

## A Study of the Factors Influencing Bank Loan Performance in Zambian Commercial Banks

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### Abstract

This study investigates the relationship between macroeconomic indicators and the Non-Performing Loan (NPL) Ratio in Zambia over a two-decade period (2003–2022/23). The research was motivated by the persistent challenge of high NPLs in Zambia's banking sector, which undermines financial stability, restricts credit availability, and stifles economic growth. In analysing data from the Bank of Zambia's Financial and Other Statistics Booklet and BOZ Annual Reports (2004–2023), the study assesses how key macroeconomic variables including inflation, GDP growth, interest rates, and exchange rate volatility influence loan performance. Semi-structured interviews with six banking experts further explore institutional and borrower-level factors contributing to NPLs. Descriptive statistics and regression analysis disclose that high inflation and exchange rate volatility significantly increase loan defaults, while lower lending rates enhance repayment capacity. Both economic contractions and rapid GDP growth periods correlate with elevated NPL ratios, which suggests that macroeconomic conditions alone cannot fully explain NPL dynamics. The study also identifies critical non-macroeconomic drivers, such as weak credit monitoring, corruption, and inadequate loan recovery mechanisms. The findings have important implications for policymakers and financial institutions. They highlight the need for a multi-pronged strategy combining macroeconomic stability, tighter regulatory oversight, and institutional reforms to curb NPLs. Recommendations include establishing dedicated loan recovery units, forming asset management corporations, and strengthening credit vetting through a national credit reference bureau. Ultimately, this study emphasizes that sustainable reductions in NPLs require sound economic policies and systemic improvements in governance, risk management, and legal enforcement to ensure long-term financial sector resilience in Zambia.

**Keywords:** Macroeconomic Factors, Loan Performance, Commercial Banks, Non-Performing Loan Ratio, Zambia

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### 1. Introduction

The global financial crisis of 2008/2009 underscored the importance of understanding credit risk, bank stability, and non-performing loans (NPLs). This study investigates the factors contributing to the prevalence of NPLs in Zambia's banking sector—a critical driver of the nation's economy since its independence in the 1960s. While economic reforms in the 1980s spurred growth, challenges such as high inflation and economic instability persisted, necessitating further reforms like bank privatization.

Despite substantial recovery after the 2008/2009 financial crisis, Zambia's banking sector faced a 103% increase in NPLs from 2014 to 2017, surpassing the regulatory threshold. This, coupled with declining interest rates and inefficiencies in state-owned banks, has constrained credit availability, particularly for SMEs. Key contributing factors include economic slowdowns, copper price declines, fiscal arrears, and restrictive monetary policies.

Efforts to mitigate NPLs, such as the establishment of a Credit Reference Bureau and Credit Risk Scoring System, have not eliminated the problem. This study emphasizes examining both macroeconomic and bank-specific drivers of NPLs to enhance regulatory policies, improve banking sector stability, and support economic growth.

## 1.2 Statement of the Problem

Non-performing loans (NPLs) pose a persistent challenge to Zambia's financial sector, with fluctuating ratios reflecting instability in loan performance and straining banks' roles as financial intermediaries. Despite studies linking macroeconomic factors (e.g., GDP growth, inflation, interest rates, and exchange rates) to NPL trends globally and regionally, their specific effects on Zambia's banking sector remain ambiguous. Additionally, systemic issues such as weak credit monitoring and regulatory gaps exacerbate NPL risks. This study seeks to clarify these relationships and address broader systemic challenges to promote financial stability and investor confidence.

## 1.3 Objectives of the Study

- i. To obtain expert opinions on the factors contributing to the increase in non-performing loans (NPLs) in banks.
- ii. To assess the effect of macroeconomic factors on NPL ratios.
- iii. To explore strategies aimed at reducing NPLs in Zambian commercial banks.

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## 2. Literature Review

### 2.1. Global Perspective on Non-Performing Loans

The determinants and implications of non-performing loans (NPLs) have been explored across diverse economic and organizational contexts. The literature highlights the interplay of macroeconomic and bank-specific factors, while identifying gaps in understanding institutional and governance roles.

Louzis, Vouldis, and Metaxas (2012) analyzed NPLs in the Greek banking sector and found GDP, unemployment, interest rates, and public debt as significant determinants. They emphasized the importance of management quality and noted mortgage loans as the least responsive to macroeconomic changes. However, the study's focus on Greece limits its applicability to other economies.

Messai and Jouini (2013) investigated NPLs in Italy, Greece, and Spain during 2004–2008, observing negative correlations with GDP growth and profitability, and positive correlations with unemployment, loan loss reserves, and interest rates. They concluded that macroeconomic factors outweigh bank-specific variables, but their research was confined to crisis-period Eurozone countries.

Beck, Jakubik, and Piloju (2013) expanded the analysis globally across 75 countries, confirming GDP growth, share prices, exchange rates, and lending interest rates as key drivers, while noting variations in the impact of share prices and exchange rates based on country-specific contexts.

Klein (2013) examined Central, Eastern, and South-Eastern Europe (CESEE) from 1998–2011 and highlighted macroeconomic conditions like GDP growth, unemployment, and inflation as primary NPL drivers, with feedback loops affecting economic recovery.

Makri, Tsagkanos, and Bellas (2014) analyzed Eurozone NPL determinants from 2000–2008, finding strong correlations with GDP growth, public debt, unemployment, and capital adequacy ratios. Their findings are restricted to pre-crisis periods.

Skarica (2014) focused on seven Central and Eastern European countries, identifying GDP growth, inflation, and unemployment as significant NPL influencers. Challenges faced by central banks in balancing monetary policy were also noted.

Quang and Nhi (2017) explored Vietnamese banks and found unemployment and GDP growth positively influencing NPLs, while inflation showed variable effects.

Mazreku et al. (2018) studied transition economies and emphasized GDP growth and inflation as negative correlates of NPLs, with unemployment positively associated.

Koju et al. (2018) investigated Nepalese banks, observing NPLs positively influenced by inefficiency, asset size, and the export-to-import ratio, and negatively affected by GDP growth, capital adequacy, and inflation.

Rachman et al. (2018) analyzed Indonesian banks, highlighting profitability and credit growth as factors reducing NPLs. However, their findings were limited to the Indonesian context.

Vaicondam et al. (2019) examined Malaysian banks, finding unemployment, inflation, and interest rates as significant NPL determinants, with unemployment having the strongest impact.

Yilmaz (2019) explored emerging markets, observing economic growth, inflation, economic freedom, and profitability as factors reducing NPLs, while unemployment, public debt, and financial crises increased NPLs.

Mustafa and Maimunah Ali (2019) applied ARDL modeling in Malaysia, confirming negative correlations between GDP growth and NPLs, while inflation showed no significant impact.

Kozarić and Dželihodžić (2020) analyzed Bosnia and Herzegovina, demonstrating that better macroeconomic conditions improve credit quality and reduce NPLs.

Karadima and Louri (2021) focused on Greece (2003–2020), emphasizing public debt and fiscal balance as NPL

determinants, with long-term fiscal expansion significantly impacting NPLs.

Kepli et al. (2021) studied Malaysian banks, finding exchange rates positively influencing NPLs, while industrial production and money supply had negative effects.

Baş and Kara (2021) observed Turkish banks and concluded that interest rates and loan volumes significantly increased NPLs.

Ferreira (2022) provided a global perspective across 80 countries, linking economic growth, profitability, and market stability to lower NPLs, while regulation and high bank costs increased NPLs.

## 2.2. African Perspective on Non-Performing Loans

The determinants of non-performing loans (NPLs) in Africa have been analyzed across various contexts, highlighting the significant influence of macroeconomic and bank-specific factors, while often omitting the role of institutional and governance factors.

Gezu (2014) investigated Ethiopian commercial banks (2002–2013) and found that the loan-to-deposit ratio positively influenced NPLs, while profitability (measured by return on equity and lending rates) exhibited a negative correlation. However, profitability measured by return on assets and tax rates showed a positive relationship with NPLs.

Nyong'o (2014) analyzed credit risk management in Kenyan banks and emphasized its effectiveness in reducing NPLs through senior management-driven policies. Nonetheless, the study was limited to Kenya and did not address macroeconomic influences.

Sheefeni (2015) focused on Namibia and identified long-term relationships between GDP, interest rates, inflation, and NPLs. The study found unidirectional causality from interest rates to NPLs but lacked an exploration of governance factors.

Fofack (2015) examined Sub-Saharan Africa during the 1990s banking crises, finding macroeconomic volatility (e.g., GDP growth and real exchange rates) as key NPL drivers. However, the study's crisis-period scope limits its relevance to contemporary contexts.

Anzagi (2016) explored Kenyan banks (2012–2017), revealing that lending interest rates positively influenced NPLs, while inflation had a negative impact. The study emphasized anticipating price fluctuations but lacked an institutional focus.

Muriithi et al. (2016) linked credit risk to diminished financial performance in Kenyan banks, recommending robust risk management practices. However, external economic and governance factors were not considered.

Mpofu and Nikolaidou (2018) analyzed the Central African Economic and Monetary Community (CEMAC) banking system, showing that bank-specific factors, such as loan-to-asset ratios, increased NPLs. The study did not address macroeconomic or governance influences.

Makori (2018) revisited credit risk management in Kenyan banks, highlighting its positive effect on loan performance and NPL reduction. Despite this, macroeconomic and institutional factors remained unexamined.

## 2.3. Zambian Perspective

Dixon, Ritchie, and Siwale (2006) analyzed loan delinquency within the Christian Enterprise Trust of Zambia (CETZAM), highlighting the hierarchical pressures on loan officers and problematic repayment enforcement methods. They concluded that such practices jeopardized client loyalty and the long-term viability of CETZAM.

Mumba (2019) identified both internal and macroeconomic factors contributing to loan defaults in Zambian financial institutions. The study emphasized inadequate client supervision, poor loan appraisal processes, and insufficient client training as major internal drivers. It also highlighted macroeconomic challenges, including high interest rates, unfavorable exchange rates, and unemployment, which were deemed more impactful than bank-specific factors.

Bwalya (2019) explored the utilization of microcredit by teachers in Lusaka, noting its positive impact on personal and economic growth through asset acquisition and business ventures. However, high interest rates and excessive indebtedness emerged as critical challenges, with many teachers failing to achieve their financial goals despite the benefits.

Chikweti (2020) focused on lending decisions and risk management in Whence Financial Services, revealing a high default risk of approximately 36%, influenced by information asymmetry and inadequate risk management. The study recommended enhanced government and central bank oversight to mitigate risks and improve institutional credibility.

Funyina and Muhanga (2021) investigated non-performing loans (NPLs) using a dynamic panel data approach. Their findings demonstrated the influence of both macroeconomic factors, such as exchange rates and fiscal deficits, and bank-specific characteristics on NPLs. They emphasized the need for detailed, bank-level analyses to address these dynamics effectively.

Mahlangu and Chowa (2022) identified economic downturns, high interest rates, and poor credit collection practices as key contributors to NPLs in Zambia. Their study underscored the importance of robust credit policies, enhanced risk management, and staff training to mitigate these issues.

## 2.4. Gaps in Literature

One significant research gap is the lack of context-specific studies. Many studies focus on specific regions or periods, limiting their generalizability. Additionally, most studies reviewed focus on economic variables, such as GDP growth, inflation, and interest rates, but neglect non-economic factors, such as borrower characteristics and prevailing regulations. There is also a need for more research on credit risk management practices. Though studies like Nyong'o (2014) and

Makori (2018) emphasize the importance of credit risk management, there is limited research on how specific practices, such as credit scoring models or digital lending platforms, influence NPLs.

## 2.5. Theoretical Framework

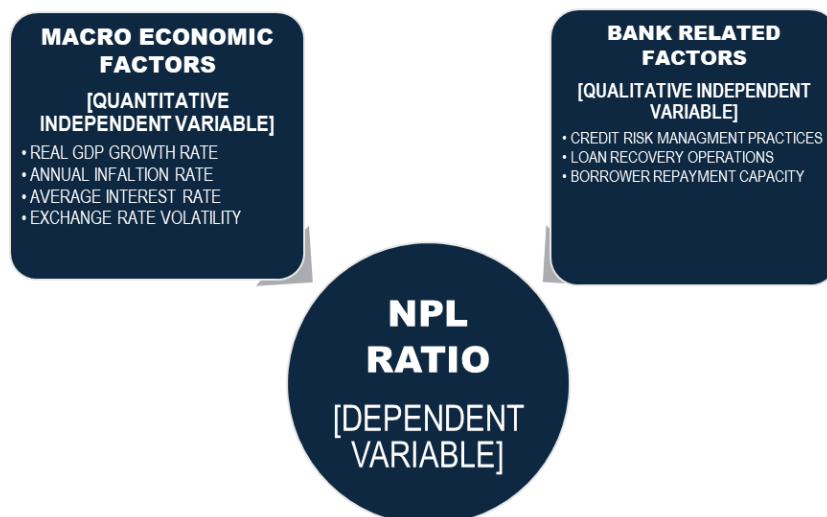
Credit Risk Theory examines the probability of borrowers defaulting on loans due to various financial and economic risk factors. It provides a structured approach for lenders to assess, manage, and mitigate credit risk, particularly in fluctuating economic conditions (Bank for International Settlements, 2000; Basel Committee on Banking Supervision, 2017). The theory identifies key determinants of credit risk, including borrower-specific factors (financial stability, credit history, and repayment capacity), assessed using credit scoring models and financial statement analysis (CFA Institute, 2025), and macroeconomic factors (GDP growth, inflation, unemployment, interest rates, and exchange rate volatility), which influence borrowers' repayment ability (Bank for International Settlements, 2000). Additionally, systemic risk, such as economic recessions, further amplifies credit risk across the financial sector.

To mitigate credit risk, financial institutions employ various credit risk management strategies, including credit scoring models, loan diversification, collateral requirements, and loan monitoring systems (CFA Institute, 2025). In the context of Zambia's commercial banking subsector, Credit Risk Theory is vital for analyzing the high prevalence of Non-Performing Loans (NPLs). The study applies this framework to explore:

- The factors contributing to increased NPLs, focusing on internal credit risk management practices (Bank for International Settlements, 2000).
- The impact of macroeconomic conditions on loan performance, assessing how economic volatility affects borrowers' repayment ability (Funyina and Muhanga, 2021).
- Strategies to improve bank loan performance, leveraging Credit Risk Theory to propose solutions tailored to the Zambian banking environment (CFA Institute, 2025).

## 2.6. Conceptual Framework

The conceptual framework for the study is illustrated in Figure 1.



Source: The Researcher, 2025

## 3. Research Methodology

### 3.1. Research Philosophy

The study adopts a pragmatic philosophy, blending positivist and interpretivist approaches to address the multifaceted nature of NPLs. This philosophy emphasizes practical problem-solving, aligning with the study's goal of generating actionable credit policy recommendations. It supports the integration of diverse data types for a well-rounded analysis.

### 3.2. Research Design

A descriptive, explanatory sequential mixed-methods design is employed, combining quantitative and qualitative approaches. Quantitative analysis identifies patterns and macroeconomic influences, while qualitative methods explore institutional dynamics shaping lending practices. Sequential implementation allows findings to progress logically, and methodological triangulation enhances validity and reliability.

### 3.3. Data Collection

- Quantitative Data: Secondary data (2004–2023) from Bank of Zambia reports ensures consistency and reliability, covering variables such as NPL ratios, GDP growth, inflation, interest rates, and exchange rate fluctuations.
- Qualitative Data: Semi-structured interviews with six banking experts (selected via purposive and snowball sampling)

provide authoritative insights into credit risk management and contextualize quantitative results.

### 3.4. Data Analysis

- Quantitative Analysis: A three-stage process—descriptive statistics, correlation analysis, and multiple regression—uncovers relationships between macroeconomic factors and NPL ratios.
- Qualitative Analysis: Thematic analysis (following Braun & Clarke's framework) systematically identifies and organizes patterns into coherent themes, creating a narrative that highlights institutional practices and challenges.

## 4. Research Results and Analysis

### 4.1. Expert Opinion on Factors that Cause High NPL in Zambian Commercial Banks

The expert opinions on the causes of non-performing loans (NPLs) in Zambian commercial banks largely align with existing literature while providing localized insights. Key factors include borrower-related challenges, institutional inefficiencies, macroeconomic instability, and regulatory hurdles. Experts emphasize poor financial management, fraudulent practices, and lack of entrepreneurial knowledge as primary borrower-related contributors (Bwalya, 2019; Chikweti, 2020), with additional insights on asset inflation and reliance on individual leadership in family businesses—an aspect not widely discussed in prior studies.

Institutional inefficiencies such as weak loan portfolio management, corruption, and inadequate credit analysis echo literature findings (Rachman et al., 2018; Nyong'o, 2014; Dixon, Ritchie & Siwale, 2006), though experts provide more detailed examples of unethical behaviour, including staff collusion with borrowers. Macroeconomic and environmental factors, including inflation, currency devaluation, climate-related disruptions, and crises like COVID-19 and power shortages, exacerbate loan repayment challenges (Messai & Jouini, 2013), adding a regional perspective to broader studies on Sub-Saharan Africa.

Regulatory inefficiencies, such as excessive requirements and legal delays in asset disposal, hinder recovery efforts (Beck et al., 2013; Karadima & Louri, 2021). Information asymmetry is also highlighted as a critical issue, with experts providing practical examples of how outdated or incomplete market data affects loan decisions (Chikweti, 2020). These insights reinforce and expand upon existing knowledge, emphasizing the need for improved financial governance, credit risk management, and regulatory reforms.

### 4.2. Macroeconomic Factors Vs NPLs

#### Real GDP Growth Rate Vs NPL Ratio

The findings indicate an inverse relationship between GDP growth and Non-Performing Loan (NPL) ratios, with economic contractions linked to higher loan defaults, supporting Messai and Jouini (2013) and Beck, Jakubik, and PiloIU (2013). Several studies (Mustafa & Ali, 2019; Mazreku et al., 2018; Anita et al., 2022) affirm that strong economic performance enhances borrowers' financial stability, reducing NPL levels, while Mazreku et al. (2018) and Smith (2024) further emphasize this inverse correlation.

However, the observed increase in NPLs during Zambia's rapid GDP growth in 2010 contradicts the typical trend, suggesting over-leveraging or systemic inefficiencies, a phenomenon also noted by Koju et al. (2018) in Nepalese banks. This deviation hints at a non-linear GDP-NPL relationship, aligning with Quang and Nhi (2017) and Beck et al. (2013), who identified structural and lending practice-mediated effects. Regional insights (Funyina & Muhanga, 2021) reinforce the variability across bank categories.

Despite the general belief that GDP growth lowers NPLs, the lack of statistical significance at the 5% level underscores its complexity (Kamun & Olweny, 2023; Gezu, 2014). Other intervening factors, including inflation, exchange rates, and sector-specific lending practices (Kepli et al., 2021; Wahome, 2021), might moderate this relationship, warranting further contextualized research into banking sector risk management and borrower demographics.

#### Annual Inflation Rate Vs NPL Ratio

The findings show that inflation's impact on Non-Performing Loans (NPLs) is inconsistent and context-dependent. While inflation spikes (e.g., in 2003 and 2004) coincided with higher NPL ratios, periods of stable inflation (e.g., 2023) saw improved loan performance. This supports studies suggesting moderate inflation enhances repayment capacity (Mazreku et al., 2018; Mustafa & Maimunah Ali, 2019) but contradicts research linking inflation directly to worsening NPLs (Kamun & Olweny, 2023). The lack of statistical significance indicates that inflation's influence may be moderated by factors like interest rates, exchange rates, and economic structure (Wahome, 2021). Future research should explore these interactions further.

#### Average Lending Rate Vs NPL Ratio

The findings on the relationship between Average Lending Rates and Non-Performing Loan (NPL) ratios reveal both confirmations and contradictions of existing literature. The observed decline in lending rates from 45.3% in 2003 to 25.0% in 2022, alongside a reduction in the NPL ratio from 5.3% to 4.2%, supports studies indicating a negative

correlation between lending rates and NPLs (Beck, Jakubik & PiloIU, 2013; Baş & Kara, 2021). Similar findings from Anzagi (2016) and Wahome (2021) suggest higher lending rates elevate default risks, straining borrowers' financial obligations.

However, the weak and insignificant correlation identified in regression analysis contradicts studies emphasizing a strong link between lending rates and NPLs (Sheefeni, 2015; Kamun & Olweny, 2023). This discrepancy may stem from country-specific factors or unaccounted variables such as borrower characteristics and banking sector structures. Additionally, high variability in lending rates (standard deviation of 6.544%) complicates the relationship, as borrowers and financial institutions adjust to fluctuating costs.

Some literature highlights the interaction between lending rates and macroeconomic factors like exchange rates or tax revenue (Funyina & Muhanga, 2021; Aliyu, 2023). However, this study suggests that lending rates alone are not a strong predictor of NPL trends, pointing to broader systemic and bank-specific influences (Gezu, 2014; Koju, Koju & Wang, 2018). Future research should further explore these moderating factors to refine the understanding of loan performance.

### Exchange Rate Vs NPL Ratio

The findings reveal both alignment and contradictions with existing literature regarding the relationship between exchange rate depreciation and Non-Performing Loans (NPLs). The observed correlation between exchange rate depreciation and increased NPLs, notably peaking at 14.8% in 2010, supports studies emphasizing the role of currency fluctuations in exacerbating credit risk (Beck, Jakubik & PiloIU, 2013; Funyina & Muhanga, 2021). However, the long-term trend showing a decrease in NPLs despite continued depreciation (declining to 4.2% in 2023) suggests borrower resilience and financial sector adjustments, contradicting studies that assert prolonged depreciation worsens NPLs (Kamun & Olweny, 2023).

Regression analysis further challenges the literature's consensus by showing an insignificant predictive relationship between exchange rates and NPLs, with low R-Square values and wide confidence intervals. This suggests that other macroeconomic or structural factors may have a greater influence on loan performance, aligning with findings from Mustafa and Maimunah Ali (2019), who observed weakened exchange rate effects in contexts where financial institutions adapted their risk models.

## 4.3. Strategies for Managing and Mitigating Poor Loan Performance in Zambia

### Proactive Engagement and Debt Restructuring:

Building trust through strong bank-borrower relationships helps reduce information asymmetry and improve repayment behaviour (Berger & Udell, 1995).

Restructuring debt through measures like extended tenures, lower interest rates, and payment deferrals can support distressed borrowers and improve loan recovery.

These approaches align with global best practices, such as those observed in India and other emerging economies.

### Institutional Reforms:

Creation of specialized loan recovery units and establishment of an asset management corporation (AMC) can help remove toxic assets from banks' portfolios.

International examples, such as Malaysia, South Korea, and Zimbabwe, demonstrate the effectiveness of AMCs in improving credit market efficiency.

Success depends on robust governance to avoid moral hazards and political interference.

### Regulatory and Systemic Enhancements:

Setting up a credit reference bureau improves borrower creditworthiness assessment and reduces risks like adverse selection and moral hazard.

Experiences in Kenya and Nigeria highlight how credit bureaus enhance transparency and reduce defaults.

### Legal Measures:

Legal instruments like litigation and wage garnishment ensure creditor rights and minimize financial instability (Laeven & Valencia, 2013).

Strategic legal actions reduce non-performing loans, as demonstrated in China (Gong, 2018), though excessive reliance may pose reputational risks and high costs (Basel Committee on Banking Supervision, 2017).

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## 5. Conclusion and Recommendations

### 5.1. Conclusion

The study reveals a multidimensional relationship between macroeconomic factors and loan performance, with high inflation and exchange rate volatility driving loan defaults, while lower lending rates improve repayment capacity.

However, macroeconomic factors alone do not fully explain NPL variations, highlighting the significance of systemic challenges such as poor financial management, weak credit monitoring, and regulatory inefficiencies. To address these issues, a multi-faceted approach is essential, combining macroeconomic stability, strengthened regulatory oversight, institutional reforms, and proactive borrower engagement to mitigate NPL risks and ensure the long-term resilience of Zambia's banking sector.

## 5.2. Recommendations

### Recommendations for the Ministry of Finance and the Bank of Zambia

1. The Ministry of Finance and the Bank of Zambia should implement targeted fiscal and monetary policies to stimulate sustained GDP growth, particularly during economic downturns
2. The Bank of Zambia should target inflation control policies, with specific attention to the most volatile sectors, like food and energy.
3. Develop inflation-resistant credit products such as inflation-indexed loans or repayment deferrals during periods of high inflation
4. The Bank of Zambia should adopt more gradual and transparent interest rate adjustments, particularly when combatting inflation, ensuring that changes are predictable
5. Develop financial instruments to hedge against exchange rate fluctuations, particularly for businesses with foreign currency-denominated loans

### Recommendations for Commercial Banks in Zambia

1. Develop Flexible Loan Products: Commercial banks should innovate adjustable-rate loans with pre-set maximum caps, ensuring that borrowers can manage their repayments even when rates increase.
2. Enhance Credit Risk Assessment: Commercial banks should integrate advanced analytics tools (such as machine learning and artificial intelligence) for improved creditworthiness assessments.
3. Establish Financial Literacy Programs: Commercial banks should initiate tailored financial literacy programs for different borrower segments.
4. Collaborate with Credit Reference Bureaus: Strengthen partnerships with credit bureaus to ensure that banks have access to comprehensive, real-time borrower data for better lending decisions

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## Conflict of Interest

The authors declare that they have no conflicting interests

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## Ethical considerations

The article followed all ethical standards appropriate for this kind of research.

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