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Bank Lending to Small and Medium Sized Business: Evidence from Russia

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Abstract

Access of small- and medium-sized enterprises (SMEs) to external financing sources is defined in many respects by the tendencies of bank system development in different countries as well as by the possibilities and interest of commercial banks to make loans to creditworthy small- and medium-sized borrowers. In the present paper, we suggest that even in post-crisis conditions, this is small- and medium-sized Russian banks, rather than large banking institutions, that tend to issue loans to small and medium-sized enterprises. Analysis of the data available from the Russian banks gives evidence that with the growth of the bank size and with widening of the scope of the bank's activity, bank's lending to legal entities, in particular, to SMEs and to individual entrepreneurs, tends to become more intense. At the same time, the share of lending to SMEs and individual entrepreneurs in the legal entities loan portfolio tends to decrease.

Keywords: bank size; small- and medium-sized business finance; bank-firm relationship

1. Introduction

Availability of external financing to small- and medium-sized enterprises (SMEs) is an object of study around the world as it helps to reveal problem areas and barriers for small- and medium-sized business development in the countries with advanced and developing economies. Access of SMEs to external financing sources is defined in many respects by the tendencies of bank system development in different countries, as well as by the possibilities and interest of commercial banks to issue loans to creditworthy small- and medium-sized borrowers.

The issue of Russian SMEs development and support, also on the part of banks, is important due to the fact that in Russia small- and medium-sized enterprises production yields 20% into GDP, while in Europe this figure is much higher – from 55% (France) to 70% (Norway), and 45% in the USA (Note 1).

When studying Russian bank system as a source of financing SMEs activity, one should take into consideration its scale, non-uniform nature and discontinuous distribution on the territory of the country as well as the development tendencies during the crisis and post-crisis periods.

Russian lending institutions can be subdivided into several groups: the largest banks with a state share, large private commercial banks that have a federal branch network, branch organizations of foreign bank institutions, and, finally, medium- and small-sized regional banks.

At the beginning of 2014, five banks with the largest assets that made up 0.54% of the total number of banks possessed more than half of the resources of the Russian bank system – 52,65% of the total assets (Note 2). Capital concentration in the bank system is characterized by the fact that more than half of lending institutions and more than half of bank system resources are centered in Moscow and Moscow region. Moscow lending institutions cater for three fourths of the country's legal entities assets.

Although small- and medium-sized banks possess an insignificant share of the bank system resources, these banks are the main players on the regional market of banking services, thus playing an important role not only in the bank system but in the social and economic life of Russian regions in general. The main production facilities and raw material resources are located in the federal districts (outside Moscow and Moscow region), they yield a greater part of the GDP production, and a greater part of the country's population live there.

As reported in Table 1 and Figure 1, the data about the change in the number of lending institutions in the Russian Federation over the last eight years indicates that the number of lending institutions and their regional presence have gone down. Figure 1 shows that at the same time the number of bank branches, both in the region where the bank has its main office and in other regions, is also decreasing.

Table 1. Dynamics of the number of lending institutions (LIs) and their branches

Indicators	01.01. 2007	01.01. 2008	01.01. 2009	01.01. 2010	01.01. 2011	01.01. 2012	01.01. 2013	01.01. 2014
Number of LIs in all the regions	1 189	1 136	1 108	1 058	1 012	978	956	923
Branches of LIs that have their main office in the same region	772	720	661	601	494	464	403	339
Branches of LIs that have their main office in another region	2 509	2 735	2 809	2 582	2 432	2 343	1 946	1 666

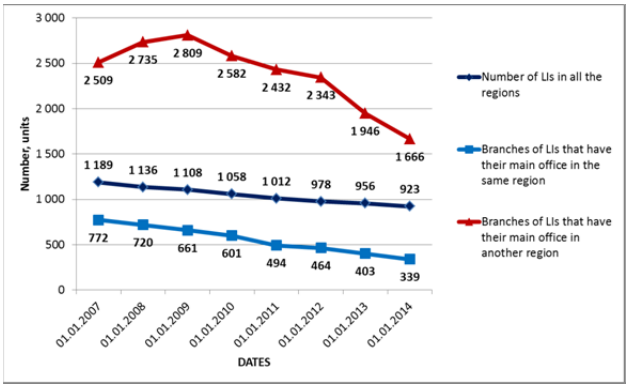

Figure 1. Dynamics of the number of lending institutions (LIs) and their branches

As shown in Figure 1, after the crisis of 2008-2009, there is a noticeable tendency for bank branches number to decrease, especially if their main office is located in another region. However, their total number significantly exceeds the number of the bank branches having their head office in the same region. This happens mostly due to the expansion of the large banks from the Central Federal District (namely, Moscow and Moscow region) into regions. Thus, the general decrease of the number of the branches results in a restricted access of the regional economic institutions to banking services and sources of finance resources.

The above-mentioned tendencies in the Russian bank system development testify to the process of its consolidation. This finds its expression in creation of banking groups and unions. Financial Group Life and VTB Group may serve as examples. We can only estimate the number of banking groups and unions functioning on the territory of Russia based on expert assessment, as a number of affiliations and mergers act as concealed bank holding companies that are not obliged to provide reports of their activities to external users on a consolidated basis.

Bank sector consolidation calls for investigating the relationship between the size and complexity of structural organization of a bank and its ability to originate and hold small and medium-sized business loans. In this context, research conducted by scientists from American, European and Asian countries with advance economies is of great interest, as the process of bank systems consolidation there has started much earlier than in Russia.

The empirical research shows that small banks tend to invest a much higher share of their assets in small business loans (Berger et al., 1998; Cole et al., 1999; Peek & Rosengren, 1998; Strahan & Weston, 1998). Large and foreign-owned bank institutions may have difficulty extending relationship loans to opague small firms (Berger et al., 2001). Small banks are better able to collect and act on soft information about a borrower than large banks (Berger et al., 2005).

However, some studies suggest that bank size growth does not necessarily lead to decrease of small business lending. For example, bank M&A between small banks may increase lending to small enterprises (Strahan & Weston, 1998). Berger and Udell (2006) show the conclusion that large institutions are disadvantaged in lending to informationally opaque SMEs to be misleading. Large banks also provide large amounts of funding and other

financial services to small firms (De la Torre, 2010). Berger and Black (2011) suggest that large banks do not have equal advantages in hard fixed-assets lending technologies and these advantages are not all increasing monotonically in firm size. Studies from different countries argue and develop these ideas (Shen & Shen, 2009; Bartoli et al., 2013).

In the present paper we suggest that even in post-crisis conditions, this is small- and medium-sized Russian banks, rather than large banking institutions, that tend to issue loans to small and medium-sized enterprises.

The paper is structured as follows: Section 2 briefly reports of the literature on large and small banks transactions lending and relationship lending to SMEs in some countries of America, Europe and Asia, where bank systems consolidation began earlier than in Russia. Section 3 presents the main hypotheses of the paper. Section 4 describes the dataset and its limitations, as well as the estimation technique. Section 5 presents the empirical evidence on Russian banks lending to small- and medium-sized business. Section 6 concludes and contains the description of further research areas.

The presented results may have implications for bank supervisors, regulators and bank managers.

2. Related Literature

Banks lend to different firms using a variety of different lending technologies (Rajan, 1992). Berger and Udell (2006) define that lending technology is a unique combination of primary information source, screening and underwriting policies and procedures, loan contract structure, and monitoring mechanisms.

Bank lending to SMEs differs from lending to other economic entities taking in account the significance of long-term financial relationships between a lender and a borrower when lending decision is to be taken (Berger & Udell, 1996). Some empirical researches show the distinction between bank relationship-based lending and transactions-based lending (Boot & Thakor, 2000; Cole et al., 2004; Berger et al., 2005; Agarwal & Hauswald, 2007).

Transactions-based lending technologies emphasize the acquisition of hard information and relate to financial statement lending, small business credit scoring, factoring, equipment lending, real estate-based lending and leasing (Berger & Udell, 2006). Some studies separate transaction lending into distinct technologies and focus on individual technology, for example, asset-based lending or credit scoring (Udell, 2004; Berger & Frame, 2007).

Relationship-based lending technologies rely on accumulation of soft information, infer obtaining by bank customer-specific information and imply multiple bank interactions with the same customer over time and across products (Boot, 2000; Elyasiani & Goldberg, 2004). On the one hand, stronger relationships between a bank and its customers benefits firms by granting them easier access to bank credit and better credit terms (Petersen & Rajan, 1994, 1995; Berger & Udell, 1995; Elsas & Krahnen, 1998; Harhoff & Körting, 1998). On the other hand, relationship lending is labor intensive and likely to cost more than many of the mentioned above transactions-based lending technologies (DeYoung et al., 2004).

Transactions-based lending technologies are more applicable to large-scale business. Large companies with well-established and developed systems of financial and administrative accounting can easily furnish a bank with a significant volume of ready, available and verifiable data about the company's activity and its results, such as financial statements and balance sheets, which can be used by the bank to form a judgment about the borrower's creditworthiness.

SMEs are more informationally opaque for banks than large firms (Berger et al., 2001). However, some studies suggest that many of the transactions-based lending technologies may be suited for less transparent small borrowers (Berger & Udell, 2006; Uchida et al., 2006). Nevertheless, these technologies do not focus on the overall quality of small firms. And the value and the quality of collateral (e.g., accounts receivable, inventory and equipment) may occur incomparably less than small borrowers demand for bank financing.

Relationship-based lending technologies presuppose that beside open public information on the activity of small- and medium-sized businesses, the bank uses the data from the history of the bank's financial relationship with the borrower and firm's non-public information. Such information enables the bank to form a judgment of the borrower's creditworthiness and to reduce credit risks exposure by forming risk-adequate reserves. This makes loans more accessible to the small- and medium-sized businesses that have long-term confidential relations with the banks providing financial services for them (Boot, 2000; Gorton & Winton, 2003).

This is especially important for Russian small- and medium-sized firms, most of which before 2013, had used an opportunity to not keep full accounting records and to not draw financial statements. They only kept income and expenses records in accordance with the Tax Code of the Russian Federation (Note 3). As new legislation on

accounting came into force in January 2003, Russian small- and medium-sized firms are obliged to keep accounting records and to submit accounting (financial) statements to authorized controlling bodies, starting with the 2013 accounting statement (Note 4). At the same time financial statements of the small- and medium-sized firms, according to the new law, can be submitted in a simplified manner. This makes it impossible for the Russian banks to make use of the formalized methods of financial statements analysis they apply to large firms when they form judgment of the small- and medium-sized enterprises' creditworthiness (Korolev, 2006; Korolev, 2007).

Different banks rely more on different types of information in order to resolve information asymmetry problem. Some empirical researches study the lending behavior of large banks to small business and find that large banks approve their small business loans based more on financial ratios, financial reports, value of assets and less on the existence of prior relationships as compared with small banks, and tend to favor transactions-based lending (Cole et al., 2004; Berger & Udell, 2006; Uchida et al., 2008).

Large banks hold a comparative advantage in transaction lending, while smaller or local banks have an advantage in relationship lending (Stein, 2002). Strahan and Weston (1998) argue that small business loans per dollar of assets rises, then falls, with banking company size. Therefore, small banks tend to build up and exploit intensive and long-lasting relationships with their small- and medium-sized customers (Berger & Udell, 2002, 2006; Howorth & Moro, 2006).

When studying lending characteristics of Russian distinct and spread across the country banks it is important to take in account that collecting, transmission and storage of hard information about the borrowers does not likely depend on distance. Therefore, transactions lending to comparably transparent large firms has no spatial limitations. In contrast, relationship lending requires personal contacts of loan officers with their borrowers in order to access managerial skills, decision making procedures, and business opportunities (Hauswald & Marquez, 2006). To collect soft information relationship lenders need to be located close to their borrowers and to understand the local community and business landscape.

3. The Hypotheses

Taking into account tendencies of the Russian bank sector development and perspectives for gradual growth and consolidation of the banking market players, one should pay attention to the specific nature of competitiveness in the banking sphere characterized by a relatively narrow expanse of competitive activity. It is conditioned by a limited scope of services rendered by banks and results from the legal status of banking business as an exclusive activity that does not allow for combining it with manufacturing, trading or insurance activities. This peculiarity makes banks compete within a very narrow scope of activities which calls for specialization, for instance, in filling the needs of certain target groups of customers.

A segment of small- and medium-sized businesses can readily become a target customers' group for Russian small- and medium-sized lending institutions due to the following reasons:

when Russian economy requires re-industrialization, large industrial enterprises need considerable long-term investment resources for the renewal of fixed capital assets and infrastructure improvement. Small- or medium-sized banks, as a rule, do not have such extensive resources;

the size of a loan issued to one borrower is limited for the banks by standard N6, that regulates bank's credit risk exposure at the rate of 25% of capital base (Note 5). Correspondingly, small- and medium-sized banks resources make it impossible for banks to meet large borrowers' credit needs;

provision of financial services for private customers requires considerable investments into creating and maintaining technological platforms for retail business, it also involves high operational expenses. Besides, private customers' deposits are a costly resource, and retail credit risk exposure is high. It finds its confirmation in the amendments to Instruction # 139-I "On obligatory bank regulatory standards" made by the Bank of Russia and effective from 01.07.2013 as regards increased risk exposure coefficient on unsecured customer lending depending on interest rates that are taken into account when calculating assets for bank's capital adequacy N1 – Bank's capital adequacy Regulatory Standard;

small- and medium-sized lending institutions function in close proximity to the customers from the number of small- and medium-sized businesses, have well-established relations with them and command understanding of the specific nature of business in the regions where they are located;

development of Russian small- and medium-sized businesses is greatly determined by arranging financial support of their activity, but it can be hindered by restrictions imposed on attracting direct government support in the context of the WTO. Such support can be given by lending institutions providing resources. At that, small-

and medium-sized banks are mostly focused on financial services for smaller businesses needs, rather than large banks.

We have chosen the below hypotheses for verification implying that strengthening interactions and relations with SMEs can become the priority for small- and medium-sized lending institutions in the context of bank system growth and consolidation.

With the growth of the bank size and with widening of the scope of the bank's activity, the volumes of bank's lending in the course of the year to legal entities, in particular, to SMEs and to individual entrepreneurs (IEs) increase.

With the growth of the size and with widening of the scope of the lending institutions' activity, the share of lending in the course of the year to SMEs and IEs in the legal entities loan portfolio decreases.

4. Data and Methodology

4.1 Data Collection

To prove the above hypotheses, we need the data on each lending institution for a number of periods about the assets volume, loan balances for legal entities, SMEs and IEs indicating overdue amounts, and also the data about the volumes of loans that are issued in the course of each period to legal entities, SMEs and IEs.

At present, the Bank of Russia summarizes and publishes information at the statistics website related to indebtedness of legal entities, SMEs and IEs, and also to the volumes of loans that are issued to legal entities, SMEs and IEs in the course of a period (Note 6). The information is given on a regional basis (in accordance with the geographical districts of the Russian Federation), but not related to individual lending institutions. However, this regional approach is based not on the bank's location, but on the location of a borrower. The changes in banks' lending to legal entities, SMEs and IEs in view of the banks of a given region can only be traced by the volumes of the loans issued by the banks of a given region calculated on an accrual basis. This approach is used as an informational foundation in the present study.

A more detailed information about banks' lending activity for the purposes of the present research could be obtained from the data contained in the financial reporting of the lending institutions on Form 0409302 "Information on the invested assets and borrowed funds" (Note 7), but this reporting is not open to the public and is only submitted to the Bank of Russia, where it is processed and is then published in a manner described above.

Information on the bank system assets is presented by the Bank of Russia in a table form. The tables characterize assets concentration and present information in the view of federal districts without breaking down to the levels of territories and regions. In connection therewith, the present study correlates the data on assets and loans issued to legal entities, SMEs and IEs with an aggregative breakdown to federal districts.

The above-mentioned information is based on the data of the Bank of Russia for the five consecutive periods: 2009, 2010, 2011, 2012 and 2013. This is due to the fact that the information on the loans issued by the banks to SMEs and IEs has only been collected and published on the Bank of Russia website since 2009.

In the data collected for processing and analysis, the Central Federal District is divided in two parts: we distinguish between the data on the lending institutions in Moscow and Moscow region and the data on all the other lending institutions of the Central Federal District. This is due to the fact that the lending institutions of this region dominate both in their assets volumes and in the volumes of their loan portfolios which extend far outside their own region and, having sufficient resources, as such, satisfy the demand for loans that the regional banks cannot meet.

4.2 Estimation Technique

To prove the hypotheses made for the five yearly periods (from 2009 to 2013) we have studied the correlation between the average assets of a lending institution in a given region (mln.rbl.) and the following indices:

volumes of loans issued in the course of the year by lending institutions of the region to all legal entities, mln. rbl.;

volumes of loans issued in the course of the year by lending institutions of the region to small- and medium-sized enterprises and individual entrepreneurs, mln. rbl.;

the share of loans issued by lending institutions of the region in the course of the year to small and medium-sized enterprises and individual entrepreneurs in the total legal entities loan portfolio.

The data for every year and on each region is put in a descending order based on the assets volume per one lending institution of the district. When presenting and analyzing the data, the information on the lending institutions of Moscow and Moscow region was grouped separately.

Presenting data on a geographical basis for each separate year made it possible to identify interdependence between the average volume of assets that accrues to one lending institution of the district (mln. rbl.) and

- the volumes of the loans issued by them to legal entities, small- and medium-sized enterprises and individual entrepreneurs, and

- the share of loans issued to small- and medium-sized enterprises and individual entrepreneurs in the total legal entities loan portfolio.

To prove the interdependence between the indices for each year, coefficients of linear correlation have been calculated.

Calculation of additional statistical indices (determination indices, statistic criteria for confirming significance of results obtained) on the basis of the information available is not currently feasible due to the short time period of the data under analysis and due to incompleteness of the data base. To carry on with the study of dependence of loan portfolio size and structure from the size of lending institutions, we should obtain full relevant information from the Bank of Russia or authorized informational and analytic institutions, and observe, analyze and monitor all the changes taking place. In the long term, with accumulation of more relevant data, additional corrections should be introduced to reconcile the data, e.g. corrections using the GDP deflator.

5. Empirical Results

The data obtained for each year is represented in Tables 2, 3, 4, 5 and 6. For clarity reasons, in every table, the data on each region is put in a descending order depending on the average assets volume per one lending institution of the district.

Table 2. Volumes of loans issued by district lending institutions to legal entities, small- and medium-sized enterprises and individual entrepreneurs in 2009 (the districts are put in order by the average assets volume that accrues to one lending institution of the district)

Federal District	Average assets that accrue to one LI in the district, mln. rbl.	Volumes of loans issued by the district lending institutions to legal entities and individual entrepreneurs, mln. rbl.	Volumes of loans issued by the district lending institutions to small- and medium-sized enterprises and individual entrepreneurs, mln. rbl.	The share of loans issued by the district LIs to small- and medium-sized enterprises and individual entrepreneurs in the district total legal entities loan portfolio
Moscow and Moscow Region	47 252,3	7 555 131,5	798 185,70	10,6%
Northwestern FD	16 430,6	678 038,3	118 809,0	17,5%
Urals FD	12 170,1	336 577,2	96 225,6	28,6%
Siberian FD	10 020,6	204 687,7	99 865,5	48,8%
Volga FD	7 931,6	694 893,2	283 326,0	40,8%
Far Eastern FD	6 824,9	129 854,2	62 057,8	47,8%
Central FD (excluding Moscow and Moscow reg.)	3 284,4	83 965,2	36 673,30	43,7%
Southern FD	2 029,6	165 625,2	60 653,5	36,6%
Total in the Russian Federation:	27 816,7	9 848 772,5	1 555 796,4	15,8%

Table 3. Volumes of loans issued by district lending institutions to legal entities, small- and medium-sized enterprises and individual entrepreneurs in 2010 (the districts are put in order by the average assets volume that accrues to one lending institution of the district)

Federal District	Average assets that accrue to one LI in the district, mln. rbl	Volumes of loans issued by the district lending institutions to legal entities and individual entrepreneurs, mln. rbl.	Volumes of loans issued by the district lending institutions to small- and medium-sized enterprises and individual entrepreneurs, mln. rbl.	The share of loans issued by the district LIs to small- and medium-sized enterprises and individual entrepreneurs in the district total legal entities loan portfolio
Moscow and Moscow Region	55 596,4	7 626 025,0	1 114 087,0	14,6%
Northwestern FD	19 564,2	706 228,0	225 025,0	31,9%
Urals FD	14 900,7	364 974,0	152 086,0	41,7%
Far Eastern FD	11 438,9	156 984,0	98 388,0	62,7%
Siberian FD	10 649,2	168 674,0	88 847,0	52,7%
Volga FD	9 465,3	727 306,0	343 608,0	47,2%
Southern FD	3 702,3	138 822,0	101 417,0	73,1%
Central FD (excluding Moscow and Moscow reg.)	3 594,0	103 583,0	65 330,0	63,1%
Northern Caucasian FD	978,0	25 917,0	18 969,0	73,2%
Total in the Russian Federation:	**33 403,8**	**10 018 513,0**	**2 207 757,0**	**22,0%**

Table 4. Volumes of loans issued by district lending institutions to legal entities, small- and medium-sized enterprises and individual entrepreneurs in 2011 (the districts are put in order by the average assets volume that accrues to one lending institution of the district)

Federal District	Average assets that accrue to one LI in the district, mln. rbl.	Volumes of loans issued by the district lending institutions to legal entities and individual entrepreneurs, mln. rbl.	Volumes of loans issued by the district lending institutions to small- and medium-sized enterprises and individual entrepreneurs, mln. rbl.	The share of loans issued by the district LIs to small- and medium-sized enterprises and individual entrepreneurs in the district total legal entities loan portfolio
Moscow and Moscow Region	71 581,3	11 924 567,0	1 408 813,0	11,8%
Urals FD	19 536,0	427 371,0	193 301,0	45,2%
Northwestern FD	17 987,9	510 142,0	209 121,0	41,0%
Far Eastern FD	15 287,8	188 287,0	124 147,0	65,9%
Volga FD	11 740,0	764 388,0	380 650,0	49,8%
Siberian FD	11 154,7	187 440,0	95 335,0	50,9%
Southern FD	4 597,2	167 938,0	128 043,0	76,2%
Central FD (excluding Moscow and Moscow reg.)	4 573,1	119 791,0	82 862,0	69,2%
Northern Caucasian FD	1 310,0	33 435,0	24 918,0	74,5%
Total in the Russian Federation:	**42 563,9**	**14 323 359,0**	**2 647 190,0**	**18,5%**

Table 5. Volumes of loans issued by district lending institutions to legal entities, small- and medium-sized enterprises and individual entrepreneurs in 2012 (the districts are put in order by the average assets volume that accrues to one lending institution of the district)

Federal District	Average assets that accrue to one LI in the district, mln. rbl.	Volumes of loans issued by the district lending institutions to legal entities and individual entrepreneurs, mln. rbl.	Volumes of loans issued by the district lending institutions to small- and medium-sized enterprises and individual entrepreneurs, mln. rbl.	The share of loans issued by the district LIs to small- and medium-sized enterprises and individual entrepreneurs in the district total legal entities loan portfolio

Moscow and Moscow Region	86 498,3	12 385 978,0	1 735 796,0	14,0%
Urals FD	24 211,2	471 631,0	219 565,0	46,6%
Far Eastern FD	22 633,9	198 965,0	118 126,0	59,4%
Northwestern FD	19 829,9	639 279,0	250 959,0	39,3%
Volga FD	13 715,8	815 629,0	373 147,0	45,7%
Siberian FD	12 015,1	213 660,0	115 492,0	54,1%
Central FD (excluding Moscow and Moscow reg.)	6 000,5	128 919,0	93 296,0	72,4%
Southern FD	5 379,6	175 403,0	137 039,0	78,1%
Northern Caucasian FD	1 627,5	36 700,0	25 133,0	68,5%
Total in the Russian Federation:	**51 788,3**	**15 066 164,0**	**3 068 553,0**	**20,4%**

Table 6. Volumes of loans issued by district lending institutions to legal entities, small- and medium-sized enterprises and individual entrepreneurs in 2013 (the districts are put in order by the average assets volume that accrues to one lending institution of the district)

Federal District	Average assets that accrue to one LI in the district, mln. rbl.	Volumes of loans issued by the district lending institutions to legal entities and individual entrepreneurs, mln. rbl.	Volumes of loans issued by the district lending institutions to small- and medium-sized enterprises and individual entrepreneurs, mln. rbl.	The share of loans issued by the district LIs to small- and medium-sized enterprises and individual entrepreneurs in the district total legal entities loan portfolio
Moscow and Moscow Region	102 509,0	14 576 550,0	2 027 005,0	13,9%
Urals FD	30 361,0	491 630,0	229 567,0	46,7%
Far Eastern FD	25 445,8	154 865,0	101 654,0	65,6%
Northwestern FD	23 577,3	718 403,0	296 637,0	41,3%
Volga FD	15 315,3	838 940,0	424 935,0	50,7%
Siberian FD	12 231,4	211 923,0	117 061,0	55,2%
Central FD (excluding Moscow and Moscow reg.)	6 973,1	126 105,0	91 603,0	72,6%
Southern FD	6 591,9	195 532,0	145 380,0	74,4%
Northern Caucasian FD	1 333,1	28 982,0	18 399,0	63,5%
Total in the Russian Federation:	**62 213,5**	**17 342 930,0**	**3 452 241,0**	**19,9%**

Indices correlations are shown in the graphs clarifying the tables. Figures 2, 3, 4, 5 and 6 show correlations between the average assets of the lending organizations of the district and the volumes of loans issued by them to legal entities.

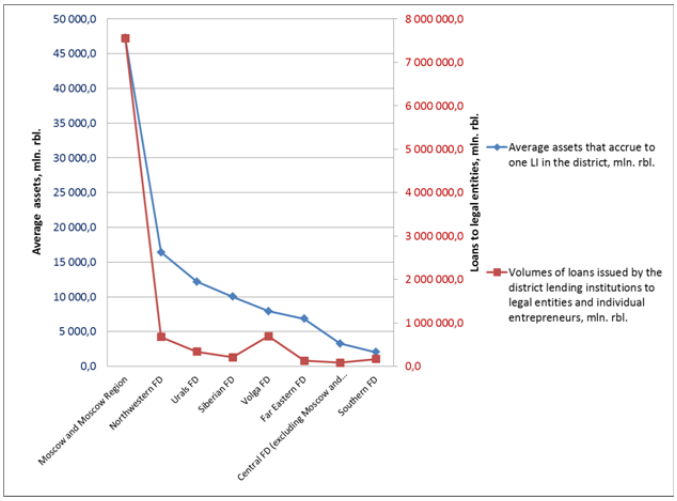

Figure 2. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to legal entities in 2009

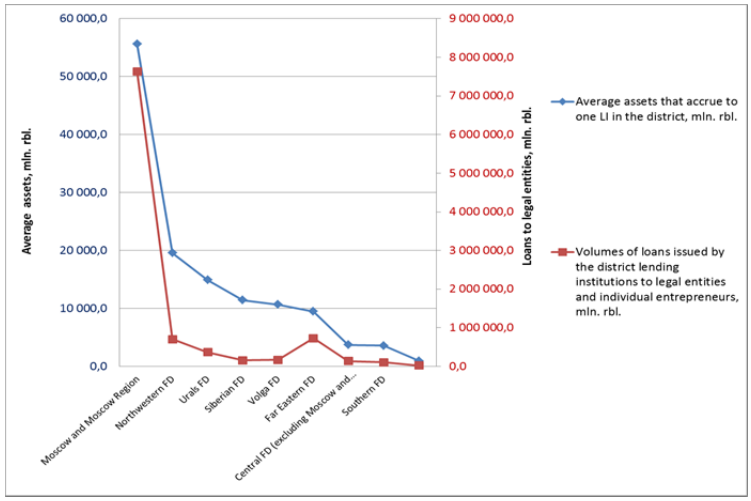

Figure 3. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to legal entities in 2010

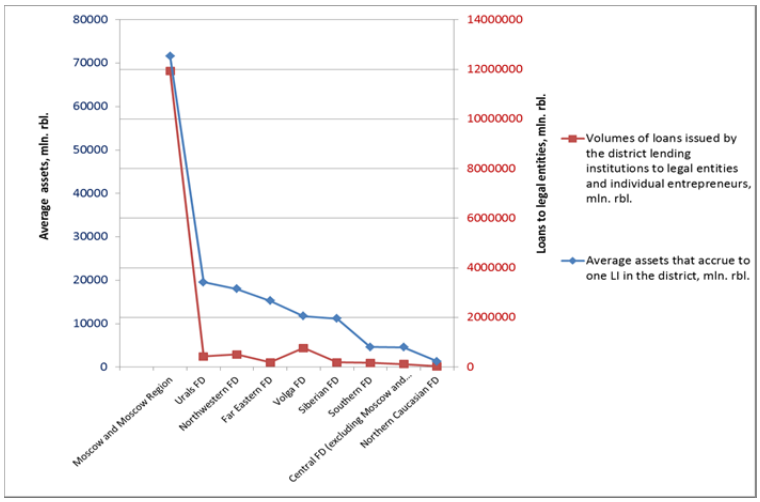

Figure 4. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to legal entities in 2011

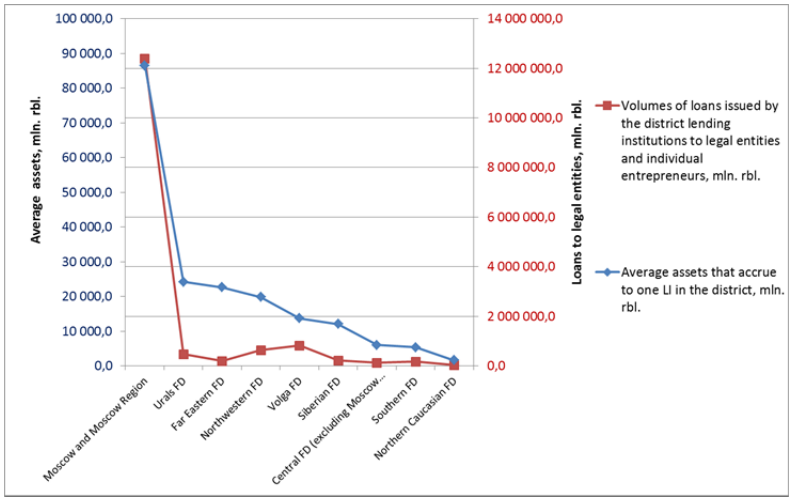

Figure 5. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to legal entities in 2012

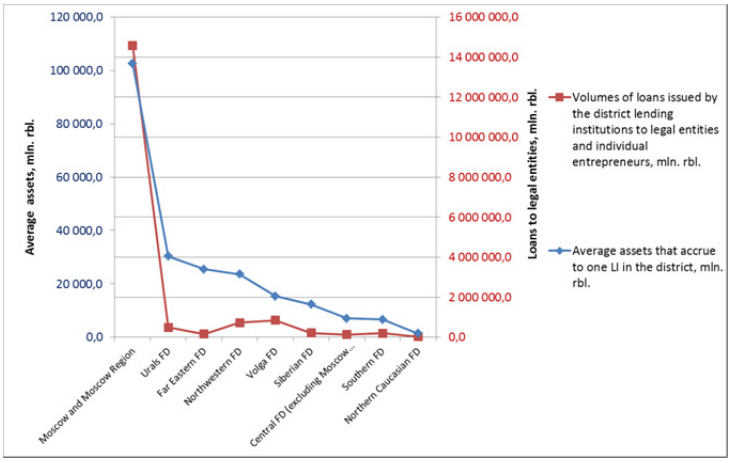

Figure 6. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to legal entities in 2013

Figures 7, 8, 9, 10 and 11 show correlations between the average assets of the lending organizations of the district and the volumes of loans issued by them to small- and medium-sized enterprises and individual entrepreneurs.

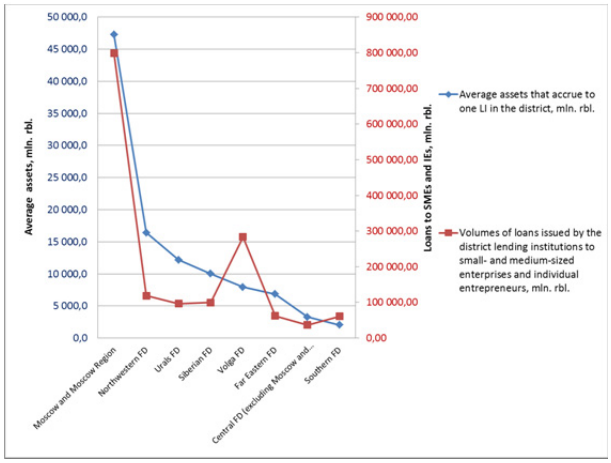

Figure 7. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to small- and medium-sized enterprises and individual entrepreneurs in 2009

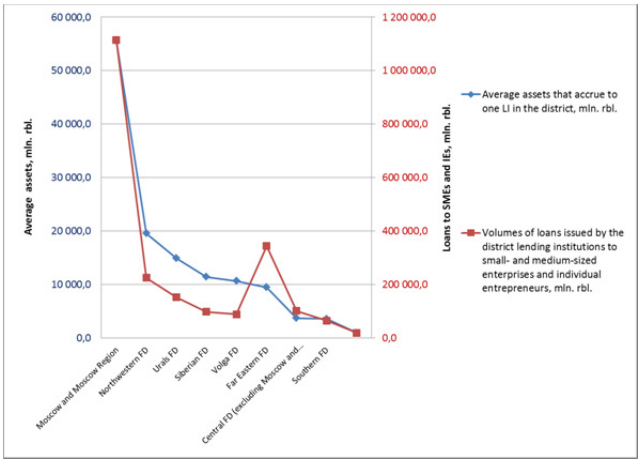

Figure 8. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to small- and medium-sized enterprises and individual entrepreneurs in 2010

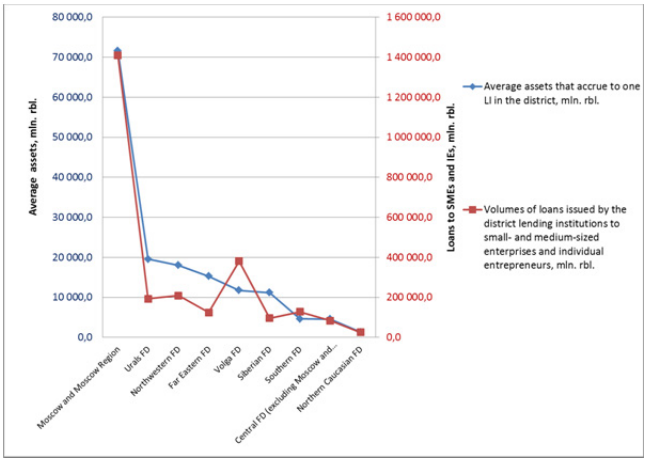

Figure 9. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to small- and medium-sized enterprises and individual entrepreneurs in 2011

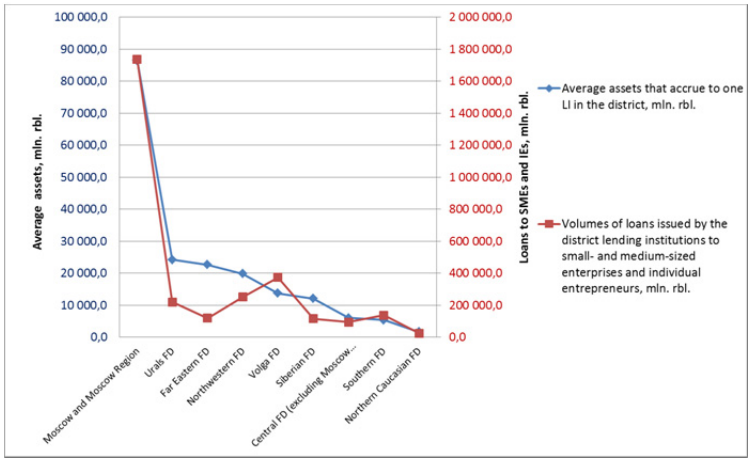

Figure 10. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to small- and medium-sized enterprises and individual entrepreneurs in 2012

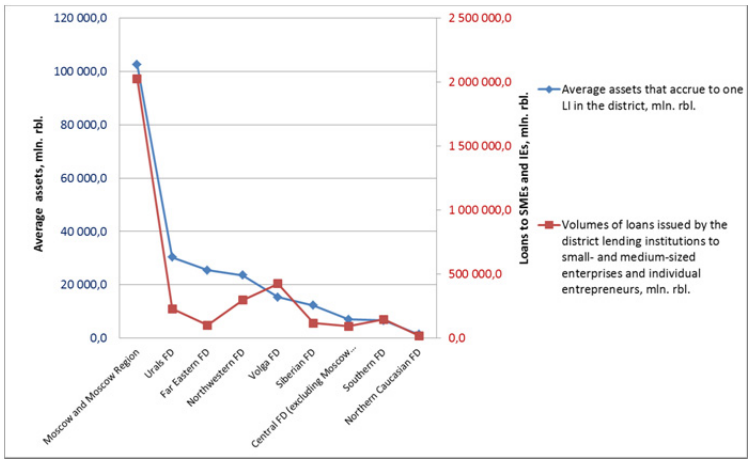

Figure 11. Graphic representation of interdependence of the average assets of the lending organizations of the district and the volumes of loans issued by them to small- and medium-sized enterprises and individual entrepreneurs in 2013

Figures 12, 13, 14, 15 and 16 demonstrate correlation between the average assets of the lending organizations of the district and the share of loans issued by them in the course of the year to small- and medium-sized enterprises and individual entrepreneurs in the total legal entities loan portfolio.

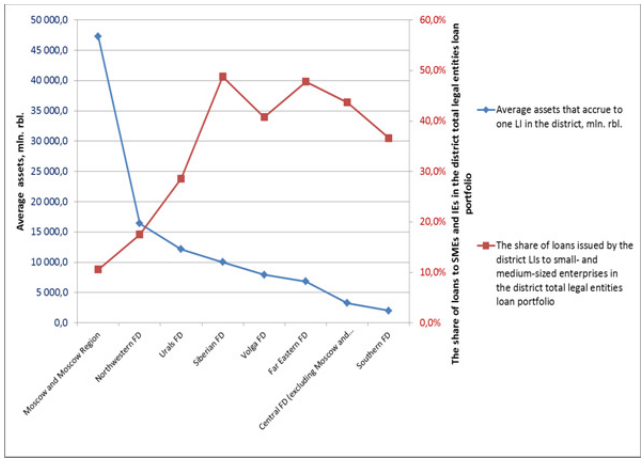

Figure 12. Graphic representation of interdependence of the average assets of the lending organizations of the district and the share of loans issued by them in the course of the year to small- and medium-sized enterprises and individual entrepreneurs in the total legal entities loan portfolio in 2009

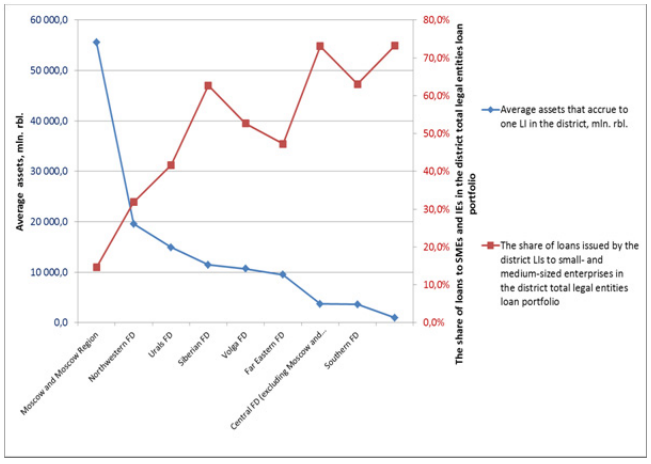

Figure 13. Graphic representation of interdependence of the average assets of the lending organizations of the district and the share of loans issued by them in the course of the year to small- and medium-sized enterprises and individual entrepreneurs in the total legal entities loan portfolio in 2010

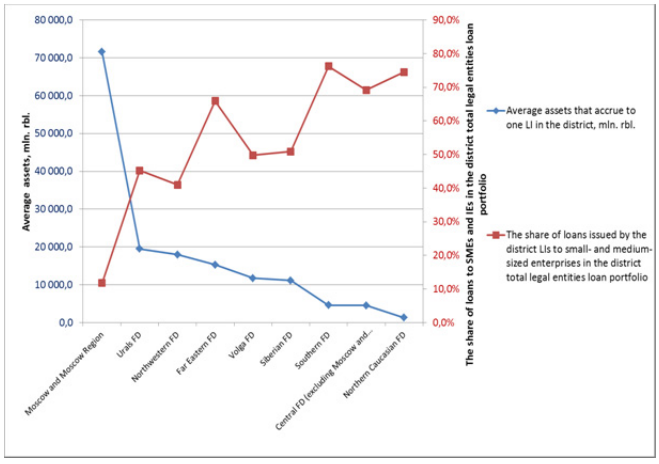

Figure 14. Graphic representation of interdependence of the average assets of the lending organizations of the district and the share of loans issued by them in the course of the year to small- and medium-sized enterprises and individual entrepreneurs in the total legal entities loan portfolio in 2011

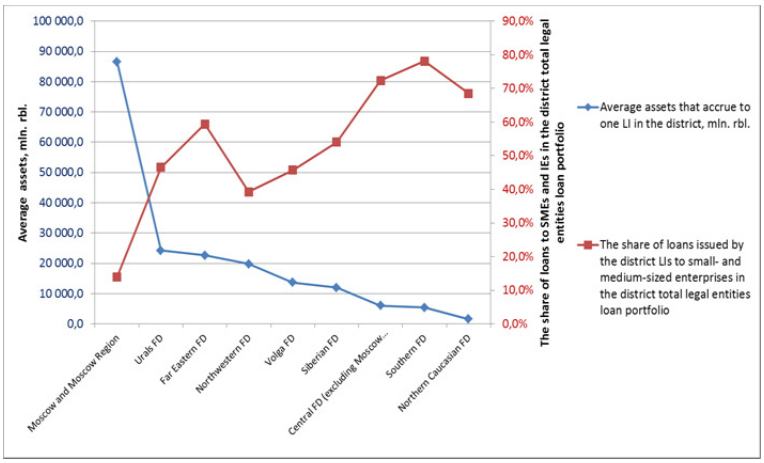

Figure 15. Graphic representation of interdependence of the average assets of the lending organizations of the district and the share of loans issued by them in the course of the year to small- and medium-sized enterprises and individual entrepreneurs in the total legal entities loan portfolio in 2012

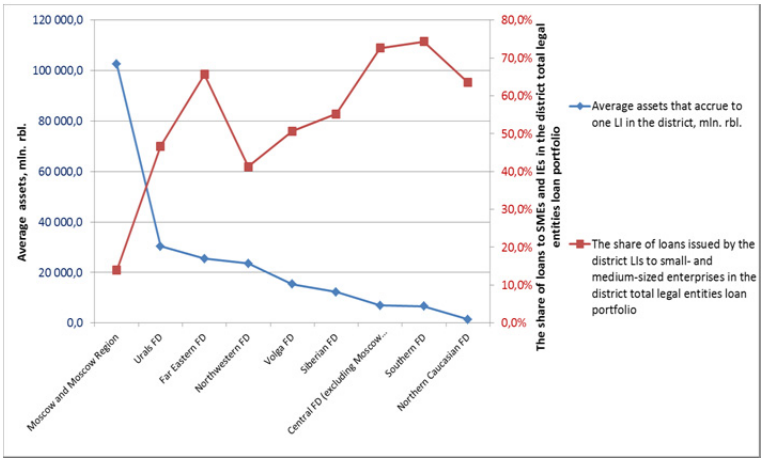

Figure 16. Graphic representation of interdependence of the average assets of the lending organizations of the district and the share of loans issued by them in the course of the year to small- and medium-sized enterprises and individual entrepreneurs in the total legal entities loan portfolio in 2013

Table 7. Linear correlation coefficients between average assets of the district lending institutions and the volumes of loans issued by them to legal entities and SMEs and IEs

Correlation coefficients	Year 2009	Year 2010	Year 2011	Year 2012	Year 2013
Correlation between average assets of district LIs and the volumes of loans issued by them to legal entities	0,962774492	0,955387557	0,964012205	0,959908782	0,957029324
Correlation between average assets of district LIs and the volumes of loans issued by them to small- and medium-sized enterprises and individual entrepreneurs	0,930914758	0,950824399	0,963996585	0,963158196	0,959173798
Correlation between the average assets of district LIs and the share of loans issued by them in the course of the year to small- and medium-sized enterprises in the total legal entities loan portfolio	-0,793780332	-0,886509072	-0,894332537	-0,863223636	-0,877541395

Graphic representation of yearly data and its interdependence enabled us to suggest and establish the presence of the following correlations:

- Positive correlation between the average assets of lending institutions of the district and the volumes of loans issued by them to legal entities;
- Positive correlation between the average assets of lending institutions of the district and the volumes of loans issued by them to small- and medium-sized enterprises and individual entrepreneurs;
- Negative correlation between the average assets of lending institutions of the district and the share of loans issued by them in the course of the year to small- and medium-sized enterprises in the total legal entities loan portfolio.

High values of linear correlation coefficients have confirmed the hypotheses. Calculation data of the linear correlation coefficients is represented in Table 7.

6. Conclusions

Processing available data and calculations we have made confirm our hypotheses described above. With the growth of the bank size and with widening of the scope of the bank's activity, bank's lending to legal entities, in particular, to SMEs and to individual entrepreneurs (IEs), tends to become more intense. At the same time, the share of lending to SMEs and IEs in the legal entities loan portfolio tends to decrease. This can be explained by large banks' interest in lending to large borrowers and by the difficulties and high expenses involved when providing financial services for opaque small businesses.

Increased credit risk exposure, higher expenses involved in lending to small- and medium-sized businesses compared to lending to large businesses call for rationalization of the Russian small- and medium-sized banks' activity models. The success rate of this activity depends both on the banks themselves and the efficiency of bank management, and on the measures of government's influence and promoting development of small- and medium-sized banking.

To elaborate adequate measures of supporting Russian small- and medium-sized banks having interest and able to work efficiently with small- and medium-sized businesses, further data has to be collected and presented on the Bank of Russia initiative, thus making it possible to carry on with the investigation of the issues raised in this article. In particular, there may be interest in studying correlation between the size of the bank, its involvement into providing financial services for and lending to SMEs and IEs and the following characteristics and indices of the banking activity:

organizational structure, presence, number and location of bank's branches and subsidiaries;

changes in the composition and content of the information on the borrowers brought about by coming into force of the new Russian Federation law "On Accounting Statement" in accordance with which small enterprises are obliged to keep accounting records and to submit accounting (financial) statements, although in a simplified manner;

lending activity expenses, and rates of provisions for loans issued to borrowers of various size and activity scope;

rates of return and interest rates on credit operations for different categories of borrowers, that can reflect the credit risk exposure when lending to borrowers of various size and activity scope;

rates of overdue indebtedness of the borrowers of various size and activity scope.

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Notes

Note 1. Source: http://news.kremlin.ru/media/events/files/41d3e10aee6d7935f5f0.pdf

Note 2. Source: data from the Bank of Russia website (www.cbr.ru), Bank Statistics Bulletin.

Note 3. Chapter 26.2 of the Tax Code of the Russian Federation “Simplified Tax System”.

Note 4. Chapter 6 of Federal Law of the Russian Federation # 402-FZ dated 06.12.2011 “On Accounting”.

Note 5. Instruction of the Central Bank of Russia # 139-I dated December 3, 2012 “On obligatory bank regulatory standards”.

Note 6. Source: http://www.cbr.ru/statistics

Note 7. Instruction of the Central Bank of Russia # 2332-U dated November 12, 2009 “On the list, forms and procedures of drawing and presenting financial reports by lending institutions to the Central Bank of Russia”.