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CREDIT RISK MANAGEMENT AND NON-PERFORMING LOAN DYNAMICS IN HOME OWNERSHIP LENDING: EVIDENCE FROM AN INDONESIAN STATE-OWNED BANK

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Abstract
This study aims to analyze the application of credit risk management in PT Bank Tabungan Negara (Persero) Tbk's Home Ownership Loan (KPR) products during the 2022–2024 period. Credit risk is a major risk in banking that has the potential to affect asset quality and stability of banks' financial performance, especially in banks with a focus on housing financing such as BTN. The research method used is a qualitative and quantitative descriptive approach by utilizing secondary data in the form of financial statements, risk management reports, as well as official publications of BTN and relevant scientific journals. The analysis focused on the development of Non-Performing Loan (NPL) ratios, the application of prudential principles, and mortgage credit risk mitigation strategies. The results show that the NPL ratio of BTN MORTGAGES during the 2022–2024 period has experienced an increasing trend, but is still at a relatively controlled level. BTN consistently implements credit risk management through 5C-based feasibility analysis and continuous credit supervision. This study concludes that the effectiveness of credit risk management plays an important role in maintaining the quality of mortgage credit and the sustainability of BTN's performance.

Keywords: Credit Risk Management, Home Ownership Loans, Non-Performing Loans

1. Introduction

Banks serve a critical function in national economic development through financial intermediation, mobilizing deposits and channeling them into productive credit to foster economic activity and societal welfare. Among various credit instruments, Home Ownership Loans (*Kredit Pemilikan Rumah* - KPR) play a particularly vital role in fulfilling the fundamental need for adequate housing by providing long-term financing solutions (Islamic, 2019).

As a state-owned bank with a historical mandate in housing finance, PT Bank Tabungan Negara (Persero) Tbk (BTN) has been the government's primary vehicle for public housing financing since its establishment. Consequently, mortgage products constitute the core of BTN's credit portfolio, resulting in distinct risk characteristics particularly regarding credit risk compared to other commercial banks (Fernos et al., n.d.).

Credit risk, arising from the potential failure of borrowers to meet their repayment obligations, represents the foremost risk in banking. It directly threatens asset quality, financial stability, and overall bank performance. In the context of mortgages, this risk is amplified due to the long-term nature of the loans and their sensitivity to fluctuations in debtor income, interest rates, and broader macroeconomic conditions.

The period 2022–2024 presents a significant phase for Indonesian banking, characterized by post-pandemic economic recovery alongside persistent global inflationary pressures, rising benchmark interest rates, and liquidity constraints. These conditions elevate the risk of non-performing loans, especially for long-term consumptive credits such as mortgages. Empirical evidence indicates that among state-owned banks, BTN exhibits a relatively higher exposure to credit risk, attributable to its concentrated portfolio in housing sector financing.

Effective credit risk management encompassing systematic processes for risk identification, measurement, monitoring, and control is therefore paramount. BTN employs prudential principles through creditworthiness assessments, application of the 5C (Character, Capacity, Capital, Collateral, Condition) framework, ongoing collectability supervision, and restructuring policies as integral components of its mortgage risk mitigation strategy (São Paulo Sitohang et al., n.d.).

While previous studies suggest that BTN's mortgage credit risk management generally aligns with regulatory standards, several implementation challenges persist. These include inconsistencies in debtor data, vulnerabilities in repayment capacity, and the susceptibility of credit quality to external economic shocks (Islamic, 2019; Simatupang et al., 2021). Consequently, strengthening risk management frameworks remains essential for preserving asset quality and enhancing the competitiveness of state-owned banks specializing in housing finance.

This study aims to conduct a comprehensive analysis of credit risk management in PT Bank Tabungan Negara (Persero) Tbk's Home Ownership Loan (KPR) products during the 2022–2024 period. The research seeks to evaluate the effectiveness of existing risk mitigation strategies in navigating contemporary economic dynamics and to provide evidence-based recommendations for refining risk management policies within the state-owned housing finance sector.

2. Theoretical Background

2.1 Home Ownership Loan (KPR)

A Home Ownership Loan (*Kredit Pemilikan Rumah* - KPR) is a bank financing facility designed to assist individuals in purchasing, constructing, or renovating residential properties through a structured installment repayment system over a predetermined period. Mortgages play a crucial role in enhancing public access to homeownership, thereby supporting the growth of the property sector and contributing to broader social welfare.

In Indonesia, mortgages are categorized into two primary types: Subsidized Mortgages and Non-Subsidized Mortgages. Subsidized Mortgages target low-income communities (Masyarakat Berpenghasilan Rendah - MBR) with government support via the Housing Financing Liquidity Facility (Fasilitas Likuiditas Pembiayaan Perumahan - FLPP). Conversely, Non-Subsidized Mortgages are available to the general public under terms set directly by banks. PT Bank Tabungan Negara (Persero) Tbk (BTN) is recognized as a pioneer in Indonesia's mortgage sector and holds the largest market share in the subsidized segment. Consequently, mortgage products constitute the core of BTN's credit portfolio (Bulo, 2024).

While this portfolio dominance significantly contributes to the bank's revenue, it simultaneously elevates its exposure to credit risk. Therefore, effective risk management for mortgage products is a strategic imperative for maintaining asset quality and ensuring the sustainability of the bank's financial performance.

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2.2 Credit Risk in Banking

Credit risk arises from the potential failure of a debtor to fulfill principal and/or interest payment obligations as stipulated in the credit agreement. As a principal risk in the banking industry, it directly impacts asset quality, bank soundness, and the stability of the financial system.

In the context of Home Ownership Loans, credit risk exhibits distinct characteristics due to its long-term nature and heightened sensitivity to variables such as debtor income stability, interest rate fluctuations, and prevailing macroeconomic conditions. Research on the disbursement of subsidized mortgages at BTN indicates that high-volume lending without adequate oversight can increase the potential for non-performing loans (NPLs).

As a bank specializing in housing finance, BTN faces relatively more pronounced credit risk challenges compared to general commercial banks. Consequently, the implementation of a comprehensive and sustainable credit risk management framework is essential for preserving financial stability and maintaining public trust (São Paulo Sitohang et al., n.d.).

2.3 Non-Performing Loan (NPL)

The Non-Performing Loan (NPL) ratio is a primary metric for assessing the level of impaired credit within a bank. It reflects the proportion of loans classified as substandard, doubtful, or loss against the total loan portfolio. A high NPL ratio signals deteriorating credit quality and elevated credit risk exposure.

Research conducted at a BTN branch in Bogor suggests that a mortgage approval system adhering to procedural and prudential principles can help mitigate the NPL rate. However, persistent administrative and operational constraints, if not optimally addressed, retain the potential to increase loan defaults (Islamic, 2019).

NPLs in mortgage portfolios have direct implications for a bank's financial performance, affecting the allocation of impairment loss allowances (Cadangan Kerugian Penurunan Nilai - CKPN) and eroding profitability. Therefore, NPL control remains a central focus of BTN's credit risk management strategy, particularly for mortgage products which represent the largest portion of its credit portfolio.

2.4 The 5C Principles in Credit Analysis

The 5C principle is a fundamental credit assessment methodology employed by banks to mitigate credit risk. This framework evaluates a debtor's creditworthiness across five dimensions: Character, Capacity, Capital, Collateral, and Condition of Economy.

In mortgage lending:

1) Character assesses the debtor's integrity and repayment history.
2) Capacity measures the ability to service installments based on stable income.
3) Capital evaluates the debtor's equity contribution (down payment).
4) Collateral pertains to the financed property serving as security.
5) Condition of Economy considers macroeconomic factors that may influence credit risk.

Empirical studies demonstrate that the consistent and disciplined application of the 5C principle can effectively reduce the potential for NPLs in mortgage portfolios. BTN integrates this principle as a core component of its credit risk management system to uphold credit quality and minimize the risk of debtor default (Meilaningrum et al., n.d.; São Paulo Sitohang et al., n.d.; Simatupang et al., 2021).

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3. Methods

3.1 Research Design

This study adopts a descriptive research design employing a mixed-methods approach that integrates qualitative and quantitative analysis. The descriptive design is appropriate for systematically documenting and explaining the characteristics of credit risk management practices. The quantitative component focuses on analyzing objective financial metrics, specifically the Non-Performing Loan (NPL) ratio, to measure and track the level of credit risk in PT Bank Tabungan Negara (Persero) Tbk's (BTN) Home Ownership Loan (KPR) portfolio from 2022 to 2024. Concurrently, the qualitative component examines the underlying policies, procedures, and strategic implementation of BTN's mortgage credit risk mitigation. This combined approach aligns with established banking research that asserts a comprehensive understanding of credit risk requires analysis beyond financial figures to include the procedural and policy frameworks that govern lending activities (Fernos et al., n.d.; Sa'diah et al., 2024).

3.2 Scope of Research and Unit of Analysis

The scope of this research is the credit risk management framework applied to Home Ownership Loan (KPR) products at PT Bank Tabungan Negara (Persero) Tbk. The analysis emphasizes the application of creditworthiness assessment, ongoing credit supervision, and risk control mechanisms, as reflected in the mortgage NPL trend.

The unit of analysis is institutional, focusing on BTN as a corporate entity. Data for analysis are drawn from the bank's official corporate documents, including its annual financial statements, risk management reports, and sustainability reports. This focus on institutional-level analysis is consistent with prior studies on BTN's mortgage operations, which utilize the bank as the primary unit to evaluate the efficacy of its credit risk management systems (Islamic, 2019).

3.3 Data Collection Techniques

Data for this study were collected exclusively through secondary data collection techniques, namely documentation study and literature review.

1) Documentation Study: Official documents were collected and reviewed, including:
    a. BTN's Annual Financial Statements (2022, 2023, 2024).
    b. BTN's Annual Reports and Risk Management Reports.
    c. BTN's Sustainability Reports.
2) Literature Review: Academic sources such as scientific journals, textbooks, and prior research publications relevant to mortgage lending, credit risk, and NPLs were examined to establish the theoretical and empirical context.

The use of verified and publicly available secondary data is a well-established and suitable method for banking risk analysis, as it provides reliable, audited information on financial performance and formal policy frameworks (Sustainability, n.d.; Islamic, 2019).

3.4 Operational Definitions and Data Analysis Techniques

The key variable and analytical techniques are defined and described below:

1) Credit Risk (Operationalized as NPL Ratio): Credit risk is measured quantitatively using the Non-Performing Loan (NPL) ratio for the mortgage portfolio. The NPL ratio is calculated as (Total Non-Performing KPR Loans / Total Outstanding KPR Loans) x 100%. This indicator serves as the primary metric for assessing credit quality

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and risk levels, supported by its widespread use as the most representative measure of banking credit asset health (Islamic, 2019).

2) Data Analysis Techniques:
   a. Quantitative Descriptive Analysis: This involves calculating the annual NPL ratios for BTN's KPR portfolio from 2022 to 2024. The results are presented descriptively (using tables and trend analysis) to identify patterns, stability, or changes in credit risk levels over the three-year period. This analysis assesses the outcome of risk control efforts.
   b. Qualitative Descriptive Analysis: This technique is used to analyze the implementation of BTN's credit risk management policies. The analysis is structured around key frameworks, particularly the 5C principles of credit analysis (Character, Capacity, Capital, Collateral, Condition of Economy). BTN's reported procedures and strategies are examined and evaluated against theoretical best practices and findings from comparable studies (e.g., Angelina & Sudrajat, 2023). This analysis aims to understand the processes behind the quantitative NPL results.

3.5 Research Stages

The research was conducted in a systematic sequence of stages:

1) Problem Identification: Defining the focus on credit risk in BTN's KPR products.
2) Data Collection: Gathering secondary data from financial reports, risk documents, and academic literature.
3) Quantitative Analysis: Processing and analyzing NPL ratio data for the 2022-2024 period.
4) Qualitative Analysis: Examining credit risk management policies and their implementation.
5) Synthesis and Conclusion: Interpreting the combined findings from both analyses to draw conclusions regarding the effectiveness of BTN's KPR credit risk management.

This staged methodology ensures a structured and comprehensive analysis, consistent with approaches used in previous research on this topic (Islamic, 2019).

4. Results and Discussion

4.1 Trend of Non-Performing Loans (NPL) in BTN's Mortgage Portfolio (2022-2024)

An analysis of PT Bank Tabungan Negara (Persero) Tbk's (BTN) financial statements and performance disclosures reveals a discernible trend in the Non-Performing Loan (NPL) ratio for its Home Ownership Loan (Kredit Pemilikan Rumah - KPR) portfolio from 2022 to 2024. As presented in Table 1, the NPL ratio demonstrates an upward trajectory over this period.

Table 1. Non-Performing Loan (NPL) Ratio of BTN's KPR Portfolio (2022-2024)

Year	NPL Ratio (%)	Remarks
2022	3.4%	Baseline post-pandemic year
2023	3.7%	Period of rising benchmark interest rates
2024	4.4%	Continuation of macroeconomic pressures

Source: Processed from BTN Annual Financial Statements and Sustainability Reports (2022-2024).

This increasing trend reflects heightened pressure on credit risk within BTN's core mortgage portfolio. The rise is attributable to a confluence of factors characterizing the

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post-pandemic economic landscape, including the economic recovery's uneven impact, successive increases in the benchmark interest rate by Bank Indonesia, and a consequent rise in the debt servicing burden for existing mortgage holders (Sustainability, n.d.). This finding aligns with established literature indicating that mortgage products are particularly sensitive to macroeconomic shifts and debtor income volatility, making them susceptible to deteriorating performance without robust risk mitigation (Islamic, 2019).

4.2 Analysis of Credit Risk and Management Effectiveness

The observed increase in the NPL ratio should not be interpreted solely as a decline in underwriting quality. A significant contributing factor is BTN's aggressive expansion in both subsidized and non-subsidized mortgage segments, a strategic move that inherently increases the volume of credit at risk. Research corroborates that high disbursement volumes, especially in subsidized mortgages, are directly proportional to elevated credit risk exposure, necessitating proportionally stronger supervision and control mechanisms (Angelina & Sudrajat, 2023).

Despite these pressures, BTN has managed to maintain its NPL ratio within a controlled and acceptable threshold relative to its risk appetite and regulatory limits. This containment is achieved through active risk management interventions, including:

1) Credit Restructuring Policies: Proactively modifying loan terms for borrowers facing temporary financial hardship.
2) Active Collection Strategies: Enhancing efforts to manage delinquent accounts.
3) Strengthened Risk Management Frameworks: Continuously refining internal controls and monitoring systems.

This demonstrates that while portfolio growth and external shocks have increased risk, BTN's institutional response has thus far been effective in preventing a crisis in asset quality (Islamic, 2019).

4.3 Implementation of Credit Risk Management: The 5C Principles and Supervision

BTN's credit risk management for mortgages is anchored in the prudential application of the 5C principles (Character, Capacity, Capital, Collateral, Conditions) during the credit assessment phase. This systematic analysis aims to evaluate both the ability and willingness of prospective borrowers to fulfill their obligations, serving as the first line of defense against default risk (Islamic, 2019). Empirical evidence confirms that consistent application of these principles is instrumental in reducing potential NPLs, although challenges such as administrative inconsistencies can occasionally impede perfect execution.

Beyond initial screening, BTN employs continuous credit supervision throughout the loan lifecycle. This involves regular monitoring of payment collectibility, ongoing assessment of debtor repayment capacity, and the timely implementation of restructuring for accounts affected by adverse economic conditions. Angelina and Sudrajat (2023) emphasize that such rigorous, ongoing supervision is a critical factor in mitigating risk within high-volume mortgage portfolios, effectively slowing NPL growth despite significant disbursement activities.

4.4 Implications for Financial Performance and Stability

The rising NPL trend carries direct implications for BTN's financial performance, primarily through the mandatory allocation of larger impairment loss allowances (Cadangan Kerugian Penurunan Nilai - CKPN), which can pressure

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profitability. However, BTN's integrated and adaptive risk management approach has enabled it to maintain overall financial stability. The bank's performance reports indicate an ability to absorb the impact of rising NPLs while continuing operations sustainably. This outcome underscores a key finding in banking literature: institutions specializing in long-term financing, such as housing loans, require exceptionally resilient and dynamic credit risk management systems to preserve asset quality and ensure long-term viability.

4.5 Synthesis and Conclusion

The analysis leads to three primary conclusions:

1) The NPL ratio for BTN's KPR portfolio exhibited an increasing trend from 2022 to 2024, driven by external macroeconomic pressures and the bank's own strategic credit expansion.
2) BTN has demonstrated an effective institutional capacity to control this elevated risk, keeping NPL levels within manageable bounds through a combination of prudent initial assessment, proactive portfolio management, and structured policy interventions.
3) The integrated application of the 5C credit analysis framework and sustained post-disbursement supervision are confirmed as vital components in maintaining loan quality and containing the growth of non-performing assets.

These findings collectively reinforce the central thesis that the effectiveness of a bank's credit risk management framework particularly one that is responsive to both internal strategy and external shocks is the paramount factor in maintaining stability for banks with concentrated portfolios like BTN.

5. Conclusion

This study aimed to analyze credit risk management in the Home Ownership Loan (KPR) portfolio of PT Bank Tabungan Negara (Persero) Tbk during the 2022–2024 period. The findings confirm a discernible increase in the Non-Performing Loan (NPL) ratio, a trend attributable to post-pandemic macroeconomic volatility, rising benchmark interest rates, and an increased debt servicing burden for borrowers. While this rise indicates heightened credit risk exposure, the NPL levels remained within controllable thresholds, reflecting the bank's inherent risk profile as a specialized housing financier.

The analysis further reveals that the rising NPL is not merely a function of deteriorating underwriting but is also correlated with BTN's significant strategic expansion in mortgage disbursement, particularly within the subsidized segment. This growth inherently amplifies risk volume, necessitating proportionally stronger oversight. The study confirms that BTN has implemented a structured risk management framework centered on the prudential application of the 5C credit analysis principles (Character, Capacity, Capital, Collateral, Conditions) and sustained post-disbursement supervision. These measures have been instrumental in mitigating the pace of NPL growth and preserving overall portfolio quality.

In summary, the research affirms that the effectiveness of a dynamic and integrated credit risk management system is the critical determinant of stability for banks with concentrated portfolios like BTN. While external pressures and growth strategies elevate risk, robust internal controls in credit assessment, monitoring, and proactive remediation can successfully contain this risk within acceptable bounds, ensuring business sustainability and financial performance.

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Based on the conclusions, the following recommendations and implications are proposed:

1) Enhance Credit Analysis with Macroeconomic Sensitivity: Strengthen the 5C-based creditworthiness assessment, with heightened focus on *Capacity* and *Conditions*, to ensure lending decisions are more adaptive to fluctuating economic cycles and individual borrower resilience.
2) Fortify Post-Disbursement Monitoring Systems: Implement more intensive and technology-driven credit supervision, especially for the high-volume subsidized mortgage segment. An advanced early warning system should be deployed to proactively identify accounts with potential default risk, enabling timely intervention.
3) Strategic and Prudent Use of Restructuring: Optimize credit restructuring policies as a key risk mitigation tool. Such policies must be applied selectively and judiciously to support viable borrowers facing temporary hardship, without compromising long-term asset quality or prudential banking principles.
4) Balance Growth with Risk Governance: Management must strategically balance ambitious mortgage growth targets with stringent credit quality controls. Ensuring that portfolio expansion is not accompanied by a disproportionate surge in credit risk is paramount for sustainable financial health.
5) Invest in Human Capital and Data-Driven Decision Making: Strengthen the competency of credit analysis and risk supervision teams through continuous training. Furthermore, managerial decisions regarding lending policies and risk mitigation should be increasingly informed by historical trend analysis of NPL data and other key risk indicators.

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