Typology of Arctic Constituent Entities of the Russian Federation by Development Level of Regional Financial Systems

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ABSTRACT

The article is devoted to the study of development level of regional financial systems of the Arctic constituent entities of the Russian Federation. The study found that the regional financial system was the basis ensuring the implementation of financial relations in a certain territory and connecting all economic subjects into a single mechanism. Factors determining differences in the development of territorial financial systems were highlighted. The special features of financial support for the development of the regions of the Arctic Zone of the Russian Federation (hereinafter – the AZRF) were defined. It was found out that the regions of the AZPF significantly differed in the development of regional financial systems, existing financial infrastructure, budget support, investment activities, as well as the opportunities to form a sufficient financial basis for sustainable economic growth. The article presents a typology of the regions of the AZRF carried out on the basis of assessment of financial potential. On the basis of the assessment, relative indicators of such components of the total financial potential as a fiscal potential, a potential of households, a potential of commercial and non-commercial organizations, a potential of finance and credit system were calculated. Final ranging was carried out on the basis of application of point assessment of calculated values of financial indicators. In the process of the study, it was found that the Yamalo-Nenets Autonomous District and the Krasnoyarsk Territory had the highest level of the financial potential among the AZRF regions. At the same time, the lowest level of the financial potential is characteristic of the Republic of Karelia and the Arkhangelsk Region. In the work, promising directions of using the results of the typology of the regions are formulated on the basis of the calculation of financial potential, which are associated with the need to develop a differentiated financial policy for the territories characterized by specific features of the development of financial systems.

Keywords: Arctic Zone of the Russian Federation, financial potential, financial regulation, investment activities, regional financial system

1. INTRODUCTION

According to the form of state structure, Russia is a federative state which includes 85 independent constituent entities (including three cities of federal significance). Such a number of regions presuppose the significant differentiation in the level of economic development, transport, industrial and social infrastructure, as well as of territorial provision with nature, labor and financial resources. Such a differentiation presupposes the need to highlight specific features of the development of key subsystems of the regional economy.

The regional financial system represents an ordered system of elements interacting within the organized financial flows, as well as the integrity of financial resources formed, distributed and used to achieve the set goals of development and functioning of the economy of a particular region.

In its essence, any financial system is the basis which ensures the implementation of financial relationships in a particular territory, and unites all regional businesses into a single mechanism [1]. This system forms the basis for the implementation of budgetary processes, investment activities, financing for development programs, crediting and

many other financial processes in the constituent entity of the Russian Federation.

With the development of new forms of financial relations, an increase in financial flows, the importance of the level of organizing and developing regional financial systems is growing. When the possibilities of federal budgetary financial support for the development of individual regions are not great, and the problems of intensifying investment activities and searching for necessary resources to implement large infrastructural, industrial and social tasks come forward, the formation of the financial system which allows controlling the process of using budgetary resources and transferring them to consumers more effectively, using an internal financial potential of a territory in a full degree, and attracting large external investors is one of the most urgent goals of authorities.

Currently, the level of development of regional financial systems of the constituent entities of the Russian Federation is extremely uneven, which is due to a number of facts:

- a significant area of territory and presence of a large variety of regions which differ in business conditions, population density, transport availability, remoteness from capitals of the Russian Federation, resources of various kinds;

- a large differentiation of the level of budgetary support for the constituent entities of the Russian Federation which leads to varying degrees of dependence on the federal budget;

- the existing centralized financial system in Russia with two highly pronounced financial centers (Moscow and Saint Petersburg) where all major exchanges and financial markets are located and more than 55% of the total number of credit institutions in the country are registered;

- a specific banking system which partly inherited certain features of the Soviet model with the prevailing role of Sberbank PAO (Public Joint Stock Company);

- insufficient development of certain segments of the financial market (including the insurance market, the segment of investment funds and financial intermediaries) in comparison with the leading economically developed countries.

The uneven development of finance in different regions and differences in the territorial provision with financial resources necessitate a typology of the constituent entities of the Russian Federation in terms of the level of development of financial systems.

In the scientific literature, there are several different approaches to the possible typology of the constituent entities of the Russian Federation according to the level of development of regional financial systems. The most common approach is when the level of development of the financial system is identified with the level of development of the budget system of the region [2, 3]. Researchers who adhere to this approach classify regions in terms of the structure of the formed budget and dependence on budgetary support from the federal level.

An alternative approach to the typology of regions according to the level of development of financial systems can be designated as an investment approach. Within the framework of this approach, indicators of investment activities in the territory of a constituent entity of the Russian Federation are considered as the resulting indicators characterizing the functioning of the regional financial system [4, 5].

In our opinion, the most optimal approach is in which the typology of regions according to the level of development of regional financial systems is carried out on the basis of comparing their capabilities to form a sufficient level of financial base to ensure sustainable development. This approach can be implemented on the basis of an assessment of the regional financial potential [6, 7], which includes, in our opinion, four main elements: a fiscal potential, a household potential, a potential of commercial and non-profit organizations, a potential of the financial and credit system (see more [8]).

2. MATERIALS AND METHODS

The purpose of this work is to carry out the typology of the AZRF regions according to the level of development of financial systems on the basis of an assessment of their financial potential. To achieve the purpose, this work will characterize the Arctic constituent entities of the Russian Federation in general, analyze the intensity of investment activities in these regions, calculate the relative indicators which characterize individual elements of the financial potential of the territories, carry out their typology on the basis of application of point system.

In the work, a number of scientific research methods were used: scientific literature analysis, synthesis, generalization, comparison. During the process of assessing the financial potential of the AZPF regions, methods of economic and statistic analysis were used, including the calculation of relative indicators and deviations, the score based on the magnitude of deviation from the national average values.

The practical research presented in the work is based on the conclusions and results obtained earlier by the author. The methodology for calculating the final assessment of financial potential, used in this work, is outlined by the author in the monograph "Approaches to Building a System of Financial Regulation of Development of the Northern Regions on Basis of an Assessment of Financial Potential" [9].

The information base for assessing the financial potential is the data of the official collections of Rosstat for 2019 [10].

3. RESULTS

3.1 Characteristics of development of the AZPF regions

Today, to identify the directions of support for regional financial systems is especially urgent for those constituent entities which are defined as strategically important growth points for Russia, significantly contribute to production of gross domestic product to ensure required rates of economic development of Russia, and have a real need in additional investment resources. One of such territories is the AZRF which entirely includes four entities (the Murmansk Region, the Yamalo-Nenets, Nenets and Chukotka Autonomous Districts), as well as partially includes municipalities of five entities (the Krasnoyarsk Territory, the Republics of Karelia, Komi and Sakha (Yakutia), the Arkhangelsk Region).

According to the *Strategy for the Development of the Russian Arctic and Ensuring National Security for the Period until 2035*, this territory is an object of strategic interests of Russia: a significant share of the country's various natural resources is being extracted in the Russian Arctic (including more than 80% of natural gas and about 17% of oil); on the coast of the Arctic regions there are ports serving the Northern Sea Route, the role of which will increase, taking into account climatic changes and the growth of world trade turnover; beyond the Arctic Circle, the Northern Navy and other objects of strategic containment are based, ensuring the country's defense.

On the other hand, the following facts are generally recognized: the extremely uneven nature of the economic development of the Russian Arctic, the high level of resource intensity of production and the cost of doing business, the low level of development of transport and social infrastructure, the presence of large industrial and financial groups in the regions of the Russian Arctic, which, on the one hand, are focused on export operations and, on the other hand, due to the use of various schemes, become a tool for pumping out financial resources obtained from the sale of natural resources from the regions, and a low quality of life of the population compared to the average Russian level.

The territory of the Russian Arctic is characterized by rather specific challenges and threats, such as a persisting trend towards a reduction in the permanent population (among other factors due to migration outflow), a lag in the implementation of infrastructure projects, the presence of outdated production infrastructure, which does not make it possible to achieve development targets in key sectors of specialization of the Arctic regions, as well as to form the necessary basis for the transition to an innovative scenario of development. Overcoming these challenges and threats is only possible by attracting large-scale investments to the regions of the AZRF, at the expense of both public funds and extra-budgetary sources. At the same time, a prerequisite for the activation of investment processes in these constituent entities of the Russian Federation is the formation of efficiently working regional financial systems.

Currently, the regions of the AZRF differ significantly in the degree of development of regional financial systems. One of the key resulting indicators of the development of the regional financial system is the level of investment in fixed assets per capita (*Figure 1*).

According to the data presented, in the majority of the AZPF regions, the indicator of investments in fixed assets per capita exceeds the average national value (in 2020, the indicator value below the average national level was noted only in the Republic of Karelia and the Arkhangelsk Region). At the same time, the differentiation of this indicator for particular Arctic entities of the Russian Federation is significant. The highest indicators are typical for the Nenets, Chukotka and Yamalo-Nenets Autonomous Districts (it should be noted that these three districts are leaders in terms of investments in fixed assets per capita not only in the Russian North, but among

all constituent entities of the Russian Federation). For the first two regions, high values are due to the low population size (44.4 thousand people and 49.5 thousand people in the Nenets and Chukotka Autonomous Districts, respectively), while the absolute value of investments in fixed assets for these Arctic entities of the Russian Federation is relatively low. The Yamalo-Nenets Autonomous District has been the absolute leader among the Arctic regions and one of the leaders in Russia (second only to Moscow) in terms of the value of investments in recent years. This region accounts for about 70% of the total investment in fixed assets in the Russian Arctic, while even in the crisis year of 2020, the region saw an increase in investment of about 15%.
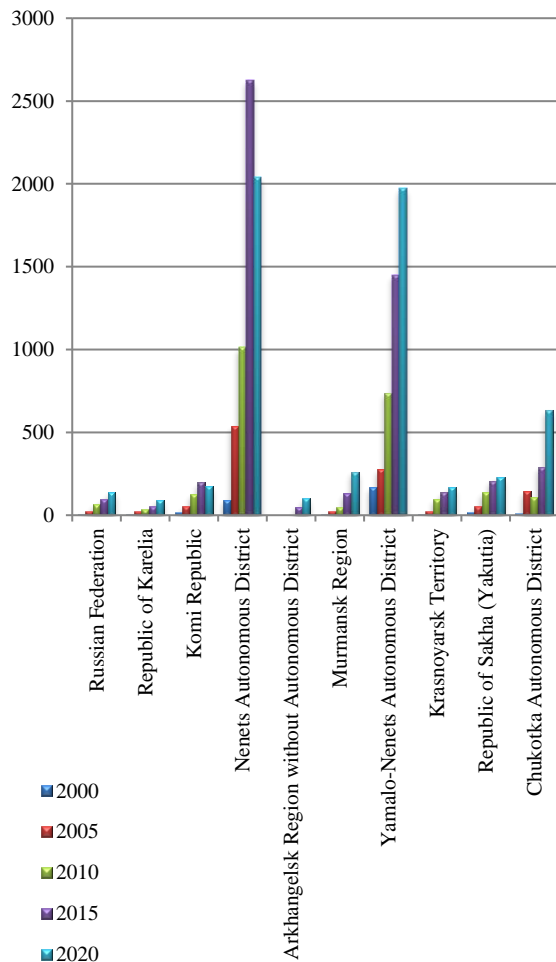

Figure 1. Dynamics of investments in fixed assets per capita in regions of the AZRF in 2005-2020, thousand rubles / person
Source: Compiled by the author based on the data [10]

Note that the Arctic regions are characterized by a high dynamics of changes in investments in fixed

assets over time [11], which is due to the beginning or end of the implementation of large investment projects, as well as the investment activity of the largest companies in industrial sectors.

3.2 Assessment of financial potential of regions of the AZRF

Tables 1-4 show relative indicators characterizing the elements of the overall financial potential of the AZRF regions.

Table 1. Fiscal potential of the AZRF regions (according to the data of 2019)

Region	Coverage Ratio of Budget Expenditures (own income to total expenditures)	Concentration Ratio of Own Budget Revenues (own revenues to total revenues)	Coefficient of Provision of Population with Tax Payments, thousand rubles / person	Ratio of Surplus (Deficit) of Consolidated Budget to Amount of Expenditures, %
Russian Federation	**0.81**	**0.81**	**69.2**	**0.03**
Republic of Karelia	0.61	0.60	51.5	1,72
Republic of Komi	0.94	0.91	104.0	3.84
Arkhangelsk Region	0.76	0.73	68.0	3.74
Nenets Autonomous District	0.85	0.85	292.2	0.99
Murmansk Region	0.89	0.86	112.7	3.44
Yamalo-Nenets Autonomous District	1.10	0.96	438.0	14.04
Krasnoyarsk Territory	1.01	0.89	97.6	13.14
Republic of Sakha (Yakutia)	0.64	0.64	136.5	-1.08
Chukotka Autonomous District	0.28	0.28	307.5	0.61

Source: Calculated by the author based on the data [10]

According to the data presented in the *Table 1*, the regions of the AZRF differ significantly in the level of fiscal potential. Five regions (the Republic of Komi, Nenets Autonomous District, Murmansk Region, Yamalo-Nenets Autonomous District, Krasnoyarsk Territory) are characterized by a higher share of their own tax and non-tax revenues in relation to the balance sheet budget indicators compared to the average indicators for the Russian Federation. In 2019, the budget of only one region (the Republic of Sakha (Yakutia)) was executed with a deficit, with the largest surplus typical for the Yamalo-Nenets Autonomous District and the Krasnoyarsk Territory.

Almost all regions of the Russian Arctic are characterized by high values of the indicator of the provision of the population with tax payments (with the exception of the Republic of Karelia). The maximum values of this indicator are in the Yamalo-Nenets, Chukotka, and Nenets Autonomous Districts.

Table 2. Financial potential of population of the AZRF regions (according to the data of 2019)

Region	Ratio of Household Savings to Total Income	Ratio of Per Capita Income in Region to Subsistence Minimum	Increase in Financial Assets, thousand rubles / person	Share of Population with Cash Incomes Above Subsistence Level, %
Russian Federation	**0.19**	**3.3**	**529**	**88**
Republic of Karelia	0.17	2.3	648	84
Republic of Komi	0.30	2.6	4526	85
Arkhangelsk Region	0.14	2.7	-305	87
Nenets Autonomous District	0.61	4.0	37198	91
Murmansk Region	0.27	2.7	3937	89
Yamalo-Nenets Autonomous District	0.56	5.3	29413	94
Krasnoyarsk Territory	0.21	2.6	857	83
Republic of Sakha (Yakutia)	0.24	2.6	2137	82
Chukotka Autonomous District	0.62	3.8	38524	92

Source: Calculated by the author based on the data [10]

Despite the high level of per capita income, the indicators characterizing the financial potential of the population in the regions of the Russian Arctic are not high (the exception is the Yamalo-Nenets, Nenets and Chukotka Autonomous Districts). This situation is due to the high cost of living in the North of Russia, which does not allow the population to form significant savings and ensure a high increase in financial assets.

The regions of the AZRF, where large enterprises of the extractive industries are located (the Krasnoyarsk Territory, Republic of Sakha (Yakutia), Murmansk Region, Yamalo-Nenets Autonomous District), are characterized by the greatest financial potential of commercial and non-commercial organizations. These enterprises largely determine the overall balanced result for the corresponding constituent entities of the Russian Federation and high values of the average return on assets. At the same time, it should be noted that almost all Arctic regions are characterized by a

higher share of unprofitable organizations compared to the average Russian level (the Krasnoyarsk Territory is an exception).

Table 3. Financial potential of commercial and non-commercial organizations in the AZRF regions (according to the data of 2019)

Region	Balanced Financial Result of Economic Entities Per Organization, mln rubles	Autonomy Ratio (share of equity in balance sheet),%	Average Return on Assets of Economic Entities, %	Share of Profitable Economic Entities, %
Russian Federation	**4.3**	**50.2**	**6.8**	**68**
Republic of Karelia	3.1	19.4	24.7	57
Republic of Komi	6.3	53.8	7.8	61
Arkhangelsk Region	2.1	24.0	3.4	64
Nenets Autonomous District	5.0	17.8	2.1	40
Murmansk Region	5.3	33.2	9.6	62
Yamalo-Nenets Autonomous District	117.4	38.9	14.7	61
Krasnoyarsk Territory	16.5	51.2	17.0	70
Republic of Sakha (Yakutia)	7.8	61.7	10.9	65
Chukotka Autonomous District	20.8	57.6	9.1	57

Source: Calculated by the author based on the data [10]

Table 4. Potential of financial and credit system of the AZRF regions (according to the data of 2019)

Region	Share of Attracted Sources (excluding budget funds) in Structure of Investments, %	Average Debt of Legal Entities on Loans Per Organization, mln roubles / unit	Volume of Deposits in Credit Institutions in Region to Volume of GRP	Number of Credit Institutions and Branches Per 1 mln Inhabitants of Region
Russian Federation	**28.8**	**8.6**	**0.52**	**7.2**
Republic of Karelia	11.5	2.7	0.30	4.9
Republic of Komi	13.3	2.6	0.20	6.1
Arkhangelsk Region	16.9	5.0	0.36	2.7
Nenets Autonomous District	27.2	13.2	0.03	0.0
Murmansk Region	23.0	7.4	0.31	5.4
Yamalo-Nenets Autonomous District	51.1	88.6	0.08	5.5
Krasnoyarsk Territory	32.0	10.7	0.16	5.6
Republic of Sakha (Yakutia)	60.5	11.1	0.12	5.2
Chukotka Autonomous District	41.5	11.9	0.14	0.0

Source: Calculated by the author based on the data [10]

The potential of the financial and credit systems of the regions of the Russian Arctic is generally low. These regions are characterized by low (in comparison with the average values for the Russian Federation) indicators of the population's provision with credit institutions and their branches, as well as a low ratio of the volume of bank deposits in credit institutions of the region to the volume of GRP. However, it should be noted that credit institutions have a fairly high lending activity in relation to the real sector of the economy in such regions as the Nenets, Yamalo-Nenets, Chukotka Autonomous Districts, the Republic of Sakha (Yakutia) and the Krasnoyarsk Territory. The regional leader in terms of the level of participation of the financial and credit system in investment processes among the entities of the AZRF is the Yamalo-Nenets Autonomous District.

Calculation of relative indicators characterizing individual components of the total financial potential of the regions of the AZRF allows us to typologize these constituent entities of the Russian Federation on the basis of a point score (*Table 5*).

Table 5. Aggregate financial potential of the AZRF regions (according to the data of 2019), point assessment

Region	Financial Potential				Total
	Fiscal	Households	Business Entities	Credit and Financial	
Russian Federation	12.0	12.0	12.0	12.0	48.0
Republic of Karelia	8.8	7.9	12.4	3.8	33.0
Republic of Komi	15.9	10.8	12.2	3.2	42.1
Arkhangelsk Region	12.2	9.7	7.5	3.8	33.3
Nenets Autonomous District	16.4	23.4	4.3	-2.4	41.7
Murmansk Region	15.0	12.5	10.3	6.1	43.8
Yamalo-Nenets Autonomous District	26.3	26.0	18.4	11.3	82.0
Krasnoyarsk Territory	19.6	8.5	15.9	4.9	48.8
Republic of Sakha (Yakutia)	9.7	8.5	14.4	7.2	39.7
Chukotka Autonomous District	6.6	23.8	8.2	1.1	39.6

Source: Calculated by the author

Based on the calculated final assessment of the financial potential, the regions of the AZRF can be classified as follows:

- Regions with a high financial potential (over 57 points): Yamalo-Nenets Autonomous District;

- Regions with an average level of financial potential (from 45 to 51 points): Krasnoyarsk Territory;

- Regions with a financial potential below the average (from 39 to 45 points): Republic of Komi, Nenets Autonomous District, Murmansk Region, Republic of Sakha (Yakutia), Chukotka Autonomous District;

- Regions with a low financial potential (less than 39 points): Republic of Karelia, Arkhangelsk Region.

It should be noted that the average level of the financial potential of the regions of the AZRF is about 45 points, which is lower than the average value for the Russian Federation.

4. DISCUSSION

The calculations made it possible to classify the regions of the AZRF by the degree of development of financial systems on the basis of a point assessment of the level of their financial potential.

This classification can be used to make decisions at the state level, when choosing the best tools for financial regulation of the development of individual territories and effective attraction of investment resources. In particular, the presented classification can serve as a basis for further research in determining the degree of participation of federal authorities in enhancing investment processes in individual regions, assessing the potential efficiency of introducing tax incentives for economic entities, making changes to the system for calculating interbudgetary transfers between levels of the budget system, assessing opportunities to involve the free funds of the population in investment processes, and choosing optimal instruments for this.

Ultimately, the typology of the financial systems of the regions based on an assessment of their financial potential can contribute to the formation of a differentiated financial policy in relation to territories characterized by their own specifics of the economy and a different ability to generate a sufficient financial base from internal resources.

5. CONCLUSION

The paper presents an assessment of the development of financial systems in the regions of the Russian Arctic. The level of development of regional financial systems of this group of constituent entities of the Russian Federation is

extremely uneven. In particular, the Arctic regions differ significantly in the level of the fiscal potential, the household potential, and the potential of commercial and non-profit organizations. At the same time, almost all Arctic regions as a whole are characterized by a low level of the potential of the financial and credit system.

The leader in terms of the level of the financial potential not only among the regions of the AZRF, but also in the Russian Federation as a whole is the Yamalo-Nenets Autonomous District, which is characterized by one of the highest levels of investment activity among the constituent entities of the Russian Federation, significant provision with its own budget revenues, active participation of credit institutions in financial processes, and a high level of income of the population. The average level of financial potential is typical for the Krasnoyarsk Territory. The rest of the entities of the AZRF should be classified as regions with a level of the financial potential below the average (Republic of Komi, Nenets Autonomous District, Murmansk Region, Republic of Sakha (Yakutia), Chukotka Autonomous District) and with a low level (Republic of Karelia, Arkhangelsk Region).

In general, the assessment of the financial potential for different regions can serve to adjust the financial regulation of the development of individual territories and optimize the use of various financial tools of regional policy.

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