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Shmygol N.
Doctor of Economics, Professor,
Zaporizhzhia Polytechnic National University, Ukraine;
e-mail: nadezdash@ua.fm; ORCID ID: 0000-0001-5932-6580
Galtsova O.
Doctor of Economics, Professor,
Classic Private University, Zaporizhzhia, Ukraine;
e-mail: olgagaltsova67@gmail.com; ORCID ID: 0000-0003-0012-0371
Krylov D.
Doctor of Economics, Professor,
Zaporizhzhia National University, Ukraine;
e-mail: d.v.krilov76@gmail.com; ORCID ID: 0000-0001-8522-5433
Semenov A.
Doctor of Economics, Professor,
Classic Private University, Zaporizhzhia, Ukraine;
e-mail: semenov.andriy.cpu@gmail.com; ORCID ID: 0000-0001-7937-2533
Shaposhnykov K.
Doctor of Economics, Professor,
State Scientific Institution «Institute for Modernization of the Content of Education»,
Kyiv, Ukraine;
e-mail: k.s.shaposhnykov@gmail.com; ORCID ID: 0000-0003-0640-9934

ASSESSMENT OF THE PROSPECTS FOR RESTORING THE FINANCIAL SECURITY OF THE STATE

Abstract. In the modern period of economic governance, the assessment of the financial security of the state takes place in different directions, different groups of indicators, different methods. Mainly in scientific works, there is a desire for bringing the various components of the assessment of financial security to an integral indicator, taking into account the normalized values of individual indicators, which requires an assessment of their weight and always contains certain subjectivity through the involvement of experts in this process. Considering that the financial system of any country is the basis for the functioning of the economy, and Ukraine has a complex of accumulated socio-economic problems that constantly accompany it, this predetermines the high relevance of this area of research in recent decades. Considering approaches to assessing the level of financial and economic security, it is necessary to refer to the Methodological Recommendations for calculating the level of economic security of Ukraine, in which for this purpose the method of reconciling their estimates with individual systems of advantages that are not publicly available was used. Therefore, in this study, when forming this system of preferences, which affects the direction of the formation of the national strategy of financial and economic security, it is proposed to use the existing cause-and-effect relationships between its components. Taking into account these cause-and-effect relationships and according to the introduced symbols, a matrix of paired comparisons was done by expert means, which determines the direct impact of some components of the country's financial security on others. The analysis which is made in the article it possible to assess the dynamics in all areas of financial security on the basis of group indicators and identify the most problematic indicators. On the other hand, such an assessment does not give an idea of which risk zone certain indicators belong to, since each of them has its own limits of acceptable values, which is indicated in the article. This direction requires further research and will help determine whether the current state of the state's financial security belongs to a particular risk zone.

Keywords: assessment of financial security, financial system, integral indicator, budget security, currency security.

JEL Classification G17, E22, E66

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Шмиголь Н.
доктор економічних наук, професор,
Національний університет «Запорізька політехніка», Україна;
e-mail: nadezdash@ua.fm; ORCID ID: 0000-0001-5932-6580
Гальцова О.
доктор економічних наук, професор,
Класичний приватний університет, Запоріжжя, Україна;
e-mail: olgagaltsova67@gmail.com; ORCID ID: 0000-0003-0012-0371
Крилов Д.
доктор економічних наук, професор,
Запорізький національний університет, Україна;
e-mail: d.v.krilov76@gmail.com; ORCIDID: 0000-0001-8522-5433
Семенов А.
доктор економічних наук, професор,
Класичний приватний університет, Запоріжжя, Україна;
e-mail: semenov.andriy.cpu@gmail.com; ORCID ID: 0000-0001-7937-2533
Шапошников К.
доктор економічних наук, професор,
ДНУ «Інститут модернізації змісту освіти», Київ, Україна;
e-mail: k.s.shaposhnykov@gmail.com; ORCID ID: 0000-0003-0640-9934

ОЦІНКА ПЕРСПЕКТИВ ВІДНОВЛЕННЯ ФІНАНСОВОЇ БЕЗПЕКИ ДЕРЖАВИ

Анотація. У сучасний період господарювання оцінювання фінансової безпеки держави відбувається за різними напрямами, різними групами показників, різними методиками. Здебільшого в наукових працях відмічається прагнення до зведення різних складових оцінювання фінансової безпеки до інтегрального показника, з урахуванням нормованих значень окремих індикаторів, що потребує оцінки їхньої вагомості і завжди містить певний суб'єктивізм через залучення експертів до цього процесу. Ураховуючи, що фінансова система будь-якої країни є основою функціонування економіки, а Україна має комплекс накопичених соціально-економічних проблем, які постійно її супроводжують, це зумовлює високу актуальність цього напряму досліджень в останні десятиріччя. Розглядаючи підходи до оцінювання рівня фінансово-економічної безпеки, слід звернутись до Методичних рекомендацій щодо розрахунку рівня економічної безпеки України, в якій з цією метою використовувався метод узгодження їхніх оцінок за індивідуальними системами переваг, які не містяться у відкритому доступі. Тому в нашому дослідженні при формуванні зазначеної системи переваг, що впливає на напрями формування національної стратегії фінансово-економічної безпеки, запропоновано використовувати наявні причинно-наслідкові взаємозв'язки між її складовими. Ераховуючи вказані причинно-наслідкові зв'язки і згідно з введеними умовними позначеннями, експертним шляхом було побудовано матрицю парних порівнянь, що визначає прямий вплив одних складових фінансової безпеки країни на інші. Проведений аналіз дозволив оцінити динаміку за всіма напрямами забезпечення фінансової безпеки на основі групових показників і виявити найбільш проблемні індикатори. З другого боку, така оцінка не дає уявлення про те, до якої зони ризику належать ті чи інші показники, оскільки кожний з них має свої межі допустимих значень, що зазначено в роботі. Цей напрям потребує дальшого дослідження і допоможе визначитись із належністю поточного стану фінансової безпеки держави до тієї чи іншої зони ризику.

Ключові слова: оцінювання фінансової безпеки, фінансова система, інтегральний показник, бюджетна безпека, валютна безпека.

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Introduction. At the beginning of the recession, issues related to the mechanisms of forming a strategy for ensuring the financial and economic security of the country are always gaining special relevance in research. Security, in this context, means the stability of the dynamic

system within acceptable limits of targets. On the other hand, security means security, that is, the ability of the economic system to withstand both external and internal negative manifestations.

In the modern period of economic governance, the assessment of the financial security of the state takes place in different directions, different groups of indicators, different methods. Mainly in scientific works, there is a desire for bringingthe various components of the assessment of financial security to an integral indicator, taking into account the normalized values of individual indicators, which requires an assessment of their weight and always contains certain subjectivity through the involvement of experts in this process.

Research analysis and problem statement. The essence, assessment criteria and methods of ensuring the financial and economic security of the state were studied by such domestic scientists as: V. Gelman, K. Goryacheva, N. Yermoshenko, G. Kalach, S. Lekar, A. Melikh, A. Kalantai, N. Nakonechnaya and others [1—14].

The category of financial and economic security is often used in the scientific literature. In this case, we are talking about the financial security of the country as a factor of economic security. Its essence, methods of assessment and role, in the context of national interests, were studied in the works of K. Goryacheva, M. Yermoshenko, A. Kalantai, O. Melykh and others [15—16].

Considering that the financial system of any country is the basis for the functioning of the economy, and Ukraine has a complex of accumulated socio-economic problems that constantly accompany it, this predetermines the high relevance of this area of research in recent decades.

The purpose of the article is to assess the level of ensuring the financial security of the state on the basis of group indicators and to identify the prospects for its recovery. Make the analysis to assess the dynamics in all areas of financial security on the basis of group indicators and identify the most problematic indicators.

The results of the study. Considering approaches to assessing the level of financial and economic security, it is necessary to refer to the Methodological Recommendations for calculating the level of economic security of Ukraine [17], in which for this purpose the method of reconciling their estimates with individual systems of advantages that are not publicly available was used.

Therefore, in this study, when forming this system of preferences, which affects the direction of the formation of the national strategy of financial and economic security, it is proposed to use the existing cause-and-effect relationships between its components:

- the balance of the revenue and expenditure parts of the budgets of all levels, which is within the competence of the government of the country and local communities, directly affects the budgetary security. In international practice of macroeconomic management, both a moderate level of deficit and surplus are acceptable [18]. Although, it is the state budget deficit that is characteristic for developing countries, due to which economic activity is stimulated. Exceeding its permissible values leads to the accumulation of debts and worsens debt security. Also, the presence of a deficit contributes to the growth of inflation, which can worsen the state of monetary security;

- a low level of debt security and high volumes of accumulated debts of previous periods lead to an increase in the unit share of expenses for repayment of the principal amount of debt and interest on it. This, in turn, contributes to the growth of the budget deficit and the deterioration of budget security. Also, depending on the internal or external sources of its financing, the accumulation of debt will worsen the state of monetary and currency security of the country;

- the growth of currency security at the expense of international reserves can also improve the level of debt security in the country. At the same time, the state of the trade balance has a direct impact on the exchange rate of the national monetary unit and affects monetary security;

- monetary security through the monetary component affects the state of the banking and non-banking financial market, and through the index of changes in the exchange rate of the national monetary unit to the US dollar-on currency security;

- the deterioration of the situation in the country's banking sector will immediately have a negative impact on all financial market participants.

According to the non-banking financial market, the level of its penetration into the economy of Ukraine remains much lower than in other developed countries. For example, the level of penetration of insurance services in 2016—2020 decreased from 1.4% of GDP to 1.1%, and the

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volume of trading on the securities market for the same period-from 100.1% to 10.5%. That is why its impact on other components of financial security is currently limited.

So we will denote:

1. Banking X_1 and security of the non-banking financial market X_2.
2. Budget X_3 and debt security X_4.
3. Currency $X_5$and monetary security X_6.

Taking into account these cause-and-effect relationships and according to the introduced symbols, a matrix of paired comparisons was done by expert means, which determines the direct impact of some components of the country's financial security on others, columns (1) — (7) of *Table 1*.

Table 1

Matrix of paired comparisons for calculating the weighting coefficients of the components of the country's financial security

Components of financial security	X_1	X_2	X_3	X_4	X_5	X_6	Sum	Calculated weighting coefficients	Weighting coefficients according to [15]
1	2	3	4	5	6	7	8	9	10
X_1	1	1	0	0	0	1	3	0,1667	0,1723
X_2	0	1	0	0	0	0	1	0,0556	0,1068
X_3	0	0	1	1	0	1	3	0,1667	0,2023
X_4	0	0	1	1	1	1	4	0,2222	0,1746
X_5	0	0	0	1	1	1	3	0,1667	0,1686
X_6	1	1	0	0	1	1	4	0,2222	0,1753
Total							18	1,0000	1,0000

Source: own calculations of the author(s).

When determining the calculated values of the weighting coefficients, columns (8) and (9), we proceeded from the premise that they should grow in proportion to the impact of each individual component of financial security on others. Therefore, according to the method of paired comparisons, the sums by terms were initially found in column (8).

Further, in column (9), their shares were calculated. For comparison, column (10) shows similar values of weighting coefficients, according to the estimation method [17]. The difference in the redistribution of influence from the non-banking financial market in favor of monetary security is fundamental. The role of debt security has also been strengthened.

Thus, the generalized indicator of the financial security of the state will be calculated according to the formula of the weighted arithmetic average:

$$X = 0{,}1667\,X_1 + 0{,}0556\,X_2 + 0{,}1667\,X_3 + 0{,}2222\,X_4 + 0{,}1667\,X_5 + 0{,}2222\,X_6, \quad (1)$$

where X is the level of financial security of the state.

The calculated indicator will take values in the range from 0 to 1 and should be maximized. For its identification, the same stability intervals should be used as in the case of normalized values of individual indicators, where the level of 0.9 is accepted as the optimal value. The fulfillment of the condition $X > 0.9$ will mean that the weighted average level of financial security exceeds the recommended values and vice versa. Accordingly, the values of the group indicators will be calculated as:

$$X_i = \frac{\sum_{j=1}^{n_i} x'_{ij}}{n_i}, \quad (2)$$

where x'_{ij} is the value of the j-th individual indicator of x_{ij} i-th group normalized by the logistic equation; n_i is the number of indicators of the i-th group.

In this case, it was assumed that all individual indicators have an equivalent effect on the group assessment. This approach is associated with the complexity of an objective assessment of the corresponding weighting coefficients, although, if there are expert judgments, the method of paired comparisons can also be used. At the same time, the individual values of the indicators of

each group do not give an idea of the overall dynamics of each direction of the target indicator assessment. To solve this problem, the normalization of individual indicators was performed, the results of which are shown in *Table 2*.

Table 2

Normalized values of financial security indicators according to the data of 2016—2020

Indicators of banking and security of the non-bank financial market		**2016**	**2017**	**2018**	**2019**	**2020**
Efficiency of the banking system	Return on assets, %	0,0590	0,3955	0,5918	0,7183	0,6556
	The volume of lending by banks to the real sector of the economy, % to GDP	0,5931	0,6732	0,5715	0,3683	0,3364
Financial risk	Standard ratio (adequacy) of regulatory capital S2	0,4162	0,5402	0,5431	0,6643	0,7254
	Short-term liquidity standardS6	0,8179	0,8863	0,8359	0,8456	0,7669
	The standard of the maximum amount of credit risk per counterparty S7	0,7423	0,7803	0,7938	0,8505	0,7933
	Share of non-performing loans	0,4563	0,4503	0,4688	0,5180	0,5866
Activities of insurance companies	The level of penetration of insurance	0,1223	0,1221	0,1168	0,1130	0,1059
	Gross payment level	0,5824	0,5369	0,6185	0,6637	0,7830
Stock market	Trading volumes on the securities market to GDP	0,8534	0,1250	0,1293	0,1447	0,1021
Indicators of budget and debt security		**2016**	**2017**	**2018**	**2019**	**2020**
Budget security	The level of redistribution of GDP through the consolidated budget, %	0,4580	0,3154	0,4061	0,5060	0,3651
	Government budget deficit / surplus to GDP ratio, %	0,7616	0,9329	0,9286	0,9035	0,1567
	The volume of inter-budget transfers from the state budget, %	0,3232	0,2303	0,2816	0,5623	0,8426
	The dynamics of the provision of funds of local budgets in the prices of the base year, UAH/person.	0,9175	0,9904	0,6824	0,2524	0,1227
	The share of Pension Fund expenditures by the state budget, %	0,4393	0,5461	0,5800	0,5902	0,6068
Debt security	Ratio of total government debt to GDP, %	0,0218	0,0787	0,2953	0,6664	0,3211
	The ratio of total external debt to GDP, %	0,2105	0,3386	0,5203	0,7668	0,5899
	The ratio of the volume of official international reserves to the volume of gross external debt, %	0,0422	0,0593	0,0781	0,1108	0,1609
Indicators of currency and monetary security		**2016**	**2017**	**2018**	**2019**	**2020**
Currency Security	Index of the change in the exchange rate of the national monetary unit to the US dollar, UAH	0,5005	0,8983	0,9236	0,7241	0,8954
	Gross international reserves of Ukraine, months of import	0,8681	0,8364	0,8030	0,8993	0,9882
	The ratio of the trade balance deficit / surplus to the total volume of foreign trade, %	0,6943	0,3432	0,1282	0,1143	0,6690
	The level of dollarization of the money supply, %	0,0407	0,0358	0,0829	0,1048	0,1218
Monetary security	Inflation Index	0,2111	0,1471	0,3919	0,8157	0,7655
	Share of long-term loans in the total volume of loans provided, %	0,9434	0,9010	0,8121	0,7508	0,7358
	Share of consumer loans granted to households in the total volume of loans granted to residents, %	0,8545	0,7495	0,5791	0,2588	0,2552

Source: compiled and calculated based on statistical reporting data [15].

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At the same time, the value of x_{bet} and x_{wor} were chosen based on the data in *Table 3*: the critical stability zone corresponded to x_{wor}, and the optimal one — x_{bet}. Directly, the stability zones for most indicators were determined on the basis of existing methods for assessing the financial security of the state, as well as taking into account their economic content and the areas of acceptable values. The convolution of normalized indicators to group estimates was performed according to the formula (2).

Table 3

Zones of stability of financial security indicators

Indicators of banking and security of the non-bank financial market		**Stability zones**				
		Critical	**Dangerous**	**Unsatisfactory**	**Satisfactory**	**Optimal**
Efficiency of the banking system	Return on assets, %	-10,0%	-5,0%	0,0%	5,0%	10,0%
	The volume of lending by banks to the real sector of the economy, % to GDP	10,0%	16,0%	22,0%	30,0%	40,0%
Financial risk	Standard ratio (adequacy) of regulatory capital S2	0,0%	3,0%	6,0%	10,0%	30,0%
	Short-term liquidity standard S6	50,0%	65,0%	80,0%	85,0%	100,0%
	The standard of the maximum amount of credit risk per counterparty S7	40,0%	35,0%	20,0%	25,0%	15,0%
	Share of non-performing loans	100,0%	75,0%	50,0%	25,0%	0,0%
Activities of insurance companies	The level of penetration of insurance	1,0%	2,0%	4,0%	6,0%	8,0%
	Gross payment level	10,0%	16,0%	22,0%	30,0%	40,0%
Stock market	Trading volumes on the securities market to GDP	10,0%	40,0%	70,0%	90,0%	110,0%
Indicators of budget and debt security		**Stability zones**				
		Critical	**Dangerous**	**Unsatisfactory**	**Satisfactory**	**Optimal**
Budget security	The level of redistribution of GDP through the consolidated budget, %	37,0%	35,0%	33,0%	30,0%	28,0%
	Government budget deficit / surplus to GDP ratio, %	-6,0%	-5,0%	-4,0%	-3,0%	-2,0%
	The volume of inter-budget transfers from the state budget, %	40,0%	33,0%	26,0%	20,0%	15,0%
	The dynamics of the provision of funds of local budgets in the prices of the base year, UAH/person.	90,0%	95,0%	100,0%	105,0%	110,0%
	The share of Pension Fund expenditures by the state budget, %	100,0%	75,0%	50,0%	25,0%	0,0%
Debt security	Ratio of total government debt to GDP, %	70,0%	60,0%	55,0%	45,0%	40,0%
	The ratio of total external debt to GDP, %	60,0%	50,0%	40,0%	30,0%	20,0%
	The ratio of the volume of official international reserves to the volume of gross external debt, %	20,0%	36,0%	41,0%	45,0%	50,0%

Table 3 (continued)

Indicators of currency and monetary security		Stability zones				
		Critical	**Dangerous**	**Unsatisfactory**	**Satisfactory**	**Optimal**
Currency Security	Index of the change in the exchange rate of the national monetary unit to the US dollar, UAH	130,0%	112,0%	108,0%	106,0%	104,0%
	Gross international reserves of Ukraine, months of import	1,5	2	2,5	3	5
	The ratio of the trade balance deficit / surplus to the total volume of foreign trade, %	-10,0%	-7,0%	-5,0%	-3,0%	-1,0%
	The level of dollarization of the money supply, %	30,0%	27,0%	24,0%	20,0%	15,0%
Monetary security	Inflation Index	115,0%	113,0%	110,0%	107,0%	102,0%
	Share of long-term loans in the total volume of loans provided, %	25,0%	30,0%	40,0%	50,0%	60,0%
	Share of consumer loans granted to households in the total volume of loans granted to residents, %	21,0%	18,0%	15,0%	12,0%	9,0%

Source: compiled and calculated according to statistical reporting data [17].

As we can see, the target indicator *X* gradually grew from 0.468 in 2016 to 0.547 in 2019, which is positive. However, by the end of 2020, its dynamics changed its direction to the opposite, which led to a reduction in the level of financial security of the state to 0.516.

Despite the fact that economic growth also slowed down in 2020, and the industrial sector of the economy ended the year with a 5.2% drop in production, the problems of the state's financial security will only deepen in the short term.

It should also be noted that the weighted average value of the effective indicator *X* is far from the recommended optimal level, which, according to the prerequisites adopted during rationing, is 0.9. That is why the development of directions for the formation of a national strategy for restoring financial and economic security remains extremely relevant today.

In the banking security sector, the overall improvement of the situation continued until 2019 due to an increase in the cost-effectiveness of bank assets from -12.6% to 4.26%, sufficiency of regulatory capital and a decrease in the maximum amount of credit risk. The situation with short-term liquidity and the share of non-performing loans remained almost unchanged. The latest indicator shows that almost half of all loans to legal entities today are problematic, that is, those that are not paid on time. The greatest concern is the fact that the banking system in 2016—2020 gradually lost its stimulating function, since the volume of lending to the real sector of the economy decreased from 28% of GDP to 20%. Thus, the high discount rate of the NBU and the financial problems of business entities hinder the development of bank lending to the real sector of the economy and negatively affect the banking security of the country [16]. Despite this, the level of X_1 relative to other components of financial security was one of the highest.

According to the non-banking financial market, the sharp deterioration of the situation in this area of assessment after 2016 was due to a significant reduction in trading volumes on the securities market. If in 2016 this indicator was 100.1%, then in 2017 it was 15.7% of GDP, and in 2019 it was 19.6% [19]. Taking into account the fact that in recent years the main share in the stock market of Ukraine has been occupied by the placement of domestic government loan, it can be argued that the stock market is in decline and today does not fulfill its main function of redistributing investment resources. Regarding the activities of insurance companies, the situation is almost similar. Here, the level of insurance penetration in 2016—2020 ranged from 1.1% to 1.4%, with a recommended value of 8%. Therefore, a slight increase in the X_2 indicator after 2017 was associated with a gradual increase in the level of gross insurance payments.

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The state of budget security in 2016—2019 remained relatively stable. A slight decrease in the X_3 indicator was due to a gradual decline in the growth rate of the provision of funds to local budgets. However, a sharp deterioration in the level of budget security in 2020 occurred due to two factors simultaneously [20]:

- growth of the state budget deficit from -2.0% to -5.5% of GDP;
- reduction of the provision of funds to local budgets by -9% in the prices of the previous year due to a decrease in the volume of inter-budget transfers from the state budget.

Both factors are the direct competence of the government of Ukraine, which directly affected the level of debt security in 2020.

The problem of public debt has been extremely urgent in Ukraine since 2016, when its total volume was 81% of the gross domestic product. At the same time, about 65% of it was external debt. In 2019, the economic situation in this direction improved rapidly, both due to the recovery of economic growth and taking into account the reduction of the principal amount of debt. However, already in 2020, due to the excessive level of the state budget deficit, these indicators sharply worsened their condition, as a result of which the overall level of debt security X_4 decreased from 0.515 to 0.357. This negative trend is aggravated by the fact that it can affect the state of budgetary, as well as currency and monetary security in the short and medium term. And although the last two components are the direct responsibility of the National Bank of Ukraine, the real levers of its management are the direct competence of the Government.

The dynamics of X_5 currency security in 2016—2020 was most influenced by the state of international trade, namely, the trade balance deficit. In 2019, it increased from -3.8% to -9.7%, and in 2020 it decreased to -4.1%. The growth of gross international reserves also had a positive effect. With this in mind, the level of currency security has increased sharply over the past year from 0.461 to 0.669, which is positive. Relative to the level of dollarization of the money supply, or the ratio of the volume of foreign currency deposits to the monetary aggregate M3, during the entire reporting period, this indicator was at a critical level, which is about 30% [21]. This indicates the deep distrust of the population of Ukraine to the national monetary unit and the desire to protect their money savings from depreciation. Thus, the stability of the national currency should be a priority of the state economic policy. And although the NBU is responsible for this, significant risks are caused by the slowdown in economic growth and the actions of the government.

The last component of the financial security of the state is monetary security X_6. The stability factor after 2017 was the gradual containment of inflation from 13.7% to 5% in 2020 [22]. However, there were negative structural shifts in the volume of bank lending, namely, a reduction in the share of long-term loans from 65.0% to 50.7% during the reporting period. The reason for this is the increase in the share of consumer lending to households from 10.2% to 17.9%, at the recommended level of 9%. This situation has developed due to a drop in the volume of lending to the real sector of the economy due to an increase in the share of non-performing loans. Despite this, the level of the X_6indicator in 2016—2020 remained one of the highest among other components of the state's financial security.

The input data were checked for homogeneity and volume adequacy. The adequacy of the obtained equation was also checked using Fisher's test with a confidence level of 95%, and the significance of the parameters of the constructed regression — using Student's test.

Conclusions. So, the analysis made it possible to assess the dynamics in all areas of financial security on the basis of group indicators and identify the most problematic indicators. . On the other hand, such an assessment does not give an idea of which risk zone certain indicators belong to, since each of them has its own limits of acceptable values, which is indicated in *Table 3*. This direction requires further research and will help determine whether the current state of the state's financial security belongs to a particular risk zone.

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