UDC 336.02(477)

УДК 336.02(477)

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DIAGNOSTICS OF THE STATE OF FINANCIAL SECURITY OF UKRAINE

Urgency of the research. The transition to the market in Ukraine led to changes in the sphere of economic relations, which are characterized by a high level of instability. Significant changes that have occurred in recent years have also created new threats to the domestic economy, necessitating the diagnosis of Ukraine's financial security.

Target setting. The welfare of each state primarily depends on the stability of its financial system, which is provided through the timely diagnosis of its threats and response to them

Actual scientific researches and issues analysis. The issues of financial security of the nation, as an economic component, the principles of the formation of a system for ensuring financial security were revealed in the works of domestic and foreign scientists, namely in the works of A. Baranovsky, V. Geyets, M. Yermoshenko, J. Zhalilo, B. Karpinsky. A. Sukhorukov, A. Shevchenko and others.

Uninvestigated parts of general matters defining. In the conditions of cyclical economic fluctuations, which are characterized by a high degree of uncertainty, it is of acute necessity to diagnose the financial security as a component of the state's economic security.

The research objective. The purpose of the article is to conduct a diagnosis of Ukraine's financial security and identify the threats that affect it.

The statement of basic materials. The article analyzes both the dynamics of integral indicators of the components of financial security by the methodology of the Ministry of Economy of Ukraine for 2013 – 2017 and the dynamics of financial security indicators by the methodology of the National Institute of International Security Problems of Ukraine from 2013 to 2017, as well as distinguishes their shortcomings. There is proposed a system of measures to increase the level of financial security of the enterprises in Ukraine.

Conclusions. Diagnostics of the level of financial security is a complex process of identifying, analyzing, eliminating and forecasting the emergence of internal and external threats to the state. Diagnosis of the components of financial security is the basis for developing a set of measures to counter threats and improve the level of protection of Ukraine.

Keywords: security; financial security; monitoring; indicator; diagnostics of the level of financial security; public administration.

DOI: 10.25140/2410-9576-2018-3(15)-12-18

ДІАГНОСТИКА СТАНУ ФІНАНСОВОЇ БЕЗПЕКИ УКРАЇНИ

Актуальність теми дослідження. Перехід до ринку в Україні зумовив зміни у сфері економічних відносин, які характеризуються високим рівнем нестабільності. Значні перетворення, що відбулися за останні роки, а й утворили нові загрози для вітчизняної економіки, що зумовлюють необхідність діагностики стану фінансової безпеки України.

Постановка проблеми. Добробут кожної держави передусім залежить від стабільності її фінансової системи, яка забезпечується за рахунок своєчасної діагностики її загроз та реагування на них.

Аналіз останніх досліджень і публікацій. Питання фінансової безпеки держави, як складової економічної, принципи формування системи забезпечення фінансової безпеки висвітлювали у своїх працях такі вітчизняні та зарубіжні вчені, такі як: О. Барановський, В. Геєць, М. Єрмошенко, Я. Жаліло, Б. Карпінський., А. Сухоруков, О. Шевченко та інші.

Виділення недосліджених частин загальної проблеми. В умовах циклічних коливань економіки, які характеризуються великим ступенем невизначеності, досить гостро постає діагностики фінансової безпеки, як складової економічної безпеки держави.

Постановка завдання. Мета статті полягає у проведенні діагностики фінансової безпеки України та ідентифікації загроз, що на неї впливають.

Виклад основного матеріалу. У статті проаналізовано динаміку інтегральних показників складників фінансової безпеки за методикою Мінекономіки України на 2013—2017 рр., динаміку показників фінансової безпеки за методикою Національного інституту проблем міжнародної безпеки України з 2013 по 2017 рр. та виділено окремі їх недоліки. Запропоновано систему заходів з підвищення рівня фінансової безпеки підприємств України.

Висновки. Діагностика рівня фінансової безпеки являє собою комплексний процес виявлення, аналізу, усунення та прогнозування появи внутрішніх та зовнішніх загроз держави. Діагностування складових фінансової безпеки є основою для розроблення комплексу заходів протидії загрозам та підвищення рівня захищеності України.

Ключеві слова: безпека; фінансова безпека; моніторина; індикатор, діагностика рівня фінансової безпеки; державне управління.

Urgency of the research. Ukraine as a nation is characterized by insufficient development of a market economy, which requires the implementation of a number of measures to ensure state financial security. Each component of financial security, in addition to performing the relevant functions, is an integral part of the synergetic system designed to ensure the stability of the national economy in relation to internal and external negative impacts for its effective functioning.

It is the security of the financial sector that directly influences the level of development of the real sector of the economy, production, military and all other elements and types of security. Financial security acts as a unique unifying basis for creating other conditions for economic security.

Without financial security, it is almost impossible to solve any of the issues facing Ukraine. The urgency of financial security is determined by the need to form internal immunity and external security from the destabilizing effect of competitiveness in world markets and the stability of the financial situation.

An effective tool for solving the problems of Ukraine's economic security is diagnostics, which is aimed at a real assessment of the current financial state of the nation, identifying, analyzing and assessing the problems of its development, identifying sources and causes of negative results and undesirable trends in its development and adoption of sound and optimal management decisions.

In addition, the changing external environment of the nation, the strengthening of internal and external competition in the world market lead to increased risks and require constant diagnosis of the level of financial security, both of the nation itself and its subjects.

Target setting. The welfare of each nation depends primirily on the stability of its financial system, which is provided by timely diagnosis of its threats and responses to them.

Actual scientific researches and issues analysis. The issue of the national financial security, the classification of financial threats and interests, approaches to assessing the level of financial security as an economic component, the principles of the formation of a system for ensuring the financial security were covered in the works of domestic and foreign scientists A. Baranovsky, A. Vlasyuk, V. Geyets, M. Ermoshenko, J. Zhalilo, B. Karpinsky, V. Muntiyan, A. Makarik, A. Sukhorukov, A. Shevchenko and others. However, the issues of determining the components of financial security, its indicators, diagnosis, methodological and methodical approaches to its evaluation remain controversial.

Uninvestigated parts of general matters defining. Under the conditions of cyclical fluctuations in the economy, which are characterized by a high degree of uncertainty, the diagnosis of financial security as a component of the national economic security is very acute, which contributes to a timely response to threats that arise in the internal and external environments.

The research objective. The purpose of the article is to research the Ukraine's financial security and diagnose the threats that affect it.

The statement of basic materials. Financial security is achieved by a sound financial policy in accordance with the adopted in the fixed order doctrines, concepts, strategies and programs in the political, economic, social, information and financial fields.

Financial security is understood by most scientists as a dynamic state of financial relations, under which favorable conditions and necessary resources would be created for expanded reproduction, economic growth and increase of the living standard of the population, improvement of the national financial system for successful countering internal and external factors destabilizing the national financial situation [1-9].

In order to identify the practical application of the methodical recommendations of the Ministry of Economic Development and Trade of Ukraine and taking into account the fact that the main objective of financial security is to ensure the stable development of both the financial system and all its structural elements, 32 indicators of financial security for the last five years were identified. The usage of the indicators' obtained values resulted in the defining of characteristic values, on the basis of which these indicators were rationed [10].

Considering the rationed values of indicators and their weighted factors, which are determined in methodical guidelines through expert evaluation and, therefore, do not require additional calculation, we have formed integral indicators of each element of financial security (Tab. 1).

Table 1
Integral indicators dynamics of financial security components by the method of the Ministry of Economic Development and Trade of Ukraine within 2013-2017

Integral indicator			Years		Deviation from	n in 2015 2013	Deviation in 2017 from 2015		
	2013	2014	2015	2016	2017	Abs. (+/–)	East, %	Abs. (+/–)	East, %
Banking Security	0,45	0,48	0,29	0,14	0,13	-0,1	-35,5	-0,2	-55,2
Security of the non-bank inancial market	0,39	0,37	0,34	0,22	0,21	-0,06	-14,2	-0,1	-36,9
Debt security	0,2	0,14	0	0	0	-0,2	-100	1	1
Budget security	0,47	0,4	0,4	0,40	0,42	-0,05	-11,6	+0,003	+3,17
Currency Security	0,59	0,66	0,27	0,25	0,27	-0,32	-53,8	-0,003	-1,11
Monetary security	0,42	0,49	0,5	0,46	0,47	+0,08	+18,8	-0,03	-5,61

Source: Calculated by the author on the basis of [11]

According to Tab. 1, the value of the integral indicator of banking security tended to increase within 2013-2014, i.e there was an increase in the level of banking system security, from the critical one in 2013 to the unsatisfactory in 2014. This was primarily due to the decrease in the share of overdue loans by 20% in 2015 compared to the year 2013, bank loans and deposits in foreign currency by 19%, and the share of foreign capital in the banks' authorized capital by 7.9 percentage points, and to the increase in the share of the five largest banks in the total assets of the banking system by 9.35%.

However, the value of the integrated indicator significantly decreased by 40% in 2015 and by 52% in 2016, compared to the previous year. At the beginning of the year 2017, the bank security index amounted to 0.129, which is the lowest value for the analyzed period. The reasons for such a sharp decline in the integral indicator is an increase in the share of overdue loans by 64%, the volume of loans and deposits in foreign currency by 10.47% and a decrease in the profitability of bank assets by 34%, etc.

The largest value of the integral indicator of the non-bank financial market safety was observed in 2013, when it amounted to 0.3948, i.e. "dangerous level", and the lowest at the beginning of 2017 (0.213 is a "critical level"). This situation derived from a drop in the level of capitalization of listed companies regarding GDP by 84%, as well as by an increase in the share of insurance premiums received by the three largest insurance companies in the total volume of insurance premium receipts by 4.8 percentage points.

Considering the integral indicator of debt security, it is worth noting that its value in comparison with other areas of financial security is the lowest, and in the period 2015-2017, it generally equals to zero. This is due to the growth by 147% in the volume of national and publicly guaranteed debt regarding GDP at the beginning of 2017 compared to 2013, gross external debt by 93%, reduction in the volume of official international reserves to external debt by 61%.

Controversially, the budget security during the studied period was at a "dangerous level" considering minor fluctuations. Thus, the value of the integral indicator was fixed at the maximum level of 0.464 in 2013, but by the end of 2016 it decreased by 18%. The decrease in the integral indicator was due to the growth of the state budget deficit regarding GDP by 30%, the level of the redistribution of GDP through the consolidated budget by 1.67 percentage points, the volume of aggregate payments for servicing and repayment of the national debt regarding budget revenues by 72.64 percentage points. It is worth noting a gradual increase of this indicator at the beginning of 2017 against the value of the similar indicator by 5.75% in 2015.

The period 2013-2014 characterizes the state of currency security as unsatisfactory, which is due to a more stable hryvnia exchange rate compared to foreign currencies, a 16% decrease in the share of loans in a foreign currency, etc. However, its security level has fallen to a critical level since 2015, which might be explained by the devaluation of the national currency, where the index of the change in the official hryvnia exchange rate to the US dollar increased from 100.02 in 2014 to 183.52 in 2016, i.e. its growth amounted to 83.48%, the import of Ukraine's gross international reserves decreased by 31%, loans in a foreign currency increased by 23 percentage points and the level of dollarization by 18.5%, etc.

Monetary security, like budget security, was at a "dangerous level" during the studied period. This was facilitated by an increase in the cash share outside the banks in the total money supply by 8.72%, the difference between interest rates on loans and deposits by 1.90 percentage points, a decrease in the average weighted interest rate for loans provided by depository corporations (except for the NBU) in national currency, relative to the consumer price index, the share of consumer loans provided to households, etc.

Due to the defined integral indicators of each element of financial security, a general integrated indicator of financial security was calculated. Thus, the level of financial security was assessed as "dangerous" in 2013-2017. In 2015, the value of the integral index of financial security comprised 0.3041, which is 0.1209 lower than in 2014.

As of 2016, the level of Ukraine's financial security was critical and amounted to 0.2517, which is 0.0524 lower than in the previous year. At the beginning of 2017, a decrease of 0.087 points showed the inadequacy of Ukraine's financial system to counter negative internal and external threats, which indicates a weakening of financial security throughout the country.

To compare the results obtained, the level of financial security was calculated using the method of the National Institute of International Security Issues of Ukraine [12] (Tab. 2)

Table 2

Dynamics of financial security indicators by the method of the National Institute

of International Security Issues of Ukraine from 2013 to 2017

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	The	Years					Abs. deviation, (+/-)		
Indicator	threshold						2015	2017	
indicator	value of the	2013	2014	2015	2016	2017	compared	compared	
	indicator						to 2013	to 2015	
Inflation rate,%	5%	-0,2	0,5	24,9	43,3	12,4	+25,1	-12,5	
Debt,% of GDP	less than 30% of GDP	35,33	38,82	70,26	79,4	71,43	+34,93	-12,5	
Volume of external debt,% to GDP	less than 20% of GDP	76,6	78,3	96,05	148,9	131,3	+19,45	+35,25	
National budget deficit,% to GDP	1% of GDP	3,66	4,3	4,98	2,28	2,94	+1,32	-2,04	
Monetization level, % to GDP	30% of GDP	54,88	62,48	61,07	50,29	51,08	+6,19	-9,99	
Cost of bank loans, % per annum	not more than 10%	26,6	25,3	26,1	29,5	18,3	-0,5	-7,8	
•	per annum	20,0	25,5	20,1	29,5	10,3	-0,5	-7,0	
International reserves (without gold), billion US dollars	up to 5 billion US dollars	22,6	18,78	6,62	12,37	14,59	-16,04	+7,97	

Source: Calculated by the author on the basis of [13]

As the Tab. 2 data show, the value of all indicators during 2013-2017 is significantly higher than the threshold values. Thus, the inflation rate was the highest in 2016 (almost ten times higher than the established threshold value). Based on the ranking of the Central Intelligence Agency's rating of inflation, Ukraine took the penultimate 224th place as of 2016, and the last 225th place occupied Southern Sudan (52.8%).

Particular attention should be paid to the indicator of the volume of external debt against GDP, because the effective value of this indicator amounted to 148,99% of GDP in 2016, while its threshold value should not exceed 20% of GDP. At the same time, the value of the domestic debt indicator is the lowest and most approximate to the optimal in 2013 (35.33% of GDP), and the highest – in 2016 (79.40% of GDP). Thus, the above mentioned confirms once more the critical level of debt security in Ukraine.

The calculations above also revealed that the deficit of the national budget until 2015 had a tendency to increase and exceeded the threshold value almost five times. However, its volume decreased 2.5 times in 2016 and amounted to 2.28% of GDP. However, even such a significant decrease did not help optimize the size of the state budget deficit compared to GDP.

The highest level of monetization during the studied period was registered in 2014 at the level of 62.48%, and the lowest – in 2016 (50.29%). That is, in the studied period, this indicator always exceeded the actual threshold value, which led to a decrease in the speed of money circulation within the nation.

It is also worth mentioning that the cost of bank loans from 2013 to the beginning of 2017 did not correspond to the optimal value. Thus, the value of this indicator was 29.5% in 2016, which is by 3.4 and 19.5 percentage points higher than the same indicator in 2015 and the threshold value, respectively. The largest volume of international reserves in Ukraine is observed in 2013 in the amount of 22.66 billion US dollars, and the smallest in 2015 with 6.62 billion US dollars, which is a negative phenomenon, because the maximum allowable level of their volume should not exceed 5 billion US dollars.

Thus, the results of the financial security assessment based on the methodology of the National Institute for International Security Problems of Ukraine also confirm the results obtained by the Ministry of Economic Development and Trade of Ukraine and convince that the level of Ukraine's financial security is critical. The biggest threats at the same time are an increase in the external debt, an increase in the level of dollarization, the devaluation of the hryvnia and high rates of inflationary processes.

However, it should be noted that both methods have certain drawbacks, which reduce the reliability of the results obtained.

Thus, the formation of indicators by the method of the Ministry of Economic Development and Trade of Ukraine was carried out on the principle of representativeness, which means selecting the most significant indicators that affect the national financial security. However, it is worth noting that the assessment of the level of financial security taking into account the indicators of banking, foreign exchange, debt, budget, monetary and security of the non-banking financial market is incomplete, because there are no indicators of tax security among them. Such indicators might include the level of concentration of tax revenues in the national budget revenues, the level of taxation on the national budget revenues, the level of the tax debt of taxpayers, the level of tax burden, etc.

When assessing the security level of the stock market in these methodical guidelines, only two indicators are used there, i.e. the level of capitalization of listed companies against GDP and the level of volatility of the PFTS index.

At the same time, additional indicators of stock market security may be the capitalization of listed companies, the share of trade in the unorganized market in the total trading volume of securities, the share of domestic government loan bonds for the amount of public debt on securities, the yield of government bonds, the yield ratio of government bonds to growth rates of GDP, etc.

During the study of budget security, it was revealed that the indicators of the method are mainly focused on the level of the budget deficit and external borrowings sent for servicing and repayment of public debt. At the same time, indicators that take into account the amounts of revenues and expenditures of the national budget, which are the main components of the national budgetary sphere, were not included. Thus, they might include the ratio of advance payments paid on income tax and VAT in the total amount of state budget revenues, the share of expenditures in foreign currency in the total amount of revenues of the consolidated budget, the share of expenditures on protected items in the amount of the consolidated budget expenditures, etc.

Another drawback of this method is that all threshold values of indicators are calculated on the basis of data of leading international organizations and the experience of economic systems functioning in highly developed countries.

Thus, the level of debt security according to the Budget Code is critical if its value is above 60%, meanwhile in methodical guidelines it is at the level of above 35%. However, it should be noted that the Law of Ukraine "On the State Budget" considers the latter value as an acceptable level for the ratio of domestic and foreign debt against GDP.

Based on the identified shortcomings, it should be noted that the main purpose of the methodical guidelines of the Ministry of Economic Development and Trade of Ukraine is to determine the level of financial security of Ukraine. That is, the immediate advantage of this technique is that, in addition to calculating the integral index of economic security, it is possible to determine the level of financial security. It should be borne in mind that only the optimal values of each indicator are defined in most methods. Whereas this method clearly defines the levels of financial security, such as optimal, satisfactory, unsatisfactory, dangerous and critical; and levels of these values allow to carry out a better analysis of its state.

Considering the method of the National Institute of International Security Issues of Ukraine, it is worth noting that its main drawback is that a small amount of indicators is used to determine the state of financial security. This ultimately forms a generalized assessment of financial security level. From the standpoint of simplicity, convenience and ease of calculations, the technique is acceptable for use. But from the position of accuracy, detailed analysis of all financial security components, the level of expediency of its use is significantly reduced. At the same time, the practical use of indicators for calculating the level of both economic and financial security of foreign countries is a significant advantage of these guidelines.

Conclusions. Based on the results of the study, the following conclusions can be drawn. Thus, the assessment of the dynamics of most financial security indicators allowed us to establish negative long-term trends. The most problematic areas are considered to be a high level of external debt; high cost of bank loans; a significant level of dollarization of the economy; constant increase in the share of the shadow economy; negative balance of payments. In our opinion, to increase the level of national financial security requires systemic actions that must include mechanisms in the sphere of budgetary and monetary policy, the stock market, as well as in the sphere of regulating the corporate sector of the economy, etc.

References

- 1. Burakovskiy I., Plotnikov A. Global financial crisis: Lessons for the world and Ukraine. Kharkov: Folio, 2009. 299 p.
- 2. Baranovsky, A. I. Financial security. M.: Phoenix, 1999. 338 p. (38.7 pp. L.) (Review Strategic panorama 2000. № 1-2. P. 243-244).
- 3. Vlasyuk, A. S. National Security of Ukraine: Evolution of Internal Policy Problems: Selected sciences. works / A. S. Vlasyuk. K: NISI, 2016. 528 p.
- 4. Zhalilo, Y. A. Theory and practice of forming an effective economic strategy of the state: monograph. K.: NISI, 2009. 336 p.
- 5. Matvienko, V. P, Matvienko, P. V. Philosophical and economic views. K.: Naukova Dumka. 2009. 304 p.
- 6. Makarik, A. V. The place and role of financial security in the overall system of national security // Scientific works of NUKhT 2009. № 29. P. 125-127.
- 7. Muntiyan, V. I. Economic Security of Ukraine / V. I. Muntiyan. Kiev: KVTS, 1999. 463 p.
- 8. Prokhorenko, G. C. Fundamentals of Financial Security of Ukraine / G. C. Prokhorenko. Kharkov: The Yunis Publishing House, 2001. P. 29.
 - 9. Shevchenko, A. Yu. Theory of financial security: inno-

Література

- 1. Бураковський, І. Глобальна фінансова криза: Уроки для світу та України / І. Бураковський, О. Плотніков. Харків : Фоліо, 2009. 299 с.
- 2. Барановський, О. І. Фінансова безпека / О. І. Барановський. К. : Фенікс, 1999. 338с. (рецензія Стратегічна панорама. 2000. № 1-2. С. 243-244).
- 3. Власюк, О. С. Національна безпека України: еволюція проблем внутрішньої політики: Вибр. наук. праці / О. С. Власюк. К. : НІСД, 2016. 528 с.
- 4. Жаліло, Я. А. Теорія та практика формування ефективної економічної стратегії держави: монографія / Я. А. Жаліло. К. : НІСД, 2009. 336 с.
- 5. Матвієнко, В. П. Філософсько-економічні погляди / В. П. Матвієнко, П. В. Матвієнко ; ред. Н. С. Колосок. Київ : Наукова думка, 2003. 302 с.
- 6. Макарик, О. В. Місце та роль фінансової безпеки в загальній системі національної безпеки // Наукові праці НУХТ 2009. № 29. С. 125-127.
- 7. Мунтіян, В. І. Економічна безпека України / В. І. Мунтіян. Київ : КВІЦ, 1999. 463 с.
- 8. Прохоренко, Г. К. Основи фінансової безпеки України / Г. К. Прохоренко. Харків : Вид-во «Юніс», 2001. С. 29.

vative approaches // Bulletin of the Academy of Municipal Management, series "Economics" - 2009. - № 6.

- 10. On approval of the Methodical Guidelines on the calculation of the level of economic security of Ukraine. Order of the Ministry of Economic Development and Trade of Ukraine on October 9, 2013 № 1277 [Electronic resource]. Access mode: http://cct.com.ua/2013/29.10.2013_1277.htm.
- 11. State Statistical Service: official site [Electronic resource]. - Access mode: http://www.ukrstat.gov.ua.
- 12. On approval of the Methodical Guidelines on the calculation of the level of economic security of Ukraine: Order of the Ministry of Economic Development and Trade of Ukraine № 1277 of 29.10.2013. [Electronic resource]. Access mode: http://www.me.gov.ua/Documents/List?lang=uk-UA&tag=MetodichniRekomendatsii.
- 13. National Bank of Ukraine: official site [Electronic resource]. - Access mode: http://www.bank.gov.ua.

- 9. Шевченко, О. Ю. Теорія фінансової безпеки: інноваційні підходи / О. Ю. Шевченко // Науковий вісник Академії муніципального управління, серія «Економіка». - 2009. - № 6. – C. 217-224
- 10. Про затвердження Методичних рекомендацій щодо розрахунку рівня економічної безпеки України Наказ Міністерства економічного розвитку і торгівлі України від 9 жовтня 2013 року N 1277 [Електронний ресурс]. Режим доступу: http://cct.com.ua/2013/29.10.2013 _1277.htm.
- 11. Державної служби статистики: офіційний сайт pecypc]. [Електронний Режим доступу: http://www.ukrstat.gov.ua.
- 12. Про затвердження Методичних рекомендацій щодо розрахунку рівня економічної безпеки України: Наказ Міністерства економічного розвитку і торгівлі України №1277 від 29.10.2013. [Електронний ресурс]. Режим досhttp://www.me.gov.ua/Documents/List?lang=uk-UA&tag=MetodichniRekomendatsii.
- 13. Національного банку України: офіційний сайт [Електронний pecypc]. Режим доступу: http://www.bank.gov.ua.

Received for publication 03.05.2018

Бібліографічний опис для цитування:

Mihus, I. P. Diagnostics of the state of financial security of Ukraine / I. P. Mihus, L. M. Akimova, O. A. Harnyk // Науковий вісник Полісся. – 2018. - № 3 (15). – С. 12-18.

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