

Nadezhda I. YASHINA, Svetlana D. MAKAROVA, Marina V. OGORODOVA,
Zhanna V. SMIRNOVA, Elena A. CHELNOKOVA, Svetlana N.
KAZNACHEEVA

Budget Aspect of Economic Security of the State: Regional Approach*

Nadezhda I. YASHINA, Svetlana D. MAKAROVA, Marina V. OGORODOVA,
Zhanna V. SMIRNOVA, Elena A. CHELNOKOVA, Svetlana N.
KAZNACHEEVA

Lobachevsky State University of Nizhni Novgorod, Nizhny Novgorod, Russian
Federation

Minin Nizhny Novgorod State Pedagogical University, Nizhny Novgorod, Russian
Federation

Abstract. *The article offers a methodology for evaluation of economic security of the state at a regional level using economic and statistical approaches. A ranking of regions on the basis of normative method was conducted in order to improve efficiency of state budget policy implementation.*

Keywords: economic security, quantitative evaluation, regions, budgetary threshold standards, ranking, budget policy.

Introduction

One of the most important issues of economic security of the state is the capability to provide oneself with means sufficient to complete internal and external tasks. Budget system fulfilling this function must have a certain margin of safety. This is necessary in case of unforeseen and emergency circumstances both at the level of the state and at the level of regions so that the authorities could efficiently and timely react to occurrence of any threats and, if possible, prevent them or at least minimize potential economic losses¹.

Budget aspect of region security features such development level of budget system possibilities to influence the economy of a region, which can secure constant development of human potential and improvement of the population's quality of life characterized by education, life longevity, birth-rate, morality elevation, spiritual richness of the population².

The diversity of these processes is determined by the multitude of directions of the budget aspect of economic security³. Currently, there isn't an integral system for quantitative evaluation of economic security via budget indexes which would allow evaluating overall the directions and scale of threats to socioeconomic development of the subjects of Russian Federation.

Literature review

Modern research of the issues in the budget aspect of economic security of the Russian Federation are conditioned by the effective legislation – the

* Acknowledgements. This paper was written with the support of the Russian Foundation for Basic Research as part of the research project 18-010-00909 A.

¹ V.K. Senchagov, V.C. Senchagova (eds.), *Economic security of. General course [Electronic resource]: textbook*, 4-th ed., Moscow, Binom. Laboratoriya znaniy, 2015.

² S.Yu. Glazyev, "The basis for ensuring the economic security of the country: an alternative reform course", in *Russian Economic Journal*, I (2014), p. 8-9.

³ I.E. Denezhkina, D.A. Suzdaleva, "The system of indicators for monitoring the economic security of the region", in *Effective anti-crisis management*, X (2014), p. 1-8.

Constitution of the Russian Federation (p. 71, 72, 106, 124)⁴; the Budget Code of the Russian Federation (p. 61.1, 217, 219, 241)⁵; the federal laws "On Federal Budget" and regional laws "On Budget of a Subject of the Russian Federation" which are passed for a target period; federal laws "On Security"⁶, "On Strategic Planning in the Russian Federation"⁷, Directive of the President of the Russian Federation "On Strategy for National Security of the Russian federation"⁸ and other regulatory legislative documents.

Economic security is considerably studied from the point of view of a legal category in the papers of N.G. Dolmatova (2016)⁹, G.S. Belyayeva (2014)¹⁰, M.V. Andreyev (2013)¹¹, Y.I. Kuznetsova (2014)¹², O.V. Morgun, (2014)¹³ etc. The research of economic and financial security as an economic category was conducted in the papers of A.A. Felyust (2009)¹⁴, Y.S. Pereverzeva et al. (2015)¹⁵, G.A. Borschevsky, (2014)¹⁶ etc. The analysis of the mechanisms of financial security ensuring was conducted in the papers of Y.V. Karanina (2015)¹⁷, V.A.

⁴ *The Constitution of the Russian Federation of December 12, 1993 (as amended on December 30, 2014)*, Moscow, SPS Konsul'tant Plyus, p. 71, 72, 106, 124.

⁵ *Budget Code of the Russian Federation of 17.07.1998 No. 145-FZ (as amended on July 31, 1998)*, Moscow, SPS Konsul'tant Plyus, p. 61.1, 217, 219, 241.

⁶ *Federal Law of the Russian Federation of December 28, 2010 N 390-FZ "On Security" (as amended on October 5, 2015)*, Moscow, SPS Konsul'tant Plyus. Cf. Elena N. Luchinskaya, Irina S. Karabulatova, Valentina V. Zelenskaya, Sergey A. Golubtsov, "Characteristics of Image of the Russian Family in Modern Advertising Discourse," in *Astra Salvensis*, VI (2018), no 11, p. 702.

⁷ *Federal Law of the Russian Federation of June 28, 2014 No. 172-FZ "On Strategic Planning in the Russian Federation" (as amended on December 31, 2017)*, Moscow, SPS Konsul'tant Plyus, 2015

⁸ *Decree of the President of the Russian Federation of December 31, 2015 No. 683 "On the National Security Strategy of the Russian Federation"*, Moscow, SPS Konsul'tant Plyus, 2015.

⁹ N.G. Dolmatova, "Threats to national security as a legal category", in *Juvenis Scientia*, VI (2016), p. 51-53. Cf. Larisa S. Shakhovskaya, Ksenia O. Klimkova, Yana S. Matkovskaya, "Improvement of Modern Institutions for Struggle Against Poverty in Russia: Acute Measures," in *Astra Salvensis*, VI (2018), Special Issue, p. 197-205.

¹⁰ G.S. Belyaeva, "On the issue of the concept of a legal regime", in *Administrative and municipal law*, III (2014), p. 272-285.

¹¹ M.V. Andreyev, "Constitutional and international political and legal principles for ensuring national security", in *Right and Politics*, VI (2013), p. 803-808.

¹² Y.I. Kuznetsova, "On the issue of state strategic planning in ensuring economic security", in *National Security*, III (2014), p. 366-371.

¹³ O.V. Morgun, "Concept and the main features of financial security measures", in *National Security*, II (2014), p. 235-243. Cf. Sabyrkul Seitova, Yessengali Smagulov, Yekaterina Gavrilova, Zhomart Zhiyembayev, Nazym Zhanatbekova, "Studying Mathematical Subjects to Students as an Independent Work," in *Astra Salvensis*, VI (2018), no. 11, p. 621.

¹⁴ A.A. Felyust, "The role of financial security in the system of economic security of the Russian Federation", in *National interests: priorities and security*, LI (200), no. 19, p. 67-69.

¹⁵ Y.S. Pereverzeva, E.I. Makrinova, V.V. Grigoryeva, I.Yu. Kapustina, A.B. Dudaev, "Theoretical bases of maintenance of economic safety and financial stability of the country", in *Fundamental researches*, X (2015), p. 189-192.

¹⁶ G.A. Borschevsky, "The role of the state in the formation of a continuum of historical consciousness in the context of the problem of ensuring national security of Russia", in *Informational humanitarian portal "Knowledge. Understanding. Skill"*, I (2012).

¹⁷ Y.V. Karanina, *Financial security (at the level of the state, region, organization and personality): monograph*, Kirov, FGBBOU in "VyatGU", 2015.

Titov (2014)¹⁸, N.I. Yashina et al., (2008)¹⁹ etc. The regional element of the issues under the investigation was studied in the papers of A.I. Tatarkin et al. (2014)²⁰, V.A. Chereshevnev et al. (2014)²¹, N.I. Yashina et al., (2008)²² etc. The research of the international experience of economic security evaluation and of the possibilities of its application in Russia is presented in the studies of A.V. Minakov (2003)²³, A.V. Galukhin, (2016)²⁴ etc.

Methods

It is worthwhile to note that, despite rather comprehensive research on this issue, little attention is paid to studying of economic security of the regions as a system of quantitative budget indexes. In order to organize the quantitative evaluation of economic security of the regions, we suggest looking at the possibility of forming a system of indexes via introduction of budget threshold standards.

The research of economic security issues in the budget aspect showed that it is quite difficult to make its evaluation both at the level of the whole state and at the level of regions. It was discovered that, generally, the issue of measuring

¹⁸ V.A. Titov, "Conceptual basis for ensuring financial security of the budgetary system of the Russian Federation", in *Bulletin of the St. Petersburg University of the Ministry of Internal Affairs of Russia*, III (2014), p. 151-155.

¹⁹ N.I. Yashina, S.P. Borisova, S.D. Makarova, "Perfection of financing of general educational institutions on the basis of an estimation of productivity of budgetary expenses", in *The Economy of formation*, V (2008), p. 32-52. N.I. Yashina, S.D. Makarova, S.Yu. Roganova, "The study of the effectiveness of spending budget funds on education", in *Economics of education*, VI (2008), p. 45-60.

²⁰ A.I. Tatarkin, A.A. Kuklin, "Change in the paradigm of studies of the economic security of the region", in *Economy of the region*, II (2014), p. 25-39. Sergey G. Tyaglov, Irina V. Takmasheva, Natalya N. Kiseleva, Natalya Yu. Rud, "Entrepreneurship as a Strategic Resource of Economic Development," in *Astra Salvensis*, VI (2018), Special Issue, p. 491-500.

²¹ V.A. Chereshevnev, A.A. Kuklin, A.V. Cherepanova, "Teoretiko-methodical approach to forecasting of social and demographic development of region", in *Economy of region*, II (2013), p. 38-46.

²² N.I. Yashina, I.A. Grishunina, "Perfection of theoretical and practical bases of an estimation of a financial condition and quality of management of budgets with a view of increase of a management efficiency by financial resources of territory", in *The Finance and the credit*, CCVII (2006), no. 4, p. 2-11. N.I. Yashina, S.V. Bogomolov, "Methodology for assessing the financial status of consolidated budgets of the RF subjects", in *Bulletin of the Nizhny Novgorod University named after N.I. Lobachevsky*, V (2008), p. 154-166.

²³ N.I. Yashina, E.V. Poyushcheva, "Perfection of the methodology for assessing the tax potential of territories taking into account the risk", in *Regional economy: theory and practice*, VI (2007), p. 132-138.

²⁴ A.V. Minakov, "Foreign experience in the management of fiscal security and the possibility of its use in Russia", in *Economic analysis: theory and practice*, XII (2003), p. 67-72. Ekaterina V. Nalivaychenko, Svetlana P. Kirilchuk, Natalia V. Apatova, Tatiana N. Skorobogatova, Oleg V. Boychenko, "Managing Intellectual Property in Information Economy," in *Astra Salvensis*, VI (2018), Special Issue, p. 714.

²⁴ A.V. Galukhin, "Budgetary security of the state as a condition of economic growth", in *Problems of Territory Development*, LXXXIV (2016), no. 4, p. 89-108.

economic security of the budgets in the subjects of the Russian Federation involves the possibility of two approaches²⁵.

The first approach implies using one integral index, the second – a system of equally significant indexes. Both have advantages, as well as disadvantages.

Results

In the course of research made, it was identified that to make quantitative evaluation of economic security it is appropriate to use a system of budget threshold standards including integral measurements, as well as to set a range of parameter change for a system with low sensitivity to external and internal changes which do not influence the mode of its sustainable development. When arriving at critical values of its criteria, the system becomes instable, i.e. the same criteria of regional budget system functioning have several threshold values indicating a different degree of instability which occurs in case of reaching them. Here we can talk about several threshold budget criteria which allows making an objective quantitative evaluation of the efficiency of economic security of the regions by applying methods of expert evaluation.

The research we've conducted in regards to each analytic index identified maximum etalon values of budget threshold criteria for a region with high (efficient economy function), satisfactory (approximation to imbalanced economy function) and low (instable economy function) level of economic security from the point of view of efficiency of the budget policy conducted^{26,27,28}.

Thus, each of the mentioned threshold values reflects the marginal state of the system when transitioning to qualitative determination of the negative state of a higher level.

Based on the results of the research conducted, we suggest a methodology of identifying budget security of the regions in the conditions of volatility of economy using economic-statistic methods and systemic analysis methods. Approbation of the methodology was carried out on official data from open data basis of the Russian Federal State Statistics Service in 85 regions of the Russian Federation for 2013 – 2016^{29,30,31}.

²⁵ Official website of the Federal Service for Financial Monitoring [Electronic resource], <http://www.fedsfm.ru/>, accessed 15. 10. 2017.

²⁶ N.I. Yashina, E.V. Poyushcheva, M.V.Ogorodova, L.V. Lavrenteva, E.A. Semakhin, O.I. Kuryleva, "Theory and practice of human capital assesment in the context of innovative economy development", in *Man in India*, IIIC (2017), no. 9, p. 43-52.

²⁷ N.I. Yashina, E.V. Poyushcheva, M.V. Ogorodova, Z.V. Smirnova, S.N. Kuznetsova, Z.V. Chaykina, "Methods of estimation of bank system development in Volga federal district", in *Academy of Accounting and Financial Studies Journal*, XXI (2017), no. 3, p. 6.

²⁸ S.N. Yashin, N.I. Yashina, M.V.Ogorodova, Z.V. Smirnova, S.N. Kuznetsova, I.N. Paradeeva, "On the methodology for integrated assessment of insurance companies' financial status", in *Man in India*, IIIC (2017), no. 9, p. 37-42.

²⁹ Official website of the Federal Service of State Statistics [Electronic resource], <http://www.gks.ru/>, accessed 15. 10. 2017.

³⁰ Official website of the Ministry of Finance of the Russian Federation [Electronic resource], <https://www.minfin.ru/en/>, accessed 15. 10. 2017.

Based on the definition of economic security, we suggest to use such markers characterizing different aspects of region functioning as budget criteria:

region financial potential (GRP, percentage of state debt in relation to gross regional product, percentage of expenses for state and municipal debt management in relation to GRP, citizen debt load coefficient (thousands, RUB), inflation rate, percentage of expenses for all-state issues in relation to gross regional product (GRP), coefficient of interest expenses);

region budget stability (budget financial stability coefficient, budget financial strains coefficient, budget independence coefficient, budget debt dependence coefficient);

financial resources investment into human capital (percentage of expenses for national economy in relation to GRP, percentage of expenses for environment preservation in relation to GRP, percentage of expenses for education in relation to gross regional product, percentage of expenses for culture and cinematography in relation to GRP, percentage of expenses for healthcare in relation to GRP, percentage of expenses for social policy in relation to GRP, percentage of expenses for physical training and sports in relation to GRP, population life span coefficient).

Budget criteria are assigned into groups by their influence on economic security of the regions and are standardized to identify their integral value and further rating of economic security of the regions.

In the course of evaluation of economic security of the regions, budget criteria can differ in dimensions. In this regard, we have used a method of linear transformation of initial markers, i.e. the values of standardized markers will fall into the set interval between 0 and 1. This period allows transitioning to evaluation through relatives preserving the budget criteria change structure: increase in some of them leads to decrease in region economic security level while increase in other criteria causes increase in region economic security level.

The first group of criteria for which their values are the higher the better include: percentage of expenses for national economy in relation to GRP, percentage of expenses for environment preservation in relation to GRP, percentage of expenses for education in relation to gross regional product, percentage of expenses for culture and cinematography in relation to GRP, percentage of expenses for healthcare in relation to GRP, percentage of expenses for social policy in relation to GRP, percentage of expenses for physical training and sports in relation to GRP, budget financial stability coefficient, budget financial strains coefficient, population life span coefficient,.

The second group of criteria for which their values are the lower the better include: percentage of state debt in relation to gross regional product, percentage of expenses for all-state issues in relation to gross regional product (GRP), percentage of expenses for state and municipal debt management in relation to GRP, citizen

³¹ N.I. Yashina, E.V. Poyushcheva, M.V. Ogorodova, L.V. Lavrenteva, E.A. Semakhin, O.I. Kuryleva, "Theory and practice of human capital assesment in the context of innovative econom y development", p. 43-52.

debt load coefficient (thousands, RUB), inflation rate, budget financial strains coefficient, coefficient of interest expenses.

First group (criteria minimization)

$$H_{ij\ st} = \frac{H_{ij} - H_{i\ min}}{H_{i\ max} - H_{i\ min}},$$

(1)

Second group (criteria maximization)

$$H_{ij\ st} = \frac{H_{i\ max} - H_{ij}}{H_{i\ max} - H_{i\ min}},$$

(2)

where H_{ij} is the target value criterion i of the system of relative economic security criteria in region J ,

$H_{ij\ cm}$ is the standardized criterion of the relative criterion i of the system of relative economic security criteria in region J ,

$H_{i\ max}$ – maximum target value of criterion i ,

$H_{i\ min}$ – minimum target value of criterion i .

In order to identify economic security of the regions in the conditions of economy volatility, it is necessary to take into consideration the alterability of the indexes characterizing socio-economic condition of the regions.

To rank the indexes of economic security of the regions, we suggest using this formula:

$$CHB_j = \sum_{i=1}^n \frac{H_{ij\ st}}{\sigma_i},$$

(3)

where CHB_j is the final standardized budget criteria for region H_{ij} ;

σ_i is standard deviation of a standardized budget standard of region H_{ij} .

To make quantitative integral evaluation of economic security of the regions in the budget aspect considering the volatility in the region, we identify the integral standardized criterion (KCHB). The indicated integral standardized budget criterion of economic security in the regions is calculated as a total of standardized criteria considering the volatility in the region being a part of the criteria system for evaluation of regional economic security level.

$$KCHB_j = \sum_{i=1}^n CHB_j,$$

(4)

where $KCHB_j$ - integral standardized budget criterion of economic security (KCHB) of region j considering the volatility.

The calculated value of the criterion is compared to the appropriate value of the integral standardized criterion reflecting the threshold value for the region belonging to the group with high, medium, or low level of economic security in the regions of the Russian Federation.

The lower the value of the integral standardized budget criterion of economic security in the regions of the Russian Federation (KCHB) the bigger the efficient state policy of economic security in the area of finance overall.

Table 1 shows the rating of regions by the level of budget security.

Table 1. Rating of the regions of the Russian Federation by the level of economic security based on the evaluation of budget criteria for 2013- 2016. (example of calculations)

	KCHB 2013	Rank 2013	KCHB 2014	Rank 2014	KCHB 2015	Rank 2015	KCHB 2016	Rank 2016
First level of economic security	46.54	8	57.61	6	45.35	5	43.08	5
Altai Republic	45.97	6	70.04	35	45.62	7	43.63	6
The Republic of Crimea	62.99	80	71.87	39	39.49	2	39.91	3
The City of Sevastopol	62.99	81	71.87	40	41.01	4	43.93	7
The Chechen Republic	32.66	1	46.86	1	40.57	3	34.56	1
The Republic of Buryatia	44.27	4	54.96	4	50.98	12	45.41	9
Kamchatka Krai	47.96	10	59.87	9	48.95	9	47.45	11
The Republic of Kalmykia	52.12	17	62.50	15	52.06	14	47.48	12
The Republic of Adygea	51.32	15	60.55	10	53.13	15	49.82	14
Altai Krai	50.21	11	58.98	8	53.38	16	50.07	15
Vladimir Oblast	53.76	27	63.95	19	56.33	21	52.45	16
City of Saint Petersburg	54.92	31	63.82	18	53.95	17	52.46	17
Sakha Republic (Yakutia)	51.34	16	65.23	24	56.26	20	53.52	20
Sakhalin Oblast	58.90	60	68.10	32	58.07	34	53.87	21
The Chuvash Republic	55.65	38	72.82	44	57.34	25	54.38	22
Bryansk Oblast	55.56	36	78.13	55	58.66	40	54.95	24
Primorsky Krai	53.66	25	62.65	16	57.73	29	54.96	25
The City of Moscow	59.83	68	71.10	36	57.40	26	55.48	26
Kursk Oblast	53.38	23	63.18	17	56.99	22	55.54	27
Leningrad Oblast	57.74	52	66.61	27	58.40	37	55.92	32
The Republic of Tatarstan	57.49	50	67.61	30	59.67	44	56.05	33
Rostov Oblast	54.73	30	64.27	20	57.17	24	56.14	34
Stavropol Krai	54.97	33	72.97	45	57.62	28	57.10	35
Second level of economic security	56.03	40	74.69	50	58.96	41	57.15	36
Moscow Oblast	59.55	66	71.92	41	58.40	38	57.19	37
Sverdlovsk Oblast	56.39	44	68.22	33	59.95	46	59.62	49
Nizhny Novgorod Oblast	61.65	78	83.71	66	63.83	66	59.81	51
Voronezh Oblast	58.30	56	73.80	47	60.80	53	60.61	55
Pskov Oblast	53.75	26	85.70	70	60.47	49	60.81	58
Samara Oblast	60.16	71	78.62	58	62.07	59	61.33	61
Ulyanovsk Oblast	57.33	49	80.64	61	62.68	60	61.41	62
Kemerovo Oblast	60.09	70	78.32	56	64.79	73	61.42	63

Belgorod Oblast	61.12	74	83.30	65	63.91	68	61.49	64
Ryazan Oblast	62.90	79	95.27	82	67.89	85	62.44	71
Krasnodar Krai	58.29	55	82.65	64	64.92	74	62.50	72
Vologda Oblast	63.53	85	98.34	85	68.67	86	64.47	78
Yaroslavl Oblast	61.26	76	92.36	78	66.34	78	65.00	79
Magadan Oblast	52.22	18	69.05	34	57.61	27	65.05	80
Komi Republic	58.20	54	75.57	51	65.11	75	65.37	81
Novgorod Oblast	58.50	58	85.73	71	66.71	80	65.59	82
Third level of economic security	63.74	86	93.50	80	66.82	81	65.85	83
Smolensk Oblast	59.40	63	87.20	73	67.66	84	66.21	84
Kostroma Oblast	63.22	84	95.35	83	67.10	82	66.28	85
Astrakhan Oblast	64.67	87	100.83	86	68.98	87	67.42	86
Amur Oblast	59.44	64	86.27	72	66.07	77	67.69	87
Chukotka Autonomous Okrug	63.17	83	114.74	88	75.70	88	70.40	88

The rank of economic security based on preliminary reports on utilization of the budgets of the subjects of the Russian Federation for 2017 shows that ratings of the regions won't change dramatically.

According to the information of the Ministry of Finance of the Russian Federation the debt load in the regions decreases second year in a row. As of January 1 2018, the ratio of the total state debt of the regions and the total volume of tax and non-tax income amounts to 30.5%, which is 3.3 percent points lower than last year. The indexes characterizing debt dependency of regions greatly differs: from 0% in Sevastopol and Sakhalin Oblast to 225.7% in Mordovia. Ratings of budget security of the regions are also associated with this. The most significant increase in debt is detected in the Republic of Mordovia and Chukotka Autonomous Okrug. Due to high level of debt and inefficiency of budget management, treasury control is introduced in Khakasia and Kostroma Oblast. An unsatisfactory quality of regional finance management is recognized for the first time.

According to the data of the Ministry of Finance of the Russian Federation, in 47 subjects of the Russian Federation, the state debt as of January 2018 exceeds 50% of the volume of tax and non-tax income of the budget, out of which in 32 subjects of the Russian Federation the state debt exceeds 70% of their own income.

Sevastopol, the Republic of Crimea, Sakhalin Oblast, Tyumen Oblast, Moscow, Leningrad Oblast, Altai and Primorsky Krai, and Saint Petersburg remain leaders of economic security based on the evaluation of budget criteria in 2017.

Conclusion

The rating evaluation of economic security from the point of view of the budget aspect will allow making current and prospective decisions in regards to the subjects of the Russian Federation which will favor their sustainable socio-economic development based on strengthening their economic security.