

## **External Debt Management in the System of Financial Security of the State**

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*Abstract:* The article is devoted to the study of the state of the state debt and the state of Ukraine's debt policy. The relevance of this topic is that during the previous years, the public debt of Ukraine, both external and internal, was constantly growing, creating threats to the country's debt security and financial stability. Over the last decade, the problem of the growth of Ukraine's foreign debt continues to worsen. Attracting loan capital is caused by the need to replenish currency reserves in order to increase the resources of the country's economic development and ensure the stability of the national currency.

The purpose of the study is a theoretical generalization of the prerequisites and features of the formation of the national debt of Ukraine and the justification of the policy of management and service of the external debt, which will contribute to ensuring the financial security and economic development of the country. In accordance with the set goal, the work is supposed to solve a number of problems, the main of which are: clarifying the impact of foreign debt on the financial security of the state; clarification of the relationship between the financial and economic development of the state and the state debt; assessment of the state debt of Ukraine and the state of its financial security; development of proposals for improving the management and servicing of public debt in Ukraine.

To achieve the goal, the following scientific methods were used in the scientific research: analysis and generalization - to study the current state of debt security in Ukraine; comparison and compilation - for the analysis of world and national experience in calculating the system of indicators of financial security; grouping – for clustering of relevant indicators of the impact of debt on financial security; statistical analysis – to study the dynamics of debt security indicators and calculate an integral index based on them.

These methods make it possible to single out the challenges and prospects of the Ukrainian economy on the way to achieving the optimal level of the country's foreign debt.

The structure of the state debt of Ukraine and its optimal limits have been determined. An analysis of the current state and main trends of the state debt of Ukraine was carried out. In particular, the trends of its share in GDP were determined, a thorough structural analysis of the national debt of Ukraine was carried out for the period from 01.01.2013 to 01.01.2022, and an assessment of budget costs for servicing and repayment of the national debt of Ukraine was carried out.

An analysis of the state and structure of the state debt of Ukraine makes it possible to identify trends in its volume growth. During the analyzed period, the size of the national debt of Ukraine changed rapidly, which is determined by general factors of economic development. The authors found that in the structure of the state debt, there is a clear tendency towards the predominance of external debt over internal debt. The main causes of the state debt are the state budget deficit and significant amounts of internal and external borrowing. Further growth of the national debt of Ukraine is very dangerous and may lead to the loss of economic independence, the withdrawal of funds from the financial market that could be used for the development of the real sector of the economy, a decrease in competitiveness on domestic and foreign markets, and a decline in the standard of living of the country's population. But reaching the projected level threatens Ukraine with default. In order to avoid negative consequences, it is proposed to improve the mechanism of public debt management at the institutional level, to improve the legal framework, and also to increase the level of own gross domestic product by modernizing domestic enterprises.

*Keywords:* public debt, external public debt, debt policy, financial security, public borrowing.

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## 1 Introduction

In recent years, the acute problem of the financial system of Ukraine has been the critical state of the state debt. An increase in the debt burden to the limit parameters due to the significant attraction of funds on unfavorable terms contributes to the vulnerability of the Ukrainian economy to various threats and significantly inhibits its development.

In Ukraine, the growth of external public debt has been observed for a long period, it is determined by high currency risks, the changing situation with the refinancing of debts of previous years, as well as the pressure of debt payments on public finances.

The issue of public debt and its impact on financial security is fundamentally important in the context of the economic difficulties that Ukraine has been suffering from in recent years. Since Ukraine has declared its accession to the European Union as a strategic goal, from this point of view it is important to borrow the best international experience of modernization of public debt management policy, which will lead to strengthening of the financial system and economic growth of the state.

External debt as an integral element of the modern world economy and an effective tool of all global economic relations was studied in the scientific works of modern domestic and foreign scientists. However, there are still many unresolved questions regarding the causes of external debt, its

legislative regulation, management mechanism and impact on the financial security of the state.

Therefore, the issues of the formation of the national debt in Ukraine and all the processes related to it are very relevant today, because every year the debt obligations of Ukraine grow and, accordingly, the costs of its management and maintenance grow. The most pressing issue in modern Ukraine is the effective definition of its debt policy regarding the attraction and spending of public borrowings.

## 2 Analysis of the Latest Research and Publications

The views of scientists on the existence of public debt differ greatly. The concept of debt is explored in the works by foreign and domestic scientists such as V. Kozyuk [14], T. Vahnenko [26], S. Ardagna, F. Caselli [2] and others. Some authors identify a number of macroeconomic channels through which public debt can negatively affect the medium- and long-term economic situation [13], [22], [27]. Thus, a significant increase in the debt-to-GDP ratio may in the future lead to an increase in taxes, as well as additional budget expenditures and, as a result, a decrease in investment in the country. Along with this, the assertions of other researchers have become widespread, that debt financing of the

budget deficit due to the expansion of public expenditures stimulates aggregate effective demand, which is the main factor of economic growth [3]-[6], [10], [30]. To obtain a positive effect, it is necessary that the volume of capital investment exceeds the volume of borrowing, and the rate of GDP growth exceeds the rate of debt growth.

The achievement of a critical state of the country's financial system, the probable growth of threatening factors of the debt burden and the excessive and ineffective involvement of financial resources are reflected in the works of foreign scientists: Hollo, D., Kremer, M., & Lo Duca, M. [12], [13], V. Grabovskiy and E. Stavash [9]. At the national level, Tsaruk O. [26], Voronych O [29], Slav'yuk, R., Slaviuk, N [25], Poltorak A. [24], Volosyuk Y. [29].

### 3 The Research Results

In our opinion, the main criteria for the effectiveness of the state's debt policy are: a balanced financial system, which is determined by the level of the budget deficit, the stability of the banking system, the national currency, the level of prices and the level of development of the financial market and the securities market; sustainable foreign economic policy and a rational structure of foreign trade, which should be oriented towards meeting the needs of the domestic market and protecting domestic

producers, a sufficient standard of living of the population and a stable socio-political situation in the country, a reduction in social tension, a high level of the country's investment attractiveness [7]. The rapid rate of increase in the country's national income should occur at the expense of possible additional foreign investments[24].

To transform the economy, it is important to compare the indicators of the state debt with macroeconomic indicators, in particular: the deficit of the state budget; the dynamics of the balance of payments; the value of official reserve assets [8]; exchange rate; inflation rate; currency reserves; tax burden in the country; the development of the securities market; the income level of the population; volumes of investment activity in the country, etc.

According to the Methodology for calculating the level of economic security of Ukraine, the main indicators for assessing the debt policy are the following (Fig. 1). Note that the evaluation of the indicated indicators is based on a comparison of the actual values in Ukraine with the limit indicators. We believe that, given the existing zones of vulnerability to the influence of crisis factors generated by debt processes, the state should take into account the complex interrelationships between debt policy, the degree of financial stability and the socio-economic and investment-innovation development of the country, and this combination is logically reflected among the proposed indicators of Fig. 6

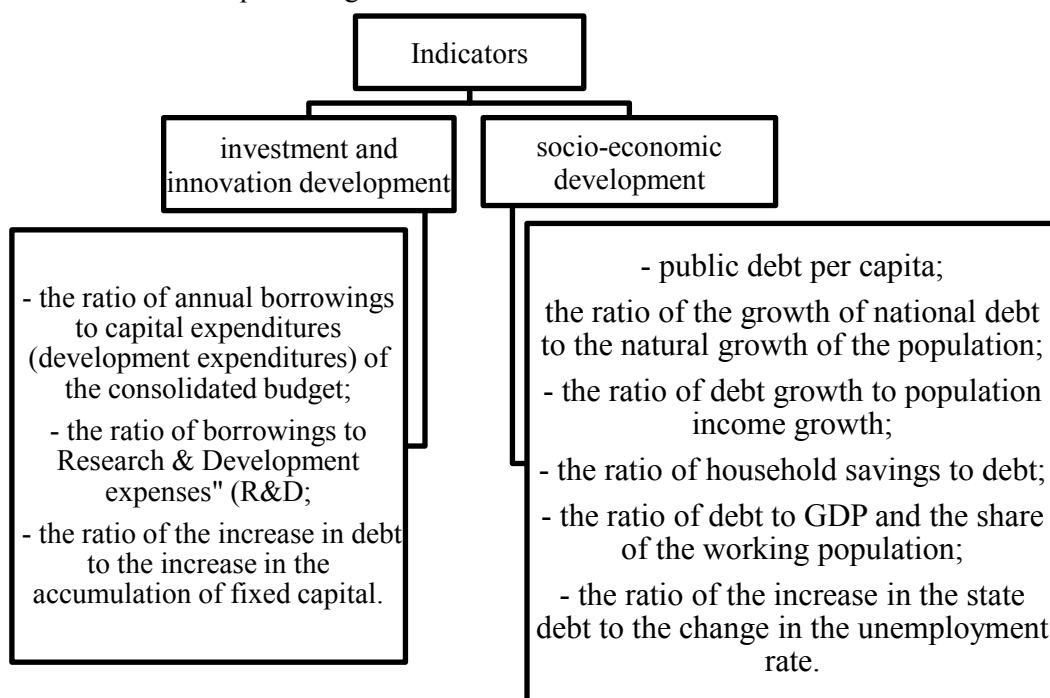


Fig. 1: Indicators for assessing the level of debt burden [16]

The use of indicators of the debt load makes it possible to make a significant adjustment of the debt policy and to increase the quality of the overall assessment of the state debt by volume and maturity.

At the moment, Ukraine has a debt policy that is aimed only at solving current issues of public debt management, for example, its repayment. This policy does not envisage economic effects from raising additional debt obligations, is quite limited, and therefore, in our opinion, should undergo significant changes.

Referring to the foreign experience of public debt management, attention should be paid to the use of the "benchmarking" method in the analysis of the effectiveness of the debt policy, on the basis of which an unbiased assessment of the

effectiveness of the debt policy can be made [6], [11]. External public debt as an indicator of debt security was analyzed as fully as possible by World Bank experts. According to the methodology of the World Bank, the critical level of public external debt is 50% of GDP. The World Bank also developed the Minimum Standard Model for determining the state's debt security, which includes nine indicators, each of which is focused on the study of external debt only [1].

Summarizing, it can be noted that although such a rapid growth of external public debt will lead to the issue of fiscal sustainability in the medium term.

Let's analyze the main statistical data for 2013-2021 (Table 1).

Table 1. Indicators of the state and guaranteed state debt of Ukraine for 2013 - 2021 billion UAH.

Years	Gross domestic product	State internal debt	State foreign debt	Guaranteed government debt	State and state-guaranteed debt	State debt/ GDP, %
2013	1454,9	284.1	300.0	104,1	584,1	40.1
2014	1566,7	488.9	611.7	153,7	1100,6	70.2
2015	1979,5	529.5	1042.7	237,9	1572,2	79.4
2016	2383.2	689.7	1240.0	278,9	1929,8	81.0
2017	2982,9	766.7	1375.0	766.7	2141,7	71.8
2018	3558,7	771.5	1397.2	752.5	2122.5	60.9
2019	3974.6	839.1	1159.2	839.1	1998.3	50.3
2020	4194.1	996.4	1518.9	1033.0	2551.9	60.8
2021	5459.6	1087.2	1449.8	1111.6	2671.2	48.9
+/-	+4004.7	+803.1	+1149,8	+1007.5	+2087.1	x

Source: compiled by the author based on data [18-20]

Analyzing the statistical data in Table 1, we can conclude that at the end of 2021, the debt of Ukraine was at the level of 2,671,2 billion UAH, which was equal to 97,9 billion dollars. By the end of 2021, it was ensured that the amount of public debt was kept within its limit level.

In general, the state and state-guaranteed debt increased by more than 4,5 times in the hryvnia equivalent during the period under study, and in relation to the dollar equivalent, the indicated indicator increased by 34%. It is worth noting the positive changes in the ratio of public debt to GDP, so the significant growth of this indicator was followed in 2016, it was 81%, but starting from 2017, it is decreasing and in 2021 it was 48,9%. The level when the total amount of public debt at the end of the budget period exceeds 60 percent of the annual nominal volume of the gross domestic product is considered critical.

For a more detailed analysis, we will conduct a study of the structure of the state debt during 2013-2021 (Table 2).

The conducted studies show that in the structure of the state debt, a significant share is occupied by the external state debt. Thus, in 2013, the internal debt was only 17,83% of the total amount of debt, while the external debt was 82,17%. Until 2016, a tendency to decrease the share of domestic debt and, accordingly, an increase in the amount of external debt is observed. Foreign debt exceeded domestic debt by 5,9 times [31]. Thus, there was a tendency to increase the disproportion between external and internal public debt. Since 2017, significant changes have taken place, including an increase in the share of state domestic debt in the structure to 35,8%, and by the end of 2021, its share has increased to 41,6%.

Table 2. The structure of the state debt of Ukraine in 2013-2021, %

Year	Total debt, UAH million	Growth, %	External debt, UAH million	Specific weight,%	Growth, %	Internal debt, UAH million	Specific weight,%	Growth, %
2013	584114	-	479975.7	82.17	-	104138.3	17.83	-
2014	1100564	88.42	946819.4	86.03	99.98	153744.6	13.97	47.64
2015	1572180.2	42.85	1334271.6	84.87	40.92	237908.6	15.13	54.74
2016	1929758.7	22.74	1650830.8	85.55	23.73	278927.9	14.45	17.24
2017	2141674.5	10.98	1374995.5	64.20	-16.71	766679.0	35.80	174.87
2018	2122476.5	-0.90	1370010.6	64.55	-0.36	752465.9	35.45	-1.85
2019	1998275.4	-5.85	1159221.6	58.01	-15.39	839053.8	41.99	11.51
2020	2551935.6	27.71	1518934.8	59.52	31.03	1033000.8	40.48	23.11
2021	2671827.6	4.70	1560230.0	58.40	2.72	1111597.6	41.60	7.61

Source: compiled by the author based on data [18-20]

Note that 2015 was the year of the biggest economic downturn, Ukraine had a devaluation and an inflationary shock occurred at the beginning of the year. In 2021, the share of domestic debt was 41,6% against 58,4% of Ukraine's external debt.

According to the structure of the state debt of Ukraine, the guaranteed debt has a general

tendency to decrease. This may indicate the repayment of part of the obligations.

The period 2013–2021 is characterized by a debt close to critical and above a safe level (more than 35% of GDP). At that time, the most important creditor was the International Monetary Fund.

Indicators for determining the system of debt security indicators of Ukraine are given in the table 3.

Table 3. Indicators for determining the system of debt security indicators of Ukraine in 2013-2020

№	Indicator	opt	crit	2013y.	2014y.	2015y.	2016y.	2017y.	2018y.	2019y.	2020y.
1	Ratio of the volume of state and state-guaranteed debt to GDP, %	20	60	40	70	79	81	72	59	50,3	61
2	Ratio of gross external debt to GDP,%	40	70	77	96	131	122	104	88	79.8	81
3	The ratio of the volume of official international reserves to the volume of gross foreign debt, %	50	20	14	5,9	11	13,7	16	18	20.8	23.2
4	Average weighted yield of OVDP on the primary market, %	4	11	13	13	13	9	11	18	16.9	10.2
5	EMBI+Ukraine index	200	1000	681	2226	2375	860	574	571	547	345

Source: Compiled by the author based on data [19]

That is, based on the analysis and evaluation of the indicators of debt sustainability of the external public debt of Ukraine, it should be noted that there is a trend towards the growth of not only the

absolute and relative indicators of the external public debt of Ukraine, but also indicators that inform about the risks of deterioration of the indicators of the country's debt sustainability.

The values of risk level indicators can be divided as follows:

- low risk (indicator value from 1 to 0,8) - the country's debt indicators are below the limit values.
- average risk (value of the integral indicator from 0,79 inclusive to 0,6): only some (no more than 2) indicators exceed the limit level, but the actual and forecast values are within acceptable limits.
- high risk (value of the integral indicator from 0,59 inclusive to 0,4): 3 or more debt indicators exceed the threshold level, but the country still has no problems with fulfilling debt obligations.
- extremely high risk, the pre-crisis state of the value of the integral indicator from 0,39 inclusive to 0): threats to debt security are noted both by indicators of the level of public debt and its structure and the cost of debt servicing, several debt indicators exceed the threshold level.

The dynamics of the integral indicator of Ukraine's debt security are shown in Table 4.

Table 4. The value of the integral indicator of debt security of Ukraine for 2013-2021 yy.

Year	The value of the integral index of debt security, %	State of debt security
2013	0,33	Dangerous condition
2014	0,24	Unsatisfactory condition
2015	0,29	Dangerous condition
2016	0,32	Dangerous condition
2017	0,34	Dangerous condition
2018	0,36	Dangerous condition
2019	0,38	Dangerous condition
2020	0,39	Dangerous condition
2021	0,37	Dangerous condition

Source: compiled by the author based on data [19]

According to the results of the calculations, for Ukraine, the integral indicator of debt risks at the beginning of 2022 was 0,37, which automatically includes our country in the high-risk group. During the period 2013-2021, the debt security of Ukraine had the status of a dangerous state (the exception is 2010-2011).

The method of assessing the integral indicator of debt security is to evaluate the level of debt security of the country in a certain period of time with a single generalizing indicator. Undoubtedly, all threats and destabilizing factors, which are measured by individual indicators of debt

security, deserve separate consideration, but their interrelated influence provides a general result and makes it possible to assess the overall level of debt security.

The reason for this situation was the devaluation of the national currency. However, the index of change of the official exchange rate of the hryvnia UAH to the US dollar rose from 100,02 in 2013 to 183,52 in 2015, in other words, its increase was 83,48%, the import of gross international reserves of Ukraine fell by 31%, loans in foreign currency increased by 23 percentage points, the level of dollarization - by 18,5%.

Thus, over the past decade, Ukraine has more than once crossed the limit value of the indicator of the ratio of public external debt to GDP in 2010, 2014-2019, this indicator reached over 25%. The positive dynamics of the reduction of the ratio of external debt to GDP was observed from 2003 to 2007, as well as during 2011-2013 and 2016-2019. With the beginning of the military conflict in the east of Ukraine, the amount of defense spending has increased significantly, and revenues to the budget from enterprises located in the zone of the temporarily occupied territories of Crimea, Donetsk, and Luhansk regions have decreased. In 2020, the value of the indicator was at the limit and is 60,8%, in 2021 an improvement of this situation is observed.

A dangerous trend in the budget system in recent years has become not only the increase in the total volume of the state and state-guaranteed debt of Ukraine, but also a significant increase in budget costs for financing its maintenance and repayment. Of particular interest today are payments under VRI instruments during 2021-2040, which under various scenarios can amount to \$4,6-5,9 billion. USA up to 84 billion dollars USA. Accordingly, the need to improve the efficiency of public debt management, optimize its structure, and improve Ukraine's debt security is becoming more urgent.

Support of national interests and financial security are the most important functions of the state, the implementation of which is aimed at strengthening its position in the international community [21].

In addition, to compare the obtained results, we calculated the level of financial security according to the methodology of the National Institute of International Security Problems of Ukraine (Table 5).

The values of all indicators during 2013–2021 significantly exceed the threshold values. Thus,

the inflation rate was the highest in 2015 (almost 10 times higher than the threshold value).

Table 5. Dynamics of financial security indicators according to the methodology of the National Institute of International Security Problems of Ukraine

Indicator	Threshold indicator value	Years									Absolute deviation (+/-)
		2013	2014	2015	2016	2017	2018	2019	2020	2021	
Inflation rate, %	5%	0.5	24.9	43.3	12.4	13.7	9.8	4.1	5.0	10.0	9.5
Volume of internal debt, % of GDP	less 30% GDP	37.5	38.8	43.4	45.6	49.0	50.5	48.9	53.7	57.2	19.7
Volume of external debt, % of GDP	Less 20% GDP	77.5	95.8	131.0	121.7	103.9	87.7	79.2	80.8	64.8	-12.7
State budget deficit, % of GDP	1% GDP	4.45	4.98	2.28	2.94	1.60	1.66	1.96	5.18	3.63	-0.82
The level of monetization of the economy, % of GDP	30% GDP	62.5	61.1	50.3	46.2	40.5	34.2	28.3	34.1	32.4	-30.1
Annual cost of bank loans, %	No more than 10% per annum	25.3	26.1	29.5	18.3	21.2	26.0	32.8	28.8	25.9	0.6
International reserves (excluding gold), million dollars USA	up to 5 billion dollars USA	2,0	7,5	13,3	15,5	18,8	20,8	25,3	29,1	30,9	10,5

Source: Compiled by the author based on data [18-20]

As of 2015, in the ranking of countries by the level of inflation compiled by the US Central Intelligence Agency, Ukraine took almost the last 224th place, and the last, 225th place, was South Sudan (52,80%) [5].

We believe that significant attention should be paid to the external debt-to-GDP ratio indicator, because in 2015 it was 131%, despite its steady decline over the following years, in 2021 its value was 64,8%, while its threshold the value should not exceed 20%.

A significant excess of the rate of growth of the volume of cash over the rate of GDP growth led to a decrease in the level of monetization from 62,5 to 32,4. One of the reasons for this situation is the failure of the national currency to fulfill its functions. Thus, in particular, there was a predominance of the function of the means of circulation and payment over the function of the measure of value. As the reasons for this situation, we see an increase in the amount of cash in

circulation, subject to a decrease in the growth rate of production [32]. The economic crisis in the country led to a significant reduction in the volume of production of most goods and services, the bankruptcy of a significant number of enterprises, while simultaneously lowering the cost of bank lending.

The largest volume of international reserves of Ukraine was observed in 2021 in the amount of 30,9 billion dollars, and the smallest in 2014 (7,5 billion dollars), which is a negative phenomenon, because the maximum permissible level of their size should not exceed 5 billion dollars.

#### 4 Conclusion

Economic theory shows that external public debt plays a significant role in the macroeconomic system of any country. This is explained by the fact that relations regarding the formation, maintenance and payment of debt significantly

affect the state of public finances, money circulation, investment climate, the structure of consumption and the development of international cooperation. Economic, political and social transformations in the circumstances of increasing globalization processes in recent decades have caused the need for significant and safe sources of financing to increase. The latter, in turn, in most countries led to an increase in external government borrowing and made the financial systems of these states more sensitive to external economic shocks.

In our opinion, the following are the key directions for improving public debt management in Ukraine:

- formation and implementation of the medium-term risk-oriented Strategy for the management of the public debt of Ukraine with the active interaction and coordination of actions of the Government, the National Bank of Ukraine, and the Ministry of Finance of Ukraine regarding the provision of a comprehensive mechanism for achieving a safe level of debt burden;
- increasing the effectiveness of Ukraine's debt policy;
- implementation of the transition to the policy of decentralization of attracting debt funds in the domestic market with the expansion of the rights of local authorities;
- improvement of the debt policy regarding the provision of state guarantees;
- activation of the development of the domestic financial market.

We believe that in order to solve the problems of Ukraine's debt burden, it is expedient to:

- to develop and implement a comprehensive strategy of public debt management, which would combine the task of improving the regulatory and institutional support of the state's debt policy, short- and medium-term benchmarks for public debt management;
- apply a moderate approach to attract new state loans;
- to diversify the structure of the state debt of Ukraine in terms of the currencies of its repayment by attracting loans in various currencies, thus reducing currency risk;
- take measures to increase the share of domestic public debt and, accordingly, reduce the share of external debt;
- to activate the direction of loans for the implementation of investment and innovation programs;
- strengthen control over the use of state loans.

Ensuring the stable development of the state should be based on a system of measures aimed at the timely detection, prevention, neutralization, and elimination of threats to the financial security of the state, namely: the introduction of a strict economy regime regarding the spending of budget funds, primarily for management, defense, financing of unprofitable and low-profit industries, various types of grants; determining the expediency of financing some social costs; reducing the amount of financial borrowing to cover the state budget deficit; improvement of tools for attracting personal savings of the population to the investment sphere; optimization of the level of tax withdrawals to the budget.

Further research on Ukraine's debt security should be aimed at determining the possibilities of implementing the international practice of using debt security criteria, developing a unified system of indicators for its assessment, programs of institutional and investment development with the provision of a stable and safe ratio of public debt to GDP, the search for the optimal ratio between debt and tax financing of budget expenditures. It is also important to combine market and institutional mechanisms of public debt management, to use foreign experience in debt settlement, to differentiate between borrowing for the repayment of the public debt and borrowing for development.

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- Nadiia Davydenko was responsible for formulating the conclusions.
- Mykola Mykhaylichenko conducted a review of literature.
- Zoia Titenko conducted an assessment of the state debt of Ukraine and the state of its financial security.
- Liudmyla Tsiukalo developed proposals for improving the management and servicing of the state debt.

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The authors have no conflicts of interest to declare that are relevant to the content of this article.

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