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Financial Security Assessment of The Krasnoyarsk Territory (Krai)

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The purpose of the research paper is to assess the level of financial security of the Krasnoyarsk Territory (Krai). For this purpose the author offers integral coefficient calculation of the level of financial security of the region, defines a set of indicators of financial security, justifies their threshold values, and depending on the value of the integral coefficient defines zones corresponding to the financial resources security level in the subject of the Russian Federation.

Calculations show deterioration of the financial security level of the Krasnoyarsk Territory (Krai) for the period of 2012-2014. This approach can and should be used in the work of government authorities for the timely identification and prevention of threats to the development of all the elements of the financial system of the region.

Keywords: regional finance, financial security of the territory, indicators of financial security of the subject of the Russian Federation.

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Research area: economics.

Introduction

Financial security in the region is an essential component of economic security of the territory.

Despite the fact that the issue of defining indicators and the level of economic security of the country in general and individual regions

is widely studied by the economists [Glazyev, Dolzhikova, Novikova, et al.], the aspects of financial security assessment of a subject of the Russian Federation until present time has received little attention.

To begin with, we will define what we mean by the term.

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The financial system of the region includes the sphere of centralized (regional and local budgets funds and territorial state extra-budgetary funds) and decentralized financial resources (institutions and households finance).

According to S.Yu. Witte, “the science of finance can be defined as the science of the best ways of obtaining the material resources by the state and rational organization of their spending for achieving the higher goals of the state union, or, in short, as the science of the best ways to meet the material needs of the state” [Witte, 2011].

Presence of the required amount of financial resources in the region enables the authorities to ensure sustainable socio-economic development of the territory independently, both in the current and long-term periods. At that, to ensure continuous and effective process of the expanded reproduction of economic goods at the level of the subject of the Russian Federation, it is necessary to keep the balance of interests of economic entities and the population of the territory with the authorities’ interests. Such a balance of interests is rather difficult to keep due to the well-known problems of unlimited needs and limited financial resources of the economic agents. To achieve the goals set, this contradiction requires rational and prudent financial management of the region under conditions of uncertainty and risks from the authorities of the subject of the Russian Federation.

The level of the population and organizations’ financial resources provision should allow them not only to meet their needs at an adequate level, but also fulfill their obligations to the budgetary system as taxpayers, therefore the regional authorities are interested in financial security of not only their centralized finance, but organizations and the population in its territory as well. Indeed,

in the case of shortfalls of taxes and charges to the centralized funds, budget deficit occurs and to cover it the subject of the Russian Federation has to take loans what can lead to the risk of the “debt trap”.

A number of potential negative factors can influence stability of the financial relationships between the government, business entities and the public, so when managing regional financial system it is necessary to have a specific tool for such threats detection for the possibility to prevent, neutralize or minimize the potential socio-economic losses.

Financial security of the region will be understood as:

- ✓ shortly – absence of danger or the state of security of the financial system of the subject of the Russian Federation from the negative factors of internal and external threats;
- ✓ more detailed – the ability of the subject of the Russian Federation promptly and timely identify and neutralize existing and potential threats to the development of all the elements of the financial system in the region to ensure provision of the necessary financial resources for stable and efficient socio-economic development of the territory.

The important elements of the policy to ensure financial security of the region are:

- ✓ to determine risk factors that constitute threats to financial security of the subject of the Russian Federation;
- ✓ assessment of financial security of the region, including:
 - qualitative assessment (define the criteria of financial security of the region)
 - quantitative assessment (monitoring the financial security determinants (indicators) that characterize development of the financial sector of the region)

- assessment of financial security of the subject of the Russian Federation
- ✓ development of the means and methods to counter financial security threats.

It is possible to divide risk factors for financial security of the subject of the Russian Federation into two groups: external threats that don't depend on the regional authorities' efforts to prevent them, which source of emergence is an economic system of a higher level of hierarchy and internal factors controlled by the regional administration. Authorities of the subject of the Russian Federation can only neutralize external threats, while internal threats, with early detection, can be prevented. This can be done in the case of having a system of quantitative determinants-indicator and knowing the established thresholds that allows preliminary signaling of the impending danger and taking steps to prevent it.

Threshold value is the ultimate value of the determinant where non-compliance with its values impede sustainable development of the financial sector, leads to the formation of negative and destructive tendencies in the field of financial security, in other words, outside the values of thresholds indexes regional finances lose the ability to dynamic self-development.

Besides, in case of having a set of financial security indicators, it is possible to assess the status or the level of financial security of the region. The most common methods of assessing the level of financial security of the territory are the following: monitoring the key macroeconomic indicators and their comparison with the threshold values; assessment of the rate of economic growth on the key macroeconomic indicators and their dynamics; methods of multivariate statistical analysis, etc.

Let us conduct analysis and assessment of the financial security of the Krasnoyarsk Territory (Krai).

2. The choice of indicators of the Krasnoyarsk Territory (Krai) financial security and threshold values establishment

An important task at the first stage is selection of the most significant financial security indicators for our region, determination and justification of the threshold values of the selected indicators.

According to I.V. Dolzhikova [Dolzhikova, 2013] the following areas are reasonable to consider as strategic directions of financial security of the subject of the Russian Federation: budget security, tax security and investment security. In addition, at the second level of priorities the author considers the credit and banking system security and inflation and price security of the region.

In our opinion, stability and long-term fiscal sustainability as an integral part of the financial security of the region are of particular interest, while at the same time it is necessary to monitor possible internal threats in all the aforementioned areas of financial security of the subject of the Russian Federation.

Table 1 shows the system of indicators and determinants of financial security of the region with their threshold values, which use will allow us to identify the points of increased risk in the financial sphere of the Krasnoyarsk Territory (Krai), beyond which a threat of disequilibrium and development of the constituent elements of the regional financial system, followed by the signs of crisis may onset. A number of indicators and their threshold values are proposed by I.V. Novikova, N.I. Krasnikov (9–11, 13) and S. Glazyev (12).

Table 2 shows financial and economic indicators of the Krasnoyarsk Territory (Krai) for the period of 2012-2014. The source of information was the official websites data: the Ministry of Finance of the Russian Federation,

Table 1. Financial security indicators of the Krasnoyarsk Territory (Krai)

№	Determinant	Unit of measure	Threshold value	Indicator (characterizes)
Determinants of budget and tax security of the region (centralized finance)				
1	The level of estimated fiscal capacity of the Krasnoyarsk Territory (Krai) before subsidy allocation	times	Not less than 1	The degree of the region independence (grantor/recipient), possibility to undertake its expenditures using its own sources of income
2	Ratio of the deficit of the consolidated budget of the Krasnoyarsk Territory (Krai) to the amount of its own (tax and non-tax) revenues	%	Not more than 15	The level of the Krai budgets balance, the ability to live "within its means", prudence of the authorities
3	Ratio of the consolidated public debt of the Krasnoyarsk Territory (Krai)* to the volume of the consolidated regional budget revenues	%	Not more than 100	Possibility for the region to get into the "debt trap", the level of the debt burden on the budget
4	Ratio of the growth rate of the consolidated public debt of the Krasnoyarsk Territory (Krai) to GRP growth rate	times	Not more than 1	
5	The amount of taxes and dues to the consolidated budget of the Krasnoyarsk Territory (Krai) from the total amount of taxes collected in the territory of the Krai	%	Not less than 50	The degree of fairness of inter-budget relations with the federal center
6	Ratio of the amount of taxes to the federal budget to the amount of financial assistance from the federal budget in the consolidated budget of the region	times	Not more than 2	
Determinants of financial security of the region (decentralized finance)				
7	Ratio of the volume of investments into fixed capital to GRP of the Krai	%	Not less than 25	The level of investment activity in the region
8	Degree of the industrial enterprises' fixed assets depreciation	%	Not more than 60	Condition and renewal of the fixed capital in the region, the possibility to form a competitive type of reproduction
9	Ratio of the coefficient of the fixed assets renewal and disposal	times	Not less than 3	
10	Ratio of the population incomes growth rate to the growth rate of consumer spending	times	Not less than 1	Possibility to turn domestic demand into the source of economic growth
11	Amount of population with below the subsistence level income per capita from the total population of the Territory (Krai)	%	Not more than 7	Indicates material capabilities of the households
12	Ratio of the market value of the property to the average annual family income	years	Not more than 12	Affordability of housing for the population

*Consolidated public debt of the Krasnoyarsk Territory (Krai) includes the amount of public debt of the Krasnoyarsk Territory (Krai) and the amount of city debt of all the municipal structures in the Krasnoyarsk Territory (Krai).

Table 2. Financial and economic indicators of the Krasnoyarsk Territory (Krai) for the period of 2012-2014

Indicator	Unit of measure	2012	2013	2014
GRP of the Territory (Krai)	bln. RUR	1183,28	1256,67	1184*
Amount of investment into the fixed capital	bln. RUR	336,09	376,9	344,54
Revenues of the consolidated budget of the Krasnoyarsk Territory (Krai)	bln. RUR	176,56	175,94	191,29
of it uncompensated receipts	bln. RUR	26,57	25,72	33,08
amount of uncompensated receipts from the federal budget to the consolidated budget of the Territory (Krai)	bln. RUR	24,26	23,76	31,58
including subvention	bln. RUR	6,91	6,87	7,67
Expenses of the consolidated budget of the Krasnoyarsk Territory (Krai)	bln. RUR	202,4	209,12	214,42
consolidated budget deficit (surplus) of the Krasnoyarsk Territory (Krai)	bln. RUR	-25,84	-33,18	-23,13
Consolidated public debt of the Krasnoyarsk Territory (Krai) on 1 st January of the next financial year	bln. RUR	36,63	56,81	78,66
Expenses of consolidated public debt of the Territory (Krai)	bln. RUR	1,58	3,00	5,29
Fiscal capacity index in the Krasnoyarsk Territory (Krai)	times	1,094	1,156	0,990
Amount of tax revenues, gained in the Krasnoyarsk Territory (Krai)	bln. RUR	268,78	293,06	315,32
of it went into the federal budget	bln. RUR	125,19	148,22	168,44
of it went into the consolidated budget of the Territory (Krai)	bln. RUR	143,59	144,86	146,88
Degree of the fixed assets depreciation at the end of the year	%	46,9	46,4	no data available
Coefficient of the fixed assets replacement	%	12,0	11,8	no data available
Capital consumption coefficient	%	0,8	0,9	no data available
Cash income per capita	RUR/ month	22524,3	24921,7	24348,3
Rate of growth of nominal population income	%	111,81	110,64	97,7
Rate of growth of real incomes of population	%	104,6	104,6	92,4
Actual final consumption of households per capita	RUR/ month	19871,46	21705,19	22727,19
Rate of growth of consumer spending	%	116,08	109,23	104,71
Average minimum wage per capita in the Territory (Krai) (4 th quarter)	RUR/ month	7715	8249	9186
Proportion of the Krasnoyarsk Territory (Krai) population with income less than the minimum wage	%	15,6	15,7	17,1
Average price of primary housing in the Territory (Krai) (floor area)	RUR /m ²	50047	53769	56371
Average price of secondary housing in the Krai (floor area)	RUR /m ²	51047	49578	50512

* Preliminary data

Table 3. Calculation of financial security indicators of the Krasnoyarsk Territory (Krai) for the period of 2012-2014

	Indicator	Unit of measure	Threshold value	2012	2013	2014
Indicators of the centralized regional finance security (taxes, budget and debt)						
1	The level of estimated fiscal capacity of the Krasnoyarsk Territory (Krai) before donation allocation	times	≥ 1	1,094	1,156	0,990
2	Ratio of the consolidated budget deficit of the Territory (Krai) to the amount of budget income	%	≤ 15	17,23	22,09	14,62
3	Ratio of the consolidated public debt of the Krasnoyarsk Territory (Krai) to the amount of income of the consolidated budget of the Territory (Krai)	%	≤ 100	24,42	37,82	49,72
4	Ratio of the rate of growth of the consolidated public debt of the Territory (Krai) to GRP growth rate	times	≤ 1	1,48	1,46	1,47
5	Proportion of taxes and duties that went into the consolidated budget of the Krasnoyarsk Territory (Krai) from the total amount of tax revenues collected in the Territory (Krai)	%	≥ 50	53,42	49,43	46,58
6	Ratio of the amount of taxes that went to the federal budget to the amount of financial support from the federal budget to the budget of the Krasnoyarsk Territory (Krai)	times	≤ 2	5,16	6,24	5,33
Indicators of decentralized finance security (businesses, households)						
7	Ratio of the volume of investments into fixed capital to GRP	%	≥ 25	28,4	29,99	29,1
8	Degree of the industrial enterprises' fixed assets depreciation	%	≤ 60	46,9	46,4	no data available
9	Ratio of the coefficient of the fixed assets renewal and disposal	times	≥ 3	15	13,1	no data available
10	Ratio of the population incomes growth rate to the growth rate of consumer spending	times	≥ 1	1,038	0,987	1,072
11	Amount of population with below the subsistence level income per capita from the total population of the Territory (Krai)	%	≤ 7	15,6	15,7	17,1
12	Ratio of the market value of the property to the average annual family income	years	≤ 12	3,74	3,46	3,66

the Federal Treasury of the Russian Federation, the Federal State Statistics Service of the Russian Federation, official website of the Krasnoyarsk Territory (Krai), as well as information provided by the Department of the Federal Tax Service in the Krasnoyarsk Territory (Krai).

On the basis of the indicators given in Table 2, to assess the level of financial security in the region we will calculate financial security indicators of the Krasnoyarsk Territory (Krai). Estimate indicators are represented in Table 3.

3. Assessing the level of financial security of the Krasnoyarsk Territory (Krai)

The next stage of the study is to evaluate the state or the level of financial security of the region.

In order to understand whether the Krasnoyarsk Territory (Krai) is financially secure region, the methodical approach to determine the integral coefficient of the level of financial security of the region, including a number of calculation stages will be applied.

1. At the first stage all the indicators (i) are distributed into two groups (i_α – indicators of financial security of the centralized finance of the region and i_β – indicators of financial security of the decentralized finance of the region). For each indicator of financial security i we calculate the ratio of the actual value (Ca) to the threshold value (Cth), if it is desirable to increase this value, and conversely, if it is desirable to decrease it. So, for each indicator we get its level (σi) in relation to the ideal value:

$$\begin{aligned} \sigma i &= \frac{Ca}{Cth} & - \text{if } i &\longrightarrow \max \\ \sigma i &= \frac{Cth}{Ca} & - \text{if } i &\longrightarrow \min \end{aligned} \quad (1)$$

2. At the second stage within the two selected groups we calculate $C\alpha$ coefficient, characterizing the degree of security of the subject of the Russian Federation on a group of indicators of the centralized regional finance and $C\beta$ coefficient, characterizing the degree of security of the subject of the Russian Federation on a group of indicators of decentralized regional finance according to the formula:

$$C\alpha = \sqrt[n]{\prod \sigma_{i_\alpha}} \quad (2)$$

$$C\beta = \sqrt[n]{\prod \sigma_{i_\beta}} \quad (3)$$

Where n is the number of indicators in the group.

3. At the third stage it is necessary to consider individual influence and various significance of different groups of factors on the total value of the region's financial security indicator. The largest influence (60%), was given to the group of centralized finance indicators, taking into

account the expert opinion of the specialists from the Ministry of Finance of the Krasnoyarsk Territory (Krai). After that, taking into account specific influence given to groups according to their significance in the impact on the financial security of the region we calculate integral coefficient, characterizing the degree of financial security of the region:

$$Cfs = 0,6C\alpha + 0,4C\beta \quad (4)$$

4. We will set up correspondence of the gained value of the region's financial security coefficient to the following zones (levels) with various degrees of risk, given in Table 4.

Calculations results are summarized in Table 5.

During the period under consideration, finance of the Krasnoyarsk Territory (Krai) from the zone of absolute security in 2012 shifted to the zone of relative security, and in 2014 was already in the zone of increased risk. At that, we see that there is a tendency to integrated index deterioration both by the decentralized resources indicator and, to a greater extent, by the centralized resources indicator.

The region government needs annual monitoring of the financial and economic situation in the region and to carry out similar calculations. In case if a strategy of economic security was developed in the subject of the Russian Federation, this methodical approach can be used within the framework of such strategy, as a tool to assess the level of financial security and define the threats and risks that caused deterioration of the integral index. On the basis of the received information it will be possible to develop the measures to overcome crisis.

Table 4. Zones of financial security of the region

Coefficient value	Zone name	Zone characteristics
$Cfs > 1,2$	Zone of absolute security	In this zone, most financial security indicators of the region exceed threshold values. The situation in the region is stable, there is economic growth, financial dependence on the federal centre is low, region's own revenues are growing, and budget deficit, as well as the public debt of the region and the cost of its serving, are reduced. Investment activity in the territory of the region is high; there are sources and potential for formation of the competitive type of reproduction. Incomes and quality of life of the population are high.
$1,2 > Cfs > 1,0$	Zone of relative security	In this zone, most financial security indicators are not much worse than the threshold values. The region has reserves to economic growth, but this growth is unstable. Depreciation of the fixed assets is high; there are difficulties in attracting investment. Incomes rise mainly due to inflation. The territory, as a rule, receives little financial support from the federal budget.
$1,0 > Cfs > 0,8$	Zone of increased risk	In this zone, most financial security parameters are below the threshold value by half. The region in this area virtually does not have reserves of economic growth, and is often stagnant. Investment activity in the region is weak; the sources of funding are low. Tax revenues, as a rule, are reduced. The subsidized territory. Incomes and living standards of the larger part of the population don't allow having savings and investing in housing.
$Cfs < 0,8$	Zone of catastrophic risk	In this zone most financial security indicators are 2 times or more below the threshold values. The region with a high degree of subsidization, experiencing a crisis of financial system. It requires huge investments and a very significant renewal of the fixed assets. Tax revenues are reducing. High budget expenditures, resulting in high debt load. High risk of introduction temporary financial administration in the territory. A very substantial part of the region's population is below the poverty line.

Table 5. The level of financial security of the Krasnoyarsk Territory (Krai) for the period of 2012 – 2014

	2012	2013	2014
Ca centralized finance security	1,015	0,876	0,887
$C\beta$ decentralized financial resources security	1,488	1,476	1,138
Cfs coefficient value	1,204	1,116	0,987
Corresponds to the zone of	absolute security	relative security	increased risk

References

Witte, S.Yu. *Konspekt lektzii o narodnom i gosudarstvennom khoziaistve, chitannykh ego imperatorskomu vysochestvy velikomu kniaziu Mikhailu Aleksandrovichu* [Notes of Lectures on National and State Economy, Delivered to His Imperial Highness Grand Duke Mikhail Alexandrovich in 1900–1902]. Moscow, 2011. 629 p.

Glazyev, S.Yu. (1997). Osnova obespecheniia ekonomicheskoi bezopasnosti strany: al'ternativnyi reformatsionnyi kurs [Basics for Providing Economic Security of the Country – an Alternative Reformation Course]. *Russian Journal of Economic*, (2), 6–7.

Dolzhikova, I.V. (2013). Obespechenie finansovoi bezopasnosti regiona [Providing Financial Security of the Region]. *Journal of Tula State University. Economic and Legal Sciences*, (3), 81–90.

Novikova, I.V., Krasnikov, N.I (2010). Indikatory ekonomicheskoi bezopasnosti regiona [Indicators of Financial Security of the Region]. *Tomsk State University Journal*, (330), 32–39.

Оценка финансовой безопасности Красноярского края

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Целью работы является оценка уровня финансовой безопасности Красноярского края. Для этого автором предложен расчет интегрального коэффициента уровня финансовой безопасности региона, определен набор индикаторов финансовой безопасности, обоснованы их пороговые значения, в зависимости от значения интегрального коэффициента установлены зоны, соответствующие уровню безопасности финансовых ресурсов в субъекте РФ.

Расчеты показывают ухудшение уровня финансовой безопасности Красноярского края за период 2012-2014 гг. Данный подход может и должен использоваться в работе региональных органов государственной власти для своевременной идентификации и предотвращения угроз развитию всех элементов финансовой системы региона.

Ключевые слова: финансы региона, финансовая безопасность территории, индикаторы финансовой безопасности субъекта РФ.

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