Effect of the banking system on the economic development of the Russian Arctic regions

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Abstract. Issues relating to financial management at the level of individual regions of the Russian Federation become increasingly relevant. At the present stage, it is the regional level that faces the priority challenges of economic development underpinning the economic growth of both individual region and the country. Regional banking sector plays an essential role in formation of financial base. This sector involves interacting regional banks that accumulate and distribute the funds for maintaining ongoing production and consumption of goods and services within the region, wire transfer payments and clearing, lending to social and economic entities, supporting investment projects through provision of loans. One of the key correlations that can be used to describe the extent of investment activity of the banking sector in the RF region is a ratio between the amount of funds attracted by the lending institutions located in the region and the bank loans granted to legal entities and individuals. Systematization provides for twelve types of the regional banking system involvement in the formation of the financial base that can be grouped into six models. This article describes the results of analysis of the banking system impact on the economic development of the Arctic regions of the Russian Federation.

1. Introduction
Financial systems in the RF regions belong to the integrated national financial system and are not adequately self-sustaining. Despite of certain common characteristics and patterns, regional financial systems have their own peculiarities determined by the position of the region in the system of interregional economic connections, its economic environment. As a core element of the financial and economic system of the region, commercial banks play a significant role in financial stabilization and strengthening of the economic position of the region. While accumulating the businesses’ and citizens’ resources, the banking sector satisfies the regional economy’s and population’s demand in financial funds and banking services.

In the scientific literature there are alternative points of view on the degree of influence of Bank credit activity on the processes of regional economic growth. Thus, in the works of E. V. Zlyvko [1], I. A. Yankina, E. V. Pokidysheva [2] with the help of statistical methods, the existence of a direct proportional relationship between the indicators of lending to the economy by the banking sector and the volume of gross regional product produced in the RF subject is proved. At the same time in the study of such authors as Vasil’eva O. G., Kovtun Yu [3], author (S. Drobyshevsky, P. Trunin, D. Troshkin, S. Chetverikov, L. Lederman) [4] similar conclusions were not confirmed. In more detail, the issues of studying the relationship between credit processes and regional economic development
are set out in article [5]. At the same time, it should be noted the indisputable influence of Bank regulation indicators on the cost of credit resources and, consequently, on the dynamics of investment activity, which were confirmed by the classics of economic theory. Keynes [6], M. Friedman [7], A. Meltzer [8].

2. Main part

The extent of the banking sector impact on the rate of economic growth of the region can be determined based on such factors of the RF region as a share of the attracted sources in total amount of financing of the investment projects; industrialization extent and availability of major industrial enterprises; proximity to financial centers; development level of the financial and lending institutions.

The authors have previously considered in detail issues of assessing the credit potential of the region [9], the key indicators and areas of review of the regional banking system development and assessment of their impact on maintaining the sufficient financial base for the economic growth of the RF regions [5]. According to the findings, in our opinion, one of the key correlations that can be used to describe the extent of investment activity of the banking sector in the RF region is a ratio between the amount of funds attracted by the lending institutions located in the region and the bank loans granted to legal entities and individuals. Considering various options of the said correlation and the structure of the attracted and allocated funds, we identified six models of the banking sector involvement in the formation of the financial base for development of the region (Figure 1).

![Figure 1. Models of the banking sector involvement in the system of formation of the financial base for the region development](image-url)

Subsidized model is typical for the regions where the banking sector is mostly represented by the branches of major non-local banks with outflow of financial funds to financial centers. This aptly depresses the opportunities for using the lending resources in the region, does not contribute to production growth and development of real sector of economy.

The expanded model is also common for the regions where the branches of major metropolitan banks prevail in the banking sector, but in this case the banks satisfy the demand in the investment resources. The factors determining the model of the banking sector involvement in the formation of the financial base for development of the regions (subsidized or expanded) are the financial potential of the business entities and investment appeal of the region.
The balanced model is characteristic for the regions where the regional banking institutions have a significant share in total amount of banking transactions, or for the regions where major non-local banks actively participate in the formation of the resource base and actively carry out the transactions for allocation of financial resources.

Depending on the structure of funds allocated by the banking institutions, the regional models can be classified into consumer (with prevailing lending of individuals) and investment (with prevailing lending of legal entities) models. The investment lending models are more attractive for the RF regions than the consumer models. This comes from the fact that loans granted to the legal entities contribute to development of the regional business entities, foster development of the real sector of regional economy.

In case of consumer lending, a significant portion of loans received by the households is directed not to development of the real sector of economy but used for non-effective investments. Hence, when lending the individuals, the extent of the banks involvement in the investment process and development of regional economy is reduced.

One of the most important groups of regions focusing on the formation of the sufficient financial base for sustaining the investment processes is the group of Arctic regions of the RF. According to the Decree of the Russian Federation President No. 296 dated May 2, 2014 On the Land Territories of the Arctic Zone of the Russian Federation, the following regions belong, fully or partially, to the Arctic Zone: Murmansk Region, Nenet Autonomous District, Chukotka Autonomous District, Yamalo-Nenets Autonomous District (these four regions fully belong to the Arctic Zone), Republic of Komi, Republic of Sakha - Yakutia, Krasnoyarsk Territory, Arkhangelsk Region (these four regions belong to the Arctic Zone partially).

A wide raw material base, significant resource potential, industrial economy, based on the extractive industries, form the specific directions of development of these territories. Leading researchers associated with the development of the Arctic zone of the Russian Federation with the implementation of major infrastructure projects [10], the implementation of complex technological solutions for Arctic offshore and in remote areas [11], the necessity of modernization of functioning production facilities [12], the implementation of major international innovation projects [13], the formation of a new Arctic clusters [14]. At the heart of these areas of development is the need for significant investment resources, which cannot be satisfied only by internal sources of economic entities operating in the Arctic regions, or public investment. In this regard, the study of the possibilities of attracting funds from the financial sector (one of the main links of which is the banking system) for the formation of sufficient financial potential for the development of these regions is an important condition for ensuring the necessary rates of economic growth of these territories. Consider the specifics of the organization of banking systems in these regions and their participation in the formation of regional financial flows. Let’s take a closer look at specific aspects of organization of the banking systems of the a.m. regions and their involvement in the formation of the regional financial flows.

Presently, the banking system of the regions is formed by three types of entities: independent lending institutions registered in the region; lending institutions represented by the fully functional branches; lending institutions represented by internal divisions (subsidiary offices, front offices and cash transaction services desks, lending and cash services offices). As at the beginning of 2019, the structure of the existing banking systems in the Arctic regions of the RF is illustrated in Table 1.

At the present stage, divisions of major metropolitan banks prevail in the structure of banking systems of the Arctic regions. Altogether, in eight Arctic regions, there exist only six lending institutions registered directly in the Arctic regions of the RF. At the same time, it should be noted that quite recently there existed a lot more regional banking entities. For instance, early 2014 15 institutions existed there, early 2009 - 23 institutions, and early 2004 - 34 institutions.

The reason for reduction in number of independent banking institutions in the Arctic regions were the Central Bank policy aimed to tighten the banking activity conditions, counteractions against sketchy transactions of the lending institutions, expansion of major metropolitan banks into regional
markets, also through purchasing of regional banks and establishing own divisions on their basis, adverse tendencies in the financial market related to unstable macroeconomic conditions and limited efforts of the RF Central Bank in support of the major Russian banks that have weakened the inherently unstable position of small-sized banks, current tendencies of IT development and computerization of banking activities as a leverage used by the major entities in the current banking market.

Table 1. Information on the number and geography of existing lending institutions and their branches and internal divisions of the existing lending institutions (branches) as at 1/1/2019 [15]

| Indicator | Murmansk Region | Chukotka Autonomous District | Yamalo-Nenets Autonomous District | Nenets Autonomous District | Republic of Komi | Krasnoyarsk Territory | Republic of Sakha - Yakutia | Arkhangelsk Region (excluding Nenets Autonomous District) | TOTAL for Arctic regions of the RF |
|-----------|-----------------|-----------------------------|---------------------------------|---------------------------|------------------|----------------------|-----------------------------|---------------------------------|----------------------------------|
| Number of lending institutions in the region | 2 | 0 | 0 | 0 | 1 | 2 | 1 | 0 | 6 | 484 |
| Number of branches in the region | 2 | 0 | 3 | 1 | 5 | 14 | 4 | 3 | 32 | 709 |
| Lending institution which head office is located in the given region | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 3 | - |
| Lending institution which head office is located in other region | 2 | 0 | 3 | 1 | 3 | 13 | 4 | 3 | 29 | - |
| **Internal divisions of the existing lending institutions (branches)** | | | | | | | | | | |
| Subsidiary offices | 91 | 0 | 112 | 10 | 139 | 358 | 172 | 122 | 1004 | 20499 |
| Cash transaction services desks outside of the front office | 5 | 0 | 1 | 0 | 11 | 34 | 5 | 0 | 56 | 1068 |
| Cash services offices | 11 | 0 | 6 | 0 | 8 | 32 | 8 | 18 | 83 | 1918 |
| Front offices | 63 | 21 | 24 | 4 | 52 | 183 | 89 | 61 | 497 | 6015 |
| **Total** | 170 | 21 | 143 | 14 | 210 | 607 | 274 | 201 | 1640 | 29500 |

Dynamic changes in the structure of regional banking systems in the Arctic regions lead to change of the role of the banking market in maintaining the financial base for economic development of such regions of the Russian Federation. Based on the developed classification of models of the banking sector involvement in formation of the financial base for regional development, we further define the position of each Arctic region of the RF. Key relative figures indicative of the regional banking models are provided in Table 2.

Based on the estimated parameters, we classified the banking systems of the Arctic regions per types of their involvement in formation of the financial base (Figure 2).

Among the Arctic regions, one RF region can be attributed to the regions with subsidized consumer model of the banking systems (Murmansk Region), two regions can be attributed to the regions with
balanced consumer model (Arkhangelsk Region excluding Nenets Autonomous District and Republic of Komi), and five regions can be attributed to the regions with expanded investment model (Republic of Sakha (Yakutia), Krasnoyarsk Territory, Chukotka Autonomous District, Nenets Autonomous District, and Yamalo-Nenets Autonomous District).

Table 2. Key relative figures indicative of the regional banking models of Arctic regions (calculation of authors on the basis of [16])

| Region                                      | Total granted loans, mln RUB | Total attracted deposits, mln RUB | Ratio (deposits vs. loans) | Ratio (loans granted to legal entities vs. loans granted to individuals) | Ratio (attracted deposits of legal entities vs. attracted deposits of individuals) |
|---------------------------------------------|------------------------------|----------------------------------|---------------------------|------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Russian Federation                          | 57461112                     | 46250520                         | 0.805                     | 3.613                                                                  | 0.618                                                                         |
| Republic of Komi                            | 138971                       | 137380                           | 0.989                     | 0.598                                                                  | 0.053                                                                         |
| Arkhangelsk Region                          | 192171                       | 194032                           | 1.010                     | 0.783                                                                  | 0.095                                                                         |
| Nenets Autonomous District                  | 16090                        | 9274                             | 0.576                     | 2.488                                                                  | 0.068                                                                         |
| Arkhangelsk Region excluding Nenets         | 176080                       | 184759                           | 1.049                     | 0.707                                                                  | 0.096                                                                         |
| Autonomous District                         |                              |                                  |                           |                                                                        |                                                                                |
| Murmansk Region                             | 149726                       | 179869                           | 1.201                     | 0.686                                                                  | 0.086                                                                         |
| Yamalo-Nenets Autonomous District           | 207070                       | 155384                           | 0.750                     | 1.240                                                                  | 0.337                                                                         |
| Krasnoyarsk Territory                      | 694407                       | 374795                           | 0.540                     | 1.732                                                                  | 0.129                                                                         |
| Republic of Sakha (Yakutia)                 | 305880                       | 146651                           | 0.479                     | 1.639                                                                  | 0.320                                                                         |
| Chukotka Autonomous District                | 23661                        | 13319                            | 0.563                     | 3.047                                                                  | 0.061                                                                         |

Murmansk and Arkhangelsk Regions and the Republic of Komi are characterized by unfavorable type of the banking system involvement in the financial base formation. In these three regions, the amount of deposits attracted by the banking institutions is either significantly higher as compared to the total amount of loans granted to business entities (Murmansk Region), or comparable with each other (Arkhangelsk Region and Republic of Komi). Lending of individuals prevails in the structure of loans granted by the banks in these regions.

In Murmansk Region, the ratio between the attracted deposits and granted loans is one-and-a-half times higher than average in Russia. Due to relatively high level of average income per capita (the region ranks among 15 Russian regions in this respect), the households in Murmansk Region are characterized by higher level of savings in the banking system (about 220 thous. RUB per person). At the same time, the level of lending of the real sector in terms of GRP or per capita is almost three-fold lower than average in Russia. In the structure of the aggregate lending portfolio of the banking system of Murmansk Region, loans granted to legal entities account only for mere 41% (among the Arctic regions, this value is lower only in the Republic of Komi). The listed banking model characteristics demonstrate that the lending sector in Murmansk Region is currently not representing the source of formation of the financial base for maintaining the necessary rates of economic growth, but serves as a sort of means for pumping out financial resources (partially generated due to high income of population) from the region to the metropolitan areas.
Figure 2. Classification of banking systems of the Arctic regions per types of their involvement in formation of the financial base

In terms of the ratio of the attracted deposits and granted loans, Arkhangelsk Region and the Republic of Komi belong to balanced banking system models. However, the structure of granted loans (with express shifts towards lending of individuals) doesn’t allow to attribute them to the investment type and, hence, to include them in the group of RF regions with favorable models of the banking sector involvement in the formation of the financial development base. In terms of relative values of real sector lending, Arkhangelsk Region and the Republic of Komi are not only below average in Russia, but also below all other regions of Arctic Zone of the Russian Federation, including Murmansk Region. Quite a low level of deposits per capita doesn’t allow forming a potential base sufficient for stimulation of the real sector lending out of internal resources of regional banking systems of these RF regions.

Another five regions of the Arctic Zone of the Russian Federation (Republic of Sakha, Krasnoyarsk Territory, Chukotka Autonomous District, Nenets Autonomous District, and Yamalo-Nenets Autonomous District) can be attributed to the group of RF regions with expanded investment model. In these regions, the amount of loans granted by the banking system exceeds the amount of formed deposits, which enables quite active stimulation of investment activity, also through banking lending. Irrespective of the fact that the ratio of lending the real economic sector and households in each of these five regions is different, in general this proportion in the given group of RF regions is noted to shift towards legal entities. Common for these regions is a significant share of deposits of individuals in structure of attracted resources (such situation is possible due to high level of income per capita).

Ratio of regional banking systems grouped per type of involvement in the financial base formation vs. scope of investments into fixed assets per capita in the regions and scope of investments into fixed assets financed out of banking lending per capita (Table 3) is of interest.
Table 3. Types of banking system involvement in formation of the financial base of the regions vs. some indicators of investment activity (calculation of authors on the basis of [16])

| Region                          | Type of the banking system involvement in formation of the financial base | Ratio (deposits vs. loans) | Investments in fixed assets per capita, RUB | Amount of investments in fixed assets financed out of the bank loans per capita, RUB |
|---------------------------------|--------------------------------------------------------------------------|-----------------------------|--------------------------------------------|--------------------------------------------------------------------------------------|
| Russian Federation              | -                                                                        | 0.805                       | 108734                                    | 12178.2                                                                              |
| Republic of Komi                | Balanced consumption model                                               | 0.989                       | 152907                                    | 1070.3                                                                               |
| Nenets Autonomous District      | Expanded investment model                                                | 0.576                       | 3232648                                   | 151934.5                                                                             |
| Arkhangelsk Region excluding Nenets Autonomous District | Balanced consumption model                                               | 1.049                       | 92737                                     | 5100.5                                                                               |
| Murmansk Region                 | Subsidized consumption model                                             | 1.201                       | 146528                                    | 3663.2                                                                               |
| Yamalo-Nenets Autonomous District| Expanded investment model                                                | 0.750                       | 2014306                                   | 936652.3                                                                             |
| Krasnoyar Region (Yakutia)      | Expanded investment model                                                | 0.540                       | 147686                                    | 6941.2                                                                               |
| Republic of Sakha               | Expanded investment model                                                | 0.479                       | 399399                                    | 6390.4                                                                               |
| Chukotka Autonomous District    | Expanded investment model                                                | 0.563                       | 237367                                    | No data available                                                                   |

It is to be noted that three regions (Murmansk and Arkhangelsk Regions, Republic of Komi) with the least values of investments into fixed assets financed out of the banking lending per capita are characterized by consumer models of the banking sector involvement in formation of the financial base of the region, and four regions with expanded investment model are characterized by the highest values of the same indicator. Hence, classification of the regions per type of banking system model provides the means for assessment of the extent of lending system involvement in financing of investment processes, and assessment of potential enhancement of investment activity of the banking sector.

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