Factors of regional distribution of banking institutions in Russia

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1. Introduction

The main goal of this article consists in the analysis and interpretation of regional differences in territorial placing of independent regional banks and branches in Russian Federation in the course of transitional 20 years. Our task is twofold. The first object of the research is the dynamics of regional banks in the period from 1991 to 2015. The second is to study factors underlying the territorial hierarchy of banking institutions. Apart from the well-known trend of banking business concentration in Moscow and correlated decrease in the number of banks in regions we have studied changes in the structure of bank institutions in the cities of Siberian Federal District. It has allowed us to identify the factors affecting number of banking institutions and to formulate some hypotheses. These hypotheses will be tested for the all regions outside Moscow (see part 3).

So, analyzing the Central Bank data and other sources we broke into stages the process of regional bank system formation using the sample of regions within the Siberian Federal District from 1991 to 2015. We identified three periods with regard to changes in key trends and institutional environment impulses: one from 1991 to 2000, two from 2001 to 2009, and three from 2010 to 2015. These periods of banking market development contain similar trends that make the changes that had taken place appear consistent within each one.

The first stage was marked by overall significant growth of credit organizations both on the basis of former state banks as well as greenfield entities started up by economic agents including former cooperators and entrepreneurs. With approximately equal starting conditions in the period of up to 2000 in Siberia the number of credit organizations increased by several times. In (Anzoategui, 2010) this fact is explained by low levels of minimum statutory capital requirements. The fact that independent regional banks operated as so-called crony banks, which
were created only for service of certain enterprises or government institutions in the regions, was another possible cause of the growth of the number of banks. Moreover, the appearance of small semi-criminal regional banks have been observed in Russia (Drobyshevsky S and oth. 2007). The largest number of financial organization was found in Novosibirsk region. The number of independent banks was twice as much as in neighboring Omsk and Tomsk regions and by 35-61% higher than in resource rich Krasnoyarsk and Irkutsk regions.

In the 90-s up to the financial crisis of 1998 independent credit organizations in Siberia with a convertible currency license were mostly located in capital cities of Federal subjects and big industrial centers. The period was also marked by appearance of Moscow banks’ branches which started to compete for local clients. Following the crisis of 1998 two major factors impacted the banking sector of Siberia: bank bankruptcies including capital ones with branch networks that traded on the GKO market and later the reciprocal process of filling the spaces left from the bankruptcies by the ‘new wave’ of network capital banks.

The second stage was marked by the turnaround from growth to reduction in the number of credit organizations. From 2000 onwards the process gained momentum and got legislative support in the form of requirement for bank’s capital adequacy. Instead of regional banks and sometimes on their basis there appear branches of Moscow banks. This again led to intense competition between independent regional banks often supported by local authorities and branches of capital banks over lucrative clients. This non-price competition which lasted for 6 to 8 years was won by the branches of capital banks. Because of the move of largest non-financial companies to the services of regional branches of Moscow banks the role of independent regional banks declined as well as their number. Behind this well-known external process – reduction of the number of credit organizations in capitals of Federal subjects – one may trace more complex structural changes in functions of the regional financial system and transformation of ‘power’ economic apexes. The reduction of credit organizations was had two major effects. The first one was the realization of inevitability by the regional banking community of the necessity to access resources of capital banks. Another was the end of the process of liquidation of captive banks belonging to local authorities: municipal and oblast banks. This fact registers agreement of local power elite to be controlled by the central power. Thus, the two major features of the second period are the liquidation of the system of regional banks of local authorities and dominance of Moscow banks in the market of banking services.
The third stage saw accelerated process of reduction of the number of independent regional banks. Tempos of reduction differed depending on the initial level but the trend in all regions was the same. The most important distinguishing as well as unexpected feature of the third stage was the situation with branches of capital banks – ubiquitous reduction of branch networks mostly in the form of cluster branch creation when branch functions over several subjects of Federation are concentrated and located in the capital of one subject. New banking technologies are one of the reason to reduce the number of banks (Alleksandrini, 2009). Thus, the information on dynamics of regional banks and branches of credit organizations testifies to the changes in financial flows within the banking system and accelerated concentration of banking business in Moscow after 2009 (see graf 1). So it is important to find empirical evidence on the geography inequality of banking industry.


2. Spatial distribution of banking institutions in Russian regions

The picture for the country in total is to a large extent the same for Siberian region. The processes of concentration of banks in the capital and at the same time reduction of the number
of independent regional banks are inherent emerging market (Sucháček J., 2007). According to ‘The information on the number of existing credit organizations and their branches across territories’ published by the CBR by Jan, 1, 2001 in the regions of Russia (excl. the city of Moscow and the Moscow region) there were 694 independent credit organizations – banks with the main office (HQ) in the region. Every such region had on average 9 regional banks (although their territorial disparity is quite substantial). By November, 1, 2015 in the regions of Russia (excl. Moscow, the Moscow region and the Crimea) there were about 50% of regional banks left or approximately 4-5 banks on average per region. This further leads to higher payoffs of capital location of a banking organization and regional banks’ loss to the competition. The question about the effect of reducing the number of banks and competition is outside of our research.

**Graf 2. Regional Banking System**

Regional Banking System (except Moscow and Moscow region)

2000-2015

The important reason for this trend is rooted in growing state influence in the bank sector. The state takes part in formation of banks’ assets and liabilities. The first ones to receive budget resources are the state banks. Budget resources are channeled to the state banks by inclusion into state investment programs and state procurement, distribution of liquidity, servicing of state organizations, opening and operation of service accounts of state corporations. During the crisis
of 2008-2010 state-owned banks were better protected against asset default (Davydov, 2016). Banks that are not in the list of state or affiliated entities have problems of forming liabilities and finding high quality borrowing clients. Lacking access to long-term money resources the regional banks can hardly engage in investment activity while their unstable position and high risks do not allow creating pools of subordinate credit. We believe that state-controlled banks forced out of business for regional banks.

It should be pointed out that historically in Russia today the role of credit organizations in investment is not significant for a number of objective and well-known reasons. In the asset structure of Russian banks the share of investment loans to non-financial sector is about 9% whereas the share of the state budget resources in capital investment in Russia is about 20% (Vernikov, 2014, 2015). Superconcentration of business in state banks and their branch structures (Fungáčová, Weill 2013) is the phenomenon of exclusively capital banks. That is why the thesis of proponents of regional commercial banks on the capability of regional credit organizations to ensure the flow of investment in regional economy is, in our view, exaggerated. Regional banks are mainly engaged in consumer credit.

In Russia with the high share of the state in the banking sphere the position of the bank is totally dependent on its chances of participation in the state financial flows. It is obvious that the potential of parent companies helps regional branches of those banks win competition with independent regional banks over clients mainly due to access to modern technology and resources. This state of things raised the question of actual existence of regional banks and received the attention of interested parties such as regional authorities, regional banks and executives of the Bank of Russia. In our opinion, the actual dynamics of the number of regional banks which were closed contradicts to the judgments suggesting sufficient stability of the regional financial systems (Heynsvort, 2005) due to, as the author believes, flexibility of decision-making and proximity to regional clients.

Unlike countries with developed institutional system the banking business in Russia has closer ties with the state and consequently with banks of the capital city. It is a way to stay close to the powers that be and a way to influence decision making with regard to investment, liquidity, authorization and information. Thus, we believe that location of credit organizations with branches in the subjects of Federation is rather significant reflecting not only the economic potential of a regional subject but is also connected to the power vertical. Analysis
of regional branch networks of credit organizations may reveal a picture of financial apexes of ‘province – capital’ system.

3. Methodology and data

To understand the nature of the shrinkage in regional banking business we analyze distribution of regional banks and branches in the regions outside Moscow. Keeping in mind the total gravitation of banking sector towards the Russian capital are there any other points of attraction?

Therefore we will explore number institutions in banking sector in Russian regions using data on the amount of independent credit institutions and branches in the period from 2000 to 2013 (from the Central Bank of Russia website\(^1\)). Other necessary data are taken mainly from the website of the Federal State Statistics Service\(^2\). We use data on all Russian regions except Crimea and Sevastopol (due to lack of most of the data) and Moscow and Moscow region (due to our interest in regional processes outside Moscow). St. Petersburg and Leningrad region are considered together. Chechnya and Ingushetia are excluded due to lack of data in the beginning of 2000s years.

According to literature we identified the following factors affecting number of banking institutions in Russian regions:

1. Gross regional product (GRP) or GRP per capita. Its importance seems obvious. It represents how regional production and income level affect the distribution of regional banks and branches of the Moscow banks. We expect it is strongly significant but not a single factor. For example, in 2013 Krasnoyarsk region has the largest GRP in the Siberian Federal District (23% of the total district GRP) while the share of Novosibirsk region is only 15%. Situation with the filial branches distribution is exactly opposite. Novosibirsk region has much more such institutions (almost 30% of total number in the district) versus only 15% that Krasnoyarsk region has.

2. Region's population and its concentration in capital city of a region (the share of total regional population residing in region's capital city). Like GRP/GRP per capita these factor represent size of the regional economy and and also agglomeration effects that draw banking institutions into well populated areas and cities. Once concentrated geographically in large city or populated regions banks enjoy reduction in information cost resulting from close contacts.

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\(^1\) Central Bank of Russia, website http://www.cbr.ru

\(^2\) http://www.gks.ru/
Concentration leads to economies of scale and encourages external economies that leads to even greater concentration. But in some cases local face-to-face information cannot be duplicated by virtualized information from distant places so these facts put a limit on the concentration of financial centers (Fratuianny, 2009, Grote, 2009).

To illustrate our insight of tendency of banking institutions to concentrate in not only populated regions but also in regions with population concentrated in main city we construct the following picture (Graph 3).

**Graph 3.**

The share of residents in regional capital city and the number of bank branches with headquarter outside region per capita, 2013

3. Structure of the regional economy: its diversification and shares of main important sectors in total production (extractive industry, manufacture, services, trade, construction etc. )

Our hypothesis is that variety of industries and activities in a region leads to diversity of credit institutions. And some economic sectors need more banking services than others. We use Herfindahl-Hirschman Index for GRP structures and for structure of manufacturing industry as well as shares of main sectors and industries in GRP. Resource abundant regions may have some

4. Political weight and status of a region and its central city. Our hypothesis is that political weight of regions strengthens positions of their banking institutions when state influence in banking sector is increasing. We refer to the literature on interconnection of state and political interests and banking institutions (Vernikov, 2014, 2015, Davydov, 2016, Disli, Schoors, Meir, 2013). Another thread of literature is devoted to the link between local peculiarities and banking sector. Linguistic, cultural and national identity forged with political features can encourage local banking institutions instead of external branches and subsidiaries (Affinito and Piazza, 2009). To address these issues we use such variables as whether there is a capital city of the federal district in a region, whether a region has republic status and more informative version of the indicator - the share of indigenous national population in total population of a republic (for non-republic stands zero) and whether a region belongs to the so-called "red belt".

5. Size and quality of higher education system in any region which is historically inherited from the Soviet era. The hypothesis is that availability of human capital is essential for institutional activity in the banking sector. We use such variable as the number of university students per 10 000 people in 1990. We prefer this variable to other indicators of education level (the percentage of people with higher education, the number of students of secondary schools, etc.). We choose this year because later in post-Soviet era the boost in number of students was accompanied by deteriorating quality of higher education. But the higher education system inherited from the past provides regional economy with constant influx of talented and skilled youth throughout the entire post-Soviet period.

The link between human capital of a region and subsequent development of its financial sector can be explained in two ways. The first relates to the role of education and talent for employment in the financial sector. For most of the 20th century the financial sector employed just a little more educated workforce than average in economy. Radical changes had occurred since the early 1980s. The financial sector, including banking, began to attract more and more highly educated employees and the average educational level of its workers began to grow rapidly. Value added per worker and wages rose sharply in comparison with other sectors of the
It occurred due to increasing complexity of financial instruments and practices, computerization and mathematization in the sector. Reduction in needs for routine and administrative tasks led to dramatic increase in demand for highly skilled employees which were rewarded accordingly. Higher wages and bonuses in the financial sector even adjusted for higher education and skill level of its employees are a special research topic. As a result the financial sector began to absorb an increasing share of university graduates. This global trend also affected Russia in the period of banking sector formation in 1990s despite the fact that there were some special characteristics in that period in the country. So presence of many well educated people was one of the factors in the development of finance and banks in a region.

The second way to explain the effect of education on banking sector development is based on the social capital concept. There is a connection between educational level and social capital which is trust, cooperation and mutual understanding in society. And these social phenomenas are extremely important for financial sector development because they affect positively demand for financial services and supply of them. Some researchers found a very strong link between social capital and financial development (Guiso etc. 2004). Trust level and ability to maintain social ties are especially important in developing countries with weak law enforcement. Obviously Russia in the period of banking sector formation can be defined as such country. Although further research of the topic makes sense.

To illustrate insight on links between regional educational system and banking institutions we construct the following picture (Graph 4).

**Graph 4.**
6. Climate and geography. Our hypothesis is that severe climate, remoteness and large area (low population density) of Russian regions hampers their development and leads to depopulation and extinction of credit institutions. We use the difference in temperature between January and July (closely related with average temperatures) as an indicator of climate severity and distance from Moscow as a measure of remoteness.

In the long run GRP, its structure and diversification and even the amount of population potentially could depend on banking sector development so there is a possibility of endogeneity problem. To test the problem we run two-stage LS method. As instruments we use population size, share of total regional population residing in region's capital city, structure and size of industrial production, extraction of natural resources, export abroad in 1989-1993 as well as climate, square of regions and remoteness variables. The demographic, industrial and natural resource inheritance of the Soviet period is exogenous and it to the large extent determines population, size and structure of regional economy during the postsoviet years. We also control for heteroskedasticity and multicollinearity and if necessary use robust standard errors.
4. Results

2000 year

The first year for which we have data is 2000. We investigate factors determining regional banking network in this year. In this period regional banks and their local branches yet played a very prominent role. Regional banks were forming branches in their own regions and their number in many regions was comparable to number of branches from Moscow and other cities. In some regions number of local affiliates was even greater (Ekaterinburg, Chelyabinsk, Dagestan, Tatarstan). On average in Russian regions (except for Moscow, of course) local institutions consisted of about 40% of the total number of banks and branches. In some places (Tatarstan, Dagestan, Karachaevo-Cherkessia) their share reached 60-70%. Only three regions did not have its regional local banking network (Jewish A.O., Chukotka and Chechnya).

We estimate separately local regionally rooted banking institutions and branches of out-region's banks (mostly from Moscow) assuming that their localisation is driven by different factors. In our result tables we include only statistically significant variables (table 1). All independent variables (except geography, climate and republic status) are instrumented.

The most prominent factors of regional banking are amount of population and GRP per capita and both of them flexibly reflect size of regional economy. But they are not in focus of our interest.

When explaining local banking network the most notable variable is the republic status of a region, supported by the large proportion of population of the titular nationality. Republic region having 50% share of indigenous national population in total population (like in Tatarstan) in 2000 ended up in 77% higher amount of regional banks and branches compared with non-republic regions ceteris paribus. For regions with 95% share of indigenous national population (like Dagestan) the figure is almost 200%.

Distance to Moscow also supported local banking network possibly slowing down the expansion of Moscow branches. The severity of climate impacts negatively on regional banking institutions.

With regard to branches of banks from other regions (mainly from Moscow) in this period there two main factors determining the "invasion" of these branches are GRP and number of population. In 2000 they were available in all regions except Chechnya. They have accounted for 60% of banking institutions in Russian regions (except Moscow).
From structural factors only share of services in GRP show some significance. Perhaps the branches of Moscow banks were more oriented to work with this sector of the economy.

Distance from Moscow as expected in some degree hinders this "invasion".

Table 1.

2SLS cross-sectional regression results, 2000 year

<table>
<thead>
<tr>
<th></th>
<th>number of regional banks and local branches in 2000</th>
<th>number of branches with out-region's headquarters in 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRP per capita</td>
<td>0.67***</td>
<td>0.43***</td>
</tr>
<tr>
<td></td>
<td>(0.23)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>Population</td>
<td>1.05***</td>
<td>0.70***</td>
</tr>
<tr>
<td></td>
<td>(0.12)</td>
<td>(0.03)</td>
</tr>
<tr>
<td>share of indigenous population in republics</td>
<td>1.14***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.36)</td>
<td></td>
</tr>
<tr>
<td>distance from Moscow</td>
<td>0.32***</td>
<td>-0.08**</td>
</tr>
<tr>
<td></td>
<td>(0.10)</td>
<td>(0.04)</td>
</tr>
<tr>
<td>climate</td>
<td>-1.59***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.61)</td>
<td></td>
</tr>
<tr>
<td>Share of service sector in GRP</td>
<td></td>
<td>1.47*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.81)</td>
</tr>
<tr>
<td>Observations</td>
<td>73</td>
<td>75</td>
</tr>
<tr>
<td>R2</td>
<td>0.61</td>
<td>0.90</td>
</tr>
</tbody>
</table>

All variables (except shares) are in logarithms. Constant is included but not shown. Instruments are population size, share of total regional population residing in region's capital city, structure and size of industrial production, extraction of natural resources, export abroad in 1989-1993 as well as climate and square of regions. Standard errors are in parentheses; *, ** and *** denote significance at the 10%, 5%, and 1% level, respectively.

2013 year

The last year for which we now have all set of data is 2013. By the end of 2013, there were far less regional banks and their branches. They accounted for 30% of all banks and branches in the regions (except Moscow), whose total number is also steadily declining. In six regions there were not any regional banks at all (in 2016 in ten regions). In many regions their numbers are extremely small (one or two). Most regional banks no longer has had any branches
(with exception of Tatarstan, Dagestan, Chelyabinsk and Tyumen regions but here also there is quick process of reduction in number of regional banks' branches).

Table 2.

<table>
<thead>
<tr>
<th>2SLS cross-sectional regression results, 2013 year</th>
<th>number of regional banks and local branches with out-region's headquarters in 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRP per capita</td>
<td>0.58** (0.35)</td>
</tr>
<tr>
<td>Population</td>
<td>0.91*** (0.12)</td>
</tr>
<tr>
<td>share of indigenous population in republics</td>
<td>0.13*** (0.003)</td>
</tr>
<tr>
<td>capital city of federal district</td>
<td>0.78*** (0.16)</td>
</tr>
<tr>
<td>share of population residing in region's capital city</td>
<td>1.04** (0.43)</td>
</tr>
<tr>
<td>education, 1990</td>
<td>0.27** (0.10)</td>
</tr>
<tr>
<td>climate</td>
<td>-0.50* (0.28)</td>
</tr>
<tr>
<td>Observations</td>
<td>71</td>
</tr>
<tr>
<td>R2</td>
<td>0.53 0.83 0.82</td>
</tr>
</tbody>
</table>

All variables (except shares) are in logarithms. Constant is included but not shown. Instruments are population size, share of total regional population residing in region's capital city, structure and size of industrial production, extraction of natural resources, export abroad in 1989-1993 as well as climate, remoteness and square of regions. Standard errors are in parentheses; *, ** and *** denote significance at the 10%, 5%, and 1% level, respectively.

It seems that the regional banks are becoming extinct. Now in republic regions with indigenous population there are only slightly more of them (by only several percents) than can be explained by their economic potential. Distance from Moscow now does not prevent process of this extinction. There are no new trends in their development.

The branches with out-region's headquarters (mainly Moscow banks) accounted for 70% of banking institutions in the regions in 2013. So they determine the overall picture.
Apart from the obvious trend towards the concentration of bank branches in populated and rich regions there are three factors of their localization.

First is the presence of capital city of the federal district in a region. This status provides benefits to business including banking. Our results show that impact of the capital city status is very pronounced. The presence of capital city of a federal district in a region leads to more than twice increase in the number of bank branches ceteris paribus. Thus our assumption is that state financial flows are extremely important for banking business in Russia and they are larger in the capitals of the federal districts. Nevertheless there is some uncertainty because role of such institution as Representation of the President of the Russian Federation in a Federal District is not considered prominent.

Second factor is size of regional capital (the concentration of populations in the region). Among two regions having the same amount of population one of them with twice large concentration in capital city also has twice larger number of bank branches. Bank branches prefer large cities due to agglomeration effects. In larger cities there is significant role of services sector, trade, transport, communication, construction in regional economy. There is also more developed financial sector as a consequence of the city size. Some tendencies in such cities are following trends in Moscow. Like Moscow, they are attractive for migrants because of their size therefore the agglomeration effects are increasing and so on.

In fact we cannot distinguish this factor from third one, educational potential of the region. Large cities tend to have more educated residents and more high quality universities inherited from soviet times or even specially created scientific research and educational centers (like Novosibirsk). Thus inherited from the Soviet era the system of universities is important for the financial sector development. Our results show that two times larger number of university students per capita in 1990 leads to about 20% increase in the number of bank branches in the end of 2013 ceteris paribus.

The climate severity affects the institutions in banking sector not only through amount of population. Perhaps it increases the unattractiveness of region's institutional development.

It is worth noting that structure of the regional economy, its resource dependence and diversification seem not to have any significant impact on number of bank institutions. This result is consistent with (Beck, 2011) who finds similar fact in his cross-country study.

As a robustness check we did the same calculations for 2001, 2002 and 2012 years and for averaged on yearly basis variables and obtained the same results.
5. Conclusions

Russia is a emerging market and going through rapid transformation of the regional banking system. In particular the spatial distribution of the credit institutions is also changing that indicates changes of financial flows and financial attraction poles in the banking system. Spatial distribution of the banking sector shows that the credit institution networks depend on the regions' status in the state hierarchy.

The transformation of the regional banking system during the last 20 years can be divided into three periods which are radically different. In the first period (1991-2000) there was intense competition for major clients among independent regional banks, as well as among relatively small number of filial branches (mainly from Moscow).

During the second period (2000-2009) amount of the independent regional banks was reduced. Leading position of the branches from the Moscow banks in the regional banking sector became obvious. An important feature of this period was elimination of the regional authorities' captive banks thus corresponding financial flows was channeled through the branches from the Moscow banks.

In the third period (after the crisis of 2008-2009) elimination of a significant number of the filial branches in the regions occured. In the remaining branches the reduction of their competence in favor of their parenting offices began. Functioning of the banking system in Russia is increasingly affected by the state intervention and reflects changes in the power of authorities to impact on any business in favor of those close to the government (central or regional). As a result in this period the architecture of the Russian banking system indicates the loss of relative financial independence of the regional authorities.

Besides the concentration of financial flows in Moscow it is worth noting very limited number of the regional banks and their affiliates in neighboring regions in the Asian part of the country. The almost absence of independent branch network of the regional banks in their neighboring regions reflects weak horizontal ties, which is not typical for such large country with federal system. The banking network of the Republic of Tatarstan is the only exception.

We can see that regional banks and branches of Moscow banks in Russian regions are influenced by different factors. Regional banks were more flourishing in regions with special status and relatively independent local authorities while Moscow banks form their branch network in accordance with the vertical of federal power. Since regional authorities and local
peculiarities of the regions were losing their weight the number of regional banks were also declining. It is very consistent with Russian modern political history.

Branches of Moscow banks develop more systematically and more intensively use agglomeration and educational benefits of large cities. They enjoy trust of the population which streaming from increasing trust to federal government and central power. Obviously these tendencies hinder survival of regional local banking sector which in many counties is considered a source of local development especially for small and medium enterprises. In context of Russia the issue is yet to be investigated.

The research results revealed existence of hierarchy of the regional capital cities according to the number of credit institutions. For example, Novosibirsk is the leader in concentration of financial ties among the cities of Siberia and Far East. The number of branches from the Moscow and other banks there is the 2-5 times higher than in other cities in the Asian part of the country. Some banks only in Novosibirsk have opened their only branch in the Asian part of Russia. May be there is an interesting symbiosis of the education, human capital, state intervention and city size that can explain the development of the credit institutions in the city.

References


