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Managing the loan portfolio of banks in the context of military conflicts: Comparison of world experience and the experience of Ukraine

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Abstract. The study examined optimal strategies for managing banks' loan portfolios during military conflicts, with an emphasis on comparing global practices with the Ukrainian experience. The paper analysed the specific risks faced by the banking sector during periods of war, particularly a substantial increase in the share of non-performing loans (NPLs), and evaluated approaches to their minimisation and management. The methodology was based on a comparative analysis of data from the Ukrainian banking system for 2013-2024 and the experiences of countries that have faced military conflicts, such as Syria, Iraq, Yugoslavia, and Yemen. Statistical data on the dynamics of NPLs, lending activities, and the impact of war on borrowers' solvency were considered, and measures implemented by banks to reduce credit risks and ensure resilience have been analysed. The results of the study show that during the war in Ukraine, the share of NPLs reached 40%, substantially threatening the financial stability of the banking system. The comparative analysis confirms the importance of debt restructuring, tightening credit policies, effective risk management, and attracting international support to maintain banks' liquidity during the crisis period. Moreover, Ukrainian banks have demonstrated their ability to adapt by implementing modern technologies for assessing creditworthiness, risk forecasting, and managing liquidity. The findings highlight the importance of government intervention in ensuring financial stability and using innovative solutions to effectively manage credit risks. Further research is recommended to focus on analysing the role of technological solutions and international support, and regulatory measures in restoring Ukraine's financial system after the conflict ends

Keywords: capital; financial stability; risk assessment; economic consequences; bank loans

INTRODUCTIONS

In the context of substantial economic and financial risks associated with crisis phenomena, the management of banks' loan portfolios becomes particularly important. Since the outbreak of hostilities in Ukraine in 2014, and especially in connection with the escalation to a full-scale war in 2022, the banking sector of Ukraine has experienced substantial shocks, which has led to an increase in systemic risks. One of the key problems was the rapid increase in the share of non-performing loans (NPLs), a decrease in the solvency of borrowers, and an increase in credit risk. These factors require banks to strengthen measures to ensure financial stability, including improving credit risk management systems, revising approaches to assessing creditworthiness, and creating reserves. In addition, banks face difficulties in maintaining liquidity and exchange rate stability due to limited access to international financial markets and capital, which exacerbates financial instability in the sector.

Global experience in managing loan portfolios during military conflicts is an important source for analysing and improving the Ukrainian banking system. In many countries that have experienced military crises, such as Iraq, Syria, or Afghanistan, governments and central banks have taken a number of measures to minimise risks and stabilise the financial sector. In particular, programmes to restructure loans, introduce state guarantees to support banking institutions, and stimulate the economy through the banking sector were successful. However, each region has its own unique circumstances, so it is important to develop

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an individual approach, considering the realities and specific features of the Ukrainian economy.

The impact of conflict and political instability on the banking sector in developing countries was investigated by A. Compaoré *et al*. (2020). The authors analysed indicators of banks' liquidity, access to capital, lending, and asset quality, developing econometric models to assess changes in banking systems during and after conflicts. As a result of their analysis, it was determined that conflicts substantially increase the likelihood of banking crises, negatively affecting financial stability, reducing confidence in banks, and slowing economic recovery. However, this study did not take into account regional and national factors that could have substantially affected the nature of the conflict and the structure of the financial system in individual countries.

The problem of assessing the quality of banks' loan portfolio remains relevant. N. Volkova & T. Shpuniarska (2023) analysed the portfolio structure of Oschadbank Joint Stock Company (JSC) and suggested ways to improve it. The researchers noted a decrease in NPL due to careful verification of borrowers, but the impact of external economic factors during the war remains poorly understood. During the war, the banking sector of Ukraine faced the problem of stability. R. Kirchner *et al*. (2022) examined the main challenges, in particular, the loss of assets in the occupied territories, reduced lending and reduced bank liquidity. They note that the National Bank of Ukraine's anti-crisis measures have strengthened confidence in the hryvnia and prevented the outflow of deposits. However, challenges such as moving to a floating course and managing NPL remain. Although researchers have provided recommendations for a swift response to these challenges, a deeper analysis of strategic long-term measures for the recovery of the banking system after the war is required.

In turn, S. Arzhevitin *et al*. (2023) noted that despite the losses, the Ukrainian banking sector continues to operate, although lending has slowed down due to high risks. The support of the National Bank and state programmes contributed to stability, but the issues of reducing currency and credit risks require further study. Economic uncertainty and geopolitical risks have a negative impact on the growth of bank lending, particularly consumer and mortgage lending. E. Demir & G. Ozturk Danisman (2021) showed that economic uncertainty substantially reduces the growth of the corporate loan portfolio. The impact of these factors on the capitalisation and stability of banks, as well as the behaviour of banks in different countries, requires further analysis.

The problem of bank lending in conditions of uncertainty is urgent since the growth of NPL creates substantial risks for the financial stability of banks. M.O. Vdovychenko (2024) considered ways to improve the credit performance of banks, in particular, by optimising the structure of the loan portfolio and managing credit risks. An important aspect is the use of world experience to solve NPL problems. However, there is still a need to adapt foreign practices to the Ukrainian market, especially in the field of asset securitisation. I. Shalyhina (2024) noted the growth of credit risks and the deterioration of the quality of loan portfolios in Ukraine during the war and focused on methods of minimising banking risks and managing NPLs. However, the issues of adapting international practices and creating new tools for managing risks in war conditions remain the subject of further research.

I. Dotsenko (2024) explored the dynamics of NPL in the banking sector of Ukraine and suggested areas for improving credit risk management, including risk management policies, strengthening control over lending operations for risky regions, and developing a risk monitoring system. However, the subject of new challenges associated with the impact of a full-scale war requires further review. The analysis of the work of scientists showed that insufficient research had been conducted on methods of securitisation of distressed assets and their use to reduce bank losses. This issue requires careful analysis and further research to use the best methods of managing loan portfolios during the war.

An important aspect during a military conflict is also the development of adaptive strategies and analysis of business challenges. A study by D. Varakin *et al*. (2024) provides important insights for managing credit risk in wartime environments. The authors highlight the substantial socio-economic and operational disruptions that Ukrainian businesses face, including the destruction of logistics chains, infrastructure, and financial instability. The need for adaptive risk management strategies that include asset diversification, implementing backup plans, and strengthening cybersecurity to ensure business continuity is highlighted. In addition, the paper stresses the importance of regulatory support, such as tax breaks and labour law adjustments, which are crucial for mitigating economic losses. These results demonstrated the crucial role of resilience and flexibility in overcoming the uncertainties of military conflicts and their impact on credit risk modelling in war-affected economies.

The purpose of this study was to analyse approaches to effective management of credit risks of banking institutions in an unstable environment caused by military conflicts, with the definition of the most effective mechanisms for reducing the negative impact of such factors on the financial system. It was necessary to investigate how the war in Ukraine contributes to the growth of the share of NPL and what factors influence this process, compare credit risk management practices in Ukraine with the experience of other countries that have experienced military conflicts, and identify effective strategies for implementation in the Ukrainian context to achieve this goal.

MATERIALS AND METHODS

The examination of bank loan portfolio management in the context of military conflicts was conducted in Ukraine in the period from 2013 to 2024, covering a critical stage for the country. Attention was also paid to countries affected by military conflicts, such as Iraq, Syria, Yugoslavia, and Yemen. These countries were selected because of their experience in implementing various credit management strategies in the face of instability, which allows for a comparative analysis and examination of which of the methods were most effective in such critical situations.

In the first stage, the National Bank of Ukraine (2024a) data for the period from 2013 to 2024 was analysed to identify changes in the banks' loan portfolio and the level of NPL. This analysis included studying statistical indicators such as total lending, the share of NPLs in the loan portfolio, and the dynamics of changes in interest rates. The collected data helped to assess the impact of the military conflict on the banking system and identify the main trends in lending. They also revealed exactly how the situation at the front and economic realities affected banks' decisions on issuing new loans and their risk management strategies.

The second stage included a detailed investigation of the basic principles of monetary policy of the National Bank of Ukraine (2022a). In particular, the inflation reports for 2015 and 2024 were analysed, which revealed how changes in the policy of the National Bank of Ukraine (2015; 2024b) affected the banking sector during the war. This stage also covered the study of decisions taken by the National Bank of Ukraine in response to the economic challenges associated with the conflict. Decisions on changing the discount rate, measures to support banks' liquidity and other regulatory initiatives were analysed (Minfin, 2024a). This allowed for a better understanding of how monetary policy has affected the availability of credit for businesses and individuals.

The third stage included an analysis of international experience in managing the loan portfolio in countries that have survived military conflicts. Methods used in Iraq, Syria, Yugoslavia, and Yemen to identify the most effective credit management practices in wartime were considered. This phase included an analysis of available research, reports from international organisations, and publications describing various approaches to credit risk management (Hinrichsen, 2019; Alyousef, 2022). Using the comparative method, common features and differences in credit risk management strategies and the most successful measures in conditions of instability were identified.

During the final stage, a comparative table was formed summarising the experience of managing the loan portfolio in Ukraine and other countries that have experienced military conflicts. The table contains the main aspects of credit management, such as the structure of debt obligations, risk management policies, debt restructuring, interaction with international organisations, the use of new technologies, and restoring confidence in banks. This table has become an important tool for analysing and comparing strategies used in Ukraine and international practice, which allowed drawing conclusions about possible ways to improve the management of the loan portfolio in war conditions.

RESULTS AND DISCUSSION

The impact of the war on the structure of bank loan portfolios and the growth of NPLs in Ukraine

The Russian aggression, which has been ongoing since 2014, has had a substantial negative impact on the banking system of Ukraine. This prolonged conflict has disrupted social stability and continues to deteriorate the state of the country's economy, particularly in the financial sector. The increase in the number of NPLs is one of the most substantial consequences of the war. Many borrowers, both individuals and legal entities, faced financial difficulties due to the fighting and economic instability, which made it difficult for them to meet their obligations to banks. As a result, the rapid growth of NPLs negatively affected the liquidity of banks and their loan portfolios.

According to the National Bank of Ukraine, the level of lending decreased, and NPL indicators reached record values in 2024. Banks are experiencing a decline in lending due to concerns about financial stability, which forces them to introduce stricter credit conditions and raise interest rates, which in turn restricts access to financing for individuals and businesses. In addition, the change in economic conditions due to the war has led to instability in the foreign exchange market. This has created additional problems for banks that were trying to maintain the stability of assets and liabilities. Many banks were forced to create reserves under NPL, which further complicated their ability to lend and finance new projects. An analysis of the impact of the Russian-Ukrainian war on the loan portfolio of Ukrainian banks showed that the conflict had a substantial negative impact on the country's financial system. For a long time, since 2014, and especially in the period from 2022, the banking sector of Ukraine has undergone major changes, which led to an increase in the number of NPLs and fluctuations in lending volumes (Fig. 1).

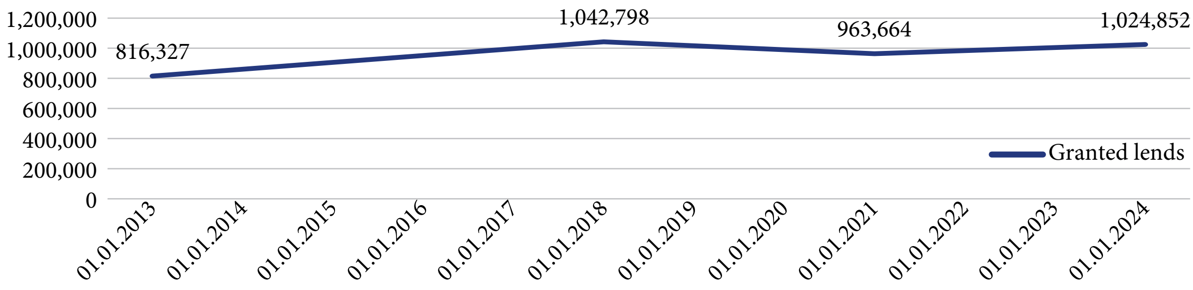

Figure 1. Lending volumes in 2013-2024, million UAH

Source: compiled by the author on the basis of S. Raga *et al.* (2020), Minfin (2024b)

These changes required banking institutions to develop new risk management strategies to adapt to ever-changing conditions and ensure the stability of the financial system. Based on the data of the National Bank of Ukraine, Table 1 shows the volume of NPL in Ukrainian banks as of January 1, 2013, 2018, 2021, and as of September 1, 2024. Table 1 shows how the situation with NPLs in banks has changed over the years. According to the National Bank, at the beginning of 2023, the share of NPL in Ukraine was 38%.

According to the data shown in Table 1, in 2024, the volume of NPLs in Ukrainian banks increased substantially compared to 2013. For example, JSC CB "PrivatBank", which is one of the largest banks in the country, experienced the largest increase in NPL – from UAH 29.633 million to UAH 178.803 million. This shows that the bank, which plays a critical role in the financial system of Ukraine, has faced serious challenges that threaten its financial stability. In addition, NPL growth was also observed in other major banks, such as JSC "Oschadbank" and JSC "Ukreximbank".

Table 1. Volumes of NPL in banks, million UAH

Bank name	01.01.2013	01.01.2018	01.01.2021	01.09.2024	2013-2024 difference
JSC CB "PrivatBank"	29.633	236.211	181.196	178.803	149.170
JSC "Ukreximbank"	11.601	70.191	64.227	49.886	38.285
JSC "Raiffeisen Bank"	10.808	8.435	1.700	10.324	-484
JSC "TASKOMBANK"	135	1.748	1.597	3.656	3.521
JSC "Oschadbank"	4.624	80.717	56.900	66.106	61.482
JSC "FUIB"	5.194	8.613	4.618	7.684	2.490
JSC "UKRSIBBANK"	3.479	7.225	1.867	2.174	-1.305
JSC "PINbank"	74	11	77	9	-65

Notes: CB – Commercial Bank

Source: compiled by the author on the basis of National Bank of Ukraine (2024a)

These changes point to an aggravation of the problem of credit risks throughout the banking system, as borrowers, especially in frontline regions, face difficulties in repaying loans. A high level of NPL entails the need to form reserves, which, in turn, reduces the liquidity of banks and their ability to make new loan transactions. Thereby, some banks, such as JSC "Raiffeisen Bank" and JSC "Ukrsibbank", demonstrated the ability to reduce NPL volumes. This may indicate the successful implementation of risk management strategies and a cautious approach to lending, which can reduce the impact of military operations on their financial condition. This is especially important because the stability of these banks can have a positive impact on the entire banking system in a crisis.

As a result of the war, the stability of Ukraine's banking sector has deteriorated, and banking institutions must adapt to the new circumstances. It is important to use effective credit risk management methods, such as debt restructuring, improving lending standards, and introducing new technologies to preserve the banking system. On April 15, 2022, the National Bank of Ukraine (2022a) changed the basic principles of monetary policy for the period of martial law to support the stability of the banking sector and the country's economy. Its main tasks are to ensure the reliable functioning of the banking system, support the country's defence capability and stability of finances in war conditions. The National Bank of Ukraine recognises that traditional market instruments are ineffective during military operations. Thus, to ensure prompt response to financial risks, the National Bank of Ukraine temporarily abandoned inflation targeting using a floating exchange rate.

The National Bank of Ukraine (2024a) has implemented a number of flexible monetary policy changes to ensure sufficient liquidity of the banking system during the war. One of the key steps was the introduction of administrative restrictions on the foreign exchange market, which was necessary to maintain price stability in conditions of extreme economic uncertainty. Although such measures pose risks, in particular, increase the threat of inflation and may weaken confidence in monetary policy, they have allowed the National Bank of Ukraine to temporarily control currency fluctuations. In addition, the National Bank of Ukraine (2022b) was granted the right to buy government securities on the primary market to finance the budget, which was an important step to support government spending in times of crisis. The National Bank of Ukraine actively cooperates with the government and international organisations to attract additional external financing necessary to meet humanitarian needs and restore infrastructure. The monetary policy also includes the introduction of additional financial sanctions to increase economic pressure on the aggressor country.

As the economy and financial system stabilise, the National Bank of Ukraine plans to return to the traditional monetary policy regime. This will provide for the resumption of a floating rate of inflation targeting, which will become possible when the predictability of economic processes improves. In addition, administrative restrictions on currency transactions will be lifted if necessary. Thus, the basic principles of the monetary policy of the National Bank of Ukraine in the context of war demonstrate how flexibly the regulator responds to the challenges facing the financial system of Ukraine. Appropriate actions are aimed at supporting economic processes and ensuring stability, which is very important in a conflict situation. Effective measures and further integration into the international financial system will be necessary to restore Ukraine's economy after the war.

An analysis of the National Bank of Ukraine's inflation reports (2015; 2024b) shows substantial changes in the economic context and monetary policy caused by the ongoing military conflict and global economic challenges. In 2015, Russian aggression in eastern Ukraine led to a sharp economic downturn, accompanied by ultra-high inflation rates, which reached 42% (Fig. 2). As a result of the war, gross domestic product (GDP) substantially decreased, which prompted the National Bank of Ukraine to introduce a tight monetary policy. Unlike in 2015, in 2024, Ukraine's economy, despite the fact that it was still suffering from war, began to recover. International financial support and structural reforms have allowed the National Bank of Ukraine to move to a softer monetary policy. Forecasts for economic growth have become more optimistic and promised GDP growth of 3.7% in 2024.

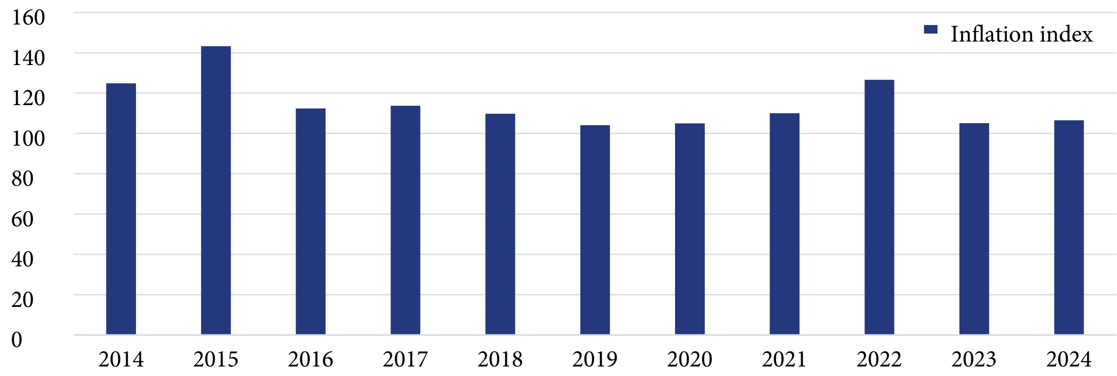

Figure 2. Dynamics of inflation in 2014-2024, %

Source: compiled by the author based on Minfin (2024c)

The National Bank of Ukraine raised the discount rate to 30% in 2015 to curb inflation and stabilise the hryvnia. Reducing currency risks and controlling inflation expectations were the main goals of the measures, including banning lending in foreign currency. In contrast, in 2024, the National Bank kept the discount rate at 13%, focusing on trends in inflation and the foreign exchange market. The accounting policy of the National Bank of Ukraine for the period 2015-2024 was aimed at controlling inflation and maintaining macroeconomic stability in the face of serious economic and political challenges. In 2015, the rate peaked to stop inflation from rising due to the crisis. In the future, in the context of economic stabilisation and recovery, the National Bank of Ukraine reduced the discount rate, reaching 6% in 2020. However, due to military operations and economic challenges in 2022, the rate increased to 25%. In 2023-2024, the National Bank of Ukraine again began to reduce it to support the economic recovery and stimulate lending (Fig. 3).

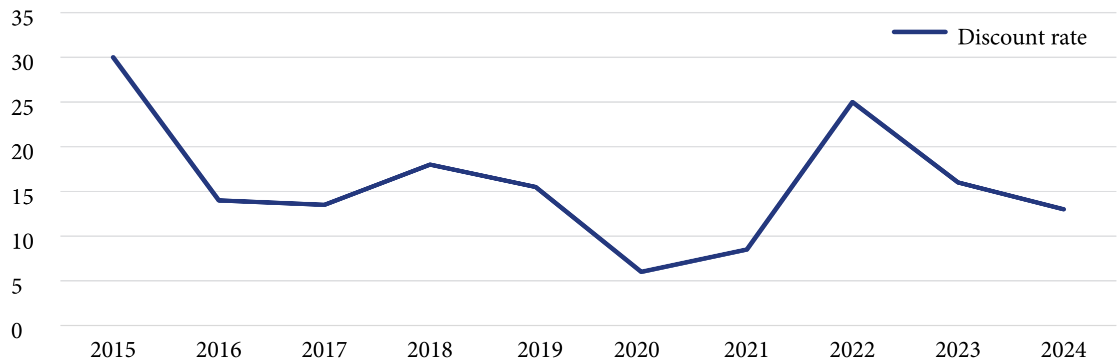

Figure 3. Discount rate level for 2015-2024, %

Source: compiled by the author based on Minfin (2024a)

Inflation forecasts for the end of 2015 were pessimistic; it was expected that the devaluation of the hryvnia and the increase in tariffs would lead to its growth of up to 30%. The overall economic climate and consumer demand were substantially affected by infrastructure destruction and high unemployment. According to the forecast, inflation is expected to fall to 8.5% in 2024, compared to 13% at the beginning of the year. However, when the economy stabilises and the state in the energy sector improves, the National Bank of Ukraine hopes for a gradual reduction in inflation to 5% by 2026.

A comparison of inflation reports from 2015 and 2024 showed changes in the monetary policy of the National Bank of Ukraine in light of changes in military and economic circumstances in Ukraine. In 2015, the National Bank of Ukraine was forced to act during a deep crisis, applying tough measures to control inflation, such as a substantial increase in the discount rate and currency exchange rate control, to stabilise the financial system. However, in 2024, the National Bank of Ukraine's policy is aimed at a more balanced approach, with an emphasis on economic growth, reducing inflation to 5% in the medium term, and easing monetary conditions. This analysis showed that monetary policy must adapt to new circumstances and requires more research on credit risk management during military conflicts.

International experience in managing a loan portfolio in the context of military conflicts

The experience of managing the loan portfolio of banks gained in Syria during the long war can be useful for Ukraine in its attempts to stabilise the banking sector. Syria's economy was severely disrupted by the war, which led to higher unemployment, lower incomes, and a substantial drop in living standards. Although it faced many challenges, the private banking sector was able to survive. According to a study by O. Alyousef (2023), none of the private banks went bankrupt even during the war, which indicates a certain strength of the system. Credit and asset management policies were one of the main elements that affected banks' profitability. In particular, due to the high level of NPL, banks had to reduce their lending volumes. According to the study, the share of NPLs in banks' portfolios has increased to 40%. This has led to the need to form reserves and limit new loan agreements. During the war in Syria, the banking system was under substantial pressure due to the growing share of NPL and the threat of liquidity. O. Alyousef analysed the determinants of private bank liquidity in Syria during crises, which emphasised the importance of managing liquidity in conflict situations. The results of the study showed that conflicts negatively affect the banking sector and the growth of NPL is one of the main causes of financial instability.

A study by F. Suliman *et al.* (2023) also emphasised the need to adapt credit policy in Syria, in particular, the importance of debt restructuring to preserve the liquidity of the banking system. Researchers noted that such measures can help banks reduce losses from NPL and maintain stability during the crisis period. This is consistent with the Ukrainian experience, where banks are also implementing restructuring programmes to overcome economic challenges. In such circumstances, the effectiveness of Syrian banks depended on many factors. First, high-cap banks were able to maintain profitability because their higher capital was positively correlated with profitability indicators. Second, banks maintained their liquidity by maintaining substantial deposits, which contributed to their stability. Operational efficiency was crucial for banks' profitability. Profitability was affected by the high cost of managing and servicing loans. Therewith, the debt restructuring measures that were introduced to support borrowers have proven useful, as they have reduced risks and improved the credit quality of portfolios. In addition, it is important to keep records of assets that do not generate profit, such as profit from the revaluation of currency positions. Since these returns do not reflect returns on banks' core business, their inclusion in financial statements can mislead investors and creditors. It is necessary to introduce risk management methods, implement loan restructuring programmes, and ensure liquidity by attracting deposits to maintain the stability of the banking system during the crisis. A study by F. Suliman *et al.* (2023) also highlights how important it is for financial statements to be transparent; this can increase confidence in the banking sector.

Iraq, as a country that has experienced many military conflicts, has useful experience in managing the loan portfolio of banks in an unstable environment. The war, which began in 2003, caused serious social and economic problems that affected the banking system. Iraq had the largest debt in the world, reaching about USD 130 billion. Prolonged military action, political isolation, and economic sanctions have led to an increase in debt. Banks faced high levels of NPL in conflict situations, which increased risks to their liquidity and lending capabilities. Banks have increased their lending requirements and raised interest rates to reduce risk. The introduction of debt restructuring programmes to support borrowers who find themselves in difficult financial conditions was one of the key measures (World Bank, 2018). Table 2 shows the main indicators of the debt situation in Iraq from 2003 to 2006, illustrating the impact of military conflicts on the banking and lending sectors.

Table 2. Iraq's debt situation (2003-2006)

Year	Total debt, USD million	Major creditors	Terms of restructuring
2003	130,000	Paris Club, USA	Debt reduction by 80%
2004	120,000	Foreign banks	Restructuring through an agreement
2006	80,000	International organisations	Political support

Source: S. Hinrichsen (2019)

From 2003 to 2006, the debt situation in Iraq changed substantially, as shown in Table 2. In 2003, the country faced huge debt obligations. However, in 2004, an agreement was reached to reduce the debt by 80% through restructuring. International political support has allowed reaching this agreement, emphasising the importance of external cooperation in the context of the economic crisis. Thus, Iraq's experience in managing its banking portfolio during military conflicts shows how important it is to change risk management strategies and actively approach debt restructuring.

Ukraine, which also faces serious problems in the banking sector during the war, must consider these lessons to ensure financial stability and support economic recovery. Effective management of the loan portfolio is very important for economic recovery and stability of the financial system.

The war in Yugoslavia (1991-2001) had serious economic, social, and political consequences for the country. The banking sector has been substantially affected by conflicts since the breakup of Yugoslavia, in particular, by the management of loan portfolios of financial institutions. During this period, there were high levels of NPL, unstable exchange rates and a drop in confidence in banks. During the war, banks faced many challenges, such as massive corporate bankruptcies, which led to a sharp increase in NPL. As a result, banking institutions were forced to introduce strict lending standards. Higher interest rates and stricter requirements for borrowers to reduce risks and protect assets were part of this. Many banks chose to be conservative and limited the number of new loans (Tung, 2000). This affected the overall level of lending in the country. In addition, due to the instability in the political and economic environment of the region, many banks have begun to actively use debt restructuring methods. These measures have helped borrowers in difficult financial conditions. For example, during the war, some banks began implementing loan restructuring programmes to prevent massive defaults on borrowers. As a result, this preserved the banks' liquidity and prevented bankruptcies at critical moments.

The collapse of Yugoslavia and military conflicts in the 1990s led to a substantial deterioration in the country's banking system. The World Bank's report (World Bank, 2001) described Yugoslavia's transition to a decentralised economy, which includes reforming the banking system and introducing market mechanisms for stabilisation. In particular, the author emphasises the importance of radical economic reforms to restore confidence in banks and stabilise credit markets after the crisis. Compared to Ukraine, Yugoslavia had similar challenges in the banking system, where banking sector reforms were also needed to recover from the crisis. The study confirms that conflicts in both countries are forcing the banking system to adapt to new realities by implementing stricter risk management standards and reforms to maintain liquidity.

The management of the loan portfolio during the military conflict in Yugoslavia involved constant monitoring of credit risks. At that time, banks were actively implementing risk management systems to reduce the negative financial consequences. This included assessing borrowers' solvency, analysing their financial condition, and monitoring compliance with credit conditions. Despite all efforts, the Yugoslav banking sector suffered substantial losses. It is estimated that the share of NPL in some banks reached between 30 and 50%, which substantially undermined the financial stability of the system (Cvikl & Mrak, 1996). In addition, this led to a loss of trust on the part of clients who were forced to look for alternative sources of financing, such as foreign investment and informal lending. After the end of the war, the countries of the former Yugoslavia were forced to rebuild the banking sector. This required not only the reorganisation of the debt but also the introduction of new regulatory rules that met the current conditions. In particular, countries such as Croatia and Slovenia have successfully implemented reforms that have helped stabilise the banking system and restore lending. Thus, the experience of Yugoslavia shows that effective management of the loan portfolio during a military conflict requires a comprehensive approach that involves a strict credit policy, Debt Restructuring, active risk tracking and adaptation to changing economic conditions. This experience can be useful for countries that face similar challenges.

The war in Yemen, which began in 2015, was one of the longest and most destructive wars in recent history. This conflict had severe humanitarian consequences and substantial economic problems, which also affected the financial system. As banks face a variety of challenges, such as rising NPLs, falling borrower confidence, and instability in financial markets, managing banks' loan portfolios has become challenging. M. al-Shaibani (2020) confirmed that military conflicts substantially affect financial systems, increasing the share of NPLs and increasing overall risks for banks. In addition, the author emphasised the need to support borrowers through debt restructuring, which is also confirmed by the Ukrainian experience. The importance of international support for stabilising the financial system during and after the military conflict is also stressed. International aid programmes can provide the banking system with resources to continue operations, reduce NPL levels, and maintain liquidity.

The war in Yemen led to an economic collapse, when the country's GDP shrank by more than 50%, and infrastructure was completely destroyed. In 2020, 80% of the population needed humanitarian assistance, which made lending even more difficult. Many companies closed or reduced their operations during the war, which led to higher unemployment rates and a decrease in the solvency of borrowers. The rise in NPL levels has been one of the most serious challenges facing Yemeni banks. It is estimated that in 2021, several banks had a 40% NPL. This jeopardised their liquidity and they were forced to restrict new loan agreements and create reserves under the NPL (Hanna *et al.*, 2021).

The banking sector of Yemen has introduced a number of measures to manage credit risks to cope with the problems. Firstly, banks have increased their requirements for borrowers. This included a more detailed credit check, which reduced the number of new loans granted to high-risk individuals and companies. However, these actions also limited the possibility of obtaining credit for companies that could potentially play an important role in the economic recovery. Secondly, to help borrowers who find themselves in difficult financial conditions, banks have started implementing debt restructuring programmes. This became especially important because many businesses were unable to repay loans due to declining sales and rising costs. The restructuring allowed borrowers to continue operating and banks to reduce losses.

In addition, managing the loan portfolio during the war in Yemen required close cooperation with international financial organisations. For example, the World Bank (2019) and the International Monetary Fund provided financial assistance to support banks' liquidity and economic recovery. This support allowed banks to adapt to the new conditions through lending programmes and technical assistance. Therewith, financial donors had to consider the difficult political and social situation in Yemen. For example, international organisations have tried to work with various parties to the conflict to guarantee unhindered access to recovery money.

The war in Yemen has shown the role that new technologies play in managing the loan portfolio. Many banks have started using digital platforms to track credit risks and process loan applications. This has helped reduce management costs and improve process efficiency. Even during the fighting, the introduction of e-banking was an important step in maintaining customer trust and ensuring access to financial services (World Bank, 2023).

In times of military conflict, managing a bank portfolio requires flexibility, adaptability, and a proactive approach to risk management. Yemen's experience shows how important it is to implement strict credit policies, restructure its debt, and cooperate with international organisations. This not only ensures the stability of the banking system but also contributes to the economic recovery after the war. Ukraine, which is also suffering from military conflict, should consider this experience to strengthen its banking sector and ensure financial stability. Successful loan portfolio management can be crucial for economic recovery and financial system stability.

Credit risk management strategies during military conflicts

Managing banks' loan portfolios is critical to ensuring financial stability and supporting economic recovery. The experience of countries that have experienced or are in military conflict, such as Ukraine, Iraq, Yemen, Yugoslavia, and Syria, provides valuable lessons on effective risk management strategies, debt restructuring, new technologies, and restoring confidence in the banking system. Table 3 compares various aspects of loan portfolio management in these countries, providing a better understanding of how to adapt banking strategies in times of instability and crisis. Table 3 summarises the main strategies and challenges that countries have faced in different periods of conflict.

Table 3. Comparative table of experience in managing the loan portfolio of banks in different countries in the context of military conflict

Loan portfolio management aspect	Experience of Ukraine	Experience of Iraq	Experience of Yemen	Experience of Yugoslavia	Experience of Syria
Structure of debt obligations	High level of NPL (up to 40%) in war conditions	The share of NPL reached 40% after conflicts	The share of NPL in some banks reached 40%	The share of NPL reached 50% during the conflict	The share of NPL reached 50% due to the economic collapse
Risk management policy	Tougher requirements for borrowers, strict lending conditions	Higher interest rates and strict conditions	Introduction of strict credit policies	Increased collateral requirements for borrowers	Strengthening security requirements, taking measures to reduce risks
Debt restructuring	Restructuring programmes to support borrowers	Debt restructuring to maintain liquidity	Debt restructuring programmes to support businesses	Implementation of restructuring programmes	Restructuring to support businesses
Interaction with international organisations	Cooperation with the IMF and the World Bank	Receiving international assistance	Cooperation with international financial institutions	Cooperation with international organisations	Support from international organisations
Using new technologies	Introduction of digital credit processing platforms	Using new technologies for risk management	Introduction of technologies for monitoring credit risks	Limited use of new technologies	Introduction of new technologies to improve processes
Restoring confidence in banks	The problem of trust through military action, the need for transparency	Difficulties with public trust	Loss of confidence in banks due to instability	Loss of confidence in the banking system	Instability has led to a loss of confidence

Source: compiled by the author

The experience of managing the loan portfolio of banks in the context of military conflicts is complex and multifaceted. Comparing Ukraine with other countries that have experienced similar challenges highlights the importance of adapting banking strategies to the specific conditions that arise during conflicts. Each country faced unique challenges, such as high NPL levels, the need for stricter risk management policies, and a loss of public confidence. In Ukraine, for example, banks introduced new requirements for borrowers to reduce risks, while in Iraq and Yemen, banks have also introduced strict credit policies, but with an emphasis on debt restructuring. In Yugoslavia, unlike in other countries, the emphasis was placed on innovative approaches to lending, although there were also problems with liquidity. The Syrian experience highlighted the importance of technological innovation to improve management processes as banks try to adapt to new conditions and maintain liquidity in crisis situations. In terms of international support, all countries have tried to interact with international financial organisations to obtain the necessary resources and expertise.

A comparison of the experience of Ukraine, Syria, and Yugoslavia in managing bank loan portfolios in conflict situations showed similar trends. In all cases, there was a substantial increase in the share of NPL, which required the adaptation of credit policies and the introduction of debt restructuring programmes. In addition, all the countries examined faced problems with the liquidity of the banking system, which forced banks to turn to international assistance.

A paper of M.M. Diwani (2022) confirmed that the growth of NPLs during military conflicts is a critical factor negatively affecting the stability of the banking system, and emphasised the need to adapt credit policies to better manage risks. A. Kreimer *et al.* (1998) emphasised the need for international assistance to restore financial systems after conflicts, which is also reflected in the Ukrainian experience. A World Bank's (1979) study highlighted the importance of long-term reforms for rebuilding the banking system after war and the current study focuses on risk management during active conflict. The impact of conflicts on banking systems has common features: a substantial increase in NPLs, reduced liquidity, and the need for international support to restore stability. I. Zaichko *et al.* (2023) highlighted the importance of reducing NPL volumes to increase bank profitability, which is one of the crucial measures to overcome the financial crisis. The study also focused on concessional lending and opportunities to increase banks' revenue through changes in credit policies.

A study by S. Shpak *et al.* (2023) highlighted that war has a substantial impact on economic activity due to lower collateral costs and an increased likelihood of default. This affects the ability of firms to get loans, which is a key issue during a conflict. In addition, S. Ahmed *et al.* (2022) emphasised that geopolitical conflicts, such as the Russian-Ukrainian crisis, have a serious impact on financial markets, in particular, European stock markets. G. Nagarajan (1997) emphasised the importance of developing financial institutions in countries emerging from conflict, as this is crucial for economic recovery. Microfinance services play an important role in this process, which can help small businesses resume their operations.

In light of the growing global geopolitical tensions, the study by M.S. Qureshi & T. Tsuruga (2023) highlighted the risks of financial fragmentation at the global level. This can have a substantial impact on international payment systems and the distribution of capital across borders, which is of particular importance for developing economies. Thus, the results of this study are consistent with international experience, which indicates the need to adapt credit policies, restructure debts, and attract international support to maintain the stability of the banking system during and after conflicts.

CONCLUSIONS

During the study, several key aspects of managing the loan portfolio of banks in the context of military conflicts were identified based on a comparison of world experience and the experience of Ukraine. Armed conflicts substantially increase the level of credit risks, which is manifested in an increase in the share of NPLs. In Ukraine, this share reaches 40% in 2023-2024, which is a substantial challenge to the financial stability of the banking system. A similar situation was observed during wars in other countries, such as Syria and Iraq, which also had a substantial increase in NPL.

International experience shows that in response to the growth of NPL, banks in such countries actively apply debt restructuring. In particular, in Syria, restructuring has become a critical mechanism for supporting the banking system. Ukrainian banks also resorted to this tool, which slightly improved the liquidity of tanks and reduced financial pressure on borrowers. This confirms that restructuring is an important tool for maintaining the stability of banks during the crisis period.

Another necessary step in managing credit in the context of military conflicts is to apply a strict credit policy. In international practice, in particular, in Arab countries, this was reflected in the introduction of stricter requirements for borrowers, which helped reduce the risks of non-repayment of loans. Ukrainian banks were also forced to reconsider their approaches to assessing the creditworthiness of customers, using the latest technologies for risk management. The use of strict credit policies during the war reduced the risks of non-repayment of loans since only customers with high creditworthiness received access to loans. This helped reduce the volume of NPLs. The use of the latest technologies for risk assessment allowed banks to quickly identify problems and prevent losses, which helped stabilise the banking sector in times of crisis.

Government support programmes and international financial assistance play an important role in stabilising the banking sector. World experience shows that banks that received support from the state or international financial organisations were able to respond faster to changes in economic conditions and maintain liquidity. This confirms that the active participation of the state and international partners in regulating the financial sector during the crisis is a key factor in maintaining stability. Ukraine, like other countries that have faced conflicts, has received substantial support from international financial organisations, which has reduced the pressure on the banking sector and the economy in general.

Prospects for further research may include an analysis of the introduction of innovative technologies for managing credit risks and maintaining liquidity in crisis situations. An important area is the automation of creditworthiness assessment processes, which will allow banks to respond more quickly to changes in economic conditions related to military conflicts.

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CONFLICT OF INTEREST

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Управління кредитним портфелем банків в умовах збройних конфліктів: порівняння світового досвіду та досвіду України

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Анотація. У статті було досліджено оптимальні стратегії управління кредитними портфелями банків під час воєнних конфліктів із акцентом на порівняння світових практик з українським досвідом. Проаналізовано специфічні ризики, з якими стикається банківський сектор у період війни, зокрема значне зростання частки непрацюючих кредитів (NPL), оцінено підходи до їх мінімізації та управління. Методологія базувалася на порівняльному аналізі даних банківської системи України за 2013-2024 роки та досвіду країн, таких як Сирія, Ірак, Югославія і Ємен, що пережили воєнні конфлікти. Розглянуто статистичні дані щодо динаміки NPL, кредитування та впливу війни на платоспроможність позичальників, а також проаналізовано заходи, які застосовували банки для зниження кредитних ризиків та забезпечення стійкості . Результати дослідження продемонстрували, що під час війни в Україні частка NPL досягла 40%, що суттєво загрожує фінансовій стабільності банківської системи. Порівняльний аналіз підтвердив важливість реструктуризації боргів, посилення кредитної політики, ефективного управління ризиками та залучення міжнародної підтримки для збереження ліквідності банків у кризовий період. Водночас українські банки продемонстрували здатність до адаптації, впроваджуючи сучасні технології для оцінки кредитоспроможності, прогнозування ризиків та управління ліквідністю. Отримані результати підкреслили важливість державного втручання для забезпечення фінансової стабільності та використання інноваційних рішень для ефективного управління кредитними ризиками. Подальші дослідження рекомендується зосередити на аналізі ролі технологічних рішень, міжнародної підтримки та регуляторних заходів у відновленні фінансової системи України після завершення конфлікту

Ключові слова: капітал; фінансова стійкість; оцінка ризиків; економічні наслідки; банківські кредити