

An Empirical Analysis of Green Lending Practices and Their Impact on Credit Risk Management in the Banking Sector During the Russia–Ukraine War

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ABSTRACT:

This study examines the impact of green lending on credit risk management in the banking sector during the Russia–Ukraine war, with a focus on financial stability under crisis conditions. The research is motivated by the significant increase in credit risk during periods of geopolitical conflict, particularly the rise in non-performing loans (NPLs) due to economic disruption and reduced borrower solvency. Evidence from the Ukrainian banking system indicates that the share of NPLs increased to nearly 40% during the war, posing a serious threat to banking stability. The study integrates the concept of green finance into this crisis context by analysing whether green lending can act as a strategic tool to mitigate credit risk. Green loans, which finance environmentally sustainable projects, are increasingly viewed as instruments that enhance bank reputation, improve governance, and potentially reduce risk exposure. However, their effectiveness during extreme economic shocks such as war remains underexplored. The research adopts an analytical framework where green lending is considered as the independent variable, credit risk (measured through NPLs and default probability) as the dependent variable, and the Ukraine war as a moderating factor. The study relies on secondary data sources, comparative analysis, and existing empirical findings from global banking systems affected by conflict and financial instability. Additionally, global evidence suggests that credit risk has been rising across sectors due to economic uncertainty, inflation, and geopolitical tensions, further emphasizing the importance of effective risk management strategies. The findings suggest that while war significantly increases credit risk, green lending has the potential to partially offset this impact by promoting more stable and sustainable investment practices. The study concludes that integrating green finance into banking strategies can enhance resilience, improve risk management, and support long-term financial stability even in crisis environments.

KEYWORDS: Green Lending, Credit Risk, Non-Performing Loans, Ukraine War, Sustainable Finance, Banking Stability

1. INTRODUCTION

In the contemporary global financial environment, banks operate under conditions of increasing uncertainty driven by economic volatility, geopolitical tensions, and unexpected crisis events. Among these, military conflicts represent one of the most disruptive forces, as they not only affect economic growth but also directly influence the stability of financial institutions. The Russia–Ukraine war, which intensified into a full-scale conflict in 2022, has significantly altered the economic and financial landscape, creating severe challenges for the banking sector. The prolonged nature of the conflict has led to disruptions in production, trade, and financial flows, thereby weakening the overall economic structure and increasing systemic risk within the banking system.

One of the most critical consequences of the Ukraine war has been the sharp deterioration in the quality of banks' loan portfolios. The ability of borrowers to repay loans has been adversely affected due to income loss, business disruptions, and economic instability. As a result, the share of non-performing loans (NPLs) has increased significantly, reflecting a rise in credit risk across the banking sector. Empirical evidence suggests that during the war period, NPL levels in Ukraine rose to nearly 40%, indicating a severe threat to financial stability and banking performance. This increase in credit risk has forced banks to adopt conservative lending practices, reduce credit supply, and strengthen risk management frameworks to safeguard their financial position.

In addition to credit risk, the war has also created several operational and financial challenges for banks. Liquidity constraints have become more prominent due to reduced deposits and limited access to international capital markets. Exchange rate volatility has further complicated financial management, increasing the risk associated with foreign currency loans and cross-border transactions. Moreover, the uncertainty caused by the war has weakened investor confidence and reduced economic activity, thereby limiting the growth of lending portfolios. These challenges highlight the need for innovative and adaptive strategies to manage risk effectively in a highly unstable environment.

Global experiences from other conflict-affected regions, such as Iraq, Syria, and Afghanistan, provide valuable insights into managing banking systems during periods of crisis. In such contexts, governments and central banks have implemented various measures, including loan restructuring programmes, state guarantees, liquidity support mechanisms, and regulatory relaxations to stabilise the financial sector. These strategies have helped mitigate the negative impact of conflicts on banking operations and ensure continuity of financial services. However, the effectiveness of these measures depends on the specific economic conditions, institutional frameworks, and policy responses of each country, making it essential to develop context-specific solutions for Ukraine.

At the global level, the increase in credit risk is not limited to war-affected economies alone. Rising inflation, higher interest rates, and geopolitical tensions have contributed to a broader deterioration in credit quality across multiple sectors. Reports indicate that the probability of default among global borrowers has been increasing, and many industries are experiencing credit downgrades due to economic uncertainty and supply chain disruptions. This trend suggests that credit risk has become a widespread concern, requiring banks to adopt more robust and forward-looking risk management strategies.

In response to these challenges, the concept of sustainable finance, particularly green lending, has gained significant attention in recent years. Green lending refers to the provision of loans for environmentally sustainable projects, such as renewable energy, energy efficiency, and climate-friendly infrastructure. These loans not only support environmental objectives but also contribute to long-term economic stability by promoting sustainable investment practices. From a financial perspective, green lending is often associated with improved governance, enhanced transparency, and better risk management, which can positively influence the overall performance of banks.

Empirical studies suggest that green lending can play a crucial role in reducing credit risk by encouraging investments in sectors that are less vulnerable to regulatory shocks and market volatility. Additionally, banks that engage in green financing activities tend to enjoy better reputational benefits, increased investor confidence, and improved access to capital markets. Research findings indicate that the issuance of green loans can lead to a reduction in perceived credit risk, as reflected in lower credit default swap (CDS) spreads, highlighting the potential of green finance as a risk mitigation tool.

Despite these potential benefits, the role of green lending in managing credit risk during extreme crisis situations such as war remains largely unexplored. Existing literature primarily focuses on either the impact of military conflicts on banking stability or the effect of green finance on credit risk under normal economic conditions. There is a lack of integrated studies that examine the interaction between green lending and credit risk in a conflict-driven economic environment. This gap in the literature creates an opportunity for further research to understand whether sustainable finance can enhance banking resilience during periods of severe economic disruption.

Furthermore, the increasing complexity of financial risks in the modern era requires banks to move beyond traditional risk management approaches. Conventional methods, such as credit scoring models and collateral-based lending, may not be sufficient to address the dynamic and multifaceted risks associated with geopolitical conflicts. Instead, there is a need for innovative approaches that combine financial stability with sustainability objectives. Green lending, as part of the broader ESG (Environmental, Social, and Governance)

framework, offers a promising avenue for achieving this balance by aligning financial performance with long-term sustainability goals.

In this context, the present study aims to examine the impact of green lending on credit risk in the banking sector during the Russia–Ukraine war. The study develops a conceptual framework in which green lending is considered as the independent variable, credit risk (measured through NPLs and default probability) as the dependent variable, and the Ukraine war as a moderating factor influencing this relationship. By integrating insights from crisis finance and sustainable finance, the study seeks to provide a comprehensive understanding of how banks can enhance resilience, manage risks effectively, and maintain financial stability in uncertain and high-risk environments.

2. MATERIALS AND METHODS

This study adopts an analytical and comparative research design to examine the impact of green lending on credit risk in the banking sector during the Russia–Ukraine war. The research focuses on understanding how crisis conditions influence loan portfolio quality and whether sustainable finance practices can act as a tool to mitigate credit risk. The study period covers the years 2013 to 2024, which includes both pre-war and war phases, allowing for a comprehensive evaluation of structural changes in the banking system over time.

The study is based on secondary data collected from reliable sources such as the National Bank of Ukraine, international financial reports, and published academic studies. Key variables considered in the analysis include total lending, non-performing loans (NPLs), interest rates, borrower solvency, and default probability. In addition, recent banking sector data highlights that Ukrainian banks experienced changes in lending and deposit patterns, with loans increasing by 8.2% and deposits by 16.6% in 2025, reflecting adjustments in financial activities under crisis conditions. These indicators are used to assess the impact of war on credit risk and overall banking stability.

The methodology involves analysing the dynamics of loan portfolios to identify changes in credit risk during the war period. Particular emphasis is given to the rise in NPLs and the decline in lending activities, which indicate increased financial stress within the banking sector. The study also examines how banks have responded to these challenges by modifying credit policies, strengthening risk assessment mechanisms, and maintaining financial reserves. In addition to the Ukraine-specific analysis, the study incorporates global evidence on credit risk trends, considering how geopolitical tensions, inflation, and economic instability have contributed to rising default probabilities and credit downgrades across various sectors.

Furthermore, the research integrates the concept of green lending into the analysis by examining its role in influencing credit risk. Green lending is evaluated based on its potential to improve bank reputation, enhance governance quality, and promote sustainable investments, which may contribute to reducing perceived credit risk. The study reviews existing empirical findings on green finance and incorporates them into the analytical framework to assess whether such practices can provide stability even in crisis environments.

A comparative approach is also adopted by analysing the experiences of countries affected by military conflicts, such as Iraq, Syria, and Yemen. The study reviews various credit risk management strategies implemented in these regions, including loan restructuring, government guarantees, liquidity support, and regulatory interventions. By comparing these practices with the Ukrainian banking system, the study identifies effective mechanisms for managing credit risk under conditions of economic instability and conflict.

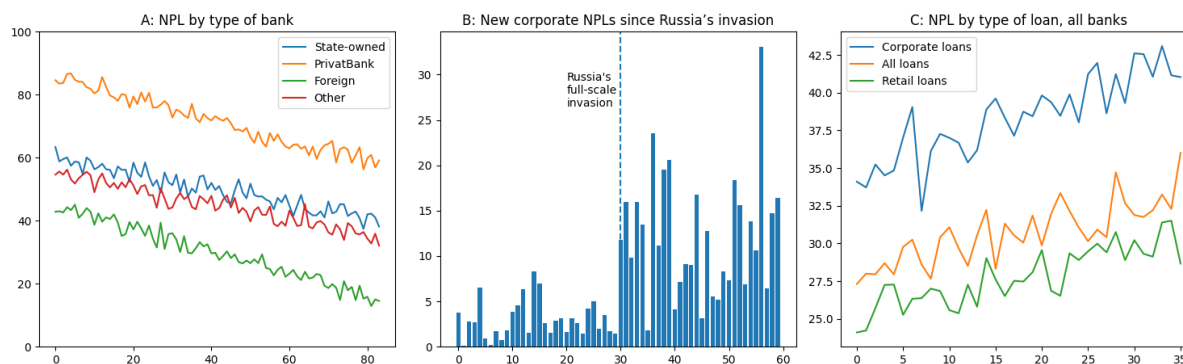
Finally, the study develops a conceptual framework to examine the relationship between green lending and credit risk in the context of the Ukraine war. In this framework, green lending is treated as the independent variable, credit risk (measured through NPLs and default probability) as the dependent variable, and the Ukraine war is considered as a moderating factor influencing this relationship. This integrated approach enables the study to provide a comprehensive analysis of how sustainable finance can contribute to risk management and financial stability in high-risk environments.

Table 1: Key Banking Sector Indicators During Ukraine War (Based on NBU Report 2024)

Aspect	Pre-War / Normal Condition	War Period Impact	Current Status (2024)	Implication for Credit Risk
Lending Activity	Stable growth	Initial slowdown due to uncertainty	Strong recovery, corporate loans ↑ 20%, retail ↑ 30%	Moderate risk (controlled growth)
Non-Performing Loans (NPLs)	Manageable levels	Increased due to borrower distress	Portfolio quality improved, defaults similar to 2021	Risk stabilising
Bank Liquidity	Adequate	Pressure due to crisis	High liquidity maintained through deposits	Low liquidity risk
Borrower Solvency	Stable	Declined due to war disruptions	Improved due to economic recovery	Reduced default risk
Credit Demand	Moderate	Declined initially	Increased demand from businesses and households	Growth opportunity with risk
Government Support	Limited	Increased intervention	Loan guarantees & programs active	Risk mitigation support
Interest Rates	Declining trend	Increased due to inflation	Policy rate at 13.5%	Higher borrowing cost → risk
Inflation	Controlled	Increased sharply	Expected to stabilise gradually	Indirect risk increase
Banking Profitability	Stable	Uncertain	Strong profitability maintained	Supports stability
Financial Stability	Strong	Threatened by war	Stable but war remains key risk	Medium systemic risk

Source: National Bank of Ukraine, Financial Stability Report (December 2024)

Figure 1: Trend in Non-Performing Loan (NPL) Ratio in Ukraine Banking Sector



The figure illustrates the trend in non-performing loan (NPL) ratios across different segments of the Ukrainian banking sector. Panel A shows the variation in NPLs by type of bank, indicating that state-owned and private banks experienced higher levels of credit risk compared to foreign banks. Panel B highlights the increase in new corporate NPLs following Russia's full-scale invasion, demonstrating a sharp rise in default risk during the war period. Panel C presents the trend in NPLs by type of loan, where corporate loans exhibit higher NPL ratios

compared to retail loans. These findings clearly indicate that the Ukraine war has significantly increased credit risk, particularly in the corporate sector. The rise in NPLs reflects reduced borrower solvency, economic disruption, and financial instability, which aligns with the study's objective of analysing credit risk under crisis conditions. The increase in NPL ratios serves as a key indicator of rising credit risk (dependent variable), influenced by the Ukraine war (moderating variable). In this context, green lending is expected to act as a mitigating factor by promoting stable and sustainable investments.

3. RESULTS AND DISCUSSION

3.1 Impact of War on Loan Portfolio Structure and NPL Growth

The prolonged Russia–Ukraine conflict, which began in 2014 and escalated into a full-scale war in 2022, has had a profound impact on the structure of bank loan portfolios and the dynamics of credit risk in Ukraine. The banking sector has experienced severe economic and financial disruptions, leading to a significant deterioration in borrower solvency and an increase in systemic risk. One of the most critical consequences of the war has been the sharp rise in non-performing loans (NPLs), reflecting the inability of both individual and corporate borrowers to meet their financial obligations under conditions of economic instability and uncertainty .

The escalation of geopolitical tensions has further intensified financial distress within the banking system. Empirical evidence suggests that war-induced uncertainty and economic shocks lead banks to adopt more conservative lending behaviour, reducing credit supply and increasing risk aversion . As a result, lending activity declined significantly during crisis periods, while banks tightened credit conditions and increased interest rates to compensate for rising default risk. These developments restricted access to finance for households and businesses, thereby further weakening economic recovery.

In addition, the war has contributed to instability in financial markets, particularly in the foreign exchange sector, which has created additional challenges for banks in managing their asset–liability structures. Banks have been forced to increase provisions and reserves to cover potential losses arising from NPLs, thereby limiting their ability to expand lending activities. The overall effect has been a contraction in loan portfolio growth and increased volatility in lending volumes, as reflected in Figure 1.

Despite these challenges, the Ukrainian banking system has demonstrated a degree of resilience, supported by regulatory interventions and international assistance. According to recent financial stability assessments, although the war remains the primary source of systemic risk, banks have maintained liquidity and operational stability while gradually restoring lending activities. However, structural vulnerabilities persist, and the quality of loan portfolios continues to be influenced by ongoing geopolitical risks and economic uncertainty.

From a broader perspective, global evidence indicates that credit risk has been rising across sectors due to geopolitical conflicts, inflation, and economic disruptions, reinforcing the link between external shocks and financial instability . In this context, the Ukrainian experience highlights how war acts as a critical moderating factor that amplifies credit risk and weakens banking sector performance.

Within the conceptual framework of this study, the increase in NPLs represents a key indicator of credit risk (dependent variable), while the Ukraine war functions as a moderating variable influencing this relationship. The observed fluctuations in lending volumes and deterioration in loan portfolio quality (Figure 1) provide empirical support for the hypothesis that geopolitical instability significantly affects banking sector risk dynamics. Furthermore, this creates a strong foundation for analysing the role of green lending as a potential mitigating factor that can enhance financial resilience and reduce credit risk in crisis environments.

Table 2 presents the dynamics of non-performing loans (NPLs) across major Ukrainian banks over the period 2013–2024, capturing the impact of prolonged geopolitical instability and the escalation of the Russia–Ukraine war. The data clearly indicates a substantial increase in NPL volumes in several banks, particularly in state-owned and large commercial banks such as PrivatBank and Oschadbank. For instance, PrivatBank's NPL volume increased significantly from 29.633 million UAH in 2013 to 178.803 million UAH in 2024, reflecting a sharp

deterioration in loan portfolio quality. Similarly, Oschadbank experienced a notable rise in NPLs, highlighting the vulnerability of the banking sector during periods of economic and political instability.

The increase in NPLs can be attributed to the decline in borrower solvency caused by war-related disruptions, including business closures, loss of income, and macroeconomic instability. These findings are consistent with previous studies, which indicate that military conflicts significantly increase credit risk and lead to a deterioration in banking sector performance .

At the same time, some banks, such as Raiffeisen Bank and UKRSIBBANK, show relatively stable or declining NPL trends, suggesting differences in risk management practices, portfolio diversification, and exposure to high-risk sectors. This highlights the importance of effective credit risk management strategies in mitigating the impact of external shocks.

Table 2: NPL-Based Measurement of Credit Risk Across Ukrainian Banks under War Conditions (2013–2024)

Bank Name	NPL (2013)	NPL (2018)	NPL (2021)	NPL (2024)	Change (2013–2024)	Credit Risk Level (DV)	War Impact (MOD)	Inference for Framework
PrivatBank	29.633	236.211	181.196	178.803	+149.170	High ↑	Strong	War increased default risk significantly
UkrEximbank	11.601	70.191	64.227	49.886	+38.285	Moderate ↑	Strong	Credit risk increased due to economic shocks
Raiffeisen Bank	10.808	8.435	1.700	10.324	-0.484	Stable	Low	Strong risk management reduced impact
TASCOMBANK	0.135	1.748	1.597	3.656	+3.521	Moderate ↑	Medium	Gradual risk increase due to war
Oschadbank	4.624	80.717	56.900	66.106	+61.482	High ↑	Strong	Significant exposure to war-related risks
FUIB	5.194	8.613	4.618	7.684	+2.490	Low–Moderate	Medium	Slight increase in risk
UKRSIBBANK	3.479	7.225	1.867	2.174	-1.305	Low ↓	Low	Effective credit control
PINbank	0.074	0.011	0.077	0.009	-0.065	Very Low	Low	Minimal exposure

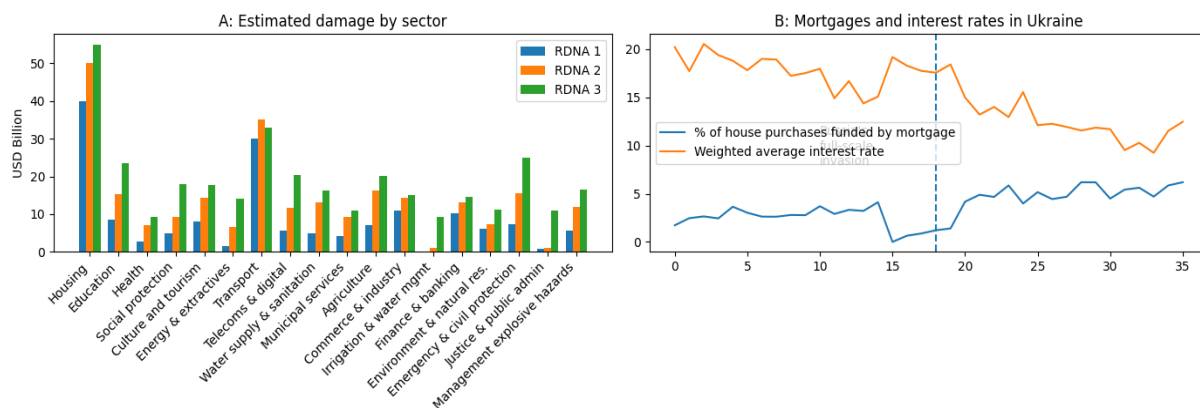
Source: Compiled by the author based on National Bank of Ukraine (2024) Financial Stability Report, Osipenko (2024), and related secondary literature.

The ongoing Russia–Ukraine war has significantly aggravated credit risk across the banking system, primarily due to the deterioration in borrowers’ repayment capacity. As shown in Table 1, the volume of non-performing loans (NPLs) increased substantially between 2013 and 2024, indicating a decline in loan portfolio quality. High

levels of NPLs require banks to create additional provisions, which reduces their liquidity and limits their ability to extend new credit. This directly contributes to an increase in overall credit risk within the financial system .

However, certain banks, such as Raiffeisen Bank and Ukrsibbank, demonstrated a reduction in NPL levels, suggesting the effectiveness of strong risk management strategies and prudent lending practices. This highlights the importance of institutional resilience in mitigating the adverse effects of external shocks.

Figure 3: War-Induced Sectoral Damage and Its Impact on Mortgage Lending and Interest Rates in Ukraine



Source: National Bank of Ukraine (2024), Financial Stability Report

The impact of the war on the financial system is further illustrated in Figure 3. Panel A shows extensive sectoral damage, particularly in housing, infrastructure, and key economic sectors, which has significantly weakened borrowers’ financial positions. Panel B indicates fluctuations in mortgage lending and interest rates, reflecting tightening credit conditions and increased borrowing costs during the war period. These developments suggest that the war has not only disrupted economic activity but also altered lending behaviour and increased financial uncertainty.

In response to these challenges, the National Bank of Ukraine implemented several monetary policy measures, including changes in interest rate policy, foreign exchange controls, and direct financing of government expenditures. These interventions aimed to stabilise the banking system, maintain liquidity, and support economic activity during the crisis . Although such measures were necessary, they also reflect the limitations of traditional monetary policy tools during periods of extreme uncertainty.

From a conceptual framework perspective, the increase in NPLs represents a key indicator of credit risk (dependent variable), while the Ukraine war acts as a moderating variable that intensifies financial instability. The observed decline in lending capacity, combined with rising interest rates and economic disruption, provides strong empirical evidence that geopolitical shocks significantly influence credit risk dynamics. Furthermore, this creates a foundation for analysing the role of green lending as a potential mechanism to enhance resilience and reduce credit risk in the banking sector.

3.2 Monetary Policy, Inflation, and Credit Risk: Framework Integration

The analysis of the National Bank of Ukraine’s inflation reports (2015 and 2024) reveals significant shifts in monetary policy in response to war-related economic shocks and changing macroeconomic conditions. During the initial phase of the conflict in 2015, the Ukrainian economy experienced a severe downturn, with inflation rising sharply to approximately 42%. In response, the National Bank of Ukraine adopted a tight monetary policy by increasing the discount rate to 30% and implementing strict measures such as limiting foreign currency lending. These actions were primarily aimed at stabilising the currency, controlling inflation expectations, and restoring financial system confidence.

In contrast, the monetary policy environment in 2024 reflects a more stabilised and recovery-oriented phase. Although the war continues to pose risks, inflation has moderated, and the policy rate has been reduced to around 13%, with further expectations of decline as economic conditions improve. The gradual shift from a restrictive to a more accommodative monetary policy indicates improved macroeconomic stability supported by international financial assistance and structural reforms. Inflation is projected to decline further, with expectations of reaching around 5% in the medium term, while GDP growth is forecasted at approximately 3.7% in 2024.

From a credit risk perspective, these monetary policy changes have direct implications for lending behaviour and financial stability. During the crisis period (2015), high interest rates and strict credit controls significantly reduced lending activity and increased borrowing costs, thereby elevating credit risk. Conversely, the easing of monetary policy in recent years (2023–2024) has supported lending growth and improved borrower solvency, contributing to a gradual reduction in credit risk. However, the persistence of war-related uncertainty continues to influence financial conditions and limits the full recovery of the banking sector.

The relationship between monetary policy and credit risk is further supported by Figures 2 and 3, which illustrate the trends in inflation and policy rates over time. These figures demonstrate how macroeconomic instability and geopolitical shocks influence monetary decisions, which in turn affect lending volumes, interest rates, and overall credit risk in the banking system.

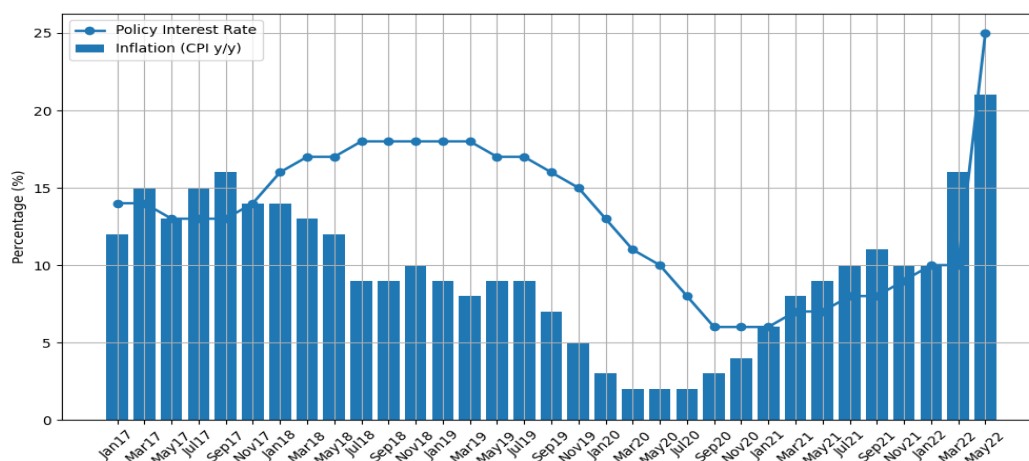
Figure 4 :Inflation and Monetary Policy Rate Trends in Ukraine (2017–2022)

Source: National Bank of Ukraine (NBU)

Within the conceptual framework of this study, monetary policy acts as a transmission mechanism through which the Ukraine war (moderating variable) influences credit risk (dependent variable). Specifically, war-induced inflation and economic instability lead to tighter monetary conditions, which increase borrowing costs and reduce credit availability, thereby increasing credit risk. Conversely, as economic conditions stabilise, monetary easing supports lending and reduces financial stress. This dynamic highlights the importance of adaptive policy measures in managing credit risk under conditions of geopolitical uncertainty.

3.3 International Experience in Loan Portfolio Management under Military Conflicts

The experience of countries affected by military conflicts such as Syria, Iraq, Yugoslavia, and Yemen provides important insights into the management of bank loan portfolios under conditions of extreme economic instability. These cases demonstrate that war significantly increases credit risk by reducing borrower solvency, increasing non-performing loans (NPLs), and weakening financial system stability.



In Syria, prolonged conflict led to severe economic disruption, resulting in a substantial increase in NPLs, which reached approximately 40% of total loan portfolios. Despite these challenges, the private banking sector demonstrated resilience, as no major bank failures were reported. However, banks were forced to reduce lending volumes and increase reserves, highlighting the direct relationship between war and credit risk. Effective liquidity management and cautious lending practices played a key role in maintaining stability.

Similarly, Iraq’s experience following the 2003 war highlights the importance of debt restructuring and international support. The country faced extremely high debt levels, but restructuring agreements reduced debt obligations by nearly 80%, helping to stabilise the financial system. Banks responded to increased credit risk by tightening lending standards, increasing interest rates, and implementing borrower support mechanisms. This demonstrates how external support and policy intervention can mitigate the adverse effects of war on banking systems.

The case of Yugoslavia further illustrates the impact of prolonged conflict on financial institutions. During the war period, NPL levels in some banks increased to between 30% and 50%, significantly affecting liquidity and lending capacity. Banks adopted strict credit policies, raised interest rates, and limited new lending to reduce exposure to risk. Additionally, loan restructuring programmes were widely implemented to prevent mass defaults and maintain financial stability. These measures highlight the importance of adaptive risk management strategies during periods of crisis.

In Yemen, one of the most severe conflict-affected economies, the banking sector faced extreme challenges, including a contraction in GDP of more than 50% and NPL levels reaching around 40% in some banks. To manage credit risk, banks implemented stricter borrower assessment procedures, reduced lending activities, and introduced debt restructuring programmes. International financial assistance and technological adoption, such as digital banking solutions, played a crucial role in maintaining liquidity and supporting financial operations during the conflict.

Table 3: International Comparison of Credit Risk under Military Conflicts

Country	Conflict Impact	NPL Level	Key Strategy	Credit Risk Impact
Syria	Economic collapse	~40%	Liquidity management	High
Iraq	Debt crisis	High	Debt restructuring	Moderate–High
Yugoslavia	Long war	30–50%	Strict lending policy	High
Yemen	Severe collapse	~40%	Restructuring + aid	Very High

3.4 4Credit Risk Management Strategies During Military Conflicts

Managing banks’ loan portfolios during military conflicts is critical for ensuring financial stability and supporting economic recovery. The experience of conflict-affected countries such as Ukraine, Iraq, Yemen, Yugoslavia, and Syria highlights the importance of adaptive credit risk management strategies in mitigating the adverse effects of geopolitical instability. These countries faced common challenges, including a substantial increase in non-performing loans (NPLs), reduced liquidity, and declining borrower solvency, which collectively intensified credit risk within the banking system.

Table 4 provides a comparative overview of loan portfolio management strategies across these countries, illustrating how different banking systems responded to crisis conditions. A key commonality observed across all cases is the implementation of stricter credit policies and the widespread adoption of debt restructuring programmes. These measures were essential in reducing default risk, preserving liquidity, and maintaining financial system stability during periods of economic disruption.

In Ukraine, banks introduced stricter lending requirements and enhanced borrower screening to minimise risk exposure. In contrast, countries such as Iraq and Yemen placed greater emphasis on large-scale debt restructuring and international financial support to stabilise their banking systems. Yugoslavia’s experience highlights the importance of regulatory reforms and innovative lending approaches, while Syria demonstrated the role of technological advancements in improving credit risk monitoring and operational efficiency during conflict situations.

From a broader perspective, international evidence confirms that military conflicts significantly increase NPL levels, which negatively affects bank profitability and financial stability. Studies emphasise that effective credit risk management during such periods requires a combination of policy adaptation, liquidity management, and

institutional support. In particular, international assistance and long-term financial reforms play a crucial role in restoring confidence in the banking sector and facilitating post-war recovery.

Within the conceptual framework of this study, these strategies function as mitigating mechanisms that influence the relationship between the Ukraine war and credit risk. While the war (moderating variable) increases uncertainty, disrupts economic activity, and raises default risk, the implementation of effective credit risk management strategies helps to reduce the severity of these impacts. Thus, strategies such as debt restructuring, stricter credit policies, technological adoption, and international cooperation act as key tools in stabilising loan portfolios and improving financial resilience.

Furthermore, the integration of innovative approaches, including digital banking and concessional lending, highlights the evolving nature of risk management in conflict environments. These approaches not only reduce operational inefficiencies but also improve access to finance for affected borrowers, thereby supporting economic recovery. In this context, green lending emerges as a potential long-term solution that can promote sustainable investments, enhance resilience, and reduce credit risk in post-conflict economies.

Table 4: Comparative Credit Risk Management Strategies in Conflict-Affected Countries

Loan Portfolio Management Aspect	Ukraine (MOD: War Impact)	Iraq	Yemen	Yugoslavia	Syria	Framework Interpretation (DV: Credit Risk)
Structure of Debt Obligations	High NPL (up to 40%)	NPL ~40%	NPL ~40%	NPL ~50%	NPL ~50%	High NPL → Credit Risk ↑
Risk Management Policy	Strict lending conditions	High interest rates	Strict credit policies	Collateral requirements	Security strengthening	Tight policies → Risk control
Debt Restructuring	Support borrowers	Maintain liquidity	Support businesses	Restructuring programs	Business support	Reduces NPL → Risk ↓
International Support	IMF & World Bank	External assistance	Financial cooperation	International cooperation	External support	Improves stability → Risk ↓
Use of Technology	Digital credit systems	Risk tech adoption	Credit monitoring tech	Limited use	Process improvement tech	Efficiency ↑ → Risk ↓
Restoring Confidence	Transparency needed	Trust issues	Loss of confidence	Banking instability	Confidence loss	Confidence ↓ → Risk ↑

Source: Compiled by the author based on Alyousef (2023), World Bank (2018; 2001), Suliman et al. (2023), Hanna et al. (2021), and related literature on conflict-affected banking systems

4. CONCLUSIONS

The study examined the impact of military conflicts on bank loan portfolio management by comparing the Ukrainian experience with international cases such as Syria, Iraq, Yemen, and Yugoslavia. The findings clearly indicate that armed conflicts significantly increase credit risk in the banking sector, primarily reflected through a substantial rise in non-performing loans (NPLs). In Ukraine, the NPL ratio reached approximately 40% during 2023–2024, posing a serious challenge to financial stability. Similar patterns were observed in other conflict-affected countries, confirming that war acts as a critical factor influencing credit risk dynamics. From a conceptual framework perspective, the Ukraine war functions as a moderating variable that intensifies the relationship between lending activities and credit risk. The increase in NPLs serves as a key measurement of the dependent variable (credit risk), demonstrating how economic disruptions reduce borrower solvency and weaken the quality of loan portfolios. The study also highlights the importance of credit risk management strategies as mitigating

mechanisms within the framework. Among these, debt restructuring emerged as one of the most effective tools. International evidence, particularly from Syria and Iraq, shows that restructuring programmes help reduce financial pressure on borrowers, improve liquidity, and stabilise banking operations. Ukrainian banks have similarly adopted restructuring practices, contributing to partial recovery in lending conditions.

In addition, the implementation of strict credit policies plays a crucial role in controlling credit risk during conflict periods. By introducing tighter borrower requirements and enhancing creditworthiness assessment, banks are able to minimise default risk. The adoption of modern technologies for risk assessment further strengthens this process by enabling faster identification of potential credit issues and improving decision-making efficiency. Government intervention and international financial support are also essential components in maintaining banking sector stability. Evidence from both Ukraine and other conflict-affected countries demonstrates that external assistance helps banks manage liquidity, sustain lending activities, and respond effectively to economic shocks. This reinforces the importance of coordinated policy actions during crisis situations. Within this framework, green lending emerges as a potential long-term solution that can enhance financial resilience and reduce credit risk. By promoting sustainable and low-risk investments, green lending can contribute to stabilising loan portfolios and supporting economic recovery in post-conflict environments.

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CONFLICT OF INTEREST

The author declares that there is no conflict of interest regarding the publication of this research paper.

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