

## Economy of Russian Regions in the Pandemic: Are Resilience Factors at Work?

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**Abstract**—The differentiation of Russian regions by the dynamics of their socioeconomic development in 2020, despite a reason atypical for modern economic crises, corresponded to the prevailing ideas about the factors of the resilience of regions. The degree of diversification of the regional economies and level of their innovative potential were of key importance. As a result, the largest cities (Moscow and St. Petersburg) found themselves in a relatively favorable position, where restrictions in certain types of activity were compensated by an increase in demand for a number of complex services (in the IT sphere, etc.) and the accelerated introduction of online activity formats and working remotely. Specialization of regional economies also mattered: the maximum, typical for crises, was the decline in the auto industry; the overall decline in the global economy hit regions with large-scale mining of fuel and energy resources hard. The traditional factor of regional development also turned out to be significant in 2020: the capacity of sales markets that contributed to the growth of production in major cities and regions working on their markets and that slowed the development of manufacturing industries in the Far East. The border position of regions had no clear impact on the dynamics of their development. It has been suggested that the state anticrisis policy made it possible to slow the decline in problem sectors, while growth in the production of goods and services in demanded types of activity was associated with the objective advantages of territories.

**Keywords:** COVID-19, major cities, border regions, industry, household income, consumer market, innovation potential

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### INTRODUCTION AND FORMULATION OF THE PROBLEM

The economic crisis that occurred in 2020 was, of course, far from Russia's first, but the cause of this crisis—the COVID-19 pandemic and the associated restrictions on business activity—was by no means typical of recent decades. Therefore, it is important to analyze whether the differentiation of regions by the dynamics of their socioeconomic development during the current crisis was unusual, or whether the pattern of interregional differences generally corresponded to that typical of crisis periods. The peculiarities of Russia's situation versus other countries that have faced the same problems themselves—forced restrictions in the economy due to the pandemic—deserve attention. Such studies are important, primarily, for the subsequent formation of state spatial development policy: if the nature of interregional differences in 2020 in the dynamics of socioeconomic indicators was nothing unique, then this gives grounds for developing recommendations for measures to increase the resilience of regions to crisis phenomena and on additional federal support for traditionally problem areas.

Based on the foregoing, this article examines the features of the socioeconomic development of Russian regions, starting from the ideas prevailing in science about the patterns of regional dynamics during years of economic crises.

### REVIEW OF EARLIER STUDIES

The influence of various kinds of shocks, including economic crises, on the socioeconomic development of regions is considered within the concept of regional resilience, which is still being developed at present. The studies (Klimanov et al., 2018; Mikheeva, 2021; Martin and Sunley, 2015; Zhikharevich et al., 2021) consider the essence of the concept of regional shock resilience; (Mikheeva, 2021) studies the stability of Russian regions to the crises of 2009 and 2015.

The 2015 crisis is purely Russian, associated with sanctions imposed on Russian in 2014. The 2009 and 2020 crises were global, and their impact on regional development has been actively studied, in particular detail in terms of consequences of the 2009 crisis for EU regions (Dijkstra, 2015; Economic ..., 2014; The

Urban ..., 2013). There are already preliminary conclusions on the impact of the 2020 crisis on interregional differences, including in the EU and OECD countries (Capello and Caragliu, 2021; OECD ..., 2020; Territorial ..., 2020).

In the studies carried out, it is important to us, first of all, the conclusions drawn in them regarding the factors of resilience of individual regions. The most important such factor is the high degree of diversification of their economies. Any crisis affects different sectors of the economy in different ways, and with a diversified structure, it is more likely that a downturn in some sectors will be offset by growth (or at least mitigated by a relatively favorable situation) in other sectors.

The authors who carried out the studies cite another significant factor of resilience: the high innovative potential of regions, which allows them to quickly adapt to new conditions and transform existing or develop new types of activity. A vivid illustration of this thesis was the situation in 2020: the readiness of regional populations and enterprises to switch to an online work format was of fundamental importance.

Other factors contribute to the resilience of the regions:

- the high quality of state and municipal administrations, well-established interaction between public authorities of different hierarchical levels, which determines the ability of the authorities to quickly develop and implement solutions necessary to combat crisis phenomena;

- peculiarities of the structure of employed persons: an increased proportion of employed persons receiving salaries from the state budget, as well as those working at the headquarters of companies or on permanent contracts. All these categories of workers are subject to fewer reductions compared to the private sector or working in separate divisions of companies or on temporary contracts;

- the availability of reserves in the state budget, which can be directed to expanding state support for the economy in crisis conditions (this can be either accumulation in reserve funds or a high level of fiscal capacity, which makes it possible to redistribute funds between budget expenditure items).

There are no unambiguous assessments of the impact of specialization of regions on their resilience. For example, on the one hand, the service sector is more vulnerable to a crisis than industry (and 2020 clearly demonstrated this), and on the other, it is much easier and faster for industry to transform (e.g., during a full lockdown, it can often be transferred to an online format, in contrast to production). However, there is an obvious exception to this rule: in crises, there is always a noticeable reduction in the automotive industry, since the demand for cars as durable goods drops. As a rule, the auto industry occupies a significant place in the industrial structure of individ-

ual regions, and such regions lead in the decline in production (Klier and Rubenstein, 2011).

There is no unequivocal impact on regional resilience and the origin of capital. Researchers say that the attitude of the local community plays a significant role in overcoming crisis phenomena (the desire to overcome the crisis in their community, and not leave for a region with a more prosperous socioeconomic situation), and local capital may be much more interested in developing the region as their “local homeland,” rather than external investors. However, in reality, it seems that the real state of affairs in enterprises is more significant, and in large companies, frequently of nonlocal origin, the situation is better (Kolko and Neumark, 2009).

A complete picture of the regional consequences of the crisis caused by the COVID-19 pandemic in the countries of the world is not yet available, but a preliminary analysis (Capello and Caragliu, 2021; Territorial ..., 2020; OECD ..., 2020), as expected, shows a strong dependence of the socioeconomic situation of regions on the possible scale of transition to remote work. Even in economically developed countries, the differentiation of territories by this parameter is significant:

- the gap between the regions of one country in the share of employed persons who have the opportunity to switch to remote work reaches 20 percentage points (e.g., in the USA);

- in the differentiation of territories by the considered indicator, there is a traditional contrast between urban and rural areas, there is a dependence on the education level of the employed persons (the higher the share of employed persons with a high education level, the greater the opportunities for remote work);

- the gap between the capital region and other regions in the indicator is on average 8 percentage points for OECD countries;

- the actual share of employed persons with the opportunity to switch to remote work varies from more than 50% in a number of capital regions (e.g., Ile-de-France, London, Stockholm) to less than 25% in a number of regions in Colombia, Italy, Slovakia, Spain, and Turkey.

In addition, the EU pays attention to the increased impact of the current crisis on the situation in border region, faced with the consequences of closed borders between the countries.

Research conducted in Russia on the results of the first months of the 2020 crisis (Klimanov et al., 2018; Zemtsov and Mikhailov, 2021; Zubarevich, 2021) have yielded mixed results. First, the impact of the crisis on major cities is still in question: on the one hand, they were the first to suffer from the pandemic and the related economic restrictions (Zubarevich and Safronov, 2020); on the other, the urban economy immediately demonstrated a certain stability in the prevailing conditions (Kolomak, 2020).

## MATERIALS AND METHODS

Within this article, the data for 2020 as a whole are analyzed. They have not yet been published in full: the main indicator of economic development of the federal subjects—gross regional product (GRP)—will appear lag by more than a year. It is GRP by which one can judge changes in the structure of the regional economy. For a quick assessment of such changes, it is necessary to seek alternative indicators. We propose to use the amount of personal income tax (PIT) receipts by type of economic activity. Wages, which are reflected in PIT, are one of the most important components of the gross product. PIT revenues are quite accurately tied to the territory (in contrast to the total volume of tax revenues, which may sometimes even be negative due to VAT refunds to exporters), and they do not depend on the tax policy of regional authorities (in contrast, e.g., to profit tax, PIT is federal tax levied according to uniform rules throughout the country). PIT revenues reflect well the situation with household incomes, and in addition, PIT is one of the main revenue sources of consolidated regional budgets (the state of which is not considered here, since this is a separate independent topic, already discussed in many aspects (e.g., (Mil'chakov, 2021; Zubarevich, 2021)).

We use data on the structure of PIT receipts to analyze the situation in Moscow and St. Petersburg versus other federal subjects. Limiting the analysis of the situation in major cities to Moscow and St. Petersburg is necessary, since these are the only two million-plus Russian cities with federal status for which a relatively wide range of statistical data is available, just like for federal subjects. For the remaining major cities—with the status of municipalities—such an analysis is impossible.

For the federal subjects in their entirety, we rely to a greater extent on indices published by Rosstat, which take into account changes in prices: production, retail trade, food services, paid services to the population, as well as personal money incomes. All these indicators have been published in monthly Rosstat publications: in the report "Socioeconomic Situation in Russia" for 2020 (for production, food services, paid services) and the bulletin "Information for Monitoring the Socioeconomic Situation of the Federal Subjects." From bulletin for January–May 2021, data on personal money incomes and retail trade were taken, which were recalculated in versus 2020 data originally published by Rosstat.

## RESULTS

To assess the interregional differences in the dynamics of socioeconomic development in 2020, let us first consider the indicators characterizing the personal income and public consumption, which indirectly indicate the state of the economy and are important, since ensuring a high quality of life is the

main task of state policy. The volume of paid services to the Moscow population has indeed declined much more than the national average (Table 1); in St. Petersburg, this indicator is lower than the national average, but it is not as significant. Conversely, in St. Petersburg, there was a very strong drop in the turnover of food services, while in Moscow the index was even higher than the national average (which can be explained by home delivery of food orders). As a result, personal money incomes both in Moscow and St. Petersburg were higher than the national average, as were the indicators of retail trade turnover.

When interpreting data on the food retail trade dynamics, it is important to remember that in the current crisis, it is associated not only with a change in personal money incomes (when people are forced to switch from expensive to cheap products), but also with a fundamental change in food services operations. In previous crises, a drop in income led to savings at the expense of food services and a switch to home meals, but this crisis was supplemented by much more significant restrictions on the operations of food service enterprises and a drop in demand due to the transition to remote work. This means that part of the cost of food services has been transformed into food purchases (although these costs cannot be directly compared due to completely different price levels). Therefore, the situation seems quite logical when the significant drop in food services turnover in St. Petersburg led to significantly higher growth in real money incomes in food retail, which was not the case in Moscow. The same effect can be observed in paid services to the population and retail trade in nonfood products (e.g., in the case of cleaning companies), but obviously much smaller in scale.

Analyzing the reasons for the relatively favorable positions of Moscow and St. Petersburg, let us consider the above factors of the resilience of the regions. The first and most important is the diversified structure of the economy. Data on PIT receipts (Table 2) show that this factor is indeed fundamentally important. The share in the structure of the economy of the types of activity that suffered the most during the 2020 crisis—hotels and food services, various types of services to the population—is relatively small. But the services of the IT sector, which are in demand in the context of a large-scale transition to online activity, play a much greater role. In addition, an increased role in the structure of the economy is played by activities able to successfully switch to a remote work format (professional, scientific and technical activity, a number of complex services—real estate transactions, finance, and insurance).

The data in Table 2 also clearly shows that the role of the budgetary sector in Moscow and St. Petersburg is not only not higher than the national average, but, on the contrary, lower. The total share in PIT of the state administration, education, health care and social

**Table 1.** Dynamics of main indicators related to personal income and expenses, 2020 compared to 2019, %, in comparable prices

| Federal districts and cities of Moscow and St. Petersburg | Real money income | Retail turnover |       |                  | Food services turnover | Volume of paid services to population |
|---|-------------------|-----------------|-------|------------------|------------------------|---------------------------------------|
|   |                   | Total           | food  | nonfood products |                        |                                       |
| Central   | 97.3              | 97.9            | 99.5  | 96.5             | 82.1                   | 77.9                                  |
| Moscow  | 98.0              | 98.1            | 98.0  | 98.2             | 84.1                   | 71.1                                  |
| Northwestern  | 99.0              | 100.2           | 103.1 | 98.0             | 76.0                   | 83.7                                  |
| St. Petersburg  | 99.4              | 98.8            | 104.7 | 95.8             | 69.5                   | 81.6                                  |
| Southern  | 98.8              | 97.6            | 98.4  | 97.0             | 88.9                   | 89.1                                  |
| North Caucasian   | 96.5              | 94.7            | 99.7  | 90.3             | 73.5                   | 86.0                                  |
| Volga Region  | 96.6              | 95.5            | 96.6  | 94.6             | 75.4                   | 85.7                                  |
| Ural  | 96.8              | 96.4            | 96.1  | 96.9             | 81.8                   | 82.5                                  |
| Siberian  | 97.8              | 96.6            | 97.7  | 95.8             | 77.5                   | 86.9                                  |
| Far Eastern   | 97.7              | 97.5            | 100.3 | 94.3             | 83.6                   | 82.6                                  |
| Average for Russian Federation                            | 97.4              | 96.8            | 98.4  | 95.4             | 79.3                   | 82.7                                  |

Source: Rosstat.

**Table 2.** Dynamics (2020 to 2019) and structure of PIT receipts (in actual prices), %

| Type of economic activity (abbreviated and generalized) | Average for Russian Federation |       | Moscow       |       | St. Petersburg |       |
|---|--------------------------------|-------|--------------|-------|----------------|-------|
|   | 2020 to 2019                   | 2019  | 2020 to 2019 | 2019  | 2020 to 2019   | 2019  |
| Agriculture   | 112.7                          | 2.4   | 102.6        | 0.1   | 129.3          | 0.2   |
| Mining  | 108.9                          | 4.2   | 110.1        | 1.1   | 114.3          | 0.4   |
| Manufacturing industries                                | 106.4                          | 13.5  | 108.4        | 6.1   | 108.7          | 13.4  |
| Electricity   | 105.3                          | 2.9   | 105.9        | 1.2   | 109.4          | 1.5   |
| Water   | 108.2                          | 0.7   | 111.7        | 0.4   | 105.4          | 0.6   |
| Construction  | 105.0                          | 5.0   | 105.6        | 4.5   | 110.5          | 5.4   |
| Trade   | 111.0                          | 12.3  | 113.2        | 14.7  | 110.2          | 16.6  |
| Transportation, storage                                 | 107.5                          | 7.6   | 109.9        | 5.0   | 106.9          | 7.4   |
| Hotels and food services                                | 100.6                          | 1.1   | 93.7         | 1.0   | 91.3           | 1.5   |
| Information and communications                          | 118.6                          | 4.3   | 119.9        | 8.3   | 129.4          | 7.1   |
| Finance and insurance                                   | 116.7                          | 6.8   | 125.0        | 15.0  | 126.3          | 5.8   |
| Real estate operations                                  | 106.0                          | 3.0   | 102.2        | 3.7   | 121.2          | 4.4   |
| Professional, scientific and technical activity         | 113.8                          | 8.1   | 121.4        | 13.5  | 110.1          | 11.5  |
| Administrative activity                                 | 106.0                          | 2.0   | 97.8         | 2.5   | 107.8          | 2.7   |
| Public administration                                   | 114.2                          | 10.5  | 112.4        | 6.0   | 111.4          | 4.4   |
| Education   | 105.4                          | 7.5   | 104.9        | 4.9   | 105.6          | 8.3   |
| Health care, social services                            | 107.3                          | 7.0   | 111.2        | 4.5   | 106.7          | 6.4   |
| Other types of services                                 | 103.2                          | 0.6   | 110.3        | 0.9   | 96.0           | 0.7   |
| Culture, sports, leisure activity                       | 101.6                          | 1.8   | 102.9        | 1.9   | 97.2           | 2.4   |
| Total   | 107.4                          | 100.0 | 111.3        | 100.0 | 108.8          | 100.0 |

Source: author's calculations based on Russian Federal Tax Service data.

services, culture, sports and leisure activity on average in federal subjects was 26.8%; in Moscow, 17.3%; in St. Petersburg, 21.5% (this estimate is conditional,

since there are extrabudgetary funds in the social sphere). Although, of course, employment in the public sector and company headquarters imparted advan-

tages to major cities (not just Moscow and St. Petersburg), if not on average for Russia, then in comparison with cities with smaller populations and with rural areas. The similarity of many parameters of the development of Moscow and St. Petersburg also allows us to say that there was no clear influence of Moscow's capital status on the development of the situation in 2020.

A disadvantage of PIT revenues as an indicator is that it does not fully reflect the situation with small businesses, since not all representatives thereof pay PIT (this tax does not apply to self-employed people who apply the patent tax system). As for the consequences of the pandemic that Moscow and St. Petersburg experienced, it has been suggested that small businesses were primarily. The currently statistics available do not explicitly confirm this. According to Federal Tax Service data, the situation with the dynamics of small business tax payments (receipts from special tax regimes) in major cities versus the previous year was at least no worse than the national average; the average number of employees at small and medium-sized businesses in Moscow and St. Petersburg, according to Rosstat estimates, at the end of the year were higher than in the first quarter, and growth was higher than the national average. However, this can be explained by completely different reasons: lack of statistics (Zemtsov and Mikhailov, 2021) and/or the high ability of small businesses to adapt to the new conditions (Kolomak, 2020) (and this advantage of small business is considered one reason why this segment of the economy should be given increased attention in public administration). Further research is needed for unambiguous estimates.

A high level of innovation potential has become a significant factor in Moscow and St. Petersburg's resilience, in full accordance with the accumulated research experience. There is no simple statistical evidence for this, but we can talk about two significant examples at least. The first is the active introduction of information technologies (IT), owing to which, e.g., the restrictions imposed on traditional formats of retail trade and even food services were compensated by the development of Internet commerce (orders); there were more opportunities in comparison with many other regions to switch to remote work and training.

The second example of the importance of innovative potential is pharmaceutical production. In 2020, for obvious reasons, it was the most dynamically developing industry—the index for the production of medicines and materials used for medical purposes averaged 123.0% in Russia. In Moscow, it reached 138.8%; in Moscow Oblast, 132.3% (taking into account the location of the pharmaceutical industry, we can say that this indicator refers to the Moscow agglomeration). In St. Petersburg, growth was more modest: 113.9% (Rosstat data). An important, although not the only factor of the leading positions of

regions was the availability of research centers with the corresponding profile, the already achieved leadership positions in pharmaceutical production (according to Rosstat, more than two-fifths of Russia's production of medicines and materials used for medical purposes comes from the three cited regions).

The development of pharmaceuticals illustrates the importance of another factor in the resilience of regions—the quality of administration. In both Moscow and St. Petersburg, new pharmaceutical production facilities were located at the sites of previously created technological special economic zones (in accordance with the federal law on SEZ), where investors can take advantage of ready-made infrastructure, tax incentives, and other preferences. In addition, Moscow is an example of active implementation of various anticrisis measures, which have become possible due to its high fiscal capacity.

In general, the state anticrisis policy at both the federal and regional levels could not help but influence the formation of differences between federation subjects in their socioeconomic development dynamics in 2020 (for the case of small business, this influence is considered in (Zemtsov and Mikhailov, 2021)). However, it is extremely difficult to holistically assess the significance of state anticrisis policy for regional development; as for federal policy, this is due to the problem, previously raised by us, of the lack of statistical data on the territorial profile of federal budget expenditures (Kuznetsova, 2019). There are data on the volumes of interbudgetary transfers, but they reflect only part of the support received by regions: significant amounts of social support went through state extrabudgetary funds, and significant direct financing of certain sectors was carried out; there were also tax breaks. Nevertheless, clearly, federal funds were directed at the industries most affected by the restrictions; i.e., this support slowed the decline in problem industries, but it did not accelerate growth. More precisely, it could have contributed to accelerated growth of certain types of activity, but owing to the real demand for their products (IT services, production of medicines, etc.); however, in this case, the primary factors are sectoral structure and innovative potential are, not state support. Social policy was largely aimed at families with children, which means regions with a high birth rate, and thus imparted advantages to national republics, but not major cities. Therefore, without denying the importance of state support for the economy, in our opinion, we can state that a decisive role was played by objective factors in the development of territories.

In the development of production in 2020, including pharmaceuticals, an important role was played by another advantage of major cities, but already, conditionally, a permanent one, not only associated with their resilience: the presence of a capacious sales market. The significance of this factor is illustrated with

**Table 3.** Production indices, 2020 compared to 2019, %

| Federal districts and cities of Moscow and St. Petersburg | Industry in total | Mining | Manufacturing industries | Food production |
|---|-------------------|--------|--------------------------|-----------------|
| Central   | 105.2             | 101.2  | 106.2                    | 109.1           |
| Moscow  | 105.1             | —      | 105.9                    | 139.1           |
| Northwestern  | 97.0              | 91.4   | 99.3                     | 99.5            |
| St. Petersburg  | 98.2              | 84.5   | 99.2                     | 104.6           |
| Southern  | 99.0              | 94.4   | 100.5                    | 97.5            |
| North Caucasian   | 106.5             | 89.6   | 104.4                    | 107.3           |
| Volga Region  | 96.6              | 92.8   | 98.6                     | 106.2           |
| Ural  | 97.7              | 94.2   | 105.6                    | 101.5           |
| Siberian  | 95.6              | 91.0   | 98.2                     | 103.9           |
| Far Eastern   | 95.9              | 96.4   | 91.7                     | 98.2            |
| Average for Russian Federation                            | 97.1              | 93.0   | 100.3                    | 103.5           |

Source: Rosstat.

particular clarity by the situation with food production dynamics (Table 3). There are many enterprises operating in the industry; therefore, the indicators of its dynamics depend to the minimum extent, compared with other types of manufacturing industries, on the situation at individual enterprises. Growth in food production was characteristic of both of the largest Russian cities. In addition, a relatively favorable situation developed in the Central Federal District (many industries in which focus on the capacious capital market), as well as in the Volga Federal District, where there are many million-plus cities.

The only federal district where the volume of food production has decreased is the least populated Far East, but the significance of the consumer factor can also be traced within its borders. The maximum growth rates are in the Jewish Autonomous Oblast (168.4%), which is largely oriented towards Khabarovsk Krai, in Khabarovsk Krai itself (109.8%), and in Sakhalin Oblast (106.8%). The Far East is noticeably worse compared other federal districts and in the index of manufacturing industries as a whole, here development is due mainly to raw materials industries or the service sector. Active federal policy to support this macroregion has not yet made it possible to achieve a radical restructuring of its economy (the pandemic's impact on the development of the Far East is discussed in detail in (Minakir, 2020)).

The data in Table 3 also illustrate the reasons for the unfavorable economic situation in certain regions. The worst situation developed, first, in the extraction of fuel and energy resources and regions specializing in it. The situation on the oil market was tense even before the pandemic, and the decline in global economic activity inevitably led to a decrease in demand for fuel and products of the energy complex. Second, traditionally, the auto industry regions were among the most affected; the motor vehicle production index

in Russia averaged 87.3%. Specialization in the automotive industry explains the decline in the manufacturing industry in both St. Petersburg and the Volga Federal District.

In general, the pattern of differentiation of federal subjects in the production index has developed quite sporadically; very different regions have become leaders and outsiders (Table 4), influenced by a combination of factors. The densely populated regions of the Center and South of Russia still dominate, the latter mainly due to specialization in the agroindustrial complex, the demand for products of which is least susceptible to crisis phenomena. Kostroma Oblast entry into outsider category is associated with a sharp decline in production in the regional electric power industry.

Other factors include:

—The situation at individual enterprises in the regions and, above all, the commissioning of new production facilities. This explains, e.g., the high position of the Tyumen Oblast, where new oil refining capacities have appeared.

—Regions with very low development of the manufacturing industry, which, due to a change in situation literally at single enterprises, can become leaders of industrial growth (Magadan Oblast and the Altai Republic) and outsiders (a number of republics).

In connection with the impact of border closure discussed in European countries on the socioeconomic development of border regions, it is interesting to assess this aspect in relation to Russia's border regions. These vary greatly in the scale of development of cross-border relations, which can be assessed by a number of parameters (Osmolovskaya, 2016). Table 5 shows federal subjects selected based only one indicator, which, in our opinion, quite adequately reflects the importance of external relations for border regions.

**Table 4.** Leading and outsider regions in production index, 2020 compared to 2019, % (growth/decline by 5% or more)

| No. | Leading regions                  | Index | Outsiders                     | Index |
|-----|----------------------------------|-------|-------------------------------|-------|
| 1   | Republic of North Ossetia-Alania | 124.7 | Tyva Republic                 | 63.1  |
| 2   | Tyumen oblast (without AO)       | 121.5 | Primorsky Krai                | 79.4  |
| 3   | Altai Republic                   | 121.4 | Karachay-Cherkess Republic    | 88.4  |
| 4   | Vladimir Oblast                  | 119.3 | Nenets Autonomous Okrug       | 88.8  |
| 5   | Tula Oblast                      | 112.4 | Kostroma Oblast               | 88.9  |
| 6   | Chechen Republic                 | 111.4 | Krasnoyarsk Krai              | 90.6  |
| 7   | Kabardino-Balkar Republic        | 111.0 | Tomsk Oblast                  | 90.7  |
| 8   | Moscow Oblast                    | 109.2 | Khanty-Mansi Autonomous Okrug | 91.6  |
| 9   | Republic of Buryatia             | 107.4 | Republic of Kalmykia          | 92.1  |
| 10  | Penza Oblast                     | 107.3 | Arkhangelsk Oblast            | 92.2  |
| 11  | Ryazan Oblast                    | 106.3 | Republic of Udmurtia          | 92.7  |
| 12  | Magadan Oblast                   | 105.6 | Komi Republic                 | 93.0  |
| 13  | Oryol Oblast                     | 105.3 | Nizhny Novgorod Oblast        | 93.4  |
| 14  | Moscow                           | 105.1 | Kaliningrad Oblast            | 93.5  |
| 15  | Republic of Adygea               | 105.1 | Republic of Mari El           | 93.6  |
| 16  | Smolensk Oblast                  | 105.0 | Kamchatka Krai                | 94.3  |
| 17  | ...                              | ...   | Sakha Republic (Yakutia)      | 94.9  |

Source: Rosstat.

**Table 5.** Indicators of socioeconomic development of some Russian border regions in 2020

| Federal subject                | Import,<br>% GRP | Import<br>(in actual prices) | Real money<br>income | Retail turnover | Employees of small and<br>medium-sized enterprises |
|--------------------------------|------------------|------------------------------|----------------------|-----------------|--|
|                                | 2019             | 2020 compared to 2019, %     |                      |                 |  |
| Kaliningrad Oblast             | 99.6             | 84.5                         | 96.9                 | 98.9            | 96.7   |
| Smolensk Oblast                | 36.3             | 101.3                        | 97.8                 | 94.3            | 89.4   |
| Primorsky Krai                 | 31.7             | 97.5                         | 97.0                 | 94.3            | 101.9  |
| Leningrad Oblast               | 20.8             | 91.0                         | 100.4                | 106.7           | 98.0   |
| Bryansk Oblast                 | 14.4             | 116.0                        | 95.3                 | 95.4            | 91.5   |
| Novosibirsk Oblast             | 13.4             | 93.2                         | 98.6                 | 99.8            | 98.1   |
| Chelyabinsk Oblast             | 12.6             | 80.8                         | 99.0                 | 104.8           | 92.3   |
| Rostov Oblast                  | 11.3             | 88.1                         | 98.4                 | 96.7            | 99.0   |
| Krasnodar Krai                 | 10.9             | 105.0                        | 98.5                 | 98.5            | 89.2   |
| Pskov Oblast                   | 10.6             | 96.2                         | 98.8                 | 100.6           | 91.0   |
| Tyumen Oblast                  | 10.1             | 81.1                         | 98.1                 | 100.2           | 92.7   |
| Belgorod Oblast                | 10.1             | 95.7                         | 98.1                 | 99.3            | 88.5   |
| Average for Russian Federation | 16.7             | 94.8                         | 97.4                 | 96.8            | 96.9   |

Source: Rosstat data and calculations based on them.

This is the ratio of the volume of imports (converted into rubles at the weighted average ruble–dollar exchange) to GRP in 2019. It makes no sense to use the ratio of exports or foreign trade turnover to GRP, because the increased ratio of exports to GRP is particular to Moscow, which performs intermediary functions and mainly for resource regions. However, there

are many border, often simultaneously coastal, federation subjects among the leaders in the ratio of imports to GRP.

In terms of the dynamics of imports, regions differed quite significantly, and no obvious influence of border position on regional socioeconomic development is observed (the given indicators do not depend

on the dynamics of imports). In particular, there is no obvious relationship between the dynamics of imports and number of people employed in small and medium-sized businesses, which again can be associated either with the poor quality of statistics or the influence of a number of factors (other than the situation in border trade) on the development of small businesses.

## CONCLUSIONS

Thus, the main conclusion of our study is that, despite atypical for modern history cause of the economic crisis of 2020, the patterns of differentiation of regions by the dynamics of their socioeconomic development were standard on the whole, differing only in certain specifics of their manifestations.

Among these patterns, one can, first of all, cite the preserved leading role in the economy of major cities and their agglomerations, shown by us with the examples of Moscow and St. Petersburg. These cities, Moscow in particular, due to their openness and high population density, were distinguished by increased cases of COVID-19; in cities, the service sectors most affected by the economic restrictions play a significant role. However, the socioeconomic indicators in Moscow and St. Petersburg as a whole were relatively favorable compared to those for Russia at large. This is due to the factors of regional resilience, the main of which can be cited as diversification of the economy and high innovation potential, and the traditional advantages of major cities—the high consumer market capacity and innovation potential:

—the diversified economy has led to compensation for recession in a number of service industries by growth in other sectors, primarily those related to IT services, as well as in certain industries, including pharmaceuticals;

—high innovative potential in the context of the COVID-19 pandemic manifested itself, first of all, in the form of accelerated implementation of information technologies: in the largest cities there were the best conditions for the transition to online trade, remote operation;

—the high capacity of the sales market manifested itself in the growth of consumer goods production, which was especially noticeable in the food industry and pharmaceuticals.

Another thing is that in the context of the COVID-19 pandemic, not only traditional advantages, but also the traditional problems of major cities manifested themselves, one of the most important of which is differentiation of the population by income. Obviously, in the context of the pandemic, there were groups of the population that both completely or partially lost their jobs, and with it their earnings; there were also specialists the demand for activity and wages of which increased. Assessment of the scale of popula-

tion stratification requires separate study, a significant part of the statistical data for which has not yet been published. However, the experience of previous crises also confirms this assumption (Barinova and Zemtsov, 2020).

Another typical pattern of the crisis years that manifested itself in 2020 is the strong dependence of the situation in regions on their sectoral specialization. As in previous economic crises, a significant decline in industrial production was characteristic of automotive regions, the demand for which as a durable good always drops sharply in crisis years. The general decline in the global economy in 2020 led to a drop in demand for fuel and energy resources and, as a result, an appreciable decline in industry of Russian regions specializing in the fuel and energy complex.

The aforementioned patterns also take place in other countries; in particular, one of the most discussed issues abroad is the traditional urban–rural contrasts that emerged during the COVID-19 crisis with its digitalization challenges (OECD ..., 2020; Territorial ..., 2020). A key difference between the Russian and European situations is the less obvious impact of the pandemic on border regions; for Russia, closing of borders was apparently less significant.

## CONFLICT OF INTEREST

The author declares no conflict of interest.

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