The role of the Moscow agglomeration for the socio-economic development of central Russian regions (part 3)

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Abstract. The article aims to comparative analysis of strategies of socio-economic development of 2 subjects of the Russian Federation – the Tver and Tula regions, scenarios of development with regard to influence of Moscow agglomeration. The authors analyze strengths, weaknesses, opportunities and threats related to the proximity of the regions to Moscow and the Moscow region as reflected in the SWOT analysis of the regions. The paper considers advantages of implementing inter-regional infrastructure projects for each of the regions; highlights the role of investments, including foreign ones and the advantages of cluster regional development. Also the paper summarizes the analysis of the impact of the proximity of Moscow agglomeration on the socio-economic development of the 8 constituent entities of the Russian Federation outlined in three articles.

Keywords: regional competitiveness, competitive advantages of the region, integration resource of the region, strategy of socio-economic development of the region, SWOT-analysis, foreign investments, innovations, Moscow agglomeration.

JEL codes: C82, M10, O18, R50, R58

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Introduction

The object of the study is Moscow – city itself, the Moscow region and two regions of the Central Federal District (CFD) close to the Moscow agglomeration – the Tver and Tula regions. Two previous articles concerned with the strengths, weaknesses, opportunities and threats associated with the proximity of the Vladimir, Ivanovo, Ryazan and Yaroslavl regions and the Kaluga and Smolensk regions (Berendeeva & Korobova, 2021a; 2021b) to Moscow and the Moscow region. Recent years Moscow, the Moscow region and the Kaluga region were donor regions, while the remaining constituent entities of the Russian Federation are subsidized.

The Tver region is the largest region of Central Russia in terms of area (its territory is 84.2 thousand km^2, which is more than the area of the Leningrad region and almost twice as large as the Moscow region, and almost three times larger than the Ivanovo region area). Tverskaya gubernia was the part of both the Russian Empire and the Soviet Union until 1929. The Tver region is an old industrial region. The region has a well-developed power industry (there are hydropower and nuclear power stations), mechanical engineering (production of excavators, passenger cars, textile equipment, agricultural machinery, garage and fire-fighting equipment, electrical products, instruments and lighting equipment, railway transport equipment, etc.), chemical, printing, woodworking, light, glass, building materials production, etc. Also there is developed electricity sector (a distance from the Moscow ring road to the border of the Tver region is 90 km).

The Tula region is much smaller (25,700 km^2) but it has large metallurgical, machine-building (arms industry), chemical, light and food processing, mining manufacture. The Tula region ranks 3rd at the 2019 Russia's regions National Investment Climate Rating. The large polycentric Tula – Novomoskovsk agglomeration is situated in Tula region. The distance from the centre of Tula to the centre of Moscow is 185 km; from the northern outskirts of Tula to the southern outskirts of Moscow (Yuzhnoe Butovo) is 150 km. The distance from the centre of Tula to the centre of Moscow is 150 km.

Moscow-city and the Moscow region influence a lot on neighbour regions development. The surveyed regions mention the proximity of the Moscow agglomeration as a threat (outflow of working-age population) in their socio-economic development strategies. The reasons for the outflow of population are various, including the crisis of the local economy and "optimization" of social infrastructure. According to T. Nefedova's study, the presence of two "cuts"-profiles in the socio-economic space of Central Russia resembling together the letter X on the map. The first profile extends from St. Petersburg through towns and districts along the route to Moscow in the Leningrad, Novgorod, Tver, Moscow regions with Moscow to the south of the Tula region; the second profile also extends along motorways from districts and towns on the southern outskirts of the Kaluga region through the Moscow, Yaroslavl regions to the eastern outskirts of the Kostroma region. By the highlighted profiles we can see the flows of intra-regional, inter-regional and international migrants for permanent residence as well as intra- and inter-regional temporary labour migrations. As a result of these migrations, the Moscow region accumulates over 70% of the total population increase due to interregional migrations in the municipalities alongside both profiles and 30-60% of the population increase due to international migrants (Nefedova, 2020).

On the other hand, proximity to the capital region is a definite advantage, an opportunity for neighbouring regions (a large market for goods and services, location of production facilities of international companies, withdrawal of production and logistics centres from the Moscow metropolitan area, etc.). The metropolitan region and Moscow have objective agglomeration advantages and status rents. It is the result of the dominance of big business in the Russian economy, headquartered mainly in Moscow, with the capital receiving a large status rent in the form of high taxes and salaries. Since 2012 there have been changes in the development of the metropolitan agglomeration, primarily the administrative annexation to Moscow of a substantial part of the Moscow region (the least populated southwestern sector of the Moscow region, which has no large cities), which led to a 2.4-fold increase in the area of the capital (Zubarevich, 2021).

The proximity to Moscow and the Moscow Region plays an important role for the socio-economic development (SED) of central Russian regions, including the Tver and Tula regions. By socio-economic development Strategies (hereinafter referred to as Strategies) it is a competitive advantage of these regions. Although the Tver and Tula regions are old industrial regions and manufacturing there has the largest share in the structure of gross regional product (22.1% in the Tver region, 45.1% in the Tula region) the competition with the Moscow agglomeration for resources (labour, investment, innovation, financial, etc.) could weaken the realization of their economic potential (Regions of Russia. Socio-economic indicators, 2020). There are also the positive trends in the proximity to Moscow. For example, the transfer of industrial functions to the regions neighbouring Moscow continues. By N. Zubarevich opinion, it is "the diffusion of investment resources out of the MKAD". It is an additional stimulus for Moscow in terms of opportunity to develop new territories, increase housing construction and implement new infrastructure projects. According to the studies, the coronavirus crisis affected two subjects of the Moscow agglomeration more severely than most regions (Zubarevich, 2021). Therefore, by the post-COVID economy, the neighbourhood of the Moscow agglomeration can be seen for the regions in terms of not only 'losses' but also 'gains'. The aim of our third article is to assess the emphasis of the Tver and Tula regions replacing by developing of socio-economic relations with the Moscow agglomeration and what are the pros and cons of such geographical and economic interaction (Babaev, 2009).

SWOT-analysis

The methodological basis for the study was a comparative analysis of regional strategies, including competitive advantages, strengths, weaknesses, opportunities and threats (SWOT analysis). Also we used statistical indicators of the Federal State Statistics Service of the Russian Federation, scientific research data and analytical data from major rating agencies.

Results

Our study shows the occuring of depopulation in the surveyed regions (with the exception of Moscow and the Moscow region). There are 8 leading in terms of gross regional product regions of the Russian

Federation: Tula (over RUB 636 bn in 2018) and Yaroslavl (over RUB 560 bn); Ivanovo region (about RUB 198 bn) is the outsider. In terms of gross regional product per capita, the Kaluga, Yaroslavl and Tula Regions have over 400,000 RUB and the Ivanovo Region has less than RUB 200 mn roubles. The share of manufacturing in gross regional product is highest in the Tula (45.1%), Kaluga (42.4%) and Vladimir (34.4%) regions and lowest in the Ivanovo (19.2%), Smolensk (21.6%) and Tver (22.1%) ones. In terms of average salaries, the regions significantly lag behind the capital region: so in 2019, salaries in Kaluga region were 75% of those in the Moscow region; the Tula region respectively 69%, Yaroslavl region 65%, Ryazan region 62%, Tver region 60%, Vladimir region about 60%, Smolensk region 56% and Ivanovo region 50% (see Table 1).

Table 1 – Main indicators of socio-economic development of the surveyed regions

	Population at the end of the year, thousand people		Gross regional product, million RUB (2018)	Gross regional product per capita, RUB (2018)	Share of manufacturing in gross regional product, % (2018)	Average monthly nominal salary of employees, RUB (2019)
	2005	2019				
Moscow	10924	12678	17881516.2	1423588.6	16.2	94294
Moscow region	6784	7691	4201768.8	556413.9	20.6	55555
Vladimir region	1486	1358	440543.0	321078.9	34.4	33076
Ivanovo region	1102	997	197839.8	195994.9	19.2	27553
Caluga region	1023	1003	465987.5	461023.2	42.4	41442
Ryazan region	1189	1109	383110.2	342734.4	29.2	34488
Smolensk region	1025	935	312857.0	330766.0	21.6	31269
Tver region	1415	1260	441653.6	345919,	22.1	33524
Tula region	1615	1466	636133.7	428275.7	45.1	38151
Yaroslavl region	1313	1254	560577.9	443970.1	28.9	36016

Source: Regions of Russia. Socio-economic indicators, 2020

In this article we will focus on the characteristics of the socio-economic situation of the Tver and Tula regions in detail.

Our analysis shows the significant difference in population, wages, unemployment and migration in the Moscow agglomeration and the 2 regions under study (Tver and Tula). By Table 2, the population in the studied regions is declining. As a result, in 2019 the population of the Tver region was 89% of the 2005 level, while in the Tula region it was 91%. Average monthly nominal salary in the Tver region is 2.8 times lower than in Moscow, 1.7 times lower than in the Moscow region and 2.5 times lower than in the Tula region and 1.5 times lower than in the Tula region, respectively. According to sample surveys of the labour force in the pre-COVID economy, the unemployment rate was minimal in Moscow (1.4%) and the Moscow region (2.7%) and ranged between 3.7% and 4.0% in the Tver and Tula regions.

Table 2 – Some indicators of socio-economic development of regions

	Population at the end of the year, thousand people		Average monthly nominal salary of employees (RUB)	Unemployment rate*, as a % of the labour force
	2005	2019	2019	2019
Moscow	10924	12678	94294	1.4
Moscow region	6784	7691	55555	2.7
Tver region	1415	1260	33524	4.0
Tula region	1615	1466	38151	3.8

* according to sample labour force surveys, annual average
Source: Regions of Russia. Socio-economic indicators, 2020

Population migration plays an important role as an indicator of the socio-economic prosperity of the region. By Table 3, the Moscow agglomeration had stable migration growth in 2013-2019. In the Tver region in 2019 the migration increase, which was negative in previous years, changed to a positive one (i.e. from migration loss to migration gain); in Tula region the situation is reversed (a change from a positive to a negative migration balance).

Table 3 – Coefficients of migration rates per 10,000 population*

Year	2013	2014	2015	2016	2017	2018	2019
Moscow	90	57	92	24	89	79	38
Moscow region	140	149	120	141	111	140	144
Tver region	1	-12	-14	4	-30	-34	5
Tula region	4	19	19	21	25	-9	-4

* The sign (-) indicates a decrease
Source: Regions of Russia. Socio-economic indicators, 2020

During the COVID-19 pandemic, migration to Moscow and the Moscow region decreased significantly. In 2020, the Tver and Tula regions were characterized by migration decrease (see Table 4).

Table 4 – Migration increase (+) / decrease (-) of population, persons

Year	2019	2020
Moscow	+47,584	+1 614
Moscow region	+110 198	+51,250
Tver region	+654	-1514
Tula region	-569	-186

Source: Key Indicators of the Socio-Economic Situation of the Constituent Entities of the Russian Federation in 2020

In the Tver region migration has a moderating effect on population decline. The positive migration balance in the Tver region in the pre-COVID period was due to international migration, mainly the influx of people from the Commonwealth of Independent States (CIS) countries as part of the regional programme to assist the voluntary resettlement of compatriots living abroad. It is expected that the inflow of migrants will actively grow during the forecast period and will reach 15.5 persons per 10,000 of population in 2030 or three times the 2012 level (5.52 persons per 10,000 of population).

According to the statistical indicators ranking analysis, in 2017-2018 the strategic economic activities of the Tver region were manufacturing, transport, trade, agriculture, energy, real estate operations and (Boyko & Romaniuk, 2020). A decrease of labour productivity is one of the economic problems of the region (Kamaleev et al., 2020).

We analyze the socio-economic development strategy of the Tver region.

The key internal threats to the development of the Tver region are:

a) population decline, long-term negative demographic processes;

b) deficit of qualified staff;

c) lag between the renewal of industrial capacity and development needs;

d) insufficiently active enterprise innovation policy in the region;

e) strong differentiation of life in urban and rural areas, formation of dying-out villages and unpromising areas, unsustainable development and crisis phenomena in mono-profile settlements of the region;

f) stratification of the population in terms of living standards, affecting the growth of social tensions;

g) outflow of part of the population to Moscow and St. Petersburg, as well as internal migration to the regional centres and the emergence of territorial differentiation;

h) degradation of the environmental situation in the region (poor quality of fresh water, underdeveloped waste management system, air pollution);

i) lagged adaptation of the region's life support systems to the needs of economic, social and other development challenges.

The basic principles for the construction of the Tver region Strategy are as follows:

– cluster approach of territorial development, strengthening the specialization of the regional economy;

– principle of resource-efficient development of the region (maximum utilization of mineral, labour and intellectual resources);

– principle of innovation (the ability to implement large-scale innovative projects for the benefit of the region and the country as a whole, including through international cooperation);

– rationalization of the transport network, maximizing the use of the area's transit capacity.

The section on the region's competitive advantages of the Tver region Strategy, it is noted that the region, in order to improve the demographic situation, attracts quite a large number of migrants, including from abroad, simultaneously turns out to be a population donor and a supplier of labour resources to other regions of Russia.

As in the previously considered strategies of other RF subjects, the region's economic and geographical location (proximity to the growing market of the Moscow agglomeration) stands out as an important advantag.

Key internal factors of socio-economic development of the Tver region:

– negative demographic phenomena, a long-term trend towards a natural decline in the labour force;

– a high level of labour migration (including temporary (commuting) migration between the Tver region and Moscow and other neighbouring subjects of the Russian Federation;

– the region dominant position within Tver city, with an accumulation of almost a third of the region's population and economic entities and a concentration of 53.22% of the turnover of large and medium-sized enterprises and organizations in the region;

– significant imbalances in the socio-economic development of municipalities, the extinction of rural municipalities;

– availability of an extensive transport infrastructure.

The development of the region's transport potential plays an important role. The large-scale transport infrastructure development projects will be implemented in the next 10 years within international transport corridor 9 in the transport sector. These, along with the high economic growth of Moscow and St. Petersburg and the expansion of their urban agglomerations, will increase the importance of the economic and geographical location factor for the Tver region and create new development opportunities. In this regard, one of the main principles of the Tver region Strategy is the rationalization of the transport network and the maximum use of the territory's transit capacity.

Transport projects in the Tver region:

– construction of a new high-speed toll highway Moscow-St. Petersburg and a high-speed railway providing train traffic at speeds up to 350 km/h with a stop in Tver;

– construction of a major discount airport, which will give an additional impetus to the economy of the Tver region at the expense of the emerging Moscow agglomeration.

As a result of these projects, in 7-8 years Moscow will have transport accessibility for passengers within 1-2 hours and for freight within 2-3 hours. The advantages for both the capital region and the Tver region are obvious.

The transport component plays an important role in the development of logistics, tourism in the region. The Tver region has a high cultural, historical and spiritual potential. In 2018, the Volga Sea cruise tourism and recreation cluster, which was announced by the Tver region, won in a nationwide competition in which 69 Russian regions took part (Balabeykina et al., 2021). The tourist transport and logistics hub on the territory of Zavidovo, which has no analogues in Russia, is considered to be the key object. In order to increase the flow of tourists, including foreign ones, the region is implementing the state programme "Development of Tourism Industry in the Tver Region" for 2018-2023 (Dombrovskaya, 2019).

An important role is given to the innovative development of the region. By the inertial scenario of the

Strategy "unless active actions are taken to increase the quality of infrastructure and human capital it will be difficult for Tver Region to take a significant position on the scale of the Central Federal District in conditions of active growth of the Moscow agglomeration and successes in implementing innovative development strategies of neighbouring regions" (Regions of Russia. Socio-economic indicators, 2020).

The innovation scenario (as the most promising in terms of qualitative socio-economic development of the Tver Oblast) states the investment attractiveness of the clusters being formed will not only help to attract investment to the territory but also to locate research, manufacturing Russian and foreign companies, stimulate the transfer and localization of innovative product manufacturing technologies, provide assistance in attracting qualified workforce and students (Regions of Russia. Socio-economic indicators, 2020).

Attracting investment remains a priority in the investment policy pursued by the regional government. In the Tver region methods are used to influence the increase in potential demand for investment. The evidence is the creation of the Uzlovaya economic zone, as well as the territories introducing a special procedure for entrepreneurial activity (Gurovich, 2021).

We analyzed the socio-economic development strategy of the Tula region.

Studies based on mathematical methods on the components of regional sustainability (potential) according to five factors (economic, political, environmental, social and institutional) show the Tula region is among the regions with sustainable development, along with Moscow, the Moscow region, the republics of Tatarstan and Kabardino-Balkaria (Arzumanyan, 2021).

The Tula region Social and Economic Development Strategy to 2030 and the Tula region Social and Economic Development Forecast for 2022-2024 reflect the region's strengths and weaknesses.

Industry, wholesale and retail trade, construction, agriculture and real estate operations are the main contributors to the gross regional product in the structure of Tula region's economy; the growth rates of these sectors have a significant impact on the growth rate of the gross regional product. The following activities have the greatest impact on the dynamics of industrial production: food production; beverage production; manufacture of chemicals and chemical products; manufacture of other non-metallic mineral products; manufacture of fabricated metal products, except machinery and equipment; metallurgical production; manufacture of paper and paper products; supply of electricity, gas and steam; air conditioning, manufacture of motor vehicles, trailers, etc. Their total share in industrial production (in terms of shipped products) in 2020 was more than 86.0%.

A structural feature of the regional industry is the high share of enterprises in the manufacturing sector. The manufacturing industry of the Tula region is quite diversified, which increases the flexibility of the regional economy and ultimately works for its sustainability.

The region's proximity to Moscow, the country's largest market, as well as its developed infrastructure, qualified workforce and favourable investment climate are the main competitive advantages.

The Tula region is an attractive investment region for major foreign corporations as Unilever, Cargill, Procter&Gamble, SCA, Knauf and others. For example, 8 major projects were implemented in the agricultural sector. At present, 29 projects worth over RUB 44 bn are being implemented in the agricultural sector in the Tula region, which will eventually lead to the appearance of about 4,000 workplaces. It allows to provide region with its own agro-industrial products and leads to increase the volume and share of products sold outside the region, including the Moscow agglomeration. By the Forecast, the Tula region envisages the implementation of a large number of agro-industrial investment projects aimed at meeting consumer demand in the Moscow region, including different manufacturing as a part of the import substitution policy (Cherkizovo Group, McCain Foods Rus LLC, Cargill LLC, Kubanmaslo-Efremovsky Butter Plant LLC, etc.).

There are three federal highways on the territory of the region: M2 Krym, M4 Don and M6 Caspian. The Domodedovo international airport is located 100 km from the border of the region.

The Forecast of socio-economic development of the region until 2024 also envisages the increase in the number of educational, medical services, development of tourism and other types of services implemented both for the residents of this region and neighbouring ones.

The declining of the population is one of the region's weaknesses. According to the conservative version of the Forecast, the average annual population number in 2024 will be 1,380,500 people; according to the basic Forecast version – 1,384,900 people; and will decrease by 77,100 and 72,700 people, respectively, compared to 2020. The State Programme to Assist the Voluntary Resettlement of Compatriots Living Abroad to the Russian Federation, approved by Presidential Decree No. 637 of 22 June 2006 'On Measures to Assist the Voluntary Resettlement of Compatriots Living Abroad to the Russian Federation' has been implemented in Tula region since 2011. During the period of 2011-2020 about 70,300 people moved to the Tula region. According to the Programme, more than 10,700 people are expected to move to the Tula Region for permanent residence in 2021-2024.

The regional authorities declare a responsible social policy related primarily to increasing the population's incomes and improving housing conditions.

In the field of investment attractiveness of the Tula region, the weak points or factors that may have a restraining effect on the investment dynamic, are:

– both unfavourable demographic structure of the region's population (high average age of the population and ratio of natural population growth rates, relatively low share of young people), which limits the labour potential of the region's economy and increases the burden on the budget, increasing the need for social expenditure;

– limited domestic demand due to the low income level of the population of the Tula region;

– high proportion of old and dilapidated housing;

– high competition for human resources with the Moscow region, resulting in an outflow of a significant number of highly skilled workers from the Tula region;

– presence of low-income territories, characterized by the population leaving (primarily rural areas and territories adjacent to the mines of the former coal basin near Moscow).

According to the Tula region socio-economic development Forecast for the next three years (2022-2024) there will be a strong development of 5 key clusters: automotive, metallurgical, innovative scientific and technological centre "Composite Valley" on the territory of the special economic zone "Uzlovaya", biotechnology cluster on the territory of single-industry town Efremov, tourism and recreation one.

The Tula region Social and Economic Development Strategy identifies 2 groups of clusters:

– group of priority (established) clusters with a steadily developing cluster structure with active intra-cluster interaction. The 8 of15 priority territorial clusters have significant innovation potential stand out (the Novomoskovsk and Shchekino gas and chemical clusters, the Efremov petrochemical cluster, the Tula region oil and gas chemical engineering cluster, the Tula region metallurgy cluster, the Tula region defence enterprises cluster, the Tula region transport engineering cluster, the Efremov biotechnology cluster);

– group of potential (emerging) clusters includes cluster formations with sufficiently strong clustering centres and a number of small and medium enterprises with an as yet unestablished system of communication links. The 4 of 15 potential territorial clusters of the Tula region have significant innovation potential (Aleksin cluster of special chemical products, Novomoskovsk cluster of household chemistry, the Tula region cluster of radioelectronic and electrical engineering, the Tula region cluster of information and telecommunications technologies).

The declared slogans acting as reference points for the strategic socio-economic development of the Tula region are: "Economic breakthrough", "Agroindustry – rural revival", "New industrialization", "Education of the future: human resources for industry", "Healthy and strong region", "Decent life in the small motherland", "Heritage preservation and tourism development" (Shulmin, 2019).

Thus, we analyzed the socio-economic development strategies of the regions neighbouring to Moscow and the Moscow region. We also analyzed the investment and innovation characteristics of the regions, the cluster initiatives underway, and the inflow of foreign investment

There is no doubt an active investment policy is the key to the dynamic development of the regions. For example, the strategy for socio-economic development of the Kaluga region goes under the slogan: "People are the centre of investment".

Table 5 shows the distribution of Russian regions by investment climate rating for 2018-2020. The surveyed regions (with the exception of Moscow and the Moscow region) have reduced investment potential, and the Ivanovo region has low investment potential. Only two regions (Ryazan and Tula) have a low risk and the other regions have a moderate risk.

Table 5 – Russian regions distribution by the investment climate rating in 2018-2020

Year	2018	2019	2020
Maximum capacity – minimum risk (1A)	Moscow Moscow region	Moscow Moscow region	Moscow Moscow region
Reduced capacity – minimum risk (3A1)	Ryazan region Tula region	Ryazan region Tula region	Ryazan region Tula region
Reduced capacity – moderate risk (3B1)	Vladimir region Ivanovo region Caluga region Smolensk region Tver region Yaroslavl region	Vladimir region Ivanovo region Caluga region Smolensk region Tver region Yaroslavl region	Vladimir region Caluga region Smolensk region Tver region Yaroslavl region
Low potential – moderate risk (3B2)			Ivanovo region

Source: Investment attractiveness of Russian regions in 2020

An important additional factor for development is the creation of special economic zones and technology parks. The effectiveness of establishing special economic zones in the regions is confirmed by scientific studies (Gvozdikova & Efremova, 2019). It is an additional impetus for development of the regions close to the Moscow agglomerationt, as can be seen in the Uzlovaya special economic zone of the industrial-production type in the Tula region. The location of this zone is very convenient (40 km from Tula, 15 km from Novomoskovsk, 180 km from Moscow), which firstly, makes it attractive not only for railway and passenger transport but also for air transport (the airport in Kaluga is nearby). Secondly, this zone has an opportunity to employ up to 1.1 million people in the radius of 40 km and to recruit necessary workforce on competitive basis (Shishkin et al., 2019).

The Ivanovo region announced the establishment of a special economic zone of the Ivanovo industrial-production type on the territory of 2 municipal formations – Ivanovo-city and the Rodnikovsky municipal district. There are plans for implementing textile industry investment projects with a total investment of over RUB 8 bn and the creation of over 3,000 jobs. The zone provides for exemption from import duties for the entire period (up to 49 years): from property tax and transport tax for 10 years; from land tax for five years; and a profit tax reduction (in the first five years from the date of the profit, it will be 2%; in the following five years, 7%, and after this period and before the zone closing – 15.5%).

The arrival of foreign investment provides an important impulse for regional development. By Table 6, the leaders among the 8 surveyed regions in terms of foreign investment inflow into the economy are the Kaluga region (the average value for 2013-2019 is USD 1,055 mn). The Tula (respectively, 687), Yaroslavl (273), Vladimir (264), Smolensk (162) and Tver (102) regions are next. Minimum foreign investment inflows in the Ivanovo (50) and Ryazan (89) regions.

By I.B. Gurkov, corruption at the level of regional administrations is combined with uncertainty of cost the necessary supporting infrastructure for new industrial projects when foreign investors choose to build new production facilities in Russia. Although the Central region (the Moscow region and nearby regions, especially the Kaluga one, and at less extent the Tver, Tula and Vladimir regions) continues to be a centre of attraction for foreign industrial investment in Russia. The leaders are still the Republic of Tatarstan and the Lipetsk, Nizhny Novgorod, Samara and Ulyanovsk regions. In the period of 2012-2018 the new plants of foreign corporations were established in 58 constituent entities of the Russian Federation. Thus, almost a third of Russian regions was unaffected by the establishing of new industrial facilities by foreign corporations in 2012-2018 (Gurkov, 2019). According to the author's research, 66% of "newcomer" and 59% of "veteran" corporations chose the special economic zones or industrial parks for establishing their new plants, i.e. in areas with guaranteed supportive infrastructure, which leads to a "cascade effect", where foreign investors experience the success of previous investment projects and try to repeat it; the maximum number of new plant establishing was in 2015 (Gurkov, 2019). Nevertheless, the proximity of the regions to the Moscow agglomeration is an additional factor of foreign investment attracting.

Table 6 – Foreign direct investment to the Russian regions economy, USD mn

Year	2013	2014	2015	2016	2017	2018	2019	Average for 2013-2019
Moscow	108107	77801	66718	65314	85326	69873	93903	81006
Moscow region	6477	7499	8031	8205	9423	8841	12101	8654
Vladimir region	238	332	256	242	284	275	219	264
Ivanovo region	19	24	80	65	85	11	68	50
Kaluga region	648	707	1274	1060	1544	1197	954	1055
Ryazan region	27	150	97	59	226	49	18	89
Smolensk region	62	52	274	241	149	255	99	162
Tver region	104	96	202	70	53	106	82	102
Tula region	927	426	623	718	833	698	581	687
Yaroslavl region	481	224	138	142	452	169	308	273

Source: Regions of Russia. Socio-economic indicators, 2020

By this study the Tula, Tver, and Vladimir regions continue to be centres of attraction for foreign industrial investment (ranked 15-17 out of 58 regions surveyed, respectively). Most of these enterprises are the modern production facilities with a high technological level. There is a high share of corporations established their first Russian manufacture in 2012-2018 ("newcomers"). Compared to the Vladimir, Kaluga, Tver, Tula and Yaroslavl regions, foreign investment attraction is weaker in the Ivanovo, Ryazan and Smolensk regions (see Table 7).

Table 7 – Distribution of newly established manufactures by constituent entities of the Russian Federation

Entity of the Russian Federation	Total number of manufactures established in 2012-2018	Number of manufactures established by "newcomers"	Number of manufactures established by "veterans"
Moscow and Moscow region	32	21	11
Kaluga region	27	17	10
Tula region	5	1	4
Tver region	5	3	2
Vladimir region	5	1	4
Yaroslavl region	4	3	1

Entity of the Russian Federation	Total number of manufactures established in 2012-2018	Number of manufactures established by "newcomers"	Number of manufactures established by "veterans"
Smolensk region	2	2	0
Ivanovo region	1	1	0
Ryazan region	1	1	0

Source: Gurkov, 2019

The cluster policy is one of the main development tools for the surveyed regions. By S. Shkiotov and M. Markin, the cluster initiative acts as a new trend in the implementation of regional industrial policy. The "Finnish model" is relevant for the Russian regions of Central Russia; the Japanese experience of leader firms and public-private regulation of economic processes is also interesting for Russia (Shkiotov & Markin, 2021).

Table 8 presents the clusters declared by regions in their socio-economic development strategies.

Table 8 – Regional development clusters declared in socio-economic development strategies

	Regional clusters
Vladimir region	– precision engineering – pharmaceutical – glass – bioenergetic – tourism and recreation
Ivanovo region	– textile industry – agricultural – flax – tourism and recreation
Kaluga region	– life sustainment and environmental development – automobile industry – educational – transport and logistics – agrifood – pharmaceuticals, biotechnology and biomedicine – composite and ceramic technology – nuclear technologies – tourism and recreation
Ryazan region	– engineering, radio electronics and robotics – IT – construction materials – medical
Smolensk region	– composite – flax (flax cultivation, primary and downstream processing) – tourism – IT – agrifood – transport and logistics – machine-building
Tver region	– railway – transport and logistics – bioenergetic

	Regional clusters
	– pharmaceutical – agro-industrial – tourism and recreation
Tula region	– industrial – agricultural – recreational – touristic
Yaroslavl region	– gas turbine and power engineering industry; – modern pharmaceutical industry and innovative medicine – tourism and recreation – automotive industry and automotive component manufacturers – logistics and transport – IT – agro-industrial – business outsourcing

Source: composed by the author

Regional strategies emphasize the necessity of innovative development and economic modernization. The ranking of the surveyed constituent entities of the Russian Federation according to the value of the Russian regional innovation index: the Kaluga region (in all ratings) has the best positions along with the capital region, while the Tula, Yaroslavl, Smolensk, Ryazan, Vladimir, Tver and Ivanovo regions have the best positions by the ranking of the Research Institute-Higher School of Economics. By the rating of the Association of Innovative Regions of Russia, Moscow-city (3rd place), the Moscow (5th place) and the Kaluga regions (7th place) are followed by the Tula (15th place), Yaroslavl (16th place), Ryazan (26th place) and Vladimir regions (32nd place). The other regions lag more than 10 points: the Tver region (43rd place), Smolensk region (44th place), Ivanovo region (50th place) are among them (see Table 9).

Table 9 – Rating of constituent entities of the Russian Federation according to the value of the Russian regional innovation index

	Research Institute - Higher School of Economics, 2019		Association of Innovative Regions of Russia (AIRR), 2018	
	Positioning of the region	Innovation index	Positioning of the region	Innovation index
Moscow	1	0.5378	3	0.65
Moscow region	6	0.4616	5	0.60
Kaluga region	10	0.4207	7	0.57
Tula region	18	0.3954	15	0.51
Yaroslavl region	21	0.3849	16	0.50
Smolensk region	29	0.368	44	0.38
Ryazan region	30	0.3645	26	0.44
Vladimir region	35	0.3530	32	0.43
Tver region	47	0.3277	43	0.39
Ivanovo region	51	0.3226	50	0.36

Source: Rating of Innovative Regions of Russia, 2020; Rating of constituent entities of the Russian Federation according to the value of the Russian regional innovation index, 2019

By the researchers, the coronavirus pandemic has not only sharpened economic challenges, but has also acted as an accelerator for the transition to a new economic model, further increasing the need for digital transformation of enterprises in terms of the transition to a neo-industrial development model. In this regard, it is important to implement "smart cities", "smart industries", based on "smart machines" and artificial intelligence, to use the smallest opportunities for rapid business restructuring (changes in organizational structures, production plans, supply chains) that will allow to withstand competition in modern conditions (Antonova, 2021).

Discussion

Thus, the three articles published in this journal contain the main conclusions of our analysis of the proximity to the Moscow agglomeration of 8 regions of Central Russia.

The proximity to Moscow and the Moscow region creates attractive conditions for neighbouring regions to locate production holdings in various industries. On the one hand, this is access to cheaper resources as land, energy resources and labour, and, on the other hand, proximity to the large sales market of the Moscow agglomeration. Studies show the growth rate of the gross urban product in 2020 in most Russian agglomerations was higher and the economic losses were less than in the Russian economy as a whole (Polidi & Gershovich, 2021).

Our analysis of strategies and forecasts of socio-economic development in the Moscow macro-region (Vladimir, Ivanovo, Kaluga, Moscow, Ryazan, Smolensk, Tver, Tula and Yaroslavl regions) for the near term shows the following:

Among the "weaknesses" of most of the surveyed regions is the high competition rate of labour resources from the Moscow agglomeration (Moscow and the Moscow region). The main goal of the regions is to create conditions to curb migration, especially of highly qualified specialists, to implement measures to attract and retain them permanently, including on the basis of Internet technologies, digitalization of labour relations, application of flexible and remote forms of employment, etc.

This topic is relevant due to the decline in the population of these regions (except Moscow and the Moscow region), the ageing of the population, the decline in the working-age population, the presence of intra-regional imbalances in population dynamics (Yakovenko et al., 2019).

The strategic priority of the surveyed regions is support of cluster development. Cluster policy and support of sectoral cluster initiatives are linked to improving regional competitiveness.

Conclusions

The Regional Strategies emphasize the development of transport transit potential, as federal highways pass through the regions, and Russia is now implementing a whole set of state programmes and national projects, including transport infrastructure development.

Increased production of new types of products, import substitution and the creation of industries for the deep processing of agricultural raw materials, including the use of biotechnology are regional development promising area. Although investment demand has recently decreased due to increased economic and epidemiological uncertainty and restrictive measures, an important area for regional development is still the improvement of investment attractiveness, namely the implementation of major investment projects in the core sectors of the economy. Regional activity is also evident in the creation of special economic zones, industrial and technology parks, territories of advanced socio-economic development, which ultimately strengthens the region's competitive advantages and economic potential, opportunities to market products, works and services for Moscow businesses and the Moscow agglomeration as a whole.

Regional strategies place great emphasis on the need for innovative development and economic modernization (ensuring economic growth, improving the investment climate and attracting investment, developing innovative activities and innovative infrastructure). It is important to intensify innovative technologies into traditional regional industries, e.g. mechanical engineering and metalworking, chemical industry, processing of agricultural products, etc.

The Regional Strategies prescribe measures to create favourable conditions for doing business, including by reducing administrative and bureaucratic barriers, simplifying permissive procedures, and developing effective instruments to support entrepreneurship (e.g. business-oriented lending), which can attract investors from other regions and countries.

Responsible social policies are important to reduce social risks. The relevant tasks include the implementation of a large-scale programme of housing construction and modernization of the housing and utilities sector (e.g. a programme of large-scale construction of low-rise and individual houses) and the acceleration of the liquidation of dilapidated housing. Solutions of these problems include not only improving the quality of life in the regions, providing a multiplier effect for the entire regional economy. But it also makes the regions neighbouring the Moscow agglomeration more attractive for residents of Moscow and the Moscow region to buy their primary or second home.

The regions pay great attention to the development of tourism and recreational resources, including small towns, taking into account the proximity to major tourist routes and transport and logistics corridors.

The governors and their teams play an important role in the social and economic development of regions. By T. Nefedova, "The success of Kaluga is largely due to the flexible and active policy of the regional administration, which managed to attract foreign investment in the most in-demand industries and create new industrial sites near the border with the Moscow region" (Nefedova, 2020).

References

1. Antonova, I. A., & Sartakov, I. V. (2021) The COVID-19 pandemic is an accelerator of the transition to digitalization and «smart production». *Theoretical economy,* (7), 39-50. DOI 10.52957/22213260 _2021 _ 7 _39. Retrieved from http://www.theoreticaleconomy.ru (in Russian)

2. Arzumanyan, M. S. (2021). Methodological tools for assessing the level of sustainability of Russian regions. *Social'no-ekonomicheskij i gumanitarnyj zhurnal Krasnoyarskogo GAU*, (1), 32-45 (in Russian).

3. Babaev, B. D. (2009). *Moscow: a donor or a "vampire"?* Ivanovo-Moscow (in Russian).

4. Balabeykina, O. A., Vlasova, M. A., & Gavrilova, K. S. (2021). The role of religious tourism in the economy of the Tver region: the experience of complex research. *Vestnik Tverskogo gosudarstvennogo universiteta. Seriya: Ekonomika i Upravlenie*, (3), 109-120 (in Russian).

5. Berendeeva, A. B., & Korobova, O. O. (2021). The role of the Moscow agglomeration in the socio-economic development of central Russian regions (Part 1). *Journal of Regional and International Competitiveniss,* (4), 43-56. Retrieved from http://jraic.com/index.php/tor/issue/view/9/7.

6. Berendeeva, A. B., & Korobova O. O. (2021). The role of the Moscow agglomeration in the socio-economic development of central Russian regions (Part 2). *Journal of Regional and International Competitiveness,* (5), 58-68. Retrieved from http://jraic.com/index.php/tor/issue/view/10/8

7. Boyko, O. G., & Romaniuk, A. V. (2020). Definition of strategic economic activities of regional economy. *Vestnik Tverskogo gosudarstvennogo universiteta. Seriya: Ekonomika i upravlenie*, 3, 98-106 (in Russian).

8. Gvozdikova, N. K., & Efremova, N. E. (2019). The role of special economic zones in the development of the region on the example of the Tula region. *Vestnik Tul'skogo filiala Finuniversiteta*, (1-2), 83-86 (in Russian).

9. Gurkov, I. B. (2019). Location of Russian Enterprises of Foreign Corporations Opened in 2012–2018. *Prostranstvennaya ekonomika*, *15*(2), 17-36 (in Russian).

10. Gurovich, A. M. (2021). Peculiarities of formation and implementation of state policy directions of spatial development on the basis of specific industries in territorial formations. *Vestnik Ekaterininskogo instituta*, (2), 24-28 (in Russian).

11. Dombrovskaya, V. E. (2019). Systemic and regional approaches in analysis of tourist space potential. *Vestnik Tverskogo gosudarstvennogo universiteta. Seriya: Geografiya i geoekologiya*, (2), 120-133 (in Russian).

12. Zubarevich, N. V. (2021). Economic development of metropolitan agglomeration after the expansion of Moscow. *Geourbanistika i gradostroitel'stvo: teoreticheskie i prikladnye issledovaniya: sbornik statej.* A.G. Makhrova (Ed.). (pp. 141-154). M.: Geograficheskij fakul'tet Moskovskogo gosudarstvennogo universiteta im. M.V. Lomonosova (in Russian).

13. Kamaleev, R. Kh., Berman, S. S., & Golovanova, E. A. (2020). Analysis and evaluation of labour productivity of Russian regions. *Kazanskij ekonomicheskij vestnik,* (3), 36-43 (in Russian).

14. Nefedova, T.G. (2020). Contrasts of socio-economic space in Central Russia and their evolution:

two "cuts"-profile. *Regional'nye issledovaniya,* (2), 18-38 (in Russian).

15. Polidi, T. Д., & Gershovich, A. Y. (2021). The impact of corona crisis on the economies of major metropolitan areas. *Voprosy Ekonomiki,* (5), 145-159. Retrieved from https://doi.org/10.32609/0042-8736-2021-5-145-159 (in Russian).

16. (2017). *Tula Region: Land of Strength and Talent: Proceedings of the Ministry of Economic Development of Tula Region.* Tula. Retrieved from https://minek.rk.gov.ru/file/File/minek/2017/sez/mrv/tulskaya_obl.pdf (accessed 28.10.2021)

17. Shishkin, A. N., Savina, I. V., & Vedeneev, D. A. (2019). Functioning of special economic zone of industrial production type "Uzlovaya" as a factor in the development of the construction industry in Tula region. *Vektor ekonomiki,* (7), 30 (in Russian).

18. Shkiotov, S. V., & Markin, M. I. (2021). Analysis of the World Practice of Industrial Cluster Development. *Teoreticheskaya ekonomika*, *78*(6), 149-159. Retrieved from http://theoreticaleconomy.ru/index.php/tor/article/view/90 (in Russian).

19. Shulmin, S. A. (2019). On strategic planning at the regional level in the Russian Federation. *Vestnik Tul'skogo filiala finuniversiteta*, (1-2), 325-328 (in Russian).

20. Yakovenko, N. V., Komov, I. V., Safonova, I. V., Derevyagina, M. V., & Gosteyeva, Y. A. (2019). The Demographic aging of the population in the regions of the Central Federal District. *Nauchnye vedomosti Belgorodskogo gosudarstvennogo universiteta. Seriya: Estestvennye nauki, 43*(2), 154-164 (in Russian).

21. Rossiyskaya Gazeta. (2021, March 12). *Main Indicators of the Socio-Economic Situation of the Constituent Entities of the Russian Federation in 2020.* Retrieved from https://rg.ru/2021/03/12/percapita-dok.html (accessed 02.06.2021) (in Russian).

22. Federal State Statistics Service. (2020). *Regions of Russia. Socio-economic indicators. 2020: stat. coll.* M.: Rosstat. Retrieved from https://rosstat.gov.ru/storage/mediabank/LkooETqG/Region_Pokaz_2020.pdf (in Russian).

23. Garant. (2013). *On the strategy for socio-economic development of the Tver Region for the period up to 2030: Decree of the Government of the Tver Region No. 475-rp of 24 September 2013.* Retrieved from https://docs.cntd.ru/document/430628871 (in Russian).

24. Official website of the Government of the Ivanovo region. (2021, 19 oct.) *Novosti.* Retrieved from https://ivanovoobl.ru/press (accessed 06.11.2021) (in Russian).

25. Association of Innovative Regions of Russia. (2021). *Rating of Innovative Regions of Russia.* Retrieved from https://i-regions.org/reiting/rejting-innovatsionnogo-razvitiya/ (accessed 28.10.2021) (in Russian).

26. National Research University "Higher School of Economics". *Rating of constituent entities of the Russian Federation according to the value of the Russian regional innovation index.* Retrieved from https://region.hse.ru/rankingid19 (accessed 28.10.2021) (in Russian).

27. RAEX. (2020). *Investment attractiveness of Russian regions in 2020.* https://raex-a.ru/ratings/regions/2020 (accessed 28.10.2021) (in Russian).

28. *Strategy for socio-economic development of Tula Oblast until 2030.* Retrieved from https://storage.strategy24.ru (accessed 18.10.2021)

29. On approval of the Tula Oblast socio-economic development forecast for 2022 and for the planning period 2023 and 2024: Tula Oblast Government Decree No. 480-r of 23.09.2021. Retrieved from https://econom.tularegion.ru/upload/iblock/30b/30b4328d3d0fc7cb8d93ee76f8adbd86.pdf (accessed 28.10.2021) (in Russian).

30. National Research University "Higher School of Economics". *Russian Cluster Observatory. Cluster Development Centres.* URL: https://cluster.hse.ru/clustercenters (accessed 18.10.2021) (in Russian).

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