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WHERE IS A TEACHER HAPPY IN RUSSIA? INDICATORS OF TEACHERS' SALARIES

BASIC RESEARCH PROGRAM

WORKING PAPERS

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WHERE IS A TEACHER HAPPY IN RUSSIA?
INDICATORS OF TEACHERS' SALARIES

This article considers the uneven positions of school teachers in different regions of the Russian Federation. There exist numerous research works on the relation of school teachers' salaries to the characteristics of regional educational systems and regional economies. A range of indicators is used to calculate school teachers' salaries. It is necessary to consider the ratio of the teachers' salary to the average salary in the region, the latter serving as a target indicator in government programs, in combination with other indicators, such as the ratio of the salary to the price of a fixed set of goods and services and the ratio of the teachers' salary fund to total regional government expenditures. Research based on cluster data analysis statistical methods allowed the author to distinguish four types of regions. We used official data provided by Russian Federal State Statistics Service and the Russian Federal Treasury. The recommendations developed for each cluster of regions seek to improve the efficiency of the steps aimed at the implementation of the educational policy tasks through differentiating the support measures by the federal government.

JEL codes: H52, H73, I22, J31

Key words: Economics of education, labor market, salary, schools teachers' status, general education, regional educational policy.

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Introduction

According to the ideologues of the modernization of education in Russia, school teachers should be included in the process of reform. It is essential that teachers become middle class in Russian society. To do this, it is necessary to raise teachers' salaries, increasing the base salary and incentive payments. Public school boards should distribute of incentive payments. In addition, the mechanisms of teacher certification need to be updated. To ensure effective contract between teachers and schools its part, society should solve two problems. The first task is to attract talented youth to a teaching career. The second task is to restore or re-create a professional community of teachers, both in departments and schools, as well as with professional association representatives of various educational institutions. They form an environment in which the teacher works and develops, which evaluates successes and, if necessary, warns of misdeeds. This environment should create and maintain professional ethics and provide adequate quality educational programs and services ('Education and society ...', 2008).

For this reason, the decrees by Russia's president, issued on May 7, 2012, stipulated that the average salary of teachers working in secondary education should be equalized with the average salary of a particular region.

However, regions tend to have different economic, cultural and social conditions and different budgetary means for meeting this challenge. Thus, in order to formulate a federal policy in this field, one should identify the regions where this task is approached in a different way.

Therefore, we have not only analyzed the ratio of the salaries of school teachers to the average salary in the region, but we have put it in the context of other crucial socio-economic indicators.

This research was designed to resolve the following tasks:

- Analyze the existing research on the relationship of school teachers' salary to the economy of the region;
- Identify the indicators of absolute and relative school teachers' salary level;
- Identify regional clusters with different relative levels of school teachers' salaries;
- Suggest government policy measures regarding these clusters.

1. Interrelation of school teachers' salaries to regional economies

Studies have shown that the salaries of teachers affect the development of the regional education system.

Research indicates that with increased salaries, more capable and qualified personnel can be attracted into the field (Barber, Mourshed 2007; Figlio 1997; Hanushek, Kain, Rivkin 1999; Leigh 2009).

It should be mentioned that cross-industry mobility of school teachers in Russia is rather low. The cases of a teacher changing job for some other occupation are rather few. For example, in 2008 in Russia the average special experience in education was 9.4 years, compared to 8.5 years in science and culture, 3.8 in trade (Kapelushnikov and Lukyanova 2010, p. 167).

As regards the intra-industry mobility, research shows that the desire to get a job at another school is explained by the expected difference in the compensation level of the present to the future work places (Andruschak et al. 2010). A high salary level keeps teachers from moving to other sectors of the economy during their teaching career (Dolton, Van der Klaauw 1999; Ingersoll 2001a, 2001b; Murnane, Olsen 1989, 1990; Stinebrickner 1998, 1999a, 1999b, 1999c, 2001a, 2001b).

On the one hand, salary increases can rejuvenate teaching staff (Abankina, 2009); on the other hand, they can provide a disincentive to retire. A higher compensation level in some regions of Russia contributes to pensioners remaining in their jobs rather than younger personnel being hired (Agranovich, Froumin 2005).

Increasing salaries in the public sector may not significantly contribute to a reduction in corruption. As a rule, low salaries go hand in hand with corruption growth. The combination of salary increases (or relative salary increase) with a set of other measures could play a considerable role[3] in reducing the corruption level (INDEM, 2002).

There was found a correlation of the Trends in International Mathematics to Science Study (TIMMS) scores of different nations and the salary level of primary school teachers (Savitskaya, Chertykovtseva 2013). Thus, teachers' salary level affects the quality of education.

Besides, teachers' salary levels are determined by a range of regional factors.

Environmental conditions are the most fundamental factor determining teachers' salaries. Harsh climate conditions increase the costs of a school system unrelated to salaries thus decreasing teachers' salaries with the same amount of regional budgetary expenditure on education (Derkachev 2003).

The amount of potential budgetary and extra-budgetary resources that the school can obtain and spend on teachers' salaries (Baird, Landon 2004; Agranovish, Froumin 2005). The volume of a

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[3] Severe punishment for corruption, changing the notion of fair and unfair salary level in the public opinion, introducing a system of social guarantees, etc.

region's tax resources is often considered an indicator of the economic potential (Baird, Landon, 2004; Gimpelson, 2004; Derkachev, 2003). Another regional indicator is the Gross Regional Product (GRP) per capita, showing how economically developed the region is and what resources the school can potentially attract by providing extra-budgetary services in order to further channel this money into teachers' salaries (Agranovich, Froumin 2005).

Schools' extra-budgetary revenues can increase their payroll budget. When determining the target indicator of an 'average teacher' salary in relation to the average salary in the region, both budgetary and non-budgetary components should be taken into account. Thus, for instance, it has been revealed that the attractiveness of jobs with the public sector stems from teachers' non-monetary gains ('Russian Worker' 2011; Gimpelson, Oschepkov 2005). The out-of-school[4] component of teachers' salaries also proves to be very relevant: there are cases of a prospective teacher weighing the options when deciding their career – in this case they consider the whole potential aggregate income related to teaching. The HSE Education Economics Monitoring: Teacher Surveying Data (2012-2013) found that in 2011 the income from giving private classes and from additional occupations (without classes given at other schools) amounted to 110% of the teachers' income at their main work place; in 2012 this figure stood at 60%. Thus, the share of teachers' income received out of school is decreasing, though it still remains substantial. A possible reason for that is the increase of salary in school, which allows teachers to abandon other jobs.

Another factor influencing the regional labor market is a relative size of the public sector. The latter brings down the pay rates in the private sector acting as a 'grounding' anchor for salaries in the economy as a whole.. The higher the share of the public sector in the region, the more obvious its role as a monopsony (the presence of the single or the dominant customer on the market) and the stronger its downward pressure on the wages in the private sector (Gimpelson, Oschepkov 2005). Subsidized regions have few opportunities to develop alternative sectors of employment, apart from those in the public sector, including education (Gimpelson, Oschepkov 2005; Derkachev 2003).

Training teaching personnel increases the labor supply in the education sector, which negatively affects teachers' salary (Gimpelson, Oschepkov 2005).

The more intense the inter-school competition for teachers and the competition from alternative sectors is, the higher salaries become (Baird, Landon 2004; Gimpelson 2004; Gimpelson, Oschepkov 2005). Baird and Landon used the number of schools as a competition measure at the local level. In our view, another relevant factor is the competition from the non-government funded

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[4] The out-of-school or Non- budgetary component include payments for overflow work. Students' families pay this work.

schools that can be fully financed by extra-budgetary sources as stipulated in *On Education in the Russian Federation* Federal Law N273.

A high unemployment rate (through the concerns over a potential job loss and a failure to find a new one) forces teachers to make concessions to their employers and thus exerts downward pressure on the compensation rates (Gimpelson, Kapelyushnikov, Ratnikova 2003). At the same time, the Russian labor market adaptation model has an unemployment level that is significantly underestimated because of the existence of a large number of inefficient low-paid jobs. Therefore, unemployment influence on teachers' salaries in Russia is weaker than in Western countries where job loss prospects are much stronger.

In many developed countries, trade unions have a considerable impact and positively influence teachers' salaries (Baird, Landon, 2004). In our view, this factor can hardly be considered significant in Russia as trade unions do not play an important role in determining teachers' salary rates.

The teachers' human capital should contribute to their higher estimation on the labor market (Backer 2006). At the same time, a series of publications have shown that the return on education in Russia's public sector is close to nil or is even in the negative ('Russian worker…' 2011). A high qualification should allow choice in the labor market (OCED, 2003), which should lead to the increase of teachers' salaries.

Throughout the world, teaching is largely a female occupation. Empirical research convincingly demonstrates that the choice of a teaching career with women is an addition to the typical gender role where the family role and responsibilities dominate professional aspirations (Gimpelson, Oschepkov 2005). Thus, other factors being equal, this predominately female profession automatically makes salaries here lower than in other sectors of the economy.

Administration type can also affect the level of teachers' salaries. Financial means to increase teachers' salaries are provided at all government/management levels: federal, regional, municipal, educational institution. The practice of building relations between these levels is important. Financing by the federal center is a powerful source of income for the budget of those regions that are subsidized from the center (Derkachev 2003). The regions' strong standing in receiving budget transfers (Gimpelson, Oschepkov 2005) may facilitate the extension of resources available for salary increases for teachers.

Another factor of influence is the priority level of education among similar expenditure items (healthcare, culture, law enforcement, etc.) in the regional budgets (Derkachev 2003).

Fixing the teachers' salary rates at the level no lower than the average in the regional economy in order to calculate the rates for per capita financing in secondary education may have affected the level of real wage rates ('Materials…' 2013).

To increase the statistically registered salary rates, educational authorities and schools could introduce changes in payroll, employees' workload, and redistribute their functions (Gimpelson, Oschepkov 2005).

Increasing expenditure on teachers' salaries may reduce the share of expenditure on equipment and supplies, which will negatively affect the technological level of the educational process (Saburov, Derkachev 2006; Derkachev 2003). This virtually makes the education system the one for adult social security (Gimpelson, Oschepkov 2005).

The independence of local budgets makes it difficult to exert administrative pressure to increase teachers' salaries (Derkachev, 2003).

Changing educational institutions' status and making them more autonomous was supposed to increase their degree of their independence (Rudnik, Shishkin, Jakobson 2006; Abankina 2010; Abankina 2011), including their compensation rates.

The development of joint government and public management schemes in educational institutions should reduce the level of administrative pressure. The role of schools' stakeholders in distributing the teachers' incentives has been studied. In a series of cases the opinion of educators, teachers and other groups of interest proves significant in determining the compensation parameters (Andruschak et al., 2010). The practice of governing boards distributing the incentives shows that the representatives of the public tend to rely on the suggestions by the school's administration regarding the content of the educational process, its quality assessment, etc. Partly (as these public-appointed governors admit themselves) this attitude is explained by their insufficient competence in the questions under consideration (Kosaretsky S.G. et al., 2010).

2. School teachers' salaries indicators by the region

The ratio of a teachers' salary to the average salary in the region shows the competitiveness of the salary as compared to other employment opportunities. The reports by the World Bank (The World Bank 2012, 2013) state that those individuals considering teaching as a career find it rather relevant how much they will earn in comparison to other occupations. The report refers to the following research: Boyd et al., 2006b; Dolton, 1990; Wolter, Denzler, 2003. The principle of legislatively pegging the pay level to the rates existing in the private sector was called the 'prevailing pay rate' (Gimpelson, Oschepkov 2005; Gimpelson, Lukyanova 2006). This principle

exists in many developed countries. In the USA there is a federal law stipulating the pay rate for employees in public sector enterprises and for those financed from the state budget (Sharunina 2012). The experience of certain countries demonstrating high educational attainments has shown that the average salary rate of teachers cannot be considered very high; however, it is at the pay level of many civil servants (OECD 2011; Mourshed, Chijoke, Barber 2010; Carnoy et al. 2009). At the same time it should be taken into account that the salary is not the most relevant factor for teachers choosing their job (Roschina, Filippova 2006; Roschina 2010). However, it should be mentioned that the salary level of teachers across the world is not so impressive in comparison with the average salary of professionals having a university degree rather than in comparison with the average salary across the nation. In this case, it is only in Spain that a teachers' salary exceeds the average salary of professionals with a university degree (Kasparzhak 2013).

The ratio of a salary to the price of a fixed set of goods and services shows the purchasing power of the teachers' salary against the cost of living in a particular region. The price of a fixed set of goods and services across the regions of the Russian Federation differs as much as three times, thus this indicator is crucial for understanding the difference between the real incomes of teachers in the Russian regions.

The ratio of a teachers' salary fund to total regional government expenditures (Agranovich, Froumin 2005) helps estimate, how high the teachers' salary is in relation to the budget potential of the region. The limitations of using the per capita gross regional product indicator is the 1-2 year delay in calculations, which hampers the use of this indicator in immediate calculations.

3. Developing a typology of regions by the school teachers' salary indicators

The database for the calculations came from the resources of governmental bodies, including:

- The data from the Russian Federal State Statistics Service (Rosstat) in the field of pay rates for certain employee categories across the regions at the end of 2014.
- The information on the average salaries across the regions at the end of 2014 provided by Rosstat.
- The price of a fixed set of goods and services across the regions at the end of 2014 provided by Rosstat.
- The number of teachers across the regions at the end of 2014 provided by Rosstat.
- Total regional government expenditures across the regions at the end of 2014 provided by the Russian Federal Treasury.

Using this info, we calculated three indicators:
1. The ratio of a teachers' salary to the average salary in the region.
2. The ratio of a salary to the price of a fixed set of goods and services.
3. The ratio of a teachers' salary fund to total regional government expenditures.

The values of input variables expressed in different units of measurement were standardized in order to make them compatible, i.e. the data were transformed into Z-scores so as the average value of every standardized variable stood at 0 while the standard deviation equaled 1.

The grouping of the regions was made using the hierarchical cluster analysis method. Euclidian distance was chosen as a measure of calculating the distance as it matches the geometrical distance between the objects in 3D space.

The Ward method was chosen as an algorithm of clustering objects. The design of this method minimizes the sum of squared deviation inside the cluster. At the first step when every cluster consists of only one object, the sum of squared deviation is 0. According to the Ward method, those groups or objects are joined where the sum of squared deviation gets the least increment. The method tends to find clusters of approximately similar size (Kim, Muller, Klekka et al. 1989).

As a result, four clusters were identified. The distance within the resulting clusters have 10 scaled units out of the maximum 25 scaled units. This means that the internal cluster scattering is 2.5 times less than the distance between the two most distanced objects. Figure 1 shows a dendrogram of recursive merging of objects into clusters.

Figure 2 shows the positions of the region clusters merged in the 3D space of the reviewed indicators.

Dendrogram using Ward Linkage

Rescaled Distance Cluster Combine

0   5   10   15   20   25

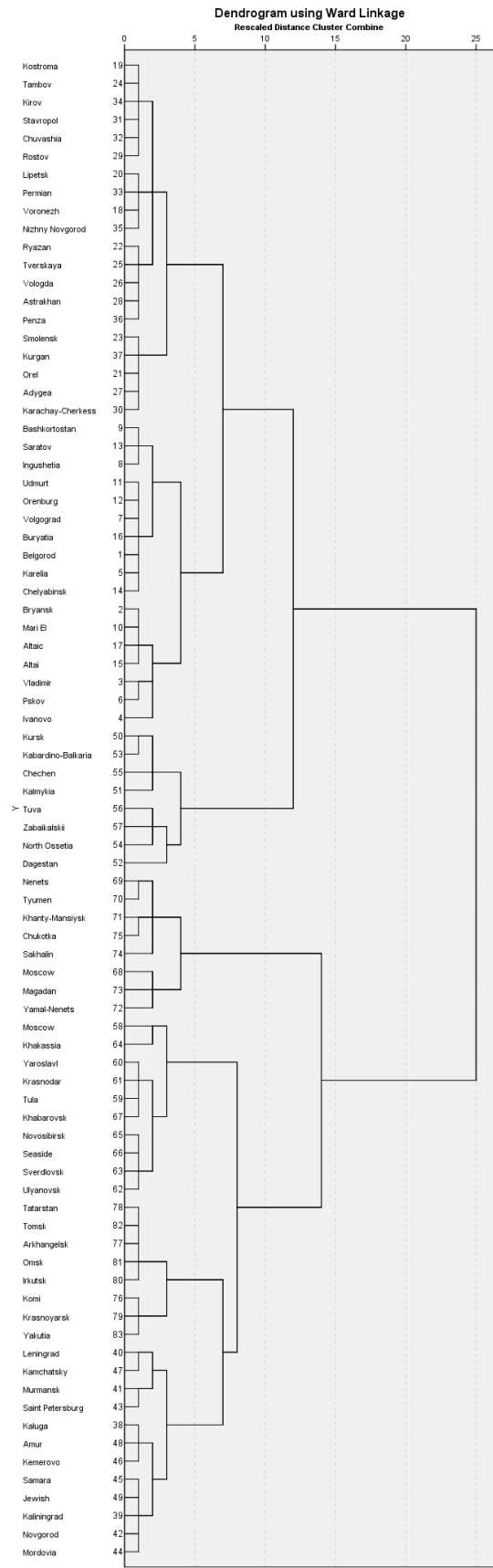| Kostroma | 19 |
Tambov	24
Kirov	34
Stavropol	31
Chuvashia	32
Rostov	29
Lipetsk	20
Permian	33
Voronezh	18
Nizhny Novgorod	35
Ryazan	22
Tverskaya	25
Vologda	26
Astrakhan	28
Penza	36
Smolensk	23
Kurgan	37
Orel	21
Adygea	27
Karachay-Cherkess	30
Bashkortostan	9
Saratov	13
Ingushetia	8
Udmurt	11
Orenburg	12
Volgograd	7
Buryatia	16
Belgorod	1
Karelia	5
Chelyabinsk	14
Bryansk	2
Mari El	10
Altaic	17
Altai	15
Vladimir	3
Pskov	6
Ivanovo	4
Kursk	50
Kabardino-Balkaria	53
Chechen	55
Kalmykia	51
Tuva	56
Zabaikalskii	57
North Ossetia	54
Dagestan	52
Nenets	69
Tyumen	70
Khanty-Mansiysk	71
Chukotka	75
Sakhalin	74
Moscow	68
Magadan	73
Yamal-Nenets	72
Moscow	58
Khakassia	64
Yaroslavl	60
Krasnodar	61
Tula	59
Khabarovsk	67
Novosibirsk	65
Seaside	66
Sverdlovsk	63
Ulyanovsk	62
Tatarstan	78
Tomsk	82
Arkhangelsk	77
Omsk	81
Irkutsk	80
Komi	76
Krasnoyarsk	79
Yakutia	83
Leningrad	40
Kamchatsky	47
Murmansk	41
Saint Petersburg	43
Kaluga	38
Amur	48
Kemerovo	46
Samara	45
Jewish	49
Kaliningrad	39
Novgorod	42
Mordovia	44

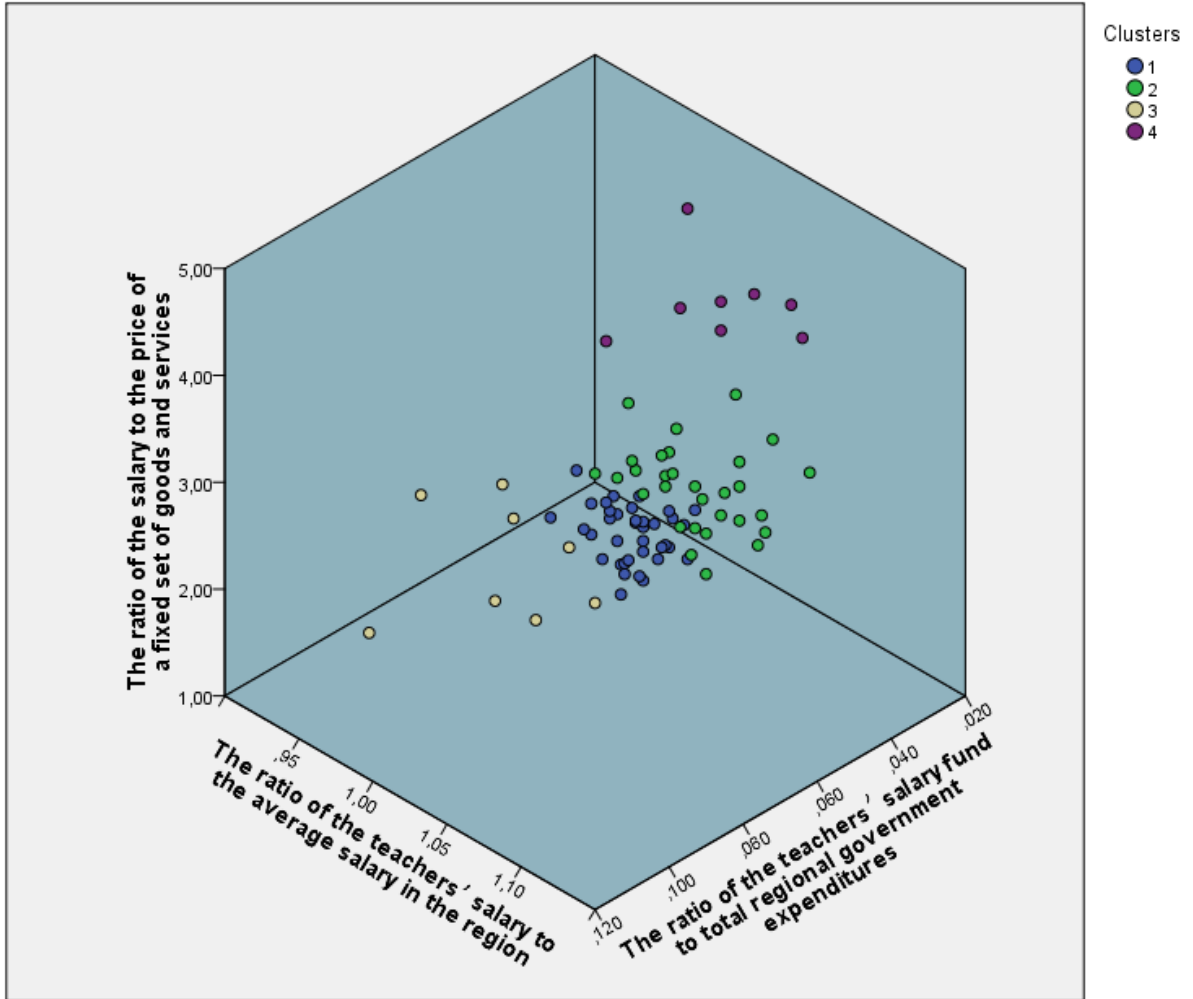Figure1. Dendrogram of recursive merging of objects into clusters.

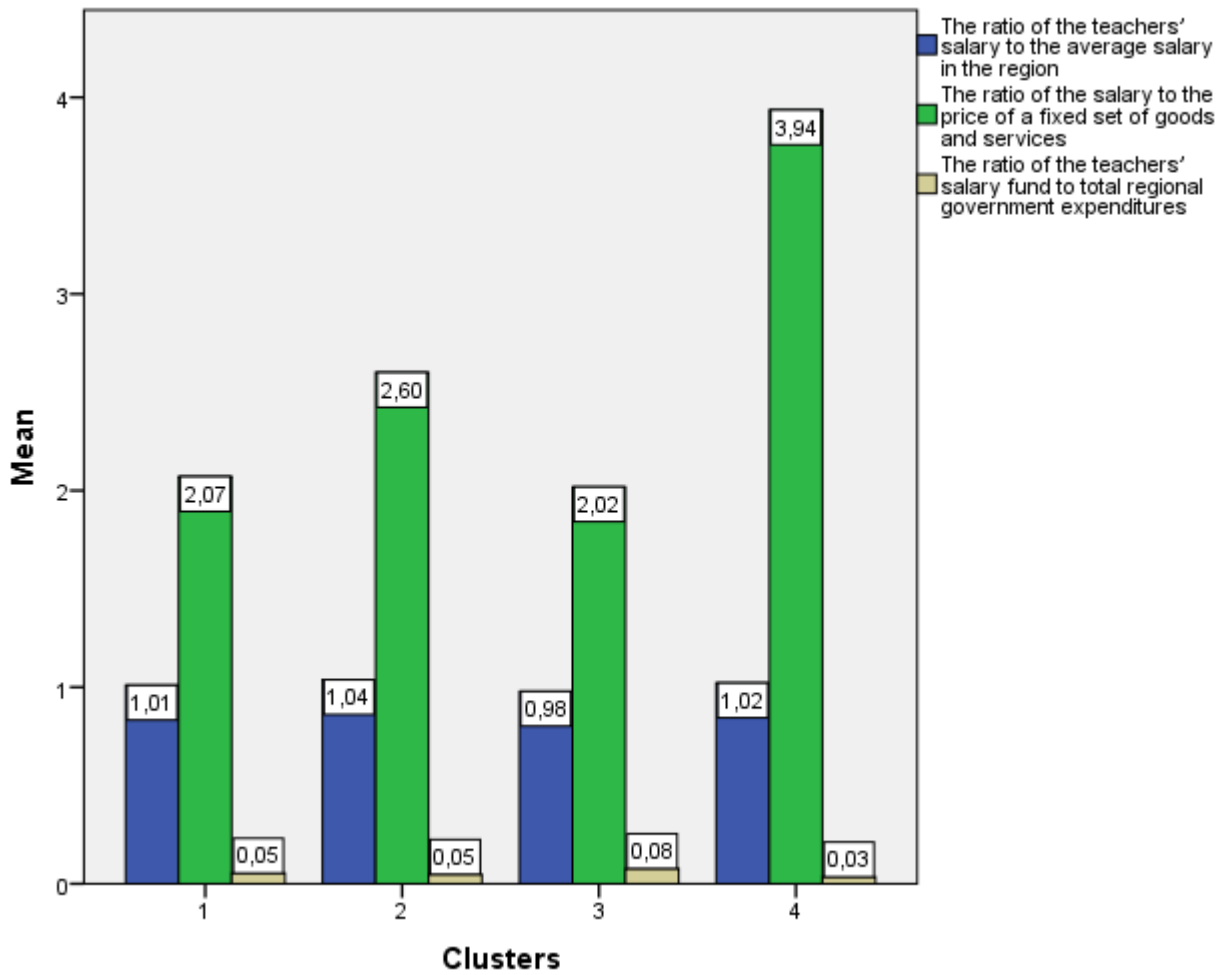Figure 2. Chart of region scattering in 3D space of indicators.

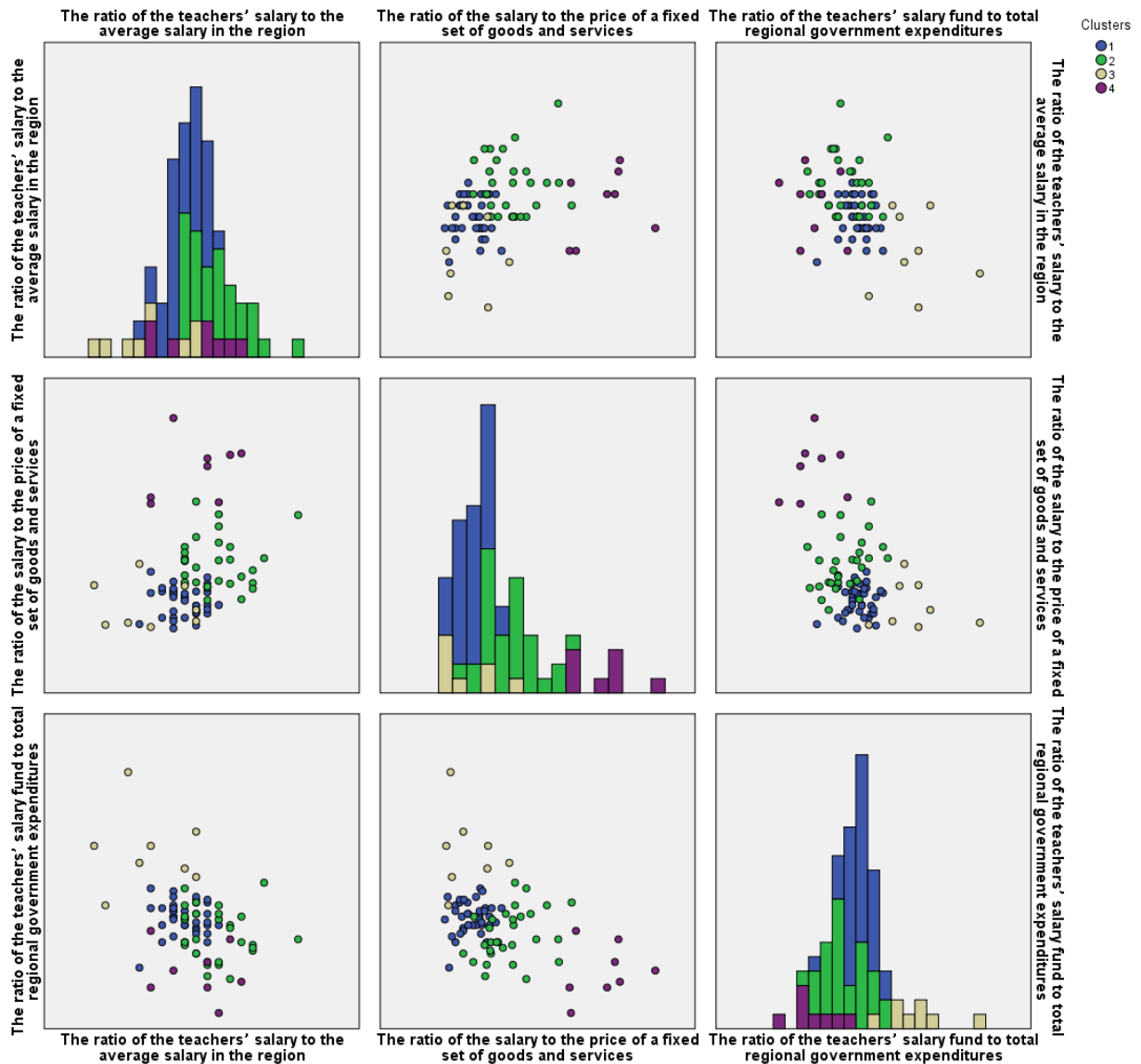Figure 3. Variables' mean values by the cluster.

Figure 4. Scatterplot matrix of indicators by clusters of regions.

Region cluster 1 – "Average".

This cluster includes 37 regions.

Here an average teacher's salary is near the average rate in the region (101%). At the same time, teachers' salaries have a low purchasing power (2.07 fixed sets of goods and services). The ratio of the teachers' salary fund to total regional government expenditures equals 5%.

Region cluster 2 – "Strong average".

This cluster includes 30 regions.

Here a teachers' salary exceeds the average rate in the region (104%). At the same time, the purchasing power of teachers' salaries is at the medium level (2.60). The ratio of a teachers' salary fund to total regional government expenditures equals 5%. Thus, the level of teachers' salaries is too high and regions have no budget resources to subsidize it.

Region cluster 3 – "Poor achievers".

This cluster includes 8 regions.

Here the teachers' salaries are lower than the average in the economy (98%), however, the low cost of living makes a medium-level purchasing power (2.02). the ratio of the teachers' salary fund to total regional government expenditures is very high (8%), which testifies to the region having no resources to maintain the teachers' pay at the target level.

Region cluster 4 – "Leaders".

This group includes eight regions. All these regions are the nation's leaders of average salary in economy, inclining five leaders in terms of hydro-carbons extraction: Nenets, Tyumen, Khanty-Mansiysk, Yamal-Nenets Sakhalin; global city Moscow with a developed economy; and two regions with the most extreme conditions of living in Russia: Magadan and Chukotka, where high salaries are geographically and historically determined.

This group of regions features a very low ratio of the teachers' salary fund to total regional government expenditures (3%), which helps keep the teachers' salary rate above average in the economy (102%) and ensures its very high purchasing power (3.94), even taking into account a high cost of living in these regions.

4. Recommendations

It is strongly recommended that **Region cluster 1** keep the salary at the achieved level obtained by means of the regions' financial resources and moderate transfers from the federal budget.

Region cluster 2 should keep teachers' salaries at the existing level until the target level of 100% in the average salary of the region is achieved.

Regions of **cluster 2** have huge local resources to maintain the salary at the level given or to further increase teachers' salaries without any support from the federal budget.

Region cluster 3 should increase the teachers' salary rate to the level of 100% in the regional economy by means of transfers from the federal budget. At the same time this risks the public sector

exerting too much pressure on the labor market. Education is one of the most stable and high-paid sectors of the economy in these regions. In these conditions the private sector may find it hard to attract employees as enterprises have to pay their workers no less than teachers.

Regions of **cluster 4**have huge local resources to maintain the salary at the level given or to further increase teachers' salaries without any support from the federal budget.

Conclusions

There exist numerous research works on the relation of the school teachers' salaries to the characteristics of regional educational systems and regional economies.

It is necessary to consider the ratio of the teachers' salary to the average salary in the region. The latter serves as a target indicator in government programs in combination with other indicators, such as the ratio of the salary to the price of a fixed set of goods and services and the ratio of the teachers' salary fund to total regional government expenditures.

The recommendations developed for each of the identified cluster of regions should improve the efficiency of the steps aimed at the implementation of the educational policy tasks through differentiating the support measures by the federal government.

References

1. Barber, M., & Mourshed, M. (2007). How the World's Best-Performing School Systems Come Out on Top. London, UK: McKinsey & Co.

2. Boyd, D., Grossman, P., Lankford, H., Loeb, S., & Wyckoff, J. (2006). "How Changes in Entry Requirements Alter the Teacher Workforce and Affect Student Achievement." Education Finance and Policy, 1(2), 176-216.

3. Carnoy, M., Brodziak, I., Luschei, T., Beteille, T., &Loyalka, P. (2009). Teacher Education and Development Study in Mathematics (TEDS-M): Do Countries Paying Teachers Higher Relative Salaries Have Higher Student Mathematics Achievement? Amsterdam, the Netherlands: International Association for the Evaluation of Educational Achievement (IEA).

4. Dolton, P. J. (1990). "The Economics of UK Teacher Supply: The Graduate's Decision." The Economic Journal, 100, 91-104.

5. Dolton, P. J., & van der Klaauw, W. (1999). "The Turnover of Teachers: A Competing Risks Explanation." The Review of Economics and Statistics, 81(3), 543-552.

6. Education and society. Is Russia willing to invest in its future? [Text] : report / Public Chamber of the Russian Federation. — M.: Publ. house of SU HSE, 2008.

7. Figlio, D. N. (1997). "Teacher Salaries and Teacher Quality." Economics Letters, 55, 267-271.

8. Hanushek, E. A., Kain, J. F., Rivkin, S. G. (1999). "Do Higher Salaries Buy Better Teachers?". NBER Working Paper 7082. Cambridge, MA: National Bureau of Economic Research (NBER).

9. Ingersoll, R. M. (2001a). "A Different Approach to Solving the Teacher Shortage Problem." Policy Brief. Seattle, WA: Center for the Study of Teaching and Policy, University of Washington.

10. Ingersoll, R. M. (2001b). "Teacher Turnover, Teacher Shortages and the Organization of Schools." Research Report. Seattle, WA: Center for the Study of Teaching and Policy, University of Washington.

11. Leigh, A. (2009). "Teacher Pay and Teacher Aptitude." Working Paper. Canberra, Australia: Australian National University.

12. Mourshed, M., Chijioke, C. & Barber, M. (2010). "How the World's Most Improved School Systems Keep Getting Better." London, UK: McKinsey & Co.'s Social Sector Office.

13. Murnane, R. J., & Olsen, R. J. (1989). "The Effects of Salaries and Opportunity Costs on Duration in Teaching: Evidence from Michigan." The Review of Economics and Statistics, 71, 347-352.

14. Murnane, R. J., & Olsen, R. J. (1990). "The Effects of Salaries and Opportunity Costs on Length of Stay in Teaching: Evidence from North Carolina." The Journal of Human Resources, 25(1), 106-124.

15. OECD (2003). Attracting, Developing and Retaining Effective Teachers.

16. OECD (2011). Building a high-quality teaching profession. Lessons from around the world. Paris: OECD.

17. Stinebrickner, T. R. (2001b). "A Dynamic Model of Teacher Labor Supply." Journal of Labor Economics, 19(1), 196-230.

18. Stinebrickner, T. R. (1998). "An Empirical Investigation of Teacher Attrition." Economics of Education Review, 17(2), 127-136.

19. Stinebrickner, T. R. (1999a). "Estimation of a Duration Model in the Presence of Missing Data." The Review of Economics and Statistics, 81(3), 529-542.

20. Stinebrickner, T. R. (1999b). "The Reasons that Elementary and High School Teachers Leave Teaching: An Analysis of Occupational Change and Departure from the Labor Force." Research Report. Ontario, Canada: University of Western Ontario.

21. Stinebrickner, T. R. (1999c). "Using Latent Variables in Dynamic, Discrete Choice Models: The Effect of School Characteristics on Teacher Decisions." Researchin Labor Economics, 18, 141-176.

22. Stinebrickner, T. R. (2001a). "Compensation Policies and Teacher Decisions." International Economic Review, 42(3), 751-780.

23. The World Bank (2012). What matters most in teacher policies? A framework for building a more effective teaching profession. System Approach for Better Education Results (SABER), June 14.

24. The World Bank (2013). What Matters Most for Teacher Policies: A Framework Paper. Systems Approach for Better Education Results (SABER). Working Paper Series. Number 4.

25. Wolter, S. C., & Denzler, S. (2003). "Wage Elasticity of the Teacher Supply in Switzerland." Discussion Paper 733. Bonn, Germany: Institute for the Study of Labor.

26. Abankina I.V. (2009). Researching the outcomes and implications of the new teachers' pay system // Education Issues №4. P. 153-169.

27. Abankina I.V. (2011). Mechanisms of organizing financial and economic activity of institutions involved in the implementation of Federal State Educational Standard taking into account the peculiarities of financing three types of institutions (state-owned, budgetary, autonomous) //Municipal education: innovations and experiment. № 5. P. 12-16.

28. Abankina T. V. (2010). Autonomous institutions in education. M.: Sport and culture.

29. Agranovich M. L., Froumin I. D. (2005). Educational personnel – more cheap or fewer expensive // Education Issues №4. P. 68-80.

30. Agranovich M. L., Kondrashov P. E. (2007). Education quality assessment indicators // School principal, №5.

31. Andruschak G.V., Kozmina Y. Y., Sivak E.V., Yudkevich M.M. (2010). New pay system in schools. The experience of Kaliningrad and Novgorod oblasts: collection of works. M.-Yoshkar-Ola: Print Center Enterprise, LLC.

32. Bekker G. S. (2003). Human behavior: economic approach. Selected works on economic theory. Compiled by R. Kapelyushnikov. HSE Publishing House, 672 p.

33. Baird R., Landon J. (2004) Monopsony in the market for public school teachers in the USA // Education Issues. №1.

34. Gimpelson V. E. (2004). Comments to the article by J. Landon and R. Baird 'Monopsony in the market for public school teachers in the USA' // Education Issues. №1.

35. Gimpelson V.E., LukyanovaA.L. (2006). Being a public sector employee in Russia – a lucky choice or a doom? // HSE Economic Journal. №4.

36. Gimpelson V. E., Oschepkov G. S. (2005). Labor market and employment dynamics in the educational services sector. // Education Issues. №4.

37. Derkachev P.V. (2003). Economic and geographical aspects of financing general education: graduation paper. M.: Moscow State University.

38. Kapelushnikov R.I. and Lukyanova A.L. (2010) Transformation of human capital in Russian society (on the base of Russia Longitudinal Monitoring Survey). Moscow, Liberal Mission Fund.

39. KasprzhakA.G. (2013). Institutional dead ends of Russia's teacher training system // Education Issues. № 4.

40. Kim J. O., Muller Ch. U., Klekka U. R. et al. (1989). Factor, discrimination and cluster analysis / Edited by I. S. Enyukov. — M.: Finance and Statistics.

41. Kosaretsky S.G., Moiseev A.M., Sedelnikov A.A, Shimutina E.N. (2010). Government and public administration in education: from precedent to institution. Research and development: Set of monographs / under the overall editorship of Kosaretsky S.G., ShimutinaE.N., VerdanM.

42. Materials for public debate at the 5th Baikal educational forum (2013). / A.I. Adamsky, A.V. Damdinov, A.A. Antonova, A.B. Vorontsov, R.V. Selyukov, N.M. Shadrina, O.A. Shian. Ministry of education and science of the Republic of Buryatia, "Eureka Institute of Educational Policy Issues". Ulan-Ude.

43. OECD. (2001). Teachers for future schools. The analysis of global indicators in education. UNESCO statistics institute. Global education indicators program.

44. Russian Worker. Education. Profession. Qualification. (2011). Edited by V.E. Gimpelson and R.I. Kapelyushnikov. M.: NRU HSE.

45. Roschina Y.M. (2010). Teachers at educational institutions: labor practices and motivations. Information bulletin. M.: State University-HSE.

46. Roschina Y.M., Filippova T.N. (2006). Teachers on the labor market. Information bulletin. M.: State University-HSE.

47. Rudnik B.L., Shishkin S.V., Yakobson L.I. (2006). Types of government and municipal and educational institutions, reasons and consequences of suggested innovations. M.: HSE Publishing House.

48. Saburov E.F., Derkachev P.V. (2006). Model of calculating the cost and the efficiency of financing educational services in general education // Education Issues. №1.

49. Savitskaya E., Chertykovtseva D. (2013). Financing and quality of school education: econometric approach // Economics Issues. № 4.

50. Tipenko N.G. (2011). New pay system in schools: peculiarities of introduction and first outcomes // Russia's region population level of living, February.

51. INDEM Foundation (2002). Salaries and corruption: how should civil servants be paid. Analytical report. / G.A. Satarov, M.I. Levin, K.I. Golovoschinsky, V.L. Rimsky. M.

52. Gimpelson V. E., Kapelyushnikov R. I., Ratnikova T. A. (2003). Fear of unemployment and salary flexibility in Russia V. 7, № 3.

53. Sharunina A. V. (2012). Can Russian public-sector employees be called losers? The analysis of cross-sectorial differences in pay: preprint WP3/2012/07 [Text] / A. V. Sharunina; National Research University Higher School of Economics. – M.: HSE Publishing House.

Attachment 1.

Relative Indexes of Teachers' Salaries at the end of 2014 across Russian regions.

Region	The ratio of a teachers' salary to the average salary in the region	The ratio of a salary to the price of a fixed set of goods and services	The ratio of a teachers' salary fund to total regional government expenditures	Cluster
Belgorod	0,99	2,21	0,051	1
Bryansk	1,00	1,84	0,058	1
Vladimir	0,99	1,84	0,045	1
Ivanovo	0,97	1,75	0,036	1
Karelia	0,99	2,26	0,057	1
Pskov	1,00	1,79	0,047	1
Volgograd	1,00	2,18	0,054	1
Ingushetia	0,98	2,19	0,064	1
Bashkortostan	1,00	2,22	0,063	1
Mari El	1,00	1,93	0,054	1
Udmurt	1,00	2,18	0,056	1
Orenburg	1,00	2,25	0,056	1
Saratov	1,00	2,13	0,061	1
Chelyabinsk	0,98	2,49	0,057	1
Altai	1,00	1,69	0,053	1
Buryatia	1,00	2,35	0,057	1
Altaic	1,01	1,84	0,056	1
Voronezh	1,03	2,20	0,048	1
Kostroma	1,02	1,95	0,050	1
Lipetsk	1,03	2,32	0,051	1
Orel	1,02	2,01	0,059	1
Ryazan	1,01	2,13	0,051	1
Smolensk	1,03	1,90	0,059	1
Tambov	1,02	1,95	0,049	1
Tverskaya	1,01	2,08	0,051	1
Vologda	1,01	2,18	0,053	1
Adygea	1,02	1,90	0,060	1
Astrakhan	1,01	2,32	0,054	1
Rostov	1,04	2,02	0,051	1
Karachay-Cherkess	1,02	1,73	0,061	1
Stavropol	1,03	2,02	0,055	1

Region	The ratio of a teachers' salary to the average salary in the region	The ratio of a salary to the price of a fixed set of goods and services	The ratio of a teachers' salary fund to total regional government expenditures	Cluster
Chuvashia	1,02	2,01	0,055	1
Permian	1,03	2,41	0,052	1
Kirov	1,02	1,91	0,048	1
Nizhny Novgorod	1,03	2,28	0,045	1
Penza	1,02	2,21	0,052	1
Kurgan	1,03	1,96	0,060	1
Kaluga	1,01	2,34	0,045	2
Kaliningrad	1,03	2,26	0,033	2
Leningrad	1,04	2,65	0,037	2
Murmansk	1,02	2,98	0,046	2
Novgorod	1,02	2,34	0,041	2
Saint Petersburg	1,04	3,3	0,038	2
Mordovia	1,02	1,95	0,041	2
Samara	1,03	2,28	0,037	2
Kemerovo	1,01	2,64	0,044	2
Kamchatsky	1,05	2,84	0,032	2
Amur	1,01	2,44	0,045	2
Jewish	1,03	2,09	0,038	2
Kursk	1,01	2,29	0,071	3
Kalmykia	0,98	1,71	0,079	3
Dagestan	0,96	1,77	0,105	3
Kabardino-Balkaria	1,02	1,79	0,068	3
North Ossetia	0,94	1,74	0,058	3
Chechen	1,02	1,95	0,084	3
Tuva	0,93	2,30	0,079	3
Zabaikalskii	0,97	2,60	0,073	3
Moscow	1,11	3,29	0,046	2
Tula	1,06	2,42	0,045	2
Yaroslavl	1,07	2,33	0,042	2
Krasnodar	1,07	2,25	0,044	2
Ulyanovsk	1,06	2,10	0,054	2
Sverdlovsk	1,05	2,66	0,051	2
Khakassia	1,08	2,68	0,066	2
Novosibirsk	1,04	2,36	0,053	2
Primorsky	1,05	2,32	0,050	2
Khabarovsk	1,07	2,51	0,043	2

Region	The ratio of a teachers' salary to the average salary in the region	The ratio of a salary to the price of a fixed set of goods and services	The ratio of a teachers' salary fund to total regional government expenditures	Cluster
Moscow	0,98	3,54	0,049	4
Nenets	1,03	3,98	0,029	4
Tyumen	1,03	4,09	0,038	4
Khanty-Mansiysk	1,05	4,14	0,046	4
Yamal-Nenets	1,00	4,66	0,035	4
Magadan	0,98	3,45	0,029	4
Sakhalin	1,04	3,47	0,020	4
Chukotka	1,06	4,16	0,031	4
Komi	1,04	3,13	0,058	2
Arkhangelsk	1,01	2,68	0,058	2
Tatarstan	1,01	2,65	0,053	2
Krasnoyarsk	1,04	2,90	0,055	2
Irkutsk	1,01	2,84	0,064	2
Omsk	1,02	2,55	0,055	2
Tomsk	1,01	2,76	0,054	2
Yakutia	1,02	3,48	0,059	2

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