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ASSESSMENT OF THE STATE OF DEBT SECURITY IN UKRAINE

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Annotation. *The article analyzes the state of debt security in Ukraine and the main trends in dynamics. The main indices of debt security for 2012-2019 are identified and calculated, their values are analyzed and, using the limit values of these ratios, the current state of debt security of the state is assessed. The integrated debt load index is calculated and it is indicated that its value is at a dangerous level during the analyzed period. A list of priority steps that need to be taken to improve the situation in Ukraine is proposed.*
Keywords: *government debt, limit values, debt security, debt load, Integrated Debt Security Index.*

The current state of the country's financial system shows that the growth of government debt slows down the socio-economic development of the state, and excessive borrowing and inefficient use of funds raised leads to recognition of the country as a risky borrower. This, in turn, reduces the country's access to low-cost loans, which are necessary to finance the economy, cover the budget deficit, and so on. Along with this, it is necessary to pay attention to the significant impact of government debt on the economic security of the country, that is, on the ability of the country and its financial system to withstand and reduce the debt load, while maintaining financial and economic independence, preventing the growth of crisis processes. For Ukraine, the problem of ensuring debt sustainability is one of the most crucial in present-day conditions, so the study and assessment of the main indicators of the country's debt security is very relevant.

Study status. Theoretical and methodological aspects of the impact of government debt on the economy have been studied by well-known foreign scientists, in particular, A.Smit, D. Ricardo, J. M. Keynes, M. Friedman, I. Fisher, A. Melzer, A. Lerner, D. Biukenen, A. Wanger, E. Domar, S. Brue, K. McConnel, K. Stein and others. Among the domestic economists who were interested in the issues of debt security it is worth mentioning O. Vlasiuka, I. Zhalila, T. Zheliuk, O. Baranovskyi, T. Bohdana, N. Kravchuk, M. Kubai, I. Pletsia, V. Koziuk and others.

Presentation of the main research material. Debt security is a component of financial security, and that in turn – economic security, which is defined as an integral characteristic of the economic system strength. The concept of debt security should be defined generally and properly. Generally, debt security should be understood as a certain level of internal and foreign debt, taking into account the cost of servicing and the efficiency of using domestic and foreign borrowing and the optimal ratio between them, sufficient to meet urgent socio-economic needs, which does not threaten the loss of sovereignty and destruction of the domestic financial system [1]. Properly, debt security is defined as the optimal ratio between domestic and foreign debts, taking into account the total amount of government debt and the cost of servicing [2].

In our opinion, the interpretation of the essence of the government debt security can be formed in the context of such components as: an element of economic security; an acceptable level (safe level) of government debt; the ability to ensure the security of the debt management system, in particular the effective use of raised financial resources and the optimal ratio between the components of government debt. So, Debt Security is an element of economic security of the state, which determines the critically permissable level of government debt, taking into account its effective use and the optimal ratio between its components and other economic indicators, which allows you to maintain the financial system strength, state sovereignty, protect national interests, while maintaining the proper level of solvency and credit rating of the state in the world space.

To assess the impact of government debt on the country's economy, it is necessary to determine the main indices of debt security, analyze their changes in dynamics, and determine the main directions for strengthening debt security.

In Ukraine, the calculation of debt security indices is carried out using methodological recommendations for calculating the level of economic security of Ukraine [3]. In particular 5 indicators and their limit values are defined:

- the ratio of government and government-guaranteed debt to GDP, %;
- the ratio of gross foreign debt to GDP, %;
- weighted average return of Domestic government bonds in the primary market, %;
- EMBI (Emerging Markets Bond Index) + country, BP;
- the ratio of official international reserves to gross foreign debt, % [3].

To determine the level of debt security, it is necessary to have criteria by which we will analyze the calculated indicators. The maximum levels of these indicators evidence a permissible level of government debt, and exceeding these values by debt security indices means risks of loss of financial sovereignty and the emergence of a debt crisis. That is why many countries around the world determine the amount of funds raised, taking into account the restrictions that are laid down to assess the level of debt security. In Ukraine, the definition of thresholds is laid down in the methodological recommendations for calculating the level of economic security of Ukraine. For each indicator, the range of critical values is divided into five intervals: optimal, satisfactory, unsatisfactory, dangerous and critical [3].

Let's analyze the level of debt security of Ukraine for the period 2012-2020, in particular during the economic crisis of 2014-2015 (Table 1).

Table 1

Dynamics of the state of debt security in Ukraine

Indicator	2012	2013	2014	2015	2016	2017	2018	2019	2020
The ratio of government and government-guaranteed debt to GDP, %;	36.59	40.15	70.25	79.42	80.97	71.80	60.94	50.28	60.85
The ratio of gross foreign debt to GDP, %;	76.84	77.51	95.83	131.03	121.71	103.94	87.68	79.16	82.65
Weighted average return of Domestic government bonds in the primary market, %;	12.94	13.13	13.98	13.07	9.16	10.47	17.79	16.93	10.2
EMBI (Emerging Markets Bond Index) + country, BP;	765.2	680.9	2226	2375	860	574	571	723	–
The ratio of official international reserves to gross foreign debt, %	18.17	14.37	5.96	11.20	13.69	16.13	18.15	20.78	23.18

Calculated by the author on the basis of: [3-9].

The indicator of the ratio of the volume of government and government-guaranteed debt to GDP during 2012-2013 had a stable Dynamics, did not exceed the critical value and was within a satisfactory state. Since 2014, this indicator has increased its absolute value, thereby exceeding the rate and reaching a peak value of 80.97% in 2016, which is more than 20% exceeds the critical value. This increase, compared to 2012, by 100.38% is explained by changes in the total amount of government and government-guaranteed debt. The reason for this was the war in the East, the financial crisis faced by Ukraine, the reduction of the country's gold and foreign currency reserves for the consolidation of the monetary unit. In 2019, this indicator reached a dangerous level (50.28%), which could indicate overcoming the debt crisis, but in 2020 the indicator increased by 10.57%, thereby crossing the critical mark. The dynamics of accelerated growth of government debt in relation to GDP indicates the unstable economic situation in the country, an increase in demand for borrowing, and the destructive, rather than stimulating, impact of the funds raised on the country's economy (Fig.1).

Analyzing such a component of Ukraine's debt security as the ratio of gross foreign debt to GDP, we observe that during 2012-2020, this indicator is beyond the critical value. The indicator experienced the worst value in 2015 and amounted to 131.03%, which is 1.9 times higher than the critical mark. This situation is caused by the government's policy of increasing foreign government debt by receiving macro-financial assistance from international financial institutions to overcome the financial crisis. It should be noted that since 2016, the indicator has been declining, but by the end of 2020 it did not approach its critical value. In 2020, compared to 2019 and 2012, the indicator value increased by 4.4% and 7.6%, respectively, and exceeds the critical rate by 12.65%. Taking into account that the ratio of gross foreign debt to GDP is a disincentive, its increase negatively affects both the country's debt security and financial security (Fig. 2). The dynamics of accelerated growth of gross foreign debt in relation to GDP indicates that the country has experienced an increase in foreign borrowing and a decrease in GDP.

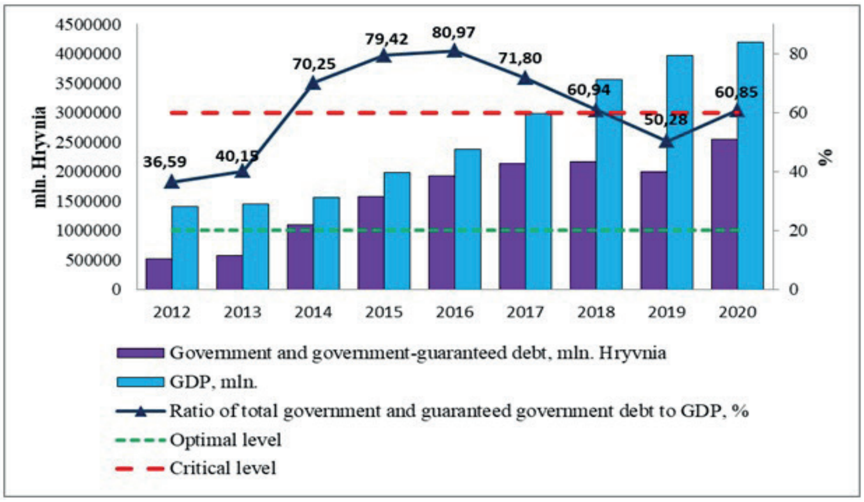

Fig. 1. The ratio dynamics of government and government-guaranteed debt to GDP [4, 5]

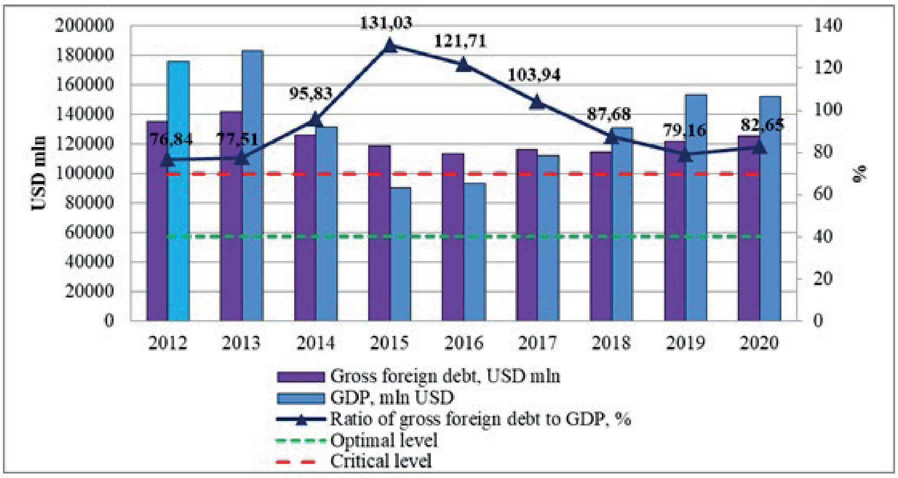

Fig. 2. The ratio dynamics of gross foreign debt to GDP [4, 6]

Domestic government bonds are debt securities that are sold by the government to primary dealers and their customers on the primary market to finance the needs of the state budget. The weighted average revenue of domestic government bonds in the primary market exceeds its optimal value since 2012, which is evidence of the accumulation of problems with Ukraine's debt security. During 2012-2015, we can observe a negative trend of this indicator. In 2016-2017, the indicator value fluctuates within 9-11%, not exceeding the rate, but balancing on the verge. In 2018-2019, there was again an increase and excess of the rate by more than 1.5 times. The situation has slightly stabilized in 2020, the average revenue on domestic government bonds is 10.2. The dynamics of growth and exceeding the critical rate of revenue on domestic government bonds leads to a significant strain on the budget due to the creation of a larger debt load in the form of debt servicing costs for domestic government bonds. It should be noted that an increase in the rate of return on government loans also has a positive side, because in this way it will help win quite large funds from investors.

EMBI index (Emerging Markets Bond Index) - emerging market bond index. This indicator is calculated by the bank JP Morgan as a weighted average among foreign currency bonds of emerging markets, to the revenue position of US Treasury bonds for the entire market and separately for bonds of each country [10]. The higher of the indicator value, the worse the situation in the country's economy. For Ukraine, this indicator had a somewhat undulating dynamics. So, during 2012-2013, this indicator was at a dangerous level and did not reach a critical value, but in 2014 and 2015, the indicator value is 2226 bps and 2375 bps, respectively, which exceeds the critical value by more than 2.2 times. The high value of the indicator evidences the risks of default for Ukraine, this situation is due to the difficult economic, political and military situation in the country. As a result of the conclusion of the agreement with the creditors' committee in 2016, the indicator value was able to stabilize to some extent.

The ratio of the volume of official international reserves to the volume of gross foreign debt characterizes how the state will be able to finance gross foreign debt at the expense of gold and foreign currency reserves. In 2012-2018, the indicator is below the critical level of Debt Security (20%). The indicator experienced the lowest value in 2014 and amounted to 5.96%. It was in 2014 that the size of international gold and foreign currency reserves decreased to a critical 7,533.33 million US dollars, and compared to 2012, the total amount of reserves decreased by 70%. One of the reasons for this situation is the devaluation of the hryvnia, which is a consequence of the political crisis, armed conflict on the Maidan and the war in Eastern Ukraine. In the future, the situation was stabilized through cooperation with the International Monetary Fund by obtaining international tranches and replenishing gold and foreign currency reserves, and in 2019 and 2020 the indicator crossed the critical threshold approaching its value to 20.78% and 23.18% respectively (Fig. 3).

As we can see, as of the end of 2019, three of the five indicators of debt security, namely the ratio of government and government-guaranteed debt to GDP, the EMBI+ index, and the ratio of official international reserves to gross foreign debt, are at a critical level, while two are outside the limits. This is evidence of a real threat to the state's debt security. For a deeper and more generalized analysis of the state of debt security, an integral index of the debt load can be calculated.

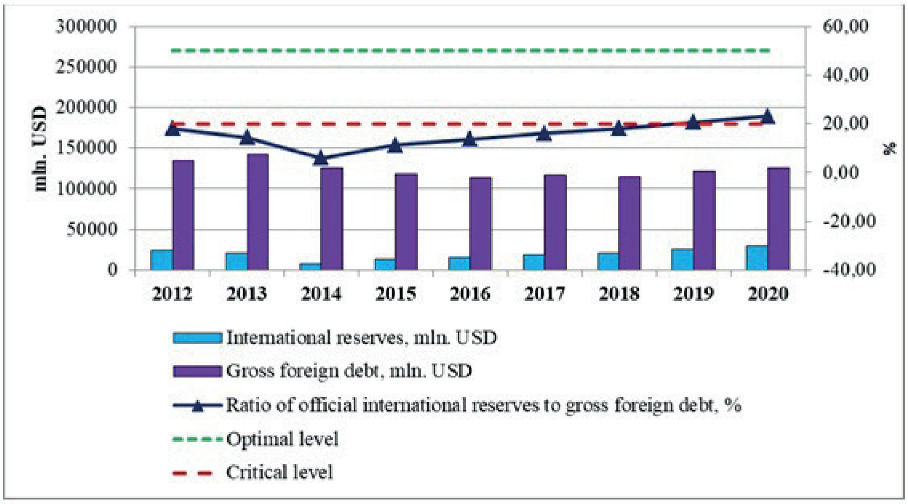

Fig. 3. The ratio dynamics of official international reserves to gross foreign debt [6, 9]

The Integrated Index of Debt Security will be calculated using the formula:

$$I_t = \sum_{i=1}^{n} a_i * \tilde{z}_i,$$

where I_t - Integrated Debt Security Index;

a_i- weighting numbers of debt security indices that determine the degree of impact i- th indicator for the integrated index;

$a_i \geq 0, \sum_{i=1}^{n} a_i = 1$;

$\tilde{z}_i$ - rated values of Debt Security Indices.

Based on the initial data of Debt Security indices, using methodological recommendations for calculating the level of economic security of Ukraine [3], the composite index of the debt load of Ukraine for 2012-2020 was calculated. The results are shown in Table 2 and Fig. 4.

As we can see in Fig. 4, the downtrend in the calculated Integrated Debt Security Index for the period 2012-2015 by 0.193 p. was replaced by an increase in the indicator by 0.135 p. for 2015-2019. According to the methodological recommendations for calculating the level of economic security of Ukraine [3], critical, dangerous, unsatisfactory, satisfactory, and optimal levels are distinguished depending on the range of data that the Integrated Debt Security Index falls into. Dynamics of the Integrated Debt Security Index of Ukraine (Fig. 4) indicates that during 2012-2013 and 2016-2019, the composite index was in a dangerous state, and in 2014-2015 – in a critical state. As you can see, the overall picture of debt dependence has improved somewhat, so we can assume that there are prospects for overcoming the debt crisis [11].

Table 2

Composite Debt Security Index of Ukraine, 2012-2019

Years	Rated values of Debt Security Indices.					**Integrated Debt Security Index**
	The ratio of the government and government-guaranteed debt to GDP, %	Ratio of gross foreign debt to GDP, %	Weighted average return of domestic government bonds on the primary market, %	EMBI (Emerging Markets Bond Index) + country, BP;	Ratio of the official international reserves to the gross foreign debt, %	
2012	0.668203	0.182204	0.170015	0.356533	0.181736	**0.317553**
2013	0.597056	0.180628	0.167555	0.4191	0.143693	**0.304718**
2014	0.170828	0.146093	0.157368	0.089847	0.059643	**0.126442**
2015	0.151086	0.106849	0.168324	0.084211	0.11202	**0.124809**
2016	0.148196	0.115028	0.384	0.293333	0.136889	**0.207568**
2017	0.167136	0.134687	0.253	0.526	0.161338	**0.238321**
2018	0.196919	0.159676	0.123665	0.529	0.181505	**0.231255**
2019	0.394468	0.176848	0.129947	0.384667	0.209799	**0.259517**
Weight numbers	**0.2195**	**0.2214**	**0.183**	**0.1778**	**0.1983**	

Calculated by the author on the basis of: [3].

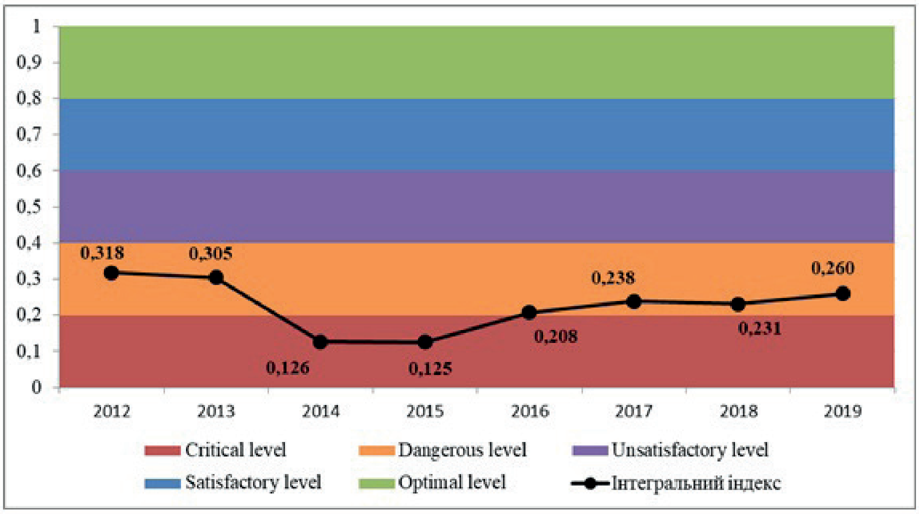

Fig. 4. Integrated Debt Security Index of Ukraine

Conclusions. Summing up the above, we can say that the increase in the level of government debt during 2012-2020 was caused by such factors as: covering the budget deficit with government borrowing; the need for funds in order for powerful institutions to be able to perform their own functions; a significant share of loans is in foreign currency; financial and economic crisis; the need to increase government investment in the development of the economy; the gap in the country's balance of payments; the formation of international foreign currency reserves of the National Bank of Ukraine, etc.

Analysis of the state of government debt and assessment of the level of debt security allows us to state the fact that Ukraine is on the verge of a debt crisis, since the value of the composite index during the analyzed period was at a dangerous level and never reached a satisfactory level. In our opinion, the government needs to implement a more effective policy on the government debt management which can in turn strengthen financial stability and increase the value of the Integrated Debt Security index. Among the priority steps that need to be taken to improve the situation, we should highlight:

- increase the share of government debt in the national currency;
- win financial backing from foreign investors to invest in bonds denominated in the national currency;
- extend the average maturity and ensure a uniform payment profile for government debt;
- continue developing strong relationships with investors;
- further improve the government debt management policy;
- improve the methodology for assessing the level of debt security by introducing new components that would make it possible to comprehensively assess the risks of debt vulnerability [11, p. 398].

Thus, in order to ensure the financial security of the state in general and its debt component in particular, it is proposed:

1. Approve the financial security strategy of the state, which will determine the political and economic course of activities of monetary authorities, investment, financial and credit, banking institutions aimed at ensuring financial stability and economic growth.
2. Set the size of the state budget deficit at such a threshold level that it would not allow the government to exceed the plan indicators of raising debt funds and increase the size of the government debt of Ukraine without control. Publish information about the use of state and local budget funds.
3. Develop an effective government debt management policy of Ukraine, which provides for minimizing the risks of government and corporate borrowing by balancing the structure of government and corporate debts by currency types, interest rates and dry dates.
4. Introduce measures to improve the competitiveness of the National equity and insurance market, help improve the level of protection of the insurance services consumers interests and all participants in the securities market.

5. At the legislative level, the powers of the NBU and the government should be clearly distinguished on the issues of foreign exchange regulation and control. Implement a currency policy of balancing the real demand for foreign currency with its supply, maintaining the stability and liquidity of the national currency. Ensure effective government control over the implementation of currency transactions.

6. Domestic banks should pursue a more flexible interest rate policy in order to raise customer funds in the national currency, and the National Bank of Ukraine should promote the accumulation of foreign currency reserves.

7. Develop and implement an effective system of fiscal controlling that would proactive and ensure the financial stability of the state.

Further research in the field of government borrowing management should be aimed at improving the system of indices for assessing debt security, while summarizing both the approaches developed by Ukraine and taking into account the international practice of applying European criteria.

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