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Index Method of Evaluating the Performance of Economic Activities

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ABSTRACT

The subject of the research is the economies of the constituent entities of the Russian Federation and the branches of economic activity functioning in their territories. The aim of the study is to develop methods for assessing the efficiency of economic sectors and types of economic activity within the boundaries of 85 constituent entities of the Russian Federation and to create a rating of the efficiency of the constituent entities by the type of economic activity "Production and distribution of electricity, gas and water". Economic and statistical methods, system analysis, as well as general scientific methods of comparison were used. The main calculations are based on the tax revenue efficiency index developed by the authors by types of economic activity. It is based on 13 indicators, where each corresponds to the type of economic activity and assesses the level of economic development of a constituent entity of the Russian Federation. The authors analyzed the reports on tax revenues and the number of employed population in the context of economic activities. Data analysis and parameter estimation were carried out by means of the statistical information processing program IBM SPSS Statistics 20, the analytical module of the Russian Taxes regional tax revenue information analysis system and the MS Excel 365 tabular processor. Based on the proposed method, the distribution of the constituent entities of the Russian Federation was obtained according to the values index of tax revenues for all types of economic activity in 2016. The effectiveness of tax revenues for individual indicators included in the index was considered. The distribution of the constituent entities of the Russian Federation by the type of economic activity "Production and distribution of electricity, gas and water" was obtained. The distribution indicators for each constituent entity of the Russian Federation were calculated. Graphs showing the structure of the tax revenues efficiency index in the Moscow region and in the Altai Republic in 2016 were built. The proposed method allows to obtain a comprehensive indicator of the system's activities and development, to assess its potential, to define goals, to identify infrastructural problems and the shortcomings in economic diversification, as well as to evaluate investment risks and threats.

Keywords: regional economy; index method; index; employed population; tax income; type of economic activity

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INTRODUCTION

The economy of the Russian Federation is in a difficult situation. The economic development of the country is influenced by both external and internal factors. The external factors hampering the development of the economy include the aggravation of the geopolitical situation, the continuously extension of the sanctions lists against the activities of Russian companies, the instability of world markets, the fall in energy prices, etc. The list of internal factors slowing down the economic development is even more extensive. These include: prolonged financial and economic crisis, technological backwardness of domestic companies and industries, inefficient use of human and natural resources, unfavorable conditions for lending to companies in the domestic market, aging and low rates of input of fixed assets, etc.

In work [1, p. 118–127], the functioning of the Russian economy as a diffuse system is considered, and a model of a macroeconomic production function is developed, an analogue to Cobb-Douglas function [2, p. 139–165]. Work [3, p. 120–127] presents a conceptual model of the financial and economic functioning of a constituent entity of the Russian Federation, where the efficiency of economic activities in the region is estimated through the tax revenues produced in its territory. This type of aspect will be applied in the studies described below.

In article [4, p. 63–70], the first attempt was made to use the index method to analyze the performance of the constituent entities of the Russian Federation. It also presents a rating of the performance of the constituent entities of the federation. As a result, all the constituent entities of the Russian Federation were divided into three clusters: the constituent entities of advanced development, the constituent entities aspiring to the average value, and the constituent entities lagging behind in economic development.

In work [5, p. 139–145], by the example of the Ivanovo region, the technological backwardness of the manufacturing industries located on its territory, aging and low rates of introduction of

fixed assets and the inefficient use of the active and busy population are shown. Similar studies are devoted to the following works of domestic and foreign authors [6; 7, p. 113–116; 8, p. 7–10].

The authors attempted to investigate the financial and economic state of the constituent entities of the Russian Federation based on the index method in the context of economic activities. The index method refers to the methods of statistical analysis and its applied aspect of research is used in many branches of science and technology. This method has received particular application in economic research. At the same time various aspects of economic and management activities are touched upon.

This method has won the greatest popularity in the field of macroeconomic research. For example, at the World Economic Forum in Davos in 2018, it was proposed to use the Inclusive Development Index; IDI. This index assesses the economic situation in 107 countries according to the criteria of economic growth, sustainability and equity. The IDI is based on twelve indicators combined into three groups. Forum experts believe that the IDI reflects the level of a country's economic development better than an indicator of GDP growth¹.

According to the IDI, Norway ranks the first place, and the Republic of Mozambique is the last. The Russian Federation is in the 19th place, losing four points to the Republic of Kazakhstan.

A number of works by foreign authors are devoted to the application of the index method in economic research. Special attention is paid to the development of methods for calculating the index of stable economic well-being, known as the Genuine Progress Indicator (GPI). The GPI was developed by Herman Daly and John Cobb in 1989. This index was proposed by the scientists as “a way of measuring the economy that will give better guidance to those interested in promoting economic welfare” [9]. GPI is the value of GDP per capita of a country, adjusted

¹ Inclusive Development Index 2018: World Economic Forum in Davos. Economy News (economynews.ru). 1999–2018. URL: <http://www.economynews.ru/mirovaja-jekonomika/524-indeks-inkluzivnogo-razvitiya-2018-vsemirnyj.html> (accessed on 26.07.2018).

for the amount of expenditure invested in socio-economic and environmental development. Creating a GPI is one of the successful attempts to synthesize an aggregated monetary index. Today in the field of GPI research the following works are known: [10, p. 13–28], [11, p. 162–172], [12, p. 330–341].

The index method is also used to assess the development of the territories of the Russian Federation. The Consortium Leontief Centre — AV Group has developed a document entitled “Regional Competitiveness Index — Growth Poles of Russia (AV RCI-2015)”². This paper describes the methodology for creating and applying the “Regional Competitiveness Index” where it determines the ability of a region to compete for markets and resources. Similar studies are carried out in the works “Analysis of the factors of improving Russia’s competitiveness in the international market” [13] and “Estimating the economic development of countries based on the global competitiveness index” [14, p. 128–138].

Ecological economics often uses the Environmental Sustainability Index (ISE), developed by Columbia and Yale Universities for the World Economic Forum in Davos. The applied aspect of using the ISE at the present stage is reflected in works [15, p. 13–28] and [16, p. 285–300].

Also, the index method can be used in logistics [17, p. 158–169] to analyze the development of green production [18, p. 229–248], the efficiency of production activities in various sectors of the economy [19, p. 639–662], [20, p. 243–261] and others.

The subject of this research is the economics of the constituent entities of the Russian Federation and the branches of economic activity functioning in their territories. 85 territories of the Russian Federation were considered as constituent entities. 13 types of economic activity were analyzed.

The aim of the study is to develop methods to assess the performance of the industries in 85 constituent entities of the Russian Federation in

the context of economic activities. It will include a performance rating of the constituent entities of the Russian Federation by type of economic activity, in particular, the distribution of electricity, gas and water.

The studies were based on economic-statistical methods, system analysis, as well as general scientific methods of comparison. The main calculations were made by means of the index method developed by the authors to analyze the types of economic activity of the constituent entities of the Russian Federation.

RESEARCH RESULTS

To give an objective account of the economic activity of the constituent entities of the Russian Federation, the authors propose a method based on an integral indicator of tax revenues for all types of economic activity — an efficiency index of tax revenues. To assess the efficiency of tax revenues in the constituent entities of the Russian Federation, it is proposed to use the index method.

When calculating the index values, the statistical data for 2015–2016 were used, presented by the Federal Tax Service of the Russian Federation and the statistical data on the main socio-economic indexes provided by the Federal State Statistics Service of the Russian Federation. To simplify the subsequent analysis, the collected data was consolidated in the database of the information-analytical system of regional tax receipts “Taxes of the Russian Federation” [21, p. 56–57].

Currently, the system of federal districts of the Russian Federation includes 9 structural units, which include 85 constituent entities. The Ministry of Economic Development of the Russian Federation and the Federal Agency for Technical Regulation and Metrology developed the All-Russian Classification of Types of Economic Activity — OK 029–2014 (OKVED), slightly updated in 2018. According to this document, there is a detailed specification of all economic sectors of the Russian Federation. The data provided by the Federal Tax Service of the Russian Federation were used in the calculations: Statis-

² Regional Competitiveness Index — Growth Poles of Russia (AV RCI — 2015). URL: http://av-group.ru/wp-content/uploads/2015/10/AV_RCI_2015.pdf (accessed on 26.07.2018).

tical Tax Reporting Form No. 1-NOM3 and the Federal State Statistics Service of the Russian Federation “Regions of Russia. Socio-economic indexes”⁴. In these reports enlarged types of economic activity corresponding to the OKVED sections are defined (*Table 1*).

Let us introduce the next relative performance index. It is equal to the ratio of the value of tax income to the average annual number of the employed population of a constituent entity of the Russian Federation for a certain type of economic activity. Let us call this index a relative performance index of tax revenues (OPEN) by type of economic activity. For each constituent entity, thirteen indexes can be determined (by the number of types of economic activity, $m = 13$) — $OPEN_{ij}$, where the index i takes values from 1 to 85 (by the number of constituent entities in the Russian Federation, $n = 85$), and the index j corresponds to the type of economic activity and, therefore, varies from 1 to 13.

This index characterizes the tax income on average for a constituent entity that is brought to the country budget by one employee engaged in the relevant type of economic activity. In the future, this index will be denoted as X_{ij} for simplicity.

Now, we will calculate the average value of the relative performance index of tax revenues for all constituent entities for each type of economic activity. As a result, we will obtain thirteen values determined by the formula of a simple average

$$\bar{X}_j = \frac{\sum_{i=1}^n X_{ij}}{n}.$$

Then, for each tax, we will determine the variance D_j and the standard deviation σ_j of the relative performance index of tax revenues for constituent entities. These variation indexes were calculated by means of the following formulas:

$$D_j = \frac{\sum_{i=1}^n (X_{ij} - \bar{X}_j)^2}{n-1} \text{ and } \sigma_j = \sqrt{D_j}.$$

Using the calculated average values, we will center all relative indexes X_{ij} by the following formula $\dot{X}_{ij} = X_{ij} - \bar{X}_j$. If we now apply the valuation operation using the standard deviations \dot{X}_{ij} to the centered relative indexes σ_j , we will obtain standardized relative performance indexes of tax revenues (indexes) for each type of economic activity in all constituent entities

$$U_{ij} = \frac{\dot{X}_{ij}}{\sigma_j}. \text{ Note that the values } U_{ij} \text{ do not have}$$

dimensions. Moreover, all average values of standardized relative performance indexes of tax revenues for each type of economic activity are zero, i.e. $\bar{U}_j = 0$ for all j , and all variances of these

$$\text{indexes } D_j = \frac{\sum_{i=1}^n (U_{ij} - \bar{U}_j)^2}{n-1} \text{ are equal to 1.}$$

Since the value of tax income for various types of economic activity is influenced by numerous diverse factors, it can be assumed that standardized values U_{ij} are subject to different laws of distribution, but with the same averages and variances. Thus, each constituent entity of the Russian Federation can be characterized by a system of dimensionless indexes with the same average values equal to zero and variances equal to one.

If the obtained indexes for all types of economic activity are summed up for each constituent entity, we will eventually have the values of a certain aggregate index reflecting the efficiency of tax collection in the constituent entity for

$$\text{all types of economic activity: } I_i = \sum_{j=1}^m U_{ij}.$$

The resulting index of tax collection efficiency is based on 13 indicators, each of them corresponding to the type of economic activity and assessing the level of economic development of the constituent entity (the index value in the i -th constituent entity is equal to I_i).

Let us estimate the share of each type of economic activity in the total tax revenue and in the number of the employed population (*Table 1*).

³ Report on form 1-NOM as of 01.01.2017 in the context of the constituent entities of the Russian Federation. Nalog.ru: Federal Tax Service of the Russian Federation. 2005–2018. URL: https://www.nalog.ru/rn77/related_activities/statistics_and_analytics/forms/6092076/ (accessed on 19.09.2018).

⁴ Regions of Russia. Socio-economic indexes. // <http://www.gks.ru/>: Federal State Statistics Service. 1999–2018. URL: http://www.gks.ru/free_doc/doc_2017/region/reg-pok17.pdf (accessed on 21.09.2018).

Table 1

**Ratio of shares of foreign economic activity in tax revenues and the employed population
in 2015–2016**

No	Type of Economic Activity (TEA)	Share of TEA in tax revenues, d_{tr} , in %		Share of TEA in the employed population, d_{ep} , in %		Relation D_{tr} to d_{ep}	
		2015	2016	2015	2016	2015	2016
1	Agriculture, hunting and forestry; fishing, fish farming	0,80	0,86	9,42	7,63	0,08	0,11
2	Mining	34,31	29,52	1,59	1,55	21,69	19,01
3	Manufacturing industries	19,75	22,45	14,39	14,22	1,37	1,58
4	Production and distribution of electricity, gas and water	3,45	4,13	2,81	2,76	1,23	1,50
5	Construction	4,80	5,24	8,26	8,65	0,58	0,61
6	Wholesale and retail trade; repair of motor vehicles, motorcycles, household goods and personal items	12,12	12,37	18,85	18,92	0,64	0,65
7	Hotels and restaurants	0,67	0,74	1,96	2,29	0,34	0,32
8	Transport and communication	6,40	6,55	8,04	8,30	0,80	0,79
9	Real estate transactions, lease and provision of services	11,92	12,31	8,78	9,93	1,36	1,24
10	Education	2,33	2,34	8,10	7,70	0,29	0,30
11	Health and social services	1,90	1,91	6,62	6,39	0,29	0,30
12	Provision of other public, social and personal services	1,51	1,56	3,74	4,40	0,40	0,35
13	Other activities	0,04	0,02	7,44	7,26	0,00	0,00

Source: calculated by the authors based on the data from the Federal Tax Service of the Russian Federation. URL: https://www.nalog.ru/rn77/related_activities/statistics_and_analytics/forms/6092076/ (accessed on 09.19.2018) and the SSC of the Russian Federation. URL: http://www.gks.ru/free_doc/doc_2017/region/reg-pok17.pdf (accessed on 09.21.2018).

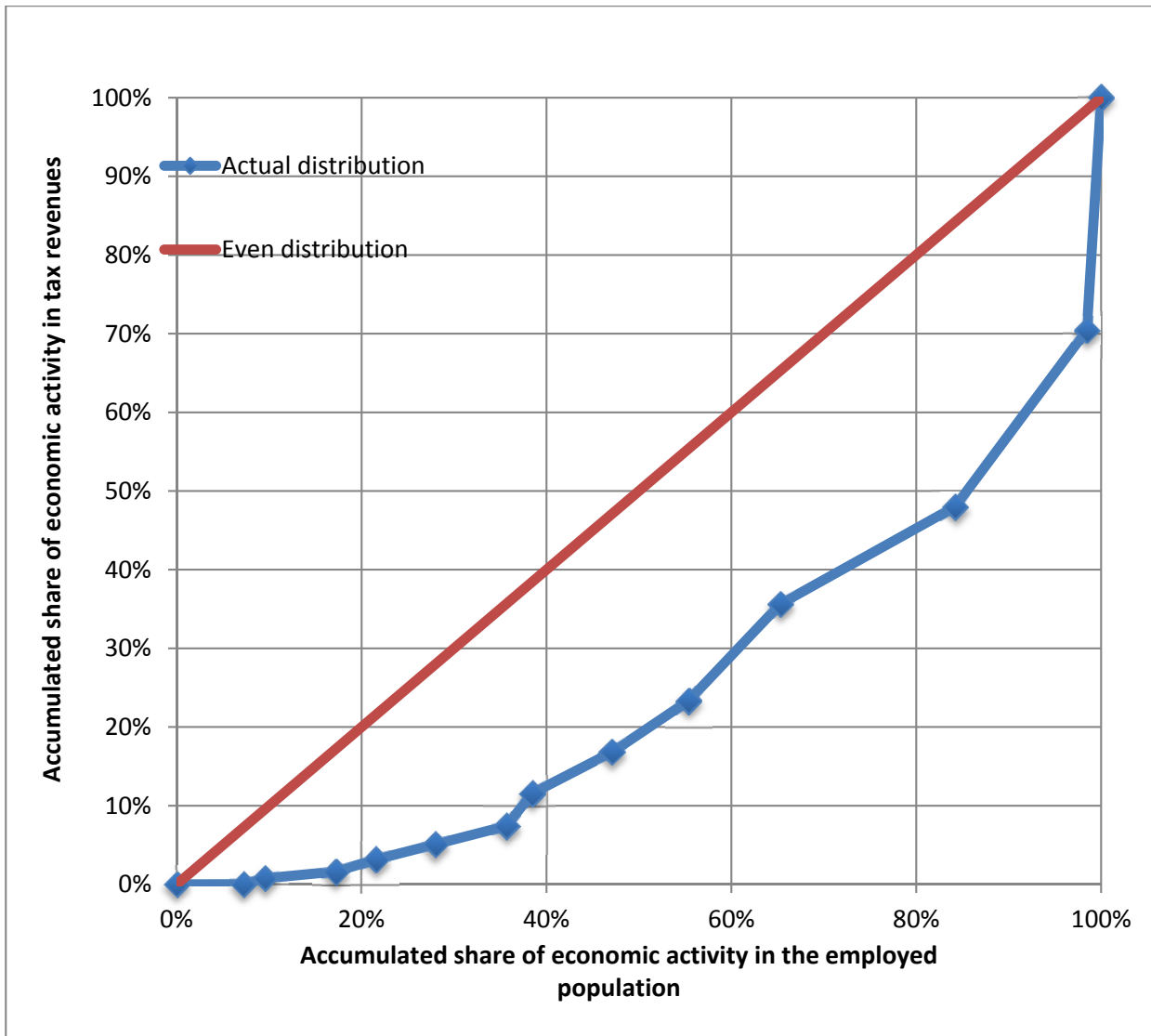


Fig. 1. Distribution of tax revenues by economic activity in 2016 (broken line – the actual distribution; dotted line – even distribution)

Source: built by the authors based on data from the Federal Tax Service of the Russian Federation. URL: https://www.nalog.ru/rn77/related_activities/statistics_and_analytics/forms/6092076/ (accessed on 19.09.2018); GKS RF. URL: http://www.gks.ru/free_doc/doc_2017/region/reg-pok17.pdf (accessed on 21.09.2018).

Table 1 shows that the share of foreign economic activity “Mining” is almost a third of all tax revenues.

Comparing the structure of tax revenues and the employed population, we see that the ratios of the shares of tax revenues d_{tr} to the shares of the employed population d_{ep} by types of economic activity differ significantly among themselves (for example, in 2016 the highest value of 19.01 was observed for the foreign economic activity “Mining”, and the smallest – 0.11 for the foreign economic activity “Agriculture, hunting

and forestry; fishing, fish farming”). They differ from the even distribution of tax revenues (in this case, the ratio of the shares of d_{tr} to d_{ep} is equal to 1).

Figure 1 shows a graph of the distribution of tax revenues by type of economic activity (analogous to the Lorenz curve), which clearly demonstrates the inequality of such a distribution (a significant deviation from the uniform distribution).

The degree of uneven tax revenues by type of economic activity can be quantified. For such an

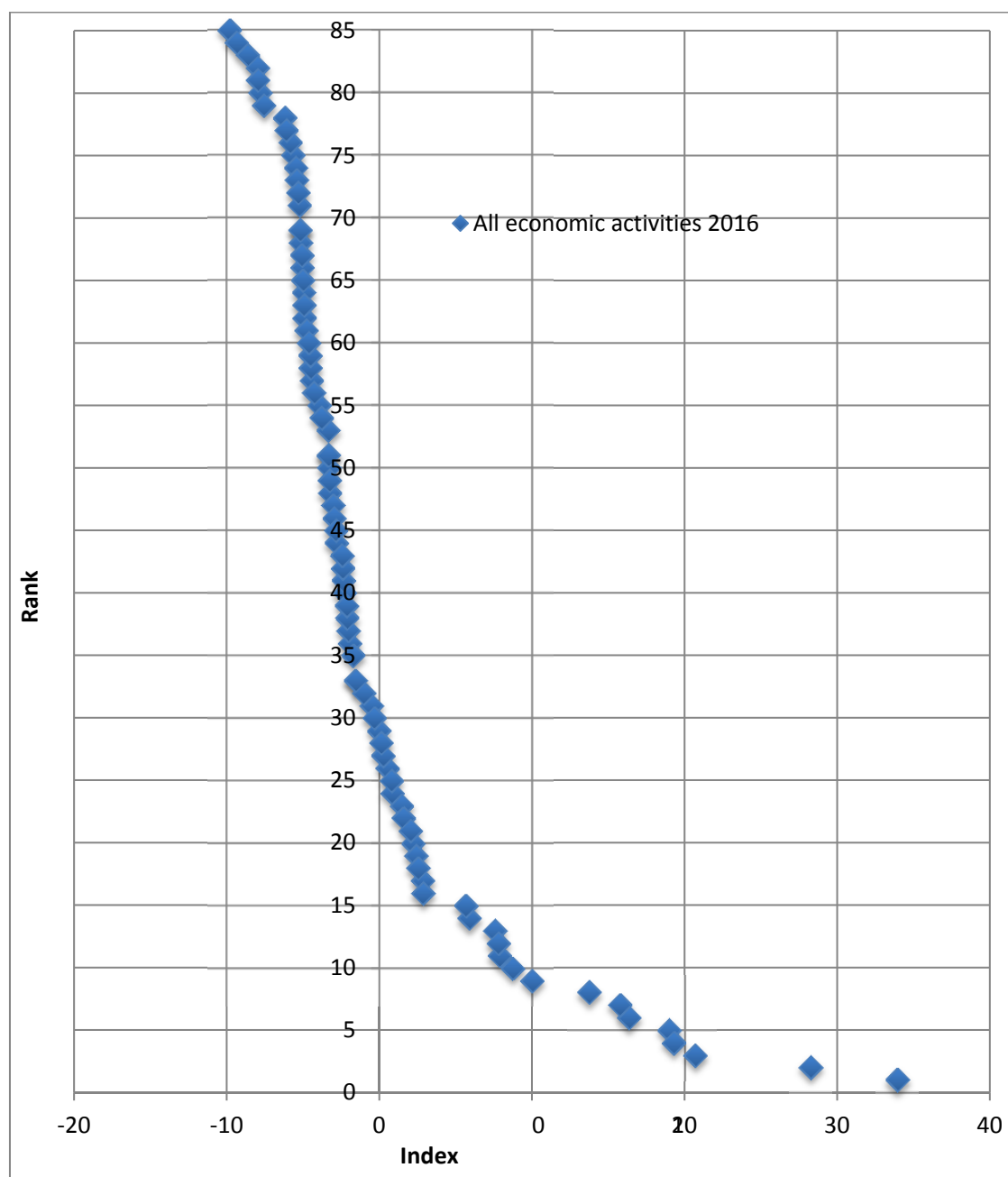


Fig. 2. Distribution of the constituent entities of the Russian Federation in accordance with the tax revenues index for all types of economic activity in 2016

Source: developed by the authors based on *Tabl. 1*.

assessment, we use the analogue of the Lorenz coefficient K_L . The value of this coefficient can be determined by formula (1)

$$K_L = \frac{1}{2} \sum_j |d_{\text{нп}j} - d_{\text{зп}j}|, \quad (1)$$

where the summation is performed for all types of economic activity. The value of the coeffi-

cient K_L , reflecting the unevenness of tax revenues by type of economic activity in 2016, was equal to 0.40. The obtained value of the coefficient K_L indicates that the distribution of tax revenues by types of economic activity in 2016 is significantly different from the uniform distribution.

Proposed by the authors, the index of efficiency of tax revenues is an integral indicator

that can be used to measure the level of economic development in the regions, their inter-subjective comparison and to assess the effectiveness of tax revenues in various types of economic activity. The method of building up the index makes it possible to analyze its (and its individual indicators) dynamics, which allows to assess changes in the economic activities of the constituent entities in the role redistribution of economic activities in terms of the effectiveness of tax revenues.

The proposed method of calculating the index makes it possible to use a variety of measurements in any socio-economic system (evaluating the resource, economic, social, etc. system potentials), which allows to obtain a comprehensive indicator of the economic development of the system, to assess its potential, to define goals, to identify infrastructure problems, gaps in the diversification of the economy, and to assess investment risks and threats.

Here are some examples demonstrating the possible use of the index of efficiency of tax revenues in analyzing the economic activities of the constituent entities of the Russian Federation. *Figure 2* shows the distribution of the constituent entities of the Russian Federation according to the values of the index of efficiency of tax revenues I .

It can be seen that there is a fairly strong stratification of the constituent entities of the Russian Federation on the effectiveness of tax revenues. For example, the number of the constituent entities whose index value is positive (above the average level) is 28, and in 57 constituent entities the value of this index is below zero.

The effectiveness of tax revenues can be considered by certain types of economic activity, i.e. by individual indicators included in the index. *Table 2* presents the distribution of the constituent entities of the Russian Federation by the indicator in the foreign economic activity "Production and distribution of electricity, gas and water". It follows from the table that the most developed constituent entities in this

foreign economic activity are: Moscow, the Krasnoyarsk Territory and the Khanty-Mansiisk autonomous district. A total of 26 constituent entities are above the average level (zero), and 59 of them are below. The Republic of Ingushetia, the Chechen Republic, the Republic of Kalmykia, the Pskov and Kirov Regions are the weakest. It can be concluded that the development of foreign economic activity "Production and distribution of electricity, gas and water" among the constituent entities of the Russian Federation is very uneven.

Based on *table 2* we will make figures 3 and 4. *Figure 3* shows the distribution curve of the constituent entities according to the index reflecting the efficiency of tax revenues from the foreign economic activity "Production and distribution of electricity, gas and water".

Figure 4 shows a histogram of positive index values of efficiency of tax revenues for the foreign economic activity "Production and distribution of electricity, gas and water" (index I_4) in descending order.

Let us consider the effectiveness of tax revenues by type of economic activity. For this, it is necessary to evaluate all summands (indicators) included in the index. For example, *figure 5* shows a histogram reflecting the structure of the index of efficiency of tax revenues for the Moscow region (the index value is 8.72; it is the 10th among the constituent entities of the Russian Federation on this indicator). It can be seen that the highest efficiency of tax revenues in this constituent entities is observed in such foreign economic activity as "Production and distribution of electricity, gas and water".

Let us consider the efficiency of tax revenues in a constituent entity in the middle of the ranked list (the index value is -2.44; it is 43rd among the constituent entities of the Russian Federation on this indicator).

The structure of the index for this constituent entity, presented in *figure 6*, indicates that for all FEA, the efficiency of tax revenues is close to the average values, practically the values of all indicators are within the intervals $(-\sigma; +\sigma)$.

Table 2

Indicator of distribution of the constituent entities of the Russian Federation by type of economic activity "Production and distribution of electricity, gas and water" in 2016

Constituent entity of the Russian Federation	Indicator 1240	Rank	Constituent entity of the Russian Federation	Indicator 1240	Rank
Moscow	5.46855	1	Nizhny Novgorod region	-0.29498	44
Krasnoyarsk Territory	4.38956	2	Republic of Karelia	-0.30163	45
Khanty-Mansiisk Autonomous District	2.21977	3	Kaluga region	-0.32573	46
Republic of Khakassia	1.89342	4	Kabardino-Balkarian Republic	-0.32852	47
St. Petersburg	1.61829	5	Orenburg region	-0.32902	48
Irkutsk region	1.50083	6	Jewish Autonomous Region	-0.35516	49
Moscow region	1.4381	7	Primorye Territory	-0.39471	50
Leningrad region	1.24543	8	Ivanovo region	-0.41518	51
Tyumen region	1.11134	9	Zabaikalye Territory	-0.41524	52
Amur region	1.10717	10	Republic of North Ossetia	-0.41681	53
Stavropol Territory	0.64021	11	Mari El Republic	-0.42119	54
Yamalo-Nenets Autonomous District	0.53125	12	Penza region	-0.42483	55
Magadan region	0.38516	13	Vologda region	-0.42684	56
Tula region	0.30986	14	Ryazan region	-0.42811	57
Sverdlovsk Region	0.30364	15	Sevastopol	-0.42813	58
Murmansk region	0.27138	16	Lipetsk region	-0.43485	59
Kamchatka Territory	0.27018	17	Kemerovo region	-0.44914	60
Novosibirsk region	0.22632	18	Smolensk region	-0.45503	61
Saratov region	0.19555	19	Republic of Crimea	-0.46636	62
Rostov region	0.15088	20	Belgorod region	-0.46737	63
Kaliningrad region	0.07724	21	Voronezh region	-0.47341	64
Chelyabinsk region	0.06231	22	Altai region	-0.50418	65
Republic of Bashkortostan	0.04357	23	Republic of Mordovia	-0.5377	66
Kurgan region	0.04078	24	Omsk region	-0.54277	67
Tomsk region	0.03717	25	Kursk region	-0.54752	68
Krasnodar region	0.02234	26	Astrakhan region	-0.5752	69
Tver region	-0.02663	27	Oryol region	-0.59274	70
Yaroslavl region	-0.04949	28	Novgorod region	-0.59961	71
Sakhalin region	-0.08211	29	Republic of Adygeya	-0.6092	72
Republic of Dagestan	-0.08899	30	Arkhangelsk region	-0.6145	73
Nenets Autonomous District	-0.1304	31	Udmurtian Republic	-0.62054	74
Khabarovsk region	-0.1342	32	Altai Republic	-0.63453	75
Republic of Sakha	-0.13707	33	Tambov region	-0.65505	76
Chuvashi Republic	-0.15907	34	Ulyanovsk region	-0.65973	77
Komi Republic	-0.18091	35	Chukotka Autonomous Region	-0.66153	78
Perm region	-0.18875	36	Republic of Buryatia	-0.66884	79
Republic of Tatarstan	-0.19606	37	Bryansk region	-0.71352	80
Republic of Tuva	-0.2024	38	Kirov region	-0.72622	81
Karachayev-Cherkessian Republic	-0.22021	39	Pskov region	-0.83866	82
Samara region	-0.27729	40	Republic of Kalmykia	-0.84296	83
Volgograd region	-0.28408	41	Chechen Republic	-0.98714	84
Vladimir region	-0.28646	42	Republic of Ingushetia	-1.04336	85
Kostroma region	-0.28845	43			

Source: calculated by the authors based on the data from the Federal Tax Service of the Russian Federation. URL: https://www.nalog.ru/rn77/related_activities/statistics_and_analytics/forms/6092076/ (accessed on 09.19.2018). GKS RF. URL: http://www.gks.ru/free_doc/doc_2017/region/reg-pok17.pdf, (accessed on 07.25.2017).

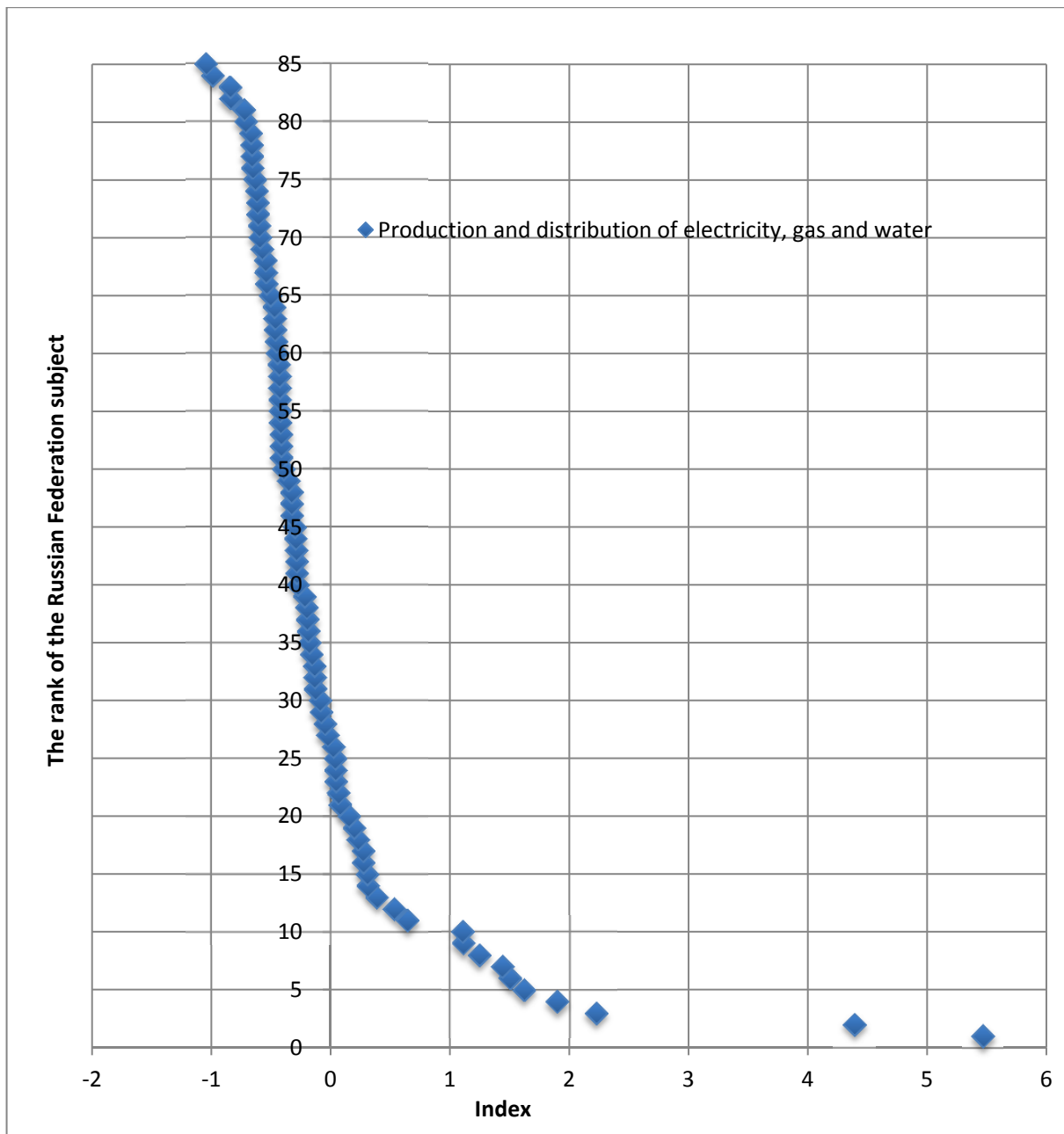


Fig. 3. Distribution of the constituent entities of the Russian Federation in accordance with the tax revenues index by type of economic activity "Production and distribution of electricity, gas and water" in 2016

Source: developed by the authors based on Table 2.

CONCLUSIONS

The article reviews the scientific works of domestic and foreign authors in the field of application of the index method and its indicators. It is revealed that this method is widely used in various fields of economics and management. The index of efficiency of tax revenues is proposed, based on 13 indicators, each of them corresponding to the type of economic activity and

assessing the level of economic development of a constituent entity of the Russian Federation.

Based on the proposed method, the distribution of the constituent entities of the Russian Federation is obtained according to the values of the index of tax revenues for all foreign economic activities in 2016. The effectiveness of tax revenues for individual indicators included in the index is considered. The distribution of the

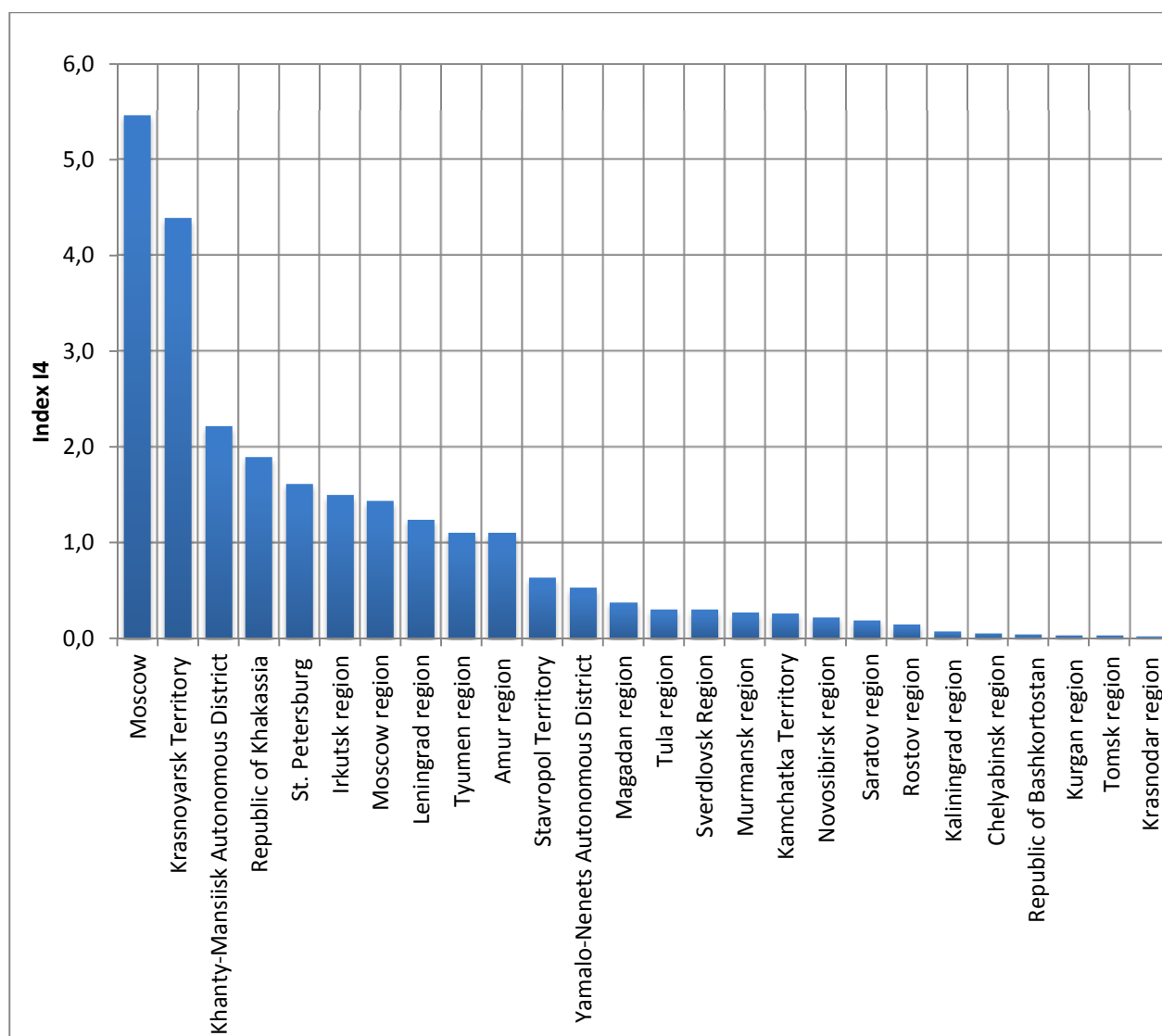


Fig. 4. Ranked number of values of the tax revenues efficiency index by type of economic activity “Production and distribution of electricity, gas and water”, exceeding the average value

Source: developed by the authors based on *Tabl. 2*

constituent entities of the Russian Federation is obtained according to the economic activity index “Production and distribution of electricity, gas and water”. Distribution indicators for each constituent entity of the Russian Federation are calculated. Graphs showing the structure of the index of efficiency of tax revenues in the Moscow region and the Altai Republic in 2016 were built.

It should be noted that the presented index method allows to evaluate the efficiency (effectiveness) of tax revenues in the constituent entities of the Russian Federation simultaneously for all types of economic activity, to compare the constituent entities among themselves accord-

ing to the values and structure of this index, to classify the constituent entities of the Russian Federation in terms of tax revenues, to analyze the change in dynamics and to predict its values in the future. The proposed method of calculating the index makes it possible to use a variety of diverse factors that affect the socio-economic system (economic, socio-demographic, technological, etc.), which allows to obtain a complex index of the system activities and development, to assess its potential, to define goals, to identify infrastructure problems, gaps in the diversification of the economy, and to evaluate investment risks and threats.

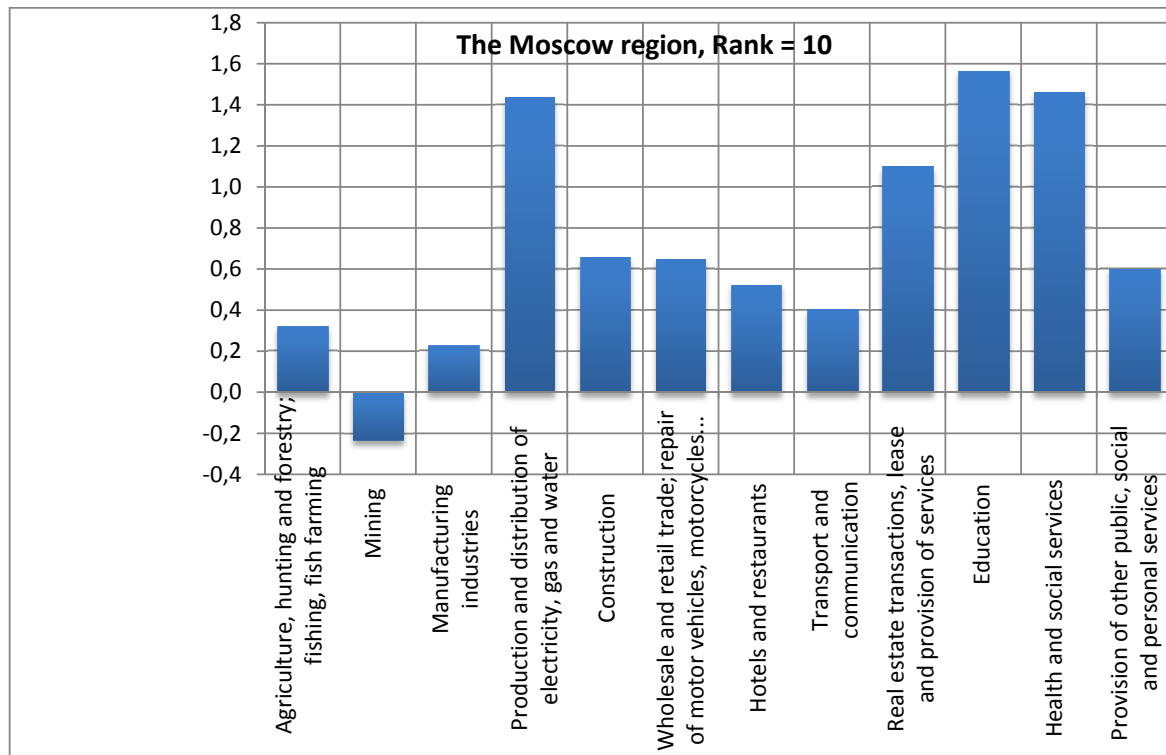


Fig. 5. Structure of the tax revenues efficiency index in the Moscow region in 2016

Source: developed by the authors based on Tabl. 1.

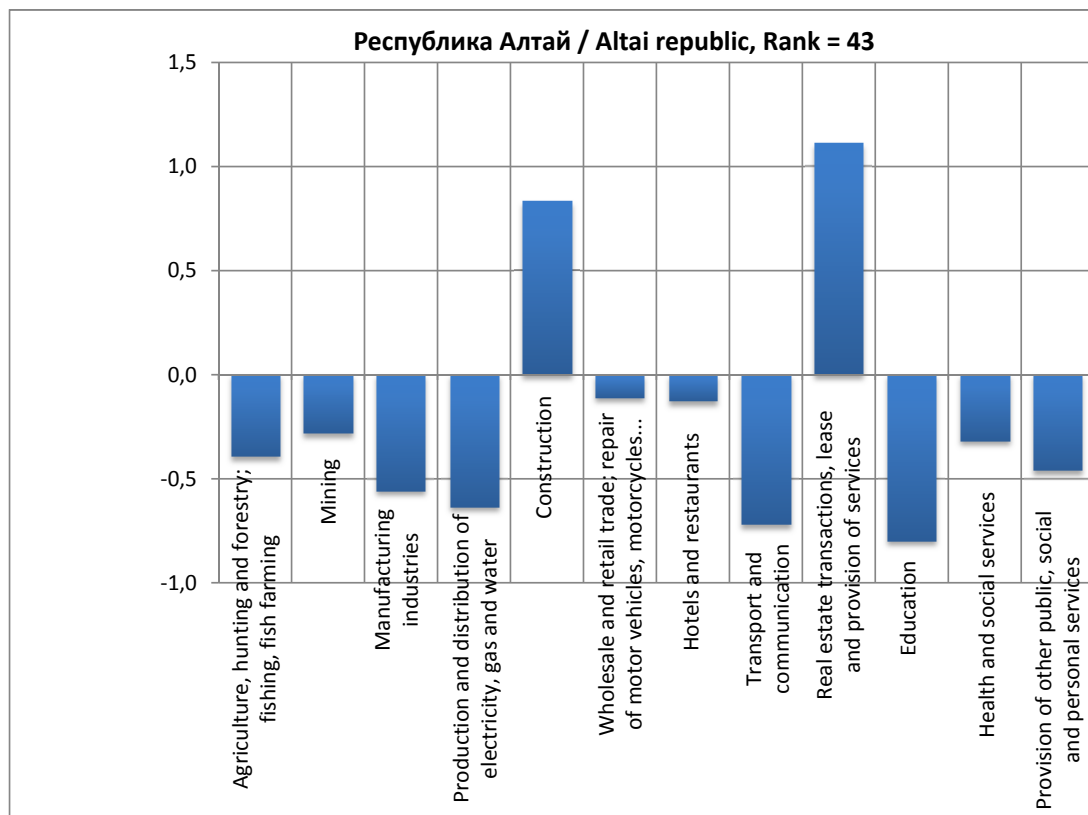


Fig. 6. Structure of the tax revenues efficiency index in the Republic of Altai in 2016.

Source: developed by the authors based on Tabl. 1.

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