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Effective functioning of financial services market players in the context of sustainable development of Ukraine's financial system

Funcionamiento eficaz de los actores del mercado de servicios financieros en el contexto del desarrollo sostenible del sistema financiero de Ucrania

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Resumen

Este artículo tiene como objetivo investigar las especificidades del funcionamiento efectivo de los participantes del mercado de servicios financieros en el contexto del desarrollo sostenible del sistema financiero ucraniano. Metodología. El estudio se lleva a cabo utilizando un enfoque sistemático y métodos analíticos, incluido el análisis legal de los cambios legislativos y el análisis comparativo, para examinar la eficiencia de los participantes del mercado de servicios financieros en el contexto del desarrollo sostenible en el sistema financiero ucraniano. Específicamente, se realiza un análisis sistemático de las actividades de los participantes clave en el ecosistema financiero de Ucrania, a saber, bancos, compañías de seguros, cooperativas de crédito, compañías financieras y casas de empeño. Los resultados revelan un aumento notable en la magnitud de las actividades realizadas por los principales participantes en el mercado financiero, como lo demuestra el crecimiento de sus activos, pasivos, rendimientos y rentabilidad. Al mismo tiempo, ha habido una reducción en el número de bancos, compañías financieras, compañías de seguros, uniones de crédito y casas de empeño. Esta tendencia puede atribuirse a la implementación de requisitos regulatorios más estrictos y ajustes en los principios, enfoques y herramientas de la regulación macroprudencial, que han sido fundamentales para mantener la estabilidad financiera en el contexto ucraniano. Un examen de la dinámica de los indicadores de estabilidad financiera en Ucrania demuestra que la suficiencia de capital de los bancos se mantuvo estable en 17,6 % durante el período que va de 2010 a 2022. Sin embargo, en tiempos de crisis, el nivel de estabilidad financiera en Ucrania experimenta una disminución, marcada por mayores riesgos de cumplir con las obligaciones, una disminución en el índice de capital ponderado por riesgo (RWA) de nivel 1 y un aumento en la proporción de préstamos en mora. El análisis reveló una concentración sustancial de préstamos morosos (NPL) en bancos estatales, que representan aproximadamente el 75% del total de NPL. Además, existe una notable concentración de préstamos en el sector privado, con un promedio de 69% observado de 2010 a 2022. La rentabilidad del sector financiero ha mostrado una tendencia al alza desde 2018, con crecimientos particularmente notables en 2019 y 2021. El nivel de liquidez sirve como indicador de la capacidad del sector de depósitos para resistir las fluctuaciones en los balances de los proveedores de servicios financieros. La posición abierta neta en Ucrania significa una exposición significativa de las empresas financieras a los riesgos cambiarios, particularmente durante tiempos de crisis, lo que indica un alto grado de vulnerabilidad a las fluctuaciones cambiarias. La importancia práctica de este artículo reside en la evaluación empírica de la eficacia mostrada por los participantes del mercado de servicios financieros en Ucrania. Esta evaluación se realiza en el marco de la implementación de una estrategia destinada a fomentar el desarrollo del ecosistema financiero para apoyar el crecimiento económico sostenible.

Palabras clave: sistema financiero, componentes del sistema financiero, mercado financiero, servicios financieros, recursos financieros, innovaciones financieras, tecnologías del sector financiero.

Abstract

This article aims to investigate the specificities of the effective functioning of financial services market participants in the context of the sustainable development of the Ukrainian financial system. Methodology. The study is conducted using a systematic approach and analytical methods, including legal analysis of legislative changes and comparative analysis, to examine the efficiency of financial services market participants in the context of sustainable development in the Ukrainian financial system. Specifically, a systematic analysis is performed on the activities of key participants in the financial ecosystem of Ukraine, namely banks, insurance companies, credit unions, financial companies, and pawnshops. The findings reveal a notable increase in the magnitude of activities undertaken by the primary participants in the financial market, as evidenced by the growth in their assets, liabilities, yields, and profitability. Concurrently, there has been a reduction in the number of banks, financial companies, insurance companies, credit unions, and pawnshops. This trend can be attributed to the implementation of stricter regulatory requirements and adjustments in the principles, approaches, and tools of macroprudential regulation, which have been instrumental in upholding financial stability within the Ukrainian context. An examination of the dynamics of financial stability indicators in Ukraine demonstrates that the capital adequacy of banks remained steady at 17.6% during the period spanning 2010 to 2022. However, during times of crisis, the level of financial stability in Ukraine experiences a decline, marked by heightened risks of fulfilling obligations, a decrease in Tier 1 risk-weighted capital ratio (RWA), and an increase in the proportion of non-performing loans. The analysis revealed a substantial concentration of non-performing loans (NPLs) in state-owned banks, accounting for approximately 75% of the total NPLs. Furthermore, there exists a notable concentration of loans in the private sector, with an average of 69% observed from 2010 to 2022. The profitability of the financial sector has demonstrated an upward trend since 2018, with particularly notable growth in 2019 and 2021. The level of liquidity serves as an indicator of the deposit sector's ability to withstand fluctuations in the balance sheets of financial service providers. The net open position in Ukraine signifies a significant exposure of financial companies to currency risks, particularly during times of crises, indicating a high degree of vulnerability to currency fluctuations. The practical significance of this article resides in the empirical evaluation of the efficacy displayed by financial services market participants in Ukraine. This assessment is conducted within the framework of implementing a strategy aimed at fostering the development of the financial ecosystem to support sustainable economic growth.

Keywords: financial system, financial system components, financial market, financial services, financial resources, financial innovations, financial sector technologies.

Introduction

In the backdrop of armed conflict, a profound economic crisis, and a notable 29.1% decline in GDP in 2022, the matter of securing stability within the financial system, fostering its sustainable development, and ensuring the effective functioning of financial services market participants in Ukraine assumes utmost importance. Throughout the war, the financial sector experienced a relatively slower rate of performance deterioration compared to other sectors, primarily attributable to the uninterrupted operation of the financial system despite power outages and disruptions. Notwithstanding the decrease in the number of financial institutions, Ukraine persisted in observing an upward trajectory in its aggregate assets. The implementation of anti-crisis measures by the National Bank of Ukraine (NBU) and the government, with the assistance of international partners, has played a crucial role in gradually stabilizing the macroeconomic landscape. Notable measures encompassed facilitating the uninterrupted operation of the banking and payment systems, establishing a fixed official exchange rate, and imposing restrictions on foreign exchange transactions and capital flows. These measures effectively curtailed panic and substantially mitigated uncertainty for households and businesses. Consequently, a foundation was laid for the reinvigoration of economic activity after the initial shock of the war (National Bank of Ukraine, 2023f).

The objective of this article is to investigate the distinctive characteristics associated with the effective functioning of financial services market participants within the framework of promoting the sustainable development of Ukraine's financial system.

Literature review

The scientific literature currently lacks comprehensive research addressing the effective functioning of financial services market participants within the context of sustainable development in the financial system. This research gap can be attributed to the predominant focus of scholars on various issues within the financial market and the examination of its components (such as credit, stock, investment, insurance, etc.). For instance, a study conducted by Seliverstova and Adamenko (2018) identified several key challenges facing the financial market in Ukraine. These challenges include political and financial instability within the country; the subpar quality of assets held by market participants; diminished asset liquidity, particularly evident during times of crises; a lack of public confidence in the banking system; an imperfect and volatile regulatory framework; and a pronounced susceptibility of the financial system to the exchange rate policies implemented by the National Bank of Ukraine (Seliverstova & Adamenko, 2018).

Research conducted on financial services market participants within the European Union (EU) primarily centers on examining factors related to the profitability and stability of financial institutions. Additionally, studies explore avenues for enhancing performance, such as technology and digital innovation, digital finance, and customer-centric approaches. Furthermore, there is considerable interest in investigating the interconnectedness between the financial sector and economic growth within the EU context.

Based on the findings of a study conducted by Petria, Capraru, and Ihnatov (2015), several factors were identified as influencing the profitability of banks within the European Union (EU27), including credit and liquidity risk, business diversification, management efficiency, market concentration/competition, and economic growth. Moreover, the study revealed a positive relationship between competition and bank profitability in the EU27 (ROAA and ROAE) (Petria, Capraru, & Ihnatov, 2015). In another investigation by Kasman and Kasman (2015), focusing on the Turkish banking industry from 2002 to 2012, the impact of competition and concentration indicators on banking stability, as measured by the non-performing loans (NPL) ratio, was examined. The results indicated a negative association between competition and NPL, while a higher level of concentration was found to have a positive influence on NPL. Furthermore, Buallay's (2019) empirical analysis established a positive connection between environmental, social, and governance (ESG) disclosure and banks' operational performance (return on assets), financial performance (return on equity), as well as market performance (Tobin's q).

Based on an empirical analysis conducted by Menicucci and Paolucci (2016), it was found that "size and capital ratio" play crucial roles as determinants of bank profitability at the firm level in Europe. Additionally, the study observed that higher levels of loan loss provisions are associated with lower profitability. Moreover, the results indicate that banks with higher deposit-to-loan ratios tend to exhibit higher profitability, although the impact on profitability is statistically insignificant in some cases (Menicucci & Paolucci, 2016). Furthermore, Chiaramonte and Casu (2017) empirically validate that the likelihood of bank failure decreases with an increase in structural liquidity reserves. Moreover, they found that capital ratios only significantly impact large banks within the EU-28. These findings underscore the importance of the Basel III framework concerning structural liquidity and highlight the regulatory focus on large and systemically important banks.

Gomber et al. (2018) conducted research focused on the identification of successful business models among financial services market participants, with a specific emphasis on fintech startups. The study highlights the importance of creating enhanced customer experiences and adopting transformative approaches within the financial services sector. The authors conclude that technological innovations have the potential to significantly enhance efficiency levels, customer-centricity, and consumer awareness within the financial services market (Gomber et al., 2018). In a separate study by Mergaerts and Vander Vennet (2016), the authors underscore the significant role of business models in determining the long-term profitability and stability of 500 European banks. According to Ozili (2018), digital finance and financial inclusion yield numerous advantages for various stakeholders, including financial service users, digital finance providers, governments, and economies as a whole (Ozili, 2018). In a study conducted by Akhisar, Tunay, and Tunay (2015), which examined data on e-banking services across 23 countries and their impact on bank profitability, significant associations were discovered. The findings highlight the substantial influence of the ratio between the number of branches and the number of ATMs on profitability. Additionally, the study emphasizes the crucial role of e-banking services in contributing to the performance metrics of return on assets (ROA) and return on equity (ROE).

Simultaneously, within the realm of research, several studies have pinpointed outdated IT systems and infrastructure challenges as significant issues faced by banking institutions in the European Union (EU). Notably, it has been revealed that a majority of EU banks rely on technologies that originated as far back as the 1960s. Consequently, these banking establishments find themselves at a disadvantage in the market when compared to emerging competitors such as fintech companies (Stulz, 2019). Furthermore, an evaluation of the operational state of bank IT systems conducted by the banking supervisory staff at the European Central Bank (ECB) has identified various risks associated with infrastructure operations (ECB, 2019). The presence of outdated IT systems presents a significant challenge when it comes to fostering profitability growth, managing risks, and implementing innovative technologies within the EU banking sector. Notably, the growth of bank profits is closely intertwined with the ongoing process of digitalization, which encompasses the transformation of back offices, streamlining of document management processes, automating lending decisions, and harnessing the power of big data analytics. However, according to the European Banking Authority (2020), the utilization of advanced solutions like big data analytics to attain business objectives remains limited among European institutions.

Caporale et al. (2015) conducted a study to examine the relationship between financial development and economic growth in the new member states of the European Union (EU). Their analysis involved estimating a dynamic panel model for the period spanning 1994 to 2007. The findings revealed that these economies exhibit underdeveloped stock and credit markets, resulting in limited contributions to economic growth due to insufficient financial stability and market depth. Conversely, a more efficient financial sector was found to contribute to accelerated growth. In another study, Creel, Hubert, and Labondance (2015) explored the correlations between indicators of financial instability and economic indicators. These indicators included the institutional index, microeconomic indicators, and a statistical index derived from principal components analysis. The results indicated negative associations between indicators of financial instability and economic components such as consumption, investment, and discretionary income.

Materials and Methods

A systematic approach serves as the foundation for examining the efficiency of financial services market participants in the context of sustainable development within Ukraine's financial system. This study involves a systematic analysis of the activities of key participants within Ukraine's financial ecosystem, including banks, insurance companies, credit unions, financial companies, and lessors. Moreover, an analysis of financial stability indicators for the Ukrainian financial sector from 2010 to 2022, as reported by the International Monetary Fund, is conducted. The comparison method is employed to juxtapose the financial stability indicators of Ukraine with those of the European Union. Additionally, a legal analysis is conducted to identify significant legislative innovations within Ukraine, which serve as a prerequisite for transforming the financial services market and implementing international practices that facilitate the functioning of financial ecosystem participants, ultimately fostering economic growth.

Result and discussion

Statistical analysis of financial stability indicators in Ukraine: In Ukraine, the issue of preserving and ensuring financial stability, as well as promoting sustainable development within the financial system, is of significant concern. The country has experienced a high frequency of systemic banking crises, positioning it among the top three countries globally in this regard. Notably, Ukraine has endured profound financial crises during the periods of 2008-2009 and 2014-2016, compounded by the ongoing challenge of maintaining stability amidst an ongoing war. The fiscal costs directly associated with overcoming the crisis have amounted to approximately 15% of GDP in the respective years, representing a moderate scale in comparison to other nations. However, the overall economic losses incurred as a result of these systemic crises have surpassed 38% of GDP. Such repercussions from these crises have constrained bank lending activities and impeded overall economic growth within the country (National Bank of Ukraine, 2023c). Between January 1, 2016, and April 1, 2023, the total number of banks in Ukraine experienced a significant reduction, declining from 117 to 65. Notably, in 2022 alone, the number decreased from 71 to 67. Over the period from January 1, 2016, to January 1, 2023, the average growth of banks' assets amounted to UAH 157,079 million. This growth was primarily driven by increases in foreign currency assets by UAH 21,406 million, cash by UAH 5,822 million, amounts due from the National Bank of Ukraine (NBU) by UAH 7,870 million, term deposits with other banks by UAH 3,930 million, customer loans by UAH 3,778 million, and provisions for active operations of banks by UAH 6,857 million. In terms of the composition of customer loans, as of January 1, 2023, they were allocated as follows: 2.39% to public authorities, 77.34% to business entities, and 20.26% to individuals (National Bank of Ukraine, 2023j).

Over the period from January 1, 2016, to January 1, 2023, banks in Ukraine witnessed an average annual growth of UAH 157,079 million in their liabilities. This growth can be attributed to several key factors, including an increase in capital by UAH 16,337 million, a rise in banks' liabilities by UAH 140,742 million, an annual increment of UAH 81,565 million in funds from business entities, and an annual increment of UAH 75,872 million in funds from individuals (National Bank of Ukraine, 2023j).

In early 2022, the National Bank of Ukraine (NBU) implemented a series of measures to address inflation and strengthen the financial system. The key policy rate was raised to 10% per annum, followed by a subsequent increase to 25% per annum, to achieve a steady decline in inflation towards the target of 5% (Figure 1). Additionally, the NBU increased the required reserve ratios for banks to enhance the appeal of hryvnia assets, foster exchange rate stability, and gradually reduce inflationary pressures. However, despite the NBU's rigorous monetary policy, consumer prices experienced a notable rise of 26.6% due to the fixed hryvnia exchange rate in 2022. This outcome has contributed to persistently elevated inflation expectations, underscoring the need for continued efforts to stabilize the economy

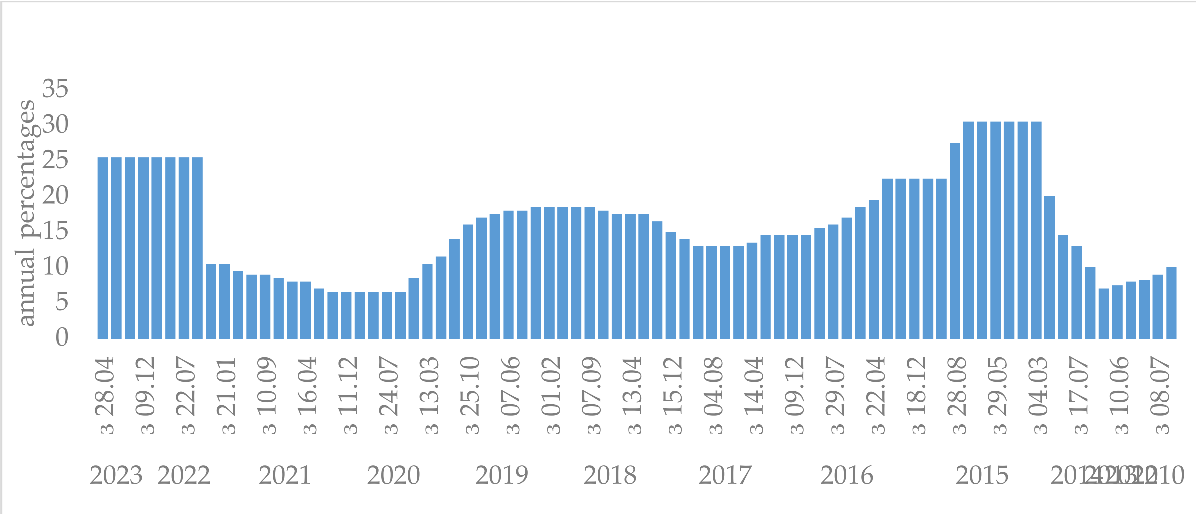

Figure 1. Dynamics of the discount rate of the National Bank of Ukraine, 2010–2023.

Source: built by the author according to the National Bank of Ukraine (2023h).

In 2022, the Russian invasion of Ukraine had a significant impact on the country's financial sector, leading to a pronounced increase in the Financial Stress Index (FSI) and its associated components. This escalation in stress indicators suggests that the strain on the financial system is pervasive and systemic. Notably, the elevated values of the FSI were driven by several factors, including heightened yields in the securities market, volatility in the cash foreign exchange market, substantial levels of foreign exchange interventions, and the NBU intervention in bank refinancing to ensure liquidity. It is worth noting that the sub-index reflecting household behavior exhibited relatively lower levels, primarily due to sustained confidence in the banking system and the absence of deposit outflows. This factor mitigated the overall growth of the FSI. Subsequently, a majority of the sub-indices experienced a decline. However, in July 2022, as the public debt restructuring loomed, government and corporate securities witnessed a sharp increase in yields. Household deposit rates also rose, and volatility persisted in the cash foreign exchange market. Consequently, the FSI returned to its March level (National Bank of Ukraine, 2023i).

In 2022, there was a notable reduction in the number of financial companies, insurance companies, credit unions, and pawnshops in Ukraine. Specifically, the figures decreased from 935 to 760 for financial companies, from 145 to 128 for insurance companies, from 205 to 162 for credit unions, and from 197 to 183 for pawnshops (National Bank of Ukraine, 2023k). This decline in participants has been an ongoing trend for at least the past five years within the insurance, credit union, and pawnshop sectors. In the majority of cases, the decision to cease operations was voluntary on the part of the market participants. There are two primary reasons behind this development. Firstly, numerous companies were not actively engaged in any substantial business activities, rendering their operations non-existent in practice. Secondly, some entities failed to comply with regulations over an extended period and opted to exit the market to safeguard their business reputation (Tymots, 2022).

The non-bank financial market in Ukraine exhibits a relatively small scale when compared to its European counterparts, signaling substantial growth potential as identified by the regulatory authority. Within the financial sector under the supervision of the NBU, non-bank financial institutions account for an 11% share of total assets. Among these institutions, financial companies hold the highest volume of assets, amounting to UAH 243.456.1 billion as of the conclusion of 2022. Notably, the assets of financial companies experienced an 18.39% growth rate throughout 2022. The assets held by insurers exhibited a minimal change in 2021, reaching UAH 64 billion, followed by an increase to UAH 70.34 billion in 2022. Conversely, credit unions and pawnshops experienced a decrease in assets during 2021, declining by 8% and 10%, respectively, to UAH 2.3 billion and UAH 3.9 billion. Subsequently, their assets further declined to UAH 1.287 billion and UAH 4.087 billion in 2022. Notably, the dynamics of these assets were primarily influenced by three key factors: the ongoing pandemic, the war situation, and voluntary market withdrawals by companies (National Bank of Ukraine, 2023k).

Insurers in Ukraine have witnessed a consistent increase in their revenues in recent years. Notably, non-life insurance services have contributed significantly to insurers' overall revenues, representing the largest share. Specifically, in 2018, non-life insurance services accounted for 56.91% of revenues, which increased to 60.48% in 2019 and slightly decreased to 59.96% in 2020. In the case of life insurance services, revenues experienced notable growth in 2019, reaching 1.23 times the 2018 figures. However, in 2020, there was a significant decline of 37.46% compared to the previous year. When considering the total income of insurers, revenue from rendering services to other insurers and other services, such as the performance of works, constitutes a negligible share, amounting to only 0.07% in 2020. Conversely, other sources of income contribute substantially to the total revenue. These include other operating income, financial income, extraordinary income, amounts from technical reserves, and other income, which accounted for 26%, 23%, and 27% in 2018, 2019, and 2020, respectively. There has been a noticeable tendency for the share of this income to fluctuate within the total income of insurers. Over recent years, Ukrainian insurance companies have experienced an increase in their expenses. Specifically, as of December 31, 2018, the total expenses for all types of activities among insurers amounted to UAH 36,618,216.1 thousand. The subsequent year witnessed an 11.81% increase, with expenses totaling UAH 40,942,623.8 thousand. By December 31, 2020, the total expenses reached UAH 42,632,643.8 thousand, indicating a 4.13% increase compared to the same period in 2019. When analyzing the breakdown of expenses, it becomes evident that operating expenses account for a significant portion of insurers' total expenses. This category includes insurance payments and deductions, acquisition costs, and administrative expenses. In the context of 2020, operating expenses represented 72.95% of the total expenses of insurers. It is noteworthy that certain insurance companies in Ukraine, such as "Alliance," "Aska," "Arsenal Insurance," "Alfa Strahuvannya," and "Uniqa," managed to maintain their positions in the insurance market throughout the crisis period from 2019 to 2021. Moreover, these companies were able to improve their financial results due to the ongoing relevance of insurance services (Artym-Drohomyretska et al., 2022).

The study reveals that the average capital adequacy ratio of banks in Ukraine stood at 17.6% during the period from 2010 to 2022, with a standard deviation of 2.9%. Notably, the ratio experienced a significant decline to 12.7% during the 2016 crisis, signifying a heightened vulnerability of Ukrainian banks during that period. Furthermore, the impact of the pandemic on the banking sector became evident through the decline of the Regulatory capital to risk-weighted assets indicator, which dropped to 18%. This reduction indicates an increased risk among Ukrainian banks, with a higher likelihood of potential difficulties in meeting their obligations promptly and in full.

The study reveals that the Tier 1 risk-weighted capital ratio (RWA) experienced a notable decline to 9% in 2016. However, it should be noted that this figure still exceeded the minimum requirement of 6% as stipulated by the Basel III framework. Examining the broader period of 2010-2022, the average value of this indicator stood at 12.5%, with a standard deviation of 2.2%. These findings suggest a generally adequate level of financial stability within the specified timeframe.

The calculation of non-performing loans net of capital allowance involves dividing the value of non-performing loans (NPLs) after deducting specific loan provisions by the capital amount. This ratio serves as an important metric in assessing the financial health of banks.

Examining the trend in Ukraine, the share of non-performing loans experienced a notable increase, reaching 39% in 2016 and further rising to 54.8% in 2017. Subsequently, the ratio exhibited slight fluctuations before eventually declining to 31.7% in 2021. The significant upswing in the NPL ratio observed from 2015 to 2017 can be attributed to three key factors:

1. The initial factor contributing to the notable increase in the non-performing loan (NPL) ratio during the period of 2015-2017 was the National Bank of Ukraine's (NBU) implementation of the Asset Quality Review (AQR). This evaluation prompted banks to reassess the quality of their assets, leading to the identification of a significant number of loans as non-performing.
2. Additionally, the introduction of a more stringent definition of the term "non-performing loan" in alignment with international standards, as outlined in NBU Board Resolution No. 351, played a crucial role in the observed rise in the NPL ratio.

3. Furthermore, the nationalization of the Privatbank resulted in the recognition of a considerable number of non-performing loans by the institution.

During the ongoing war, the non-performing loan (NPL) ratio experienced a notable increase, reaching 38.1%. Moreover, the volume of NPLs surged by UAH 127 billion, totaling UAH 432 billion between March and December 2022. Notably, approximately 75% of these NPLs are concentrated in state-owned banks, with Privatbank alone accounting for over 40% (UAH 178.741 million) and Oschadbank for UAH 67.739 million. The repercussions of the war have had a profound impact on the financial landscape, resulting in the destruction of assets and collateral, diminished revenues, and a decline in the solvency of borrowers. These adverse circumstances have significantly impeded borrowers' ability to service their loans, consequently deteriorating the overall quality of loan portfolios and necessitating increased provisioning to address the mounting risks. Amid the full-scale war and its subsequent economic ramifications, banks have encountered substantial credit losses. As of the end of February 2022, loan loss provisions have surpassed UAH 100 billion, constituting more than 12% of the banks' loan portfolio. Notably, the potential losses within the loan portfolio, attributed to the war, the economic crisis, and the energy-related actions of the aggressor country, are projected to reach up to 30% (National Bank of Ukraine, 2023g).

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Table 1. Dynamics of financial stability indicators of Ukraine, 2010–2022

	2010	2016	2017	2018	2019	2020	2021	2022	Average, 2010-2022	Standard deviation 2010-2022
Regulatory capital to risk-weighted assets	20,8	12,7	16,1	16,2	19,7	22,0	18,0	19,7	17,6	2,9
Tier 1 capital to risk-weighted assets	15,1	9,0	12,1	10,5	13,5	15,7	12,0	13,1	12,5	2,2
Nonperforming loans to total gross loans	15,3	39,0	54,8	54,4	50,5	43,5	31,7	38,1	33,6	14,7
Loan concentration by economic activity, %	74,6	68,2	67,2	66,2	67,7	68,2	69,4	66,8	69,0	3,2
Provisions to nonperforming loans	66,6	71,0	81,1	86,0	90,4	89,3	91,6	83,2	75,2	11,9
Return on assets	-1,5	-12,5	-1,8	1,6	4,7	2,8	4,5	1,5	-0,8	4,6
Return on equity	-10,2	-121,9	-17,6	11,3	34,8	20,0	35,0	11,0	-10,4	43,0
Interest margin to gross income	66,0	45,9	50,2	52,0	47,4	45,0	53,1	52,1	52,7	8,1
Noninterest expenses to gross income	61,9	60,9	76,1	61,9	55,6	60,8	61,2	48,5	61,3	6,7
Liquid assets to total assets	44,8	64,6	70,2	70,1	72,3	69,1	69,2	-	60,3	10,0
Liquid assets to short-term liabilities	91,2	92,1	98,4	93,5	94,4	86,8	89,1	-	91,5	3,5
Net open position in foreign exchange to capital	39,8	57,1	43,3	47,0	47,4	32,8	30,7	45,6	39,7	9,3

Source: calculated by the author according to the National Bank of Ukraine (2023f), International Monetary Fund (2023).

By way of comparison, the European Union (EU) exhibits a considerably lower ratio of non-performing loans to total loans, ranging between 5% and 10%. In 2016, the volume of non-performing loans within the EU peaked at over EUR 1 trillion. However, by the end of 2020, the total amount of non-performing loans decreased to EUR 468 billion. Notably, the overall share of non-performing loans exhibited a decline from 7.48% in June 2015 to 1.79% in September 2022 (Figure 2) (European Central Bank, 2023a). It is important to highlight that certain banking institutions continued to grapple with persistently high levels of non-performing loans, albeit experiencing a gradual reduction in their non-performing loan portfolios.

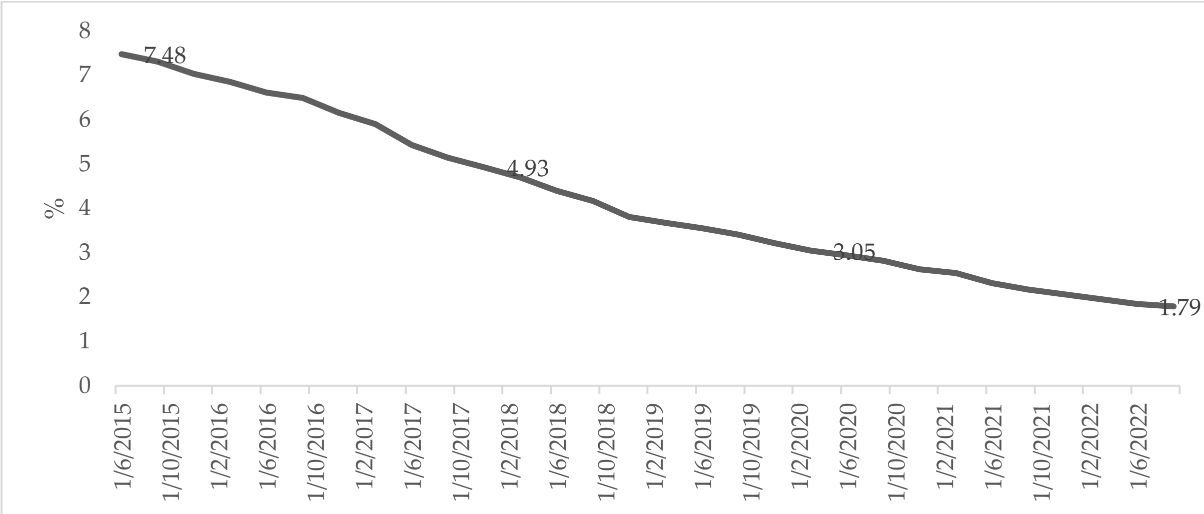

Figure 2. The dynamics of the share of non-performing loans in the EU for the period 30.06.2015–30.09.2022
Source: European Central Bank (2023a).

The concentration of loans by type of economic activity averaged 69%, with a deviation of 3.2% in 2010-2022. Thus, there is a negative trend in Ukraine toward the concentration of the loan portfolio, and the concentration of banks' lending operations in certain industries or in a group of interrelated industries, which causes systemic risk in the event of an economic downturn.

During the period spanning 2010 to 2017, Ukraine exhibited negative trends in terms of return on assets and return on capital, with a substantial decline in 2016 to 12.5% and 121.9%, respectively. However, since 2018, the financial sector's profitability has demonstrated a growth trajectory, particularly evident in 2019 and 2021. The net interest margin, representing the gross profit of financial institutions in Ukraine, maintained an average of 52.7%, although it experienced declines in 2016 as well as in 2019-2020. Consequently, interest income generally surpassed interest expenses. Turning to the liquid assets ratio, which reflects the available liquidity for meeting anticipated and unforeseen cash requirements, it averaged 60.3% from 2010 to 2020, with an upward trend since 2016. This liquidity level signifies the deposit sector's capacity to withstand fluctuations in the financial service providers' balance sheets. Furthermore, the net open position in Ukraine indicates a pronounced foreign exchange risk, highlighting the exposure of financial companies, particularly during times of crises, to fluctuations in foreign exchange rates.

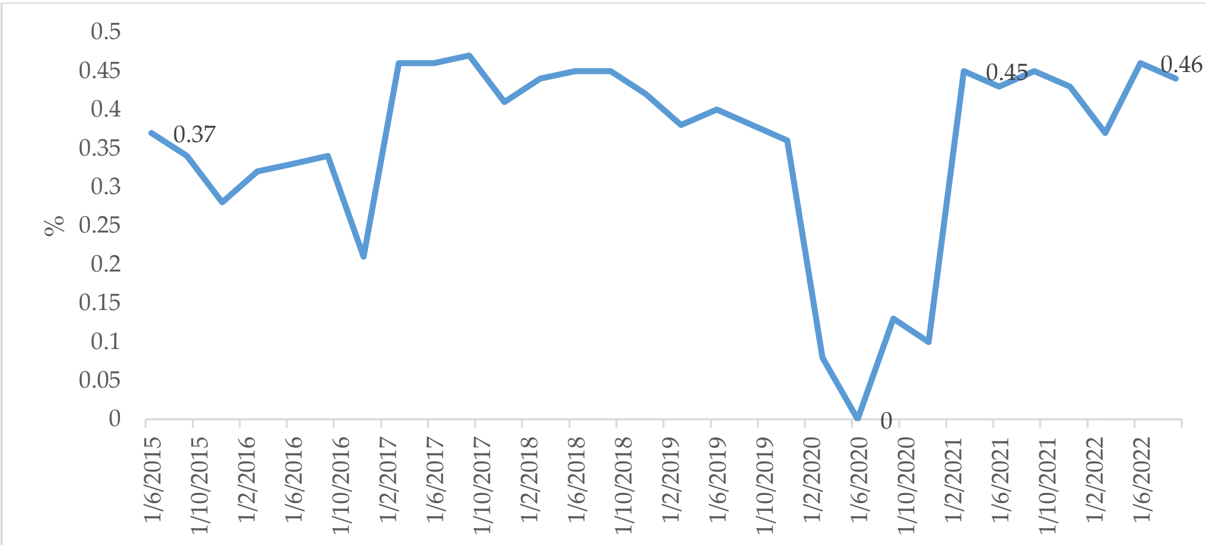

Figure 3. Dynamics of return on assets of the EU financial sector for the period 30.06.2015–30.09.2022, %.
Source: European Central Bank (2023b).

For comparison, financial sector profitability in EU countries is low for many reasons (Figure 3). After 2008, the EU introduced a requirement for a mandatory leverage ratio, which indirectly led to a restriction on the return on capital. Consequently, the EU saw a downward trend in stock market prices for the financial sector, which signaled relatively low market confidence in the sector's medium-term profitability.

The continued low level of profitability of EU financial institutions for such a long period may indicate the existence of structural factors related to the low level of interest rates and the complex cost structure of EU banks.

Differences in the key indicators of financial stability between Ukraine and the EU are due to different institutional, legal, political, market, cultural, and historical conditions, which determine the differential efficiency of financial ecosystems. Therefore, there is a gap in the development of the financial sector, institutions, and legal framework for its regulation within the member states. For instance, Ukraine has a different financial system structure from the EU and a different level of maturity in the financial services market (Figure 4), which affects the level of trust in service providers and the development of the system.

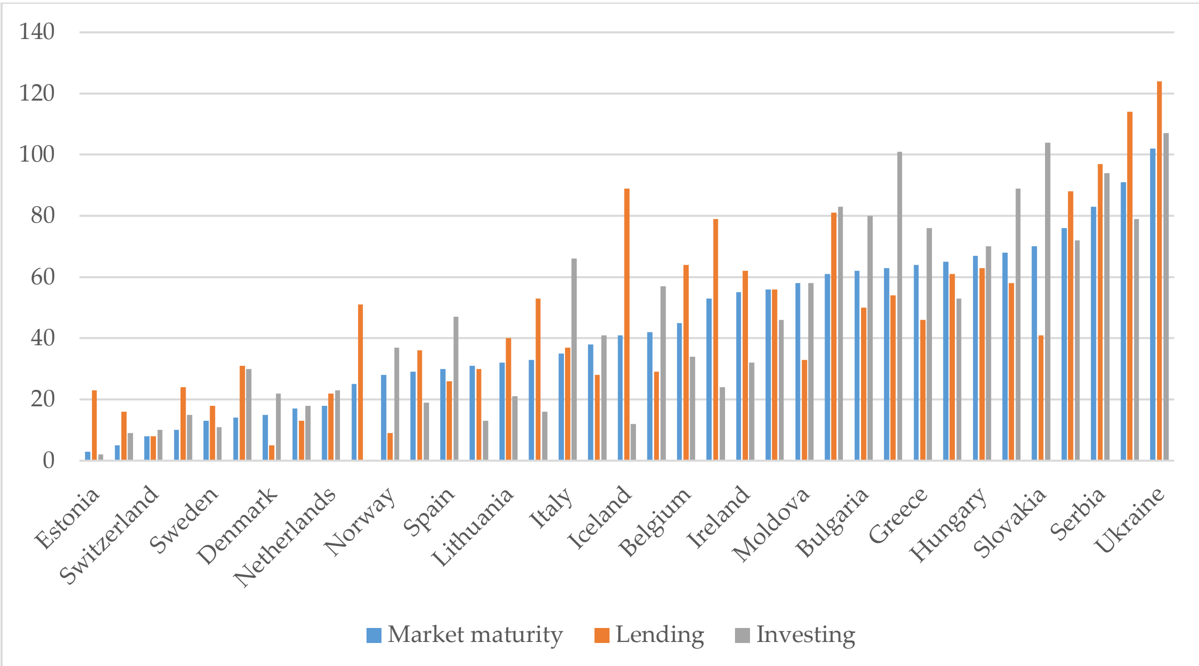

Figure 4. Ranking of European countries by market maturity (in terms of lending and investment) according to the Global Innovation Index, 2022.

Source: built by the author based on the World Economic Forum (2023).

To address the problem of differentiation in market structure and maturity, EU regulators are creating a common institutional and legal environment by harmonizing legislation and forming a common financial market. One of the challenges for the EU and Ukraine is to develop a unified legal framework for regulating the financial sector in line with its maturity level. It is also advisable for Ukraine to update the legal framework for regulating and supervising financial institutions in line with EU practices and the needs of the economy in times of war.

The Law of Ukraine "On Financial Services and State Regulation of the Financial Services Market," enacted in 2001, underwent a review by the Verkhovna Rada of Ukraine (VRU) in 2020. The prolonged absence of amendments resulted in a misalignment between the provisions of the fundamental legislation and the evolving realities and requirements of the economy and financial services market participants. Furthermore, the existing legal framework lacked provisions that adequately address the emerging trends in the global financial infrastructure, including digital advancements. Banking and capital market operations in Ukraine are governed by distinct legislative norms, leading to a lack of uniformity in defining corresponding provisions for different segments of the financial market. This fragmented approach hinders effective regulation and oversight. Notably, the absence of regulatory measures within the key legal framework on non-bank financial institutions, apart from insurers and credit unions, is a significant concern. This deficiency extends to areas such as licensing, activity requirements, and supervision, which necessitate a differentiated approach based on the level of risk associated with these activities.

Given the above, Ukraine adopted Law No. 5065 "On Financial Services and Financial Companies". It became the fundamental basis for the aggregate financial services market, established key principles and principles of market activity, ensured consumer protection in the provision of such services, and state regulation and supervision of activities in the financial services market (Verkhovna Rada of Ukraine, 2023c).

Law No. 5065 "On Financial Services and Financial Companies", which is a new version of the Law "On Financial Services and State Regulation of Financial Services Markets", serves as the basis for aligning the requirements for market participants, supervision, and regulation with international practices. The main objective of Law No. 5065 is to create opportunities for the development of financial institutions in various segments, which will ensure the functioning of an efficient financial services market as an integral part of the Ukrainian economy (Verkhovna Rada of Ukraine, 2023c).

Law No. 5065 defines the following innovations (Verkhovna Rada of Ukraine, 2023c):

a) establishing universal provisions on state regulation of the financial services market to ensure uniformity of their application;

b) consolidation of the role and interconnection of financial services with related services, such as support, ancillary and intermediary services. According to Law No. 5065, financial services include: 1) insurance; 2) lending; 3) attracting refundable funds; 4) financial leasing; 5) factoring; 6) providing guarantees; 7) trading in currency values; 8) financial payment services; 9) capital market services; 10) services in the field of funded pension provision. Additional services include: 1) intermediary services; 2) auxiliary services (consulting, expert information services, risk assessment (including actuarial risk) or solvency, claims settlement, identification and verification of persons, collection, and processing of documents, provision, and transmission of financial information, data processing, cash collection, etc.);
c) expanding the opportunities for financial institutions to provide new types of services to deepen their permeation into the financial services market. For instance, Law No. 5065 defines the following concepts: "outsourcing - the transfer of work or functions (processes) of a financial service provider performed by its employees to other persons on a contractual basis to optimize costs and processes; and outstaffing – the engagement of personnel of another company by a financial service provider to perform work or functions (processes)";
d) a fundamental change in the approach to licensing - moving away from licensing types of financial services and licensing the type of activity of a financial institution to provide a particular financial service, while including such an institution in the relevant register to simplify the process of market access and increase the efficiency of regulation;
e) introduction of modern principles of prudential supervision and market behavior supervision;
f) introducing a risk-based approach to supervision depending on the size, significance, complexity of the business model and individual risk level of a financial institution;
g) improving the mechanisms for applying corrective measures and enforcement actions in case of violation of legal requirements by financial institutions

h) enhancing the protection of the rights of financial services consumers by raising their awareness of financial services, introducing the Regulator's supervision of the market behavior of financial services providers to prevent unfair competition and fraud in the financial services market;
i) establishing provisions for regulating outsourcing in the financial services market;
j) improving the procedure for supervision by individual regulators and the procedure for their interaction with each other, with other state authorities, and with regulatory and supervisory authorities of other countries;
k) establishing provisions for regulating the activities of financial companies and pawnshops: requirements for their activities, the procedure for reorganization and exit from the market;
l) regulating the conclusion of financial services contracts.

Given this, the systematic introduction of a new model of regulation and supervision will provide participants in the relevant financial services markets with sufficient time to build a proper corporate governance system and internal control and risk management system. Moreover, it will allow them to define their development strategy and business model, generate capital sufficient to maintain their solvency and ensure the necessary level of liquidity and asset quality, which will contribute to the financial stability of such parties.

Within the framework of sustainable development and the ongoing digitalization of financial activities and services, financial service providers, particularly those offering financial and technological services, are regarded through a systemic lens as pivotal participants within the financial ecosystem. These providers play a vital role by leveraging technology and infrastructure to deliver services to key stakeholders, including businesses, the public sector, and individuals (National Bank of Ukraine, 2023d). Ukrainian legislation primarily adopts an institutional perspective when defining financial service providers. As an illustration, the Law of Ukraine "On Banks and Banking" (Article 4) delineates the Ukrainian banking system as comprising "the National Bank of Ukraine, other banks, and branches of foreign banks that are established and operate in Ukraine in compliance with the provisions outlined in the Law and other Ukrainian legislation"

(Verkhovna Rada of Ukraine, 2023a). It is noteworthy that within the framework of this institutional approach, the banking system is regarded merely as a collection of individual banking institutions that constitute the credit system. However, in the era of digitalization, banks have transcended their traditional role as isolated entities within the banking system and have become intricately interconnected with individuals and legal entities, referred to as new financial service providers. This interconnection aims to enhance service quality and bolster market competitiveness. Technological advancements have ushered in novel avenues of communication and customer engagement, enabling the expansion of services and propelling the evolution of the financial ecosystem among market participants. Globally, there is a concerted push towards cultivating a new technological framework that fosters transparency, seamless communication, customer-centricity, and personalized experiences in the interactions between financial institutions within the financial ecosystem. These developments signify a transformative shift in the way financial services are delivered and experienced worldwide. An exemplary illustration of the ongoing digital transformation in the banking sector can be observed in the endeavors of JSC CB Privatbank. This financial institution actively undertakes the development and integration of digital solutions into its banking operations, thereby providing legal entities with Internet banking services encompassing a range of supplementary business functionalities. Notably, these include accounting services, a feature that enables companies and entrepreneurs to generate and submit electronic reports to regulatory authorities, and a service dedicated to monitoring staff adherence to prescribed work schedules. Additionally, JSC CB Privatbank collaborates with select organizations on a partnership basis, facilitating the provision of accounting services, acceptance of budgetary payments, the establishment of online stores, and the implementation of the Paperless service, which facilitates the electronic exchange of documents among companies and entrepreneurs.

An exemplification of positive developments in legislation can be witnessed in Verkhovna Rada's adoption of Draft Law No. 4364, titled "On Payment Services." This legislative initiative is notably aligned with contemporary standards and considers the provisions outlined in European regulations, including the Second Payment Services Directive

(PSD2) and the Electronic Money Directive (EMD). The law encompasses several noteworthy aspects, including the introduction of the open banking concept, the integration of the Ukrainian payment market with its European counterpart, and the modernization and advancement of the Ukrainian payment services sector. As highlighted by the National Bank of Ukraine (2023a), the provisions within the Law on Payment Services foster a conducive environment for innovation within the financial domain. The law establishes guidelines for the provision of payment services in Ukraine and outlines requirements for service providers. Furthermore, it endeavors to enhance the security and efficacy of these services, broaden the array of payment service providers, streamline their operations, and revise antiquated approaches to the legal regulation of the payment market (Verkhovna Rada of Ukraine, 2023b).

The adoption of the NBU's strategic documents has a positive impact on the efficiency and sustainability of the financial services market, as well as on the implementation of international regulatory and supervisory practices. The National Bank of Ukraine Strategy until 2025 defines goals and approaches to the development of the financial system, which is "moving to a new evolutionary stage" given external political, economic, technological, and social factors. The NBU is defined as an influential, innovative, and useful regulator and player in the financial sector and the economy as a whole. The NBU's Institutional Strategy until 2025, approved in 2021, defines a new stage in the development of the banking system: "intensifying economic growth in the country and improving the efficiency of the financial ecosystem" (National Bank of Ukraine, 2023d). The NBU is creating an innovative regulatory environment for supervising and controlling innovative products and services of financial ecosystem players, including banking institutions.

The Strategy defines the financial ecosystem as "a set of financial market participants and other parties that interact with each other based on cooperation and competition to create and provide financial products and services" (National Bank of Ukraine, 2023d). Thus, a new approach to the functioning of the financial system is being implemented in Ukraine, which involves cooperation and competition between the main players, the openness of the system, multidimensional relations, and defined rules of interaction to create innovative products and services based on the concept of customer focus and taking into account the needs of customers who require transparent, high-quality, round-the-clock financial services. The latter trend intensifies competition between financial sector players, which is reflected in the constant technological upgrades and the emergence of new services to improve and optimize service delivery and maintenance. Satisfying the needs of end users is defined as the main strategic goal. It should be achieved on the principles of synergy, consideration of the interests of all parties, and mutually beneficial work of all participants.

As stated in the NBU Strategy, "Participants in the financial ecosystem can play different roles according to their own needs. For instance, a commercial bank can simultaneously be an investor, a provider and consumer of financial and technological services, and a provider of expertise" (National Bank of Ukraine, 2023d).

In light of the active engagement of diverse financial market participants in the realm of innovative financial ecosystems, it is noteworthy to acknowledge that, apart from the conventional interactions between central banks, commercial banks, and other traditional market institutions, these entities will establish relationships on the process of innovating products and the regulatory influence exerted by the central bank on their potential utilization by various market players. Presently, collaboration among institutions within the financial ecosystem signifies a novel mode of interaction. An exemplary instance of such collaboration can be observed in the establishment of virtual banks, commonly known as neo-banks, which operate through mobile applications and online platforms under the auspices of a traditional banking license. Effectively, these neo-banks function as digital complements to traditional banking activities, exemplifying the evolving landscape of cooperative efforts within the financial ecosystem.

At its regular meeting on May 4, 2023, the Financial Stability Council (FSC) approved the concept of a new Financial Sector Development Strategy, the development of which is envisaged by the Memorandum of Economic and Financial Policies between Ukraine and the International Monetary Fund. The measures envisaged in the concept are based on two focuses: rapid action to stabilize and minimize the negative effects of the war and development, which involves changes in the financial sector to lay the foundations for post-war recovery and build a new economy. The main objectives of the updated strategy will be to ensure macroeconomic and financial stability, the orientation of the financial system towards the country's recovery, modern financial services, and effective regulation of the financial sector. One of the key elements of the strategy is an assessment of the banks' sustainability. Its results will determine the ways to safely wind down the emergency measures introduced in Ukraine in the first months of the full-scale invasion and the priorities for resolving NPLs (National Bank of Ukraine, 2023b).

In the context of the sustainable development of Ukraine's financial system, new prerequisites for the effective functioning of financial services market players should be created:

a) stability of the financial system and, accordingly, stability of its participants;
b) a high level of trust in the private and civil sectors, ensuring consumer protection and security, including in the digital environment and cyberspace
c) promoting sustainable economic growth;
d) effective performance of market participants' functions and their resilience to crises.

The effectiveness of the financial system is upheld through the continuous enhancement of macroprudential supervision and control tools by the financial system regulator. These tools encompass a range of requirements and restrictions that are implemented on the financial system as whole or specific groups of participants within the financial services market. The objective of these measures is to mitigate and preempt systemic risks, thereby safeguarding financial stability.

Businesses' and citizens' confidence in the financial system is a prerequisite for economic development and ensuring the transition to a new quality of economic growth. To promote financial stability, the NBU ensures that the financial system performs its functions efficiently and is resilient to crises, taking measures to minimize systemic risks for all participants. In the context of the transition to a new quality of economic growth due to the efficiency of financial market participants, the NBU should emphasize the importance of technology and the promotion of Ukraine's technological infrastructure.

Conclusion

The findings of the study demonstrate a favorable trajectory in fostering the financial stability of Ukraine's financial ecosystem starting from early 2018, even amidst the backdrop of ongoing conflict. The results indicate a growth in the scale of operations undertaken by key participants in the financial market, encompassing aspects such as assets, liabilities, profitability, and return on investment. Simultaneously, a decline in the number of banks, financial institutions, insurance companies, credit unions, and pawnshops is observed. This can be attributed to the implementation of more stringent regulatory requirements and revisions in the principles, approaches, and instruments utilized in macroprudential regulation, which have contributed to sustaining financial stability within the Ukrainian context. The dynamics of financial stability indicators in Ukraine highlight the consistent maintenance of banks' capital adequacy at a level of 17.6% during the period spanning 2010 to 2022. However, it is noteworthy that during times of crisis in Ukraine, the overall level of financial stability experiences a decline, accompanied by increased risks in meeting obligations, a decrease in Tier 1 risk-weighted capital ratio (RWA), and an uptick in the proportion of non-performing loans (NPLs). An extensive concentration of NPLs is observed within state-owned banks, accounting for approximately 75% of the total, while loans exhibit a notable concentration within the private sector, representing an average of 69% throughout 2010 to 2022. Moreover, the financial sector has displayed an upward trend in profitability, particularly notable in 2018, 2019, and 2021. The level of liquidity serves as an indicator of the deposit sector's resilience in response to fluctuations in the balance sheets of financial service providers. The net open position in Ukraine signifies a significant exposure to currency risks and a heightened susceptibility of financial companies, particularly during periods of crises.

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