in the regions engage in higher risk-taking than their other counterparties.

The role of the Russian banking crisis following the worldwide financial crisis was covered by Fidrmuc and Süß (2010) who worked on the development of early warning system for Russian banks based on the data from that period. Their research confirmed that balance sheet indicators were useful for bank failure prediction, especially asset quality (net loans and loan loss reserves), capitalization (equity) and profitability metrics (net interest revenues and return on average equity) (Fidrmuc and Süß, 2010).

The more recent investigation conducted by Mäkinen and Solanko (2017) focuses on bank-specific indicators between 2013 and 2017 and tries to answer the question whether a change in CAMEL ratios play a role for explaining bank failure. They confirm that this is indeed the case – asset quality is positively correlated with the probability of bank failure, while capitalization, profitability and liquidity exhibit negative relationship.

In addition to the existing research focused solely on the Russian banking sector, the papers conducting cross-country analysis or covering Central and Eastern Europe provide valuable insight. For instance, Haselmann and Wachtel (2007) in their study on risk-taking by banks in transition economies (including Russia) conclude that bank size or ownership does not result in an excessive risk-taking. In addition to that, there is no linkage found between risk-taking and the quality of the institutional environment in which the banks operate (Haselmann and Wachtel, 2007).

IMF working paper by Maechler et al. (2007) analyses how different risk aspects affect banking stability in the Eastern European countries and comes to the conclusion that credit risk is the crucial indicator, especially in cases of rapid credit expansion (Maechler et al., 2007). Same findings are delivered by the analysis of Köhler (2012) on the bank in 15 European countries - results show that banks with higher growth rates of loan portfolio are also riskier.

Remarkable results are provided by Männasoo and Mayes (2009) that focused on the role of macroeconomic, structural and bank-specific factors in explaining bank failures in Eastern European transition economies (including Russia). According to this research, among bank-

specific factors liquidity variables are considered to be of highest importance (Männasoo and Mayes, 2009).

3.1 Bank risk-taking indicators

In order to investigate whether excessive risk-taking led in the end to the economic failure of FC Otkritie Bank and B&N Bank, it is crucial to set the list of reliable risk-taking indicators. Ratios that have been proven to have a predictive power by existing research are included in this study.

Bank risk is considered to be multidimensional (Klomp and de Haan, 2013). Most of the existing research analyses bank risk-taking across one or more dimensions that are reflected in so called CAMEL rating system, a supervisory rating system originally developed in the United States in late 1980s and where each letter in the term "CAMEL" stands for a separate aspect of bank risk: capital adequacy, assets, management capability, earnings and liquidity (Mäkinen and Solanko, 2017).

The aspect of management capability has not been widely covered by the existing research on Russian banks – in addition to that, there are debates on the applicability of quantitative indicators for this aspect. Thus, bank risk taking is measured across four dimensions in this paper: asset quality, capital adequacy, liquidity, and earnings. Z-score, or z-index, is presented as a separate risk-taking indicator.

3.1.1 Asset quality

Asset quality is considered to be one of the critical factors since once it is mismanaged, then quality deterioration and associated credit risk is the major trigger of most bank failures (Grier, 2007).

One of the most commonly used asset quality indicators that is also applied as a proxy for risk-taking (for measuring loan portfolio risk) is NPL ratio, the ratio of non-performing loans to total loan portfolio (Golin and Delhaise, 2013). It has been proven to have a significant role in explaining bank failure by a number of papers covering Russian banking sector (Konstandina, 2006; Lanine and Vennet, 2006; Fungacova and Solanko, 2008; Karminsky and Kostrov, 2014) as well as others focused on other countries and regions (Sinkey and Greenawalt, 1991; Berger and DeYoung, 1997; Berger et al, 2009; Betz et al, 2013; Jimenez et al, 2013).

Various studies (Berger and DeYoung, 1997; Gonzalez-Hermosillo, 1999; Karminsky and Kostrov, 2014; Jakubik and Reininger, 2014) indicate that banks with high NPL ratio are less stable and more likely to fall into financial trouble – therefore, NPL ratio is an indicator of high risk-taking and is positively associated with the possibility of bank failure.

However, it is crucial to set the clear definition of non-performing loan because there is no unity across different jurisdictions and papers how to define it. In this research, the analytical description of non-performing loans set by Barisitz (2013) is applied using two primary elements: a loan is identified as non-performing if it is more than 90 days overdue or shows signs of weak performance, or both of them. Given these elements, in case of IFRS reporting individually impaired and 90 days or more overdue loans are considered as non-performing loans.

Comparable measure of credit risk that is used in research is the ratio of loan loss reserves to total loans - it generally follows the dynamics of non-performing loans and, therefore, is positively correlated with the probability of bank failure (Sinkey and Greenawalt, 1991; Haselmann and Wachtel, 2007; Fungacova and Solanko, 2008; Betz et al., 2013).

However, asset quality indicators are not limited to NPL ratio or the related ratio of LLRs to total loans. Another widely used proxy for credit risk is the ratio of total loans to total assets that is also positively associated with potential bank failure (Sinkey and Greenawalt, 1991; Gonzalez-Hermosillo, 1999; Konstandina, 2006; Lanine and Vennet, 2006; Haselmann and Wachtel, 2007; Arena, 2008; Fidrmuc and Süß, 2010; Peresetsky et al, 2014). The reason behind is that loans are considered to be most risky assets in the bank portfolio (Lanine and Vennet, 2006).

One more credit risk indicator that is used in this paper and captures the dynamics of loan portfolio is the loan growth that, according to a number of studies, provides a strong signal for potential distress of the bank (Bongini et al, 2001; Maechler et al, 2007; Fungacova and Solanko, 2008; Foos et al, 2010; Köhler, 2012; Soedamorno et al, 2017). Loan portfolio growth exceeding the growth of total assets basically implies that the shift towards riskier operations is taking place (Fungacova and Solanko, 2008). Foos et al. (2010) and Köhler (2012) find out that abnormal loan growth has a significant impact on loan losses with a lag of two to four years and affects the solvency of the bank negatively.

Therefore, the loan growth is also presented alongside with total assets growth of an individual bank as well as of the whole Russian banking system in the corresponding year.

3.1.2 Capital adequacy

Another important dimension for capturing bank risk and probability of bank failure is capital adequacy. Widely-used proxy for capital risk that is applied in this paper is the capital ratio that is calculated as a proportion of bank's equity to its total assets (Sinkey and Greenawalt, 1991; Konstandina, 2006; Lanine and Vennet, 2006; Haselmann and Wachtel, 2007; Fungacova and Solanko, 2008; Berger et al, 2009; Fidrmuc and Süß, 2010; Peresetsky et al, 2011; Betz et al, 2013; Karminsky and Kostrov, 2014; Mäkinen and Solanko, 2017).

Capitalisation ratio is negatively associated with bank risk and probability of bank failure because higher capital level acts as a cushion against potential financial losses and protects bank's solvency (Fidrmuc and Süß 2010; Betz et al, 2013). In addition to that, regulatory capital ratios of FC Otkritie Bank and B&N Bank based on local accounting standards, namely Tier 1 ratio and Total Capital Adequacy Ratio (CAR) will be presented too (Fungacova and Solanko, 2008).

3.1.3 Liquidity

The third aspect that is most dynamic and rapidly changing is the liquidity one. Liquidity serves as an indicator of the ability of the bank to meet its obligations as they fall due. In case of strong liquidity, the bank has reserves of and access to sufficient amount of cash or other assets that can be quickly converted into cash (Golin and Delhaise, 2013). Liquidity risk, therefore, refers to the situation when a bank is unable to meet its obligations in time.

Liquidity aspect might be divided into two parts – asset liquidity and funding liquidity. Asset liquidity is defined as "bank's ability to access cash reserves or to convert various forms of financial and other assets into cash on short notice and without significant loss" (Golin and Delhaise, 2013).

The most common indicator for asset liquidity measurement is liquid assets' ratio, the proportion of liquid assets to total assets (Konstandina, 2006; Lanine and Vennet, 2006; Haselmann and Wachtel, 2007; Arena, 2008; Fungacova and Solanko, 2008; Köhler, 2012; Peresetsky et al, 2014; Mäkinen and Solanko, 2017). Liquid assets include cash and those holdings that can be easily converted into cash in a case of need, and these include investments in stocks, bonds, and

promissory notes as well as accounts and deposits with CBR and other banks (Mäkinen and Solanko, 2017). The comparable definition is provided by Arena (2008).

The general assumption is that LA ratio is negatively associated with risk-taking and probability of failure – the higher share of liquid assets results in lower liquidity risk. However, Maechler et al. (2007), as well as Fungacova and Solanko (2008), point out that excessive liquidity might indicate the existence of some structural issues such as poorly functioning interbank market or detached position of the bank in the market.

The second part of liquidity aspect is presented by funding liquidity that relates to "bank's capacity to access new funding to refinance maturing liabilities or to meet other myriad obligations" (Golin and Delhaise, 2013). The applied indicator is the ratio of customer deposits to total balance sheet volume that is negatively associated with the probability of failure since deposit funding is considered to be more stable in comparison with interbank funding (Konstandina, 2006).

3.1.4 Profitability

In this paper, the return on assets (RoA) is used as an overall proxy for bank profitability (Lanine and Vennet, 2006; Mäkinen and Solanko, 2017). In general, high profitability is one of the characteristics of strong and healthy banks that decreases the probability of failure (Lanine and Vennet, 2006).

3.1.5 Z-score

In addition to the metrics covering 4 dimensions described above, one more indicator that is frequently applied in the literature is used – that is so called z-score or z-index. Various modifications of z-score have been used in the research covering failures and risk-taking of Russian banks as well as bank risk in other countries and regions (Maechler et al, 2007; Fungacova and Solanko, 2008; Laeven and Levine, 2008; Berger et al, 2009; Köhler, 2012; Karminsky and Kostrov, 2014; Li et al, 2017). This paper applies the modification proposed by Fungacova and Solanko (2008).

Z-score is defined as the ratio of the return on assets plus the capital ratio divided by the standard deviation of the return on assets:

$$Z\text{-}score = \frac{ROAt+CARt}{SDROAt}$$

where ROA stands for the four quarters moving average of bank returns on assets at quarters *t* to *t-3* and CAR is the four quarters moving average of the bank's equity to total assets ratio. SDROA is calculated as the four quarters standard deviation of bank returns on assets (Fungacova and Solanko, 2008).

Z-score actually measures the buffer available to the bank and is negatively correlated with the probability of default – it "represents the number of standard deviations returns would have to fall in order to deplete a bank's equity" (Fungacova and Solanko, 2008). A higher z-score is associated with higher stability and indicates lower risk-taking (Laeven and Levine, 2008; Fungacova and Solanko, 2008; Köhler, 2012).

The following table summarizes all risk-taking indicators that are applied in this paper:

Table 1. Risk-taking indicators

Category	Ratio	Formula
Asset quality	NPL ratio	$\frac{Total\ non-performing\ loans}{Gross\ loans}\ X\ 100$
	LLRs to total loans	$\frac{Total\ loan-loss\ reserves}{Gross\ loans}\ X\ 100$
	Loan ratio	$\frac{Gross\ loans}{Total\ Assets}\ X\ 100$
Capital adequacy	Capital ratio	$\frac{Total\ equity}{Total\ Assets}\ X\ 100$
	Regulatory ratios	
Liquidity	Liquid assets' ratio	$\frac{Liquid\ assets}{Total\ Assets}\ X\ 100$
	Deposit ratio	$\frac{Customer\ deposits}{Total\ balance\ sheet}\ X\ 100$
Profitability	RoA	$\frac{Net\ Income}{Total\ Assets}\ X\ 100$
Z-score	Z-score	$\frac{ROAt+CARt}{SDROAt}$

3.2 Data

The analysis is focused on the balance sheet data of two Russian banks – FC Otkritie Bank and B&N Bank – and covers the period from 31.12.2013 to 31.12.2017.

According to the Russian legislation, banks are obliged to provide their financial reporting based on Russian accounting standards (RAS) as well as IFRS; however, the frequency of these reports differs. RAS reporting must be provided on a monthly basis, while IFRS statements must be published at least annually, yet, many credit institutions publish IFRS reports more frequently.

This study provides the analysis of risk-taking indicators based on both accounting standards, RAS as well as IFRS. In case of RAS, quarterly reports serve as a basis – since, for instance, profitability data is available only in the reports of this type. The data used in this study is disclosed on the website of the Central Bank.

For the analysis of IFRS indicators semiannual and annual statements are used that are available on the websites of corresponding banks – both FC Otkritie and B&N Bank publish IFRS report only with this frequency.

3.3 Definition of failure

Since the focus is on the economic failure of a credit institution, it is necessary to clarify this definition too.

There are several interpretations of bank failure in the economic literature. Usually, it is the case when the net worth of an entity becomes negative (Fidrmuc and Süß, 2010). However, financial authorities often react before such event actually comes true.

One of the cases that is classified as a failure by the existing literature is the situation when "either the central bank or a government agency, specifically created to address the crisis, recapitalized the financial institution or the institution required a liquidity injection from the monetary authority" (Arena, 2008; Fidrmuc and Süß, 2010). This is precisely the case of FC Otkritie Bank and B&N Bank since the temporary administration has been introduced by the CBR in both institutions and afterward, they were taken over by the Banking Sector Consolidation Fund (BSCF), a special entity created by CBR for recovery purposes.

4. Cases of FC Otkritie Bank and B&N Bank

4.1 FC Otkritie Bank

The history of Otkritie Group goes back to 1992, however the rapid development started at the beginning of 2014 when the financial company "Otkritie Holding" took control over Nomos-Bank. "Otkritie Holding" was an active participant of the M&A market and starting from this deal the banking business of the group began to grow aggressively.

In June 2014 Nomos-Bank was renamed into FC Otkritie Bank, while the parent company of the group simultaneously changed its name to open joint-stock company "Otkritie Holding". In addition to that, the group finished the integration of "Petrokommerz" in June 2015 (it was initially purchased in March 2015) and merged it with FC Otkritie Bank (Bank Otkritie FC, 2014; Otkritie Holding, 2016).

Next actions of the group again confirmed their intention to turn FC Otkritie Bank into the core entity of their banking business. Thus, in August 2016 the merger of "Hanty-Mansiisky bank Otkritie", another subsidiary of "Otkritie Holding" that controlled it since June 2013, with FC Otkritie Bank was completed, however full integration of operational and IT systems had to be finalized until the end of 2017 (Otkritie Holding, 2016).

Besides that, FC Otkritie Bank was conducting the rehabilitation of Trust Bank since December 2014. Under this program with the participation of Deposit Insurance Agency, DIA provided to FC Otkritie Bank two tranches for the financial recovery of Trust bank – one tranche of RUB 99bn for 10 years and second one of RUB 28bn for 6 years (DIA, 2014). According to the publicly available information, FC Otkritie asked the authorities for additional RUB 50bn for rehabilitation process, however this request was not satisfied (RBC, 2017e).

FC Otkritie Bank remained active in the M&A market in 2017, and the next target was insurance company Rosgosstrakh and its subsidiary RGS-Bank. According to media reports, Otkritie Group and Rosgosstrakh agreed to complete the merger during 2017, and the process was conducted in several stages. First, in March 2017 FC Otkritie increased its share in Rosgosstrakh to 19.8% (banki.ru, 2017a). During the remaining period, before the takeover by the CBR on 29th of August, 2017, there was a constant news flow regarding further preparations for the acquisition of

Rosgosstrakh and RGS-Bank, however the deal took officially place already after the start of rehabilitation process – at the beginning of September 2017, FC Otkritie took the insurance company and RGS-Bank under control (banki.ru, 2017f; Izvestija, 2017). In addition to that, at the end of August, FC Otkritie got under control three more non-government pension funds (NPFs) – "NPF of electroenergy", NPF "RGS" (as of 28.07.2017) as well as NPF "Lukoil-Garant" (as of 29.07.2017).

When the takeover by CBR was officially announced, the representatives of the regulator allowed themselves to comment on this case. For instance, first deputy chairman of CBR, Dmitri Tulin, said that the purchase of Rosgosstrakh was one of the triggers that forced CBR to act and start the recovery process with the help of Banking Sector Consolidation Fund (BSCF). Second reason for the takeover was named by the deputy chairman Mihhail Pozdyshev, and that was "not a very successful rehabilitation process of Trust Bank" (RBC, 2017f).

However, in order to construct the whole chronology of the events preceding the takeover by the regulator, it is still necessary to return several months back in 2017.

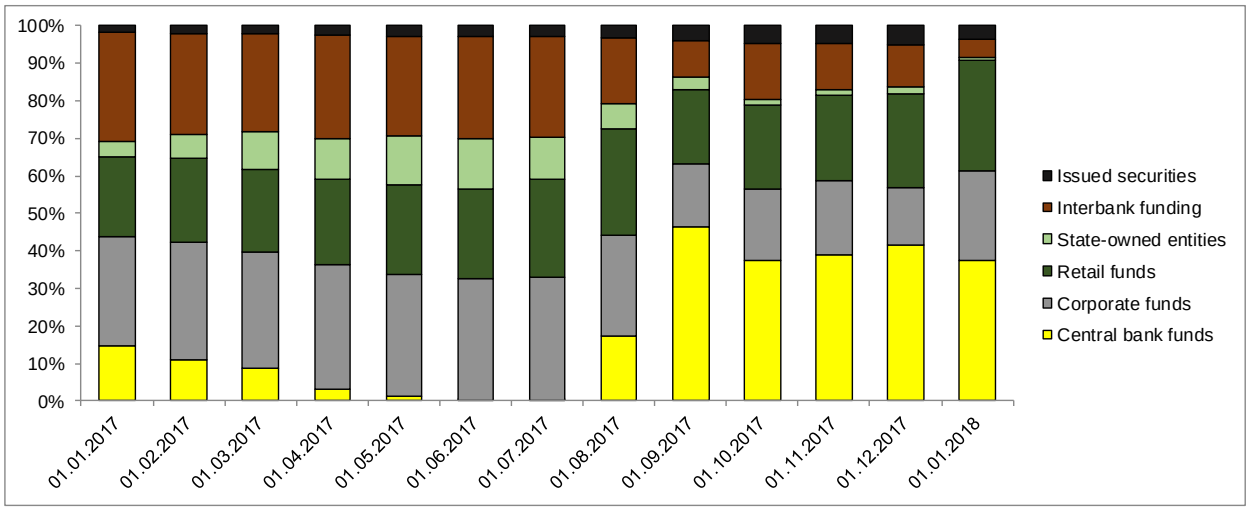
One of the events that could be considered as a trigger for increased tensions around FC Otkritie was the downgrade of the bank by S&P rating agency in May 2017 when the long-term rating of the entity was downgraded from BB- to B+. The rating agency named among the key reasons for lower rating the increased exposure of FC Otkritie towards Rosgosstrakh (in March 2017 the bank provided a short-term loan of RUB 30bn) and high possibility of the merger with the insurance group. Given negative profitability of RGS Group, the rating agency concluded that FC Otkritie will be obliged to support the insurance group further as well (banki.ru, 2017b).

Negative information background around FC Otkritie was additionally aggravated by quite moderate rating assigned to the bank by the local rating agency, ACRA, as of July 3, 2017 (ACRA, 2017; banki.ru, 2017c). Among negative factors that lead to the rating BBB-(RU), ACRA named weak asset quality and potentially negative impact on the liquidity and capitalization of the bank from the parent company (ACRA, 2017). One of the main consequences of the rating BBB-(RU) was the fact that pension and federal funds could not be placed at the bank with such rating – and that could cause the outflow of these funds from FC Otkritie if there were any (banki.ru, 2017c).

Monthly RAS financials of FC Otkritie show that, starting from the beginning of July 2017, bank's funding base was under increasing pressure and suffered from the outflow of corporate (including state-related entities) and retail funds – that was partially compensated by the repo funding from the Central Bank.

The graph below demonstrates that during spring 2017 CBR facilities did not exceed 10% of total funding and even decreased to almost zero during May-June, however there was a sharp surge to 15.6% of b/s in July. At the same time the share of total deposits (both federal and private funds) declined from 64% to 56% during one month, and the outflow continued in August as well, bringing the share of deposit funding further down to 37%. Interbank funds followed the same dynamics, decreasing from 24.5% of b/s at the beginning of July 2017 to 9% as of 1.09.2017. Funding provided by the Central Bank via repo increased at the same time to 43% of b/s.

Figure 14: Funding structure of FC Otkritie Bank, % of b/s

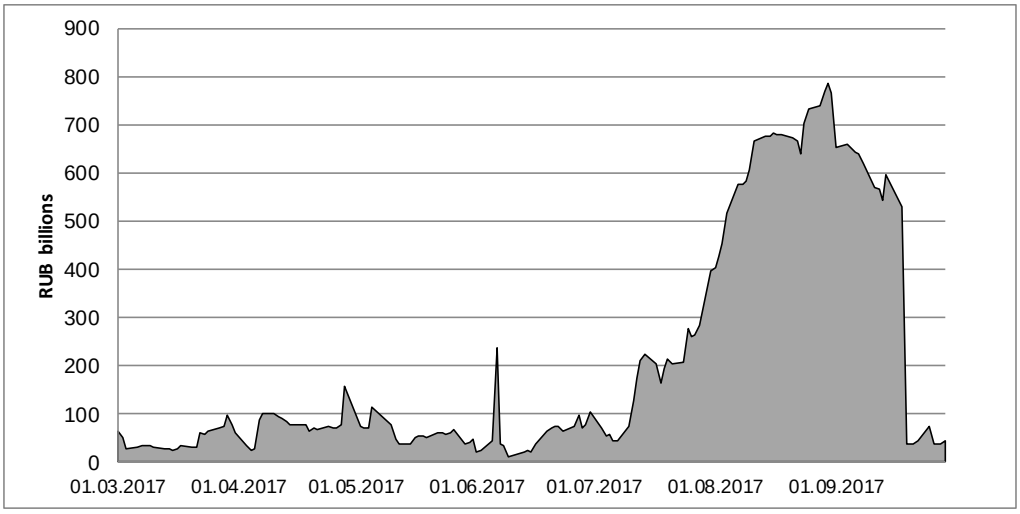


Source: CBR; e-disclosure

Additional confirmation of the increased tension in the Russian banking market is provided by the Central Bank data on repo deals, displayed in Figure 15.

Except two short-term peaks in spring 2017, the market appetite for liquidity remained quite moderate, not exceeding the volume of RUB 100bn. However, the situation started to change at the beginning of July and the funding reached a peak of RUB 785bn at the end of August, simultaneously with the official announcement of the rehabilitation of FC Otkritie Bank. Afterwards it started to decline and dropped below RUB 100bn shortly before the start of second rehabilitation, the one of B&N Bank.

Figure 15: Repo operations with the Central bank on the interbank market, RUB bn



Source:CBR data

As it became obvious from monthly RAS financials, FC Otkritie and B&N Bank were the main consumers of increased CBR repo funding during July-September 2017. In addition to that, according to media reports in August, CBR provided unsecured credit line to FC Otkritie, however the volume of this line was not disclosed (banki.ru, 2017e).

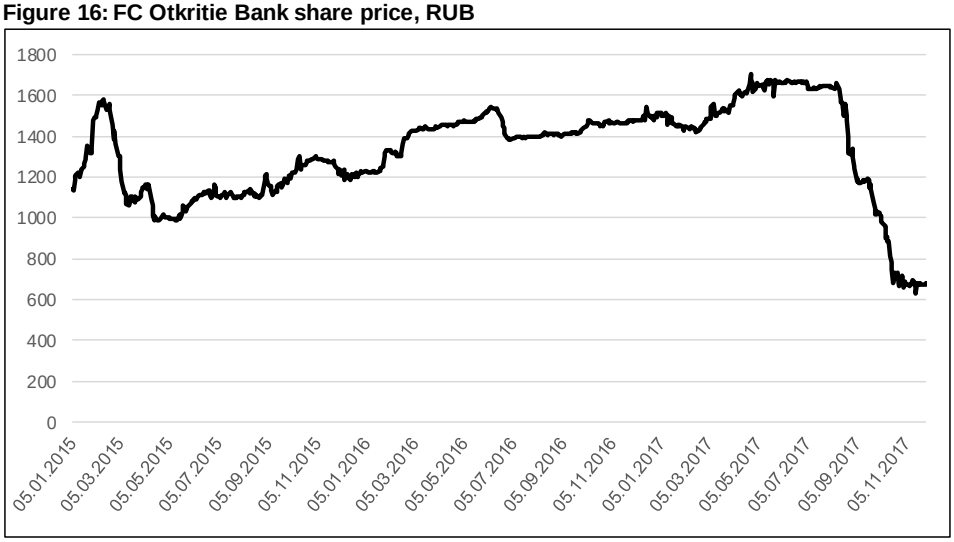
Another event that caused a large resonance in the market, however it is still hard to measure how strong its real effect was, was the publication of the letter by Mr. Gavrilov, the management director at Alfa-Capital, with the recommendation to avoid any exposure towards so called "Moscow ring" banks – FC Otkritie Bank, B&N Bank, Promsvyazbank and Credit Bank of Moscow – due to the increased level of issues at these banks and that the situation around these credit institutions might escalate already in autumn 2017, and not after the presidential elections in Russia in March 2018. The holders of subordinated bonds of these banks were named to be exposed to the risk the most because, in case of rehabilitation, these securities would be entirely written-off (RBC, 2017b).

This publication caused a wide reaction in the market and the request of the Central Bank to Federal Antimonopoly Service (FAS) in order to check this information for potential market manipulations (RBC, 2017c). On the next day after the publication, the management company "Alfa-Capital" named this letter the private opinion of the analyst and called it off, however, the information was already in the market (banki.ru, 2017d). One of the possible consequences of this publication is the fact that it put these four banks from the public point of view all in one boat.

These events over previous months lead to the culmination at the end of summer 2017 when on 29th of August the Central Bank of Russia officially announced the start of the rehabilitation process of FC Otkritie Bank and the members of its group, including insurance company "Rosgostrakh" and RGS-Bank, Trust bank, Otkritie Broker, "Tochka" and Rocket banks as well as three pension funds – NPF "Lukoil-Garant", NPF "RGS" and NPF of Electroenergy (CBR, 2017c). This rehabilitation was the first one under the new recovery program; according to which the Central Bank will step in as the main investor of rehabilitated entity and the recovery process will be conducted with the participation of the Banking Sector Consolidation Fund (BSCF). No moratorium was introduced on creditors' claims, and the entities of Otkritie Group continued to operate in an ordinary manner.

Since FC Otkritie Bank was listed on the Moscow Stock Exchange, the development of its share price provided additional information about the situation surrounding the bank:

Figure 16: FC Otkritie Bank share price, RUB



Source: Moscow Stock exchange

Until mid-August, the share price was relatively stable, staying above RUB 1600 per share. The downward trend started on August 15, 2017, together with the publication of the letter by Alfa-Capital manager – first falling to RUB 1500 and on August 28 standing already at RUB 1309. The shares of FC Otkritie were delisted from the Moscow Stock Exchange starting from December 1 according to the decision of the temporary administration.

Prior to the start of the rehabilitation, the ownership of FC Otkritie Bank was dispersed, with "Otkritie Holding" keeping the controlling stake. "Otkritie Holding" itself was owned by a number of individuals and legal entities:

Figure 17: Ownership structure of FC Otkritie Bank as of 31.12.2016

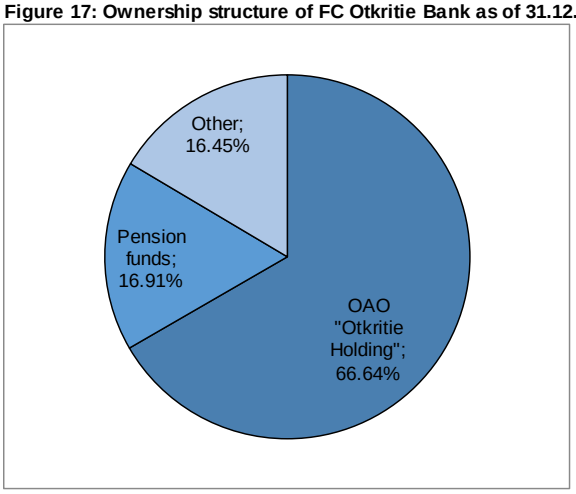
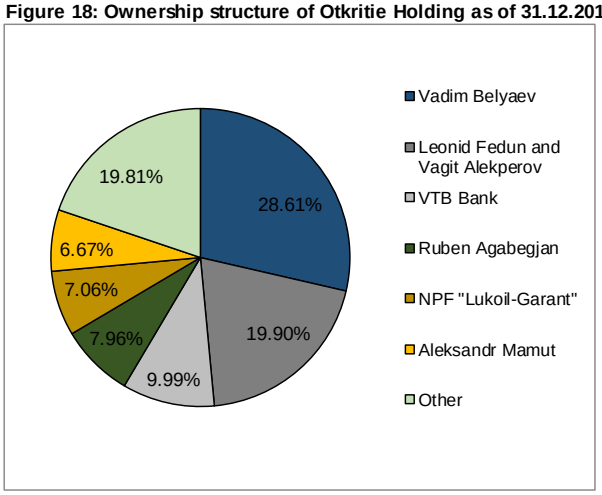


Figure 18: Ownership structure of Otkritie Holding as of 31.12.2016



Source: FC Otkritie Bank annual report, 2016; Otkritie Holding annual report, 2016

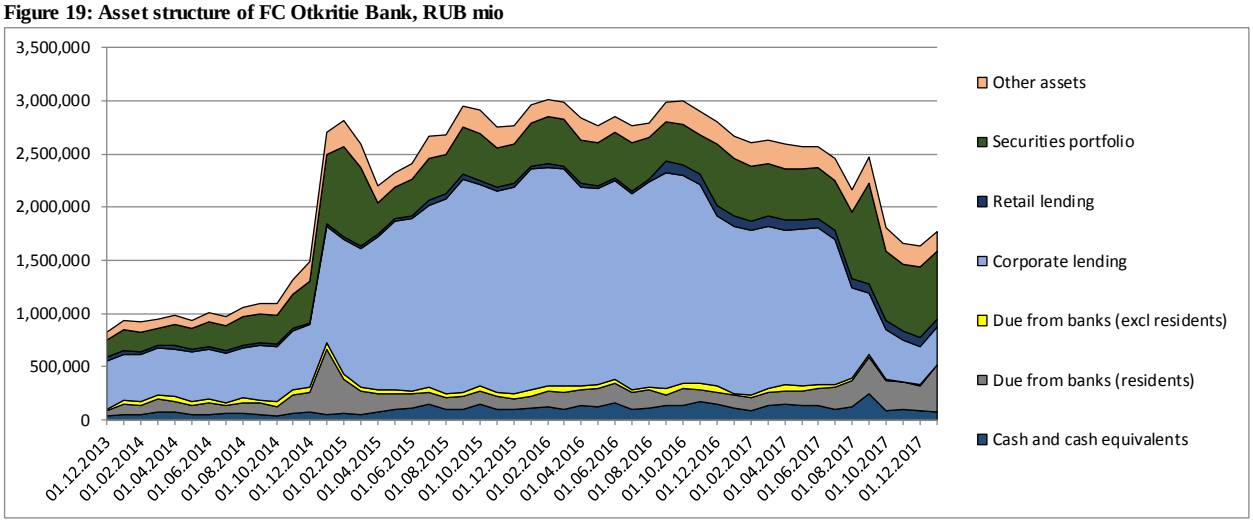
As a result of the rehabilitation and subsequent assessment done by the temporary administration, previous shareholders of FC Otkritie Bank lost their shares in the bank, and the Central Bank became the sole shareholder of the institution. This change officially took place in December 2017 when the recapitalization was performed (banki.ru, 2018a). OAO "Otkritie Holding" itself was not in scope of the rehabilitation, and continued to perform as an independent legal entity with the shareholders listed above.

4.1.1 Analysis of risk-taking indicators

Given the fact of the economic failure of the bank and its takeover by the regulator, it is necessary to assess now whether risk-taking variables provide any indication of the increase in the risk appetite of FC Otkritie Bank prior to its failure.

Before moving to the analysis of individual risk-taking indicators, the overall development of the balance sheet of FC Otkritie Bank during the observation period is presented. The following graph representing the asset structure of FC Otkritie Bank is based on monthly RAS financials:

Figure 19: Asset structure of FC Otkritie Bank, RUB mio



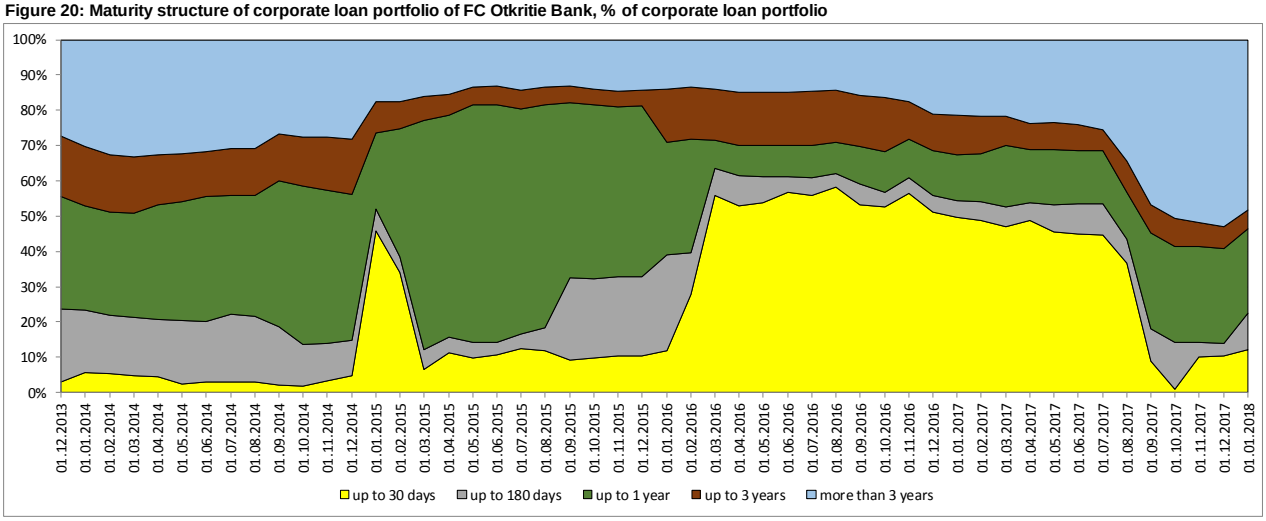
Source: CBR; e-disclosure

The graph demonstrates that the growth in the balance sheet coincides with the increase in M&A activity of Otkritie Group. Since the end of 2013, FC Otkritie Bank grew almost 6 times, reaching the volume of almost RUB 3trln at the end of 2015 and staying at this level until the beginning of 2017. Corporate lending and securities portfolio, followed by interbank allocations, were the main contributors to the growth.

It is necessary to point out that corporate lending portfolio also includes reverse repo operations with legal entities. The maturity structure of corporate book provides an indication of the volume of reverse repo deals since their substantial part has relatively short maturity, not exceeding 30 days (Bank FC Otkritie, 2016). For instance, share of lending with maturity up to 30 days increased sharply at the beginning of 2016, and remained at the level of about 50% of corporate loans until 2017 when it started to decrease gradually. This development ended up with the sharp decline during August 2017 that might be caused by funding contraction during July-August and necessity to close these short-term deals.

High share of short-term lending in the bank's portfolio partially explains the relatively volatile loan book during the observation period.

Figure 20: Maturity structure of corporate loan portfolio of FC Otkritie Bank, % of corporate loan portfolio

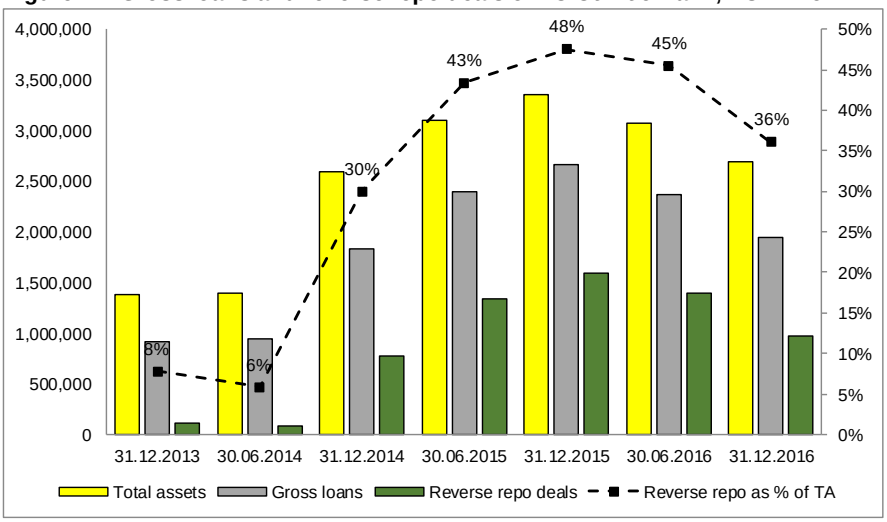


Source: CBR; e-disclosure

Financial reports under IFRS standards provide additional insight, however their main disadvantage is a low frequency of publications – FC Otkritie Bank provided statements only on the semiannual basis, and the latest IFRS financials were published with reporting date December 31, 2016.

Figure 21 shows that reverse repo transactions with corporate customers constituted a significant share of bank's activity since the end of 2014, accounting for more than 30% of total assets.

Figure 21: Gross loans and reverse repo deals of FC Otkritie Bank, RUB mio



Source: FC Otkritie Bank IFRS financial reports

Risk-taking indicators focused are calculated on the basis of IFRS (semiannually in case of FC Otkritie Bank) as well as RAS financials (quarterly). The IFRS ratios are presented in the table below:

Table 2. FC Otkritie Bank risk-taking indicators, IFRS

	31.12.2013	30.06.2014	31.12.2014	30.06.2015	31.12.2015	30.06.2016	31.12.2016
Asset quality							
NPL ratio	4.7%	5.0%	3.3%	4.6%	5.5%	6.8%	8.5%
LLPs to total loans	3.6%	3.4%	2.2%	2.5%	3.4%	4.1%	5.6%
Loan ratio	66.1%	67.9%	70.3%	77.0%	79.0%	76.7%	71.7%
Loan growth		3.9%	92.6%	30.9%	11.2%	-10.9%	-18.2%
Asset growth		1.3%	85.9%	19.6%	8.3%	-8.2%	-12.5%
Capital adequacy							
Capital ratio	10.1%	10.2%	6.1%	6.5%	5.5%	6.1%	8.6%
Liquidity							
LA ratio	26.3%	12.5%	15.5%	16.6%	9.3%	12.3%	19.2%
Deposit ratio	56.9%	56.7%	39.5%	41.1%	37.5%	39.2%	44.1%
Profitability							
RoA	1.26%	0.44%	0.30%	0.29%	0.21%	0.11%	0.05%

Source: FC Otkritie Bank IFRS financial reports

NPL ratio and provisioning level follow the common trend, gradually increasing towards the end of 2016. Loan ratio, however, peaks in December 2015, reaching 79% of total assets, but starts to decline afterwards. It can be also noted that loan portfolio exhibits, in general, higher volatility in comparison with total assets.

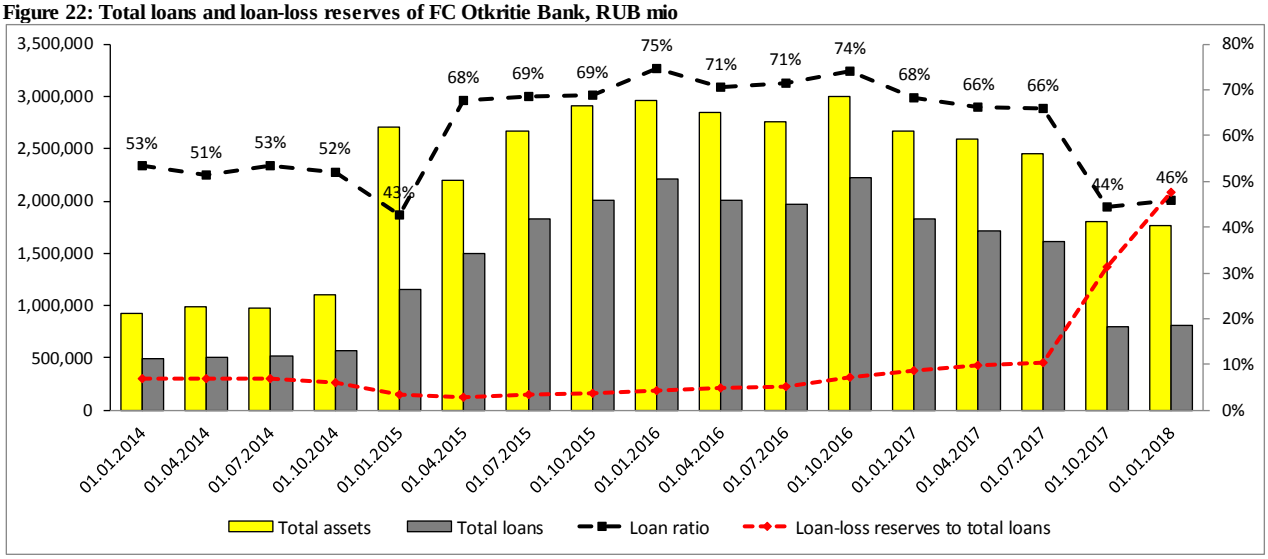
In regards to the capitalization, the substantial deterioration took place at the end of 2014 – the capital ratio was diluted by the aggressive asset growth. Since then, the capitalization remained relatively stable. On the funding side, deposit ratio showed the same dynamics, but increasing gradually towards the end of 2016. Profitability, however, showed the deterioration during the whole observation period.

IFRS financials, unfortunately, do not provide any insight in the year 2017, the period preceding the takeover of the bank by the regulator. Due to that reason and the low frequency of IFRS reports, the calculation of risk-taking indicators on the basis of RAS financials was also conducted. In this case, results are presented in sub-sections, summarized by risk-taking dimensions.

4.1.2 Asset quality

The following graph demonstrates the development of risk-taking ratios on the basis of RAS financials:

Figure 22: Total loans and loan-loss reserves of FC Otkritie Bank, RUB mio



Source: CBR; e-disclosure

It is necessary to point out that since the information on non-performing loans is irregularly disclosed in the quarterly reports of the bank published on the website of the Central Bank, NPL ratio is not included in the analysis of asset quality indicators based on RAS financials. In this case, asset quality indicators are limited to the ratio of loan-loss reserves to total loans; loan ratio and loan growth.

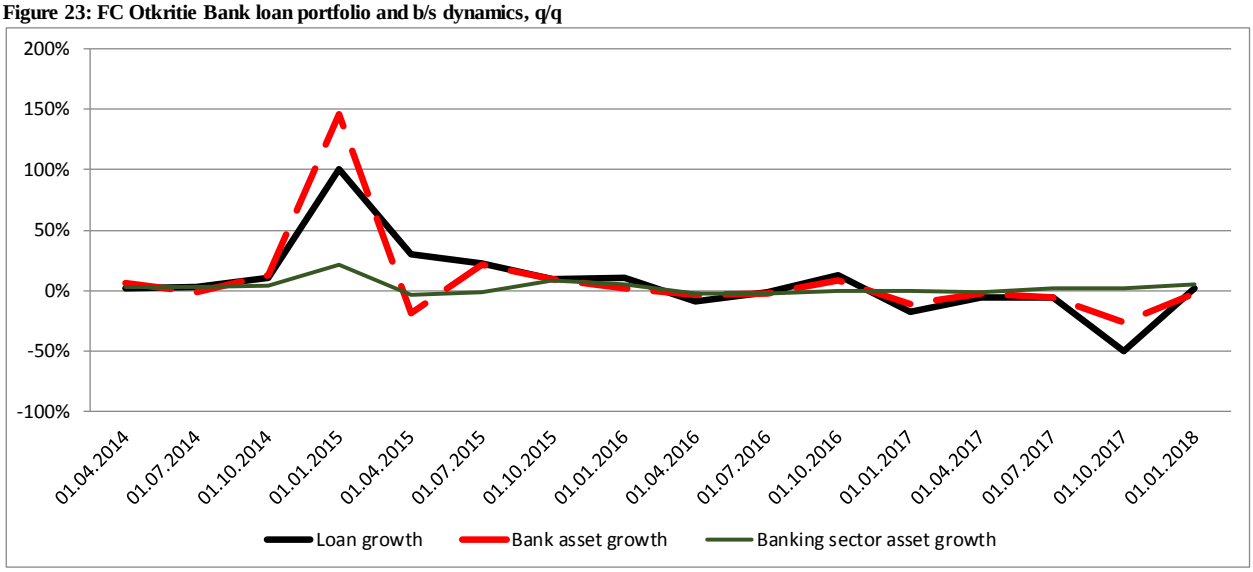
Risk metrics based on RAS standards show similar dynamics to the ones based on IFRS. Loan ratio, for instance, began to increase aggressively at the beginning of 2015 and reached its peak in one year, accounting for 75% of total assets. Starting from the end of 2017, the loan portfolio demonstrated a moderate decline, however still remained elevated.

More substantial contraction took place during July-September 2017, before the takeover by the regulator, and coincided with the outflow of customer funds. As it was shown previously, this decline is largely attributable to lower of share of loans with the maturity up to 30 days, partially consisting of reverse repo agreements.

The ratio of loan loss reserves to total loans demonstrated a gradual growth since the fourth quarter of 2016, partially caused by overall lending contraction.

With the exception of January 1, 2015, loan portfolio of FC Otkritie Bank exhibited a higher growth in comparison with the bank's total assets.

Figure 23: FC Otkritie Bank loan portfolio and b/s dynamics, q/q



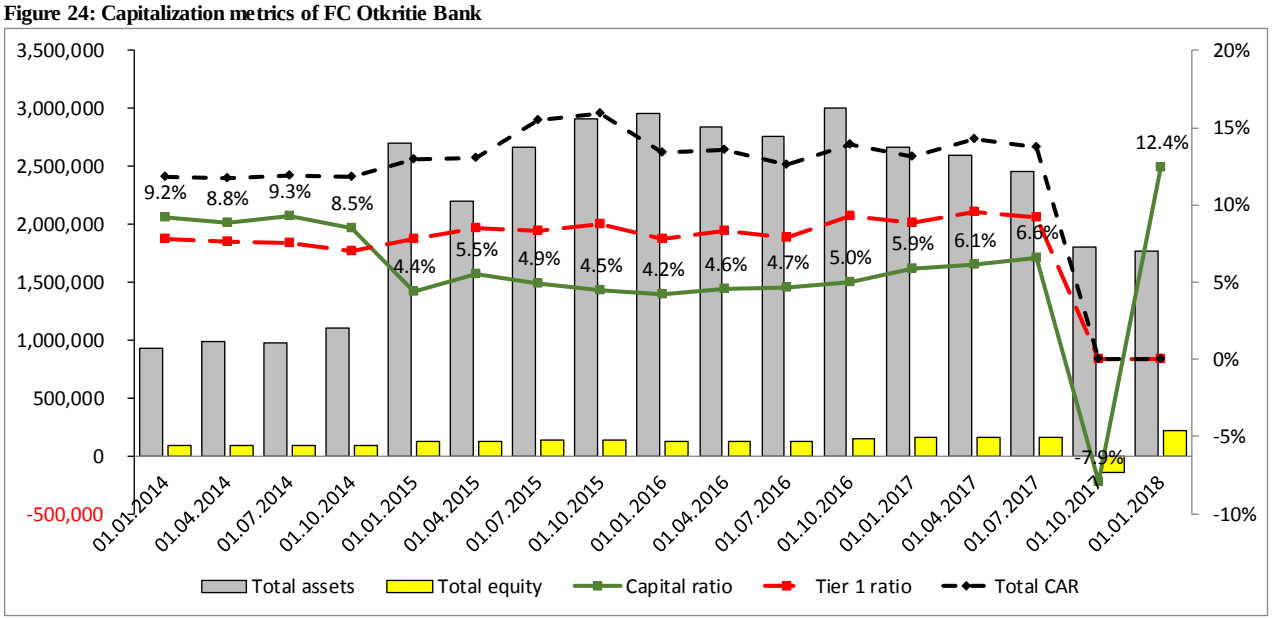
Source: CBR; e-disclosure

4.1.3 Capital adequacy

Figure 24 displays the development of capitalization metrics – capital ratio as well as regulatory indicators (local Tier 1 ratio and total CAR).

At the beginning of 2015, capital ratio showed a substantial deterioration, being diluted by aggressive asset growth, but it remained quite stable during the rest of the observation period due to support via capital injections. Regulatory ratios also remained relatively flat and declined only after the start of rehabilitation process.

Figure 24: Capitalization metrics of FC Otkritie Bank



Source: CBR; e-disclosure

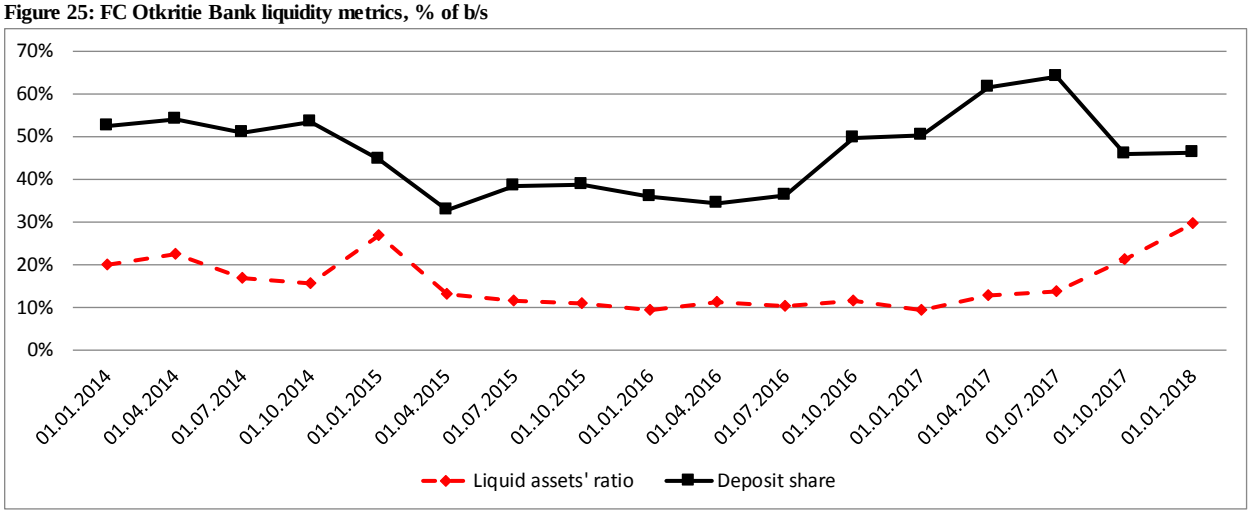
During the observation period there were several capital injections completed by the bank. For instance, in November 2014 SPO on the Moscow Stock Exchange was conducted that resulted in the additional capital inflow of RUB 21.4bn (banki.ru, 2014; Bank FC Otkritie, 2014); in February 2015 there was additional share emission in total volume of RUB 665mio (Bank FC Otkritie, 2015). In August 2016 the capital of FC Otkritie was increased as a result of the merger with PAO "Khanty-Mansiysky Bank Otkritie" (Bank FC Otkritie, 2016).

4.1.4 Liquidity dimension

In case of asset liquidity, the definition of liquid assets must be clarified first. More conservative interpretation is taken into account - it includes cash and its equivalents, deposits with the Central bank and funds due from other banks (Golin and Delhaise, 2013).

Figure 25 shows that there was a certain decline in liquidity buffer at the beginning of 2015, however after that liquid assets remained rather stable, standing around 10% of total assets, and there was even an increase in the first half of 2017.

Figure 25: FC Otkritie Bank liquidity metrics, % of b/s

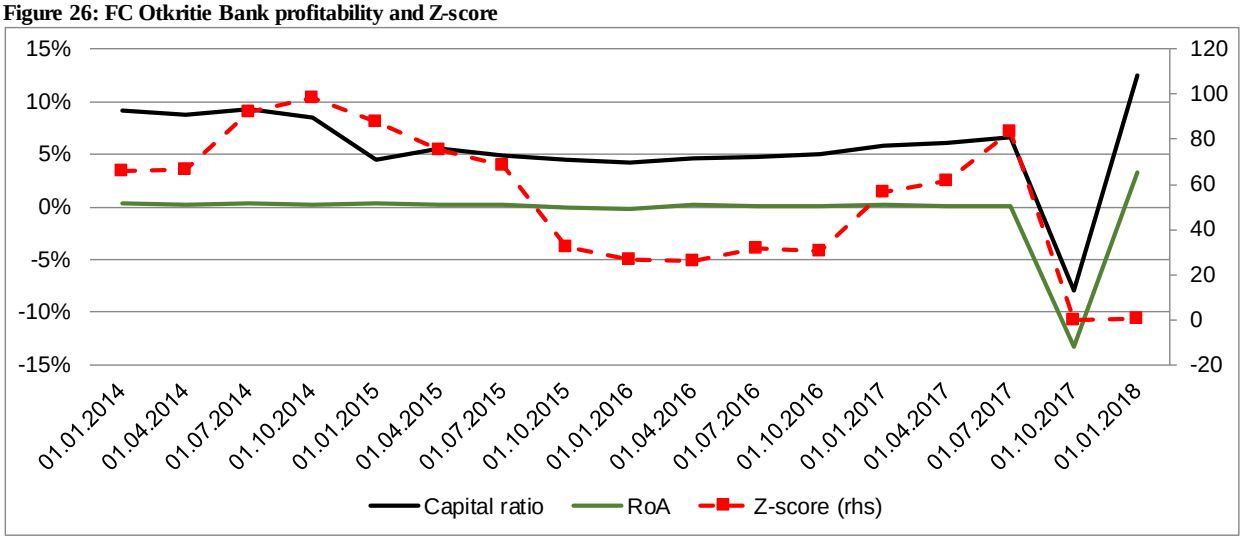


Source: CBR; e-disclosure

Funding liquidity during the most part of the observation period demonstrated similar dynamics, declining at the beginning of 2015, remained flat until the end of third quarter of 2016 and then starting to grow again, indicating the improvement in the funding stability. However, as shown in Figure 16, during July-September 2017 the trend changed and demonstrated the substantial deterioration, dropping below 50% of total funding. These developments followed the downgrade of FC Otkritie by S&P in May and the rating issued by ACRA at the beginning of July based on which federal and pension could not be placed anymore at the bank.

4.1.5 Profitability and z-score

Figure 26: FC Otkritie Bank profitability and Z-score



Source: CBR; e-disclosure

Profitability of FC Otkritie remained marginal over the whole observation period, staying below 1% for every quarter.

Z-score showed very volatile dynamics – decreasing at the beginning of 2015 together with overall asset growth, remaining suppressed until 2017, while being on the upward trend during the first half of 2017. The moderate improvement in the capital ratio had also a positive impact on the z-score.

4.1.6 Interim summary

Summing up all the findings from the analysis of risk-taking indicators of FC Otkritie Bank during the observation period, it is possible to stress out several aspects.

First, the main issue with IFRS financials is that the last published report refers to 31st of December, 2016, and, therefore, IFRS data does not provide any insight in the risk-taking of the bank during 2017. The available data of previous years provides the following conclusions. For instance, asset quality metrics such as NPL and LLR ratios were on the rise during 2016 accompanied by the decline in the profitability. Capital adequacy and liquidity metrics, on the contrary, stood at the lowest level during the second half of 2015, but demonstrated a modest improvement since then.

Second, RAS variables across all four risk dimensions show that there was an increase in risk-taking at the beginning of 2015 coincided with active M&A operations as well as start of the rehabilitation process of Trust Bank and, as a result, more aggressive growth of the balance sheet. It is captured by the growth in loan ratio, while capital adequacy, asset liquidity as well as funding liquidity deteriorated. Z-score as an ultimate risk-taking index declined too. On the other hand, the share of loan loss reserves was diluted because of the aggressive growth of loan portfolio.

Thirdly, although there was a move to higher level of risk-taking, it stabilized and remained at this level for the rest of the observation period. The only exception was the LLR ratio that demonstrated an upward trend during 2017.

In addition to that, quarterly risk-taking metrics do no capture the increased turbulence in summer 2017 – in this case it is necessary to check monthly financials reported according to RAS. Figure 16 presents the funding structure of FC Otkritie Bank and indicates the rapid outflow of customer funds from the beginning of July accompanied by increasing reliance on Central Bank facilities.

As it can be seen from the chronology of events, one of the triggers for deteriorating liquidity might be the downgrade of the bank by S&P in May 2017 and, even more, relatively low rating assigned

by the local rating agency in July 2017. That prohibited federal and pension funds to be placed at the bank causing their outflow, as a result, however also giving a signal for the outflow of corporate and retail funds.

Additional reputational damage was done by the letter of Alfa-Capital manager in mid-August 2017. It is difficult to measure which of these events did play the major role – most probably, the synergy of all these events together with already high risk level of FC Otkritie Bank led to the situation that the Central Bank had to step in, providing originally additional funding in order to substitute the outflow of customer funds and then acting as the major investor and taking over the bank completely.

4.2 B&N Bank

The second case that is in the focus of this study is B&N Bank. The credit institution received its banking license in 1993 and was founded by Mikhail Shishkhanov as an operator in a special economic zone (internal offshore), Republic of Ingushetia. At the beginning the bank had rather captive role, servicing state-owned oil company "Slavneft" and later "Russneft", the oil company founded by Mikhail Shishkhanov (Banki.ru, 2017h). With the passage of time, B&N Bank moved to the model of the universal bank, servicing the needs of both retail as well as corporate customers and extending its geographical presence.

Since the foundation and until the introduction of the temporary administration in September 2017, B&N Bank always remained in private hands. Over last several years, it was under control of Mikhail Shishkhanov and his nephew, Mikhail Gutseriev. As of 31.12.2016, Mr. Gutseriev and Mr. Shishkhanov held 67.97% and 28.49% of B&N Bank's shares respectively (B&N Bank, 2016).

As in case with FC Otkritie Bank, the period from the end of 2013 till the end of 2017 is covered. Similar to FC Otkritie, this period in the development of B&N Bank is marked with very aggressive growth – both due to organic expansion as well as high activity in the M&A market, including purchases of healthy financial institutions and participation in the rehabilitation processes of other banks with their consequent mergers.

For instance, on the 28th of December 2013 the merger of Bashinvestbank was completed, and the bank continued to operate as a branch of B&N Bank in Ufa. In April 2014 B&N Bank purchased Moscomprivatbank.

Starting from November 2014 B&N Bank participated in the rehabilitation process of ROST Bank Group (consisting of ROST Bank, SKA-Bank, Tveruniverbank, Akkobank and Kedr). On 17th of December B&N Bank purchased 99.9% share of ROST Bank, 94.1% in Tveruniverbank, 78.7% in Kedr bank (B&N Bank, 2014)

ROST Bank was the subsidiary of B&N Bank starting from 25th of March 2015 until 24th of December 2015. On 24th of December 2015 Mikhail Shishkhanov, the main shareholder of B&N Bank, purchased shares of ROST Bank from B&N Bank – with this step, ROST Bank was de-consolidated from IFRS financial reporting of B&N Bank Group. According to the management statements until the end of summer 2017, it was planned that ROST Bank would be merged with B&N Bank until the end of 2025 (B&N Bank, 2015)

ROST Bank together with Shishkhanov and B&N Bank prepared and provided to Deposit Insurance Agency Plan of financial rehabilitation of ROST Bank. Within this program, B&N Bank provided funding to ROST Bank in the form of interbank loans. As of 31st of December 2016 the total volume of funding by B&N Bank accounted for RUB 545.84bn. According to financial rehabilitation plan, interbank loans provided by B&N Bank were the main funding source until the planned merger (B&N Bank, 2016).

In June 2015 B&N Bank shareholder Mikhail Shishkhanov announced the purchase of 58.33% of MDM bank shares that was followed by a number of additional share purchases and ultimately ended up with the merger of B&N Bank and MDM Bank in November 2016. MDM Bank was a relatively large credit institution in the Russian banking landscape – prior to the merger, according to Russian accounting standards (RAS) it was ranked 29th largest bank in Russia by total assets and accounted for 33% of B&N Bank total assets. This merger allowed B&N Bank to strengthen its position as the 12th largest bank in Russia (CBR; kuap.ru; banki.ru).

The situation in the banking sector was relatively stable during that period, however tensions started to rise in June 2017 triggered by the assignment of relatively low rating to FC Otkritie Bank

by the local rating agency. In addition to that, B&N Bank was also mentioned in the letter of Mr. Sergei Gavrilov, the manager at Alfa-Capital, that was published on August 15, 2017.

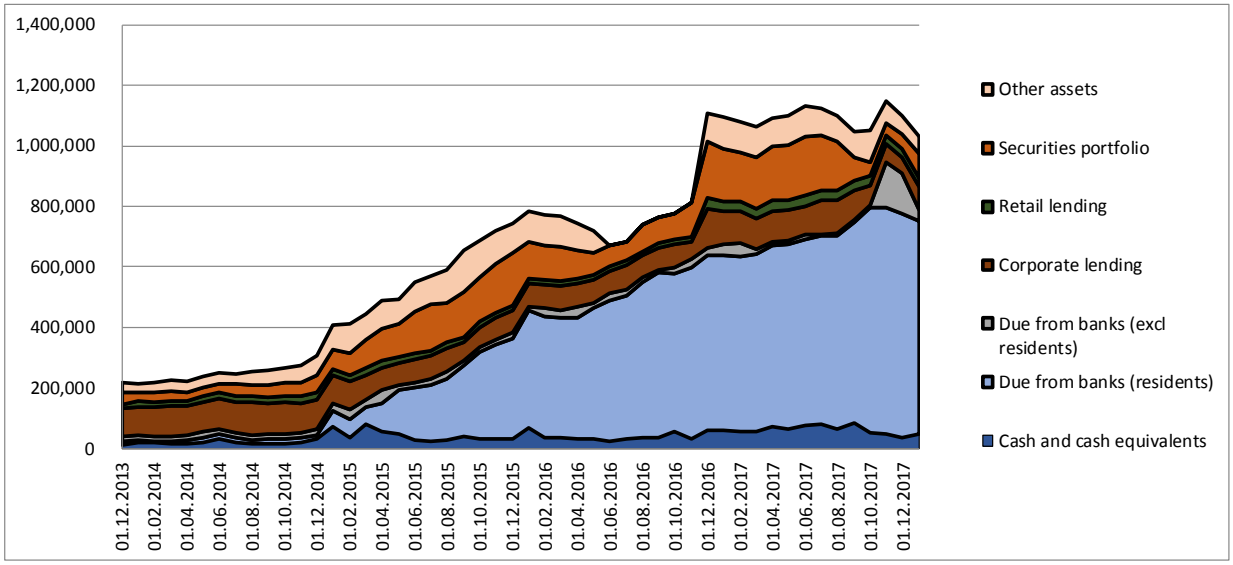
One month after the start of the rehabilitation process of FC Otkritie Bank, on 20th of September 2017, shareholders of B&N Bank asked themselves the Central of Russia for the financial support – this point differs from FC Otkritie Bank case where there was no publicly available information that its shareholders approached the CBR.

On the next day, 21st of September, CBR announced the realization of measures aiming to increase of the financial stability of B&N Bank and ROST Bank – in other words, the rehabilitation process with the participation of the Banking Sector Consolidation Fund (BSCF) has been started and the temporary administration has been introduced. No moratorium on creditors' claims has been announced, and all banks that belonged to B&N Group – B&N Bank itself, ROST Bank, "B&N Bank Digital" as well as Uralprivatbank – continued to operate in the ordinary manner. The same procedure was applied in case of FC Otkritie Bank (CBR, 2017d).

4.2.1 Analysis of risk-taking indicators

As it was already mentioned, B&N Bank demonstrated during the observation period very aggressive balance sheet growth – increasing almost 4 times from RUB 216bn at the end of 2013 to RUB 1 trln as of September 1, 2017, the last reporting date before the rehabilitation start.

Figure 27: Asset structure of B&N Bank, RUB mio



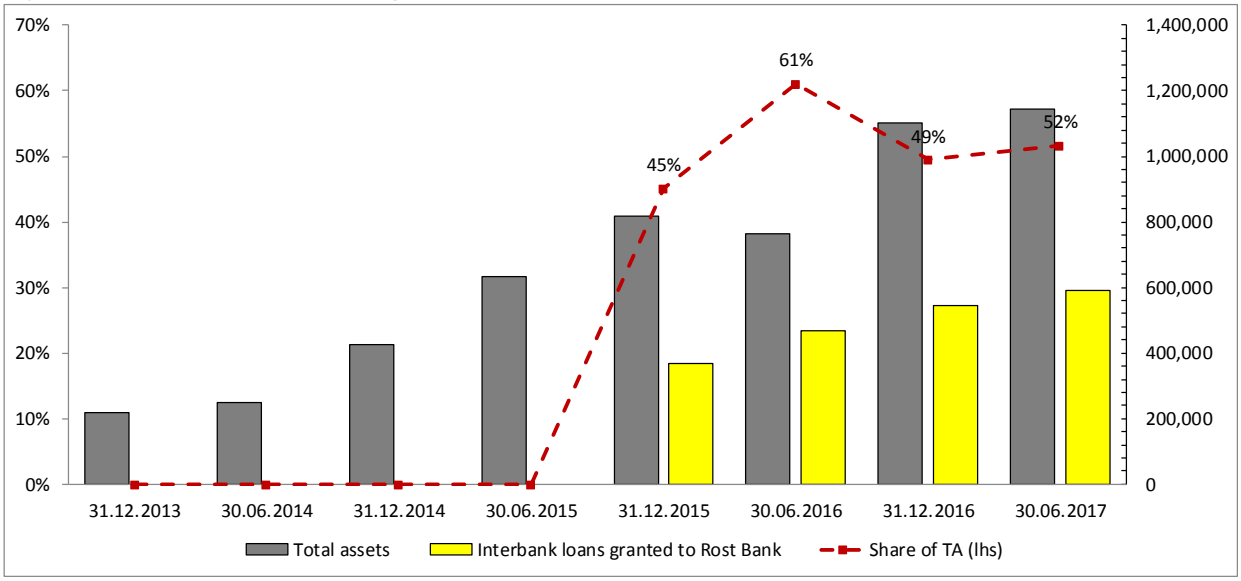
Source: CBR; e-disclosure

The main growth driver was the interbank lending to residents, and this aspect is connected with one crucial characteristic of B&N Bank. Since November 2014 B&N Bank was participating in the financial rehabilitation of ROST Bank and, according to the plan, B&N Bank was providing funding to ROST Bank in a form of interbank loans.

In the financials reported under RAS the exposure towards ROST Bank is not disclosed separately – only due from banks-residents might serve as a proxy for this exposure. The advantage of IFRS financial statements is that the exposure towards ROST Bank is explicitly reported:

Starting from the end of 2015, the exposure towards ROST bank has been increasing in absolute

Figure 28: B&N Bank total assets and exposure towards ROST Bank based on IFRS, RUB mio



Source: B&N Bank IFRS financial reports

terms. Percentage-wise, the decline between 30.06.2016 and 31.12.2016 might be attributable to the merger with MDM Bank, but, in general, the relative share of exposure towards ROST in the structure of total assets of B&N bank has been also gradually increasing, reaching 52% of TA as of 30.06.2017.

Due to this aspect, the analysis of risk-taking indicators of B&N Bank includes two adjustments. First, the calculation of asset quality ratios such as loan ratio and loan growth includes the exposure towards ROST Bank – in case of IFRS financials, this data is provided separately; however, in case of RAS financials, due from banks-residents is taken as a proxy for the exposure towards ROST bank. The ratio of LLRs towards loan portfolio, however, does not include the exposure towards ROST Bank because reported reserves refer only to corporate and retail loan portfolio and the

inclusion of ROST exposure would dilute this ratio. Second, asset quality indicators of ROST Bank are calculated too (based on RAS financials) and presented alongside with those of B&N Bank.

Table 3 presents the summary of risk-taking indicators for B&N Bank calculated on the basis of IFRS financials. NPL ratio is excluded from the calculation because of its incomplete reporting in the statements.

Table 3: B&N Bank risk-taking indicators, IFRS

	31.12.2013	30.06.2014	31.12.2014	30.06.2015	31.12.2015	30.06.2016	31.12.2016	30.06.2017
Asset quality								
NPL ratio								
LLRs to total loans	3.1%	4.0%	4.4%	4.9%	5.4%	7.0%	16.3%	15.4%
Loan ratio	64.7%	66.6%	52.8%	59.6%	73.4%	83.8%	79.0%	80.3%
Loan growth		18.5%	34.6%	68.4%	58.9%	6.7%	36.1%	5.3%
Asset growth		15.0%	69.9%	49.1%	29.1%	-6.6%	44.4%	3.7%
Capital adequacy								
Capital ratio	8.4%	10.3%	7.2%	5.6%	7.0%	7.8%	7.4%	7.2%
Liquidity								
LA ratio	26.4%	24.7%	42.4%	19.8%	15.8%	11.0%	12.9%	10.9%
Deposit ratio	79.1%	68.0%	62.1%	61.1%	59.7%	63.1%	67.3%	66.2%
Profitability								
RoA	0.35%	0.48%	1.37%	-0.45%	-2.95%	-0.16%	0.33%	0.11%

Source: B&N Bank IFRS financial reports

In terms of asset quality, the ratio of loan-loss reserves to total loans is on the rising trend during the whole observation period, although gaining additional momentum during 2017. The growth is also observed in the loan ratio. Capitalization, in its turn, demonstrated a significant deterioration in the second half of 2014 (at the same time, B&N started the rehabilitation of ROST Group) and remained at this level until the takeover by the regulator.

LA ratio also showed a deterioration during the observation period, however deposit ratio was overall volatile, without any clearly defined trend. Profitability of B&N Bank remained marginal - for 3 reporting dates the bank was even loss-making.

The following analysis is based on the indicators calculated on the basis of RAS financials.

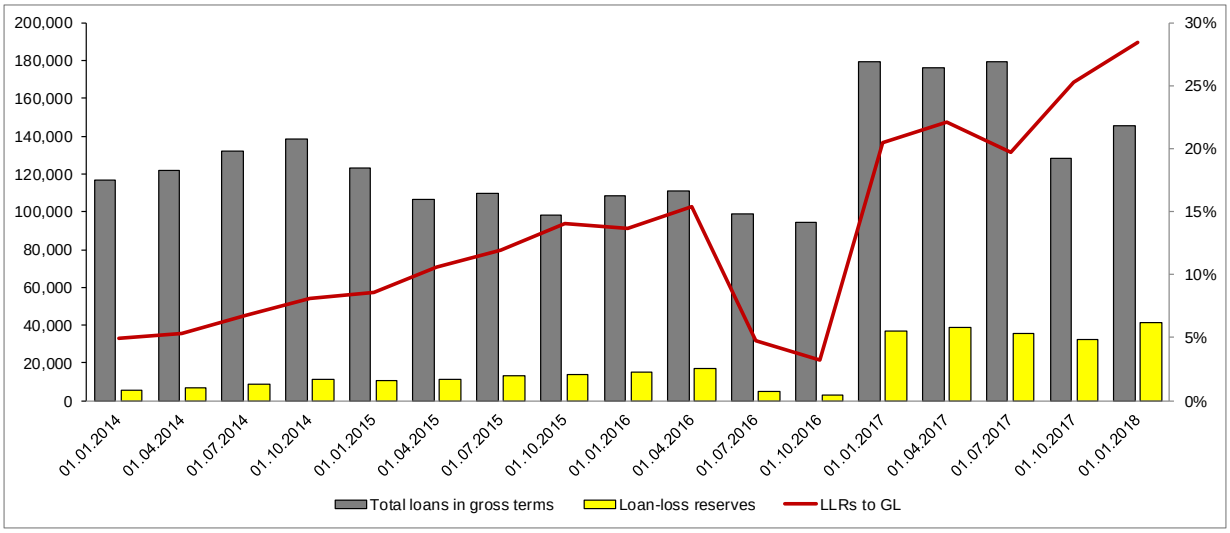
4.2.2 Asset quality

First asset quality indicator that is in the spotlight and based on RAS financials is the ratio of loan loss reserves to total loans. In case of B&N Bank, interbank loans are excluded from the calculation

because no provisions were reportedly created for these exposures during the whole observation period and its incorporation in LLR ratio would create a downward bias for this metric.

Figure 29 demonstrates that although during the second half of 2016 the LLR ratio deteriorated, at the beginning of 2017 it started to grow again. One of possible reasons for this surge might be the merger with MDM Bank and weaker asset quality of this institution. So, the provisioning ratio remained elevated during the rest of the period until the takeover by the regulator. In case of second indicator, loan ratio, two types of this metrics are presented – one excluding interbank exposure and consisting only of corporate and retail loan book; and the second one with interbank exposure.

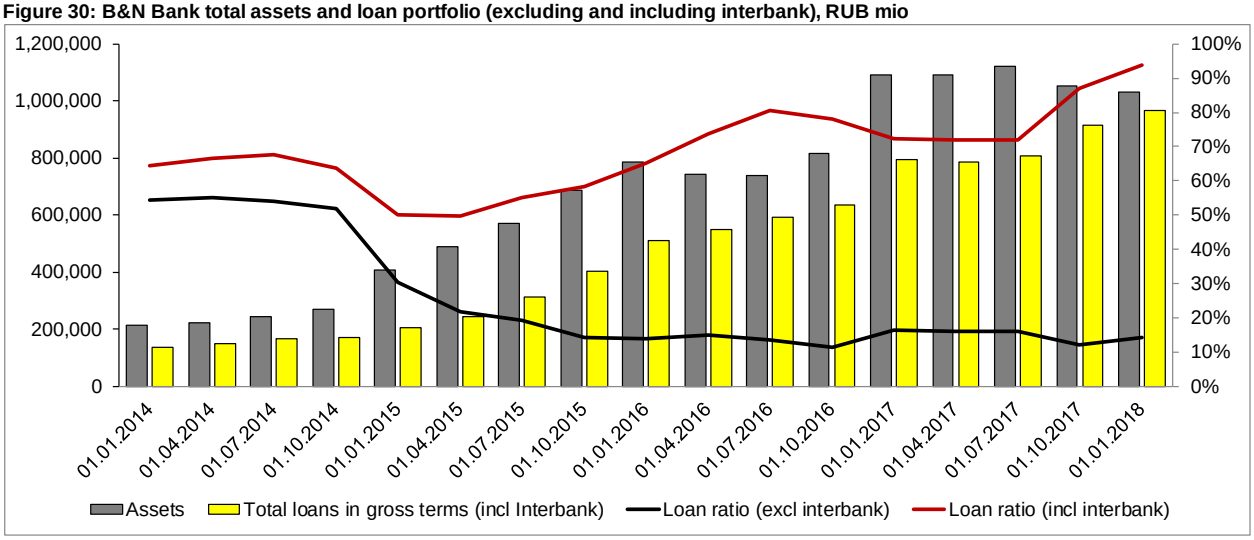
Figure 29: B&N Bank loan portfolio (excl. Interbank) and provisions, RUB mio



Source: CBR; e-disclosure

These two versions of one indicator demonstrate different dynamics during the observation period. The loan ratio without interbank lending deteriorated in the fourth quarter of 2014 and remained at this level. On the other hand, the ratio including interbank exposure was on the upward trend since the beginning of 2015 – therefore, the share of interbank placements, including funds provided to ROST Bank, was gradually increasing. For instance, the loan ratio including interbank exposure reached 72% of total assets as of July 1, 2017, last quarterly RAS financials published before the start of rehabilitation process.

Figure 30: B&N Bank total assets and loan portfolio (excluding and including interbank), RUB mio

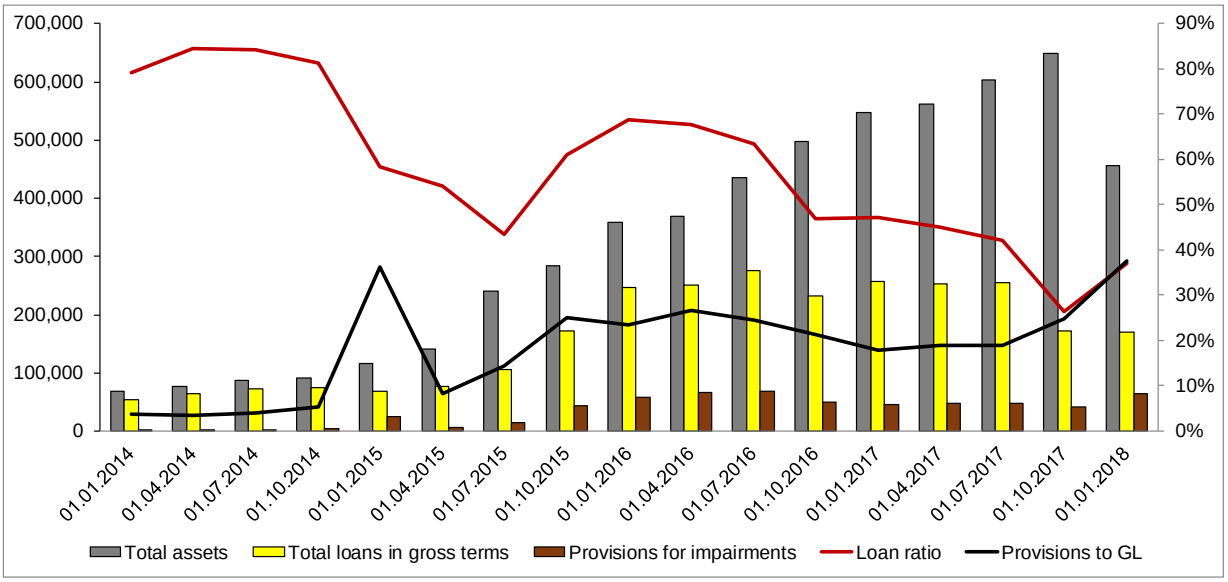


Source: CBR; e-disclosure

Due to the increasing exposure towards ROST Bank, the asset quality metrics of this institution are presented too. As Figure 31 shows, LLR ratio was relatively volatile, peaking at the beginning of 2015, decreasing to 7% afterwards, but starting to rise again and reaching 17% of loan portfolio as of July 1, 2017. Loan ratio, on the contrary, was on the downward trend during 2017.

It is also worth noting that during 2016 the loan portfolio of ROST Bank was expanding – accompanied by the decline of corporate and retail loan book of B&N Bank during the same period,

Figure 31: Total assets, loan portfolio and provisions of ROST Bank, RUB mio

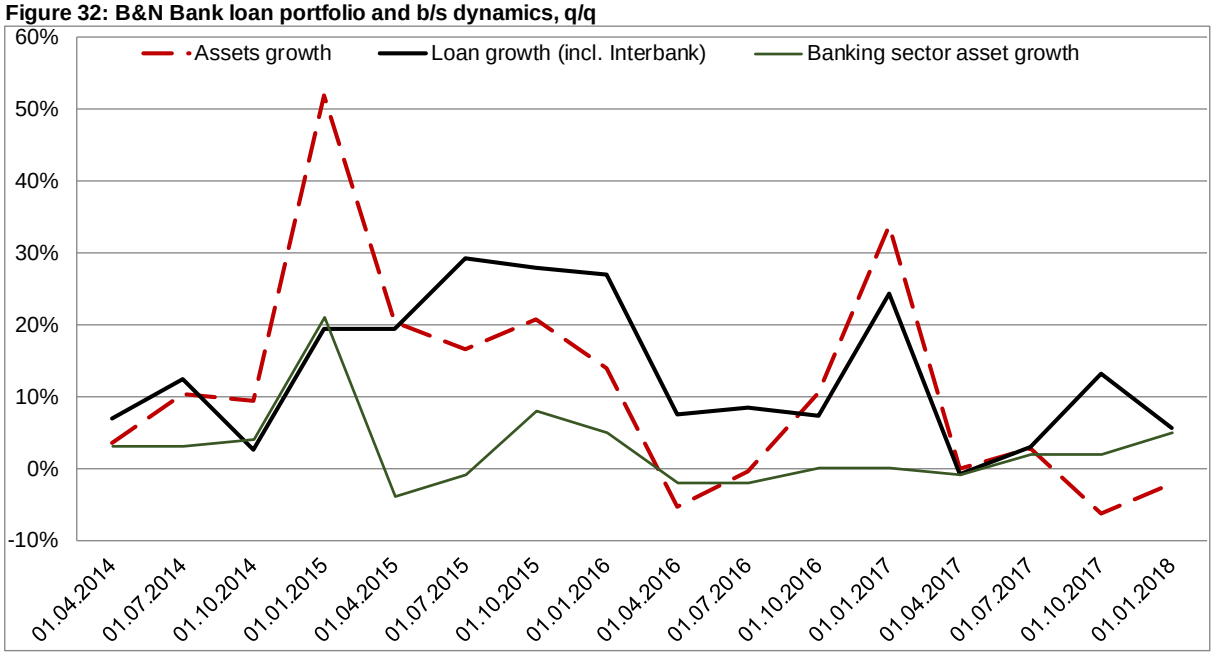


Source: CBR; e-disclosure

it might be the indicator of transfer of selected exposure from B&N Bank towards ROST Bank.

Returning at asset quality metrics of B&N Bank itself, namely total assets and loan portfolio dynamics, it is visible that during the most of the reporting dates these metrics were substantially higher in comparison with banking sector asset growth – so, the bank was expanding significantly faster than the market itself.

Figure 32: B&N Bank loan portfolio and b/s dynamics, q/q



Source: CBR; e-disclosure

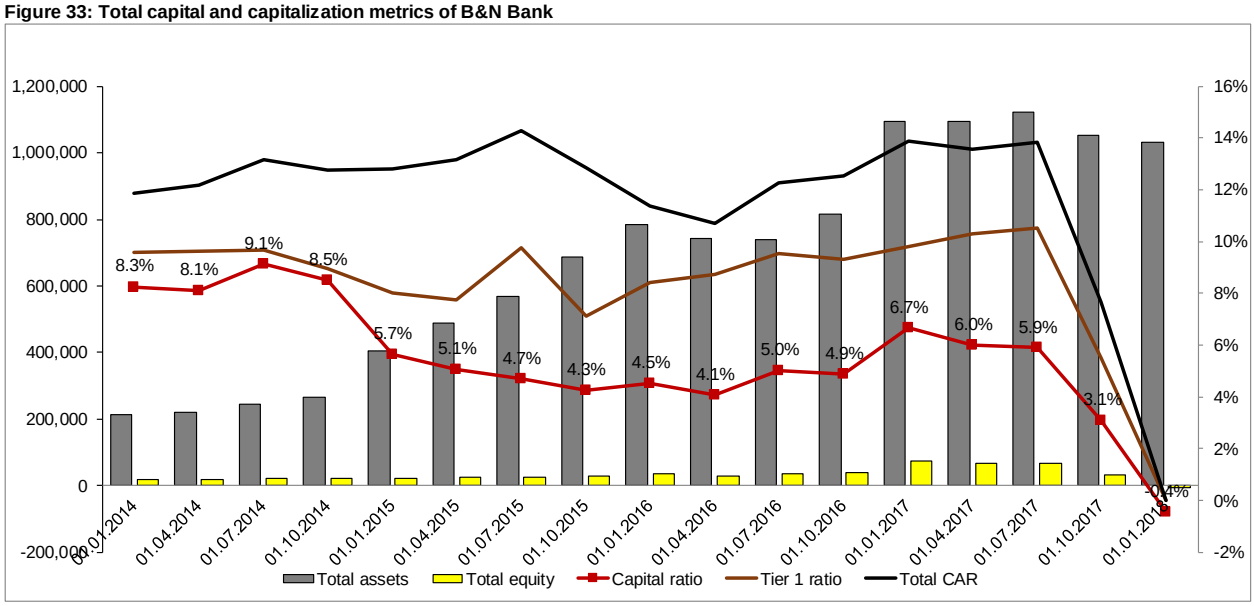
4.2.3 Capital adequacy

Figure 33 shows the development of capitalization indicators – capital ratio as regulatory metrics (local Tier 1 ratio and total CAR).

The capital of B&N Bank has been constantly supported by the equity injections from shareholders as well as inclusion of capital of merged entities. In December 2013 the share capital of B&N Bank has been increased by the share capital of merged Bashinvestbank, in November 2016 – via the merger with MDM Bank. Besides that, share capital has been increased through additional share issues: in May 2014 - RUB 4bn; in April 2015 – RUB 6bn (B&N Bank, 2014; 2015; 2016)

Overall, the capital ratio was diluted by the aggressive asset growth at the end of 2014, however since then it remained rather constant, supported by injections and mergers mentioned above.

Figure 33: Total capital and capitalization metrics of B&N Bank



Source: CBR; e-disclosure

Moderate increase during the fourth quarter of 2016 was caused by the merger with MDM Bank. During 2017 capital ratio as well as regulatory metrics remained rather stable and do not indicate any increase in the risk-taking by B&N Bank until the start of rehabilitation process.

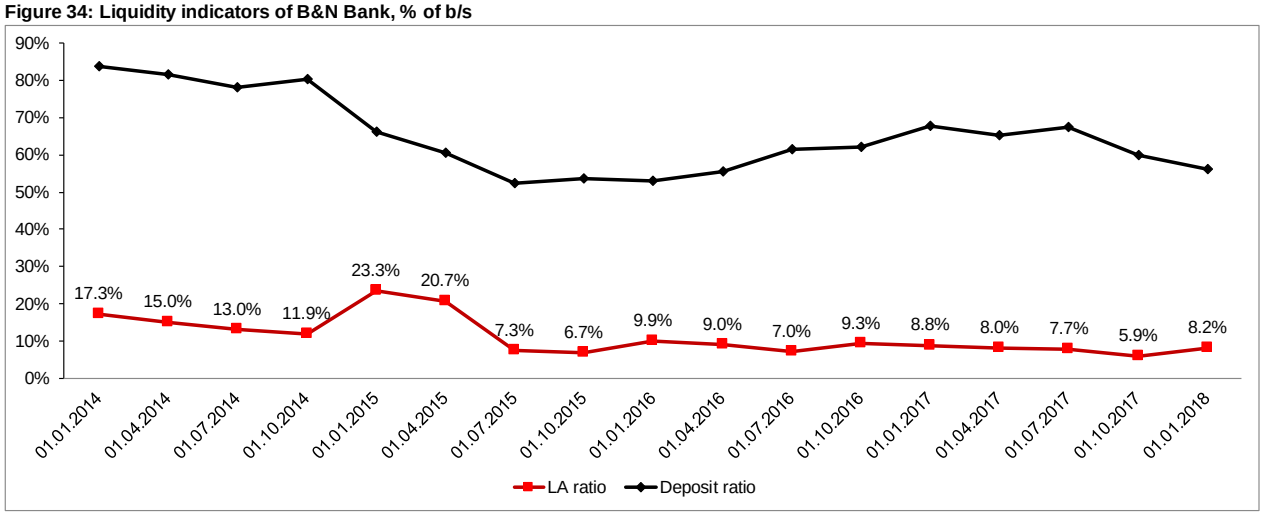
4.2.4 Liquidity dimension

Moving forward to the liquidity aspect of B&N Bank, the estimation of asset liquidity has one adjustment. In case of FC Otkritie Bank, liquid assets included cash and its equivalents, deposits placed with the Central Bank and funds due from other banks.

B&N Bank reports the exposure towards ROST Bank as the part of due from banks-residents. Given the financial rehabilitation of ROST Bank, B&N bank exposure towards ROST is assumed to be illiquid and cannot be converted easily into cash in case of need. Due to that reason, due from banks-residents as a proxy towards ROST bank is excluded from the calculation of liquid assets – in this case, liquidity reserves of B&N Bank are represented by cash and its equivalents, placements with the Central bank and other banks-non-residents.

Liquid assets' ratio demonstrated a decline in the middle of 2015, and since then it did not exceed 10% of total assets. Since the fourth quarter of 2016, LA ratio was on the downward trend, decreasing from 9.3% to 7.7% as of July 1, 2017.

Figure 34: Liquidity indicators of B&N Bank, % of b/s

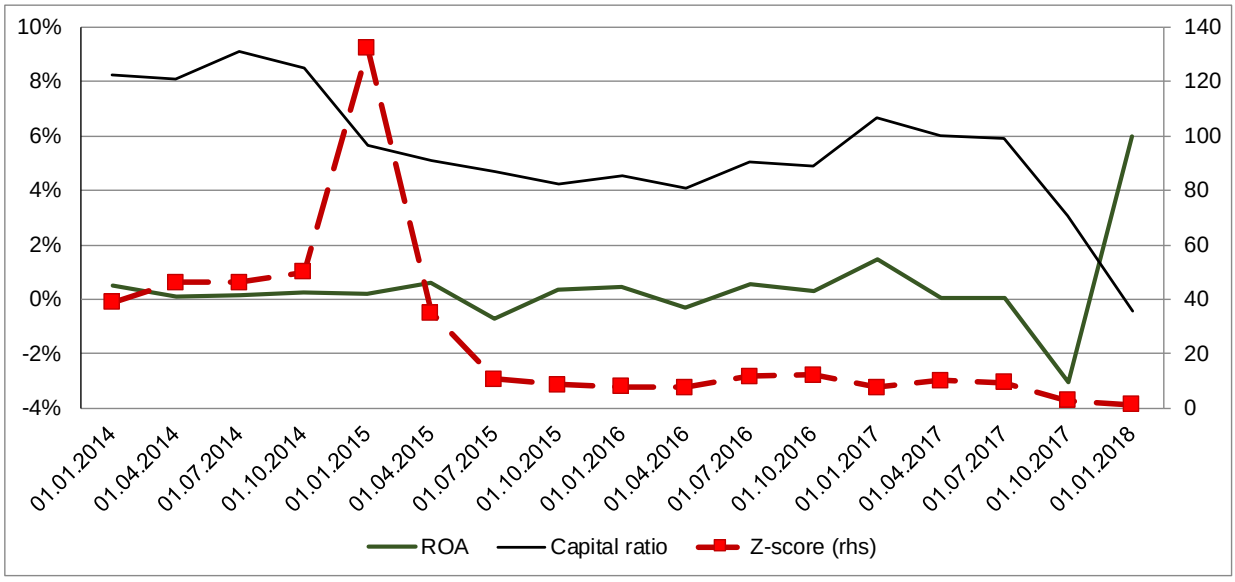


Source: CBR; e-disclosure

The indicator of funding liquidity, deposit ratio, dramatically decreased during 2014 and first half of 2015, however afterwards remained relatively stable, staying in a range between 52% and 67% of the balance sheet.

4.2.5 Profitability and z-score

Figure 35: B&N Bank profitability and z-score



Source: CBR; e-disclosure

Profitability of B&N Bank remained moderate during the whole observation time, even falling periodically in the loss-making zone.

In regards to z-score, the extraordinary peak as of January 1, 2015, can be explained by relatively stable profitability during 2015 and, therefore, low four quarters standard deviation, resulting in higher z-score. In the following periods, increased volatility of returns as well as declining capital ratio resulted in lower z-score that stayed at this level until the start of rehabilitation process.

4.2.6 Interim summary

Based on the risk-taking indicators presented above, it is possible to make the following preliminary conclusions.

In case of IFRS metrics, only one of them – the ratio of loan-loss reserves to total loans – indicated the increased level of risk in the middle of 2017, prior to the takeover by the Central Bank. All others indicators – capital ratio, liquidity and profitability – hit the lowest level in the middle-end of 2016, while afterwards they were demonstrating a modest recovery trend.

One of the major issues in regards to IFRS reporting might be the fact that ROST Bank was kept outside consolidation, while at the same time B&N Bank was heavily exposed to this institution – as of June 30, 2017, the exposure reached a new record, accounting for 52% of B&N Bank's total assets. This aspect allows to make the assumption that IFRS financials might not capture all the risk carried by B&N Bank.

Risk-taking metrics calculated on the basis of RAS data also provide various outcomes. First, asset quality indicators – loan-loss reserve ratio as well as loan ratios – confirm the increase of bank risk that started at the end of 2016 and coincided with the merger with MDM Bank. In case of loan ratio, however, only its version with interbank lending towards banks-residents (as a proxy for the exposure towards ROST Bank) included supports this trend.

At the same time, among asset quality indicators of ROST Bank presented separately, only LLR ratio demonstrated the growth at the end of 2015 and since then remained at the same level.

All other metrics of B&N Bank – capital adequacy, profitability and z-score as an ultimate indicator of bank risk – showed a deterioration in the third and fourth quarters of 2015, but then did not

provide any indication of further increase in the bank risk shortly before the economic failure of B&N Bank.

4.3 FC Otkritie Bank and B&N Bank: similarities and differences

Recent cases of economic failure of FC Otkritie Bank and B&N Bank have their own similarities and differences.

First, both credit institutions shared similar behavior – they were aggressively increasing their market share via organic growth as well as high activity in the M&A market. For instance, at the beginning of 2014 FC Otkritie Bank was ranked 14th largest by total assets in the Russian banking sector, while as of August 1, 2017, prior to the start of financial rehabilitation, it was already 8th and second largest private bank (first place was kept by Alfa-Bank). The growth of B&N Bank is even more impressive – from 31st as of January 1, 2014, to 11th largest as of August 1, 2017 (kuap.ru, 2018). In addition to that, both banks participated in the financial rehabilitation of troubled entities – Trust in case of FC Otkritie and ROST Group in case of B&N Bank.

Second, the recommendation letter of Mr. Gavrilov, the Alfa-Capital analyst, in mid-August 2017 about the problems of certain group of banks, mentioned both FC Otkritie and B&N Bank, thus, increasing their interconnectedness from the public point of view. Although it is difficult to assess the effect of this publication, it might be assumed that the takeover of FC Otkritie increased subsequently the pressure on B&N Bank, forced its management to react and might have played a role in its economic failure.

Finally, most of risk-taking indicators of FC Otkritie and B&N Bank demonstrated a deterioration simultaneously in the first half of 2015 due to their more aggressive growth in the market and increased risk-taking.

Despite all the commonalities, triggers of economic failure of these banks are different. Apart from gradual increase of loan-loss reserves ratio of FC Otkritie Bank, other quarterly indicators did not show any elevated risk-taking during 2017 – the major increase in bank risk took place during the first half of 2015. The main reason of increased pressure on the bank that resulted in the takeover by the Central Bank lies on the funding side – during July-August 2017 the bank was experiencing the outflow of customer funds (both private as well as state-owned ones) and was trying to

substitute them with the borrowing from the Central Bank – as a result, at certain point the regulator made the decision to introduce the temporary administration at FC Otkritie and conduct its financial rehabilitation.

In case of B&N Bank, results show that main trigger of the economic failure lay on the asset side – during 2017 LLR as well as loan ratios showed a gradual increase in risk level. In addition to that, the risk was partially kept outside B&N Bank, on the balance sheet of ROST Bank. Here, the increase in the risk level was captured by the growth of B&N exposure towards ROST Bank as well as increase in provisioning ratio of the latter during 2017.

4.4 FC Otkritie Bank and B&N Bank after the takeover by the Central Bank of Russia

Temporary administrations were introduced by the regulator on August 29, 2017, at FC Otkritie Bank and on September 21 at B&N Bank, and these dates are official starting points of financial rehabilitation.

The Central Bank announced that its ultimate goal is the assessment of required financial support for failed entities, their re-capitalization and return to healthy financial condition. After that, the regulator plans to privatize these institutions again.

The official rehabilitation of FC Otkritie Bank was completed on January 12, 2018 – in mid-December 2017 the CBR conducted the capital injection of RUB 456bn and the temporary administration transferred the management functions to the newly created team that included the representatives of the regulator as well as top managers from other Russian banks (banki.ru, 2017i; banki.ru, 2018a) . For instance, the position of CEO was taken by Mihhail Zadornov, former CEO of VTB24, Russian state-controlled bank.

The financial rehabilitation of B&N Bank has not been yet completed and the temporary administration is still running the bank. According to latest available information, the Central Bank made the decision to merge FC Otkritie and B&N Bank, keeping the brand name of the former one. The merger is expected to be completed until April 1, 2019 (banki.ru, 2018b; 2018c).

There is less clarity about privatization plans of the merged bank. Authorities and management of FC Otkritie acknowledge that it will depend on the overall economic situation in Russia and interest from private investors (Kommersant, 2017b; RIA, 2018).

5. Conclusion

The Russian banking sector was developing very actively since the collapse of the Soviet Union and is currently characterized by high share of state-controlled banks; significant concentration (although there were 561 active banks at the end of 2017, top-20 and top-200 largest institutions accounted for 80% and 98.5% of total assets of the banking sector) and gradual supervision tightening.

The cleanup of the banking sector that was announced by the Central Bank in autumn 2013 is still continuing, however in August 2017 it entered a completely new stage – the regulator put into action the new rehabilitation mechanism and the takeovers of FC Otkritie and B&N Bank were the first cases of financial recovery of so large scale.

The main question that this paper was trying to answer was whether the increase in bank risk of FC Otkritie and B&N Bank led to their economic failure or it was caused by other factors.

The analysis of risk-taking indicators calculated on the basis of IFRS and RAS financials allows to make a conclusion that the major increase in bank risk took place during 2015, while since then most metrics either remained at the same level or even showed a modest improvement. The only exception showing further increase in bank risk during 2017 were asset quality metrics – loan-loss reserves and loan ratios of B&N Bank as well as loan-loss reserve ratio of FC Otkritie. It is possible to assume that elevated bank risk since 2015 could make the banks more vulnerable to external shocks. The question whether the downgrade of FC Otkritie by S&P and local rating agency ACRA was a consequence of accumulated problems or actually a trigger remains opened, but these events were followed by increased tensions on the funding side of FC Otkritie, forcing the bank to ask for the support from the regulator.

Since B&N Bank had also elevated risk-taking since 2015 and its asset quality continued to deteriorate during 2017, it might have increased its vulnerability and put the bank under pressure after the takeover of FC Otkritie.

So, the major conclusion of these two cases is that although the increase in the risk-taking by individual banks does not necessarily result in their economic failure in the short-term, it makes them more vulnerable to external shocks that are not always captured in the analysis of bank-level

metrics. Another important takeaway is that even risk-taking indicators of a bank on a standalone basis might not capture all the risk because part of it might be kept outside the bank's balance sheet. That is, for instance, the case of B&N Bank and ROST bank that was under its rehabilitation.

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Abstract

In 2017 the Russian banking sector faced two remarkable events – the Central Bank of Russia introduced temporary administrations at and started financial rehabilitation of FC Otkritie and B&N Bank, privately owned banks ranked among 15 largest credit institutions countrywide.

The aim of this paper is the analysis of risk-taking indicators of these banks in order to clarify whether excessive risk appetite of these entities led to their economic failure or whether other factors played a decisive role. The analysis is based on available bank-level data, namely balance sheet information disclosed by FC Otkritie and B&N Bank according to Russian accounting standards as well as IFRS.

The assessment of bank-level indicators provides the following conclusions. First, the growth in bank risk does not necessarily lead to the economic failure of individual institutions in the short term, but it makes them more vulnerable towards external shocks. Risk metrics of both banks demonstrated the increase in risk appetite during 2015, however since then they remained stable, except for asset quality ratios that continued their deterioration until September 2017. This risk level got bolstered by the combination of external factors that occurred during 2017 and resulted in the economic failure of the banks.

Second, the analysis of bank risk metrics on a standalone basis might not capture the whole risk associated with the credit institution since it might be kept outside balance sheet. Therefore, in case of material exposure towards other institutions, their risk metrics must be included in the scope of analysis.

Zusammenfassung

Im dritten Quartal 2017 sah sich der russische Bankensektor mit zwei bemerkenswerten Ereignissen konfrontiert: die russische Zentralbank übernahm bei den Privatbanken FC Otkritie und B&N Bank, die zu den 15 größten Kreditinstituten landesweit gehörten, die vorübergehende Verwaltung ein und startete die finanzielle Sanierung.

Das Ziel dieser Arbeit ist die Analyse der Risikoindikatoren dieser Banken, um die Frage zu beantworten, ob ein übermäßiger Risikoappetit dieser Unternehmen zu ihrem wirtschaftlichen Scheitern führte oder ob andere Faktoren eine entscheidende Rolle spielten. Die Analyse basiert auf verfügbaren Daten auf Bankenebene, insbesondere Bilanzinformationen, die von FC Otkritie und B&N Bank nach russischen Rechnungslegungsstandards sowie IFRS offengelegt wurden, sowie auf von der Russischen Zentralbank veröffentlichten Bankensektor-Kennzahlen.

Die Bewertung von Indikatoren der Bankenebene liefert die folgenden Schlussfolgerungen. Erstens, führt das Wachstum des Bankenrisikos kurzfristig nicht zwangsläufig zu einem wirtschaftlichen Scheitern einzelner Institute, sondern macht sie anfälliger gegenüber externen Schocks. Zum Beispiel haben Risikoindikatoren der FC Otkritie und der B&N Bank über alle Ebenen hinweg den Anstieg ihrer Risikobereitschaft im Jahr 2015 gezeigt, obwohl sie seitdem ziemlich stabil geblieben sind, mit Ausnahme der Asset-Qualitätsquoten, die sich bis September 2017 weiter verschlechterten. Dieses Risikoniveau wurde durch die Kombination von externen Faktoren, die im Zeitraum Juli-September 2017 auftraten, gestützt und führte zum wirtschaftlichen Scheitern der Banken.

Zweitens, kann die Analyse von Bankenrisikoindikatoren nicht das gesamte mit dem Kreditinstitut verbundene Risiko erfassen, da dieses möglicherweise außerhalb der Bankbilanz gehalten wird. Aus diesem Grund müssen ihre Risikokennzahlen im Falle einer erheblichen Exponierung gegenüber anderen Instituten in den Analyseumfang einbezogen werden.