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COMPARISON OF THE EFFICIENCY OF BUDGET FINANCING AND THE SOCIAL SECURITY OF A REGION

The article deals with theoretical and economic aspects of the “security” category and draws a distinction between philosophical, sociological, and economic approaches to the concept of social security. From the perspective of a system approach, the authors define the place of the region's social security in ensuring national security. The article describes the theoretical content of the “social security” category and provides the authors' specification for such terms as “social risks,” “danger,” and “threat.” The authors offer methodological tools to evaluate the region's social security based on a complex assessment of the region's socioeconomic and budget-financing indicators to identify the risks (deviations) and factors of inefficient financing. The proposed methodological approach is based on identifying the dependencies between the social and financial security of the region. The following indicators reflecting the social security level in the territory of residence were selected as estimated indicators: the region's consolidated budget income and expenses, gross domestic product growth rates, natural population growth ratio, unemployment level, the share of the population with income below the subsistence minimum. This approach was tested by the example of the Perm Territory and Sverdlovsk Region revealing the regularities as well as favorable and unfavorable periods for the region's social security. The obtained estimated indicators are ranked depending on the growth (fall) time lag, resilience, and sensitivity to budget financing. The assessment results show that the Perm Territory has been entering a deep recession in terms of national security since 2012. Similar tendencies are demonstrated by the Sverdlovsk Region; however, in view of the apparent diversity and dominant influence of the Perm Territory and the Sverdlovsk Region on the socioeconomic development of the Privolzhsky and Ural Federal Districts, respectively, the provided comparison is of scientific and practical interest.

Keywords: risks, threats, social security, budget financing, consolidated budget, natural population growth ratio, gross domestic product, unemployment

Introduction

Social security assessment becomes of special relevance in the context of negative socioeconomic and political tendencies inevitably leading to lower living standards, contributing to the social polarization of the society and higher social tension, and posing a serious threat to national security.

The review of the literature on social security issues showed that the modern social security theory in Russia is based on two methodological approaches: philosophic-sociological and economic. The philosophic-sociological approach is mostly developed and views national security as the security of social organization of the society, the country, social systems of various nature, and human rights and freedoms [1–7].

The economic content and substance of social security are in line with a more general definition of the term “security” given in the Federal Law of the Russian Federation On Security: Security Is a State of Protection of Vital Interests of People, Society, and Country against Internal and External Threats.¹ Vital interests under the Law include a number of needs that when satisfied ensure the existence and opportunities for the development of a person, society, and country.²

From the perspective of a system approach, social security is part of national security and demonstrates a close dependence on economic and financial security (Fig. 1).

Moreover, social security is one of Russia's prerogative as per Article 7 of the Constitution of the Russian Federation: “Russian Federation is a social country that pursues a policy of creating conditions

¹ On Security. Federal Law No. 390-FZ dated December 28, 2010. Revised on October 5, 2015. Available at the ConsultantPlus Legal Reference System (date of access: June 6, 2016).

² On Russia's National Security Strategy. Decree of the President of the Russian Federation No. 683 dated December 31, 2015. Available at the ConsultantPlus Legal Reference System (date of access: June 8, 2016).

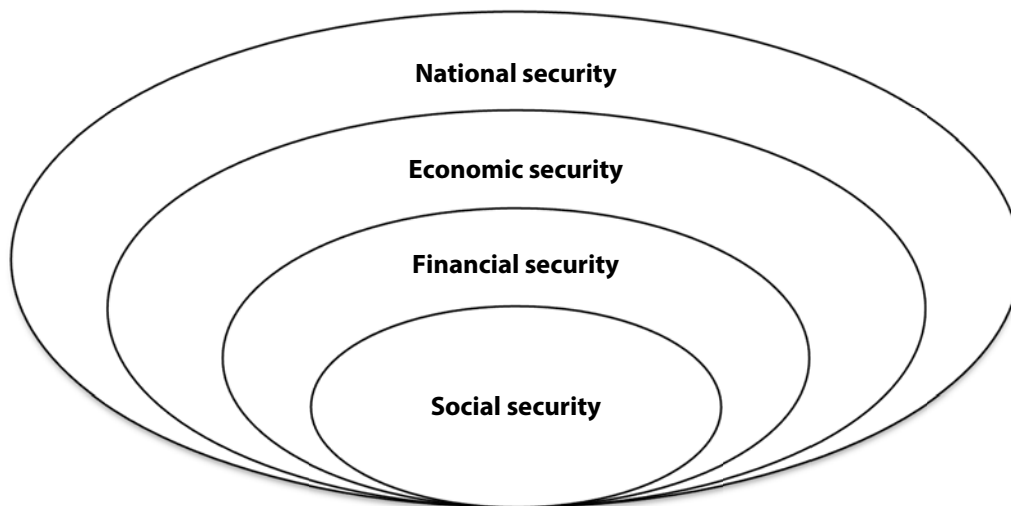


Fig. 1. *Place of social security in the system of national security*

to ensure decent life and free human development."³ However, according to Russia's National Security Strategy, "the key strategic threats to national security in the economy, ... imbalanced national budget system, ... uneven development of the regions"⁴ entail such threats to national security as unfair distribution of benefits in the society and uneven welfare levels in the regions (territories). Thus, to objectively evaluate social security, it is required to make an adequate assessment of the territory of residence as its condition determines the integrity and sustainability of the national economy and social security of vital interests of the Russian citizens.

Theory

The theoretical concept field of social security includes associated terms such as social risks, danger, threats, and vulnerability. B. Porfiryev understands "danger" as "the capability to inflict any damage (harm) to human life or health, material, or spiritual values" and defines "risk" as "a potential danger and a quantitative expression of its consequences" [8]. In this interpretation, the concept of risk is a derivative from the concept of danger and is identified as threat. According to N. Luhmann, "if potential damage is regarded as a consequence of a decision, then we are talking about risk, but if the reasons for such damage are thought to be from the outside—the external world—then it is danger" [9, 10]. A. Mozgovaya adds that "danger is not risk until there is no decision to act," thus identifying the subjective component or risk. "The efficiency of the decision made directly depends on the protection and resilience of the subject to the adverse effect. The loss by the subject of the decision of such protection characterized by the vulnerability category is along with danger another prerequisite for risk" [11].

Summarizing the foregoing, let us first of all refer to the etymology of these concepts. The dictionary of the Russian language by S. I. Ozhegov defines "danger" as "a possibility or threat of something very bad, some misfortune," then "danger" and "threat" are the synonyms of "risk." The dictionary also defines risk as a "possibility of danger or failure." The term "risk" comes from the Greek *ridsikon* or *ridsa* meaning cliff or rock. So, it appears that the Russian word for "risk" would be danger or threat. Thus, danger and threat possess generic characteristics of risk, and risk is a measurable uncertainty [12–14] or is a measure of quantitative evaluation of danger or threat determined as a probable deviation from the expected value.

The term "risk" applies to socioeconomic processes. The differences between the object and the subject are the basis for the typologization and classification of risks.

The basic social risks include the risks associated with the probability of adverse or accidental events beyond a person's control that deteriorate the person's welfare and decrease their income and living

³ Constitution of the Russian Federation. Adopted by national voting on December 12, 1993. Subject to the amendments made by Russian Laws on Amendments to the Constitution of the Russian Federation No. 6-FKZ dated December 30, 2008, No. 7-FKZ dated December 30, 2008, No. 2-FKZ dated February 5, 2014, and No. 11-FKZ dated July 21, 2014. Available at the ConsultantPlus legal reference system (date of access: June 6, 2016).

⁴ On Russia's National Security Strategy. Decree of the President of the Russian Federation No. 683 dated December 31, 2015. Available at the ConsultantPlus legal reference system (date of access: June 10, 2016).

standards: risks of disability (temporary, permanent), loss of a breadwinner, unemployment. Social risks also include demographic risks, being a manifestation of adverse modifications in demographic processes (birth rate, mortality, marriages, migration). The basic demographic risks are the longevity risk, the risk of death, and the risk of modification of demographic indicators [15].

As to social risks, A. Giddens reasonably notes: "... Risk is inherent not only in individual activities. There are risk environments that have an effect on huge masses of individuals faced with a dilemma, an uncertainty. The social settings as a source of threats and dangers not only provoke risky acts and deeds of individuals and social groups but also prejudice personal and public security" [16, 17]. S. Doil says that the country is in a state of security if it can "take measures to develop its social sphere, education, and economy without any external influence, provide their citizens with housing, food, and work, and protect their civil rights and personal freedoms" [18].

Financial security is an essential element of the country's economic security system that has an immediate effect on its other constituent elements (infrastructure, energy, social sphere, etc.). Having an adverse effect on the economic development, financial factors are a subject of financial security [19].

Today, the most significant social threats are:

- Various welfare level in the regions
- High social differentiation of the population
- Reduced life expectancy
- Reduced quality of education and health care [20]

By means of budget expenses, the government can influence the social sphere and the overall economic situation in the region.

Social security is a condition of protection where citizens are guaranteed an acceptable level of social benefits determining the living standards of individuals and of the society in the territory of residence. Moreover, security is a combination of economic relations aimed at neutralizing and/or mitigating the risks (dangers or threats) to maintain a balance and a capability for sustainable reproduction and operation of various systems. Since all systems (without exclusion) are prone to various dangers (risks), the category "risk" is absolute, while the category "security" is relative and depends on a multitude of factors [21]. In our opinion, the methodology of assessing the security level is fully based on the risk theory. The identification and analysis of risk and its quantitative assessment are the bases for security evaluation. Of special relevance is the quantitative assessment of the social security level.

Methods

The analysis of the methods used to evaluate social security shows that today's scientific and economic literature provides a rather sufficient methodological base. In assessing the region's social security, researchers usually apply indicative analysis methods and view social security from the perspective of the territory's economic security [1–4, 22, 23]. The existing methods differ by various indicators, threshold values, and identification of several danger levels. The lack of an unified list of indicators can be explained by the novelty of this problem and by high agility and volatility of the socioeconomic processes in the society.

The indicative analysis method makes it possible to assess the level of the region's social security as of a specific date, compare it with threshold values, identify threats, track changes in dynamics, and make comparisons with other subjects of the Russian Federation. In our opinion, this method is not without faults: it is static and does not reveal the interrelations between various factors affecting social security, and — most significantly — it does not assess the efficiency of financing in the region or reveal the relations between the costs and the achievement of the forecast values of target social indicators.

The methodological tools proposed by the authors are based on the identification of interdependencies between the region's social and financial security and include two assessment methods:

1. Assessment of the region's budget financing (budget risks) (Table 1).
2. Comparison of social security indicators with the level of budget financing to identify the risks (deviations) and the factors of inefficient financing.

Indicators of the territory's budget financing with account of the risks of underfunding

Indicator	Estimation
Dynamics of key budget parameters	
Consolidated budget income	Δ Growth / reduction rate; in dynamics by years
Consolidated budget expenses	Δ Growth / reduction rate; in dynamics by years
Consolidated budget deficiency / surplus	$Share = \frac{Surplus(Deficiency)}{Income(Expenses)} \times 100$
<i>Own budget income</i>	
Share of own income in the consolidated budget	$Share\ of\ own\ income = \frac{Own\ expenses\ of\ the\ territory}{Income\ of\ the\ territory's\ consolidated\ budget} \times 100$
Own income	$Own\ income = Income - nonrepayable\ receipts$
Share of basic budget parameters in GRP	
Consolidated budget income in % of the gross regional product (GRP)	$Share\ of\ income = \frac{Income}{GRP} \times 100$
Consolidated budget expenses in % of the gross regional product (GRP)	$Share\ of\ expenses = \frac{Expenses}{GRP} \times 100$
Consolidated budget deficiency (surplus) in % of the gross regional product (GRP)	$Deficiency\ /surplus\ share = \frac{Deficiency\ /Surplus}{GRP} \times 100$
Budget support and adequacy levels	
Budget support level (rubles per capita)	$Budget\ support\ level = \frac{PConsolidated\ budget\ expenses\ a}{Population\ size}$
Budget Adequacy Level 1	$Budget\ Adequacy\ Level_1 = \frac{The\ territory's\ budget\ support\ level}{The\ territory's\ subsistence\ minimum}$ <p>Budget Adequacy Level1 < 1 = inadequate Budget Adequacy Level1 = 1 = minimum Budget Adequacy Level1 > 1 = adequate</p>
Budget Adequacy Level 2	$Budget\ Adequacy\ Level_2 = \frac{The\ territory's\ budget\ support\ level}{Average\ population\ income}$ <p>Budget Adequacy Level2 < 1 = minimum Budget Adequacy Level2 = 1 = adequate Budget Adequacy Level2 > 1 = good (satisfactory)</p>
Territory underfunding risks	
Budget risk level	Territory underfunding as a result of budget deficiency and incomplete budget utilization, which entails a decrease in the living standards and life quality
Assessment of the budget deficiency and its limit value	High risk: Budget deficiency Critical risk: <i>Budget deficiency > 0.5 of the limit value</i> Acceptable risk: <i>Budget deficiency < 0.5 of the limit value</i>
Territory underfunding risk (failure to utilize the budget (income, expenses))	High risk: <i>Target ≥ Actual < 70%</i> Critical risk: <i>Target ≥ Actual < 80%</i> Acceptable risk: <i>Target ≥ Actual ≥ 90%</i>
Risk of the low level of the territory's income and expense budget planning	High risk: <i>Target < Actual > 30%</i> Critical risk: <i>Target < Actual > 20%</i> Acceptable risk: <i>Target < Actual ≥ 10%</i> Risk of additional receipts <i>Target < Actual ≤ 10%</i>

We select four relative indicators as social security indicators:

- GRP growth / reduction rates, %
- Natural population growth ratio
- Unemployment level, %
- Share of population with income below the subsistence minimum

Obtained Results

The social security assessment methodology was tested by the example of the Perm Territory and the Sverdlovsk Region.

The data from Tables 2 and 3 let us conclude that budget expenses increase with every year for the period in question.

The highest budget deficiency in the Perm Territory was 11,369 million rubles in 2014 and 26,354.3 million rubles in the Sverdlovsk Region in 2013. In 2013, the Sverdlovsk Region covered the deficiency by means of the following financial instruments:

- State (municipal) securities
- Loans of credit institutions
- Budget loans from other budgets within the Russian budget system
- Changes in the balances on budget accounts
- Other sources for internal budget deficiency financing⁵

Such a big deficiency is due to the fact that in pursuance of the Presidential Decrees of May 2012 on the main areas of the state education, health care, and social policy, the regions had to make their budgets for 2013 with allocating funds for new expenditure items.

Table 2

Perm Territory aggregate budget financing indicators for 2000–2015⁶

Year	Income, million rubles	Expenses, million rubles	Deficiency / surplus million rubles	Population, thousand people	Per capita budget expenses, thousand rubles per capita	GRP, million rubles	GRP growth rates, %	GRP per capita, thousand rubles	Share of deficiency / surplus in income, %	Limit deficiency value, %
2000	20,499.9	20,122.4	377.5	2,940.7	6.842	12,4142.2	142.15	42.215	1.841472	15
2001	22,064.528	22,083.722	19.1938	2,923.7	7.553	166,803.4	134.36	57.052	0.086989	15
2002	24,939.456	25,713.895	-774.439	2,813.8	9.138	178,091	106.77	63.292	-3.10528	15
2003	29,776.002	28,963.091	812.911	2,791	10.377	209,275.7	117.51	74.982	2.730088	15
2004	39,509.973	36,316.249	3,193.724	2,769.8	13.111	266,325.9	127.26	96.154	8.083336	15
2005	46,972.114	43,755.29	3,216.9	2,748.2	15.921	327,273.3	122.88	119.086	6.848531	15
2006	56,572.34	54,238.065	2,334.275	2,730.892	19.860	383,770.1	117.26	140.529	4.126177	15
2007	78,652.551	77,575.902	1,076.649	2,718.227	28.539	477,794.2	124.50	175.774	1.368867	15
2008	110,095.168	95,109.015	14,986.154	2,708.419	35.116	607,362.7	127.12	224.250	13.612	15
2009	94,754.2745	100,148.871	-5,394.5962	2,701.174	37.076	539,831.5	88.88	199.851	-5.69325	15
2010	96,533.043	104,872.215	-8,339.172	2,633.55	39.8211	623,116.8	115.43	236.607	-8.63867	15
2011	108,392.378	108,193.953	198.4247	2,631.073	41.121	840,101.1	134.82	319.300	0.183061	15
2012	116,644.454	118,430.091	-1,785.6368	2,634.461	44.954	860,342.7	102.41	326.573	-1.53084	15
2013	119,770.286	129,523.644	-9,753.3576	2,636.154	49.133	893,409.8	103.84	—	-8.14339	15
2014	121,602.225	132,971.711	-11,369.486	2,637.032	50.424	N/a	N/a	—	-9.34974	10
2015	126,934.175	132,909.451	-5,975.2757	2,634.409	50.451	N/a	N/a	—	-4.70738	10

— unfavorable period; — favorable period.

⁵ The Ministry of Finance of the Sverdlovsk Region. Available at: <http://minfin.midural.ru> (date of access: June 14, 2016).

⁶ Federal State Statistics Service. Available at: <http://www.gks.ru> (date of access: June 10, 2016); Federal State Statistics Service for the Perm Territory. Available at: <http://permstat.gks.ru> (date of access: June 10, 2016); Perm regional server. Available at: <http://www.perm.ru/> (date of access: June 10, 2016).

Sverdlovsk Region aggregate budget financing indicators for 2000–2015⁷

Year	Income, million rubles	Expenses, million rubles	Deficiency / Surplus, million rubles	Population, thousand rubles	Per capita budget expenses, thousand rubles per capita	GRP, million rubles	GRP growth rates, %	GRP per capita, thousand rubles	Share of deficiency (surplus) in income, %	Limit deficiency value, %
2000	22,482.9	21,726.9	756	4,546	4.8	156,077	128.1	34.3	3.4	15
2001	28,713.5	28,757.4	-43.9	4,514	6.4	199,859.1	117.5	44.3	-0.2	15
2002	35,446.8	36,091.3	-644.5	4,478	8.1	234,866.4	121.2	52.4	-1.8	15
2003	40,579.9	41,885.5	-1,305.6	4,448	9.4	284,576.3	128.0	64.0	-3.2	15
2004	53,211.0	52,584.3	626.7	4,428	11.9	364,368.8	130.5	82.3	1.2	15
2005	67,585.0	64,736.4	2,848.6	4,410	14.7	475,575.5	137.5	107.8	4.2	15
2006	97,862.3	91,074.3	6,788	4,400	20.7	653,908.3	125.5	148.6	6.9	15
2007	128,353.3	130,023.8	-1,670.5	4,396	29.6	820,792.5	112.5	186.7	-1.3	15
2008	156,924.5	157,178.0	-253.5	4,395	35.8	923,550.8	89.4	210.1	-0.2	15
2009	139,547.4	143,768.9	-4,221.5	4,394	32.7	825,267.4	126.8	187.8	-3.0	15
2010	161,263.9	156,203.3	5,060.6	4,297	36.4	1,046,600.1	123.4	243.6	3.1	15
2011	184,087.4	189,927.2	-5,839.8	4,307	44.1	1,291,019.1	115.0	299.7	-3.2	15
2012	203,597.2	204,445.0	-847.8	4,316	47.4	1,484,447.4	106.9	343.9	-0.4	15
2013	206,271.7	232,626.0	-26,354.3	4,321	53.8	1,586,228.7	104.7	367.1	-12.8	15
2014	210,703.0	232,648.0	-21,945.0	4,327	53.8	N/a	N/a	—	-10.4	15
2015	222,097.8	239,643.0	-17,545.3	4,330	55.3	N/a	N/a	—	-7.9	15

■ — unfavorable period; □ — favorable period.

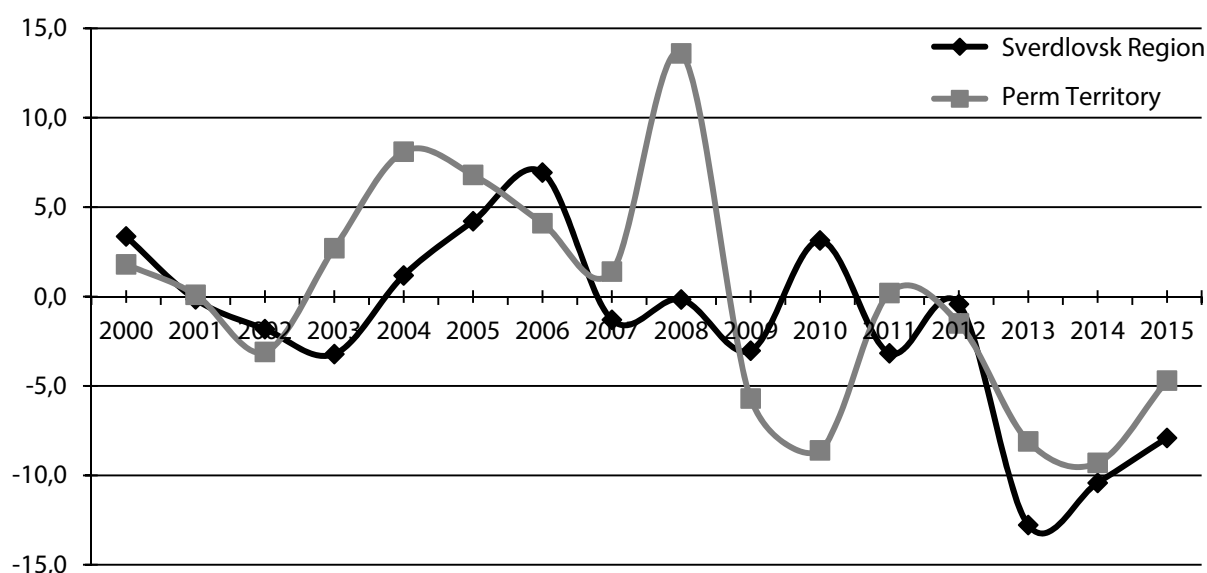


Fig. 2. The deficiency (surplus) share in the income of the consolidated budget of the Perm Territory and the Sverdlovsk Region for 2000–2015, %

The estimations show that from the perspective of budget financing, the years 2002, 2009–2010, and 2013–2014 were unfavorable for the Perm Territory. The negative tendency also preserves in 2015 and 2016. For the period in question, the years 2004–2008 (Table 2) were favorable for the Perm Territory.

⁷ Federal State Statistics Service. Available at: <http://www.gks.ru> (date of access: July 4, 2016); Treasury of Russia. Available at: <http://www.roskazna.ru> (date of access: July 4, 2016).

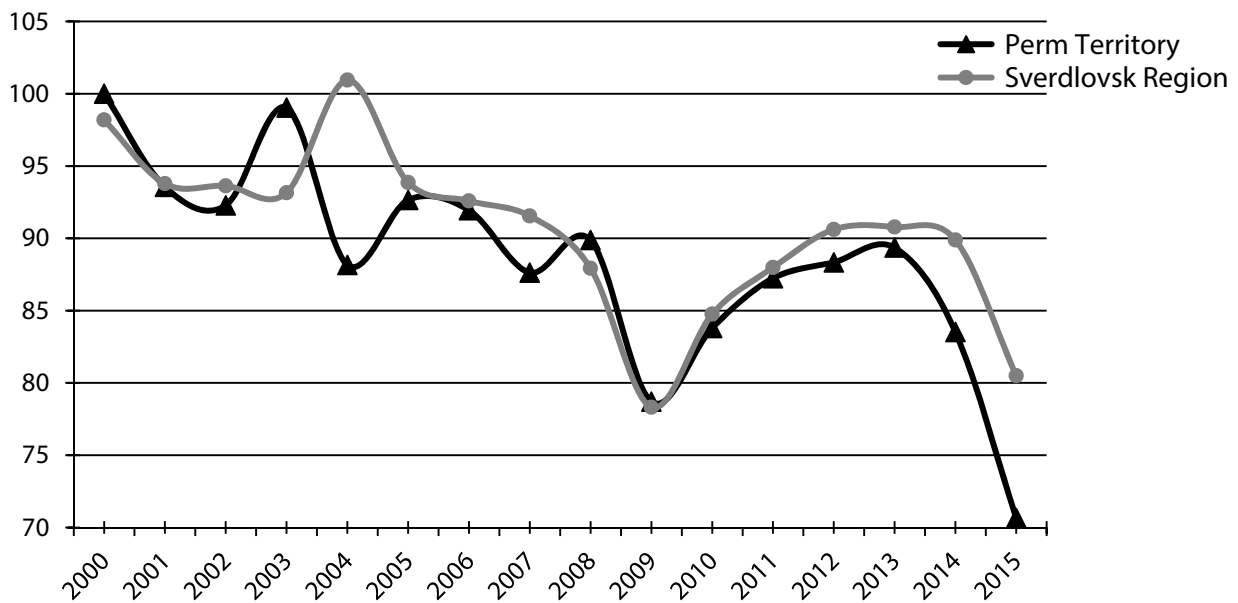


Fig. 3. Share of own income in the consolidated budget income of the Perm Territory and the Sverdlovsk Region for 2000–2015, %

In the Sverdlovsk Region, the expenses exceeded the income in 2001–2003, 2007–2009, and 2011–2015. Currently, the budget of the Sverdlovsk Region is also deficient. From the perspective of budget financing, the favorable periods were 2000, 2004–2006, and 2010 (Table 3).

The analysis of the deficiency (surplus) share in the consolidated budget of the Perm Territory (Fig. 2) shows that the period from 2004 to 2009 was also favorable from the social security perspective. Negative tendencies started to develop from 2009. And manifested themselves later in 2013–2015.

For the Sverdlovsk Region, the favorable periods were 2000, 2004–2006, and 2010, while 2007–2009 and 2011–2015 were unfavorable.

The high share of own income in the region's consolidated budget income evidences its financial stability, security, and independence. In the Perm Territory, the maximum share of own income (100 %) for the period in question was in 2000, and in 2003 it was rather high (99.04 %) (Fig. 3).

However, this indicator demonstrates negative dynamics. The reduced share of own income in the total consolidated budget turned the Perm Territory from a donor region into a beneficiary region, and the share of own income decreased substantially in 2015 (up to 70.66 %), which indicates reduced financial security and emerging threats to the region's social security.

In the Sverdlovsk Region, the maximum share of own income was in 2004 (100.9 %), and the minimum was in 2009 (78.3 %). The Sverdlovsk Region was the donor region until 2011. Starting from 2011, the Sverdlovsk Region became a subsidized subject. Since 2015, the Sverdlovsk Region has not received any subsidies to equalize its budget support.

Next, to assess the social security level, the budget support and budget adequacy indicators are calculated (Figs. 4 and 5; Table 1 shows the calculations).

The analysis shows that the budget support level in the Sverdlovsk Region was higher than in the Perm Territory in 2000–2004 and 2011–2015. But in 2005–2011, this indicator was higher in the Perm Territory.

The highest budget support level in the Perm Territory and in the Sverdlovsk Region was recorded in 2015.

In accordance with the selected methodology for the assessment of budget risks (Table 1), the budget adequacy level is assessed versus the subsistence minimum (Level 1) and the weighted average population income (Level 2) in the region (Fig. 5).

Throughout the whole period, the adequacy level indicators in the Perm Territory and in the Sverdlovsk Region exceeded 1. It means that the share of budget funds from the Territory budget per capita was severalfold higher than the subsistence level and the average income in the region, which evidences budget adequacy and social security of people in the territory of their residence. Since 2012, however, the region has been demonstrating reducing dynamics and a down trend, and by 2016 this indicator has reached its minimum value, which indicates the growth of social tension in the region.

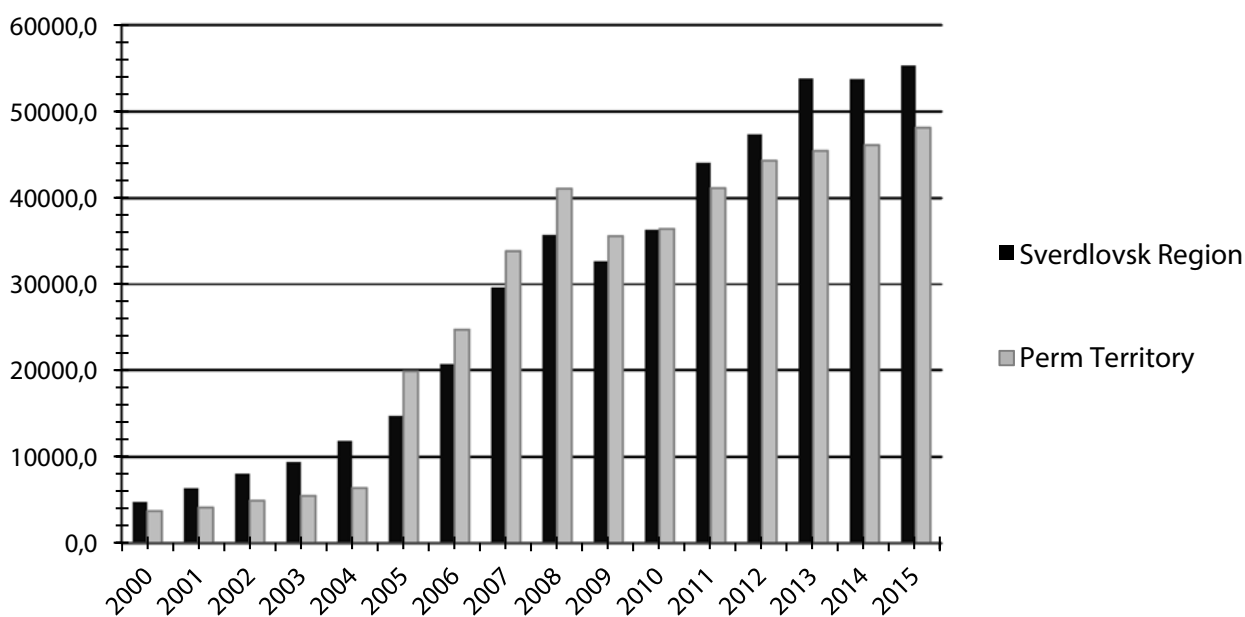


Fig. 4. Budget support level in the Perm Territory and the Sverdlovsk Region in 2000–2015, rubles per capita

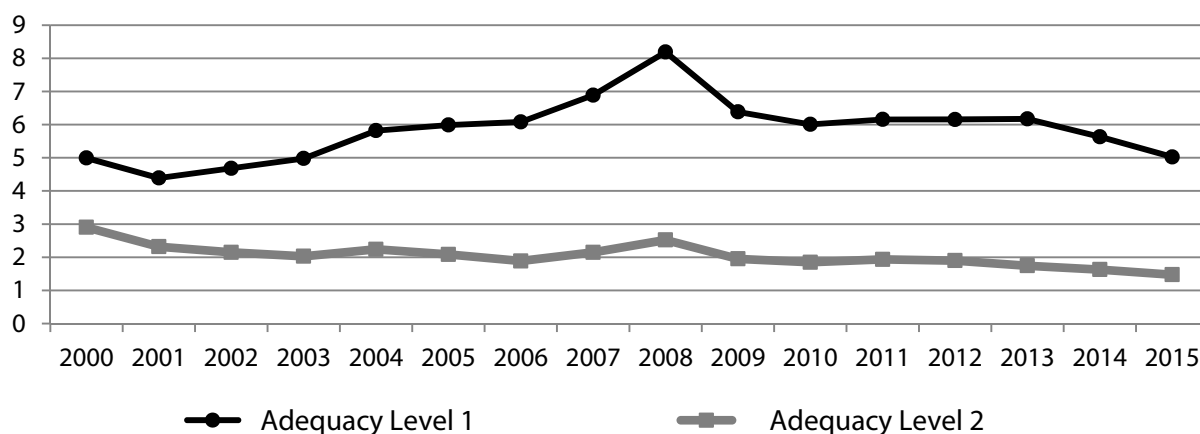


Fig. 5. Budget financing adequacy level in the Perm Territory in 2000–2015

Table 4

Underfunding risks in the Perm Territory and the Sverdlovsk Region in 2010–2015, %¹

Year	Territory	Indicators			
		Income, actual/target (%)	Risk level	Expenses, actual/target (%)	Risk level
2010	Perm Territory	99.1	Acceptable	72.6	Critical
	Sverdlovsk Region	104.3	Acceptable	97.4	Acceptable
2011	Perm Territory	92.5	Acceptable	72.3	Critical
	Sverdlovsk Region	98.4	Acceptable	94.4	Acceptable
2012	Perm Territory	92.8	Acceptable	72.7	Critical
	Sverdlovsk Region	105.3	Acceptable	94.1	Acceptable
2013	Perm Territory	90.6	Acceptable	76.5	Critical
	Sverdlovsk Region	98.6	Acceptable	96.5	Acceptable
2014	Perm Territory	86.2	Acceptable	77.0	Critical
	Sverdlovsk Region	99.3	Acceptable	97.2	Acceptable
2015	Perm Territory	90.5	Acceptable	78.5	Critical
	Sverdlovsk Region	101.2	Acceptable	97.7	Acceptable

¹ Perm regional server. Available at: <http://www.perm.ru/> (date of access: June 17, 2016); Ministry of Finance of the Sverdlovsk Region. Available at: <http://minfin.midural.ru> (date of access: June 30, 2016).

To estimate the underfunding risks, target and actual indicators of the consolidated budget income and expenses for the Perm Territory and the Sverdlovsk Region are compared (Table 4).

The estimations show that for the period in question the Perm Territory preserves the critical budget risk level for the consolidated budget expenses. It is related to the low planning and management level.

In our opinion, incomplete budget utilization for expenses poses a significant threat to social security as the budget funds do not reach the population, which entails poorer living standards and life quality in the region.

In the Sverdlovsk Region, the budget risk is on an admissible level.

Following the logics of the above methodology, the socioeconomic indicators of the Perm Territory and the Sverdlovsk Region are assessed and demonstrated on the charts (Fig. 6–10). Fig. 6 shows the GRP growth (reduction) rates from 2000 to 2013.

For the Perm Territory, the years 2002, 2009, and 2012 were unfavorable for GRP. In the Sverdlovsk Region, the same periods were 2001, 2008, and 2013.

The GRP and consolidated expense change rates in the Perm Territory (Fig. 7) demonstrate a negative correlation during the unfavorable periods of 2002, 2009, 2012, and 2013: with reduced GRP growth rates, the changes in the budget expenses grow, and vice versa. It evidences that when the level

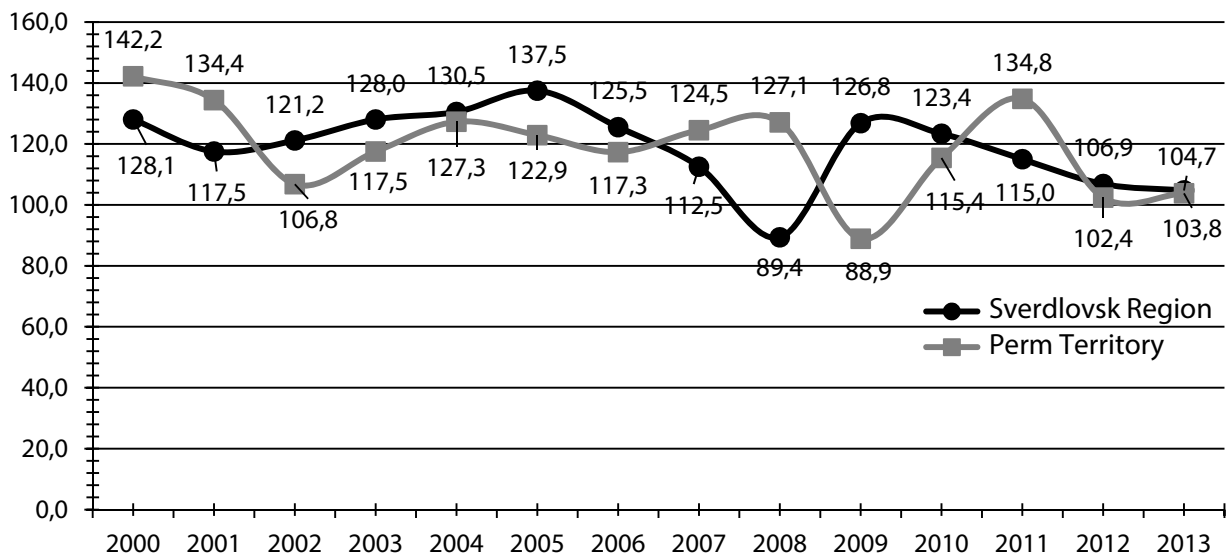


Fig. 6. GRP growth (reduction) rates in the Perm Territory and the Sverdlovsk Region in 2000–2013, %¹

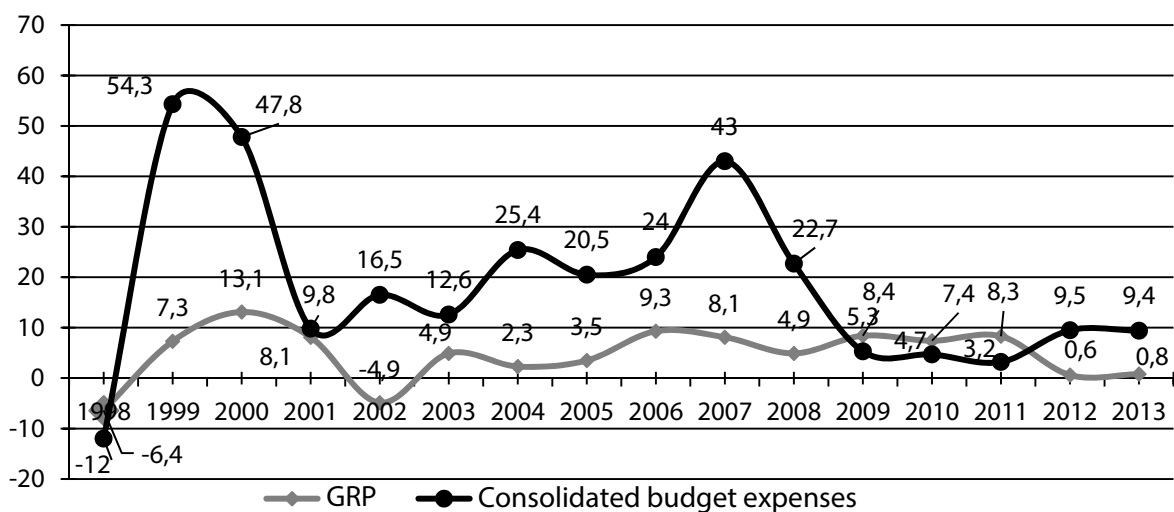


Fig. 7. The ratio between the GRP growth (reduction) rates and consolidated budget expenses of the Perm Territory in 1998–2013²

¹ Federal State Statistics Service. Available at: <http://www.gks.ru> (date of access: June 15, 2016); Federal State Statistics Service for the Perm Territory. Available at: <http://permstat.gks.ru> (date of access: June 15, 2016).

² Federal State Statistics Service for the Perm Territory. Available at: <http://permstat.gks.ru> (date of access: June 14, 2016).

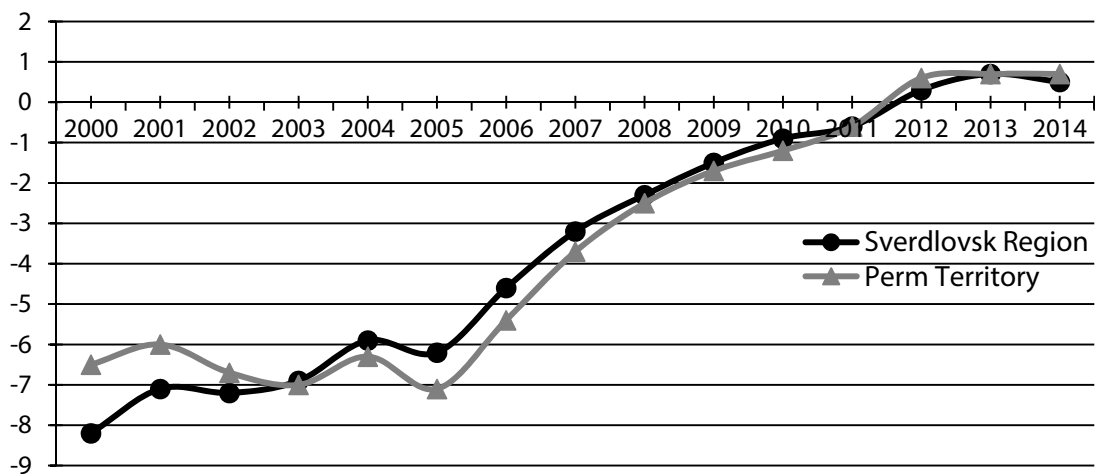


Fig. 8. Natural population growth ratio in the Perm Territory and in the Sverdlovsk Region for 2000–2014³

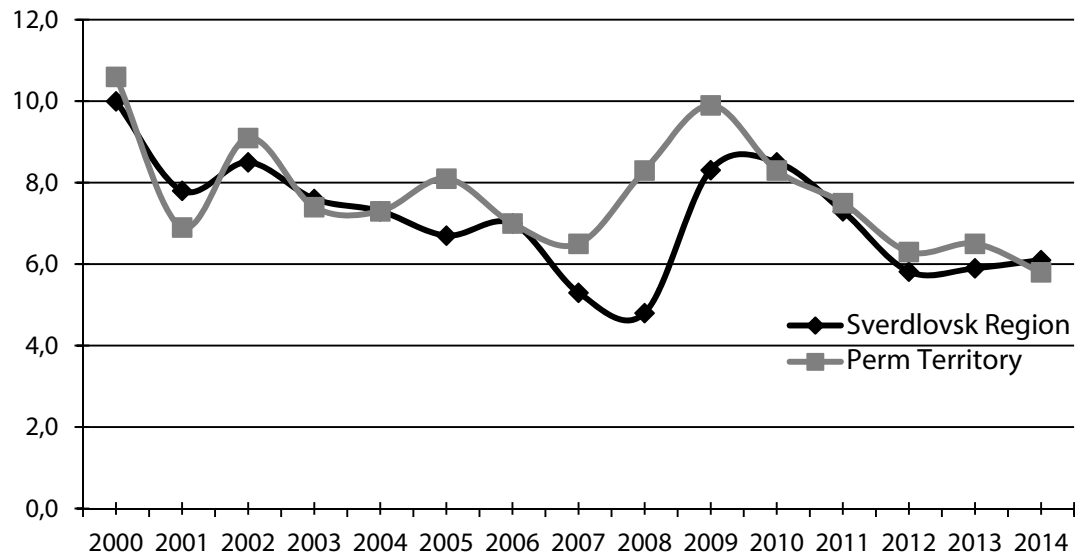


Fig. 9. Unemployment level in the Perm Territory and the Sverdlovsk Region in 2000–2014⁴

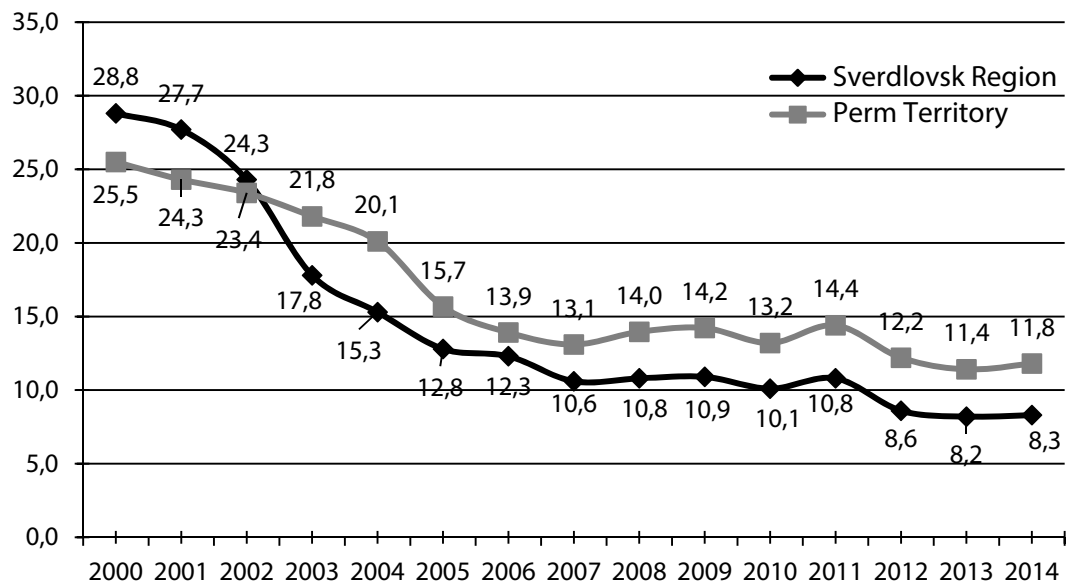


Fig. 10. Share of population with income below the subsistence minimum in the Perm Territory and the Sverdlovsk Region for 2000–2014, %⁵

³ Federal State Statistics Service. Available at: <http://www.gks.ru> (date of access: June 18, 2016).

⁴ Federal State Statistics Service. Available at: <http://www.gks.ru> (date of access: June 20, 2016).

⁵ Federal State Statistics Service for the Perm Territory. Available at: <http://permstat.gks.ru> (date of access: June 18, 2016); Federal State Statistics Service for the Sverdlovsk Region. Available at: <http://sverdl.gks.ru> (date of access: June 20, 2016).

of economic security (indicated by reduced GRP) drops, the region's financial and social security is maintained out of the budget of the Russian subject.

For the "natural population growth indicator" in the Perm Territory, the year 2005 was the most unfavorable, while for Sverdlovsk Region the most unfavorable was 2000 (Fig. 8).

The analysis shows that the unemployment level in the Perm Territory demonstrated negative tendencies in 2001 and 2007–2009 (Fig. 9).

For the Sverdlovsk Region, unfavorable periods were 2002, 2009, and 2010. Today, the unemployment level in the region grows.

The increase in the share of population with income below the subsistence minimum was demonstrated in 2000–2004, then started in 2010, and has been going on by now (Fig. 10).

In 2000–2002, the share of population with income below the subsistence minimum in the Sverdlovsk Region was higher than that in the Perm Territory. But since 2003, this indicator has been lower in the Sverdlovsk Region.

Table 5 provides the results of the analysis conducted.

The analysis shows that for the majority of indicators taken to assess the region's social security the favorable and unfavorable regions mostly coincided. The years 2002, 2009–2010, and 2012 were

Table 5

Comparison of the tendencies in the socioeconomic indicators of the Perm Territory and the Sverdlovsk Region for 2000–2015

Indicator	Negative period	Time lag of the negative tendency	Favorable period	Time lag of the positive tendency
<i>Perm Territory</i>				
ΔGRP	2000–2002	2	2002–2008	6
	2008–2009	1	2009–2011	2
	2011 — present	4		
ΔRegional budget expenses	2000–2001	1	2001–2007	6
	2007–2011	4	2011 — present	4
Share of the region's consolidated budget deficiency/surplus	2002–2003	1	2000–2001	1
	2010 — present	5	2003–2010	6
Natural population growth ratio	2000–2011	11	2011 — present	4
Unemployment level	2001–2002	1	2000–2001	1
	2007–2009	2	2002–2007	5
				2009–2014
Share of population with income below the subsistence minimum	2000–2004	4	2004–2010	6
	2010–2011	1	2011–2013	2
	2013 — present	2		
<i>Sverdlovsk Region</i>				
ΔGRP	2000–2001	1	2001–2005	4
	2005–2008	3	2008–2009	1
	2009 — present	6		
ΔRegional budget expenses	2000–2002	2	2002–2006	4
	2006–2008	2	2008–2010	2
	2010 — present	5		
Share of the region's consolidated budget deficiency (surplus)	2000–2004	4	2004–2006	2
	2006–2009	3	2009–2010	1
	2010–2014	4		
Natural population growth ratio	2000–2011	11	2011–2014	3
Unemployment level	2001–2002	1	2000–2001	1
	2008–2010	2	2002–2008	6
				2010–2014
Share of population with income below the subsistence minimum	2007–2009	3	2000–2007	7
	2010–2011	1	2009–2010	1
	2013 — present	2	2011–2013	2

negative for the social security of the Perm Territory, and in 2013–2015 negative tendencies grew. For the Sverdlovsk Region, the negative periods were 2008 and 2012–2015.

Moreover, there is a dependence between the time lags of negative and positive periods: the longer the recession period, the longer the recovery period. However, it can be noted that the socioeconomic indicators are characterized by an unequal rate of response, lag, and recovery and various elasticity—sensitivity and susceptibility to budget financing. The most elastic indicator was the GRP change indicator that demonstrated a negative dependence. The "share of population with income below the subsistence minimum" has rather high elasticity, and the favorable periods when this indicator reduced coincided with the increase in the budget financing and reduction of regional budget deficiency. The "natural population growth ratio" has the lowest elasticity to budget financing and a big time lag between reduction and growth. It is explained by the nature of demographic processes and long periods of population reproduction.

The analysis also shows that the majority of indicators continue to experience negative periods. From the perspective of social security, the Perm Territory has been entering a stage of deep recession since 2012. The Sverdlovsk Region demonstrates similar tendencies. This fact indicates growing threats to the region's social security and the necessity to strengthen state regulation and to enhance social support from regional authorities.

Conclusion

Thus, the proposed methodological tools make it possible to conduct a comprehensive assessment of the region's social security with respect both to its socioeconomic development and to financing. This approach helps identify in a timely manner the actual threats emerging in the social sphere due to inadequate or inefficient budget financing. Moreover, the above methods may be used to assess security in individual social spheres (health care, education, etc.) to attain the target indicators and to identify internal and external threats.

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References

1. Kuznetsov, V. N. (2008). *Sotsiologiya bezopasnosti [Sociology of security]*. Moscow: Kniga i biznes Publ., 880.
2. Samygin, S. I., Vereshchagina, A. V. & Kolesnikova, G. I. (2011). *Sotsialnaya bezopasnost: uchebnoye posobie [Social security: study guide]*. Moscow, Rostov on Don: Dashkov i K Publ., Nauka — Spektr Publ., 360.
3. Liga, M. B. (2013). Sotsialnaya bezopasnost i kachestvo zhizni: kontseptualnyy analiz [Social security and life quality: conceptual analysis]. *Uchenyye zapiski ZabGU [Scientific notes of Transbaikal State University]*, 170–177.
4. Maksimova, S. G., Noyanzina, O. E., Goncharova, N. P., Omelchenko, D. A., Varava, V. V. & Dubova, T. G. (2010). Sovremennyye realii sotsialnoy bezopasnosti regionalnogo sotsiuma [Modern day reality of social security of the regional society]. *Izvestiya Altayskogo gosudarstvennogo universiteta [The News of Altai State University]*, 2/1(66), 187–190.
5. Japp, K. P. (1996). *Soziologische Risikoforschung. Funktionale Differenzierung, Politisierung und Reflexion*. Weinheim, München, 240.
6. Johnson, B. B. & Covelto, V. T. (2012). *The Social and Cultural Construction of Risk: Essays on Risk Selection and Perception*. Springer Science and Business Media, 424.
7. Kaufmann, F.-X. (1970). *Sicherheit als soziologisches und sozialpolitisches Problem: Untersuchungen zu einer Wertidee hochdifferenzierter Gesellschaften*. Stuttgart, 357.
8. Porfiryev, B. N. (2001). Risk i bezopasnost. Opredelenie ponyatiy [Risk and security. Concept definition]. *Risk v sotsialnom prostranstve [Risk in social space]*. Institute of Sociology of RAS; In: A. V. Mozgovoy (Ed.). Moscow: Institute of Sociology of RAS Publ., 38–49.
9. Luman, N. (1994). Risk, neopredelennost, sluchaynost [Risk, uncertainty, and chance]. *THESIS*, 5, 35–160.
10. Luhmann, N. (1990). *Die Wissenschaft der Gesellschaft*. Frankfurt: Suhrkamp, 732.
11. Mozgovaya, A. V. (2001). Sotsiologiya riska: vozmozhnosti sinteza teorii i empiricheskogo znaniya [Risk sociology: possibilities of synthesis of theory and empirical knowledge]. *Risk v sotsialnom prostranstve [Risk in social space]*. Institute of Sociology of RAS; In: A. V. Mozgovoy (Ed.). Moscow, 13–37.
12. Knight, F. H. (2003). *Risk, neopredelennost i pribyl: per. s angl. [Risk, uncertainty and profit: trans. from English]*. Moscow: Delo Publ., 360.
13. Knight, F. (1921). *Risk, Uncertainty and Profit*. Boston, 381.
14. Gratt, L. B. (1987). Risk Analysis or Risk Assessment: A Proposal for Consistent Definitions. In: V. T. Covelto et al. (Eds). *Uncertainty in Risk Assessment, Risk Management, and Decision Making*. New York, 241–249.
15. Kuklin, A. A. (2014). Ekonomicheskaya bezopasnost regionov. Teoretiko-metodologicheskie podkhody i sravnitelnyy analiz [Economic security of regions. Theoretical and methodological approaches and comparative analysis]. *Fundamentalnyye issledovaniya [Fundamental research]*, 6(1), 142–145.
16. Giddens, E. (1994). Sudba, risk i bezopasnost [Fate, risk, and security]. *THESIS*, 5, 107–134.

17. Giddens, A. (1990). *The Consequences of Modernity*. Stanford (CA), 188.
18. Doyl, S. (1994). *Grazhdanskiye kosmicheskiye sistemy. Ikh vliyaniye na mezhdunarodnuyu bezopasnost [Civil space systems. Implications for international security]*. Moscow: RAN INION Publ., 160.
19. Krilenko, V. I. (2013). Finansovaya bezopasnost kak sostavlyayushchaya ekonomicheskoy bezopasnosti gosudarstva [Financial security as an element of the country's economic security]. *Globalnyye problemy modernizatsii natsionalnoy ekonomiki. Mat-ly II mezhdunar. nauch.-prakt. konf. (zaочноy) [Global problems of national economy modernization. Materials of the Second International Scientific and Practical Conference (distance)]*. Tambov: Biznes — nauka — obshchestvo Publ., 218–224.
20. Astashkin, A. V. (2010). Byudzhet v kontekste obespecheniya ekonomicheskoy bezopasnosti v sotsialnoy sfere [Budget in the context of ensuring economic security in the social sphere]. *Ekonomika i effektivnost organizatsii proizvodstva [Economy and efficiency of production organization]*, 12, 10–14.
21. Tatarin, A. I. & Kuklin, A. A. (2009). Kachestvo zhizni — indikator ustoychivogo razvitiya regionov [Life quality as an indicator of the regions' sustainable development]. *Uroven zhizni naseleniya regionov Rossii [Life quality of the population in the Russian regions]*, 8–9, 25–34.
22. Gayfulin, A. Yu. & Gayfullina, M. M. (2015). Metodicheskiy podkhod k otsenke sotsialnoy bezopasnosti regiona [Methodological approach to the assessment of the region's social security]. *Fundamentalnyye issledovaniya [Fundamental research]*, 12, 1001–1006.
23. Saraykin, Yu. V. (2010). Pokazateli i kriterii otsenki sotsialnoy bezopasnosti regiona. Statisticheskiy aspekt [Indicators and criteria for the assessment of the region's social security. Statistical aspect]. *Vestnik Volzhskogo universiteta imeni V. N. Tatishcheva [Messenger of the V. N. Tatishchev Volga University]*, 19, 63–65.

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