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ASSESSMENT OF THE EFFICIENCY OF BANKING ACTIVITY DURING DESTRUCTIVE EVENTS IN THE COUNTRY'S ECONOMY

ОЦІНКА ЕФЕКТИВНОСТІ БАНКІВСЬКОЇ ДІЯЛЬНОСТІ ПІД ЧАС ДЕСТРУКТИВНИХ ПОДІЙ В ЕКОНОМІЦІ КРАЇНИ

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The article examines the efficiency of Ukrainian banks during macroeconomic shocks. It is determined that the main functions of the banking system are the function of financial intermediation and the transformational function. The emphasis is placed on the fact that banks will play a leading role in the post-war recovery of the domestic economy by providing it with credit resources. The purpose of the article is to assess the efficiency of the domestic banking system during destructive events in the economy. The dynamics of the number of banking institutions and their performance over the past 10 years are examined. A significant reduction in the number of banks with a simultaneous increase in their profitability is revealed. The reasons for the reduction in the number of banks are given. A parallel is drawn between the regulatory actions of the National Bank of Ukraine and the financial performance of the banking system. It is proposed to use the DuPont model and the indicator of operational efficiency of banks in assessing the efficiency of the banking system. The efficiency of banking activities is analyzed by assessing the return on assets and capital and the operating efficiency indicator. It is noted that despite the high profitability of banking activities, the operating efficiency indicator has exceeded the conditionally safe level. It is emphasized that the banking system continues to operate efficiently. The results of the assessment of the banking system stability made by the National Bank of Ukraine are considered. It is noted that due to profitable activities, domestic banks were able to increase their capital during the war. The new regulatory requirements for bank capital are described. The forecast indicators of the core capital adequacy ratio are investigated, taking into account operational risk and the impact of the increased corporate income tax rate for banks. The assessment of the sustainability of the banking system of Ukraine at present and soon is summarized. The conclusions on the high efficiency of the banking system and its sufficient sustainability in the face of destructive events in the economy are drawn. The main threats to the financial security of the banking sector are outlined. Proposals are made on how to use the profits of the banking system to ensure further uninterrupted operation of banks.

Keywords: banking system, destructive events, efficiency, profitability, stability, bank capital.

У статті розглянуто ефективність діяльності банків України під час макроекономічних потрясінь. Визначено, що головними функціями банківської системи є функція фінансового посередництва та трансформаційна функція. Зроблено акцент на тому, що саме банки відіграватимуть провідну роль у повоєнному відновленні вітчизняної економіки шляхом забезпечення її кредитними ресурсами. Метою статті є оцінка ефективності вітчизняної банківської системи під час деструктивних подій в економіці. В роботі досліджено динаміку кількості банківських установ та результативність їх діяльності за останні 10 років. Виявлено значне скорочення кількості банків при одночасному зростанні їх прибутковості. Наведено причини скорочення кількості банків. Проведено паралель між регулятивними діями Національного банку України та фінансовими результатами діяльності банківської системи. Запропоновано при оцінці ефективності банківської системи використовувати модель Дюпона та показник операційної ефективності діяльності банків. Проаналізовано ефективність банківської діяльності шляхом оцінки показників рентабельності активів і капіталу та показника операційної ефективності. Наголошено, що незважаючи на високу рентабельність банківської діяльності, показник операційної ефективності перевищив умовно безпечний рівень. Зроблено наголос на тому, що банківська система продовжує ефективно працювати. Розглянуто результати проведеної Національним банком України оцінки стійкості банківської системи. Зауважено, що завдяки прибутковій діяльності вітчизняні банки змогли наростити капітал під час війни. Описано нові нормативні вимоги до банківського капіталу. Досліджено прогностичні показники нормативу достатності основного капіталу з урахуванням операційного ризику та впливу підвищеної ставки податку на прибуток підприємств для банків. Підведено підсумок оцінки стійкості банківської системи України на теперішній час і у найближчій перспективі. У статті зроблено висновки щодо високої ефективності банківської системи та її достатньої стійкості під час деструктивних подій в економіці. Наведено основні загрози фінансовій безпеці банківського сектору. Надано пропозиції щодо напрямів використання прибутків банківської системи задля забезпечення подальшої безперебійної роботи банків.

Ключові слова: банківська система, деструктивні події, ефективність, рентабельність, стабільність, банківський капітал.

Formulation of the problem. The efficiency of the banking system is primarily determined by its ability to perform its functions. The main banking function is financial intermediation. Banks act as intermediaries between owners of temporarily available funds and those who need them. In this way, they transform idle capital in cash into functioning capital in cash. The effectiveness of this transformation largely determines the continuity of the economy's functioning and the pace of economic growth, and, during and after a war, economic recovery. It is banks that organize payments, performing both economic and social functions. In addition, the resource potential of banks allows them to provide loans to meet the current needs of economic entities and to finance investment and innovation projects. The banking system plays a key role in providing financial and credit services to the economy and ensuring economic recovery in the war-affected areas.

Analysis of recent research and publications. The concept of banking efficiency is quite broad. Many works of domestic and foreign scholars are devoted to its study. Some scholars view efficiency as the correspondence of the results of banking institutions' activities to the basic social needs, goals, and interests of society and an individual, which is achieved through the interaction of the banking system with the state and the public and manifests itself in the social effect for society. This opinion

is shared by I. P. Senyshch, S. O. Khailuk, V. V. Ohorodnyk, N. I. Kozmuk [1; 2; 3].

Other scholars, such as V. V. Kovalenko, consider the efficiency of banking activities in the context of organizational and functional levels: banking system, banking institution, structural unit of the bank [4], including the scientist considers banking efficiency through a set of goals, actions aimed at the effective operation of a banking institution through coordination and efficient use of resources, as well as the choice of the most effective methods and ways to ensure it with the full implementation of the functions assigned to banks [5].

The assessment of banking efficiency using the system of indicators of operational efficiency and profitability was carried out by Yu. V. Nikolaienko [6], Y. I. Chaikovskiy [7], and many others.

The efficiency of the banking system in the works of scientists is also considered as the ability to implement and apply the latest banking technologies. In this direction, efficiency is considered by Dovhan Zh. M. [8], Khutorna M. E., and Kostohryz V. G. [9].

Thus, many works of domestic scientists are devoted to the issue of banking efficiency, however, in the conditions of war and a decrease in the country's economic potential, constant monitoring of the efficiency and stability of the banking system is a guarantee of timely identification of problems and allows solving

the identified problems at an early stage. Such studies help to identify trends in the banking sector and ensure the stability of money circulation.

Formulation of the goals of the article (statement of the task). The aim of the article is to determine the operational efficiency and profitability of the Ukrainian banking system in the context of destructive events in the economy. The objectives of the study are to analyze the performance of banking activities over the past 10 years, assess the profitability and operational efficiency of banks, and review the forecast indicators of the banking system's stability in the short term.

Presentation of the main research material. The banking system is the “circulatory system” of the country's financial system. It is thanks to banks that cash flows are ensured both within the country and in foreign economic activity. Despite the numerous challenges faced by banks during the war, the banking system continues to operate steadily. This situation in the banking sector is facilitated by the fact that since 2014, the National Bank of Ukraine, as a regulator, has taken several measures to ensure stability in the banking market both during the COVID-19 epidemic in 2020–2021 and during the full-scale invasion of Ukraine by the Russian Federation, which began in February 2022. The National Bank of Ukraine has been gradually implementing the financial regulation provisions of the EU-Ukraine Association Agreement,

conducting comprehensive asset quality reviews (AQRs) and stress tests, and raising and enforcing capital and liquidity ratios.

Many banks that did not meet these standards were liquidated or nationalized. As a result, the number of banks more than halved between 2015 and 2022 (Figure 1).

Figure 1 shows that over the past 10 years, the number of banks has decreased by 2.5 times. At the same time, the financial performance of the banking system has improved and in 2023 reached its highest level in the last decade. During this period, the domestic economy experienced several severe shocks: the beginning of Russia's invasion of Ukraine, which resulted in the occupation of parts of Donbas and Crimea and active hostilities in eastern Ukraine in 2014–2015; the coronavirus pandemic and forced lockdowns in 2020–2021; and Russia's full-scale invasion in 2022. All these shock events hurt the economy in general and the banking system in particular. The banking system suffered the greatest losses in 2015 due to the sharp depreciation of the hryvnia, the impossibility of the NBU's foreign exchange interventions due to the lack of gold and foreign exchange reserves, premature withdrawal of deposits by households, resulting in a reduction in the resource base, and a decrease in active operations of banks, namely lending. All these factors led to significant losses in banking operations. After the 2014–2015 crisis, the National Bank of Ukraine took some measures

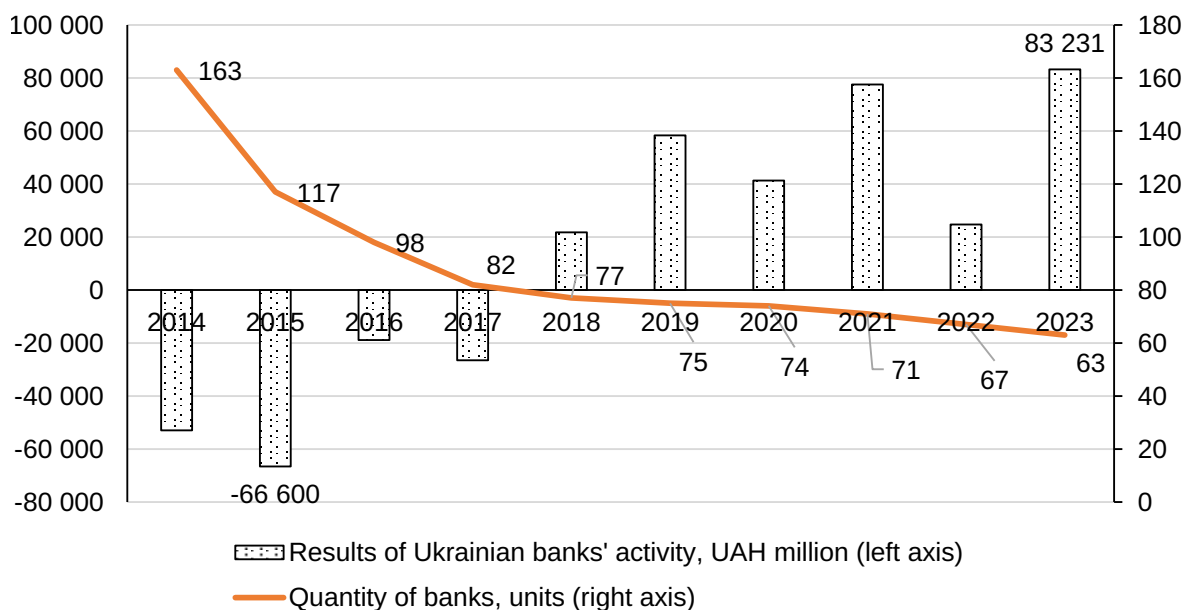


Figure 1. Quantity of Ukrainian banks and their financial performance in 2014–2023

Source: compiled by the authors according to reference data [10; 11]

to sanitize the banking system: banks whose operations did not meet the standards lost their banking licenses; a systemically important bank, JSC CB PrivatBank, was nationalized, which prevented its bankruptcy and, as a result, panic among depositors in the banking market; requirements to asset and capital quality were increased; and in 2018, the results of stress testing of 24 banks were published for the first time.

Figure 1 shows that Ukraine's banking system made its first profit in 2018, meaning that the banking market stabilized during this period, and profits increased the following year. In 2020, financial performance declined by almost 30% due to forced lockdowns during the coronavirus crisis and banks increasing provisions for expected losses. In 2021, the banking system has already adapted to the pandemic restrictions and almost doubled its profits compared to the previous year.

In 2022, the full-scale invasion of Ukraine by the Russian Federation was a shock event for domestic banks. The occupation of part of the territory, the loss of property by banks in the occupied territory, the destruction of property during shelling, and the forced suspension of branches due to a lack of electricity led to a decrease in banking profits. However, despite all the destructive factors, the banking system has resisted and continued to perform its core function as a financial intermediary. Despite the difficulties, banks made profits at the end of the year that were higher than the financial result of 2018. In 2023, there was a significant increase in banking profits, and the financial result of 2023 was the largest in the last 10 years, which indicates adequate actions by the regulator and the financial strength of domestic banks that have been built up by this year.

The main factor behind the significant difference in profitability between 2022 and 2023 was the significantly lower allocations to provisions for losses from active operations, which decreased by 86% over the year. In total, since the start of the full-scale invasion, banks have made provisions of UAH 133 billion, of which only UAH 17 billion in 2023. In December 2023, by changes to the legislation, banks charged an additional annual income tax based on the results of 2023 at a higher rate of 50% [12].

The DuPont model is mostly used to assess the efficiency of the banking system. This methodology examines the relationship between

a bank's profitability and risk indicators and determines the impact of certain factors on its performance. The most important indicators for analyzing banking performance are return on assets (ROA) and return on equity (ROE). In addition to ROA and ROE, the bank's performance is measured by the Cost to Income Ratio (CIR), which reflects the efficiency of the bank's operations in terms of operating expenses incurred by the bank to generate one unit of profit. CIR is one of the key performance indicators for banks and the banking system. Figure 2 shows the dynamics of the above performance indicators of the Ukrainian banking system.

As shown in Figure 2, the dynamics of all banking performance indicators are closely linked to external factors, namely macroeconomic shocks to the domestic and global economies. For example, the spillover effects of the COVID-19 pandemic affected the return on assets and capital of banks in Ukraine and globally and reduced them in 2020. For the most part, those were the forced lockdowns that led to a decline in profits and, as a result, in the profitability of banking activities. At the same time, operating expenses per UAH 1 of operating income increased in this period, indicating a decline in the efficiency of banks. The same developments in return on assets and equity (ROA and ROE) occurred in 2022. Due to the full-scale war, the profitability of banking activities declined significantly. However, the increase in the CIR was avoided due to the banks' optimization of operating expenses. In 2023, there was already a stabilization in banking in terms of profitability, with a significant year-on-year improvement to ROA of 3.25% and ROE of 30.4%. At the same time, the CIR indicator deteriorated significantly (it increased to 78%), which is due to the increase in operating expenses due to the increase in the income tax rate for banks from 18% to 50%.

In European practice, a CIR of around 65–70% is considered "conditionally safe". If this ratio is higher, banks are considered to have significant risks that operating profits will not be able to cover their expected losses (called "provisions" or "credit risk") [13]. In other words, due to significant income tax payments by Ukrainian banks in 2023, the CIR rose to a level higher than critical.

Considering all the performance indicators of the banking system, it can be noted that 2021 was the most efficient year for the Ukrainian banking

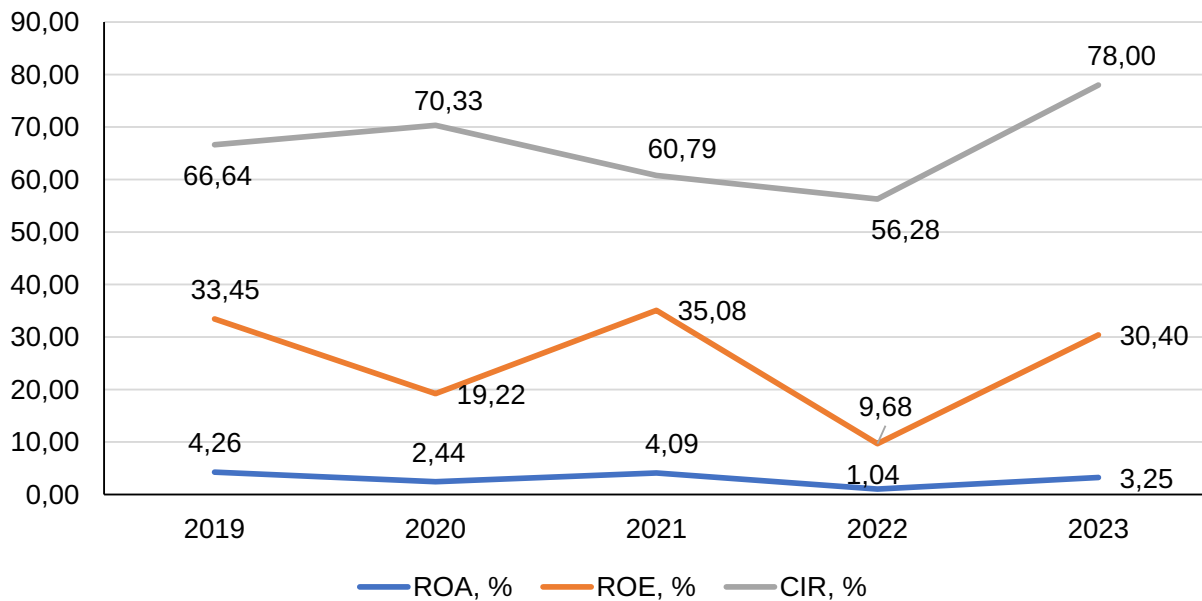


Figure 2. Performance indicators of the banking system of Ukraine in 2019–2023

Source: compiled by the authors according to reference data [10; 11]

system over the past five years. However, taking into account such a factor as the war on the territory of our country, the banking system proved its resilience and demonstrated the ability to work effectively in tough conditions in 2023. Despite a significant corporate income tax rate increase, the sector remained highly profitable, ensuring its sustainability.

The efficiency of banks is impossible without ensuring the sustainability of the banking system. The National Bank of Ukraine regularly assesses the sustainability of domestic banks and develops medium-term forecasts of their sustainability. The NBU mainly focuses on the core capital adequacy ratio (R3), as its compliance is the key to financial stability.

According to the National Bank of Ukraine statistics, banks increased their capital in the second half of 2023 due to high profits. The NBU's resilience assessment confirms that most bank capital is adequate and the system is highly resilient, with only five banks subject to increased capital requirements. The banking sector's capital is expected to grow even under a conservative scenario. Taxation of "excess profits" of banks will slow capital growth, but will not threaten the system. Thus, there are all the prerequisites for further restoration and introduction of new capital requirements [14]. The main requirements are as follows:

- from the beginning of 2024, the full amount of non-core assets is deducted from the capital (in 2023, only 75% was deducted);

- from the beginning of 2024, risk-weighted assets will include 100% of the estimated amount of operational risk (in 2023, only 50%);
- since May, banks have been updating the calculation of operational risk based on the latest financial statements (the calculation has not been updated since February 2022);
- after the test calculation, banks will take into account the calculated amount of market risk in their capital adequacy ratios;
- the requirements for the capital structure will be updated starting in August: the minimum values of Tier 1 capital adequacy are 5.625%, and the minimum values for Tier 2 capital are 7.5% [14].

The new proposed changes should have a positive impact on banks. The transition to the new capital structure will allow them to include retained earnings directly in their Tier 1 core capital, subject to certain requirements. Thus, banks will have no difficulty in meeting the requirements, which increase the resilience of the sector and bring regulatory requirements closer to those in Europe.

Based on the current level of banks' core capital and trends in its change, the NBU forecasts the following amounts of the core capital adequacy ratio in the medium term (Figure 3).

As we can see from Figure 3, even after taking into account the operational risk that may be realized and the increased corporate income tax rate, the capital adequacy ratio will be much higher than the regulatory one and

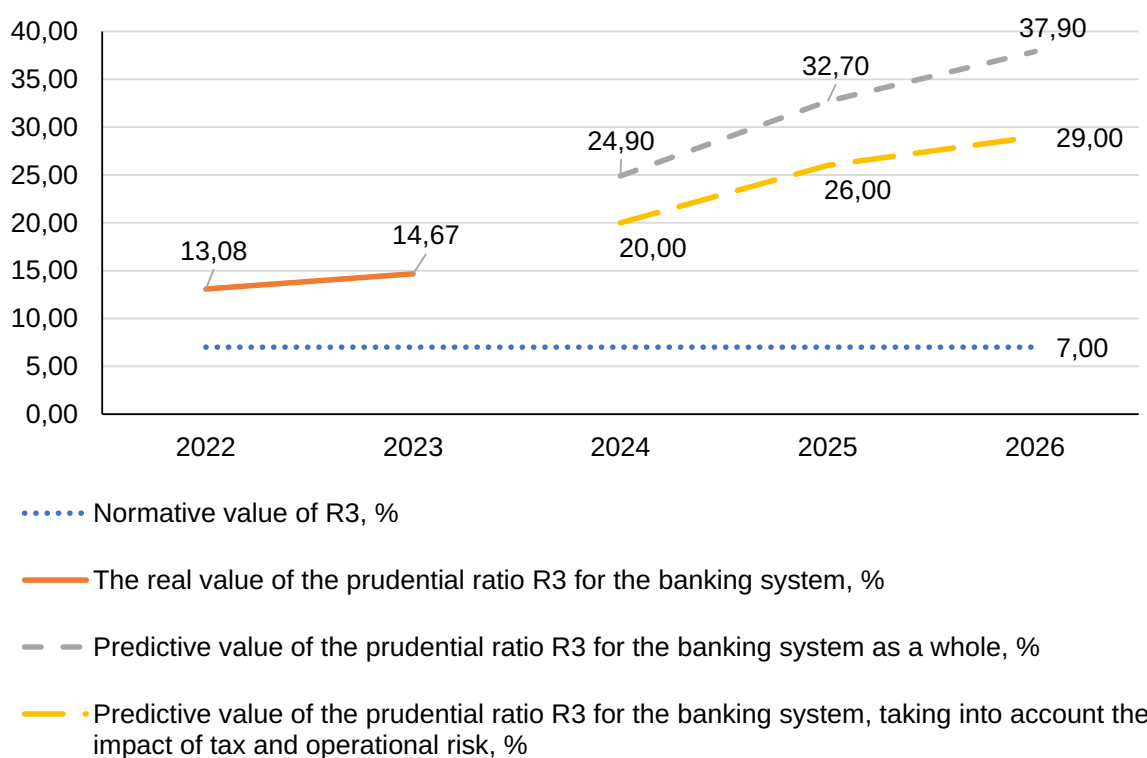


Figure 3. Weighted average of real and predictive values of the core capital adequacy ratio (R3) of Ukrainian banks based on the results of the resilience assessment

Source: compiled by the authors according to reference data [14; 15]

will grow every year. Thus, we can conclude that the National Bank of Ukraine forecasts further strengthening of the banking system's resilience.

Conclusions. A study of Ukraine's banking system for 2019–2023 has identified the main external threats to the financial security of the banking sector. These include:

- protracted military operations on the territory of Ukraine;
- economic recession;
- depreciation of the national currency and inflation;
- capital outflow from the country;
- cyber attacks by the aggressor and physical destruction of infrastructure.

The NBU's forecasts show that the banking system retains the ability to generate profits and increase capital even with an increased corporate income tax rate and growing operational risks. Given this, we consider it appropriate to propose the following areas for using the banking system's profits:

1. Covering unexpected losses from risks realized during the war.

2. Lending to the leading sectors of the economy and restoring Ukraine's critical infrastructure.

3. Further building up the capital conservation buffer and the buffer of systemic importance.

Despite the challenging environment, the financial sector continues to operate steadily, with customers maintaining high confidence in banks and banks increasing lending to businesses and households. Given the existing military risks, the financial sector plays an increasingly important role in economic recovery. The profits accumulated by the banking system in 2023 will allow banks to meet the NBU's new capital requirements, which will ensure the stability of banking operations in future periods. If the profitability of banking activities is maintained and the state does not withdraw half of the banking profits in taxes to the state budget, banks will play a leading role in the post-war economic recovery. Banking profits will be channeled into active lending operations to the domestic economy and the restoration of the lost infrastructure and property.

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