

# The system for assessing the socio-economic sustainability of the region for the development of entrepreneurial networks in conditions of restrictions using the methods of mathematical modeling

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**Abstract.** The subject of the research is scientific and methodological provisions for the study of assessing the socio-economic sustainability of the region for the development of entrepreneurial networks in conditions of restrictions. The purpose of the study is to assess the socio-economic accountability of the region (using the example of the Federal Districts of the Russian Federation). The authors improved the methodology for assessing the socio-economic sustainability of the region, identified assessment indicators and substantiated their threshold values by methods of mathematical modeling. The most financially stable and unstable regions were identified. Recommendations are given for the most vulnerable regions. **Keywords:** assessment of socio-economic sustainability, region, Russian Federation, financial sustainability, state regulation, business networks

## 1 Introduction

In recent years, the role of the formation of a system of socio-economic stability at all levels has sharply increased, be it macroeconomic stability, stability of enterprises in various spheres and industries, or the financial stability of an individual. This problem remains one of the main ones and, accordingly, is most relevant in the context of restrictions. Legal stability of socio-economic stability can be interpreted in two ways: in the narrow one – provision of financial stability by local authorities within the framework of the financial and legal regime; broadly – the activities of these entities together with law enforcement financial entities. This approach ensures the interconnection of government bodies that provide legal protection for financial stability at various levels of government. Many authors study the components of financial stability, economic stability, structure, subjects in interaction, note this (Betskov et al., 2020; Blazhevich et al., 2018; Borsch et al.,

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2019; Burkaltseva, Betskov, et al., 2018; Burkaltseva, Blazhevich, et al., 2019; Burkaltseva, Dudin, et al., 2018; Burkaltseva, Yanova, et al., 2020; Gerasimova, 2019; Dudin et al., 2017; Igaliev et al., 2020; Kazbekova et al., 2020; Korobeynikova et al., 2018; Minimol, 2020. Nalivaychenko et al., 2018; Nassyrova et al., 2020; Niyazbekova et al. 2016; Niyazbekova et al., 2020; Nurzhanova et al., 2020; Rakhimzhanova et al., 2020; Reutov et al., 2020; Reutov et al., 2019; Savitri et al., 2020; Shchipanova et al., 2017; Sivash et al., 2017; Srebalová et al., 2020; Vasilev et al., 2020; Vorobyov et al., 2018; Vorobyov, Poritsky, 2015; Vovchenko et al, 2017; Varnaliy et al., 2018).

At the same time, there is no consensus on what socio-economic stability is and how to assess it using the example of the regions of the Russian Federation for further decision making by regional and local authorities, as well as state regulation in general under conditions of restrictions.

## 2 Literature review

Economic stability is a state of the economy in which the independence and integrity of the country is preserved, the provision of resources for stable functioning from the state to the population, as well as the availability of mechanisms to prevent emerging internal and external threats.

Table 1 shows the interpretation of the concept of "economic stability".

**Table 1.** Interpretation of the concept of "economic stability".

<b>Author</b>	<b>Interpretation of the concept</b>
Manakhova, 2019	Conditions created by the state that guarantee the prevention of irreparable damage to the country's economy from internal and external economic threats.
Goncharenko, 2018	A state in which the people (through the state) can sovereignly, without interference and pressure from outside, determine the ways and forms of their economic development.
Naryshkin, 2010	This is the state of the national socio - economic system, in which it progressively develops, becoming more and more resistant to the impact of unpredictable or poorly predictable endogenous and exogenous factors.
Senchagov, 2013	This is not only the protection of national interests, but also the willingness and ability of government institutions to create mechanisms for the implementation and protection of national interests of the development of the domestic economy, maintaining the socio-political stability of society.
Source: compiled by the authors	

The economic stability of the region is understood as such a set of economic, legal, political and other conditions that provide (Tatarkin, Kuklin, Romanova et al., 2017):

1. Opportunity to improve the situation in the region during the crisis, stagnation and future development.
2. Protection of the most important interests of both the country and the region (resource potential, economic growth).
3. Creation of a protective mechanism for threats arising from the outside, which lead to imbalances in the economy.
4. The country's competitiveness in world markets.
5. High standard of living of the population and personal development.

So, the economic stability of the region is a combination of the current state, conditions and factors that characterize the stable and sustainable development of the economy in a certain area (Krutikov, 2017).

The financial stability of the state is one of the main indicators characterizing the effective functioning of the state. An effective state protects its national interests, and also guarantees financial stability at various times.

Maintaining financial stability solves one of the main tasks – the stable development of the state. Financial stability must always be kept under control, but especially during the period of economic development, as well as during the transition to a new financial strategy.

The issues of financial stability of the state were considered by various scientists. In order to reveal the significance of the financial stability of the state, it is necessary to consider its essence. This involves studying the concept of "financial stability". To date, domestic and foreign economists have not come to a single definition, therefore, let us consider some interpretations of this concept (Table 2).

**Table 2.** Interpretation of the concept of "financial stability".

<b>Author</b>	<b>Interpretation of the concept</b>
Vorobyov et al., 2016	Financial stability is a concept that includes a set of methods to protect the economic interests of the state at the macro level and the financial activities of business entities at the micro level.
Karanina, 2015.	Financial stability is the state of stability (stability) of the financial system and its main parameters: the financial market, the monetary system and the economy as a whole.
Vagina, 2016.	The financial stability of the state is a certain financial state of the state, characterized by its ability to withstand existing and emerging threats, which is ensured by constant monitoring and diagnostics of its level, as well as the formation of a set of preventive and control measures.
Kondrat, 2012	Financial stability lies in the ability of public authorities to ensure, by political, legal and economic methods and means, the safe functioning of all spheres of social and economic activity, where finances circulate.
Gromova, 2007	Financial stability is a concept that includes a set of measures, methods and means to protect the economic interests of the state at the macro-level, corporate structures, financial activities of business entities at the micro-level.
Luppel, 2016	Financial stability is a state of the financial system (finance, financial instruments) of an entity that ensures the normal functioning of its economy, protection of interests and harmonious development.
Magomedov, Ivanitskaya, Karataev, Chistyakova, 2016	The financial stability of the country is understood as the stability of the country's financial sphere, or such a state of the budgetary, tax and monetary systems, which guarantees the state's ability to effectively form, save from excessive depreciation and rationally use the country's financial resources to ensure socio-economic development and service financial obligations".
Source: compiled by the authors	

In addition, financial stability can be considered from different perspectives:

- From the point of view of the resource-functional approach, financial stability is the protection of the financial interests of business entities at all levels of financial relations; provision of households, enterprises, organizations and institutions, regions, regions, sectors of the state economy with financial resources sufficient to meet their needs and fulfillment of corresponding obligations;
- From the point of view of statics, financial stability is financial, monetary, foreign exchange, banking budget, tax, investment, customs-tariff and stock systems, which are characterized by a balance, to internal and external negative influences, the ability to

prevent external financial expansion, to ensure effective functioning of the national economic system and economic growth;

- In the context of legal regulation, financial stability provides for the creation of such conditions for the functioning of the financial system, in which, firstly, there is virtually no opportunity to direct financial flows to the areas of their use that are not enshrined in legislative normative acts and, secondly, the possibility of abuse is reduced to a minimum financial resources (Karanina, 2015).

Thus, the financial stability of the state is understood as the protection of the country's interests in the financial sphere, or this is the state of the budgetary, tax and monetary systems, which guarantees the country's ability to effectively form, save from excessive depreciation and rationally use the country's financial resources to ensure socio-economic development and servicing financial obligations against external and internal threats.

Socio-economic stability ensures stability and stability, first of all, of the financial system for the development of business structures and the social system as a whole. In addition, this category is a very complex and multi-level functional system in which the processes of interaction and opposition of the interests of society and the state with possible threats arising between these interests in the financial sphere are constantly taking place.

### 3 Methodology

The socio-economic stability of the regions of Russia is measured by a number of specific indicators that reflect the real situation of the socio-economic stability of the region.

To analyze the socio-economic stability of the region, it is necessary to use the following algorithm.

1. It is necessary to define a system of indicators on the basis of which the analysis will be carried out. Indicators should be independent, but at the same time reflect the actual situation in the region.

There are three aspects to consider when choosing these indicators:

- Availability of initial data (official website of the Federal State Statistics Service, the Central Bank of Russia, etc.)

- Common analysis period for all proposed indicators.

- A specific set of selected indicators.

2. After determining the indicators, it is necessary to conduct a comprehensive regional analysis.

Since there is no single set of indicators in the economy that could fully characterize socio-economic stability, we have identified a number of our indicators that, in our opinion, reflect the actual situation in the region.

There are 5 main modules characterizing socio-economic stability (Fig. 1).

Let's take a closer look at each of the modules.

The first module for assessing socio-economic stability is social. It reflects the situation of the social direction of the region. The indicators calculated in this module characterize the general standard of living, as well as the material condition of the population. The higher each of the above indicators, the more favorable life in this region. Let's consider them in more detail.

- Consumer Price Index is a monthly measurement of prices of goods and services purchased by various households. The importance of this indicator lies in the fact that it measures the rate of inflation, therefore it is used in order to prevent inflationary processes. In addition, the consumer price index is used to adjust such an important indicator as the GRP. The government also uses the consumer price index to raise the level of benefits, provide social benefits and implement various government programs.

- Average subsistence minimum – the monetary value of the minimum set of products that is necessary to ensure human life. When assessing this indicator in the Federal Districts, it is possible to trace the standard of living of the population, the amount of social benefits that are established at the regional level, etc.

- Average per capita income – reflects what income one family has. The level of this indicator characterizes how attractive a region is for life. The higher the value of this indicator, the higher the average family income.

The financial module reflects the stability of the region's financial system, which includes banking development. This module presents indicators that characterize:

- Rate of growth of inflation - is necessary in order to track the level of inflationary processes. This is necessary in order to analyze in which of the regions, at a high rate, prices rise, which negatively affects the overall financial plan of the Federal District.

- Opportunities for entrepreneurs to obtain loans for the development of their activities. Thus, the dynamics of the volume of loans issued to legal entities shows how developed entrepreneurial activity is in the region, which indicates the attractiveness for the development of new companies.

- Degree of debt on loans. The level of debt shows the opposite characteristic. This indicator is useful in that the higher the debt on the organization's loans, the greater the risk of investing in a given region.

The calculated indicators characterize how stable the region is in the financial direction, as well as how stable and independent it is.

The next module is budgetary. In order to fulfill their functions, the Federal Districts need to have funds that will contribute to the development of the region.

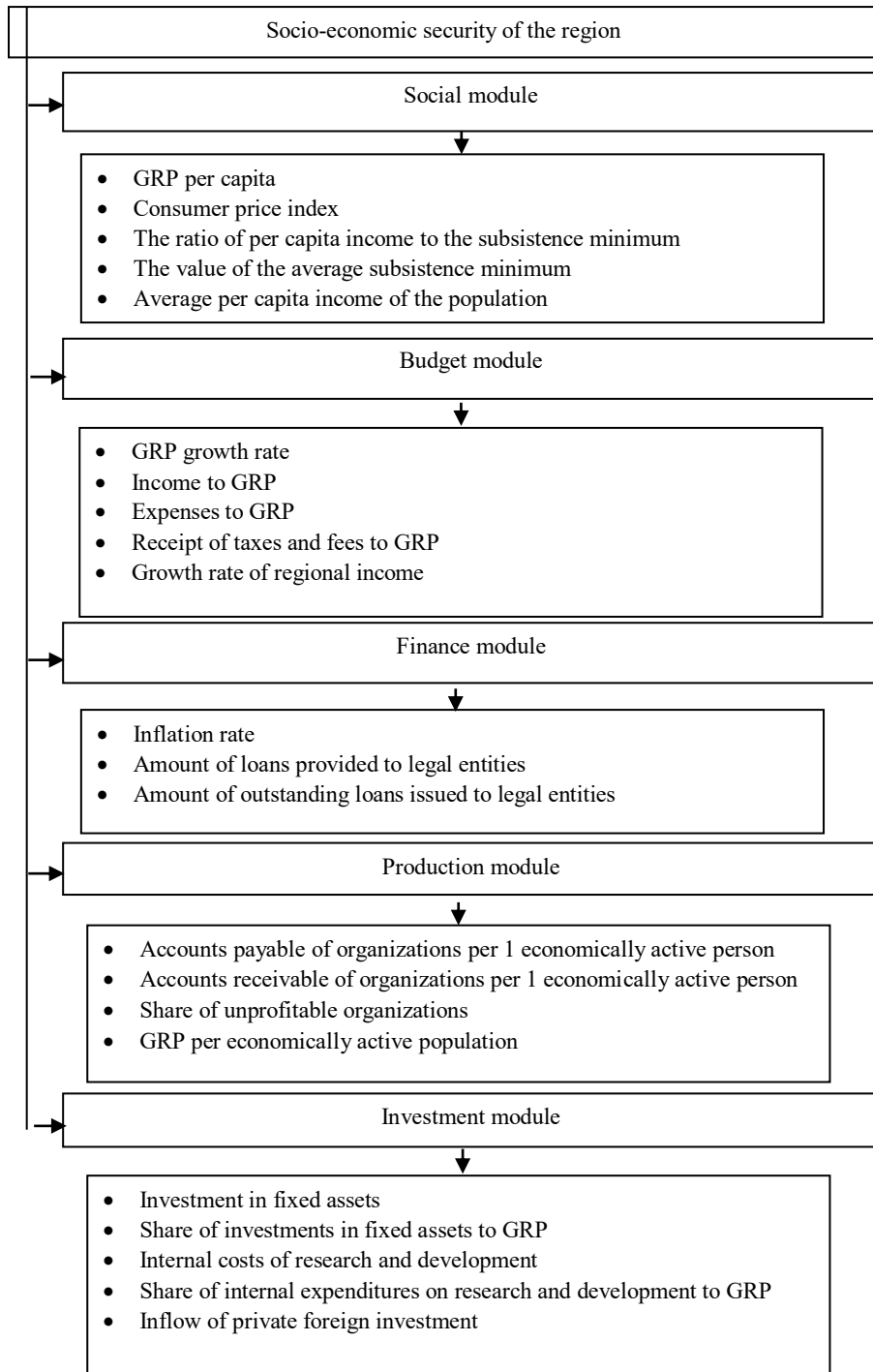
The production module represents the economic development of enterprises located in a given area. The indicators in this module reflect the financial condition of organizations.

- The level of economically active empowerment shows how the region is able to involve the population in work activities that generate income. In addition, the indicator reflects the real level of the labor force.

- The proportion of unprofitable organizations is characterized by the fact that the higher the indicator, the less attractive the region for the creation of new business structures, which negatively affects the development of the business sector as a whole in the region.

- Accounts payable and receivable reflect the possibility of developing entrepreneurship in a particular territorial district.

The investment module characterizes the investment attractiveness of the regions of the Russian Federation.



**Fig. 1.** Indicators for assessing the socio-economic stability of the region.

Considering the given module, it is possible to determine which of the regions is the most attractive for investment, both for domestic and foreign investors. In our opinion,

these indicators provide a more complete assessment of investment stability. Let's give them a description

1. Investment in fixed assets – these are the costs of construction, reconstruction and modernization of various objects, which will subsequently lead to an increase in their initial cost.

2. The share of investments in fixed assets to GRP is calculated as a quotient of dividing investments in fixed assets and gross regional product.

3. Internal expenditure on research and development – expenditure in monetary form that is directed to research and development within the country. These costs are divided into two types: current – costs that are associated with the purchase of raw materials, materials, labor, as well as insurance; capital – costs for the acquisition of land plots, buildings, structures, mechanisms, etc. [6].

4. Share of domestic expenditures on research and development to GRP - estimated in both current and constant prices, calculated as a division of the gross regional product.

5. The inflow of private foreign investment is funds that are directed from abroad for the development of various sectors of the economy in Russia. The more attractive the investment climate in different regions of the country, the higher the level of foreign investment.

Based on this, it must be said that socio-economic stability has a fairly broad significance. It can be considered both by sectors of the economy and by various state levels.

The main requirements for assessing the socio-economic stability of a region are inter-regional comparison of key indicators. This allows us to identify the most lagging regions, which will help balance the development of all regions in aggregate.

In order to analyze socio-economic stability, it is necessary to determine what indicators will characterize it.

5 main modules have been developed, which most fully reflect the socio-economic stability of the region:

- The social module characterizes how comfortable financial conditions are created for living in a particular area.
- The budget module reflects the state of the budgetary sphere in the analyzed region.
- The financial module reflects what financial level each of the analyzed regions has.
- The production module shows at what level the organizations are located in a particular area.
- The investment module shows to what extent the Federal District is investment-developed and attractive.

## **4 Application functionality. Results and Discussion**

### **4.1 Assessment of indicators affecting the socio-economic stability of the federal districts of the Russian Federation**

The Russian Federation has eight Federal Districts: the Central Federal District (hereinafter – CFD), the Northwestern Federal District (hereinafter – NWFD), the Southern Federal District (hereinafter – Southern FD), the North Caucasian Federal District (hereinafter – NCFD), the Volga Federal District (hereinafter – VFD), the Ural Federal District (hereinafter – UFD), the Siberian Federal District (hereinafter – Siberian FD), the Far Eastern Federal District (hereinafter – FEFD).

Here are the main indicators characterizing the socio-economic situation in the districts. (Table 3).

**Table 3.** Interpretation of the concept of "financial stability" Socio-economic characteristics of the Federal Districts.

	CFD	NWF D	South ern FD	NCFD	VFD	UFO	Siberi an FD	FEFD
The size of the territory (% of the territory of the Russian Federation)	3.8	9.9	2.6	1.0	6.1	10.6	30	36.0
Organization s' turnover (trillion rubles)	52.7	15.9	9.2	1.9	20.3	16.9	13.6	5.6
Labor force (mln. people)	21.5	7.5	8.3	4.7	15.2	6.4	9.7	3.3
Unemployed (thousand people)	590.5	278.9	442.5	466.2	631.6	296.4	650.0	158.0
Average monthly nominally accrued wages (rubles)	52947	48295	30774	26037	31026	46790	36485	52505
Source: built by the authors based on (Bulletin, 2018; Regions of Russia, 2018; Regions of Russia. Socio-economic indicators, 2018)								

The federal district, which has the largest population and the composition of its constituent entities, is the Central Federal District. The Far Eastern Federal District has the largest territory.

Districts such as the UFO and the Central Federal District do not include republics. At the same time, it should be noted that the UFO has autonomous okrugs as part of one subject – oblast. The Central Federal District consists exclusively of regions and a city of federal significance.

There are no regions in the NCFD, but there is one edge. In addition, this region is the only one that does not have a numerical advantage among the ethnically Russian population, the share is highest in the Central District.

Having considered the main characteristics of the federal districts, we will assess the indicators of the socio-economic stability of the Federal districts of the Russian Federation.

#### 4.2 Assessment of the integral indicator of socio-economic stability of the region

An analysis of the integral indicator of each of the analyzed module is the final state of financial security of the region. The normative indicator, when assessing the integral indicator, will be considered the Russian Federation, its value is 1. The deviation from this norm, to the larger or smaller side, will indicate the improvement or worsening of financial security, respectively.



## 1. Budget module.

The calculation of the integral indicator of the budget module is presented in table 4.

**Table 4.** Determination of the integral indicator of the budget module of the federal districts of the Russian Federation.

<b>Federal Districts of the Russian Federation</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
CFD	0.9598	0.9671	0.9746	0.9681	0.9451	0.9581
CFD (without Moscow)	0.9649	0.9616	0.9609	0.9687	0.9476	0.9959
including Moscow	0.9651	0.9822	0.9892	0.9680	0.9767	0.9762
NWFD	1.0182	1.0173	1.0221	1.0139	1.0065	1.0125
Southern FD	0.9355	0.9277	1.0023	0.9626	0.9311	0.9419
NCFD	0.9208	0.9139	0.9169	0.9085	0.9041	0.9449
VFD	1.0002	1.0009	1.0092	1.0121	1.0169	1.0160
UFD	1.1897	1.1676	1.1241	1.1719	1.2287	1.1747
Siberian FD	0.9783	0.9718	0.9766	0.9848	0.9609	0.9821
FEFD	1.0103	1.0454	0.9760	0.9403	1.0255	0.9797

The integral indicator of the budget module is affected by 5 indicators (Table 5).

**Table 5.** Calculation of indicators that influenced the budget module of the federal districts of the Russian Federation. Source: calculated by the authors.

<b>GRP growth rate</b>						<b>Federal Districts of the Russian Federation</b>	<b>Revenues to GRP</b>					
2014	2015	2016	2017	2018	2019		2014	2015	2016	2017	2018	2019
0.9954	0.9777	1.0111	1.0020	0.9899	0.9941	CFD	0.9285	0.9280	0.9375	0.9887	1.0029	1.0164
1.0063	1.0178	1.0213	0.9810	0.9789	0.9994	CFD (without Moscow)	1.1190	1.1254	1.0628	1.0799	1.3712	1.4753
0.9887	0.9524	1.0041	1.0164	0.9972	0.9906	including Moscow	0.8080	0.7946	0.8513	0.9282	0.7628	0.7147
0.9786	1.0909	1.0284	0.9707	0.9689	1.0064	NWFD	1.1124	1.0099	1.0228	1.0617	1.0605	1.0542
1.0604	1.0066	1.0024	1.0124	0.9606	1.0072	Southern FD	0.9512	0.9390	1.1142	1.0989	1.1357	1.0920
1.0319	0.9750	0.9988	0.9586	0.9154	0.9745	NCFD	1.4879	1.5656	1.4786	1.4921	1.5756	1.6552
0.9908	0.9867	0.9784	0.9823	0.9987	0.9866	VFD	0.9944	1.0117	0.9982	0.9734	0.9560	0.9473

<b>Expenses to the GRP</b>						<b>Federal Districts of the Russian Federation</b>		<b>The receipt of taxes and fees to GRP</b>					
	2014	2015	2016	2017	2018			2014	2015	2016	2017	2018	2019
0.6897	0.8902	0.8894	0.9185	0.9544	0.7054	0.7126	FEFD	0.8138	0.9404	0.8401	0.6950	0.6528	0.6877
							Siberian FD	0.8752	0.8609	0.8925	0.9162	0.9350	0.9201
							UFD	1.8447	1.7872	1.6143	1.6736	1.8232	1.7291
							VFD	1.0283	1.0247	1.0705	1.1011	1.1099	1.1058
							NCFD	0.4314	0.4145	0.4559	0.4379	0.4289	0.4557
							Southern FD	0.6299	0.6492	0.7684	0.7472	0.7095	0.6950
							NWFD	1.0884	1.0111	1.0703	1.0965	1.0539	1.0482
							including Moscow	0.8166	0.8801	0.8859	0.8431	0.7325	0.7762
							CFD (without Moscow)	0.8140	0.7755	0.8053	0.7707	0.7896	0.8225
							CFD	0.8156	0.8379	0.8531	0.8142	0.7550	0.7946
							FEFD	1.4500	1.5806	1.4487	1.4245	1.4176	1.4033
							Siberian FD	1.1234	1.1244	1.0887	1.0478	1.0038	1.0177
							UFD	0.7665	0.7605	0.7448	0.6833	0.6710	0.6581
							FEFD	1.0367	1.0038	0.9953	0.9542	1.1850	1.0355
							Siberian FD	1.0120	1.0011	0.9929	1.0051	0.9511	0.9912
							UFD	0.9806	1.0048	0.9800	1.0550	1.0528	1.0141

Federal Districts of the Russian Federation	Revenue growth rate of the region					
	2014	2015	2016	2017	2018	2019

CFD	0.9825	1.0141	1.0045	1.0242	0.9807	1.0018
CFD (without Moscow)	0.9915	1.0010	0.9741	1.0856	0.8691	1.0043
including Moscow	0.9747	1.0255	1.0303	0.9749	1.0803	1.0000
NWFD	1.0128	0.9846	1.0112	0.9987	1.0060	1.0051
Southern FD	0.9848	0.9786	1.2292	1.0446	0.9691	0.9996
NCFD	0.9810	0.9755	0.9749	0.9838	0.9657	1.0351
VFD	0.9818	0.9930	0.9972	0.9766	0.9738	0.9845
UFD	1.0522	0.9703	0.9386	0.9840	1.1063	0.9528
Siberian FD	0.9908	0.9832	0.9907	1.0003	0.9185	0.9989
FEFD	1.0613	1.0693	0.9053	0.9258	1.1668	1.0591

In the Central Federal District in 2019, the integral indicator is 0.9581. The calculated indicator is slightly lower than the normative value of equal 1. It should be noted that 3 indicators negatively influenced the formation of an integral indicator, and 2 – positively. At the same time, the negative impact of indicators exceeded the positive, as a result of which the integral indicator of the budget module in the Central Federal District did not reach the normative value. The most negative impact was had an indicator of taxes and fees to the GRP, and the greatest positive - the ratio of income to the GRP.

It should be noted that during all periods of analysis, an integral financial security indicator for the budget module in the Central Federal District was less normative. The smallest level of this indicator was recorded in 2018. It was in this period that the situation was the worst. The closest to the minimum acceptable level was recorded in 2016.

Integral assessment of the budget module of the NWFD in 2019 above the norm. This year it is 1.0125, which is 0.0125 more than the standard. The negative impact on this level of security was exerted 1 indicator, the positive – 4. Since the positive effect exceeds the negative, this leads to the fact that the level of budget security in the NWFD is high.

It should be noted that in 2016 the highest level of budget security is observed, which indicates a favorable situation in the region during this period.

The integral indicator of the Southern Federal District in 2019 is 0.9419. This indicates that the indicator is below the normative value. To a greater extent, 2 indicators influenced

this value. The negative impact was exerted by 3 indicators. Since the negative impact exceeded the positive, this led to the fact that the level of budget security is less than the normative value.

In 2015, the integral indicator of the Southern Federal District is 0.9277, which indicates a low level of security in the region. The best situation is observed in 2016, during this period the indicator is 1.0023.

The North Caucasus Federal District in 2019 has an indicator of 0.9449. It is worth noting that during 2014-2019 it has a positive dynamics. The growth was influenced by 2 indicators, the rest had a negative effect.

In 2019, the integral indicator is the largest, this is a positive moment for the region. Despite the fact that during this period the indicator is the maximum, its level is not enough to achieve normative value. The smallest level of security is observed in 2018 – 0.9041.

In 2019, the VFD has the value of the integral indicator – 1.0160. The most positive influence was exerted to show 1 to show, the negative – 4. Despite the fact that only 1 indicator had a positive effect, this was enough to achieve a normative value in 1. In addition, it should be noted the positive dynamics of this region throughout 2014-2019 years. The largest level of security was 0.0169 in 2018, and the smallest in 2014 – 1.0002.

UFD, as well as the VFD, has a level of budget security more than a normative value. In 2019, it is 1.1747. This is a positive moment for FR. Such a level of security, to a greater extent, had a positive effect of 2 indicators, and negative – 3. Despite the fact that the level of security of this region is more than a normative value of 0.1747, in general, the level of security in this region is reduced.

The integral indicator of the Siberian Federal District is 0.9821, which is 0.0179 less the standard. This value is acceptable, since the indicator strives for the norm. The 1 indicator had a positive effect, 4 – negative. For 2014-2019, the level of budget security remained at the level of 2014-0.9783. At the same time, the greatest value of the integral indicator is observed in 2017 – 0.9848, but it also does not comply with the norm.

The level of budget security of the Far Eastern Federal District in 2019 is 0.9797. This value is less normative. 3 indicators had a positive effect, negative - 2. Despite the fact that more indicators had a positive effect than negative, this was not enough to achieve normative significance. It should be noted that in 2015 and 2018, the value was 1.0454 and 1.0255, which exceeds the standard, however, the subsequent reduction led to a decrease in the level of security in the region as a whole.

The next module for analyzing the integral indicator is social.

## 2. Social module.

The calculation of the integral indicator of the social module is presented in table 6.

**Table 6.** Determination of the integral indicator of the social module of the federal districts of the Russian Federation.

	2014	2015	2016	2017	2018	2019
CFD	1.2685	1.2575	1.2564	1.2601	1.2622	1.2610
CFD (without Moscow)	0.9125	0.9098	0.9639	0.9778	0.9651	0.9594
including Moscow	1.6327	1.6028	1.5894	1.5997	1.6341	1.6058
NWFD	1.0069	0.9992	1.0486	1.0563	1.0461	1.0418
Southern FD	0.9134	0.8919	0.8919	0.8866	0.8791	0.8754
NCFD	0.7765	0.7742	0.7759	0.7730	0.7321	0.7321
VFD	0.9510	0.9449	0.9324	0.9239	0.9092	0.9142
UFD	1.2380	1.2100	1.2024	1.1904	1.2725	1.2649
Siberian FD	0.9074	0.9072	0.9065	0.9083	0.9141	0.9008
FEFD	0.9082	0.9421	0.9373	0.9388	0.9127	0.9698

The integral indicator of the social module is affected by 3 indicators (Table 7).

**Table 7.** Calculation of indicators that influenced the social module of the federal districts of the Russian Federation. Source: calculated by the authors.

GRP per capita						Federal Districts of the Russian Federation	Consumer price index					
2014	2015	2016	2017	2018	2019		2014	2015	2016	2017	2018	2019
1.350	1.3270	1.2946	1.3054	1.3050	1.2885	CFD	0.9914	0.9920	0.9946	0.9920	0.9940	1.0015
0.7438	0.7487	0.7628	0.7775	0.7634	0.7480	CFD (without Moscow)	0.9927	0.9898	0.9932	0.9916	0.9950	0.9966
2.6392	2.5953	2.4495	2.4494	2.4670	2.4351	including Moscow	0.9941	0.9876	0.9918	0.9911	0.9959	0.9918
1.0883	1.0638	1.1616	1.1907	1.1517	1.1133	NWFD	0.9870	0.9972	1.0021	0.9930	0.9998	1.0015
0.6923	0.6301	0.6327	0.6319	0.6397	0.6132	Southern FD	0.9923	1.0017	0.9965	1.0027	0.9959	1.0044
0.3942	0.4046	0.3928	0.3900	0.3723	0.3389	NCFD	1.0131	0.9833	1.0012	1.0017	1.0036	0.9995
0.7708	0.7657	0.7579	0.7425	0.7320	0.7339	VFD	1.0012	1.0106	1.0069	1.0047	0.9988	1.0044
1.6732	1.6383	1.6448	1.6070	1.6949	1.7831	UFD	1.0104	0.9981	0.9965	0.9998	1.0075	1.0005
0.8698	0.8777	0.8795	0.8732	0.8801	0.8417	Siberian FD	1.0021	1.0106	1.0031	1.0037	0.9978	0.9957
0.9243	0.9618	0.9690	0.9661	0.9249	1.0994	FEFD	1.0030	1.0070	0.9993	1.0027	1.0026	0.9928
Federal Districts of the Russian Federation						The ratio of the average per capita income to the cost of living						

	2014	2015	2016	2017	2018	2019
CFD	1.4791	1.4536	1.4799	1.4829	1.4876	1.4931
CFD (without Moscow)	1.0009	0.9909	1.1358	1.1644	1.1369	1.1334
including Moscow	1.2648	1.2255	1.3270	1.3585	1.4395	1.3904
NWFD	0.9454	0.9365	0.9821	0.9851	0.9868	1.0106
Southern FD	1.0556	1.0438	1.0466	1.0252	1.0017	1.0087
NCFD	0.9223	0.9347	0.9336	0.9273	0.8202	0.8579
VFD	1.0810	1.0585	1.0324	1.0246	0.9967	1.0045
UFD	1.0303	0.9937	0.9661	0.9645	1.1151	1.0112
Siberian FD	0.8501	0.8332	0.8370	0.8480	0.8644	0.8650
FEFD	0.7973	0.8574	0.8435	0.8475	0.8106	0.8171

In the Central Federal District in 2019, the integral indicator is 1.2610. The calculated indicator is slightly higher than the normative value of equal 1. It should be noted that 3 indicators have positively influenced the formation of an integral indicator. Since all indicators had a positive effect, as a result of which the integral indicator of the social module in the Central Federal District reached a normative value.

It should be noted that during all periods of analysis, an integral financial security indicator for a social module in the Central Federal District was more normative. The largest level of this indicator was recorded in 2014. It was in this period that the situation was the best.

Integral assessment of the NWFD social module in 2019 above the norm. This year it is 1.0418, which is 0.0418 more than the standard. Not a single indicator has a negative

impact on this level of security, the positive - 3. Since a positive effect exceeds the negative, this leads to the fact that the level of social security in the NWFD is high.

It should be noted that in 2017 the highest level of social security is observed, which indicates a favorable situation in the region during this period.

The integral indicator of the Southern Federal District in 2019 is 0.8754. This indicates that the indicator is below the normative value. To a greater extent, 2 indicators influenced this value. Negative influence had 1 indicator. Since the negative impact exceeded the positive, this led to the fact that the level of social security is less than the normative value.

In 2019, the integral indicator of the Southern Federal District is 0.8754, which indicates a low level of security in the region. The best situation is observed in 2014, during this period the indicator is 0.9134.

The North Caucasus Federal District in 2019 has an indicator 0, 7321. No indicator has affected this level positively, all the analyzed indicators had a negative effect.

In 2014, the integral indicator is the largest, this is a positive moment for the region. Despite the fact that during this period the indicator is the maximum, its level is not enough to achieve normative value. The smallest level of security is observed in 2018 and 2019.

In 2019, the VFD is of an integral indicator – 0.9142. 2 indicators had the most positive effect, negative- 1. Despite the fact that 2 indicators had a positive effect, this was not enough to achieve a normative value in 1. In addition, the negative dynamics of this region should be noted during 2014-2019. The largest level of security was 0.9510 in 2014, and the smallest in 2018 – 0.9092.

The level of social security in the UFD in 2019 is 1.2649. This is a positive moment for for the federal district. Such a level of security, to a greater extent, had a positive effect of 3 indicators, and the negative - 0. Despite the fact that the level of security of this region is more than a normative value of 0.2649, in general, the level of security in this region is improving.

The integral indicator of the Siberian Federal District is 0.9008, which is 0.0992 less than the standard. This value is acceptable, since the indicator strives for the norm. A positive influence was had 0 indicators, 3 – negative. For 2014-2019, the level of social security remained at the level of 2014 – 0.9074. At the same time, the greatest value of the integral indicator is observed in 2018 - 0.9141, but it also does not comply with the norm.

The level of social security of the FEFD in 2019 is 0.9698. This value is less normative. The 1 indicator had a positive effect, the negative – 2. Despite the fact that 1 indicator had a positive effect, this was not enough to achieve a normative value. It should be noted that in 2014-2019, the level of social security has not been reached normative significance.

### 3. Production module.

The calculation of the integral indicator of the production module is presented in table 8.

**Table 8.** Determination of the integral indicator of the production module of the federal districts of the Russian Federation.

	2014	2015	2016	2017	2018	2019
CFD	1.4141	1.4869	1.5263	1.4186	1.4580	1.4584
CFD (without Moscow)	0.8459	0.8598	0.8798	0.8461	0.8209	0.8466
including Moscow	2.5773	2.7634	2.7957	2.5417	2.6836	2.6143
NWFD	1.2064	1.3278	1.3145	1.3637	1.4075	1.3804
Southern FD	0.7799	0.6994	0.7117	0.7073	0.6743	0.6796
NCFD	0.5953	0.6110	0.6078	0.5648	0.5858	0.5912
VFD	0.8380	0.8023	0.7942	0.7970	0.8167	0.8143

UFD	1.2891	1.2617	1.2470	1.3251	1.3039	1.3125
Siberian FD	0.7905	0.7746	0.7657	0.7719	0.7980	0.8085
FEFD	1.0424	1.0046	0.9997	1.0133	0.9041	0.9201

The integral indicator of the production module is affected by 3 indicators (table 9).

**Table 9.** Calculation of indicators that influenced the production module of the federal districts of the Russian Federation. Source: calculated by the authors.

Accounts payable for 1 economically active person						Federal Districts of the Russian Federation	Accounts receivable for 1 economically active person					
2014	2015	2016	2017	2018	2019		2014	2015	2016	2017	2018	2019
						CFD	2.0044	2.2190	2.2813	1.9791	2.1324	2.1525
						CFD (without Moscow)	0.7444	0.7634	0.7895	0.7298	0.7471	0.8311
						including Moscow	4.5004	5.1112	5.1783	4.4081	4.8253	4.6785
						NWFD	1.6513	1.8919	1.7767	1.9651	2.0930	2.0470
						Southern FD	0.5607	0.4649	0.4936	0.4452	0.4205	0.4520
						NCFD	0.3144	0.3068	0.3162	0.2319	0.2283	0.2259
						VFD	0.6406	0.5850	0.6288	0.6494	0.6550	0.6613
						UFD	1.2564	1.1412	1.1512	1.2936	1.1706	1.1684
0.5545						Siberian FD	1.6674	1.7514	1.7277	1.7145	1.6532	1.6751



0.8747	1.0231	1.0231	1.0231	1.1199	1.0295	1.0200	0.9637	0.9364	1.0601	0.9808	The proportion of unprofitable organizations					1.0176	
											2014	2015	2016	2017	2018		2019
0.9006	1.0219	1.0000	1.0231	1.0654	1.0831	0.9731	0.9879	0.9504	1.0574	0.9909	0.8769						
0.9296	0.9685	0.9685	0.9844	1.0109	1.0685	0.9780	1.0318	1.0213	1.0751	1.0425	0.8303						
0.9383	0.9764	0.9764	0.9830	1.0000	1.0471	1.0105	1.0176	1.0212	1.0587	1.0358	0.9138						
0.9109	0.9450	0.9450	0.9476	1.0522	1.1557	0.9658	1.0554	1.0307	0.9799	1.0100	0.7196						
0.9156	0.9728	0.9728	0.9572	1.0407	1.1854	0.9471	1.0170	1.0317	0.9750	1.0085	0.7037						
		Siberian FD															
		UFD															
		VFD															
		NCFD															
		Southern FD															
		NWFD															
		including Moscow															
		CFD (without Moscow)															
		CFD															
		FEFD															
1.2348	0.7938	0.7938	1.5878	0.7534	0.4419	0.7590	1.0042	2.2950	0.7331	1.2570	1.2741						
1.2363	0.8095	0.8095	1.6219	0.7566	0.4432	0.6602	1.1037	2.2286	0.7585	1.2507	1.1525						
1.2391	0.8068	0.8068	1.6055	0.7428	0.4387	0.6634	1.1351	2.1875	0.7748	1.2550	1.1412						
1.1879	0.8174	0.8174	1.6987	0.7415	0.4153	0.6663	1.1085	2.1960	0.7498	1.2410	1.1426						
1.0818	0.8686	0.8686	1.7935	0.7427	0.3733	0.6367	1.0741	2.1948	0.7358	1.2314	1.5102						
1.1409	0.8634	0.8634	1.8119	0.7408	0.3622	0.6398	1.0772	2.1327	0.7335	1.2141	1.6099						

Initially, 4 indicators were selected to evaluate the production module. After calculating the data, it was decided to remove one indicator – receivables for 1 economically active person, since the results of this indicator distort the picture of the assessment.

In the Central Federal District in 2019, the integral indicator is 1.4584. The calculated indicator is higher than the normative value of equal 1. It should be noted that 3 indicators have positively influenced the formation of an integral indicator. The positive influence of the indicators exceeded the negative, as a result of which the integral indicator of the production module in the Central Federal District reached a normative value.

It should be noted that during all periods of analysis, the integral financial security indicator for the production module in the Central Federal District was more normative. The largest level of this indicator was recorded in 2016. It was in this period that the situation was the best.

Integral assessment of the production module of the NWFD in 2019 above the standard. This year it is 1.3804, which is 0.3804 more than the standard. The negative impact on this level of security had 2 indicators, positive – 1. Since a positive effect exceeds the negative, this leads to the fact that the level of production security in the NWFD is high.

It should be noted that in 2018 there is the highest level of production security, which indicates a favorable situation in the region during this period.

The integral indicator of the Southern Federal District in 2019 is 0.6796. This indicates that the indicator is below the normative value. To a greater extent, 3 indicators affected the negative impact on this value. Since the negative impact exceeded the positive, this led to the fact that the level of production security is less than the normative value.

In 2018, the integral indicator of the Southern Federal District is 0.6743, which indicates a low level of security in the region. The best situation is observed in 2014, during this period the indicator is 0.7799.

The North Caucasus Federal District in 2019 has an indicator of 0.5912. The level of production security was influenced by 1 indicator, the rest had a negative effect.

In 2015, the integral indicator is the largest, this is a positive moment for the region. Despite the fact that during this period the indicator is the maximum, its level is not enough to achieve normative value. The smallest level of security is observed in 2017 – 0.6078.

In 2019, the VFD is of an integral indicator – 0.8143. The most positive influence was exerted to show 1 to show, negative – 2. Despite the fact that only 1 indicator had a positive effect, this was not enough to achieve a normative value of 1. The largest level of security was in 2014 – 0.8380, And the smallest in 2016 – 0.7942.

In the UFD, the production security level in 2019 is 1.3125. This is a positive moment for FR. Such a level of security, to a greater extent, had a positive effect of 2 indicators, and negative – 1. Despite the fact that the security level of this region is more than a normative value of 0.3125, in general, the level of security in this region is increasing.

The integral indicator of the Siberian Federal District is 0.8085, which is 0.1915 less than the standard. No indicator had a positive effect, 3 – negative. For 2014-2019, the production security level increased by 0.018.

The production security level of the FEFD in 2019 is 0.92019. This value is less normative. The 1 indicator had a positive effect, the negative – 2. Despite the fact that 1 indicator had a positive effect, this was not enough to achieve a normative value. It should be noted that in 2014, 2015 and 2017, the value was 1.0124, 1.0046 and 1.0133, which exceeds the standard, however, the subsequent reduction led to a decrease in the level of security in the region as a whole.

#### 4. Financial module.

The calculation of the integral indicator of the financial module is presented in table 10.

**Table 10.** Determination of the integral indicator of the financial module of the federal districts of the Russian Federation.

	2014	2015	2016	2017	2018	2019
CFD	1.2230	1.2668	1.1947	1.0695	1.2750	1.2694
CFD (without Moscow)	0.9439	1.0461	1.0014	0.8965	0.9822	0.9294
including Moscow	1.3866	1.4185	1.3300	1.1867	1.4508	1.4747
NWFD	0.9429	0.9037	0.9975	0.9211	0.9316	0.8574
Southern FD	0.8606	0.9344	0.9998	1.0069	0.8721	1.0066
NCFD	0.6531	0.5724	0.6072	0.8897	0.5793	0.5940
VFD	0.8793	0.8862	1.0372	1.1256	0.8712	0.8591
UFD	0.7544	0.7636	0.6638	0.6576	0.6627	0.7275
Siberian FD	0.8229	0.8102	1.1744	0.8004	1.0176	0.7540
FEFD	0.7501	0.6764	0.5406	0.7382	0.9353	0.5560

The integral indicator of the financial module is affected by 3 indicators (table 11).

**Table 11.** Calculation of indicators that influenced the financial module of the federal districts of the Russian Federation. Source: calculated by the authors.

Inflation level						Federal Districts of the Russian Federation	Loans volume to legal entities for 1 rub. GRP					
2014	2015	2016	2017	2018	2019		2014	2015	2016	2017	2018	2019
0.9031	0.9316	0.9148	0.6553	1.0415	0.6241	CFD	1.6419	1.7169	1.6027	1.5385	1.7168	1.9676
						CFD (without Moscow)	0.9346	1.0340	1.0033	0.9974	0.9978	1.1499
						including Moscow	2.0895	2.1787	2.0149	1.8977	2.1854	2.5053
0.8635	0.9751	1.0411	0.6068	0.7875	1.1857	NWFD	1.0162	0.8345	0.8876	0.9937	0.9746	0.6684
0.9107	1.0106	0.9472	1.0041	0.7175	1.3175	Southern FD	0.7483	0.7766	0.9125	0.9064	0.8963	0.7829
1.1221	0.8699	1.0311	1.8126	0.8726	1.1116	NCFD	0.2602	0.2572	0.2433	0.2668	0.2877	0.2394

1.0082	1.0054	1.0993	0.9925	VFD			
1.0603	1.0996	0.9781	1.0958				
0.9928	1.0703	0.9323	1.1533				
1.0339	1.0819	0.8510	1.1631				
1.6992	1.6992	0.9784	0.7687				
0.9121	0.9881	1.1475	1.3175				
FEFD	Siberian FD	UFD					
0.4646	0.6124	0.4223	0.7289	UFD			
0.3555	0.5643	0.5259	0.6850				
0.3566	0.6284	0.4209	0.8656				
0.4243	0.5577	0.4362	0.9560				
0.3622	0.5389	0.3496	0.7304				
0.2547	0.5258	0.3583	0.4899				
<b>Federal Districts of the Russian Federation</b>		<b>The amount of debt for 1 ruble of loans issued to legal entities</b>					
		<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
CFD		1.1240	1.1518	1.0667	1.0148	1.0666	1.2166
CFD (without Moscow)		0.9941	1.1727	1.0860	1.0368	0.9072	1.0141
including Moscow		1.1671	1.1453	1.0603	1.0073	1.1255	1.2946
NWFD		0.9489	0.9017	1.0639	1.1627	1.0327	0.7180
Southern FD		0.9229	1.0160	1.1398	1.1101	1.0025	0.9195
NCFD		0.5769	0.5901	0.5472	0.5898	0.5777	0.4311
VFD		0.9164	0.8778	1.0925	1.2576	1.1145	0.7701
UFD		0.7414	0.7870	0.6382	0.6856	0.6602	0.6767

Siberian FD	0.8508	0.7666	1.8243	0.7616	0.8146	0.7482
FEFD	0.7774	0.6134	0.2725	0.7565	0.7444	0.5012

In the Central Federal District in 2019, the integral indicator is 1.2694. The calculated indicator is above the normative value of equal 1. It should be noted that 1 indicator negatively influenced the formation of an integral indicator, and 2 - positively. At the same time, the negative impact of indicators did not exceed the positive, as a result of which the integral indicator of the financial module in the Central Federal District reached a normative value.

It should be noted that during all periods of analysis, an integral financial security indicator for a financial module in the Central Federal District was more normative. The smallest level of this indicator was recorded in 2017. Despite this, the level of financial security has remained more normative value by 0.0695. The greatest importance was recorded in 2018.

Integral assessment of the financial module of the NWFD in 2019 below the standard. This year it is 0.8574, which is 0.1426 less than the standard. The negative impact on this level of security had 2 indicators, the positive – 1. Since the negative impact exceeds the positive, this leads to the fact that the level of financial security in the NWFD is below the standard.

It should be noted that in 2016 the highest level of financial security is observed, which indicates a favorable situation in the region during this period.

The integral indicator of the Southern Federal District in 2019 is 1.0066. This indicates that the indicator is higher than the normative value. To a greater extent, 1 indicator influenced this value. 2 indicators had a negative impact. Since the negative impact did not exceed the positive, this led to the fact that the level of financial security is more normative.

In 2014, the integral indicator of the Southern Federal District is 0.8606, which indicates a low level of security in the region. The best situation is observed in 2017, during this period the indicator is 1.0069.

The North Caucasus Federal District in 2019 has an indicator of 0.5940. It is worth noting that during 2014-2019 it has negative dynamics. The growth was influenced by 1 indicator, the rest had a negative effect.

In 2017, the integral indicator is the largest, this is a positive moment for the region. Despite the fact that during this period the indicator is the maximum, its level is not enough to achieve normative value. The smallest level of security is observed in 2015 – 0.5724.

In 2019, the VFD has the value of the integral indicator – 0.8591. The most positive influence was exerted to show 1 to show, negative – 2. Despite the fact that only 1 indicator had a positive effect, this was not enough to achieve the normative value in 1. The highest level of security was the largest level of security in 2016 and 2017 – 1, 0372 and 1.1256, and the smallest in 2019 – 0.8591.

The UFD, just like the VFD, did not reach a normative value. In 2019, it is 0.7275. This is a negative point for the federal district. On such a level of security, 1 indicator had a positive effect, and negative – 2. Despite the fact that the security level of this region is less than a normative value of 0.2725, in general, the level of security in this region is reduced.

The integral indicator of the Siberian Federal District is 0.7540, which is 0.2460 less than the standard. No indicator had a positive effect, 3 – negative. In 2014-2019, the level of budget security has significantly decreased by 0.0689. At the same time, the highest

value of the integral indicator is observed in 2016 – 1.1744, which corresponds to the norm, however, the subsequent reduction has led to the fact that the final indicator of financial security is less than the standard.

The level of financial security of the FEFD t in 2019 is 0.5560. This value is less normative. A positive effect was had 0 indicators, negative – 3. Since there were more indicators, this led to the fact that the level of financial security is lower than normative significance. It should be noted that in 2018 the value was 0.9353, which did not exceed the standard, however, the subsequent reduction led to a greater reduction in the level of security in the region as a whole.

##### 5. Investment module.

The calculation of the integral indicator of the investment module is presented in table 12.

**Table 12.** Determination of the integral indicator of the investment module of the federal districts of the Russian Federation

	2014	2015	2016	2017	2018	2019
CFD	0.9077	0.9202	0.8967	0.9281	0.9351	1.1582
CFD (without Moscow)	0.6545	0.6534	0.6196	0.6237	0.6369	0.8010
including Moscow	0.7079	0.7300	0.7211	0.7515	0.7553	0.8973
NWFD	0.6224	0.5928	0.6257	0.6194	0.6491	0.5371
Southern FD	0.4823	0.4358	0.3774	0.4101	0.3916	0.2918
NCFD	0.3372	0.3329	0.3209	0.3145	0.3545	0.2912
VFD	0.6049	0.6325	0.6146	0.5936	0.5826	0.5321
UFD	0.5210	0.5230	0.5628	0.5293	0.5056	0.4338
Siberian FD	0.4549	0.4401	0.4343	0.4264	0.4459	0.4402
FEFD	0.3417	0.3135	0.3906	0.4314	0.4061	0.3459

The integral indicator of the investment module is affected by 5 indicators (Table 14).

**Table 13.** Calculation of indicators that influenced the investment module of the federal districts of the Russian Federation. Source: calculated by the authors.

Investments in fixed assets						Federal Districts of the Russian Federation	The share of investment in fixed assets to GRP					
2014	2015	2016	2017	2018	2019		2014	2015	2016	2017	2018	2019
1.1557	1.1586	1.1580	1.1909	1.2684	1.8776	CFD	0.7285	0.7470	0.7384	0.7579	0.8154	1.2142
0.6566	0.6588	0.6356	0.6272	0.6360	0.9303	CFD (without Moscow)	1.0679	1.0528	0.9945	1.0003	1.0363	1.5167
0.4991	0.4998	0.5224	0.5637	0.6324	0.9473	including Moscow	0.5137	0.5401	0.5622	0.5969	0.6715	1.0154
0.4552	0.4655	0.5316	0.5288	0.5438	0.3883	NWFD	1.0071	0.9440	1.0484	1.0743	1.1403	0.8090

		Internal expenses for scientific research for GRP						Federal Districts of the Russian Federation						The share of investment in fixed assets to GRP						
		2014	2015	2016	2017	2018	2019							2014	2015	2016	2017	2018	2019	
0.4935	1.3946	1.6313	1.2872	1.4980	1.4980	1.4980	1.4980	CFD						0.6284	0.5977	0.5735	0.6816	0.6063	0.7279	
0.3908	1.3032	1.7487	1.2809	1.5599	1.4898	1.4755	1.4673	CFD (without Moscow)						0.0851	0.0962	0.0968	0.1109	0.1058	0.1718	
0.3867	1.2409	1.6943	1.2007	1.4932	1.2113	1.2374	1.2201	including Moscow						0.5432	0.5015	0.4767	0.5707	0.5005	0.5560	
0.3460	1.2518	1.6748	1.2007	1.4932	1.2113	1.2374	1.2201	NWFD						0.1152	0.1084	0.1677	0.1052	0.1098	0.0609	
0.3676	1.3125	1.6306	1.2007	1.4932	1.2113	1.2374	1.2201	Southern FD						0.0150	0.0185	0.0153	0.0163	0.0155	0.0097	
0.3658	1.2900	1.6299	1.2007	1.4932	1.2113	1.2374	1.2201	FEFD						1.0738	1.1950	1.2509	1.3858	1.3152	1.1021	
0.4805	0.4805	0.4805	0.4805	0.4805	0.4805	0.4805	0.4805	Siberian FD						1.0303	0.9593	0.9513	0.9350	0.9248	0.8855	
0.7666	0.7666	0.7666	0.7666	0.7666	0.7666	0.7666	0.7666	UFD						1.2419	1.2309	1.3492	1.2404	1.1302	0.9289	
0.7718	0.7718	0.7718	0.7718	0.7718	0.7718	0.7718	0.7718	VFD						1.1051	1.1575	1.1033	1.0297	0.9713	0.8155	
0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	0.1600	NCFD						1.3336	1.3174	1.2693	1.2437	1.3989	1.1086	
0.4479	0.4479	0.4479	0.4479	0.4479	0.4479	0.4479	0.4479	Southern FD						1.4207	1.3227	1.1058	1.2584	1.1834	0.8067	

Federal Districts of the Russian Federation	Internal costs for scientific research and development					
	2014	2015	2016	2017	2018	2019
CFD	0.5281	0.5377	0.5204	0.5202	0.5100	0.5042
CFD (without Moscow)	0.1759	0.1781	0.1705	0.1688	0.1688	0.1663
including Moscow	0.3522	0.3596	0.3499	0.3515	0.3413	0.3379
NWFD	0.1401	0.1428	0.1398	0.1369	0.1391	0.1376
Southern FD	0.0346	0.0276	0.0273	0.0248	0.0253	0.0253
NCFD	0.0050	0.0048	0.0047	0.0045	0.0051	0.0051
VFD	0.1495	0.1538	0.1565	0.1584	0.1603	0.1613
FEFD	0.2983	0.0000	0.2961	0.3602	0.2943	0.2756
Siberian FD	0.6659	0.6902	0.6579	0.6425	0.7616	0.7928
UFD	0.4201	0.4480	0.4993	0.4908	0.4475	0.4499
VFD	0.9630	1.0043	1.0447	1.0766	1.0907	1.1126
NCFD	0.1859	0.1840	0.1795	0.1817	0.2240	0.2307
	0.0576	0.0795	0.0846	0.0696	0.0400	0.0195
	0.0290	0.0314	0.0536	0.0526	0.0585	0.0566
	0.1185	0.1109	0.0780	0.0502	0.1203	0.0859
	0.0351	0.0493	0.0245	0.0213	0.0485	0.0388
	0.0013	0.0044	0.0028	0.0032	0.0010	0.0006



UFD	0.0576	0.0618	0.0674	0.0699	0.0671	0.0684
Siberian FD	0.0690	0.0716	0.0678	0.0665	0.0750	0.0774
FEFD	0.0162	0.0000	0.0161	0.0186	0.0181	0.0175

In the Central Federal District in 2019, the integral indicator is 1.1582. The calculated indicator is above the normative value of equal 1. It should be noted that 3 indicators negatively influenced the formation of an integral indicator, and 2 – positively. At the same time, the negative impact of indicators did not exceed the positive, as a result of which the integral indicator of the investment module in the Central Federal District reached a normative value.

It should be noted that during all periods of analysis, an integral financial security indicator for the investment module in the Central Federal District was less normative. The smallest level of this indicator was recorded in 2016. It was in this period that the situation was the worst.

Integral assessment of the North -Western Administration of the NWFD Investment Module in 2019 below the standard. This year it is 0.5371, which is 0.4629 less the standard. The negative impact on this level of security had 4 indicators, the positive – 1. Since the negative impact exceeds the positive, this leads to the fact that the level of investment security in the NWFD is below the standard.

It should be noted that in 2018 there is the highest level of investment security, which indicates a favorable situation in the region during this period.

The integral indicator of the Southern Federal District in 2019 is 0.2918. This indicates that the indicator is below the normative value. To a greater extent, 2 indicators influenced this value. The negative impact was exerted by 3 indicators. Since the negative impact exceeded the positive, this led to the fact that the level of investment security is less than the normative value.

In 2019, the integral indicator of the Southern Federal District, which indicates a low level of security in the region. The best situation is observed in 2014, during this period the indicator is 0.4823.

The North Caucasus Federal District in 2019 has an indicator of 0.2912. It is worth noting that during 2014-2019 it has been reduced. The growth was influenced by 2 indicators, the rest had a negative effect.

Since, in 2019, the indicator is minimal for the entire analyzed period and its level is not enough to achieve normative value.

In 2019, the VFD has the value of the integral indicator – 0.5321. The most positive influence was exerted to show 1 to show, the negative – 4. Despite the fact that only 1 indicator had a positive effect, this was not enough to achieve a normative value in 1. In addition, the negative dynamics of this region should be noted during 2014-2019 years. The largest level of security was in 2016 – 0.6325, and the smallest in 2019.

The UFD, as well as the VFD did not reach the normative value in 1. In 2019, it is 0.4338. On such a level of security, to a greater extent, 2 indicators had a positive effect, and negative – 3. Despite the fact that the level of security of this region is less than a normative value of 0.5662, in general, the level of security in this region is reduced.

The integral indicator of the Siberian Federal District is 0.4402, which is 0.5598 less than the standard. The 1 indicator had a positive effect, 4 – negative. For 2014-2019, the level of investment security remained at the level of 2014-0.4549. At the same time, the greatest value of the integral indicator is also observed in 2014, but it also does not correspond to the norm.

The level of investment security of the FEFD in 2019 is 0.3459. This value is less normative. 2 indicators had a positive effect, negative – 3. Despite the fact that a positive effect had less indicators than negative, this was not enough to achieve normative value.

## 5 Conclusions

1. The Russian Federation has 8 Federal Districts: Central, Northwest, South, North Caucasian, Volga, Ural, Siberian, Far Eastern Federal Districts.

An analysis of the socio-economic stability of each Federal District of the Russian Federation was carried out.

The budget module analyzed such indicators as the growth rate of GRP, income and expenses to GRP, the receipt of taxes and fees to GRP, as well as the growth rate of regional revenues.

The social module considered such indicators as: population size, GRP per capita, consumer price index, the ratio of per capita income to the subsistence minimum, the average subsistence minimum and average per capita income.

When analyzing the production module, calculations were made for the following indicators: payables and receivables. Share of unprofitable organizations.

In the financial module, such indicators were calculated as the volume of loans provided to legal entities, as well as their debt, and the rate of inflation.

The investment module examines indicators such as investments in fixed assets, domestic expenditures on research and development, and the inflow of foreign direct investment.

It should be noted that, despite some lagging indicators, the Ural Federal District in the budgetary module is a financially stable region. The most financially unprotected region in the budgetary module is the Southern Federal District.

The most financially stable region in the social module is UFD (Ural Federal District). In contrast to this district, the North Caucasus Federal District acts, which is the least financially stable.

In the production module, the NWFD (Northwestern Federal District) can be considered a financially stable region. The North Caucasus Federal District will act as a counterbalance to this region, since in this module it is the least financially stable.

Summing up the analysis of the financial module, we can conclude that in this module the Central and Southern Federal Districts are the most financially safe regions. The least financially stable region is the Far Eastern Federal District.

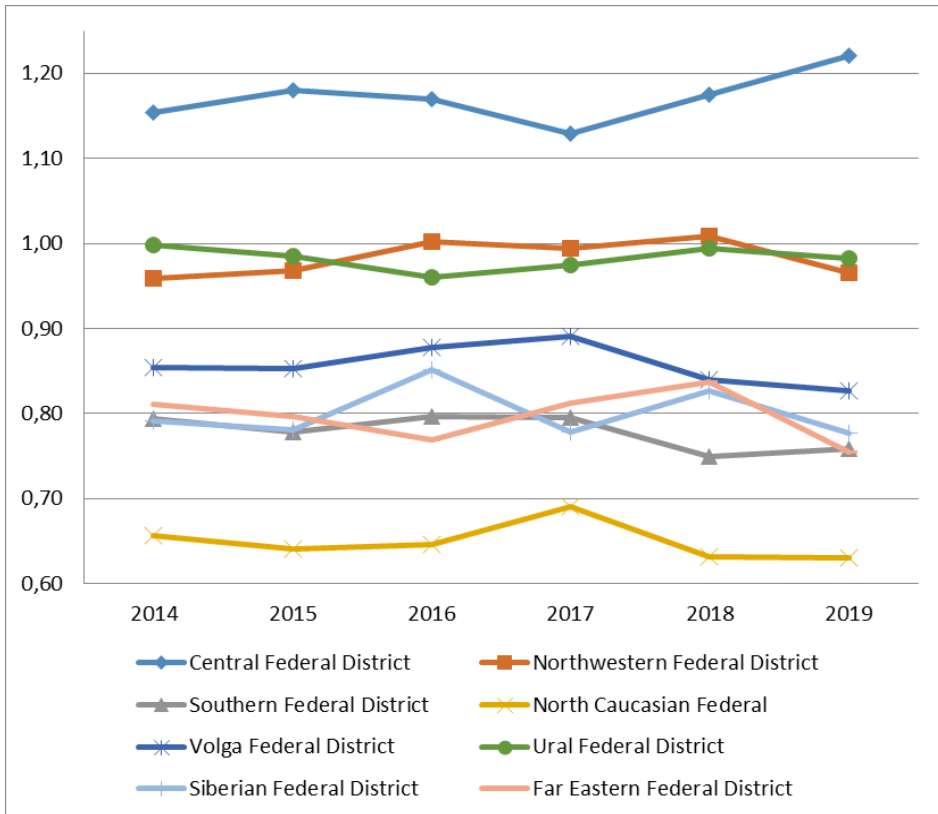
In the investment module, the CFD (Central Federal District) is the most investment safe region. The least investment safe region is the North Caucasus Federal District.

2. According to fig. 2, we can conclude that the lowest level of financial stability is observed in the North Caucasus Federal District. This is due to the low level of safety in the production, financial and investment module. As for the Southern and Far Eastern Federal Districts, the low financial stability of the region as a whole is associated with a low indicator in the production module for the Southern Federal District, in the financial module for the Far Eastern Federal District, and in the investment module for two regions (Table 49).

**Table 14.** Integral indicator of socio-economic stability of the Federal Districts of the Russian Federation.

	2014	2015	2016	2017	2018	2019
Central Federal District	1.1546	1.1797	1.1697	1.1289	1.1751	1.2210
Central Federal District (excluding Moscow)	0.8643	0.8861	0.8851	0.8625	0.8705	0.9064
incl. Moscow city	1.4539	1.4994	1.4851	1.4095	1.5001	1.5136
Northwestern Federal District	0.9594	0.9682	1.0017	0.9949	1.0081	0.9658
Southern Federal District	0.7944	0.7778	0.7966	0.7947	0.7496	0.7591
North Caucasian Federal District	0.6566	0.6409	0.6457	0.6901	0.6311	0.6307
Volga Federal District	0.8547	0.8534	0.8775	0.8904	0.8393	0.8272
Ural federal district	0.9984	0.9852	0.9600	0.9749	0.9947	0.9827
Siberian Federal District	0.7908	0.7808	0.8515	0.7784	0.8273	0.7771
Far Eastern Federal District	0.8105	0.7964	0.7688	0.8124	0.8368	0.7543

Source: built by the authors



**Fig. 2.** Integral assessment of the socio-economic stability of the Federal Districts of the Russian Federation.

Scope of the results. The results obtained are of practical importance and can be used by business entities, in particular, by business networks when strategizing. The improved methodology for assessing the socio-economic sustainability of the region can form the basis of the future Strategy for the financial sustainability of the federal districts of the

Russian Federation to control the mechanism of its implementation. Further research should be directed to the development of the Concept of the Strategy for Financial Sustainability, using the example of the federal districts of the Russian Federation.

## Acknowledgements

The study was financially supported by the Ministry of Science and Education of the Russian Federation Program "Priority-2030" No. 075-15-2021-1323.

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