

The Influence of the Structure of Modern Russian Society on the Economy

Sergey A. Surkov*

International Institute of Management LINK, Moscow, Russia

Ellen G. Trofimova

Russian Medical Academy of Continuous Professional Education, Moscow, Russia

Abstract

The structure of modern Russian society, consisting, according to the authors, of four main aggregations, is considered. Among them there are "New Russians", "Old Russians", "The ruling elite" and "The swamp". The recoil from each aggregation is determined. The cumulative recoils from all aggregations were normalized on the population of the country, were compared with the real level of GDP per capita, and as a result, a satisfactory correlation was obtained. It has been established that this calculated indicator lags behind the real by more than four years, due to negative phenomena in public life.

Keywords: Russian society; National economy; Social aggregation.

1. Introduction

The structure of various societies is intensively discussed by researchers, but the most interesting is the case of modern Russian society, which has relatively recently undergone transformations, relating primarily to its economic basis. Russian society is the object of keen interest of foreign researchers, who tirelessly breed a variety of hypotheses. They explain their problems in resolving this issue, for example, by the "mysterious Russian soul", without taking into account the multinational character of the population of Russia. Also the "scientific" explanation by "barbarity" of the people of Russia is used. But as a rule, approaches to the study of the nature of the processes occurring in modern Russia are far from the real state of things. In Russia, clan-corporate capitalism, which is different from other countries, has been formed, which accounts for the peculiarities of the domestic and foreign policy of the Russian state. This article is devoted to the analysis of today's condition of the Russian society.

2. Literature Review

Rapoza (2018), notes that "over the last five years, Russian GDP has shrunk by a little more than a trillion dollars. Last year, Russia's economy was worth \$1.6 trillion, less than India (\$1.9 trillion) and Brazil (\$2.05 trillion). It's also around 14 times smaller than the Chinese economy".

This source provides information only on general economic indicators.

Ivatkina (2018), indicates that on social performance ratings, such as average life expectancy Russia is in the lower third of the list countries.

The author also provides general information on social indicators, but says nothing about the structure of Russian society.

Greene (2011), indicates that "individuals of the non-elite are pushed out of the common space, in the name of harmony and stability, but are then increasingly deprived of access to it altogether, as the captured state redistributes the benefits of the public space to the elite". He further notes that "Russia with a severely fractured political and social space, a stagnant economy and extremely low levels of political identification between citizens and the state to which they nominally belong".

In this source only the general social and economic circumstances in the Russian society are lit, but data on structure of the Russian society do not contain.

Hays (2016), emphasizes that "older Russians have found adapting to the complexities and challenges of post-Soviet society much more difficult than have their younger compatriots, so the former often preserve as much as possible of their former lives, garnished with nostalgia for an idealized Soviet past. Society has traditionally been divided into an upper class and a lower class".

Here there is some information about the structure of Russian society, but they are very general in nature.

According to Gontmakher (2016), "before the crisis of 2014-2016 the Russian society's structure was as following: The number of rich - 1-2%. Middle class - 15-20%, below middle class - 30-35%, poor - 40-50%. These people include ... single non-working pensioners, families with disabled or chronically ill, families with 2 and more kids under 18, single mothers [or single fathers]".

Data on property stratification of the Russian society are provided in this source, but there is nothing about its concrete social structure.

The purpose of this article is to describe the socio-economic structure of modern Russian society.

*Corresponding Author

3. Materials and Methods

As an object of a research the population of Russia is chosen. The method of research is content analysis of information on the Internet using four search engines Google, Yandex, Rambler and Mail. The sources on the topic of the article, found on the first ten pages of the search engines are selected.

4. Theory

Based on the literature data, the following hypothesis can be put forward.

Hypothesis: modern Russian society can be represented as society consisting of four main aggregations.

Here we use the most general term "aggregation" because of the vagueness of boundaries and the defining parameters for these formations.

Thus, the modern Russian society can be divided into the following aggregation:

"New Russians" are the people who adapted to new conditions and showed the abilities which are obviously distinguishing them in the most different areas. They are creators - artists, talented engineers, architects, designers, artists, successful businessmen, lawyers, that is, those who have learned to sell their knowledge and skills on the free market;

"Old Russians" are representatives of the intellectuals still Soviet period. They all understand, but the real levers of power in their hands there and nobody listens to them.

"The ruling elite" is closed on its own interests and makes the regulatory and managerial influence impact on society, in fact, only when these interests are infringed.

"The swamp" are those people who want to do nothing in life for its improvement.

Schematically, the structure of modern Russian society can be represented as shown in Fig.1.

Figure-1. Schematic image of model the Russian society



The total recoil from all these aggregations is

$$G_{\Sigma} = (\Sigma F_i * N_i), \tag{1}$$

where F_i is the recoil on each of the aggregations, N_i is the size of each aggregation.

Borisov (2017) reports that in the total number of all categories of the middle class “the administrative and administrative component is equal to 17.3%, the production of goods and services - 15.3%, sales, marketing - 11.1%, financial, accounting -19.9%, information technology support 6.6%, personnel - 5%, supply - 3.3%, security, security - 2.7%, advertising, PR - 2.3%, other - 24.1% ”.

Bush (2009), testifies that labor productivity in Russia has the following values: productivity in agriculture and fisheries in Russia is €1.8, productivity in the Russian industry per hour is €14.1, in trade in Russia productivity €8.5 per hour, in financial and insurance activities in Russia €24.6 per hour.

Titov (2018), gives the value of return in the field of ICT (Information and Computer Technologies) of the industry at \$75.000 per year, which corresponds to a labor productivity of \$38.1 per hour, or €33.7 per hour.

For aggregation "New Russians" the number of "New Russians" can be considered approximately equal to the number of the middle class. For the middle class in Russia, the average labor productivity can be determined by the formula

$$P_{\Sigma} = \Sigma P_j * K_j, \tag{2}$$

where P_j is labor productivity for different categories of middle class,
 K_j is the relative share of these categories.

Milov and Avshalumova (2010), provide data according to which it is possible to determine a recoil indicator on the personnel direction of \$10.3 per hour or €9.1 per hour.

Calculations using the formula (2) give the average value of labor productivity for the middle class
 $P_1 = (0.173+0.153)14.1+0.199*24.6+0.066*33.7+0.05*9.1+0.033*8.5+0.241*19.7=$
 $=4.60+4.90+2.22+0.46+0.28+4.75=17.21.$ (3)

This value should be normalized on the maximum recoil by category $P_{norm} = 17.21/24.6 = 0.70.$

A study led by Zubets (2018) presents data on the size of the middle class in Russia, which allow us to derive a formula for this indicator in a relative form

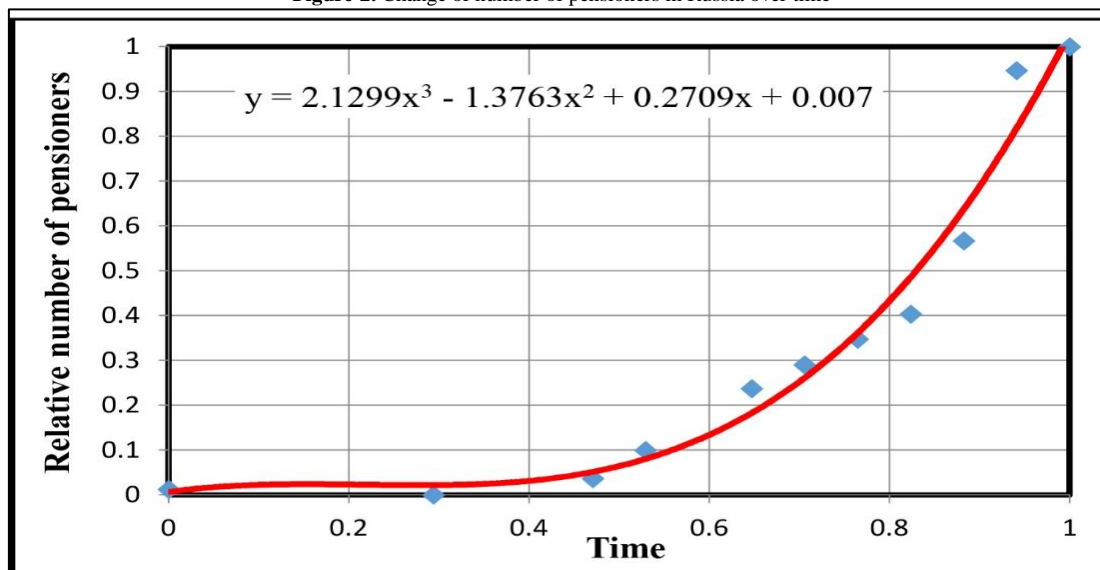
$$N_1 = -1.449t^2 + 0.942t + 0.555. \tag{4}$$

Full recoil from the middle class will make

$$P_2 = N_1 * P_{norm} = -1.014t^2 + 0.660t + 0.389. \tag{5}$$

The aggregation of "Old Russians" now, in essence, represents almost without exception pensioners and disabled people. The size of this aggregation according to a source (Anonymous, 2017a) is presented in Fig. 2.

Figure-2. Change of number of pensioners in Russia over time



The curve in Fig. 2 is described by the equation

$$N_2 = 2.130t^3 - 1.376t^2 + 0.271t + 0.01. \tag{6}$$

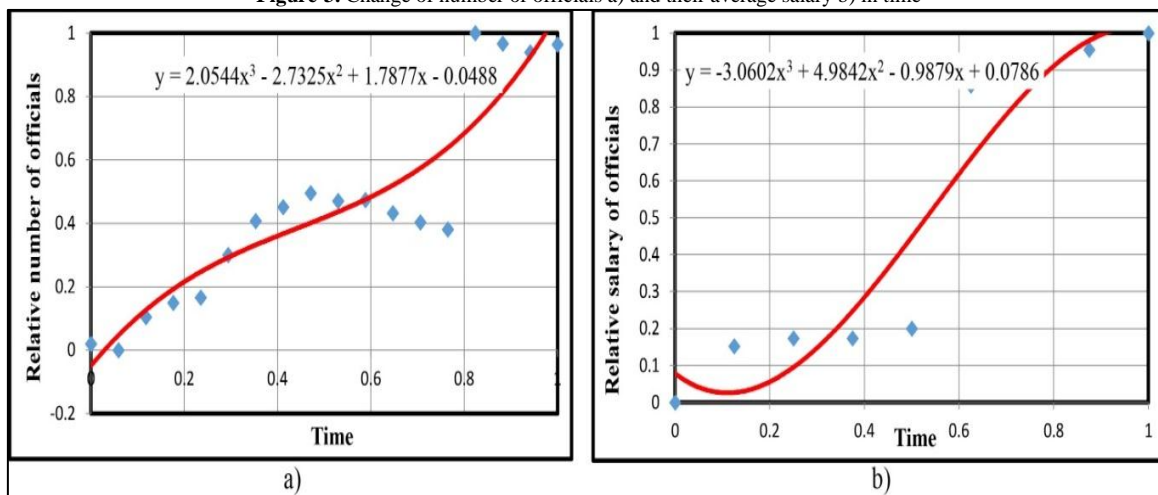
Ruveliva [12] results the average size of the pension in Russia 15400 RUB per month.

The average salary in Russia according to Belyaev (2019) in 2019 is 42550 RUB per month. It is customary to compare the average pension with the average salary in order to estimate the relative decline in people's incomes at retirement. Then you need to normalize the average pension by dividing it by the average salary, the result is a value of 0.362. The contribution of this aggregation is equal

$$N_3 = N_2 * P_2 = 0.771t^3 - 0.498t^2 + 0.098t + 0.004. \tag{7}$$

Aggregation of the "The ruling elite" is essentially a set of officials at all levels. The recoil of this aggregation does not have a strong impact on the society, respectively, the recoil of its can be considered by its wages. According to a source (Anonymous, 2019a) the schedule of Fig. 3a is constructed.

Figure-3. Change of number of officials a) and their average salary b) in time



The curve of Fig. 3a) is described by the equation

$$Y_1 = 2.054t^3 - 2.733t^2 + 1.788t - 0.050. \tag{8}$$

To obtain data on the average salary of officials we had to attract sources (Anonymous, 2011;2013;2015a;2019b; Bolgova, 2017; Fyodorov, 2018; Manuylova, 2018; Surnacheva, 2010). The curve of Fig. 3b) can be described by the equation

$$Y_2 = -3.060t^3 + 4.984t^2 - 0.988t + 0.079. \tag{9}$$

The contribution of this aggregation is equal to the product $Y_1 * Y_2$, or

$$P_3 = Y_1 * Y_2 = (2.054t^3 - 2.733t^2 + 1.788t - 0.050) (-3.060t^3 + 4.984t^2 - 0.988t + 0.079) = -6.285t^6 + 10.237t^5 - 1.981t^4 + 0.162t^3 + 8.363t^5 - 13.621t^4 + 2.700t^3 - 0.216t^2 - 5.471t^4 - 8.911t^3 - 1.767t^2 + 0.141t + 0.153t^3 - 0.249t^2 + 0.050t - 0.004. \tag{10}$$

In expression (10) we neglect expressions of the second order of smallness, including expressions with degree t above three. Then

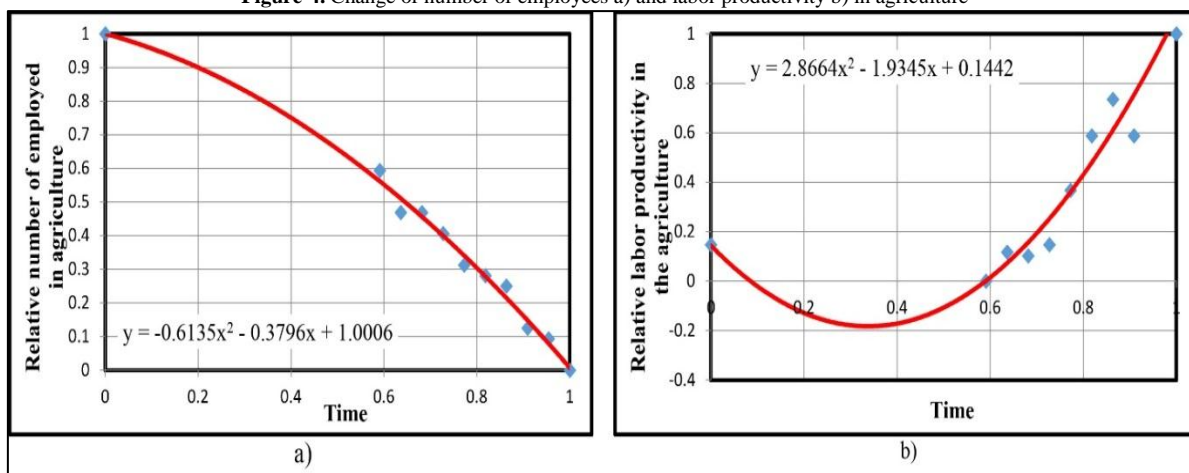
$$P_3 = Y_1 * Y_2 = +0.162t^3 + 2.700t^3 - 0.216t^2 + 0.141t + 0.153t^3 - 0.249t^2 + 0.050t - 8.911t^3 - 1.767t^2 = t^3(0.162 + 2.7 + 0.153 - 8.911) - t^2(0.216 + 0.249 + 1.767) + t(0.141 + 0.05) = -5.743t^3 - 2.232t^2 + 0.191. \tag{11}$$

The fourth aggregation "The swamp" yields a recoil consisting of three components, as presented in formula (12)

$$P_4 = P_{Agriculture} + P_{Manufacturing\ industry} + P_{Extractive\ industry}. \tag{12}$$

In order to determine the first component, we used the source data (Anonymous, 2015b). The graphs obtained on its basis are shown in Fig.4.

Figure-4. Change of number of employees a) and labor productivity b) in agriculture



For graph Fig. 4a) the equation has the form

$$Y_3 = -0.614t^2 - 0.380t + 1.001 \tag{13}$$

and for graph Fig. 4b) -

$$Y_4 = 2.866t^2 - 1.935t + 0.144. \tag{14}$$

Full return from agriculture will be

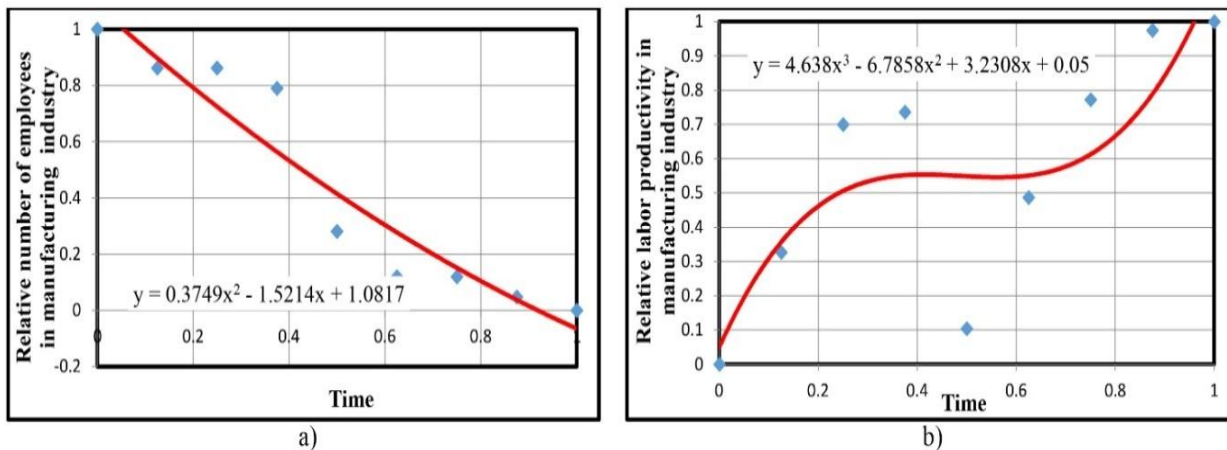
$$P_{Agriculture} = P_{average} * Y_3 * Y_4 = (1.8/24.6) (-0.614t^2 - 0.380t + 1.001) (2.866t^2 - 1.935t + 0.144) = 0.073(-1.760t^4 + 1.188t^3 - 0.088t^2 - 1.089t^3 + 0.735t^2 - 0.055t + 2.869t^2 - 1.937t + 0.144). \tag{15}$$

For simplification we will neglect the fourth degree of t then the formula (15) takes a form

$$P_{Agriculture} = 0.073[t^3(1.188 - 1.089)t^3 + t^2(-0.088 + 0.735 + 2.869) + t(1.937 - 0.055)] + 0.144 \approx t(0.257t + 0.17). \tag{16}$$

Data on manufacturing industry are taken from the source (Anonymous, 2015c). On the basis of these data schedules of Fig. 5 are constructed.

Figure-5. Number of employees a) and labor productivity b) in the manufacturing industry



Graph on Fig.5a) is described by the equation

$$Y_5 = 0.375t^2 - 1.521t + 1.082 \tag{17}$$

and the graph of Fig. 5b) -

$$Y_6 = 4.638t^3 - 6.786t^2 + 3.231t + 0.05. \tag{18}$$

Recoil from manufacturing industry is

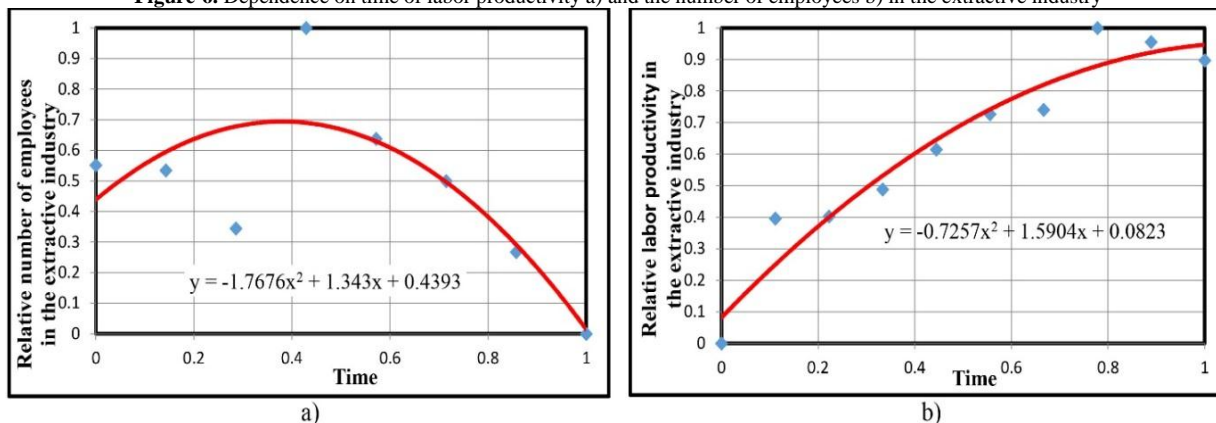
$$P_{\text{Manufacturing industry}} = P_{\text{avl}} * Y_5 * Y_6 = (14.1/24.6) (0.375t^2 - 1.521t + 1.082) (4.638t^3 - 6.786t^2 + 3.231t + 0.05) = 0.573(1.739t^5 - 2.545t^4 + 1.212t^3 + 0.019t^2 - 7.054t^4 + 10.322t^3 - 4.914t^2 - 0.076t + 5.018t^3 - 7.343t^2 + 3.496t + 0.054). \tag{19}$$

Let's neglect members of above the second order of smallness.

$$P_{\text{Manufacturing industry}} = 0.573(1.212t^3 + 10.322t^3 + 5.018t^3 + 0.019t^2 - 4.914t^2 - 0.076t - 7.343t^2 + 3.496t) = 0.573(16.552t^3 - 12.238t^2 + 3.420t) = 9.484t^3 - 7.012t^2 + 1.960t. \tag{20}$$

Extractive industry data were obtained from sources Masych et al. (2015) and Anonymous (2016). Based on these data, graphs are built. Fig.6.

Figure-6. Dependence on time of labor productivity a) and the number of employees b) in the extractive industry



From the data presented in Fig. 6, time dependencies are obtained

$$Y_7 = -1.768t^2 + 1.343t + 0.439, \tag{21}$$

$$Y_8 = -0.726t^2 + 1.590t + 0.082. \tag{22}$$

The enhancement factor for the extractive industry for 2016, according to the source (Anonymous, 2017b), is 4.43.

The contribution of this component is equal to

$$P_{\text{Extractive industry}} = P_{\text{m2}} * Y_7 * Y_8 = (4.43 * 8.5/24.6) (-1.768t^2 + 1.343t + 0.439) (-0.726t^2 + 1.590t + 0.082) = 1.531(1.347t^4 - 2.811t^3 - 0.145t^2 - 0.708t^3 + 2.135t^2 + 0.119t - 0.319t^2 + 0.698t + 0.036). \tag{23}$$

Let's neglect members of the second and above the order of smallness. Then

$$P_{\text{Extractive industry}} = 1.531(-0.145t^2 + 2.135t^2 + 0.119t - 0.319t^2 + 0.698t) = 2.551t^2 + 1.251t, \tag{24}$$

Overall result

$$P_{\Sigma} = (-1.014t^2 + 0.660t + 0.389) + (0.771t^3 - 0.498t^2 + 0.098t) + (5.743t^3 - 2.232t^2 + 0.191t) + (0.07t^3 + 0.257t^2 + 0.173t + 0.01) + (9.484t^3 - 7.012t^2 + 1.960t) + (2.551t^2 + 1.251t) = 4.582t^3 - 7.948t^2 + 4.333t + 0.389. \tag{25}$$

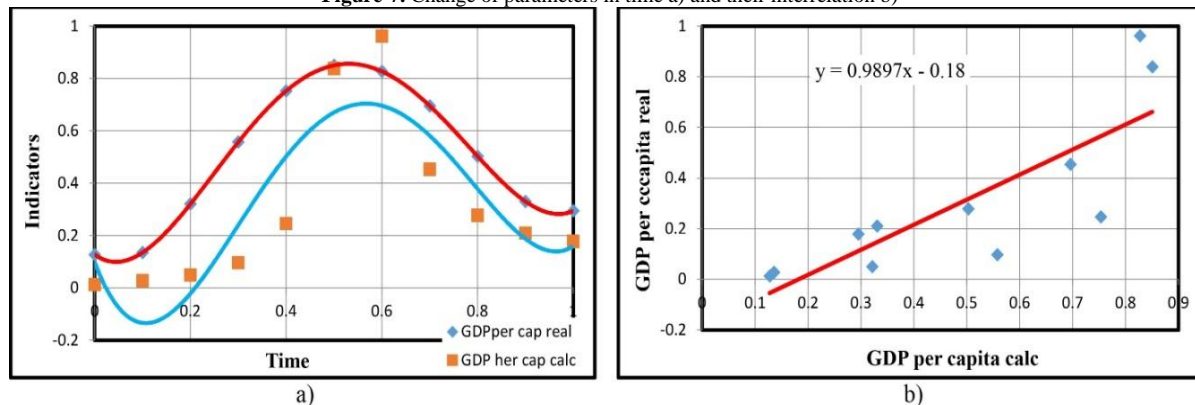
On the basis of the data a source (Anonymous, 2017c) the dependence of real GDP per capita on time is described by a polynomial

$$GDP_{\text{per capita}}^{\text{real}} = 14.459t^4 - 29.764t^3 + 16.785t^2 - 1.313t + 0.127. \tag{26}$$

5. Results

A comparison of the calculation results by formulas (25) and (26) is shown in Fig.7.

Figure-7. Change of parameters in time a) and their interrelation b)



In the calculations, the source data (Anonymous, 2018) was used for rationing, according to which the working time in 2018 was 1970 hours per year.

6. Discussion

The correlation coefficient for the graph in Fig. 7b) is 0.817 and is substantial for all significance levels greater than 0.01. The regression equation $y = 0,99t - 0,18$ shows that the calculated level of GDP per capita is lower than real by 18%, which is quite an acceptable level for this type of calculation.

At calculation of a design value of an indicator of GDP per capita used shift on 0.4 ranges of time, that is on 4.4 years. It means that the schedule is displaced at this value by the beginning of coordinates. Thus, the maximum calculated GDP per capita is reached for 4.4 years earlier. The reason may be corruption and embezzlement of public funds, which are not taken into account in the model, because it is difficult to find sources that give accurate figures for this factor.

7. Conclusion

When comparing real and calculated values, a quite acceptable value of the correlation coefficient is obtained, which can serve as confirmation of the hypothesis put forward.

8. Recommendations

To increase the return for the entire social mechanism, it is necessary to increase the return on the first and fourth aggregations, since it is small from the second and third aggregations and cannot be significantly increased in principle.

There are trends that suggest ways to increase the return from the first aggregation. These ways include the improvement of the creative climate, the change in people's attitudes towards intellectual achievements. To increase the return from the fourth aggregation, it is necessary to achieve an improvement in the investment climate with a transition to the area of preferential financing of post-industrial areas of activity.

References

- Anonymous (2011). The salary of officials in 2010. Website law office "Mamic, Musina and partners. Available: <http://www.mamich.ru/articles/text/176/>
- Anonymous (2013). Named the average salary of officials in Russia. Information and analytical portal Azerros. Available: <http://azerros.ru/news/13983-nazvana-srednyaya-zarplata-chinovnikov-v-rossii.html.07.10.2013>
- Anonymous (2015a). The average salary of federal officials in 2014 amounted to 109 thousand rubles. Website Arguments and Facts. Available: <http://www.aif.ru/money/mymoney/1457180>
- Anonymous (2015b). 5 issues to be resolved to the new Minister of Agriculture. Uniform information portal. Available: <http://ua-ru.info/V-mire/61562-5-problem-kotorye-predstoit-reshit-novomu-ministru-selskogo-hozyaystva.html>
- Anonymous (2015c). As far as the Russian industry is ready for the crisis? Website "Russia in the twenty-first century. Available: <http://21russia.ru/news/industry/2015-01-16/naskolko-rossiiskaya-promyshlennost-gotova-k-krizisu>
- Anonymous (2016). Dynamics of the number of employees by economic activities in the Russian Federation. Website Rational numbers. Available: <http://rationalnumbers.ru/all/dinamika-chislennosti-zanyatyh-povidam-ekonomicheskoy-deyatelnosti/>
- Anonymous (2017a). Number of pensioners in Russia. Statistics. Available: <https://franshiza.pro/myblog/statistika/chislennost-pensionerov-v-rossii.html>
- Anonymous (2017b). Industry, uncertainty and economic growth. №128. 15.02.2017-04.03.2017. Website "Comments on the State and business." Institute "Development Center of the National Research University Higher School of Economics". P.:15. Available: <https://dcenter.hse.ru/mirror/pubs/share/direct/203859896>
- Anonymous (2017c). Russian Federation - Gross domestic product per capita in current prices. Website Knoema. Available: <https://knoema.ru/atlas/%D0%A0%D0%BE%D1%81%D1%81%D0%B8%D0%B9%D1%81%D0%BA%D0%B0%D1%8F-%D0%A4%D0%B5%D0%B4%D0%B5%D1%80%D0%B0%D1%86%D0%B8%D1%8F%D0%92%D0%92%D0%9F-%D0%BD%D0%B0-%D0%B4%D1%83%D1%88%D1%83-%D0%BD%D0%B0%D1%81%D0%B5%D0%BB%D0%B5%D0%BD%D0%B8%D1%8F>
- Anonymous (2018). Russian: Factory calendar. Website TRUDko. Available: <http://trudko.ru/content/proizvodstvennyj-kalendar-2018>
- Anonymous (2019a). The number and personnel of state bodies and bodies of local self-government of the Russian Federation. Website of the Federal State Statistics Service. Available: http://www.gks.ru/wps/wcm/connect/rosstat_main/rosstat/ru/statistics/state/#
- Anonymous (2019b). Officials in Russia: the salary and the number for 2015. According to Rosstat, the average salaries of officials for the year grew to 111.3 thousand. Rubles. Information Agency REGNUM. Available: <https://regnum.ru/news/2090045.html>
- Belyaev, M. (2019). The size of the average salary in the Russian Federation. Website Consumer Right Protection. Available: <http://zpponline.ru/zarplata/srednyaya-zarplata>

- Bolgova, C. (2017). Rosstat said the average salary of officials in Russia. The largest amounts are in the government, the presidential administration and the Accounts Chamber. Komsomolskaya Pravda. 03.01.2017. Website "Komsomolskaya Pravda. Available: <https://www.kp.ru/daily/26648/3668750/>
- Borisov, A. (2017). The middle class, his salary, education and real estate - the criteria for success in 2018. Website Reconomica. Available: <https://reconomica.ru/%D1%8D%D0%BA%D0%BE%D0%BD%D0%BE%D0%BC%D0%B8%D0%BA%D0%B0/%D0%B0%D0%BD%D0%B0%D0%BB%D0%B8%D1%82%D0%B8%D0%BA%D0%B0/c%D1%80%D0%B5%D0%B4%D0%BD%D0%B8%D0%B9-%D0%BA%D0%BB%D0%B0%D1%81%D1%81-%D0%B2-%D1%80%D0%BE%D1%81%D1%81%D0%B8%D0%B8-2017/>
- Bush, J. (2009). Why is Russia's productivity so low? Website bloomberg. Available: <https://www.bloomberg.com/news/articles/2009-05-08/why-is-russias-productivity-so-low>
- Fyodorov, V. (2018). The average salary of Russian officials has risen to 118 thousand. Website Life#News. Available: https://life.ru/t/%D0%BD%D0%BE%D0%B2%D0%BE%D1%81%D1%82%D0%B8/1094973/sriedniaia_zarplata_rossiiskikh_chinovnikov_vyrosla_do_118_tysiach
- Gontmakher, E. (2016). The Class Structure of Russian Society. Website Elenasmmodels. Available: <https://blogs.elenasmmodels.com/en/the-class-structure-of-russian-society>
- Greene, S. A. (2011). *Russia: Society, politics and the search for community*. Website Eurozine. <https://www.eurozine.com/russia-society-politics-and-the-search-for-community/>
- Hays, J. (2016). Russian society. Website Facts and Detalais. Available: http://factsanddetails.com/russia/People_and_Life/sub9_2e/entry-5014.html
- Ivatkina, M. (2018). *Real economy of Russia: recession, fall of income, growth of taxes*. Website the First Russian Tsargrad. https://tsargrad.tv/articles/realnaja-jekonomika-rossii-recessija-padenie-dohodov-rost-nalogov_154928
- Manuylova, A. (2018). Officials salaries increased by inflation. Monitoring the job market. Newspaper Kommersant. Available: <https://www.kommersant.ru/doc/356613>
- Masych, M. A., Kaplyuk, E. V., Krasnyanskiy, A. S. and Tikhonina, A. V. (2015). Labor productivity industries: economic and statistical analysis. Fundamental research 12 (part 3). *Scientific journal*: Available: <https://fundamental-research.ru/ru/article/view?id=39590>
- Milov, G. and Avshalumova, R. (2010). The return on investment in human capital has fallen sharply in 2010. Website Vedomosti. Available: https://www.vedomosti.ru/management/articles/2010/10/14/vyzhimayut_menshe
- Rapoza, K. (2018). *In Russia, putin whistling past the graveyard*. Website forbs. <https://www.forbes.com/sites/kenrapoza/2018/11/01/in-russia-putin-whistling-past-the-graveyard/#7cb386095992>
- Surnacheva, E. (2010). White House richer Kremlin. Rosstat considered officials. Website Газета.Ru. Available: https://www.gazeta.ru/politics/2010/08/23_a_3410315.shtml
- Titov, B. (2018). Russia: from digitalization to digital economy. Institute of economy of growth of Stolypin P.A. Available: http://stolypin.institute/wp-content/uploads/2018/09/issledovanie_tsifrovaya-ekonomika-14-09-18-1.pdf
- Zubets, A. (2018). In the first half of 2018, the share of the middle class rose to 15%. Study of the Financial University under the Government of the Russian Federation. Available: http://www.fa.ru/org/div/cos/press/Documents/61_Middle_Class_Poverty_1H_2018.pdf