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# TRANSFORMATION OF RUSSIAN STATEHOOD

PUBLIC VERSION. PART I

PROTEST DYNAMICS AND  
THE KREMLIN STATE CAPACITY TO REACTION  
AND COUNTERMEASURES

The document was prepared by the Analytical Department of the NGO "COME BACK ALIVE!" with the NGO "Agency for Legislative Initiatives" support and under the Initiative for Development of Analytical Centers in Ukraine implemented by the International Renaissance Foundation in partnership with the Open Society Initiative for Europe (OSIFE) and funded by the Swedish Embassy in Ukraine. The opinions and positions expressed in this publication are those of the authors and do not necessarily reflect the position of the donors.

The Analytical Department of the NGO "COME BACK ALIVE!" was created in May 2018. The task of analysts is a comprehensive study of issues that directly or indirectly impact Ukraine's defense capability.

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NGO «COME BACK ALIVE!»

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# Annotation

This document is a public (abbreviated) part of the closed research under the title “Transformation of Russian Statehood” conducted by the Analytical Department NGO “Come Back Alive!”.

The research shows the need to transform Russian statehood as the main and almost the only way to level the existential threat posed by the Russian Federation to Ukraine. In this context, we are talking about the need for an in-depth study of Russia as a heterogeneous entity, the use of scientific approaches for this, and current data collection and analysis methods.

Also, the research is designed to update the discourse of the professional community regarding the understanding of the acceptable criteria for determining the victory of Ukraine in the liberation war against Russia and to become an impetus for an in-depth study of the Russian Federation to further level the threats from it not only to Ukraine and the region but also to the whole world.

This document describes the socio-political block of research in the part that can be published. We are talking about methods of studying the deprivation of the population and measuring the capacity of the Russian Federation in the regions.

The full text of the research is not public. It is primarily intended for key stakeholders — the military-political leadership, profile representatives of the Security Forces and Defense Forces of Ukraine, etc.

The information is correct and current as of August 2022.

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# Introduction

It may appear that the authoritarian nature of the current regime in the Russian Federation has made the social unrest in the country impossible. However, alongside the relative stability in Moscow there are regular counterterrorist operations and violent protests in Dagestan Republic; heavy industry workers in the different regions of Russia are left jobless because of the production cuts; here and there, Molotov cocktails are thrown in the windows of the enlistment offices.

The Russian Federation has a huge ethnically and religiously diverse territory with numerous different social groups and unequal distribution of social benefits. The economic crisis and the effect of the sanctions sooner or later will cause the discontent in the society. At the same time, the Russian Federation has an unbalanced ability to control the population. The effectiveness of the state institutions varies in different regions of the Federation. Having 83 federal subjects, Russian Federation doesn't have the ability to react promptly to the social challenges everywhere in the country, can't effectively suppress the protests or rebellions that in turn could lead to more economic risks.

The modern history of Russia also filled with various social conflicts and unrest. North Caucasian Federal District alone had more than 19 attempts of republic proclamations, 6 military counterterrorist operations were carried out; two of them are known as Chechen Wars.<sup>1,2</sup> Excluding North Caucasian Federal District, there were at least 23 known attempts to proclaim an independence in 1990–2000 in other federal districts of the Russian Federation. Districts also made attempts to create a currency apparatus and held numerous rallies about the autonomy status.<sup>3</sup>

Not only ethnic-based separatism, but also a religious fundamentalist movements are possible in Russia. Some parts of the population of the North Caucasian region in Russia support radical Islamic movements. For example, The Islamic State of Iraq and the Levant (ISIL) was able to recruit followers in Chechnya and Dagestan.<sup>4</sup> It is important to note that North Caucasus is one of the few border regions of Russian Federation where the indigenous people make a majority of the population.<sup>5</sup> All other border regions have a Russian ethnical population as a majority and thus — a low-level separatist potential.

But there are other protest triggers in the Russian Federation. In 2011 the falsification of the election results led to an opposition protest movement that for 2 years had been organizing major anti-government protests. The biggest of them were demonstrations on Bolotnaya Square in Moscow, in particular "March of the Millions" that ended with clashes with the police and numerous arrests.<sup>6</sup> The other well-known example of a social unrest

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<sup>1</sup> Dobaev I.P., "Sovremenny terrorizm na Severnom Kavkaze: evolyutsiya form i metodov spetsificheskoy praktik", *Gosudarstvennoye i munitsipalnoye upravlenie. Uchenyie zapiski SKAGS*, no. 1 (2012): 132–140.

<sup>2</sup> Markedonov S.M., "De-fakto gosudarstva postsovetского prostranstva: vybory i demokratizatsia", *Vesnik Yevrazii*, no. 3 (2008): 75–98.

<sup>3</sup> Ibid.

<sup>4</sup> Sturdee N. and Vatchagaev M., "ISIS in the North Caucasus", *Newlines Institute for Strategy and Policy*, 2020. <https://newlinesinstitute.org/isis/isis-in-the-north-caucasus>.

<sup>5</sup> Meaning that North Caucasian federal Okrug is the only federal okrug where the number of non-Slavic ethnicities is bigger than others ethnicities.

<sup>6</sup> *Dissecting Russia's Winter of Protest, Five Years on* (Open Democracy, 2016). <https://www.opendemocracy.net/en/odr/dissecting-russia-s-winter-of-protest-five-years-on>.

in the Russian Federation is large-scale protests in Khabarovsk that started after the governor of Khabarovsk region had been arrested.<sup>7</sup> The rallies were held in 2020, when the Russian regime became even more closed and repressive.

The historical retrospective confirms the presence of the social conflicts in Russia. But the data distortion and the lack of the research doesn't allow isolating the main factor, political subject or the region that has the biggest conflict potential. Understanding the history of the protest movements doesn't enable to evaluate the potential of the new possible movements and ideologies that hadn't appeared before.

The increasing number of protests, especially the violent ones, will make the Russian authorities to focus more on the inner security challenges and to spend more resources on the stabilization of the situation. The open challenges of the opposition mood can signal about the threat to the regime, and this in turn can lead to tightening the repressions.<sup>8</sup> The government resources also will be used for preventing the protests: the social benefits and the subsidies will be increased, while the control will be tightened. Eventually, noticeable quantity of the protests will increase the feeling of instability among the Russian population and the elites.

The lack of high-quality analytics of the Russian population and the possible protest triggers is noticeable, although the scientific researches give the wide range of tools for the analysis.

Our analytical research shows the way of looking for the social groups that are potentially unsatisfied with their status quo and thus are more prone to protesting. We also rated the Russian Federation regions according to their deprivation level and the ability of the Russian regime to control their population.

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<sup>7</sup> "Putina u vidstavku", "Het' tzarya": na aktsiyu u Khabarovsku vyjshly desyatky tysyach lyudey. (Ukrinform, 2020). <https://www.ukrinform.ua/rubric-world/3070099-putina-u-vidstavku-get-cara-na-akciu-u-habarovsku-vijsli-desatki-tisac-ludej.html>.

<sup>8</sup> Levitsky S., Lucan A. Way, *Competitive authoritarianism: hybrid regimes after the Cold War*. (New York: Cambridge University Press, 2010), 54–65.

# 1. Social Discontent of Groups and Regions

The idea of discontent and partial deprivation being a precondition for social and political movements occurrence was a leading thought in the researches of the political disagreement.<sup>9</sup> Lately, scientists have proven that the social discontent not necessarily leads to the protests. Other factors can play a huge role in the rise of the protest movements. Among them are the political environment or the existence of the organizations that can mobilize supporters to their cause.<sup>10</sup>

When the actual state of affairs doesn't correspond with the expectations, both individuals and groups experience the *partial deprivation*.<sup>11</sup> The key part of this concept is the **divergence between the real and the expected conditions of living** that cause the feeling of *discontent*. The deprivation plays the part of the so-called petri dish where the conditions necessary for a potential protest mood can occur.

Partial deprivation can be caused by economic factors, for example, when a person's prosperity unexpectedly lowers and doesn't meet the previously expected level anymore. The state of deprivation can also be caused by the social or political factors. Deprivation can vary in scale (the number of people who feel the discontent) and intensity (the acuteness of the discontent).

Scientists name three types of deprivation:

- When the expectations are relatively stable, but the real conditions worsen;
- When the expectations grow, but the reality doesn't change;
- When the expectations grow, and the reality worsen simultaneously;<sup>12</sup>

## Deprivation in the social groups

The theory of the deprivation enables the estimation of the protest potential by analyzing the separate groups that could theoretically feel the discontent because of the current state of the affairs. This could be factory workers or miners that lost their jobs or part of their income. People whose relatives have died in a war. Students that lost the access to a certain benefit, and other groups that bear economic or social losses.

The research approach is to take notice not only of the existing movements and the groups that are already protesting, but also of the groups that feel the discontent.

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<sup>9</sup> Brush, Stephen G. "Dynamics of Theory Change in the Social Sciences", *Journal of Conflict Resolution*, 40. no. 4 (1996): 523–45.

<sup>10</sup> McCarthy, John D., and Mayer N. Zald. "Resource Mobilization and Social Movements: A Partial Theory". della Porta, Donatella, "Political opportunity/political opportunity structures", *American Journal of Sociology* 82. No. 6 (1977): 1212–41; Snow, David A., Donatella Della Porta, Bert Klandermans, and Doug McAdam, *Encyclopedia of Social and Political movements* Snow, eds. (Sussex: Wiley-Backwell), 956–961.

<sup>11</sup> Garr, T.R., *Pochemu lyudi buntiyut*, (Sankt-Peterburg: Pityer, Mastera Sotzyologii, 2005), 61–62.

<sup>12</sup> Ibid, 67–83.



The approach consists of the next steps:

- Search for the groups that can experience the deprivation;
- Preliminary assessment of the possible deprivation and ranging the groups by priority (the size of the group, the instruments of influencing it, factors that restrain the discontent, the ways of expressing the discontent by the group);
- Study the specific groups and their discontent triggers.

Don't discard the analysis of the groups that could experience deprivation and discontent because of the social changes or the lack of them (among them could be ethnic minorities, students, mothers of the soldiers etc.). In October 2018 the representatives of the Ingush ethnic minority protested against the change of the border between Chechen Republic and the Republic of Ingushetia. This is the evidence that the discontent can be caused by the social and political factors.<sup>13</sup>

One of the examples of a potentially deprived group can be automotive industry workers. Ferrous metal import to Russia is limited, while Russian coal export is gradually being restricted by the European Union embargo.<sup>14</sup> Lack of spare parts and exodus of international companies from Russia jeopardizes the automotive industry.<sup>15</sup> Some of the factories are on the brink of closure because their owners were added to the sanctions list, for example, Severstal company that operates in mining and steel industry.<sup>16</sup>

Factories with a large workforce become a space for a discussion of the possible instability and shared problems that could arouse during the crisis. That is why the automotive industry has a potential for the collective exposure to the deprivation. An additional argument for the concentrating on these groups should be their previous involvement in the labor protests. According to the "Monitoring of the Labor Protests" project in 2019–2021 healthcare, transportation and industry were the most turbulent spheres within the protest context.<sup>17</sup>

Heavy industry branches that should be meticulously monitored are those that stopped the production altogether or significantly decreased it. For example, metallurgical companies "Severstal" and "Magnitogorsk Iron and Steel Works" are expected to decrease their production for 20–40% and more than 40% accordingly.<sup>18</sup> The Ministry of Energy of the Russian Federation warns about possible reduction of the coal production for 17%.<sup>19</sup> The companies will fight for their survival by searching for new markets and increasing their sales to the state. Decrease of the production doesn't necessarily lead to abrupt stop of the factories.

<sup>13</sup> "Protesty v Ingushetii: khronika peredela granitsy s Chechney", Kavkazkiy Uzel, 2022. <https://kavkaz-uzel.eu/articles/326282>.

<sup>14</sup> "EU Sanctions against Russia Explained", Council of the European Union, 2022. <https://www.consilium.europa.eu/en/policies/sanctions/restrictive-measures-against-russia-over-ukraine/sanctions-against-russia-explained>.

<sup>15</sup> "Rossiya gotova k volne bezrabortitsy? A zavody ostanovyatsya iz-za sanktsiy? I chto my vse budem yest? Otveychayet regionalist Natalya Zubarevich", Meduza, 2022. <https://meduza.io/feature/2022/03/11/rossiya-gotova-k-volne-bezrabortitsy-a-zavody-ostanovyatsya-iz-za-sanktsiy-i-chto-my-vse-budem-est>.

<sup>16</sup> Ibid.

<sup>17</sup> "Trudovye protesty v Rossii. Chast 3. Otrazlevaya struktura trudovykh protestov", Monitoring trudovykh protestov, 2022. <http://www.trudprotest.org>.

<sup>18</sup> "MMK i 'Severstal' ozhdayut snizheniya nagruzki v iyune na 20–40%", Financial One, 2022. <https://fomag.ru/news-streem/mmk-i-severstal-ozhidayut-snizheniya-zagruzki-v-iyune-na-20-40>.

<sup>19</sup> "V RF prognoziruyut sokrascheniye dobytchi uglya na fone embargo", Ekonomicheskaya Pravda, 2022. <https://www.epravda.com.ua/rus/news/2022/06/18/688312>.

Automotive industry in Russian Federation is in a much worse condition. The lack of spare parts causes the factories to stop their production. According to the Federal State Statistics Service, in April 2022 car production in Russia has decreased by 85.4% comparing to April 2021. Car sales has decreased by about 30%.<sup>20</sup> On spring and at the beginning of summer 2022 some of the factories had sent their workers on the forced vacation with a partial salary payment; some factories have cut the stuff with paying the rest of the salary for the whole 2022 year. Other factories have offered their workers alternative jobs in the agriculture sector.<sup>21</sup>

In July 2022 the production in the automotive sector was partially resumed. AvtoVAZ car manufacturing factory is planning to restart the production line of Niva and Lada Granta models after the nationalization of the Renault production line. However, irregular manufacturing and the projected production decrease attest to instability and risks for the industry and its workers.

To increase the discontent of the workers, it is important to understand what exactly bothers them and to formulate the messages accordingly. The inability to conduct the interviews and surveys in the Russian Federation had us concentrate our research on the case of AvtoVAZ workers, specifically on the analysis of the commentaries made by AvtoVAZ workers in the Russian social media VKontakte in May-July 2022.<sup>22</sup>

In general, the monitoring of the labor protests in the Russian Federation in 2017–2022 shows that **the main cause for the protest is a salary delay**. Other potent triggers are low salaries and the leadership policy. Less important protest set-offs are the changes of the working conditions, personnel cuts and change in the payment system.<sup>23</sup> One of the issues that troubles AvtoVAZ workers according to their commentaries on the AvtoVAZ VKontakte page was the decreased potential of making a high-quality tech production. In June, some of the workers have noted in the commentaries: “The only thing left for us – to start the production of the wheelbarrows, as there are almost no sensors”. The incompetence of the new factory leadership was also noted: “Look what happened to the factories, where the whole corporation has come to. Everything has been sold. The same thing will happen to AvtoVAZ, I’m 90% sure”. We also noticed the mentions of the irregular working hours and possible cuts in the future.

Mentions of low salaries are rare. Comments in the social media page shows that workers get their wages regularly without any delays. However, there are some other interesting comments: “Lada Izhevsk, engineer of the quality control department, 4800 rubles of advance payment. If I disappear from the radar, it’s because I’ve starved to death”.

The government of the Russian Federation probably tries to avoid the non-payments. The workers could be transferred to other departments, send on paid vacations or paid after the job cuts. All these measures probably won’t save the industry from the further problems during this turbulent timeline. Management incompetence, changes in the working schedule and payment methods, low sales, uncertainty about future of the factory, price

<sup>20</sup> “Proizvodstvo lehkovykh avtomobilyey v Rossii upalo na 85.4 %”, RTVI, 2022. <https://rtvi.com/news/proizvodstvo-legkovykh-avtomobiley-v-rossii-upalo-na-854>.

<sup>21</sup> “Sobirat’ klubniku vmesto mashyn: rabochim rossiyskogo zavoda predlozhyli alternativu”: <https://dengi.ua/career/6313389-sobirat-klubniku-vmesto-mashin-rabochim-rossijskogo-zavoda-predlozhili-alternativu>.

<sup>22</sup> Workers group chat in the social media “VKontakte”: <https://vk.com/public212062547>.

<sup>23</sup> “Trudovye protesty v Rossii v 2021 godu. Chast’ 3”. Trudprotest, March 16, 2022. <http://www.trudprotest.org/2022/03/16/тудовые-протесты-в-россии-в-2021-г-часть-3>.

grows combined with the fixed income — all these factors will become the permanent fixture of the workers' lives.

The social media page doesn't contain a lot of politically tinged commentaries. The posts that criticize the current government cause heated debates. But the idea that automotive industry and the local technology didn't develop because of the ineffective policy of the so-called "managers" and "officials" is frequent. One of the commentators says: "That's how the efficient managers make the effective upgrade of the automobile factories: some uncle John pushes the button in Washington and the factory in Russia stops". Comments of this type draws less criticism than accusations towards Vladimir Putin and the central government. Moreover, the social media page emanates the skepticism about the relevance of the Russian cars on the domestic market and its demand among the political elite.

## Measuring the deprivation: regional dimension

This research studies the deprivation as unsatisfactory living standards, not as a subjective state that triggers the unrest. Our purpose is to rate the regions of the Russian Federation by the levels of deprivation.

There are different approaches towards measuring the levels of deprivation that allows to demonstrate the well-being of the household on compact chosen territories. This research concentrated on the regions of the Russian Federation (krais, republics, regions/provinces, autonomous districts) partially because of the lack of data access as we are able to operate only with regionally-gathered indicators of Federal State Statistics Service. It is important to note that the federal subjects are separate political systems themselves with different abilities to control the population, sometimes with a diverse composition of a nationalities and political beliefs.

## The deprivation measuring methodology and the results of the measurements in the regions

Using the deprivation measurement methodology created by Ministry of Housing, Communities and Local Government of Great Britain,<sup>24</sup> we highlighted the next indicators of the deprivation:

- Employment;
- Income;
- Education;
- Health;
- Crime levels;
- Comfort of living;
- Infrastructure.

<sup>24</sup> "The English Indices of Deprivation", 2019. Ministry of Housing, Communities & Local Government, 2019. [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/835115/loD2019\\_Statistical\\_Release.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/835115/loD2019_Statistical_Release.pdf).

**Table 1. Deprivation index indicators**

| <i>Indicator</i>   | <i>Weight coefficient</i> |
|--|---------------------------|
| <b>Education</b>   | <b>11%</b>                |
| Number of students per 10000 population                                  |                           |
| Number of pupils in private schools per 1000 population                  |                           |
| Number of secondary education certificates issued per 1000 population    |                           |
| Fraction of pupils who achieved a high result at United State Exam (USE) |                           |
| <b>Health</b>  | <b>14%</b>                |
| Morbidity per 1000 population  |                           |
| Number of medics (all specializations) per 10 000 population             |                           |
| Number of hospital beds per 10 000 population                            |                           |
| <b>Living and comfort</b>  | <b>21%</b>                |
| Total square of living space per one person                              |                           |
| Living area with water supply  |                           |
| Living area with hot water supply  |                           |
| Living area with heating   |                           |
| Number of active Wi-Fi users   |                           |
| <b>Transport and infrastructure</b>                                      | <b>10%</b>                |
| Number of public buses per 100 thousand population                       |                           |
| Percentage of paved roads  |                           |
| Number of cars per 1000 population                                       |                           |
| <b>Income</b>  | <b>19%</b>                |
| Percentage of population with income lower than living wage              |                           |
| Median salary  |                           |
| Part of the income spent on food   |                           |
| <b>Employment</b>  | <b>13%</b>                |
| Unemployment level   |                           |
| <b>Crime</b>   | <b>13%</b>                |
| Number of crimes per 1000 population                                     |                           |

They allow us to determine where the population of the Russian Federation is poorer, has fewer possibilities to achieve a desirable level of well-being and limited access to comfortable and safe living conditions.

According to these measurements, we have chosen 19 indicators from Federal State Statistics Service report made in 2019: "Regions of Russia: social and economic indicators of 2020".<sup>25</sup> We deliberately chose the year before COVID-19 pandemic, as the quarantine restrictions could have influenced some of the economic indicators. The indicator of the pupils' progress at the Unified State Exam was used from 2021 year because of the limited access to data. Before making the analysis, all data were normalized by **Min-Max Normalization** method/technique.

Coefficient weight of every indicator was defined with factor analysis made by SPSS software. **The method of principal component analysis** was used to distinguish two factors that in combination explain 56% of dispersion. The coefficients were defined using the methodology from "Handbook on Constructing Composite Indicators".<sup>26</sup> A matrix of squared factor loadings after rotation was created. The most significant factor loadings for every indicator were identified, grouped, and multiplied by the relation of general and explained variation, thus getting the coefficient values.<sup>27</sup>

After getting the coefficient values, the indicators were summed up according to their weight in the general index. Thus, **the deprivation index and the general index of all regions of the Russian Federation** were obtained.

In the table/infographics below, we demonstrate 10 Russian regions with the highest deprivation level and 10 regions with the lowest deprivation level. The bigger the index value — the higher the deprivation level. Full rating can be found in Appendix 1.

The map below on image 1 demonstrates the level of economic welfare of all the regions of the Russian Federation. The highest level of deprivation is detected in Republic of Tyva (0.76), the lowest — in the cities of Saint-Petersburg (0.14) and Moscow (0.16). Some of the results meet the general expectations, for example, the biggest Russian cities have the highest level of welfare. High welfare level in Yamalo-Nenets and Khanty-Mansi Autonomous Okrugs can be explained by high income and low level of unemployment in these rich in gas and oil regions. Far East regions are also more prosperous due to the abundance of minerals and high salaries caused by harsh climate.

Russians will be troubled more and more by growing prices and the decrease of income, while the enthusiasm about the news from the war in Ukraine will subside sooner or later. The deprivation also should be compared with the number of protests in the regions, ethno-cultural and religious confrontations. For example, the Republic of Dagestan with its high levels of protests holds a fifth place in the number of protest movements in the Russian Federation<sup>28</sup> and at the same time, has a high deprivation level. Dagestan also is religiously and ethnically a heterogeneous region.

<sup>25</sup> "Regiony Rossii. Socialno-ekonomicheskiye pokazateli". Federalnaya Sluzhba gosudarstvennoy statistiki, 2020. <https://rosstat.gov.ru/folder/210/document/13204>.

<sup>26</sup> *Handbook on Constructing Composite Indicators*, Organisation for Economic Co-Operation and Development, 2008. <https://www.oecd.org/sdd/42495745.pdf>.

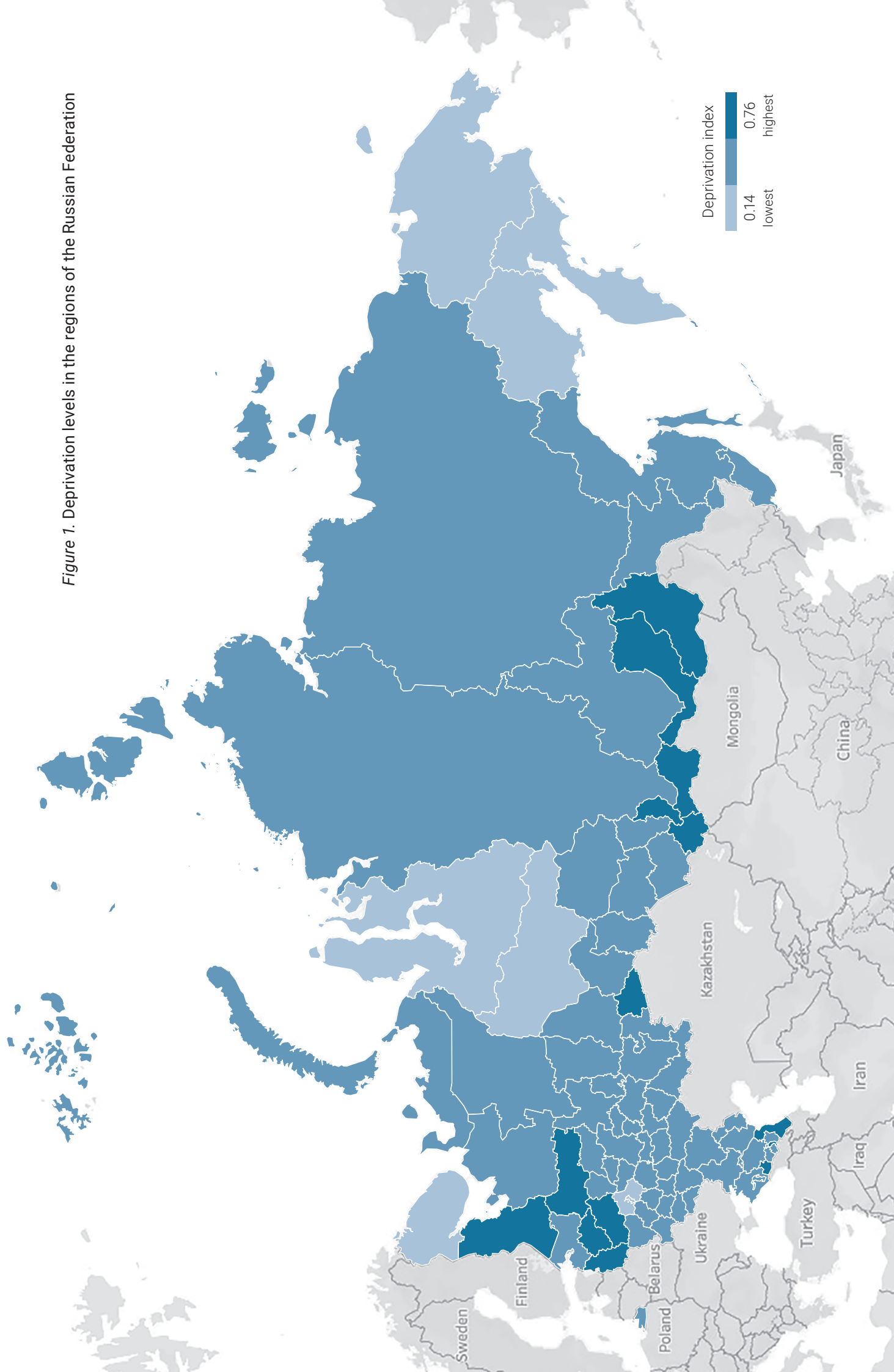
<sup>27</sup> Ibid, 89–91.

<sup>28</sup> *The Armed Conflict Location & Event Data Project*, <https://acleddata.com/#/dashboard>.

**Table 2. Abridged rating of the Russian Federation regions by the deprivation level**

| <i>Region (first 10)</i>          | <i>Index</i> | <i>Rating</i> | <i>Region (last 10)</i>                      | <i>Index</i> | <i>Rating</i> |
|-----------------------------------|--------------|---------------|--|--------------|---------------|
| <b>Tyva Republic</b>              | 0,76         | 1             | <b>Republic of North Ossetia – Alania</b>    | 0,37         | 74            |
| <b>Altai Republic</b>             | 0,72         | 2             | <b>Kamchatka Krai</b>                        | 0,35         | 75            |
| <b>Kurgan Region</b>              | 0,70         | 3             | <b>Chukotka Autonomous Okrug</b>             | 0,34         | 76            |
| <b>Buryatia Republic</b>          | 0,67         | 4             | <b>Murmansk Region</b>                       | 0,34         | 77            |
| <b>Zabaykalsky Krai</b>           | 0,65         | 5             | <b>Moscow Region</b>                         | 0,34         | 78            |
| <b>Republic of Ingushetia</b>     | 0,65         | 6             | <b>Khanty-Mansi Autonomous Okrug – Yugra</b> | 0,32         | 79            |
| <b>Republic of Dagestan</b>       | 0,62         | 7             | <b>Magadan Region</b>                        | 0,31         | 80            |
| <b>Vologda Region</b>             | 0,61         | 8             | <b>Yamalo-Nenets Autonomous Okrug</b>        | 0,29         | 81            |
| <b>Karachay-Cherkess Republic</b> | 0,61         | 9             | <b>City of Moscow</b>                        | 0,16         | 82            |
| <b>Novgorod Region</b>            | 0,60         | 10            | <b>City of Saint-Petersburg</b>              | 0,14         | 83            |

Figure 1. Deprivation levels in the regions of the Russian Federation





## 2. The state capacity of the Russian Federation

While the deprivation shows the levels of discontent, the state capacity shows how Russia as a state can implement its capacity in the different regions of the Federation. It gives us the ability to choose the next perspective region for the in-depth analysis.

Traditionally, the state capacity of the Russian Federation is immensely heterogeneous. For instance, mighty autonomous and separatist movement together with the Islamic and nationalistic extremism in the 1990s made Kremlin focus strongly on the Caucasus region. But the government couldn't exert the significant influence other than allocating huge financial resources for the local elites and de facto introducing systemic repressions in the form of the regular so-called counter-terroristic operations. This policy significantly contrasts with the Kremlin's policy in the Republic of Tyva or Tatarstan. While nominally the constitutional reform of 1993 and the administrative reform of the beginning of 2000th centralized the power in the Russian Federation, a personalistic nature of Putin's regime doesn't allow the homogeneous ruling in the regions of the country. The state capacity is also significantly influenced by the mineral resources being the main financial assets for the regime.

This part of the research is intended to demonstrate the various possibilities of analyzing Russian ability to implement state capacity and also to refute one of the basic misconceptions about the homogeneity and a so-called "total control" of a state over the whole territory of the Russian Federation and also to show how unwarranted they became after the 24th of February 2022.

### The concept of capacity and the methodology of its study

**The capacity of the state** — is the ability of the government to implement its policy, control the resources (including human ones) and to conduct its extraction on the sovereign territory of a country. In some degree, the capacity could be understood as an ability to effectively run the country, though this indicator usually doesn't have an exact explanation due to a distinction of the indicators in every given research.

This part of the research is based on the prism of the ability of the Russian Federation as a state to utilize its resources. The concept of the capacity even in this specific case is determined by the researchers and is used according to the goals the authors have set before themselves. The research offers a whole **range of the capacity indicators<sup>29</sup> that are used in the scientific papers that study the uprisings.**

The researches on the whole look at the capacity of the whole state, not its singled-out regions, as the regions data is partial and difficult to obtain. This issue has deepened after 24th of February 2022 when the substantial part of the sources were closed for the access or blocked by the cyberattacks. We propose to "compensate" the lack of the open-source information by using our own additions extracted from "The Theory of the Stationary Bandit",<sup>30</sup>

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<sup>29</sup> Hendrix Cullen S. "Measuring state capacity: Theoretical and empirical implications for the study of civil conflict," *Journal of Peace Research* 47, no. 3: 273–285.

<sup>30</sup> "The Theory of a Stationary Bandit" consists of interpreting the state as a "stationary bandit" where the key concept is developing more effective methods of accumulation of the resources from the "robbed ones". Martin McGuire and Mancur Olson are considered to be the authors of this model.



in particular, from the works of Charles Tilly<sup>31</sup> and Mancur Olson.<sup>32</sup> Authors also use another indirect element of the state capacity — the ability of the Russian Federation to use its force to mobilize, transport and control any given region. Kremlin's **potential to maintain the monopoly on violence** in the region and to extract the resources due to this monopoly is the basis of the state capacity concept in this research.

The available indicators from the works of the state capacity researches were used in this research.<sup>33</sup> In particular, the indicators of the power aspect as a manifestation of a literal and direct presence of the state in the region (police and military units) were deduced from the "Theory of the Stationary Bandit". Some of the indicators were modified for the purposes of the research, in particular, shifting the focus from the military capacity to the capacity of the security forces. This is attributed to the lack of the data about the military force in the Russian regions and to the greater role of police and other security forces in the suppression of the resistance. This conclusion was based on the practice of using FSS and Ministry of Internal Affairs units (in particular, national Guard of Russia) during the so-called counter-terrorist operations in the Caucasus region in 2008–2017 (locally — up to 2020). The indicators of the basic infrastructure that allows the state to control the region (the ones that are within the field of the state sector responsibility) were also included in the research.

The research used the figures presented by the Federal State Statistics Service for 2019<sup>34</sup> — the biggest data array with the widest cataloging. The numbers of the Ministry of the Internal Affairs employees and the number of the police stations in the regions of the Russian Federation were taken from 2106 statistical yearbook as it was the only open-source data of the regional cataloging. Some of the numbers such as the number of the Ministry of the Internal Affairs employees and the number of the regional police stations correlate with indicator 0.97 (strong correlation). For this reason, the indicator of the regional police stations was chosen. Overall, 11 indicators that serve as the basis for the indicating Kremlin's state capacity in the regions were chosen:

- Gross regional product per capita (Gledich, 2002);
- Income/Gross regional product per capita (modified using M. Arbetman and J. Kugler works, 1997);
- Taxes/Gross regional product per capita (modified using M. Arbetman and J. Kugler works, 1997);
- Ministry of the Internal Affairs employees/population (modified using Singer, J. David, Stuart A. Bremer, and John Stuckey works, 1972);
- Number of the Ministry of the Internal Affairs departments (based upon "Theory of the Stationary Bandit");
- Military units (Russian Armed Forces and national Guard of Russia, based upon "Theory of the Stationary Bandit");

<sup>31</sup> Tilly C., *War Making and State Making as Organized Crime* (Cambridge: Cambridge University Press, 1985).

<sup>32</sup> Olson M., "Dictatorship, Democracy, and Development", *The American Political Science Review* 87, no. 3, 1993: 567–576.

<sup>33</sup> Hendrix Cullen S., "Measuring state capacity: Theoretical and empirical implications for the study of civil conflict", *Journal of Peace Research* 47, no. 3: 273–285.

<sup>34</sup> Federalnaya sluzhba gosudarstvennoy statistiki. Regiony Rossii. Sotsyalno-ekonomicheskiye pokazateli. *Statisticheskiy zbornik* (Moscow, 2020).

- Thermal generation by thermal power plants in MW (infrastructure indicator);
- Number of thermal generation sources (infrastructure indicator);
- Length of thermal pipelines (infrastructure indicator);
- Ratio of the paved roads (infrastructure indicator);
- Railroad density per 10000 km<sup>2</sup> (infrastructure indicator).

All those indicators can't take into consideration a significant share of the relativity of the "effectiveness" of the state administration. It's better to make assessment of the capacity, not its exact indicator. That is why the proposed indicators were attempted to be narrowed down to the most "physical" factors of assessment, which represent the most tangible objects. Such data is less likely to be counterfeited or distorted. For example, energy generation, energy or transportation infrastructure buildings play an important role in country management and investment perspectives.

## The methodology of state capacity calculation

By calculating the state capacity, this research means rating of the Russian Federation regions by capacity index. We begin with the normalization of the proxy-indicators for further calculations — for two reasons:

- The value range of the indicators varies significantly due to the different types of the values — ratio of the paved roads per area or gross regional product per capita in rubles per capita etc.
- The evaluation of the region is relative to other regions. *Min-max normalization* was chosen as a normalization method, as it was chosen above to define the index of economical depravity. The highest value of the year within one indicator gets 1 point, the lowest gets 0, all other values are distributed in this interval.

This configuration of the capacity calculation lies within the goals of our research. It is important to emphasize that the capacity could cover a wide range of state' spheres of roles — from the tax policy or reformation of the administrative services up to the military role. Thus, it could be either narrowed down or widen according to the tasks. However, the suggested methodology could be a basis for the modifications or calibration for further research of a state capacity of the Russian Federation.

The above-mentioned indicators need weight coefficients. Their roles differ, therefore indicating the weight without studying the whole context is impossible. In any case, any evaluation of the potential will be deductive. **This should be the first step in a further in-depth research of the state capacity.**

We used a **factor analysis of a maximum likelihood estimation** (MLE) as a default example of estimating the parameters. Essentially, this is a search for interdependence between the indicators given the observant data. Simulation could be more relevant and reproducible only if a larger sample is used. The calculations were made using same named MLE function.

The factor calculations were made using SPSS software, as in developing a deprivation index. The results of the calculations of the coefficients weights for the indicators are following:

**Table 3. The results of the coefficients weights for the indicators of the state capacity**

| <i>Indicator</i>   | <i>Coefficient</i> |
|--|--------------------|
| Number of the Ministry of the Internal Affairs departments in the region | 0,12               |
| Number of the military units in the region                               | 0,15               |
| Ratio of the paved roads   | 0,02               |
| Railroad density per 10000 km <sup>2</sup>                               | 0,14               |
| Thermal generation by thermal power plants in MW                         | 0,11               |
| Number of thermal generation sources                                     | 0,06               |
| Length of thermal pipelines  | 0,13               |
| Ministry of the Internal Affairs employees/population                    | 0,06               |
| Regional income/Gross regional product per capita                        | 0,03               |
| Regional taxes/Gross regional product per capita                         | 0,09               |
| Gross regional product per capita (in rubles)                            | 0,07               |

Using the coefficients weights for the indicators, we have obtained the variation of the indicator from 0.0646 to 0.6498.

The calculations have shown an evident anomaly in the index, namely, high indicators of the capacity in Krasnoyarsk Krai and Khanty-Mansi Autonomous Okrug. The anomaly could be explained by an immensely high rate of a mineral extraction. Krasnoyarsk Krai has an extensive oil, gas, nickel, and gold extraction industry. The same goes to Tyumen region, the subject of Khanty-Mansi Autonomous Okrug. For instance, the price of oil extracted in Khanty-Mansi Autonomous Okrug in 2019 exceeds the gross regional product by one-and-a-half,<sup>35</sup> while in Krasnoyarsk Krai the price of the extracted oil makes 28% of the gross regional product. The extraction of the gas exported from the Tyumen region exceeds the cumulative gross regional product of both the region and Khanty-Mansi Autonomous Okrug in 63 times.

Collier and Hoeffler state that the **extraction of the minerals significantly lowers the state capacity in the region**.<sup>36</sup> The income from a minerals extraction doesn't stimulate the infrastructure development for the further extraction of the resources from the population. This principle is worth remembering for the assessment of the Russian Federation capacity in general but is difficult to apply for the comparative analysis of the state control in the regions. Only 20 regions of the Russian Federation have oil and gas. Most of those territories need an extracting industry development, especially in the remote regions with the extreme cold and swampy areas. This makes incorrect the application of the principle

<sup>35</sup> Based on the data from 2019 analyzed by Federal State Statistics Service.

<sup>36</sup> Collier P., Hoeffler A. Greed and Grievance in Civil War. *Oxford Economic Papers* 56, no. 4 (2004): 563–95.

of a negative influence of the minerals' extraction on the state capacity for these exact regions.

It is important though to take into account the role of mining industry in the gross regional product while rating the top 10 regions. This is not crucial for our research, as de facto the presence of the Russian Federation in the region is significant. But this giant has feet of clay. Following table includes 10 regions of the Russian Federation with the highest state capacity and 10 regions with the lowest state capacity, with the exception of Krasnoyarsk Krai and Khanty-Mansi Autonomous Okrug (complete list in the Appendix 2).

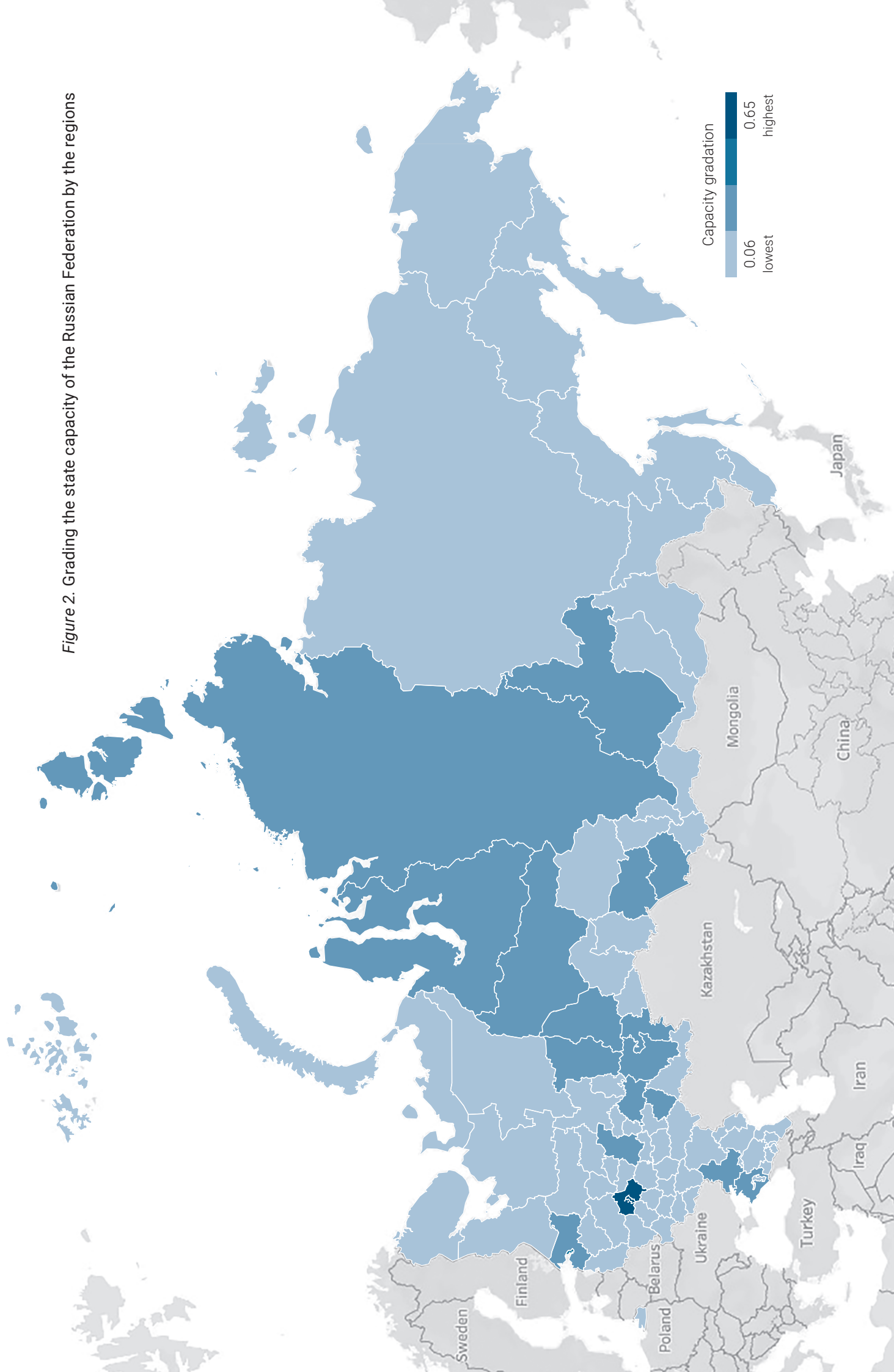
**Table 4. The Regions with the highest state capacity, excluding Krasnoyarsk Krai and Khanty-Mansi Autonomous Okrug**

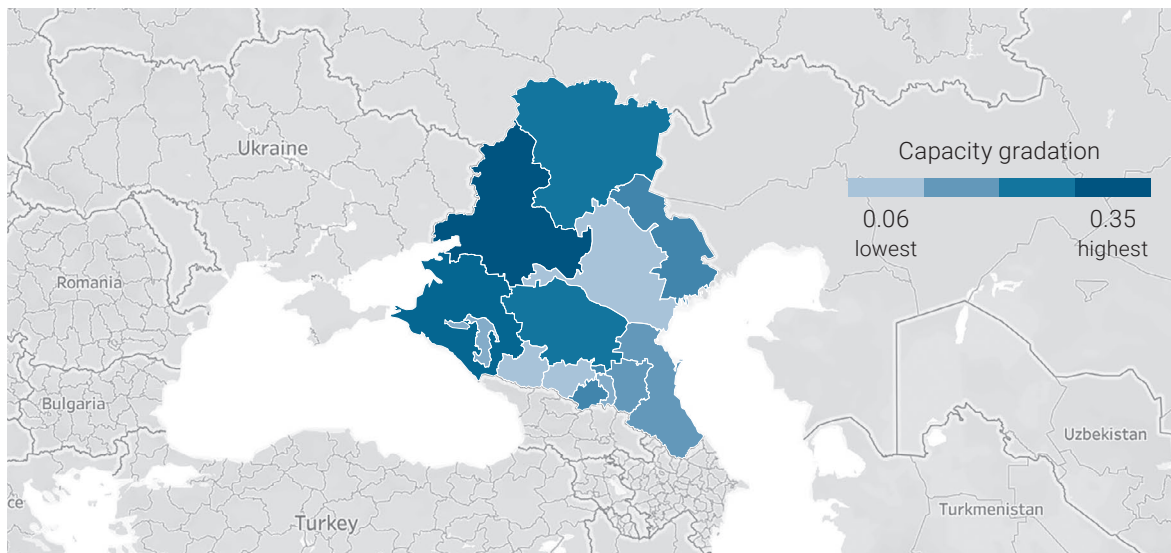
| <i>Region (the first ten with the highest state capacity)</i> | <i>Indicator</i> | <i>Rating</i> | <i>Region (the last ten with the lowest state capacity)</i> | <i>Indicator</i> | <i>Rating</i> |
|---|------------------|---------------|---|------------------|---------------|
| City of Moscow  | 0,65             | 1             | Republic of Karelia   | 0,11             | 74            |
| Moscow region   | 0,58             | 2             | Republic of Ingushetia                                      | 0,10             | 75            |
| City of Saint-Petersburg                                      | 0,40             | 3             | Magadan region  | 0,10             | 76            |
| Sverdlovsk region   | 0,35             | 4             | Republic of Adygea  | 0,09             | 77            |
| Rostov region   | 0,28             | 5             | Republic of Kalmykia  | 0,08             | 78            |
| Krasnodarsk krai  | 0,28             | 6             | Kabardino-Balkarian republic                                | 0,08             | 79            |
| Nizhny Novgorod region  | 0,28             | 7             | Altai Republic  | 0,08             | 80            |
| Samara region   | 0,27             | 8             | Jewish autonomus region                                     | 0,07             | 81            |
| Republic of Tatarstan   | 0,27             | 9             | Republic of Khakassia                                       | 0,07             | 82            |
| Leningrad region  | 0,23             | 10            | Karachay-Cherkess Republic                                  | 0,06             | 83            |

It is important to conduct such testings for at least checking the selection of the indicators. However, making an assumption is still the main aspect of the state capacity research. The indicators should be calculated and developed according to the goals of research. The goal of our research is to identify the capacity of the Russian Federation as a monopolist to a violent imposition of rules and expropriation of the resources.

The capacity design shows the evident heterogeneity of Kremlin's power in the regions, disproportionate even on the federal districts level.

Figure 2. Grading the state capacity of the Russian Federation by the regions





*Figure 3. Capacity index of the Russian Federation in the Southern and Northern Caucasian federal districts (by the republics, krais and regions)*

In some cases, the federal capacity is low, but it is worth mentioning that the research didn't calculate the capacity of the local regime. For instance, the indicator for the Chechen Republic under the rule of Ramzan Kadyrov could be questionable, as this rule is the prime example of a personalistic regime in the Caucasus region.

Here, the Russian Federation has a lesser military presence and poor territory development. **It suggests the absence of the political center's focus on the regions.**

The capacity indicators were chosen in order to understand Kremlin's ability to counteract a potential unrest. It's fair to interpret that the regions with the smallest capacity and the highest economic indicators are the weak links in the system of security and defense of the Russian Federation in respect of military presence, mobile movement and the ability to control the region.

**Table 5. The least “capable” and the most economically deprived regions of the Russian Federation**

| <i>Region</i>              | <i>Capacity</i> |  | <i>Economical deprivation</i> |  |
|----------------------------|-----------------|--|-------------------------------|--|
|                            | <i>Index</i>    | <i>Place in the rating of capacity</i> | <i>Index</i>                  | <i>Place in the rating of economic deprivation</i> |
| Republic of Dagestan       | 0,12            | 61                                     | 0,62                          | 7  |
| Republic of Kalmykia       | 0,08            | 78                                     | 0,52                          | 22   |
| Vologda region             | 0,12            | 67                                     | 0,61                          | 8  |
| Kurgan region              | 0,12            | 64                                     | 0,70                          | 3  |
| Jewish autonomous region   | 0,07            | 81                                     | 0,55                          | 16   |
| Republic of Ingushetia     | 0,10            | 75                                     | 0,65                          | 6  |
| Tyva Republic              | 0,12            | 71                                     | 0,77                          | 1  |
| Republic of Khakassia      | 0,07            | 82                                     | 0,59                          | 11   |
| Karachay-Cherkess Republic | 0,07            | 83                                     | 0,61                          | 9  |
| Altai Republic             | 0,08            | 80                                     | 0,72                          | 2  |



# Conclusion

The Russian Federation is unequivocally heterogeneous in its regional capacity. Despite an obvious monstrosity of the resources' deposits, their distribution is extremely unequal, and the profit is accumulated in the so-called centers of decision-making. Marginal periphery obviously suffers a lot more from the economical and social problems and country's low capacity to implement its policies on the ground. Even the enforcement presence in regions such as Altai Republic or Khabarovsk krai is close to none.

The role of discontent of sectoral workers, either industry or IT, social groups (for instance, Salafis communities in the Caucasus region) depends on the communication inside the community. The main task should be an assessment of the groups' protest potential, as in examples given in this document.

The capacity index together with the indicator of the economic deprivation opens up the possibility to search for the vulnerable regions. The areas, **where deprivation level is relatively (but not critically) high and state capacity is relatively low**, have a significantly higher possibility of sociopolitical movements supported by the local population.

It is still important to calibrate the indicators while scaling the researched context. For example, a big number of petrol station in the Dagestan Republic could mistakenly be interpreted as a sign of a developed infrastructure. In fact, a significant percentage of these petrol stations are so-called shadow stations that mainly sell stolen, or "gray" petrol made on the clandestine oil refineries in the republic. Similar aspects could be encountered often, therefore, the quantitative measurement could only supplement context researching. Capacity index can give unexpected results for the generalization of the processes, especially for the cases of all 83 regions of the Russian Federation. In other words, in the absence of the clear context understanding and in search for unexpected cases, the quantitative method gives the opportunity to successfully apply theoretical paradigms.

This approach leads to the need for continuous filling, maintenance, and updating of databases for various regions and social groups of the Russian Federation. Such databases most likely be in demand mainly in Ukraine, in particular, for developing security solutions.

This type of analytics should be very flexible. The research process should be constant without formal interim reports. Systematic monitoring and evaluation of a methodology of data gathering together with data surveillance is crucial.

This will provide a unique data on the actual dynamic of a mood in the Russian Federation. In fact, for now we have only bits of information in the public domain or data that was evaluated by Ukrainian allies. That's why we need the results of our own experiments made for our own purposes. Eventually, sufficient number of testings will give the possibility to collect the needed data sets and to test the accurate relevant models.



The implementation of the modern knowledge demonstrated in the document is just a tiny part of the global field of a possible work for the Ukrainian intelligence. Russia spends huge resources on thousands of troll factories, scientific researches, unleashes information campaigns on Brexit, uses so-called soft power via intellectuals and its own culture in the most unexpected situations — from taking part in the conference of the enslaved peoples of the Russian Federation to publishing in the most reputable editions affiliated with the global microprocessor manufacturers. Russia has long and successfully used the mechanisms of the radicalization against Ukraine, polarizing the society and creating the conditions when the anti-Russian part of the population was painted as a threat to Europe. Meanwhile, the Ukrainian analytic field still lags behind. Absence of the scientific publications and use of modeling indicates the gap between Ukrainian and Russian intelligence in the development of the operations. Meticulous, difficult for the implementation development from the theory to the practical application is a must. For now, lion's share of experience, build-ups and theories lies in the academic field of the Western countries.

## Appendix 1. The results of the interim indexes and the deprivation index

| Region                                | Indicator |        |        |         |           |                               |                  | Results      | Final index  |
|---------------------------------------|-----------|--------|--------|---------|-----------|-------------------------------|------------------|--------------|--------------|
|                                       | Education | Income | Health | Comfort | Transport | Unemployment level (inverted) | Crime (inverted) |              |              |
| Coefficient                           | 0,11      | 0,19   | 0,14   | 0,21    | 0,1       | 0,13                          | 0,13             |              |              |
| City of Saint-Petersburg              | 0,082     | 0,143  | 0,118  | 0,208   | 0,079     | 0,132                         | 0,096            | <b>0,859</b> | <b>0,141</b> |
| City of Moscow                        | 0,108     | 0,172  | 0,063  | 0,206   | 0,078     | 0,132                         | 0,084            | <b>0,843</b> | <b>0,157</b> |
| Yamalo-Nenets Autonomous Okrug        | 0,023     | 0,188  | 0,033  | 0,199   | 0,067     | 0,129                         | 0,069            | <b>0,709</b> | <b>0,291</b> |
| Magadan Region                        | 0,009     | 0,160  | 0,123  | 0,178   | 0,073     | 0,115                         | 0,032            | <b>0,690</b> | <b>0,310</b> |
| Khanty-Mansi Autonomous Okrug – Yugra | 0,024     | 0,161  | 0,053  | 0,180   | 0,057     | 0,126                         | 0,078            | <b>0,679</b> | <b>0,321</b> |
| Moscow Region                         | 0,059     | 0,138  | 0,043  | 0,151   | 0,058     | 0,125                         | 0,091            | <b>0,665</b> | <b>0,335</b> |
| Murmansk Region                       | 0,018     | 0,139  | 0,073  | 0,193   | 0,075     | 0,111                         | 0,056            | <b>0,664</b> | <b>0,336</b> |
| Chukotka Autonomous Okrug             | 0,002     | 0,158  | 0,137  | 0,186   | 0,000     | 0,119                         | 0,060            | <b>0,662</b> | <b>0,338</b> |
| Kamchatka Krai                        | 0,000     | 0,151  | 0,089  | 0,173   | 0,077     | 0,119                         | 0,044            | <b>0,653</b> | <b>0,347</b> |
| Republic of North Ossetia – Alania    | 0,029     | 0,074  | 0,094  | 0,202   | 0,083     | 0,075                         | 0,071            | <b>0,627</b> | <b>0,373</b> |
| Republic of Tatarstan                 | 0,047     | 0,119  | 0,014  | 0,193   | 0,047     | 0,122                         | 0,075            | <b>0,616</b> | <b>0,384</b> |
| Belgorod Region                       | 0,028     | 0,108  | 0,024  | 0,168   | 0,069     | 0,119                         | 0,095            | <b>0,611</b> | <b>0,389</b> |
| Kaliningrad Region                    | 0,048     | 0,090  | 0,048  | 0,180   | 0,063     | 0,116                         | 0,065            | <b>0,610</b> | <b>0,390</b> |
| Khabarovsk Krai                       | 0,027     | 0,126  | 0,078  | 0,145   | 0,068     | 0,119                         | 0,045            | <b>0,608</b> | <b>0,392</b> |
| Sakhalin Region                       | 0,004     | 0,152  | 0,129  | 0,148   | 0,018     | 0,112                         | 0,039            | <b>0,601</b> | <b>0,399</b> |
| Lipetsk Region                        | 0,026     | 0,102  | 0,045  | 0,167   | 0,054     | 0,120                         | 0,087            | <b>0,601</b> | <b>0,399</b> |
| Stavropol Krai                        | 0,025     | 0,092  | 0,047  | 0,169   | 0,075     | 0,114                         | 0,077            | <b>0,599</b> | <b>0,401</b> |
| Nizhny Novgorod Region                | 0,048     | 0,104  | 0,052  | 0,149   | 0,044     | 0,118                         | 0,072            | <b>0,586</b> | <b>0,414</b> |
| Voronezh Region                       | 0,039     | 0,101  | 0,070  | 0,138   | 0,036     | 0,120                         | 0,073            | <b>0,578</b> | <b>0,422</b> |
| Tula Region                           | 0,020     | 0,097  | 0,041  | 0,149   | 0,053     | 0,119                         | 0,097            | <b>0,577</b> | <b>0,423</b> |
| Orenburg Region                       | 0,034     | 0,091  | 0,041  | 0,158   | 0,062     | 0,116                         | 0,070            | <b>0,573</b> | <b>0,427</b> |
| Tomsk Region                          | 0,059     | 0,102  | 0,089  | 0,118   | 0,037     | 0,110                         | 0,056            | <b>0,570</b> | <b>0,430</b> |

| Region                       | Indicator |        |        |         |           |                               |                  | Results | Final index |
|------------------------------|-----------|--------|--------|---------|-----------|-------------------------------|------------------|---------|-------------|
|                              | Education | Income | Health | Comfort | Transport | Unemployment level (inverted) | Crime (inverted) |         |             |
| Bashkortostan Republic       | 0,033     | 0,105  | 0,031  | 0,140   | 0,072     | 0,116                         | 0,070            | 0,567   | 0,433       |
| Sverdlovsk Region            | 0,030     | 0,111  | 0,045  | 0,136   | 0,051     | 0,117                         | 0,072            | 0,563   | 0,437       |
| Novosibirsk Region           | 0,042     | 0,088  | 0,083  | 0,149   | 0,046     | 0,107                         | 0,047            | 0,562   | 0,438       |
| Kursk Region                 | 0,026     | 0,096  | 0,074  | 0,129   | 0,036     | 0,118                         | 0,080            | 0,560   | 0,440       |
| Primorsky Krai               | 0,035     | 0,109  | 0,079  | 0,103   | 0,066     | 0,112                         | 0,055            | 0,559   | 0,441       |
| Samara Region                | 0,049     | 0,102  | 0,035  | 0,173   | 0,008     | 0,119                         | 0,072            | 0,558   | 0,442       |
| Ryazan Region                | 0,030     | 0,083  | 0,056  | 0,133   | 0,040     | 0,119                         | 0,095            | 0,556   | 0,444       |
| Republic of Adygea           | 0,020     | 0,086  | 0,022  | 0,142   | 0,096     | 0,096                         | 0,090            | 0,551   | 0,449       |
| Penza Region                 | 0,023     | 0,088  | 0,040  | 0,137   | 0,054     | 0,117                         | 0,091            | 0,551   | 0,449       |
| Eyumen Region                | 0,043     | 0,098  | 0,053  | 0,132   | 0,055     | 0,118                         | 0,050            | 0,549   | 0,451       |
| Chechen Republic             | 0,065     | 0,072  | 0,000  | 0,148   | 0,053     | 0,068                         | 0,132            | 0,538   | 0,462       |
| Kabardino-Balkarian republic | 0,002     | 0,047  | 0,066  | 0,179   | 0,064     | 0,083                         | 0,098            | 0,538   | 0,462       |
| Krasnodar Krai               | 0,032     | 0,093  | 0,033  | 0,126   | 0,062     | 0,114                         | 0,076            | 0,536   | 0,464       |
| Saratov Region               | 0,031     | 0,069  | 0,082  | 0,126   | 0,032     | 0,117                         | 0,079            | 0,535   | 0,465       |
| Krasnoyarsk Krai             | 0,021     | 0,107  | 0,053  | 0,117   | 0,061     | 0,116                         | 0,056            | 0,530   | 0,470       |
| Omsk Region                  | 0,041     | 0,091  | 0,057  | 0,124   | 0,036     | 0,106                         | 0,075            | 0,529   | 0,471       |
| Yaroslav Region              | 0,040     | 0,105  | 0,054  | 0,128   | 0,022     | 0,111                         | 0,068            | 0,527   | 0,473       |
| Astrakhan Region             | 0,016     | 0,083  | 0,093  | 0,137   | 0,026     | 0,099                         | 0,074            | 0,527   | 0,473       |
| Ulyanovsk Region             | 0,030     | 0,082  | 0,034  | 0,120   | 0,050     | 0,119                         | 0,089            | 0,523   | 0,477       |
| Orlov Region                 | 0,041     | 0,086  | 0,039  | 0,138   | 0,026     | 0,111                         | 0,079            | 0,519   | 0,481       |
| Chuvashia Republic           | 0,039     | 0,073  | 0,048  | 0,117   | 0,035     | 0,114                         | 0,090            | 0,517   | 0,483       |
| Nenets Autonomous Okrug      | 0,007     | 0,171  | 0,021  | 0,117   | 0,051     | 0,098                         | 0,051            | 0,516   | 0,484       |
| Volgograd Region             | 0,037     | 0,086  | 0,057  | 0,141   | 0,021     | 0,111                         | 0,055            | 0,508   | 0,492       |
| Perm Krai                    | 0,024     | 0,105  | 0,044  | 0,126   | 0,042     | 0,112                         | 0,055            | 0,508   | 0,492       |
| Rostov Region                | 0,033     | 0,090  | 0,021  | 0,133   | 0,050     | 0,114                         | 0,066            | 0,506   | 0,494       |
| Komi Republic                | 0,020     | 0,111  | 0,061  | 0,117   | 0,061     | 0,103                         | 0,032            | 0,504   | 0,496       |
| Irkutsk Region               | 0,047     | 0,103  | 0,059  | 0,094   | 0,056     | 0,104                         | 0,040            | 0,502   | 0,498       |
| Kaluga Region                | 0,047     | 0,106  | 0,027  | 0,104   | 0,034     | 0,120                         | 0,060            | 0,499   | 0,501       |
| Tambovsk Region              | 0,017     | 0,094  | 0,035  | 0,137   | 0,019     | 0,119                         | 0,077            | 0,497   | 0,503       |

| Region                     | Indicator |        |        |         |           |                               |                  | Results      | Final index  |
|----------------------------|-----------|--------|--------|---------|-----------|-------------------------------|------------------|--------------|--------------|
|                            | Education | Income | Health | Comfort | Transport | Unemployment level (inverted) | Crime (inverted) |              |              |
| Mari El Republic           | 0,037     | 0,074  | 0,026  | 0,135   | 0,028     | 0,115                         | 0,083            | <b>0,497</b> | <b>0,503</b> |
| Bryansk Region             | 0,020     | 0,079  | 0,026  | 0,132   | 0,041     | 0,119                         | 0,079            | <b>0,497</b> | <b>0,503</b> |
| Chelyabinsk Region         | 0,029     | 0,101  | 0,023  | 0,135   | 0,056     | 0,112                         | 0,040            | <b>0,497</b> | <b>0,503</b> |
| Vladimir Region            | 0,030     | 0,091  | 0,018  | 0,121   | 0,036     | 0,118                         | 0,078            | <b>0,491</b> | <b>0,509</b> |
| Leningrad Region           | 0,010     | 0,118  | 0,005  | 0,108   | 0,051     | 0,119                         | 0,074            | <b>0,486</b> | <b>0,514</b> |
| Ivanovo Region             | 0,033     | 0,083  | 0,033  | 0,113   | 0,035     | 0,119                         | 0,069            | <b>0,485</b> | <b>0,515</b> |
| Kemerovo Region            | 0,016     | 0,104  | 0,050  | 0,113   | 0,058     | 0,110                         | 0,034            | <b>0,485</b> | <b>0,515</b> |
| Smolensk Region            | 0,025     | 0,068  | 0,078  | 0,102   | 0,036     | 0,112                         | 0,063            | <b>0,485</b> | <b>0,515</b> |
| Republic of Sakha          | 0,043     | 0,127  | 0,065  | 0,066   | 0,004     | 0,103                         | 0,075            | <b>0,483</b> | <b>0,517</b> |
| Udmurt Republic            | 0,026     | 0,100  | 0,037  | 0,126   | 0,029     | 0,117                         | 0,046            | <b>0,480</b> | <b>0,520</b> |
| Republic of Kalmykia       | 0,044     | 0,061  | 0,053  | 0,089   | 0,050     | 0,091                         | 0,089            | <b>0,476</b> | <b>0,524</b> |
| Kostroma Region            | 0,027     | 0,087  | 0,047  | 0,082   | 0,030     | 0,118                         | 0,074            | <b>0,464</b> | <b>0,536</b> |
| Mordovia Republic          | 0,015     | 0,065  | 0,027  | 0,121   | 0,025     | 0,117                         | 0,090            | <b>0,458</b> | <b>0,542</b> |
| Kirov Region               | 0,033     | 0,088  | 0,060  | 0,079   | 0,021     | 0,114                         | 0,062            | <b>0,457</b> | <b>0,543</b> |
| Altai Republic             | 0,020     | 0,077  | 0,035  | 0,118   | 0,041     | 0,109                         | 0,058            | <b>0,456</b> | <b>0,544</b> |
| Amur Region                | 0,014     | 0,115  | 0,078  | 0,077   | 0,049     | 0,111                         | 0,009            | <b>0,453</b> | <b>0,547</b> |
| Jewish Autonomous region   | 0,040     | 0,087  | 0,087  | 0,048   | 0,062     | 0,107                         | 0,022            | <b>0,451</b> | <b>0,549</b> |
| Arkhangelsk Region         | 0,025     | 0,119  | 0,058  | 0,058   | 0,030     | 0,107                         | 0,049            | <b>0,446</b> | <b>0,554</b> |
| Tver Region                | 0,027     | 0,088  | 0,053  | 0,060   | 0,029     | 0,118                         | 0,055            | <b>0,430</b> | <b>0,570</b> |
| Republic of Karelia        | 0,024     | 0,100  | 0,028  | 0,091   | 0,048     | 0,100                         | 0,035            | <b>0,425</b> | <b>0,575</b> |
| Pskov Region               | 0,023     | 0,080  | 0,034  | 0,051   | 0,048     | 0,112                         | 0,074            | <b>0,421</b> | <b>0,579</b> |
| Republic of Khakassia      | 0,016     | 0,086  | 0,015  | 0,101   | 0,047     | 0,108                         | 0,036            | <b>0,407</b> | <b>0,593</b> |
| Novgorod Region            | 0,013     | 0,092  | 0,037  | 0,048   | 0,046     | 0,120                         | 0,045            | <b>0,401</b> | <b>0,599</b> |
| Karachay-Cherkess Republic | 0,008     | 0,069  | 0,020  | 0,083   | 0,045     | 0,078                         | 0,092            | <b>0,395</b> | <b>0,605</b> |
| Vologda Region             | 0,016     | 0,096  | 0,006  | 0,066   | 0,029     | 0,116                         | 0,061            | <b>0,390</b> | <b>0,610</b> |
| Republic of Dagestan       | 0,015     | 0,056  | 0,017  | 0,048   | 0,048     | 0,071                         | 0,122            | <b>0,377</b> | <b>0,623</b> |
| Republic of Ingushetia     | 0,000     | 0,000  | 0,007  | 0,187   | 0,031     | 0,000                         | 0,126            | <b>0,351</b> | <b>0,649</b> |
| Zabaykalsky Krai           | 0,024     | 0,082  | 0,078  | 0,010   | 0,043     | 0,090                         | 0,023            | <b>0,349</b> | <b>0,651</b> |
| Buryatia Republic          | 0,026     | 0,089  | 0,054  | 0,004   | 0,045     | 0,091                         | 0,022            | <b>0,331</b> | <b>0,669</b> |

| <i>Region</i>         | <i>Indicator</i> |               |               |                |                  |                                      |                         | <i>Results</i> | <i>Final index</i> |
|-----------------------|------------------|---------------|---------------|----------------|------------------|--------------------------------------|-------------------------|----------------|--------------------|
|                       | <i>Education</i> | <i>Income</i> | <i>Health</i> | <i>Comfort</i> | <i>Transport</i> | <i>Unemployment level (inverted)</i> | <i>Crime (inverted)</i> |                |                    |
| <b>Kurgan Region</b>  | 0,017            | 0,078         | 0,007         | 0,046          | 0,025            | 0,098                                | 0,032                   | <b>0,303</b>   | <b>0,697</b>       |
| <b>Altai Republic</b> | 0,007            | 0,072         | 0,027         | 0,012          | 0,041            | 0,081                                | 0,039                   | <b>0,279</b>   | <b>0,721</b>       |
| <b>Tyva Republic</b>  | 0,007            | 0,053         | 0,096         | 0,000          | 0,006            | 0,074                                | 0,000                   | <b>0,235</b>   | <b>0,765</b>       |

## Appendix 2. The results of the Russian Federation regional capacity calculation

| Region                       | MIA departments | Military units | Ratio of paved roads | Railroad density per 10 000 km <sup>2</sup> | Thermal generation by TPP (in MW) | Number of thermal generation sources | Length of thermal pipelines | MIA employees/ population | Income/GRP per capita | Taxes/GRP per capita | GRP per capita (in rubles) | Result/Index |
|------------------------------|-----------------|----------------|----------------------|---|-----------------------------------|--------------------------------------|-----------------------------|---------------------------|-----------------------|----------------------|----------------------------|--------------|
| Karachay-Cherkess Republic   | 0,009           | 0,002          | 0,007                | 0,002                                       | 0,000                             | 0,001                                | 0,003                       | 0,028                     | 0,005                 | 0,007                | 0,001                      | <b>0,065</b> |
| Republic of Khakassia        | 0,010           | 0,003          | 0,008                | 0,005                                       | 0,004                             | 0,003                                | 0,007                       | 0,015                     | 0,002                 | 0,004                | 0,004                      | <b>0,066</b> |
| Jewish Autonomous region     | 0,005           | 0,001          | 0,007                | 0,007                                       | 0,001                             | 0,002                                | 0,003                       | 0,036                     | 0,003                 | 0,007                | 0,003                      | <b>0,075</b> |
| Altai Republic               | 0,008           | 0,000          | 0,005                | 0,000                                       | 0,000                             | 0,008                                | 0,003                       | 0,032                     | 0,007                 | 0,013                | 0,001                      | <b>0,078</b> |
| Kabardino-Balkarian Republic | 0,008           | 0,012          | 0,008                | 0,005                                       | 0,002                             | 0,005                                | 0,006                       | 0,024                     | 0,004                 | 0,005                | 0,001                      | <b>0,078</b> |
| Republic of Kalmykia         | 0,010           | 0,002          | 0,013                | 0,001                                       | 0,000                             | 0,010                                | 0,001                       | 0,031                     | 0,005                 | 0,007                | 0,002                      | <b>0,083</b> |
| Republic of Adygea           | 0,008           | 0,010          | 0,009                | 0,010                                       | 0,000                             | 0,002                                | 0,003                       | 0,025                     | 0,005                 | 0,019                | 0,001                      | <b>0,092</b> |
| Magadan Region               | 0,007           | 0,006          | 0,002                | 0,000                                       | 0,002                             | 0,001                                | 0,005                       | 0,055                     | 0,003                 | 0,006                | 0,012                      | <b>0,100</b> |
| Republic of Ingushetia       | 0,008           | 0,003          | 0,007                | 0,005                                       | 0,014                             | 0,000                                | 0,000                       | 0,029                     | 0,032                 | 0,003                | 0,000                      | <b>0,102</b> |
| Republic of Karelia          | 0,015           | 0,012          | 0,009                | 0,006                                       | 0,005                             | 0,004                                | 0,011                       | 0,030                     | 0,001                 | 0,012                | 0,004                      | <b>0,108</b> |
| Mari El Republic             | 0,014           | 0,016          | 0,014                | 0,003                                       | 0,005                             | 0,007                                | 0,008                       | 0,020                     | 0,007                 | 0,013                | 0,002                      | <b>0,109</b> |
| Mordovia Republic            | 0,020           | 0,006          | 0,014                | 0,010                                       | 0,003                             | 0,011                                | 0,008                       | 0,025                     | 0,002                 | 0,012                | 0,002                      | <b>0,113</b> |
| Tyva Republic                | 0,012           | 0,001          | 0,007                | 0,000                                       | 0,002                             | 0,011                                | 0,003                       | 0,065                     | 0,006                 | 0,006                | 0,001                      | <b>0,115</b> |
| Novgorod Region              | 0,018           | 0,013          | 0,010                | 0,010                                       | 0,004                             | 0,008                                | 0,011                       | 0,030                     | 0,002                 | 0,008                | 0,004                      | <b>0,115</b> |
| Chukotka Autonomous Okrug    | 0,006           | 0,001          | 0,000                | 0,000                                       | 0,001                             | 0,001                                | 0,003                       | 0,060                     | 0,010                 | 0,018                | 0,016                      | <b>0,116</b> |
| Kamchatka Krai               | 0,010           | 0,020          | 0,005                | 0,000                                       | 0,003                             | 0,006                                | 0,010                       | 0,036                     | 0,005                 | 0,014                | 0,007                      | <b>0,116</b> |
| Vologda Region               | 0,024           | 0,012          | 0,007                | 0,002                                       | 0,017                             | 0,010                                | 0,000                       | 0,027                     | 0,002                 | 0,011                | 0,004                      | <b>0,118</b> |
| Kostroma Region              | 0,021           | 0,008          | 0,009                | 0,005                                       | 0,005                             | 0,011                                | 0,011                       | 0,027                     | 0,003                 | 0,017                | 0,002                      | <b>0,119</b> |
| Smolensk Region              | 0,016           | 0,009          | 0,009                | 0,011                                       | 0,009                             | 0,010                                | 0,015                       | 0,022                     | 0,002                 | 0,013                | 0,002                      | <b>0,119</b> |
| Kurgan Region                | 0,023           | 0,003          | 0,016                | 0,005                                       | 0,006                             | 0,012                                | 0,013                       | 0,027                     | 0,003                 | 0,011                | 0,002                      | <b>0,120</b> |
| Orlov Region                 | 0,021           | 0,006          | 0,013                | 0,011                                       | 0,004                             | 0,021                                | 0,007                       | 0,026                     | 0,002                 | 0,007                | 0,002                      | <b>0,120</b> |

| <i>Region</i>                             | <i>MIA departments</i> | <i>Military units</i> | <i>Ratio of paved roads</i> | <i>Railroad density per 10 000 km<sup>2</sup></i> | <i>Thermal generation by TPP (in MW)</i> | <i>Number of thermal generation sources</i> | <i>Length of thermal pipelines</i> | <i>MIA employees/ population</i> | <i>Income/GRP per capita</i> | <i>Taxes/GRP per capita</i> | <i>GRP per capita (in rubles)</i> | <i>Result/Index</i> |
|---|------------------------|-----------------------|-----------------------------|---|--|---|------------------------------------|----------------------------------|------------------------------|-----------------------------|-----------------------------------|---------------------|
| <b>Tambov Region</b>                      | 0,022                  | 0,014                 | 0,016                       | 0,010   | 0,005                                    | 0,012                                       | 0,009                              | 0,026                            | 0,002                        | 0,004                       | 0,002                             | <b>0,122</b>        |
| <b>Republic of Dagestan</b>               | 0,042                  | 0,030                 | 0,006                       | 0,005   | 0,003                                    | 0,007                                       | 0,007                              | 0,019                            | 0,002                        | 0,001                       | 0,001                             | <b>0,123</b>        |
| <b>Pskov Region</b>                       | 0,021                  | 0,023                 | 0,006                       | 0,009   | 0,004                                    | 0,007                                       | 0,000                              | 0,027                            | 0,013                        | 0,011                       | 0,002                             | <b>0,123</b>        |
| <b>Chechen Republic</b>                   | 0,044                  | 0,017                 | 0,006                       | 0,009   | 0,001                                    | 0,002                                       | 0,004                              | 0,034                            | 0,007                        | 0,003                       | 0,000                             | <b>0,127</b>        |
| <b>Chuvashia Republic</b>                 | 0,022                  | 0,005                 | 0,015                       | 0,011   | 0,008                                    | 0,020                                       | 0,011                              | 0,019                            | 0,003                        | 0,015                       | 0,001                             | <b>0,129</b>        |
| <b>Penza Region</b>                       | 0,026                  | 0,016                 | 0,012                       | 0,009   | 0,009                                    | 0,014                                       | 0,014                              | 0,020                            | 0,001                        | 0,009                       | 0,002                             | <b>0,132</b>        |
| <b>Ivanovo Region</b>                     | 0,021                  | 0,022                 | 0,009                       | 0,008   | 0,010                                    | 0,008                                       | 0,016                              | 0,023                            | 0,003                        | 0,014                       | 0,001                             | <b>0,134</b>        |
| <b>Lypetsk Region</b>                     | 0,020                  | 0,008                 | 0,011                       | 0,015   | 0,011                                    | 0,028                                       | 0,012                              | 0,020                            | 0,002                        | 0,005                       | 0,004                             | <b>0,136</b>        |
| <b>Ulyanovsk Region</b>                   | 0,012                  | 0,008                 | 0,014                       | 0,009   | 0,017                                    | 0,017                                       | 0,016                              | 0,017                            | 0,002                        | 0,025                       | 0,002                             | <b>0,138</b>        |
| <b>Murmansk Region</b>                    | 0,015                  | 0,035                 | 0,014                       | 0,003   | 0,012                                    | 0,002                                       | 0,014                              | 0,029                            | 0,003                        | 0,009                       | 0,006                             | <b>0,140</b>        |
| <b>Belgorod Region</b>                    | 0,020                  | 0,007                 | 0,017                       | 0,012   | 0,007                                    | 0,030                                       | 0,016                              | 0,016                            | 0,002                        | 0,010                       | 0,005                             | <b>0,141</b>        |
| <b>Tula Region</b>                        | 0,028                  | 0,008                 | 0,012                       | 0,017   | 0,008                                    | 0,010                                       | 0,022                              | 0,021                            | 0,002                        | 0,009                       | 0,004                             | <b>0,142</b>        |
| <b>Astrakhan Region</b>                   | 0,012                  | 0,023                 | 0,013                       | 0,006   | 0,006                                    | 0,008                                       | 0,011                              | 0,023                            | 0,001                        | 0,034                       | 0,005                             | <b>0,143</b>        |
| <b>Amur Region</b>                        | 0,022                  | 0,032                 | 0,005                       | 0,004   | 0,011                                    | 0,011                                       | 0,022                              | 0,030                            | 0,004                        | 0,000                       | 0,003                             | <b>0,144</b>        |
| <b>Sakhalin Region</b>                    | 0,013                  | 0,010                 | 0,012                       | 0,004   | 0,004                                    | 0,005                                       | 0,011                              | 0,035                            | 0,002                        | 0,024                       | 0,025                             | <b>0,145</b>        |
| <b>Arkhangelsk Region</b>                 | 0,022                  | 0,019                 | 0,005                       | 0,001   | 0,018                                    | 0,012                                       | 0,022                              | 0,025                            | 0,003                        | 0,015                       | 0,004                             | <b>0,146</b>        |
| <b>Tver Region</b>                        | 0,029                  | 0,019                 | 0,007                       | 0,010   | 0,012                                    | 0,012                                       | 0,022                              | 0,019                            | 0,002                        | 0,014                       | 0,003                             | <b>0,148</b>        |
| <b>Kursk Region</b>                       | 0,028                  | 0,020                 | 0,016                       | 0,016   | 0,008                                    | 0,011                                       | 0,013                              | 0,024                            | 0,002                        | 0,012                       | 0,003                             | <b>0,152</b>        |
| <b>Buryatia Republic</b>                  | 0,022                  | 0,014                 | 0,008                       | 0,002   | 0,005                                    | 0,010                                       | 0,019                              | 0,045                            | 0,014                        | 0,013                       | 0,001                             | <b>0,152</b>        |
| <b>Republic of North Ossetia – Alania</b> | 0,018                  | 0,028                 | 0,008                       | 0,008   | 0,002                                    | 0,010                                       | 0,004                              | 0,044                            | 0,025                        | 0,007                       | 0,001                             | <b>0,155</b>        |
| <b>Bryansk Region</b>                     | 0,024                  | 0,013                 | 0,016                       | 0,013   | 0,007                                    | 0,027                                       | 0,015                              | 0,023                            | 0,003                        | 0,013                       | 0,002                             | <b>0,156</b>        |
| <b>Komi Republic</b>                      | 0,018                  | 0,003                 | 0,012                       | 0,002   | 0,012                                    | 0,006                                       | 0,024                              | 0,030                            | 0,001                        | 0,040                       | 0,008                             | <b>0,156</b>        |
| <b>Kirov Region</b>                       | 0,039                  | 0,019                 | 0,010                       | 0,004   | 0,006                                    | 0,019                                       | 0,023                              | 0,023                            | 0,003                        | 0,011                       | 0,002                             | <b>0,159</b>        |
| <b>Yaroslavl Region</b>                   | 0,018                  | 0,014                 | 0,013                       | 0,008   | 0,017                                    | 0,011                                       | 0,022                              | 0,024                            | 0,002                        | 0,028                       | 0,004                             | <b>0,160</b>        |
| <b>Vladimir Region</b>                    | 0,015                  | 0,027                 | 0,013                       | 0,015   | 0,011                                    | 0,015                                       | 0,023                              | 0,022                            | 0,002                        | 0,017                       | 0,002                             | <b>0,160</b>        |
| <b>Udmurt Republic</b>                    | 0,023                  | 0,012                 | 0,010                       | 0,009   | 0,012                                    | 0,015                                       | 0,023                              | 0,018                            | 0,002                        | 0,039                       | 0,003                             | <b>0,166</b>        |

| <i>Region</i>                  | <i>MIA departments</i> | <i>Military units</i> | <i>Ratio of paved roads</i> | <i>Railroad density per 10 000 km<sup>2</sup></i> | <i>Thermal generation by TPP (in MW)</i> | <i>Number of thermal generation sources</i> | <i>Length of thermal pipelines</i> | <i>MIA employees/ population</i> | <i>Income/GRP per capita</i> | <i>Taxes/GRP per capita</i> | <i>GRP per capita (in rubles)</i> | <i>Result/ Index</i> |
|--------------------------------|------------------------|-----------------------|-----------------------------|---|--|---|------------------------------------|----------------------------------|------------------------------|-----------------------------|-----------------------------------|----------------------|
| Zabaykalsky Krai               | 0,035                  | 0,027                 | 0,006                       | 0,003   | 0,012                                    | 0,021                                       | 0,024                              | 0,024                            | 0,003                        | 0,009                       | 0,002                             | <b>0,166</b>         |
| Volgograd Region               | 0,039                  | 0,014                 | 0,016                       | 0,007   | 0,009                                    | 0,015                                       | 0,027                              | 0,019                            | 0,002                        | 0,017                       | 0,003                             | <b>0,166</b>         |
| Tomsk Region                   | 0,018                  | 0,010                 | 0,008                       | 0,001   | 0,006                                    | 0,007                                       | 0,019                              | 0,049                            | 0,002                        | 0,043                       | 0,005                             | <b>0,168</b>         |
| Ryazan Region                  | 0,023                  | 0,024                 | 0,013                       | 0,011   | 0,009                                    | 0,007                                       | 0,014                              | 0,021                            | 0,002                        | 0,042                       | 0,003                             | <b>0,169</b>         |
| Kaluga Region                  | 0,013                  | 0,048                 | 0,010                       | 0,013   | 0,009                                    | 0,008                                       | 0,015                              | 0,020                            | 0,002                        | 0,029                       | 0,004                             | <b>0,172</b>         |
| Stavropol Krai                 | 0,031                  | 0,039                 | 0,012                       | 0,006   | 0,009                                    | 0,018                                       | 0,016                              | 0,022                            | 0,002                        | 0,014                       | 0,002                             | <b>0,173</b>         |
| Voronezh Region                | 0,031                  | 0,017                 | 0,014                       | 0,011   | 0,019                                    | 0,027                                       | 0,023                              | 0,017                            | 0,002                        | 0,009                       | 0,003                             | <b>0,174</b>         |
| Primorsky Krai                 | 0,035                  | 0,028                 | 0,007                       | 0,004   | 0,015                                    | 0,014                                       | 0,028                              | 0,030                            | 0,003                        | 0,012                       | 0,004                             | <b>0,180</b>         |
| Khabarovsk Krai                | 0,027                  | 0,037                 | 0,006                       | 0,001   | 0,020                                    | 0,011                                       | 0,025                              | 0,029                            | 0,002                        | 0,018                       | 0,005                             | <b>0,181</b>         |
| Nenets Autonomous Okrug        | 0,000                  | 0,002                 | 0,005                       | 0,000   | 0,010                                    | 0,012                                       | 0,001                              | 0,035                            | 0,001                        | 0,041                       | 0,075                             | <b>0,183</b>         |
| Omsk Region                    | 0,035                  | 0,012                 | 0,015                       | 0,002   | 0,011                                    | 0,022                                       | 0,030                              | 0,032                            | 0,002                        | 0,028                       | 0,003                             | <b>0,192</b>         |
| Saratov Region                 | 0,044                  | 0,019                 | 0,014                       | 0,011   | 0,010                                    | 0,024                                       | 0,023                              | 0,021                            | 0,002                        | 0,024                       | 0,002                             | <b>0,194</b>         |
| Republic of Sakha              | 0,037                  | 0,006                 | 0,002                       | 0,000   | 0,020                                    | 0,018                                       | 0,055                              | 0,023                            | 0,000                        | 0,022                       | 0,011                             | <b>0,195</b>         |
| Kemerovo Region                | 0,045                  | 0,012                 | 0,008                       | 0,008   | 0,025                                    | 0,016                                       | 0,045                              | 0,026                            | 0,002                        | 0,006                       | 0,004                             | <b>0,197</b>         |
| Orenburg Region                | 0,035                  | 0,017                 | 0,007                       | 0,006   | 0,009                                    | 0,026                                       | 0,026                              | 0,021                            | 0,001                        | 0,045                       | 0,004                             | <b>0,198</b>         |
| Tyumen Region                  | 0,023                  | 0,005                 | 0,013                       | 0,003   | 0,041                                    | 0,034                                       | 0,024                              | 0,022                            | 0,002                        | 0,027                       | 0,008                             | <b>0,200</b>         |
| Kaliningrad Region             | 0,017                  | 0,051                 | 0,012                       | 0,021   | 0,007                                    | 0,015                                       | 0,012                              | 0,020                            | 0,004                        | 0,044                       | 0,004                             | <b>0,207</b>         |
| Novosibirsk Region             | 0,044                  | 0,034                 | 0,007                       | 0,004   | 0,027                                    | 0,017                                       | 0,043                              | 0,020                            | 0,002                        | 0,012                       | 0,004                             | <b>0,213</b>         |
| Bashkortostan Republic         | 0,058                  | 0,010                 | 0,007                       | 0,005   | 0,024                                    | 0,026                                       | 0,048                              | 0,016                            | 0,000                        | 0,022                       | 0,003                             | <b>0,220</b>         |
| Altai Republic                 | 0,058                  | 0,028                 | 0,008                       | 0,004   | 0,016                                    | 0,045                                       | 0,039                              | 0,005                            | 0,003                        | 0,013                       | 0,001                             | <b>0,220</b>         |
| Irkutsk Region                 | 0,029                  | 0,035                 | 0,006                       | 0,001   | 0,035                                    | 0,017                                       | 0,044                              | 0,012                            | 0,002                        | 0,034                       | 0,005                             | <b>0,220</b>         |
| Perm Krai                      | 0,049                  | 0,012                 | 0,007                       | 0,005   | 0,029                                    | 0,019                                       | 0,038                              | 0,024                            | 0,000                        | 0,034                       | 0,004                             | <b>0,222</b>         |
| Yamalo-Nenets Autonomous Okrug | 0,015                  | 0,001                 | 0,015                       | 0,000   | 0,011                                    | 0,004                                       | 0,024                              | 0,031                            | 0,001                        | 0,060                       | 0,061                             | <b>0,222</b>         |
| Chelyabinsk Region             | 0,048                  | 0,032                 | 0,011                       | 0,009   | 0,005                                    | 0,022                                       | 0,064                              | 0,020                            | 0,002                        | 0,013                       | 0,003                             | <b>0,230</b>         |
| Leningrad Region               | 0,039                  | 0,065                 | 0,010                       | 0,014   | 0,021                                    | 0,012                                       | 0,030                              | 0,000                            | 0,002                        | 0,034                       | 0,005                             | <b>0,232</b>         |
| Republic of Tatarstan          | 0,057                  | 0,012                 | 0,013                       | 0,006   | 0,046                                    | 0,036                                       | 0,036                              | 0,017                            | 0,002                        | 0,036                       | 0,006                             | <b>0,268</b>         |
| Krasnoyarsk Krai               | 0,056                  | 0,028                 | 0,007                       | 0,000   | 0,038                                    | 0,021                                       | 0,058                              | 0,018                            | 0,002                        | 0,033                       | 0,008                             | <b>0,269</b>         |
| Samara Region                  | 0,047                  | 0,031                 | 0,014                       | 0,012   | 0,033                                    | 0,028                                       | 0,039                              | 0,020                            | 0,002                        | 0,042                       | 0,004                             | <b>0,274</b>         |



| <i>Region</i>                                | <i>MIA departments</i> | <i>Military units</i> | <i>Ratio of paved roads</i> | <i>Railroad density per 10 000 km<sup>2</sup></i> | <i>Thermal generation by TPP (in MW)</i> | <i>Number of thermal generation sources</i> | <i>Length of thermal pipelines</i> | <i>MIA employees/population</i> | <i>Income/GRP per capita</i> | <i>Taxes/GRP per capita</i> | <i>GRP per capita (in rubles)</i> | <i>Result/Index</i> |
|--|------------------------|-----------------------|-----------------------------|---|--|---|------------------------------------|---------------------------------|------------------------------|-----------------------------|-----------------------------------|---------------------|
| <b>Nizhny Novgorod Region</b>                | 0,054                  | 0,044                 | 0,015                       | 0,007   | 0,033                                    | 0,032                                       | 0,047                              | 0,020                           | 0,002                        | 0,019                       | 0,003                             | <b>0,277</b>        |
| <b>Krasnodar Krai</b>                        | 0,053                  | 0,062                 | 0,011                       | 0,014   | 0,018                                    | 0,035                                       | 0,044                              | 0,021                           | 0,002                        | 0,014                       | 0,003                             | <b>0,277</b>        |
| <b>Khanty-Mansi Autonomous Okrug – Yugra</b> | 0,028                  | 0,006                 | 0,016                       | 0,001   | 0,027                                    | 0,014                                       | 0,041                              | 0,024                           | 0,001                        | 0,092                       | 0,028                             | <b>0,277</b>        |
| <b>Rostov Region</b>                         | 0,053                  | 0,056                 | 0,014                       | 0,009   | 0,025                                    | 0,064                                       | 0,028                              | 0,017                           | 0,002                        | 0,012                       | 0,003                             | <b>0,282</b>        |
| <b>Sverdlovsk Region</b>                     | 0,072                  | 0,058                 | 0,012                       | 0,008   | 0,042                                    | 0,023                                       | 0,090                              | 0,022                           | 0,002                        | 0,014                       | 0,005                             | <b>0,348</b>        |
| <b>City of Saint-Petersburg</b>              | 0,072                  | 0,032                 | 0,016                       | 0,144   | 0,055                                    | 0,012                                       | 0,000                              | 0,021                           | 0,002                        | 0,033                       | 0,007                             | <b>0,395</b>        |
| <b>Moscow Region</b>                         | 0,120                  | 0,113                 | 0,014                       | 0,023   | 0,092                                    | 0,042                                       | 0,131                              | 0,016                           | 0,002                        | 0,025                       | 0,005                             | <b>0,583</b>        |
| <b>City of Moscow</b>                        | 0,121                  | 0,146                 | 0,017                       | 0,090   | 0,112                                    | 0,003                                       | 0,104                              | 0,020                           | 0,002                        | 0,020                       | 0,014                             | <b>0,650</b>        |