International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878 (Online), Volume-8 Issue-2, July 2019

Agglomeration Effects in Spatial Development of Russia's Regions

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Abstract*: The article addresses the issue of the twofold role of territorial agglomeration entities in the spatial development of Russian regions. The authors look at the possibilities of both stimulating and dissimulating effects of expansion of urban agglomerations on the socioeconomic status and innovation development of Russia's regions, which cause the economic growth on the national level to speed up or slow down. On the one hand, urban agglomerations become "growth poles" that help spread business activity from the centre to the periphery and stimulate the diffusion of innovations. On the other hand, agglomeration trends in spatial development create centripetal economic effects that lead to greater inter- and intraregional socioeconomic disparity. The authors pay special attention to the forming of urban agglomerations as a socioeconomic phenomenon that preconditions economic disparity between territories. This becomes a problem from the viewpoint of state management, as Russia's federative model of government grants priority to regulative influence in the economic space of regions. As a result, the socioeconomic development gap grows quite large, making national economic and innovation policies less effective in general. Based on the conducted studies, the authors demonstrate that it is necessary to transfer to a balanced combination of interregional cooperation aimed at eradication of regional disparity.

***Index Terms*: agglomeration, growth poles, innovation diffusion, interregional disparity, regional policies, spatial economics, urbanization.**

I. INTRODUCTION

Agglomerations as special territorial socioeconomic systems formed by unions of urban and suburban settlements are steadily acquiring the status of economic growth drivers in Russia – both on the regional and the national scale.

Revised Manuscript Received on 30 July 2019.
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By all means, the geographical factor has significance in the formation and development of agglomerations, but it is not the vital factor. The key role is played by diverse industrial, labour, cultural and social, recreational ties that make agglomerations complex and sufficiently stable systems. As a rule, agglomerations are formed around core cities, often accompanied by satellite cities, which is why urban agglomerations are the prevailing type. The topic of agglomeration became trending in Russia in 2004-2005, when possible supporting points were being determined, which would ensure the socioeconomic development of the country. The issue appeared on the agenda because it was necessary to resolve one of the top-priority tasks of the state's economic policy: to decrease the levels of interregional disparity and disparity in the quality of life. However, the progressive role in spatial development, originally set for the agglomerations, somewhat conflicts with the specific features of the system of state regulation of the economy. The main reason behind this controversy is the lack of balance between the efforts of the state in the socioeconomic sphere and the sphere of innovations (based on the federative and administrative-territorial structure of the country) and the informal character in which agglomerations function as territorial entities. Agglomeration areas appear in an objective manner – they are the result of urbanisation processes and circular migration, and are characterized by their conventional nature and open borders. In addition to the formal relations among the market players regulated "from above", new relations appear, created by initiative "from below", without any state involvement [1], [2]. In a sense, the spontaneous nature nature of processes occurring in urban agglomerations can result in three types of situations appearing in the regions: 1) steady concentration of economic resources, growth of investment activity, improvement of the business climate; 2) lack of resources, decreased level of economic activity; 3) high concentration of resources, oversaturation with resources in a certain territory, gradual diffusion of economic activity. All this makes the study of agglomeration processes an important task and requires fundamental rethinking.

II. METHODS

The subject matter of this study is the analytic overview of methodology that describes the existing agglomeration situation in the Russian regions. The authors directed their efforts at discovering the positive and destructive effects of development of agglomeration territories, primarily using the

factual method – studying the facts recorded in scientific works, expert evaluations and research. Materials of the Russian Federal Service for State Statistics, "Institute for Urban Economics" foundation, "Russia's Urban Agglomerations" analytical portal were used as evidentiary basis [3], [4]. Ratings published by RIA Rating, the National Rating Agency, Association of Innovative Regions of Russia (AIRR), statistical and analytical data describing the development of Russia's urban agglomerations were used for comparative analysis [5]-[7]. The methodological tools of the study also include such general scientific methods as analysis, synthesis, scientific analogy, inductive, deductive and systematic approaches. Analysis of empirical and statistical data, tables and figures representing empirical and analytical information, economic diagnostics and monitoring based on a system of key indicators of spatial development of Russia's regions were used to acquire and illustrate the tangible results. The limited amount of statistic indicators pertaining to the socioeconomic status of agglomeration territories is supplemented by calculations performed through analytical comparison with the corresponding indicators of regional statistics. In order to get a more objective picture of the existing economic situation in the agglomerations, the authors studied such macroeconomic parameters as gross regional product (GRP), investment in fixed capital, average salaries, retail turnover and balanced financial results of enterprises. For purposes of comparison, all these data are presented in the form of relative indicators.

The use of methods of information and analysis modelling helped uncover non-trivial, previously unknown, practically applicable information, necessary for elaboration of recommendations regarding the actual use of the study results. This multi-aspect study helped reach new conclusions and supplement some existing concepts about the patterns and trends of agglomeration development in the system of Russia's regional economy.

III. OVERVIEW OF LITERATURE ON THE TOPIC

The aims of this study suggest that the authors should inspect the positive and destructive influence of agglomeration effects on the spatial development of Russia's regions. Therefore, let us compare the views of a number of foreign and Russian scientists in this sphere.

Aiming to improve the territorial organisation of society and the administrative-territorial system, W. Christaller developed his theory of functions and spacing of a system of settlements (central place theory) [8]. In the early 1950's F. Perroux developed Christaller's theory by creating his own theory of "growth poles", based on the concept of effect of centripetal and centrifugal forces concentrated in the centres of economic space, allowing enterprises to use industrial factors effectively and creating centres of their attraction [9]. A. Lösch, founder of the theory of spatial organization of the economy, described the following benefits of agglomerations: enterprises are able to jointly use the infrastructure, resolve HR issues more effectively, accumulate expert knowledge, etc [10]. The concept of dynamic and segment analysis methods, created by M. Storper and R. Walker adds to these views [11]. According to said concept, regional ties created by industrial enterprises cause regional concentration of industry with its own development dynamics. The scientists point out that regions, where agglomeration processes are at play, cope with structural economic changes more easily.

In the 1970's, proponents of the spatial approach began to apply not only the theories of industrial complexes, but also the social theories that take into account the individual behavioural features and preferences of the population. Closer attention to social aspects helped identify the "weak spots" of agglomeration territories. A large share of the studies involving social aspects is represented by the so-called urban economics, the theories of supraregional trade and urban growth [12]-[14], as well as the forming theory of industry clusterisation and the concepts of network economics [15]. R. Camagni and R. Capello describe the negative agglomeration effects, pointing out the possible overconcentration of people and resources in large urban agglomerations [16]. This results in worse investment conditions, "overheating" of the construction sector leading to real estate profiteering, prospectless migration of the population from crisis territories into cities with low development potential, etc. After analysing the effect of regional conditions in certain territories upon the development of different sectors of the economy, R. Giffinger et al. concluded that the same territorial conditions may stimulate development of some sectors and obstruct the development of others [17]. Border regions may serve as an example – in N. Hansen's words [18], they are sufficiently fragile and endangered, due to effects caused by language barriers, differences in mentality and the threat of military intervention [19]. However, integration processes eliminate these barriers and create additional benefits and economic development [20]. The features of border regions are supplemented by the concept of the "centre and periphery", with the centre being the socioeconomic localisation of human activity and the periphery being the less urbanized village area with lower population density [1], [21].

Two lines of thought can also be traced in the views of Russian scientists regarding the role of agglomerations in the socioeconomic development of regions. Those supporting the classic approach to the nature of agglomerations point out such positive features as economic activity growth and its transgression over the formal city limits; the unity of features of the socioeconomic space of the city and of smaller villages surrounding it [22]; the establishment of self-implementing forms of legal, political, socioeconomic regulation of the corresponding areas [23]; the development of transportation links between the settlements, the beautification of suburban territories [24].

The other group of scientists prefers to address the problems caused by the agglomerations. These include the absence of regulation in state and municipal law, the problem of their financing, the lack of balance between the interests of the territory (the city) and of the economic sectors, possible degradation of territories that are not part of the agglomeration [20], [25],

absence of an effective infrastructure supporting the formation and lack of practical experience in the functioning of agglomerations [26]. It is necessary to clearly understand the actions and abilities of the forces influencing the agglomeration processes. As we may learn from the works of foreign and Russian scientists, the key factors of these processes include regional ties, the concentration of industry, the synergetic effect of the joint use of resources, the correspondence of territorial conditions of agglomerations to the industrial specifics of enterprises, the state of the road infrastructure, the financial abilities of territories, social and motivational stimuli.

IV. STUDY RESULTS

1. The Agglomerations as a Segment of Spatial Economics

This study touches upon aspects within the field of such scientific disciplines as regional and spatial economics. The corresponding theories may be divided into three groups: first, those pertaining to local (intraregional) development and international (interregional) interaction; second, those pertaining to both spatial and territorial aspects; third, those pertaining to traditional and innovation economy.

Spatial economics studies the interaction of unevenly distributed socioeconomic subsystems, as well as the interaction of spatial development subjects and of economic relations among them. The objects of spatial economics are both economic agents (individuals or groups of individuals) participating in the processes of production, exchange and consumption and Russia's territorial entities.

The administrative-territorial system of regionalisation in Russia is not always productive, as in some cases the current administrative borders inhibit economic growth in the regions and significantly decrease the effectiveness of regional development strategies. According to expert assessments, annual losses of the Russian economy caused by ineffective spatial organisation are as high as 2.25 – 3 % of the GDP [27], [28]. We should act on the premise that economic activity is characterized by a multitude of relations and takes place not only within the national and administrative-territorial borders, but also on the global market, on many regional and sectoral markets.

From the viewpoint of state management, spatial development is seen as a "Russian doll of interacting economic spaces (global, national, subnational and local ones)" [29], [30]. The main difference between the regional and the spatial approach to the organisation of economic activity is that in the first case there exist clearly defined and officially determined borders, within which the state regulates the socioeconomic processes, while the economic space is continuous by nature, its segments appear and seize to exist depending on the viability and effectiveness of unravelling reproductive processes.

The notion of "segment" has different meaning in scientific studies, depending on whether the aspect is territorial or spatial, but no radical difference can be traced between them. In both aspects, the segment is regarded as a group of producers of goods, a network of partners, administrative-territorial entities, territorial entities not linked to the administrative-territorial system [31], [32]. Apart from the regions, the multitude of socioeconomic systems includes municipal entities, tech cities ("naukograds"), tech and industrial clusters, special economic zones, advanced development zones. Urban agglomerations are also included into this group, but they have a somewhat special status, since they lack any sort of centres that control the whole territory.

As an economic category, "agglomeration" has somewhat evolved with time. The term was originally coined by Alfred Weber in 1905. Initially it meant the mutual attraction between enterprises located in the same area [33]. Much later, French geographer M. Rouget (1973) used this term to describe a situation in which the concentration of urban activities goes beyond the administrative borders and into the neighbouring settlements [34]-[37].

There is no official statistical recording of socioeconomic parameters of urban agglomerations. There are assessments and practical studies conducted by groups of experts and individual authors employed by research institutions, such as the Geography Institute of the Russian Academy of Sciences, Territorial Development and Transport Infrastructure Research Institute, Central Research Institute of the Russian Ministry of Construction. Only the most general information, such as the lists of settlements included into agglomerations, the areas occupied by them and their population total is usually available.

Currently there are 124 agglomerations in Russia, with different development levels and a total population of 85 mln. people. According to "Institute for Urban Economics" foundation, 20 major agglomerations have formed in Russia, with a third of the country's population residing in them. Within the framework of this study we take a look at those major Russian agglomerations, the population of which exceeds 1 mln. people. These include Moscow, Saint-Petersburg, Samara-Tolyatti, Yekaterinburg, Rostov, Nizhny Novgorod, Novosibirsk, Kazan, Chelyabinsk and Volgograd agglomerations (see Table I).

Table I. General characteristics of Russia's major agglomerations

No.	Agglomeration name	Constituent entity of the federation included into the agglomeration	Agglomeration composition*	Population total	Share of the region's total population**	Area, sq. km	Share of the region's area occupied**	Population density in the agglomeration**
1	Moscow	Moscow, Moscow Region	cities – 81 UTSs – 72	17 000 000	74%	5 698	12%	2983,50

2	Saint-Peters burg	Saint-Petersburg, Leningrad Region	cities – 32 UTSs – 32	6 200 000	87%	11 600	14%	534,48
3	Samara-Toly atti	Samara Region	cities – 11 UTSs – 14	2 738 652	86%	19 685	37%	139,13
4	Yekaterinburg	Sverdlovsk Region	cities – 11 UTSs – 23	2 211 425	51%	13 171	7%	167,90
5	Rostov	Rostov Region	cities – 6 UTS – 1	2 700 000	64%	3 506	3%	770,11
6	Nizhny Novgorod	Nizhny Novgorod Region	cities – 11 UTSs – 12	2 081 838	64%	10 577	14%	196,83
7	Novosibirsk	Novosibirsk Region	cities – 5 UTSs – 10	2 020 044	72%	9 677	5%	208,74
8	Kazan	Republic of Tatarstan	cities – 5 UTSs – 5	1 680 834	43%	9 000	13%	186,76
9	Chelyabinsk	Chelyabinsk Region	cities – 4 UTSs – 2	1 602 000	46%	9 511	11%	168,44
10	Volgograd	Volgograd Region	cities – 4 UTSs – 10	1 412 494	56%	8 200	7%	172,26

**UTS – urban-type settlement*
*** calculated by the authors, based on data provided by Rosstat and "Russian Cities" analytical portal*
Sources: Rosstat (n.d.);
Russian Cities (n.d.)

Around 40 % of Russia's urban population lives in agglomerations. According to statistics, only 5 core cities of agglomerations have increased their population within the last 20 years (Moscow, Rostov-on-Don, Kazan, Krasnoyarsk, Krasnodar), while the numbers have not changed much in another three (Yekaterinburg, Omsk, Naberezhnye Chelny). Population decline in certain agglomerations is not a sign of the general population decline (including urban population), but rather a sign that urbanisation processes have slowed down, and spontaneous forming of new agglomeration centres is impossible under current circumstances. There is now a steady flow of labour resources (primarily of highly qualified workforce) from the core cities into Moscow. Herewith it is evident that statistics do not show the real, so-called daytime population in these cities, which are the centres of daily circular migration. It is worth noting the population concentration on the territories of agglomerations in relation to the share of the regions' areas occupied by them, as shown in Table I. In almost all agglomerations (except for Kazan and Chelyabinsk agglomerations) the share of the population resident on the territory of the corresponding Russian region is significant – within the 50 % – 90 % bracket. Herewith, in most cases (except for Samara-Tolyatti agglomeration) the agglomeration occupies less than 20 % of the region's total area. Large agglomerations occupying significant territories have the potential to organize the economic and social life on large areas around them, thus becoming the regions' advanced development zones.

2. Influence of Agglomerations upon the Development of Regional Economies

Today the constituent entities of the Russian Federation act not only as independent participants of economic processes, but often as territorial market players, competing for different limited resources, including investments, human resources, state contracts, etc. Under such circumstances, certain regions take the lead in the competitive struggle, while others fall back, becoming outsiders. The effect agglomerations have on the development of Russian regions can be generally assessed by examining the socioeconomic status rating, annually published by "RIA Rating" rating agency owed by "Russia Today" media group. This rating is formed through aggregation of key regional development indicators (Fig. 1).

**Rating of the socio-economic status of the subjects of the Russian Federation at the end of 2017, n.d.).*

Fig 1. Rating of socioeconomic status of Russia's constituent entities

The graphic interpretation of 2013-2017 ratings shows the stability of the region's positions. Closer inspection will allow to trace controversial trends in the socioeconomic status of certain Russian regions: a number of them occupy high rating positions (Moscow, Moscow Region, Saint-Petersburg, Republic of Tatarstan), while some others, also housing the major agglomerations, are losing ground (Samara Region, Rostov Region, Novosibirsk Region, Chelyabinsk Region).

In order to make the interregional comparison more precise, let us use the available relative indicators, calculated as percentage of the Russian average, based on the latest statistical data (Table II).

Table II. Relative indicators of socioeconomic development of Russian regions in 2016, % of the Russian average*

Russia's region	GRP, per capita	Investment in fixed capital, per capita	Average nominal salary	Retail turnover, per capita	Balanced financial result, per capita
Moscow	245,1	137,8	194,4	179,6	430,6
Moscow Region	102,4	83,8	116,2	133,7	89,6
Saint-Petersburg	150,9	128,5	132,7	121,7	197,1
Leningrad Region	108,4	147,2	98,9	99,4	127,1
Samara Region	84,3	79,7	77,1	96,9	72,2
Sverdlovsk Region	96,8	75,4	88,1	126,2	64,6
Rostov Region	63,6	69,2	72,7	104,4	23,3
Nizhny Novgorod Region	76,9	70,9	77,4	103,9	50,9
Novosibirsk Region	82,9	58,5	82,1	84,2	17,4
Republic of Tatarstan	105,8	163,3	82,3	107,1	105,8
Chelyabinsk Region	76,3	56,3	84,3	73,1	58,5
Volgograd Region	62,0	71,9	72,3	70,5	18,8

Calculated by the authors based on Rosstat's data (Rosstat, n.d.)

The data in Table II show how certain regions are exceeding or falling behind the Russian average in terms of the vital socioeconomic development criteria, which paves the way for regional asymmetry. Moscow and Saint-Petersburg are among the absolute leaders, ahead of the Russian average across the whole spectre of indicators. Herewith, Moscow Region, being part of Moscow agglomeration, has problems in the sphere of investments, while Leningrad Region, included into Saint-Petersburg agglomeration, is somewhat falling behind as regards average salary and retail turnover per capita. Samara, Sverdlovsk and Chelyabinsk regions are the list's outsiders: they are lacking development across the whole range of indicators.

The dynamic of macroeconomic factors is an important parameter of socioeconomic development of territories. It follows from Fig. 2 that in 2012-2016 all indicators have gone up, which has significantly influenced economic growth in all the regions studied here. Therefore the situation seen in the outsider regions is not hopeless. The problem is the deceleration of fixed capital investment growth rates in reference to GRP growth rates. This is characteristic of Moscow (23.9 % against 35.4 %), Saint-Petersburg (55.9 % against 88.1 %), Volgograd Region (32.5 % against 37.4 %). This ratio may either point to the ineffective use of investment resources or signify that most investments are socially-oriented (and cost-intensive).

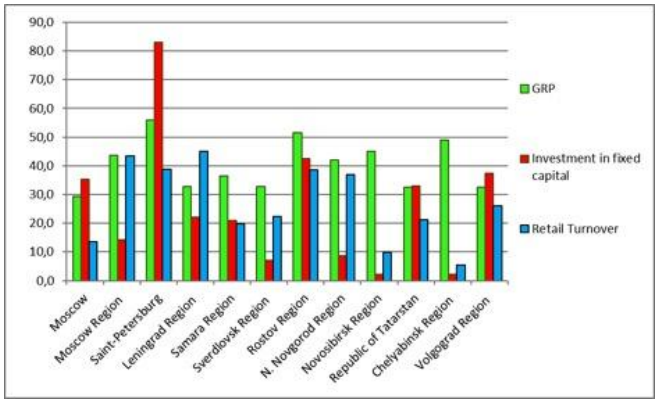


Fig 2. Basic growth of relative GRP, fixed capital investments and retail turnover indicators in certain Russian regions, 2012-2016

Scientists describe different factors responsible for concentration of economic activity on the regional level. Here are some of them:

- manufacturing enterprises tend to be located near market outlets [19];
- concentration of manufacturing production on the territory of a region due to liberalisation of trade [38];
- concentration of economic activity in the region is positively influenced by the presence of an export hub (this observation is especially useful for hi-tech enterprises) [39];
- dependence on previous development, specialized industrial forces, foreign economy growth accompanied by growing concentration of productive forces [40].

Studies show that spatial concentration of economic activity boosts overall effectiveness of applied resources, creates additional benefits, and, on the whole, has a positive effect on economic development. However, it should be understood that higher concentration usually leads to greater interregional disparity, both on economic and social development levels. As the regions become less attractive for labour resources, financial investments, etc., and for development of industrial production, they become recipients of the economic system.

3. Agglomeration Effect in the Innovation Process

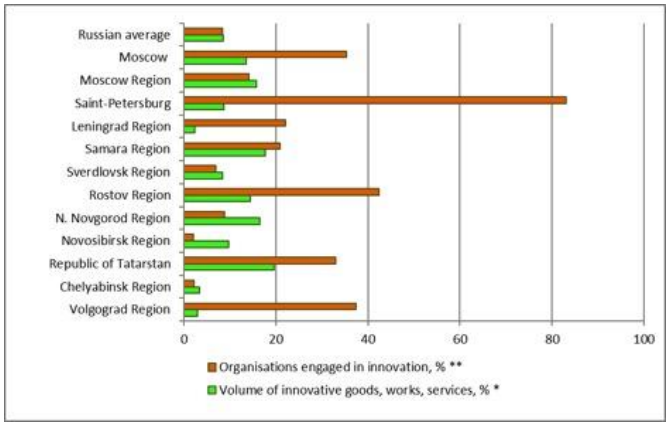
The Russian economy is entering a new phase of economic development. The main driving force of this phase is the innovation activity in all spheres of life of the society – first of all in the manufacturing sector. The need to constantly introduce scientific-technical achievements into economic activity, making oneself more effective and competitive, is caused by the rules of transformation of the global economy. Innovation development of a county, as of any other territorial socioeconomic system, is ensured by a high-quality structure and positive dynamics of investment.

Increasing the investment activity and making it more open to stimulating factors should be among the top priorities of regional authorities. In the modern world, the formation of technological traditions in the industrial sector, as well as the formation of a scientific and education complex able to create modern technologies required by existing and future enterprises is a competitive advantage for any territorial entity, including urban agglomerations.

International practice has elaborated the following types of state influence upon innovation development: 1) strategy ща active involvement; 2) decentralised regulation; 3) mixed forms. The third type is prevalent in the Russian economy. This is understandable, as the territorial units of innovative development in Russia are the regions, which have all the necessary regulatory and resource capacities. Stimulation (including financial stimulation) of prioritized segments of the economy through concentration of financial resources within them is the key mechanism of development of innovative activities [41].

In order to promote innovative activity it is necessary to develop territorial subsystems of the national innovation system; these subsystems include urban agglomerations. Maximum innovation activity caused by economic concentration is generated in the centre of the urban agglomeration, which is its core. The factors of innovation development of an agglomeration include: increased interaction of the market players, development of innovation infrastructure, of information technologies, distribution and logistics systems. These factors cause the diffusion of innovations, which spreads around the economic space of the agglomeration and beyond.

In a situation of innovation development it is the agglomerations that determine the real borders of territories, within which the regional segment of the national innovation system is localized [1]. It should be pointed out that such regional segments may transcend the borders of an individual region. Nevertheless, the efficiency of innovative production is evaluated only from the standpoint of municipal entities, regions and federal circuits. Interregional effects pertaining to agglomeration influence remain hidden from the official statistics. One of the ways to track the growth of the innovation component in the tech structure of the economy is to look at the share of innovation products in the total volume of dispatched goods and at the share of innovation organisations. Studying these indices across several regions can provide indirect help in the assessment of agglomerations' influences upon the innovation processes (Fig. 3).



**Volume of innovative goods, works, services (% of the overall volume of dispatched goods, performed works and services).*

***Innovation activity of organisations (% of organisations engaged in innovations among the total of inspected organisations).*

Sources: Rosstat (n.d.)

Fig 3. Innovation activities of Russia's regions representing the major agglomerations in 2016, %

Proceeding from the graph on Fig. 3, a conclusion offers itself that there is no link between the scale of innovation production and the number of organizations engaged in innovation activities. Saint-Petersburg shows the most striking result here: the gap between the concentration of innovation industry and the share of innovation-oriented enterprises is huge (8.7 % and 88.1 % correspondingly). A similar situation can be traced in most of the regions under study, although the gap is not that big in other cases.

As a rule, the link between the level of innovation development and the socioeconomic status of a territory is not evident at the initial stages of innovation economy. In particular, this is evidenced by the difference of region's positions in socio-economic and innovation ratings (Table III).

Table III. Rating assessment of the socioeconomic status and innovation development of constituent entities of the Russian Federation

Russia's region	Region's position in the socioeconomic status rating		Change of position **	Region's position in the Innovation development rating by AIRR*		Change of position **
	2016	2017		2016	2017	
Moscow	1	1	↔	1	2	↓
Moscow Region	4	6	↓	9	7	↑
Saint-Petersburg	2	2	↔	2	1	↑

Leningrad Region	7	9	↓	44	50	↓
Samara Region	12	12	↔	10	9	↑
Sverdlovsk Region	11	8	↑	13	17	↓
Rostov Region	18	20	↓	19	28	↓
Nizhny Novgorod Region	16	18	↓	8	11	↓
Novosibirsk Region	27	28	↓	5	5	↔
Republic of Tatarstan	5	4	↑	3	3	↔
Chelyabinsk Region	20	22	↓	21	22	↓
Volgograd Region	29	27	↑	51	53	↓

AIRR - Association of Innovative Regions of Russia.*

***moved up (↑); moved down (↓); stable (↔)*

Sources: Socioeconomic status rating of constituent entities of the Russian Federation (RIA Rating) (2018); Innovative Regions Rating (by AIRR) (2018)

After comparing the rating results, the authors discovered three situations: 1) overall correspondence of the socioeconomic and innovation development levels (Moscow, Saint-Petersburg, Samara Region, Republic of Tatarstan, Chelyabinsk Region); 2) socioeconomic status is higher than innovation development level (Leningrad Region, Volgograd Region); 3) vice versa (Novosibirsk Region). Herewith, contrary trends can be traced in these development spheres (Moscow Region, Sverdlovsk Region, Volgograd Region).

Speaking about the role of agglomerations in the process of innovations, we should point out that according to international practice innovation development is only possible within the framework of an innovation system (national, regional one). On the other hand, as innovation development is gaining momentum, the commercialisation of scientific-technical achievements follows the concept of "growth points" and "centres of attraction". Urban agglomerations fall in line with this concept; however their relations with innovative systems of any level are a problem to be solved, both theoretically and practically. It can only be said that spontaneous development of agglomerations is inadmissible in the Russian economy due to the negative effects slowing down innovation growth.

V. CONCLUSIONS AND RECOMMENDATIONS

In the economic sphere, any theory, concept, law or pattern is tied to the temporal interval (including retrospect) within which it was created, as well as to the concrete socioeconomic conditions at which it was oriented. Theories of central places, "growth poles", spatial organization of the economy indicate that there are positive agglomeration effects in the spatial development of territories. As regards the situation in Russia, we are rather talking about the potential that agglomerations will have, should their development be regulated and coordinated from universal centres on the regional and federal level. Considering "agglomeration" as an economic notion, we'd like to point out that initially the meaning of this notion was oversimplified. On the current stage, the development of agglomerations is inseparably tied to the process of urbanisation. Uncontrolled and continuous growth of urban territories has led to spontaneous appearance and expansion of agglomeration areas. In the mid-20th century, cities came to be regarded not as separate centres of population concentration, but as an integration of cities and suburban settlements with unbreakable functional ties. Also, around this time there came the understanding that it is necessary to control the evolutionary processes of urban and agglomeration development. Scientists believe that three consecutive stages characterize the process of urbanisation in Europe: the stage of concentration of the population in large cities (until mid-20th century), the stage of suburbanisation and urban agglomerations (1950's-1960's), the stage of slower growth of urban agglomerations, outflow of population and industry into smaller towns and non-urban areas (1970's). With a certain time lag, urbanisation processes are taking a similar course in Russia. As regards agglomeration development, no clear patterns have been established in this sphere yet. The only thing we can assume based on the conducted analysis is that three agglomeration territories have formed in Russia, possessing the features of "centres of attraction" and the characteristic effects of centripetal and centrifugal forces. These are Moscow, Saint-Petersburg and Kazan agglomerations, which have become the driving forces of national economic growth. The other agglomeration territories are showing unstable growth and are experiencing the negative agglomeration effects. The agglomeration situation existing in Russian regions shows that the following factors may be included into the list of centripetal forces of the agglomeration process: workforce migration, higher salaries in the region (as compared to the national average), growing returns to scale. Indirect centripetal forces are themselves significantly influenced by the current regional socioeconomic policies.

Centrifugal forces supposedly include the significant growth of the cost of living in Russia's regions, higher costs of entrepreneurship, "oversaturation" of certain constituent entities of the Russian Federation, which puts high pressure upon the whole ecosystem; overload of the road infrastructure due to insufficient density of the road network; high transportation costs; lack of balance between the growing demand and the existing supply of social services, etc.

The lack of interregional interaction is one of the significant barriers for effective agglomeration development. A twofold situation appears here. On the one hand, when there is a deficit of budgetary sources, it is reasonable to unite material and technical, financial, labour and other resources necessary for carrying out large-scale innovation projects and programs based on interregional cooperation.

On the other hand, in a market economy there is competition not only among individual producers, but also among regions and even among municipal entities, which makes the territories try to isolate themselves and focus on creating their own competitive advantages.

The key to overcoming the negative agglomeration effects is to unite agglomerations within the framework of municipal entities, based on voluntary agreements with clear distribution of powers among the different levels of administration. It is necessary to regulate the administrative, organisational and managerial barriers created by the limited scope of powers of the local authorities, ineffective budgetary policy, lack of practice of horizontal ties and relations among municipalities. It is high time for coordinated efforts of federal, regional and municipal authorities with participation of the local communities – this may result in positive agglomeration effects becoming the overwhelming factor in the spatial development of the regions.

ACKNOWLEDGMENTS

This study was financed by a grant from the Plekhanov Russian University of Economics.

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