http://www.moderntechno.de/index.php/meit/article/view/meit34-00-011
DOI: 10.30890/2567-5273.2024-34-00-011

УДК 336.27:303.211(477)

DIRECTIONS OF RISK MANAGEMENT: FINANCIAL DEBT REALITY AND ENERGY INSTABILITY

НАПРЯМКИ УПРАВЛІННЯ РИЗИКАМИ: РЕАЛІЇ ФІНАНСОВОГО БОРГУ ТА ЕНЕРГЕТИЧНА НЕСТАБІЛЬНІСТЬ

Likhonosova Ganna / Ліхоносова Г.С.
d.econ.s., prof. / д-р екон. наук, проф.
ORCID: 0000-0001-6552-8920
National Aerospace University «Kharkiv Aviation Institute»,
Kharkiv, Manka St., 2, 61017
Національний аерокосмічний університет ім. М.Є. Жуковського «ХАІ»,
Харків, вул. Манька, 2, 61071

Abstract: *The article analyzes modern approaches to risk management, in particular in the financial and energy spheres. The main factors affecting the financial debt situation of Ukraine, such as the volume of external borrowings, the dynamics of exchange rates and economic growth, are considered. Particular attention is paid to the analysis of energy instability, including dependence on energy imports, the influence of political factors, and the development of domestic energy resources. Specific directions for risk reduction are proposed, including diversification of energy supply, introduction of energy-saving technologies, and optimization of public debt management. The article offers an innovative approach to the integration of financial and energy risks into a single risk management system. Interrelationships between financial debt policy and energy security are considered, which allows for a deeper understanding of the mechanisms of their influence on general economic stability. The recommendations proposed in the article can be useful for energy sector enterprises and financial institutions in the process of planning and risk management. It was concluded that optimizing the management of public debt, including the restructuring of obligations and attracting new sources of financing, will allow to reduce financial risks and increase the economic stability of the country.*

Keywords: *state debt, financial dependence, energy instability, balance of payments, risk management.*

Introduction

Ukraine faces complex challenges in the field of financial debt and energy security. The financial debt reality of the country is characterized by a significant external debt and the instability of the currency market. At the same time, energy instability caused by geopolitical risks and dependence on imported energy sources creates additional threats to economic stability. In such conditions, risk management becomes a key element in ensuring national security and economic development.

Effective risk management in the financial and energy spheres of Ukraine requires a comprehensive approach, which includes the development and implementation of innovative strategies aimed at reducing dependence on external borrowing and diversifying energy sources.

The originality of the research lies in the comprehensive approach to the analysis of financial and energy risks, as well as in the development of recommendations that take into account the specifics of the Ukrainian context. New risk management strategies that can be applied both at the state and corporate levels are proposed.

Materials and Methods

Methods of analysis and synthesis were used to study the literature on risk management, financial debt and energy instability. Descriptive statistics methods were used to analyze the dynamics of Ukraine's financial debt, debt structure, exchange rates, economic growth and energy imports. The data were obtained from official sources such as the State Statistics Service of Ukraine, the Ministry of Finance of Ukraine, the National Bank of Ukraine and the International Energy Agency. The method of scenario analysis was used to model possible scenarios of the development of the situation with financial debt and energy security of Ukraine. Various scenarios of economic growth, energy price fluctuations, political changes and introduction of energy-saving technologies were taken into account. Scientific articles, monographs, research reports and reviews on the topics of risk management, financial stability and energy security were analyzed. The experience of other countries that had similar problems, as well as the recommendations of international organizations, were taken into account. The application of a comprehensive approach, which includes quantitative and qualitative methods, made it possible to comprehensively investigate the problems of financial debt and energy instability of Ukraine and to develop effective directions of risk management.

Results

At the end of 2021, the public debt of Ukraine was only 48.9% of GDP [1], that is, the country was in a fairly stable debt situation. The average debt service rate was about 9% per year for domestic debt and 4% for external debt [2]. The total cost of servicing the debt was 2.9% of GDP. But the decline of the Ukrainian economy due to the military conflict, as well as a significant increase in public spending, which increased from 40% to 75% of GDP from 2021 to 2023, significantly increased both internal and external debt. As a result, according to the results of 2023, the state debt was 84.4% of GDP (Table 1) [1].

Table 1 – Dynamics of the aggregate state debt and GDP of Ukraine from 2009 to 2024 (million UAH)

State debt (total)				Gross domestic product (GDP)				State debt / GDP
December 2009	316 885			за 2009	913 345			34.7%
December 2010	432 235	115351	36.4%	за 2010	1 082 569	169224	18.5%	39.9%
December2011	473 122	40886	9.5%	за 2011	1 316 600	234031	21.6%	35.9%
December 2012	515 511	42389	9.0%	за 2012	1 408 889	92289	7.0%	36.6%
December 2013	584 114	68604	13.3%	за 2013	1 454 931	46042	3.3%	40.1%
December 2014	1 100 564	516450	88.4%	за 2014	1 566 728	111797	7.7%	70.2%
December 2015	1 572 180	471616	42.9%	за 2015	1 979 458	412730	26.3%	79.4%
December 2016	1 929 759	357579	22.7%	за 2016	2 383 182	403724	20.4%	81.0%
December 2017	2 141 674	211916	11.0%	за 2017	2 982 920	599738	25.2%	71.8%
December 2018	2 168 627	26953	1.3%	за 2018	3 558 706	575786	19.3%	60.9%
December 2019	1 998 275	-170352	-7.9%	за 2019	3 974 564	415858	11.7%	50.3%
December 2020	2 551 936	553660	27.7%	за 2020	4 194 102	219538	5.5%	60.8%
December 2021	2 671 828	119892	4.7%	за 2021	5 459 574	1265472	30.2%	**48.9%**
December 2022	4 071 683	1399856	52.4%	за 2022	5 191 028	-268546	-4.9%	78.4%
December 2023	5 519 484	1447801	35.6%	за 2023	6 537 825	1346797	25.9%	**84.4%**
May 2024	6 115 264	595780	10.8%	за 2024				

Source: [1]

This indicator would have been even worse if the US had not filled Ukraine's budget with $22.85 billion in the form of grants, not loans, in 2022-2023 [3]. In 2022, the government of Ukraine agreed with creditors to postpone the payment of principal and interest on Eurobonds for 2022–2023 [4]. However, the situation will be different in 2024. This year, Ukraine does not have Western grant support, and it is time to pay interest on Eurobonds immediately in three years (2022-2024).

This situation has led to an unprecedented increase in public debt servicing costs to 6.3% of GDP, or almost $12 billion in 2024 [2]. And by the end of the year, the state debt will reach almost 100% of GDP [5]. At the same time, the policy of high interest rates of the National Bank of Ukraine led to an increase in the average domestic debt service rate from 9% to 13% in two years [2].

In addition, there are securities of Ukraine tied to the GDP of 2015, which are valid until 2041. In 2015, Prime Minister A. Yatsenyuk and Finance Minister M. Yaresko signed an agreement with creditors, which slightly reduced the amount of the debt in exchange for securities, the payments of which are mandatory [6], if the economic growth of Ukraine exceeds 3% of GDP starting in 2019. Moreover, the conditions contain obligations: the greater the GDP growth, the greater the payment. The motive behind the signing of such an agreement by the government of Ukraine remains a mystery. However, in the conditions of post-war recovery, payments on these obligations can reach 1-2 billion dollars per year and more for the nominal volume of securities of 3.2 billion dollars.

In 2023, the Ukrainian economy grew by 5.3%, which means that already in 2025, Ukraine will have to pay about $700-$800 million "tax on the growth of the Ukrainian economy" for the benefit of creditors, to which the Ukrainian government signed a corresponding agreement. Thus, approximately half of the US and EU aid to Ukraine in 2024 will go to service the debt of creditors inside and outside of Ukraine.

In order to reduce the burden on the state budget, in May-June 2024, the Ministry of Finance of Ukraine and its creditors held negotiations on the restructuring of the $20 billion debt (Eurobond) and the modification of securities tied to GDP [7]. So far, the negotiations have not led to any joint decision. If debt restructuring is not successful by August 1, 2024, Ukraine will have to pay about $3.75 billion in interest on Eurobonds by the end of 2024.

The GDP of Ukraine in 2023 was UAH 6.5 trillion in nominal terms [1]. The amount of international aid is 1.5 trillion. UAH or 23% [2]. This money goes mainly to cover the budget's social expenses: pensions, salaries of budget employees, benefits, scholarships, etc. In dollar equivalent, the situation is approximately similar: the GDP of 2023 amounted to 160 billion dollars. in the equivalent, aid - 40 billion dollars. or 25% [2].

That is, if it were not for the grants that go to transfers and loans that go to the assets of the financial account, the balance of payments of Ukraine would have a "hole" of 40 billion dollars. and a deficit of 25-30 billion dollars. And this would lead to a deep devaluation of the hryvnia at least at the level of 2022. Which, in turn, would lead to a revaluation of the currency equivalent of nominal GDP and a reduction of currency GDP to 70-80 billion dollars. In addition, there is nothing unusual about this for the Ukrainian economy: in 2015, the GDP of Ukraine was

already falling from 183 billion dollars. in 2013 to 90 billion dollars [1].

In 2022, real GDP in hryvnia decreased by 28.8%, and in 2023 it increased by 5.3%. The currency equivalent in 2023 was 160 billion dollars. — this is 80% of the level of 2021 (then a historical maximum of $200 billion was recorded). But in this method of determining the ratio of GDP and public debt, there are certain destructive factors in the form of a huge influence that external financial assistance creates.

Therefore, to determine GDP growth rates, we use the so-called "electrical method", that is, the method of determining GDP growth rates based on the dynamics of electricity production and consumption. The indicator of energy availability of the country's economy and population has a different connotation. Its growth indicates positive development trends. Because the more available and cheap energy, the more opportunities and incentives for development, although the energy factor alone is necessary but not sufficient.

So, let's track, based on actual data, how energy consumption reflects the level of strategic development of the country. On a per capita basis, China compared the indicators of the level of primary energy production with the volume of the entire EU. In turn, the EU level has decreased significantly: from approximately 45,000 kWh per year to 35,000 kWh per year per capita [8]. And in China, the same indicator, on the contrary, grew significantly: starting from significant energy poverty of the population to more than 30,000 kWh per year [9]. The indicator of energy production per capita shows the level of complexity of the economy, how many machines and equipment can be used in everyday life and production for the strategic development of the country and the quality of life of its population.

As for Ukraine's indicators of primary energy production, there are currently no statistical data. In 2023, electricity production amounted to 96.8 billion kWh per year [10] with a population of about 30 million people. It is worth noting that this is not consumption, it is production per capita of purely electricity, without taking into account other energy resources.

That is, the indicator of energy generation per capita in Ukraine is about 3,200 thousand kWh per year. In 2024, it is safe to say that electricity production may drop to 90 billion kWh per year, and the per capita production rate may fall to 3,000,000 kWh or lower. And if its citizens who left the country begin to return to Ukraine with constant electricity generation, this indicator will drop to 2,500 kWh per year.

Based on these indicators, to ensure an above-average level of development, taking into account the population of about 30 million, Ukraine needs to generate at least 180 billion kWh per year. In other words, taking into account the current level, Ukraine needs to at least double its electricity generation.

At the same time, it is necessary to understand that no decentralized generation will fulfill the task. Only the increase of basic, stable generation, and what is important for Ukraine - on an available energy resource. And today for Ukraine it is no longer coal or gas. Alternative sources of generation, or rather their level of development in Ukraine today, are also unable to cover the necessary indicators. The only available source so far remains uranium, i.e. energy generation by nuclear power plants.

Conclusion.

In other words, the Ukrainian economy is becoming less energy-rich. Not energy-intensive (which would be a completely positive phenomenon), but less energy-rich. In this format, the economy and security of Ukraine in the horizons of post-war structural transformations (if they will occur at all) become more and more vague. So, to get a chance for recovery, the economy of Ukraine should be directed, first of all, to social programs. Something like the repatriation of the population following the example of Israel. But for this, it is necessary to completely remove the existing repressive tools in the relations between society and the state, restart the social contract, form a relationship to the country's resources as a general potential and opportunity for growth, guarantee the impossibility of dismantling basic human rights and freedoms, launch well-known models of dynamic economic growth based on knowledge economy and the formation of own added value, not only raw materials and agricultural products, create jobs and ensure entrepreneurial freedoms. This task is extremely difficult, but it cannot be said that it is impossible, of course, under the conditions of its formation.

References

1. Dynamics of the aggregate state debt and GDP of Ukraine from 2009 to 2024. Portal of the Ministry of Finance. 2024. URL: https://index.minfin.com.ua/ua/finance/debtgov/ (access date: July 15, 2024)

2. Medium-term strategy of public debt management for 2024–2026. Resolution of the Cabinet of Ministers of Ukraine dated October 27, 2023 No. 1117. URL: https://mof.gov.ua/storage/files/MTDS2024-2026.pdf (access date: July 15, 2024)

3. Grant funds provided on non-refundable terms. Government portal. The only web portal of executive authorities of Ukraine. 2023. URL: https://www.kmu.gov.ua/news/u-2023-rotsi-minfin-ukrainy-zaluchyv-426-mlrd-dolariv-ssha-pilhovoho-ta-hrantovoho-finansuvannia-vid-mizhnarodnykh- partneriv (access date: July 15, 2024)

4. Kharlamov, P. (2023). How the country pays back its foreign debts and whether it is worth watching out for default. Mind investment summit. URL: https://mind.ua/en/publications/20259208-ukraines-national-debt-increased-by-almost-70-in-hryvnia-and-by-36-in-dollars-during-the-war-wha (access date: July 15, 2024)

5. Chupak, O. (2024). Debt crisis: why the return of Ukraine's public debt depends on international partners. Analytical Center "Ukrainian Studies of Strategic Studies". Ukrainian week. URL: https://tyzhden.ua/borhova-kryza-chomu-povernennia-derzhavnoho-borhu-ukrainy-zalezhyt-vid-mizhnarodnykh-partneriv/ (access date: July 15, 2024)

6. Vygovska, L. (2015). Everything you need to know about an agreement with creditors. Key facts about writing off the national debt of Ukraine. New Voice (NV). URL: https://nv.ua/ukr/publications/vse-shcho-potribno-znati-pro-ugodu-z-kreditorami-kljuchovi-fakti-pro-spisannja-derzhborgu-ukrajini-66101.html (access date: July 15, 2024)

7. Parashchii, O. (2024). Ukraine and creditors will have to make concessions to

restructure the debt. FinClub. URL: https://finclub.net/priama-mova/ukraini-ta-kredytoram-dovedetsia-pity-na-postupky-dlia-restrukturyzatsii-borhu.html (access date: July 15, 2024)

8. Primary and final energy consumption in Europe. Environmental information systems. European Environment Agency. March. 2024. URL: https://www.eea.europa.eu/en/analysis/indicators/primary-and-final-energy-consumption (access date: July 11, 2024).

9. Statistical Review of World Energy. 73rd edition. 2024. URL: https://www.energyinst.org/__data/assets/pdf_file/0006/1542714/EI_Stats_Review_2024.pdf (access date: July 11, 2024)

10. Ukraine Electricity Generation 2023 vs 2022. Green Deal Ukraine, 2024. URL: https://greendealukraina.org/gd-tracker/figure-of-the-week/2024/ukraine-electricity-generation-2023-2022 (access date: July 12, 2024)

Анотація. *У статті проаналізовано сучасні підходи до управління ризиками, зокрема у фінансовій та енергетичній сферах. Розглянуто основні чинники, що впливають на фінансову боргову ситуацію України, такі як обсяги зовнішніх запозичень, динаміка валютних курсів та економічне зростання. Особливу увагу приділено аналізу енергетичної нестабільності, зокрема залежності від імпорту енергоресурсів, впливу політичних чинників та розвитку вітчизняних енергетичних ресурсів. Запропоновано напрями зниження ризиків, зокрема диверсифікацію енергопостачання, впровадження енергозберігаючих технологій, оптимізацію управління державним боргом. У статті запропоновано інноваційний підхід до інтеграції фінансових та енергетичних ризиків в єдину систему управління ризиками. Розглянуто взаємозв'язки фінансово-боргової політики та енергетичної безпеки, що дозволяє глибше зрозуміти механізми їх впливу на загальну економічну стабільність. Запропоновані в статті рекомендації можуть бути корисними підприємствам енергетики та фінансовим установам у процесі планування та управління ризиками. Підсумовано, що оптимізація управління державним боргом, у тому числі реструктуризація зобов'язань та залучення нових джерел фінансування, дозволить знизити фінансові ризики та підвищити економічну стабільність країни.*

Ключові слова*: державний борг, фінансова залежність, енергетична нестабільність, платіжний баланс, ризик-менеджмент.*

The article has been sent: August 4, 2024