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The Prudential Regulation: the Preventive Effort against Non-Performing Loan (NPL) for MSMEs in Indonesia

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Abstract

This study aims to develop a regulatory framework for the prudential principles to prevent non-performing loans (NPL) in the distribution of bank credit to Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. The research focuses on Conventional Banks (Mandiri, BNI, BRI, and BPR) in Indonesia, involving interviews with 50 MSME actors who are currently applying for or have previously applied for credit, as well as an analysis of regulations issued by the Financial Services Authority (OJK) and banking data from OJK from 2018 to 2024. The study period is divided into three phases: the Pre-Covid 19 Pandemic Phase (2018–2019), the Covid 19 Pandemic Phase (2020–2021), and the Post-Covid 19 Pandemic Phase (2022–2024). The analysis explores the influence and relationship of these phases with NPL trends, focusing on banks as creditors and MSMEs as debtors. Utilizing Legal Protection Theory, the study emphasizes preventive measures to mitigate the risk of NPL rather than addressing their resolution. The findings highlight the necessity for internal oversight by banks on MSMEs' credit management and propose that credit agreements include not only collateral from debtors but also insurance mechanisms to secure the credit distributed to MSMEs.

Keywords: *Regulation, Prudential Principle, Banking Lending, Non-Performing Loan (Npl), Micro, Small, Medium Enterprises (MSMEs), Covid-19 Pandemi.*

Introduction

Micro, Small, and Medium Enterprises (MSMEs) play a crucial role in Indonesia's economy, significantly contributing to the Gross Domestic Product (GDP) and employment absorption (Sunoko et al., 2022; Tambunan, 2019). However, this sector often faces challenges in accessing financing from banking institutions, which is frequently due to the high risk of Non-Performing Loans (NPLs) (Wiraguna, A., et al., 2024).

NPLs are a serious issue faced by the banking sector in Indonesia (Abdelsalam, O. et al., 2020), particularly concerning Micro, Small, and Medium Enterprises (MSMEs). To prevent the occurrence of NPLs, the implementation of prudential principles in the credit disbursement process is essential (Florin Filip, B., 2015). Under Banking Law No. 10 of 1998, banks are required to apply prudential principles in all credit-related activities. The Financial Services Authority (OJK) has also issued various regulations, such as OJK Regulation No. 11/POJK.03/2020, which provides guidelines for banks in extending credit to debtors affected by economic situations, including the COVID-19 pandemic. Additionally, Bank Indonesia Regulation (PBI) No. 23/13/2021 of 2021 mandates the Macroprudential Inclusive Financing Ratio (RPIM), requiring banks to allocate at least 30% of their total loans to MSMEs by the end of June 2024, aiming to enhance financing access for this sector.

Despite these supportive regulations, many Rural Banks (BPR) have faced challenges, with no fewer than 220 being forced to close between 2018 and 2024 due to high NPL levels. This indicates that the application of prudential principles in practice still needs improvement (Pilbeam, C., et al., 2025).

The COVID-19 pandemic, which began in early 2020, has further exacerbated this situation, with a rise in NPLs within the MSME sector due to the decline in economic activity and purchasing power of the public (Kryzanowski, L., et al., 2023). In response, the Indonesian government issued Government Regulation

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No. 47 of 2024, introducing a policy for the write-off of bad loans for specific MSMEs until May 2025, aiming to stimulate credit growth and economic recovery. This policy provides opportunities for MSMEs previously hindered by poor credit records to access new loans, thereby revitalizing economic activity (Sanatan Satpathy, A., et al., 2024).

Nevertheless, this bad loan write-off policy underscores the necessity of strengthening more comprehensive and preventive banking prudential regulations (Aven, T., 2023). An approach that not only focuses on meeting administrative requirements but also includes effective oversight mechanisms on credit utilization by MSME debtors is critically important (Sanatan Satpathy, A., et al., 2024). Furthermore, integrating instruments such as credit insurance could serve as a strategic measure to protect banking institutions from potential losses caused by bad loans while simultaneously providing a sense of security for MSMEs in developing their businesses (Li, X., et al., 2022).

Against this backdrop, this study aims to analyze the implementation of banking prudential principles in credit disbursement to MSMEs in Indonesia across three time phases: pre-pandemic COVID-19 (2018–2019), during the COVID-19 pandemic (2020–2021), and post-pandemic COVID-19 (2022–2024). It further seeks to develop an ideal and comprehensive regulatory framework for prudential principles to prevent future bad loans in the MSME sector. By doing so, this study is expected to contribute significantly to strengthening the MSME sector and ensuring the stability of Indonesia's banking system.

Literatur Review

Theory of Legal Protection

The Theory of Legal Protection proposed by Philipus M. Hadjon is a fundamental framework for understanding how the law functions to safeguard the rights of individuals and society. In his book titled *"Legal Protection for the People of Indonesia"*, Hadjon explains that legal protection is a condition that guarantees the dignity and worth of individuals as well as the recognition of human rights possessed by legal subjects. This underscores the essential role of the state in providing assurances to its citizens against arbitrariness and abuse of power (Camelia Nicoleta, O., 2013).

According to Hadjon, legal protection is categorized into two forms: preventive legal protection and repressive legal protection (Hadjon, Philipus M., 1987):

- *Preventive Legal Protection*

  Preventive legal protection provides legal subjects the opportunity to voice objections or express their opinions before a government decision becomes definitive. The primary purpose of preventive protection is to prevent disputes or conflicts from arising.

- *Repressive Legal Protection*

  Repressive legal protection aims to resolve disputes or conflicts that have already occurred. This form of protection is rooted in the concept of recognizing and safeguarding human rights. The recognition and protection of human rights are directed toward imposing limitations and obligations on both society and the government.

Hadjon's theory emphasizes the state's responsibility to ensure the recognition and enforcement of human rights while maintaining a balance between individual rights and societal and governmental duties. This dual approach of preventive and repressive legal mechanisms serves to uphold justice and prevent the misuse of authority.

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Furthermore, Hadjon also emphasized that the principle of legal protection must be grounded in Pancasila, the ideological foundation of the Indonesian state. In his view, the relationship between the government and the people should be based on the principle of harmony, where the balance between rights and obligations is key to achieving social justice. Thus, Philipus M. Hadjon's theory of legal protection not only highlights aspects of legality but also incorporates morality and ethics in governance practices.

Overall, this theory provides a comprehensive framework for understanding how law can function as a tool for the protection of the people, as well as the importance of having effective mechanisms to prevent and resolve disputes in order to achieve justice and societal well-being (Kobayashi, T., 2024).

Banking Prudential Principle in Banking Lending

The prudential principle in banking is a fundamental foundation that governs how banks perform their functions of mobilizing and distributing funds. This principle emphasizes that banks must act cautiously and diligently in every activity, particularly in credit disbursement, to protect customer funds and maintain the stability of the financial system (Dobre, E., 2013). In this context, the prudential principle is explicitly regulated under Law No. 10 of 1998 on Banking, which mandates that banks maintain their soundness through various indicators such as capital adequacy, asset quality, and liquidity.

The implementation of the prudential principle encompasses several key aspects, one of which is a thorough analysis of debtors before granting credit. As stipulated in Financial Services Authority Regulation (POJK) No. 42/POJK.03/2017, banks must consider five critical elements known as the "5 Cs": Character, Capacity, Capital, Collateral, and Condition (economic condition). By conducting this analysis, banks can identify potential risks and take appropriate mitigation measures.

Furthermore, the prudential principle requires banks to comply with applicable laws and regulations while implementing internal policies professionally. This aims to prevent unhealthy banking practices that could lead to non-performing loans (Georgiou, O., 2024). By consistently adhering to this principle, banks are expected to maintain public trust and ensure their operational sustainability amid the ever-changing dynamics of the economy.

Credit Risk in MSMEs

Credit risk in Micro, Small, and Medium Enterprises (MSMEs) in Indonesia has become an increasingly important issue amidst economic slowdown and rising market uncertainty (Wiraguna, A., et al., 2024). According to Financial Services Authority Regulation (POJK) No. 5 of 2024, OJK mandates that banks must maintain a healthy NPL ratio, where an NPL ratio exceeding 5% of total loans will trigger stricter supervision and mitigation measures to address NPL risks. Data indicates that the NPL ratio for MSMEs reached 4% in September 2024, an increase from 3.88% in the previous year. This rise highlights the challenges faced by MSMEs in meeting their debt payment obligations.

Several factors contribute to the high credit risk among MSMEs, including the characteristics of business operators who predominantly come from lower-middle-class communities, making them more vulnerable to economic fluctuations. Additionally, many MSMEs lack adequate financial management systems (Zuhroh, D., et al., 2025), resulting in difficulties managing cash flow and debt payments. Income instability and limited understanding of credit products further exacerbate these issues.

The shift in business patterns toward technology-based models (Vikrant Kulkarni, A., et al., 2024) and the increasing need for larger capital investments pose significant challenges for MSMEs in adapting to these changes. Furthermore, competition from illegally imported products, which often offer lower prices, continues to erode the competitiveness of local MSMEs (Sanatan Satpathy, A., et al., 2025).

In this context, banks have become more cautious in extending credit to MSMEs. A prudent approach is essential to maintaining financial stability and preventing a higher incidence of non-performing loans (Prijadi, R., et al., 2022). As of September 2024, the NPL ratio for MSME loans was recorded at 4%, up

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from 3.88% in September 2023. Within this, the micro segment exhibited a lower NPL ratio (3.25%) compared to the small (4.22%) and medium (5.17%) segments, indicating that overall credit risk remains higher for MSME loans than for non-MSME loans.

Therefore, effective credit risk management is crucial for the sustainability of MSMEs. Measures such as improving financial literacy, implementing robust accounting systems (Zuhroh, D., et al., 2025), and diversifying income sources can help MSME operators reduce credit risk and enhance their access to formal financing. With support from various stakeholders, including the government and financial institutions, it is hoped that credit risk in the MSME sector can be better managed, thereby promoting the growth of this sector as a key pillar of the national economy (Sanatan Satpathy, A., et al., 2025).

The Role of Credit Insurance in Risk Mitigation

Credit insurance serves as a risk mitigation instrument for banks in extending loans to MSMEs. With credit insurance, the risk of default by debtors can be transferred to the insurance company, providing banks with protection against potential losses. Additionally, credit insurance can enhance banks' confidence in lending to MSMEs that face limitations in collateral or have inadequate credit histories (Sanatan Satpathy, A., et al., 2025).

Research Methodology

This study employs a normative-empirical legal research methode. The normative approach involves analyzing legal norms, regulations, and principles related to the banking prudential principle, with a particular focus on the regulatory framework issued by the Financial Services Authority (OJK) in Indonesia. The empirical approach is employed to evaluate the implementation and effectiveness of the prudential principle in preventing Non-Performing Loans (NPLs) among Micro, Small, and Medium Enterprises (MSMEs) through interviews and data analysis. The research focuses on developing prudential regulations to prevent NPLs in credit disbursement to MSMEs by analyzing three critical phases: the pre-COVID-19 phase (2018–2019), the COVID-19 pandemic phase (2020–2021), and the post-pandemic phase (2022–2024). These phases are used to assess banking performance, credit disbursement practices, the impact of the pandemic, and strategies for regulatory adjustment and recovery.

Data collection involves both primary and secondary data. Primary data is obtained through interviews with 50 MSME actors who have applied for or are currently managing loans during the research period, to explore their experiences, challenges, and the impact of regulations on credit management. Interviews are also conducted with key personnel at Bank Mandiri, BNI, BRI, and BPR to understand the application of the prudential principle and internal oversight mechanisms. Field observations are conducted to gain insights into the credit disbursement process and supervision practices by banking institutions. Secondary data includes banking statistics from OJK, such as credit disbursement data and NPL levels from 2018 to 2024, relevant regulations issued by OJK, as well as academic literature, journals, and reports pertinent to the research.

Data analysis was conducted using both qualitative and quantitative approaches. The qualitative analysis involves interpreting OJK regulations within the context of the prudential principle and thematic analysis to identify patterns and themes from interviews. The quantitative analysis compares NPL levels across the three research phases (2018–2024) and examines the correlation between regulatory adjustments and NPL trends during this period. This study adopts Philipus M. Hadjon's Theory of Legal Protection, focusing on preventive legal protection to mitigate NPL occurrences.

The research scope includes Bank Mandiri, BNI, BRI, and BPR as representatives of conventional banks in Indonesia, as well as 50 MSME actors from various sectors. This study is limited in its empirical focus to regulatory landscapes and practices within Indonesia.

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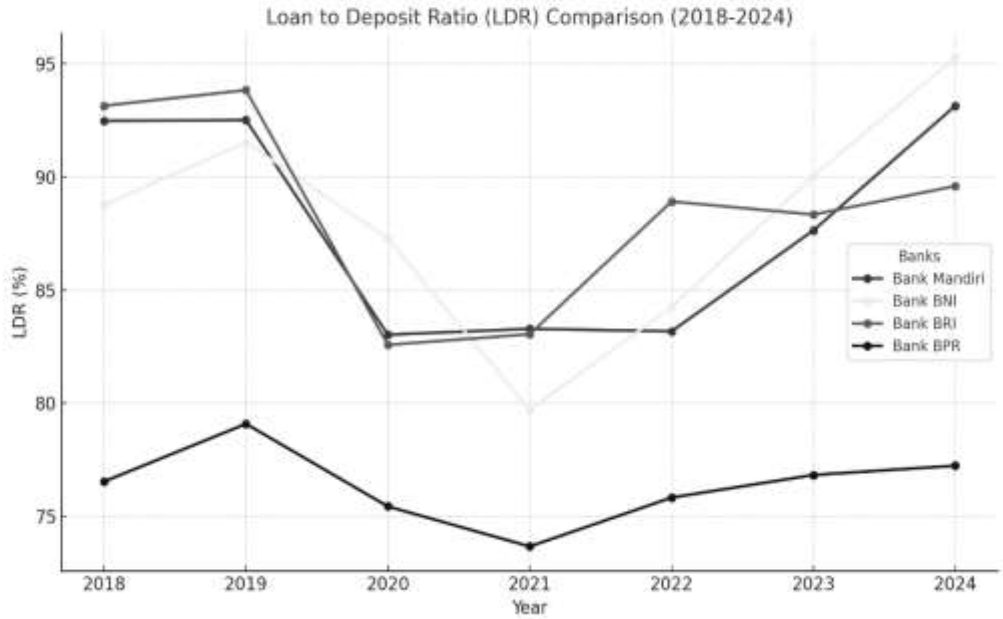
Results

Figure (1) & Table (1) Comparison of Loan to Deposit Ratio (Ldr) Yoy 2018–2024



MANDIRI	92,48	92,52	**83,03**	**83,29**	83,18	87,64	93,15
BNI	88,76	91,54	**87,28**	**79,71**	84,25	90,05	95,28
BRI	93,15	93,84	**82,58**	**83,05**	88,92	88,34	89,60
BPR	76,54	79,09	**75,44**	**73,67**	75,83	76,83	77,24

The Loan to Deposit Ratio (LDR) is a financial ratio used to measure a bank's liquidity. LDR compares the total amount of loans disbursed by the bank to customers with the total third-party funds (TPF) it has collected, such as savings, demand deposits, and time deposits. This ratio reflects the extent to which the bank utilizes its collected funds to redistribute them in the form of loans (Wiraguna, A., 2024).

LDR Formula

$$LDR = \frac{\text{Total Loans}}{\text{Total Third-Party Funds (TPF)}} \times 100\%$$

Generally, the ideal LDR ratio ranges between 80%-90%, depending on the regulatory policies of each country. If the LDR is too low (<80%), it indicates that the bank has high liquidity but is less productive in loan disbursement. On the other hand, if the LDR is too high (>92%), it indicates that the bank is overly aggressive in extending loans, which could increase liquidity risks in the event of large-scale withdrawals by customers.

As shown in Figure (1) and Table (1), the comparison of LDR among Bank Mandiri, BNI, BRI, and BPR illustrates the LDR trends of each bank during the period from 2018 to 2024, compared to the ideal LDR threshold. According to Bank Indonesia regulations, a healthy LDR ranges from 80%-92%, reflecting a bank's ability to optimally disburse loans without compromising liquidity.

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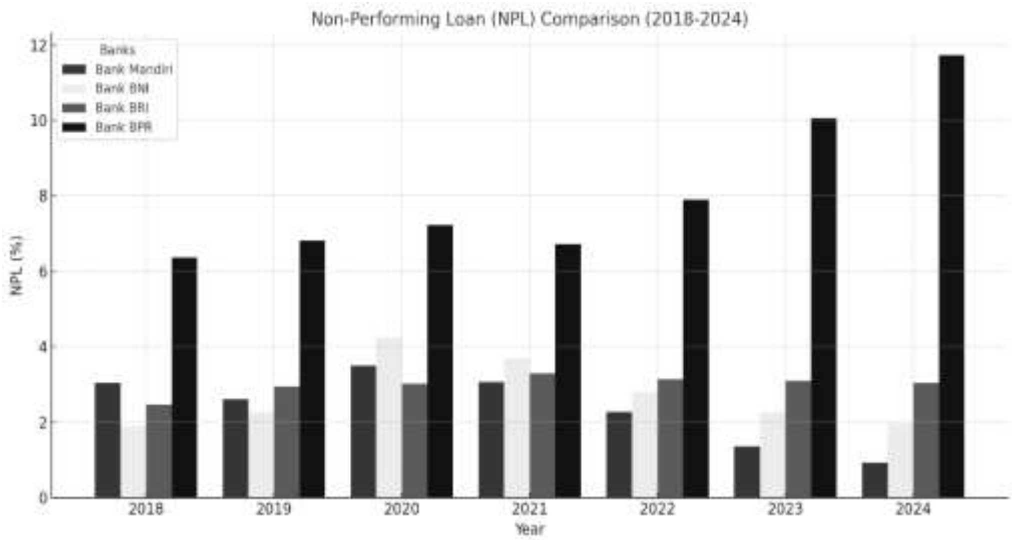
Bank Mandiri's LDR has been consistently close to or slightly above the upper ideal threshold (92%) from 2018 to 2024. A sharp decline occurred in 2020 and 2021, reaching approximately 83%, likely due to the impact of the COVID-19 pandemic. However, by 2024, the LDR increased again to 93.15%, slightly exceeding the upper ideal threshold. This reflects an aggressive approach to loan disbursement, which must be balanced with effective credit risk management.

Bank BNI exhibited significant fluctuations in its LDR. From 2018 to 2019, the LDR remained within the healthy range, but it dropped to 79.71% in 2021, falling below the lower ideal threshold. After 2022, the LDR sharply increased, reaching 95.28% in 2024, reflecting significant credit expansion. While this indicates recovery and growth, the excessively high LDR level should be monitored carefully, as it could reduce the bank's liquidity.

Bank BRI generally maintained its LDR within a relatively stable range. From 2018 to 2019, the LDR was slightly above the upper ideal threshold (93%-94%), then decreased in 2020 to 82.58%, before recovering to approach the upper ideal threshold (89.60%) in 2024. This pattern demonstrates Bank BRI's efforts to balance credit expansion and liquidity, even under external pressures.

Bank BPR had a relatively lower LDR compared to other banks, consistently ranging between 73%-79%. While this indicates better liquidity, an LDR that is too low may also suggest that the bank is not optimizing its credit disbursement. In 2024, Bank BPR's LDR reached 77.24%, still below the lower ideal threshold, highlighting potential opportunities to improve credit disbursement efficiency.

Figure (2) & Table (2) Comparison Of Non-Performing Loans (NPL)Year On Year 2018-2024



MANDIRI	3,04	2,61	**3,50**	**3,06**	2,26	1,36	0,93
BNI	1,90	2,27	**4,25**	**3,70**	2,81	2,27	1,97
BRI	2,46	2,94	**3,02**	**3,29**	3,14	3,10	3,04
BPR	**6,37**	**6,81**	**7,22**	**6,72**	**7,89**	**10,05**	**11,73**

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Non-performing loan (NPL) is a term in banking that refers to loans or credit for which the debtor has defaulted on principal and/or interest payments for a specific period, typically exceeding 90 days or as determined by the policies of individual banks and regulators. NPL reflects poor credit quality and serves as a critical indicator for assessing a bank's financial health (Vollmar, S., et al., 2024).

NPL Formula

$$\text{NPL} = \frac{\text{Non-Performing Loans}}{\text{Total Loans Disbursed}} \times 100\%$$

In Indonesia, the Financial Services Authority (OJK) establishes that a healthy gross NPL ratio is below 5%. This ratio indicates that banks can effectively manage non-performing loans.

Figure (2) and Table (2) on NPLs compare the credit risk management performance of Bank Mandiri, BNI, BRI, and BPR during the 2018–2024 period. According to Bank Indonesia regulations, the maximum healthy NPL threshold is below 5%. NPLs exceeding this level indicate high credit risk, which can disrupt a bank's financial stability.

Bank Mandiri successfully maintained its NPL ratio below 5% throughout this period. After peaking at 3.50% in 2020, the NPL consistently declined to 0.93% in 2024. This reduction reflects the effectiveness of its risk management strategies and the recovery of credit quality following the COVID-19 pandemic.

Bank BNI experienced a significant increase in NPLs in 2020, reaching 4.25%, close to the upper permissible limit. However, NPLs have steadily declined since then, dropping to 1.97% in 2024. This trend indicates improved credit quality and the success of its risk mitigation strategies.

Bank BRI maintained a relatively stable NPL ratio but slightly higher compared to Bank Mandiri and BNI, ranging between 2.46% and 3.29%. While remaining within the safe threshold, its NPL in 2024 stood at 3.04%, highlighting the need to strengthen strategies to further reduce credit risk.

Bank BPR has an NPL ratio significantly above the maximum threshold of 5%, reaching as high as 11.73% in 2024. This upward trend indicates a substantial increase in credit risk. Bank BPR urgently requires interventions, such as stricter credit analysis, restructuring of problematic loans, and enhanced debtor supervision.

The LDR and NPL charts for Bank Mandiri, BNI, BRI, and BPR from 2018 to 2024 illustrate a complex relationship between credit disbursement levels and the credit risks faced by each bank. According to Bank Indonesia regulations, a healthy LDR ranges between 80%-92%, while a healthy NPL ratio is below 5%. Bank Mandiri and BNI demonstrated the ability to balance aggressive credit disbursement with effective risk management. In 2024, Bank Mandiri's LDR rose above the ideal range to 93.15%, yet its NPL was significantly reduced to 0.93%.

A similar pattern was observed at Bank BNI, which maintained a high LDR of 95.28% in 2024 while its NPL fell sharply from its peak of 4.25% in 2020 to 1.97% in 2024. Conversely, Bank BRI kept its LDR within a stable range of 82%-93%, but its NPL remained above 3% in 2024, indicating the need for additional strategies to improve credit quality. Bank BPR, with consistently low LDRs below 80%, faced significant challenges as its NPL continued to rise, reaching 11.73% in 2024. This demonstrates that a low LDR does not necessarily guarantee effective credit risk management.

Overall, Bank Mandiri and BNI successfully leveraged credit expansion without significantly increasing risk, whereas Bank BRI needs to focus on reducing its NPL ratio. Bank BPR requires special attention to enhance efficiency and address its escalating credit risk. The relationship between LDR and NPL underscores the

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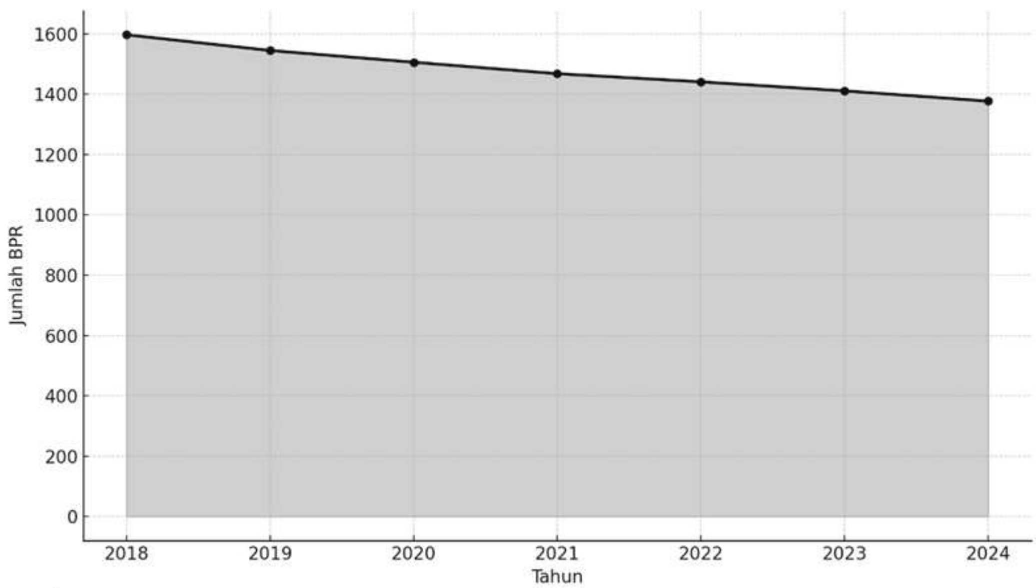
importance of effective credit risk management to maintain the stability and operational sustainability of banks.

Figure (3). Trend of Declining Number of BPRs in Indonesia 2018-2024



1.597	1.545	1.506	1.468	1.441	1.411	1.377

Figure (3), illustrating the decline in the number of Rural Banks (BPR) in Indonesia from 2018 to 2024, shows a consistent downward trend. In 2018, there were 1,597 BPRs, and this number decreased to 1,377 by 2024, indicating that no fewer than 220 BPRs closed over the past six years. This decline reflects the challenges faced by BPRs, including industry consolidation and closures due to operational issues.

Data indicates that throughout 2024, the Financial Services Authority (OJK) revoked the business licenses of 15 BPRs by September, marking the highest number in the past two decades. These revocations were primarily due to management issues and the inability to comply with banking regulations. Additionally, the Deposit Insurance Corporation (LPS) reported that an average of 6 to 7 BPRs close annually, mainly due to mismanagement by their owners.

The decline in the number of BPRs has also been influenced by consolidation policies implemented by OJK, such as the single presence policy, which limits ownership of more than one BPR by a single entity. This policy encourages BPR mergers to strengthen capital and improve operational efficiency (Shamshadali, P., et al., 2024).

Overall, the decline in the number of BPRs from 1,597 in 2018 to 1,377 in 2024 reflects the dynamics of the banking industry, which faces regulatory, managerial, and consolidation challenges to enhance the stability and efficiency of Indonesia's banking sector.

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Figure (4) Proportion of issuance of OJK Regulations 2017-2024

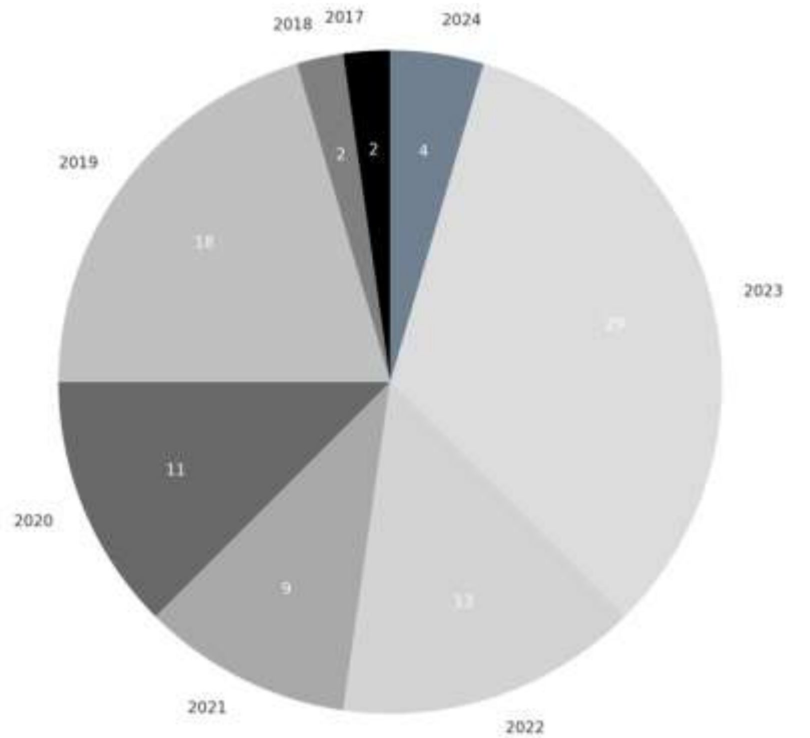

Figure (4) illustrates the number of Financial Services Authority (OJK) Regulations (POJK) issued annually from 2017 to 2024. Based on the assumption that the data for 2017, 2018, and 2024 is incomplete, while the data from 2019 to 2023 is considered complete, a dynamic pattern of regulation issuance by OJK is evident. During the period 2019–2023, which has complete data, 2019 marked a significant surge with 18 POJK issued, likely linked to OJK's efforts to strengthen the regulatory framework prior to the COVID-19 pandemic. During the pandemic (2020–2021), the number of POJK issued decreased to 11 and 9, reflecting a shift in regulatory focus towards emergency policies to maintain financial sector stability. In 2022, the number of POJK increased again to 13, marking the economic recovery phase, while 2023 became the most productive year with 29 POJK issued, potentially reflecting OJK's response to new regulatory demands arising from fintech developments and post-pandemic economic dynamics.

Meanwhile, the incomplete data for 2017 and 2018 shows only 2 POJK each, making it inconclusive whether regulatory activity during this period was genuinely low. Similarly, for 2024, the recorded number of POJK thus far is only 4, but this is likely to increase if full-year data becomes available. Overall, the chart reflects OJK's dynamic efforts to adapt regulations to the needs of the financial sector, including regulatory surges during specific periods such as 2019 and 2023, as well as regulatory adjustments during the pandemic. With additional data for incomplete years, more accurate trends can be identified to provide a comprehensive overview.

Discussion

Based on the presented data, the relationship between the Loan to Deposit Ratio (LDR), Non-Performing Loan (NPL), the decline in the number of Rural Banks (BPR), and the dynamics of OJK regulations can be analyzed to illustrate the condition of the banking sector and the challenges faced in maintaining financial stability. Below is an analysis based on each element:

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The Relationship Between LDR and NPL (Bank Mandiri, BNI, BRI, and BPR)

Bank Mandiri and BNI demonstrated the ability to balance aggressive credit disbursement and credit risk management. Despite Bank Mandiri's LDR reaching 93.15% in 2024 (above the upper ideal threshold of 92%) and Bank BNI's LDR at 95.28%, their NPLs remained well-controlled at 0.93% and 1.97%, respectively. This indicates that credit expansion can be achieved without increasing credit risk, provided that effective risk management is implemented.

In contrast, Bank BRI, although maintaining its LDR within the ideal range (82%-93%), recorded an NPL above 3% in 2024. This suggests that LDR stability does not guarantee optimal credit quality if credit oversight is not conducted rigorously.

Bank BPR, with a low LDR (below 80%), faced significant challenges with high NPLs, reaching 11.73% in 2024. This demonstrates that high liquidity resulting from a low LDR cannot compensate for poor credit quality, especially if there are weaknesses in credit management and oversight.

The relationship between LDR and NPL underscores the importance of balancing credit aggressiveness and risk management. Banks that can optimize their LDR without increasing NPLs reflect effective risk management, while banks with low LDRs but high NPLs, such as BPR, need to evaluate their operational strategies.

Decline in the Number of BPRs and Dynamics of Operational Challenges

The decline in the number of Rural Banks (BPR) from 1,597 in 2018 to 1,377 in 2024 reflects the dynamics of the banking industry facing significant challenges. A substantial portion of BPR closures was due to internal management issues, resulting in their inability to comply with banking regulations.

The consolidation policies implemented by OJK, such as the single presence policy, encouraged the merger of BPRs to enhance operational efficiency and capital adequacy. Additionally, in many cases, BPRs heavily relied on collateral as loan security, making their liquidity and financial resilience vulnerable when NPL levels increased.

The reduction in the number of BPRs highlights the urgent need to improve governance and operational efficiency in this sector. Challenges such as mismanagement and high NPLs indicate the necessity for stricter regulatory and supervisory measures from OJK.

OJK Regulation Dynamics (POJK 2017-2024)

The dynamic issuance of POJK regulations reflects OJK's responsiveness to the needs of the banking sector under various economic conditions:

- The surge in regulations in 2019 (18 POJK) indicates efforts to strengthen the legal framework before the COVID-19 pandemic.
- The decline in regulations during 2020–2021 reflects a focus on emergency policies to maintain financial sector stability amid the pandemic.
- The post-pandemic increase in regulations (29 POJK in 2023) demonstrates a response to emerging needs, including advancements in financial technology and economic recovery.

OJK regulations play a crucial role in aligning banking policies with economic needs. However, the consistency and effectiveness of these regulations in addressing fundamental issues such as NPLs and BPR governance remain significant challenges.

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The Relationship Between LDR, NPL, and the Decline of BPRs

Data indicates that banks with optimal LDRs (such as Bank Mandiri and BNI) tend to have well-controlled NPLs. Conversely, BPRs with low LDRs face high NPLs, suggesting that the efficiency of credit disbursement also affects credit quality.

High NPLs in BPRs are one of the primary causes of the decline in the number of BPRs. The inability to manage credit risk and comply with banking regulations poses significant challenges that threaten the sustainability of BPRs.

The relationship between LDR, NPL, and the dynamics of OJK regulations highlights that the success of the banking sector relies on the ability to balance credit expansion, risk management, and good governance. The decline in the number of BPRs serves as concrete evidence that operational, regulatory, and credit risk management challenges require serious attention to maintain the stability of Indonesia's banking system. OJK must continue to promote stronger governance, operational efficiency, and stricter oversight to address these challenges.

The findings of this study reveal that the application of prudential principles in credit disbursement for Micro, Small, and Medium Enterprises (MSMEs) in Indonesia significantly influences the NPL levels across the three research phases: pre-pandemic COVID-19, during the pandemic, and post-pandemic. Data obtained from the Financial Services Authority (OJK) and interviews with MSME actors and banking institutions indicate that NPL levels during the pre-pandemic phase were relatively stable, with MSME NPL ratios ranging between 2.5% and 3%. However, during the COVID-19 pandemic phase (2020–2021), NPL ratios rose significantly, averaging between 4% and 5%, driven by disruptions to MSME business activities due to economic restrictions. In the post-pandemic phase (2022–2024), a gradual decline in NPLs was observed, although they have not yet returned to pre-pandemic levels.

Interviews with 50 MSME actors revealed that most debtors faced challenges in managing cash flow and meeting credit obligations during the pandemic. This issue was exacerbated by the lack of internal oversight from banks regarding the utilization of credit by debtors.

Figure (5). Respondents' Answers Regarding Bank Oversight After Credit Disbursement To Msmes By 50 Msmes

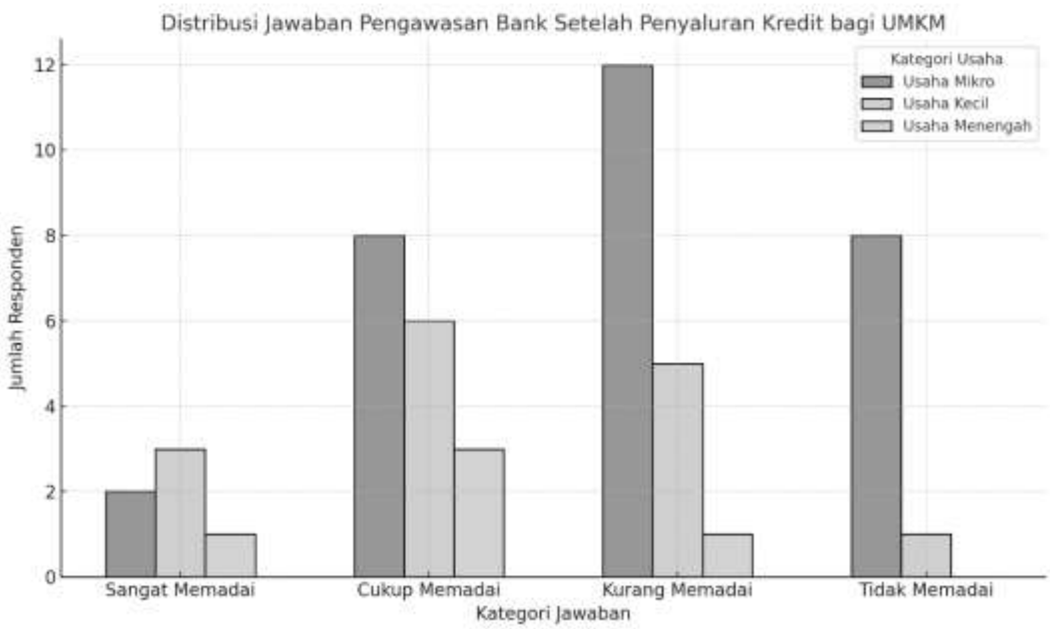

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Figure (5) above illustrates the distribution of respondents' answers regarding bank oversight after credit disbursement to MSMEs, categorized by business size (micro, small, and medium). Respondents from micro enterprises (30 individuals) indicated that the majority felt bank oversight was inadequate (12 respondents or 40%) or insufficient (8 respondents or 26.7%). Only 8 respondents (26.7%) rated the oversight as sufficient, and 2 respondents (6.7%) considered it very sufficient. This reflects significant dissatisfaction among micro-enterprise actors regarding bank oversight, likely due to limited communication or the bank's constraints in supporting them post-credit disbursement.

In the small enterprise category (15 respondents), most rated the oversight as sufficient (6 respondents or 40%), followed by 5 respondents (33.3%) who felt it was inadequate. Three respondents (20%) rated the oversight as very sufficient, and only 1 respondent (6.7%) considered it insufficient. These findings suggest that small enterprises generally had a more positive experience with bank oversight compared to micro enterprises, although there is still room for improvement.

Respondents from medium enterprises (5 individuals) predominantly rated the oversight as sufficient (3 respondents or 60%), followed by 1 respondent (20%) who rated it very sufficient and another respondent (20%) who felt it was inadequate. None of the respondents from medium enterprises considered bank oversight insufficient, indicating that banks tend to provide better oversight to medium enterprises.

Overall, only 12% of respondents felt that bank oversight was very sufficient, while the majority (34%) rated it as sufficient. However, 36% of respondents considered the oversight inadequate, and 18% felt there was no adequate oversight. These results highlight the need for improved bank oversight, particularly for micro-enterprises, through more intensive guidance and structured communication to ensure proper credit utilization and support business success. Efforts to enhance oversight can help build MSMEs' trust in the banking system and reduce the risk of non-performing loans.

Furthermore, despite the requirement for collateral in credit disbursement, many MSMEs feel that this additional burden does not sufficiently protect them from the risk of default.

Figure (6). Respondents' Answers Regarding the Perceived Risk of Non-Performing Loans (NPL) by 50 MSMEs

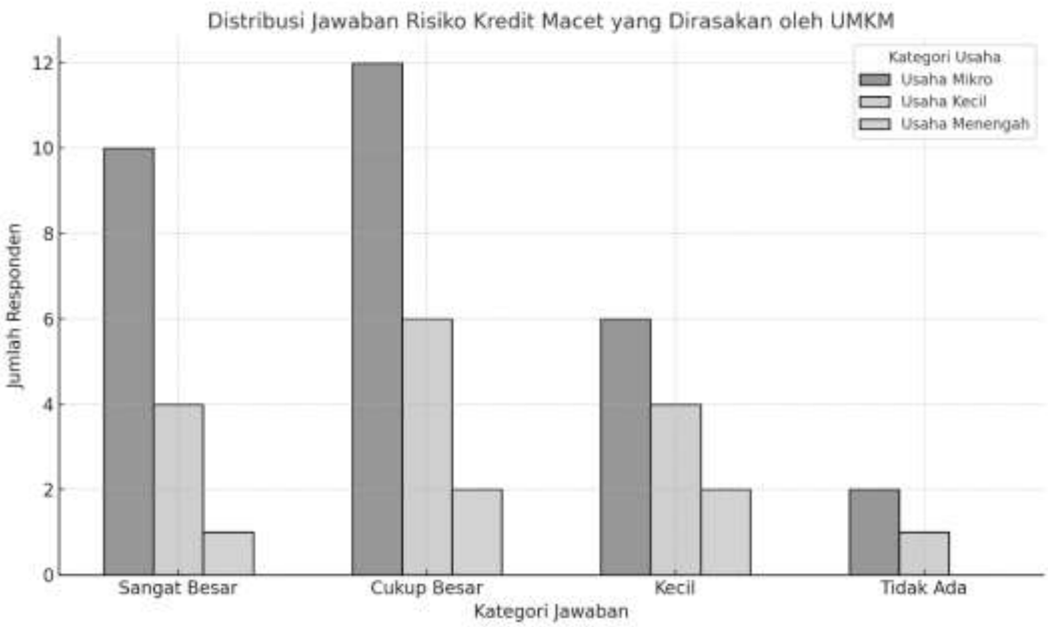

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Figure (6) above illustrates the distribution of respondents' answers regarding the perceived risk of non-performing loans (NPLs) among MSMEs, categorized by business size (micro, small, and medium).

Micro-enterprise respondents (30 individuals) largely perceived the risk of NPLs as significant, with 12 respondents (40%) feeling the risk was fairly high and 10 respondents (33.3%) considering it very high. Six respondents (20%) perceived the risk as low, while only 2 respondents (6.7%) felt there was no risk of NPLs. This indicates that micro-enterprise actors are the most vulnerable group to the risk of NPLs, likely due to cash flow constraints or difficulties in managing their credit obligations.

In the small enterprise category (15 respondents), the majority perceived the risk of NPLs as fairly high (6 respondents or 40%), followed by 4 respondents (26.7%) who felt the risk was low, and another 4 respondents (26.7%) who considered the risk very high. Only 1 respondent (6.7%) felt there was no risk. These findings suggest that small enterprise actors have a more balanced perception of risk, with most still acknowledging the risk but at a more moderate level compared to micro-enterprises.

Medium enterprise respondents (5 individuals) perceived the risk of NPLs as lower. Two respondents (40%) felt the risk was low, another 2 respondents (40%) considered the risk fairly high, while only 1 respondent (20%) felt the risk was very high. None of the respondents in this category perceived no risk, reflecting that while financial stability may be better, risk remains a concern.

Overall, 40% of respondents rated the risk of NPLs as fairly high, and 30% considered it very high. However, 24% perceived the risk as low, and only 6% felt there was no risk. These results indicate that business size significantly influences the perception of NPL risk, with micro-enterprise actors experiencing greater risk compared to small and medium enterprises. Therefore, more effective risk mitigation policies from banks are needed, such as financial education, credit supervision, and flexible repayment options, particularly for micro-enterprises that are most vulnerable to NPL risk. These measures will help reduce overall risk levels and support the sustainability of MSMEs.

Figure (7). Respondents' Answers Regarding Credit Insurance Requirements in Loans by 50 MSMEs

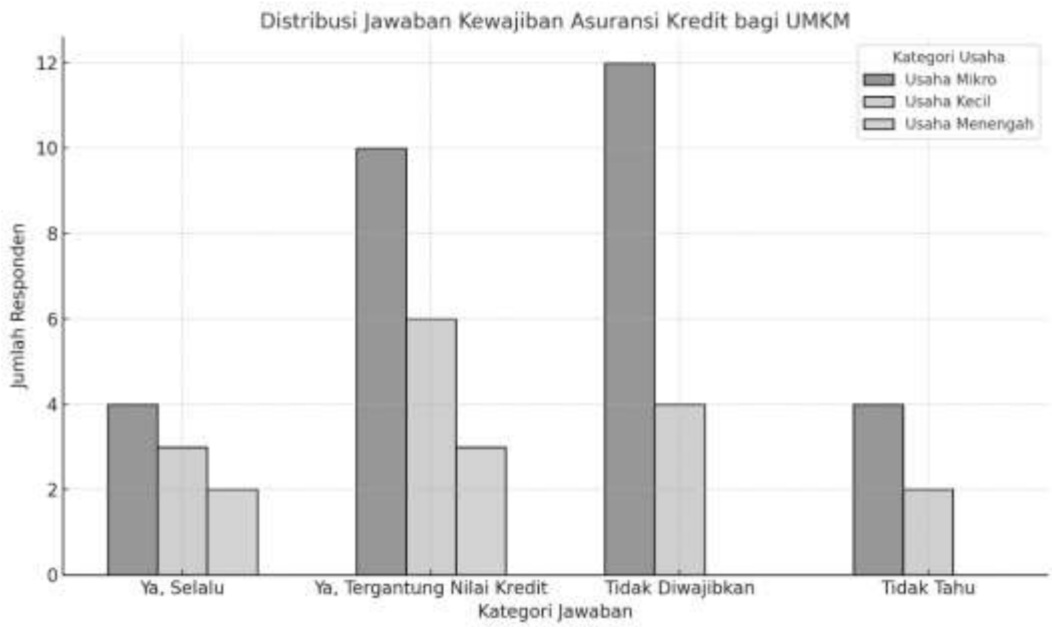

Figure (7) above illustrates the distribution of respondents' answers regarding the obligation of credit insurance in bank loans for MSMEs, categorized by business size (micro, small, and medium).

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Among micro enterprises (30 respondents), the majority felt that credit insurance was either not required (12 respondents or 40%) or required depending on the loan value (10 respondents or 33.3%). A total of 4 respondents (13.3%) stated that credit insurance was always required, while another 4 respondents (13.3%) did not know about this obligation. This reflects inconsistency in the implementation of credit insurance for micro-enterprises and a lack of awareness or outreach regarding its importance.

In the small enterprise category (15 respondents), most stated that the obligation for credit insurance depended on the loan value (6 respondents or 40%). Four respondents (26.7%) said that credit insurance was not required, while 3 respondents (20%) stated it was always required. The remaining 2 respondents (13.3%) were unaware of the obligation. These findings indicate that small enterprises have a more diverse experience regarding credit insurance, with some perceiving clearer obligations compared to micro-enterprises.

Among medium enterprises (5 respondents), the majority felt that credit insurance was required, either always (2 respondents or 40%) or depending on the loan value (3 respondents or 60%). None of the respondents in this category stated that insurance was not required or that they were unaware of the obligation. This reflects a more consistent and well-understood implementation of credit insurance among medium enterprises.

Overall, 38% of respondents stated that the obligation for credit insurance depends on the loan value, while 18% indicated that credit insurance is always required. However, 32% felt that credit insurance was not mandatory, and 12% were unaware of this obligation. These results highlight that the requirement for credit insurance has not been evenly applied or well-socialized, especially for micro and small enterprises. Therefore, efforts are needed to enhance outreach and implement more inclusive credit insurance policies to ensure all MSMEs understand the benefits and obligations of insurance in bank loans. This can help reduce the risk of non-performing loans (NPLs) and provide better financial protection for MSMEs.

From the banking perspective, interviews with personnel at Bank Mandiri, BNI, BRI, and BPR revealed that the implementation of prudential principles, such as credit feasibility analysis and periodic monitoring, follows standard procedures. However, in practice, internal oversight of debtors remains passive, focusing more on the formalities of documentation rather than active monitoring of credit utilization. Additionally, there is no integrated credit insurance mechanism as part of loan agreements for MSMEs, which could serve as a solution to reducing problematic credit risks.

The findings also align with the legal protection theory proposed by Philipus M. Hadjon, which emphasizes the importance of preventive legal protection. In this context, an ideal preventive measure to avoid NPLs in MSMEs includes strengthening banks' internal supervision of debtors and integrating credit insurance into every MSME loan agreement. With insurance, the risk of default can be minimized for both the bank as the creditor and the MSME as the debtor. Moreover, banks need to adopt a proactive approach in educating and assisting MSMEs in managing credit, particularly during crisis periods such as the pandemic.

This discussion highlights that the prudential principle must be implemented not only as formal regulation but also through internal oversight mechanisms and direct support for MSMEs. Existing OJK regulations should be adjusted to accommodate these elements, shifting focus from collateral requirements to fostering a more sustainable and inclusive credit ecosystem. Strengthening prudential regulations and their implementation practices is expected to lower MSME NPL ratios, increase debtor confidence, and support the stability of the banking sector and the national economy.

Coclusion

This study reveals that the implementation of prudential principles in bank credit disbursement to MSMEs in Indonesia plays a crucial role in preventing NPL occurrences. However, its application still faces various challenges, particularly in terms of internal supervision and support for debtors. Over the three research phases (pre-pandemic, pandemic, and post-pandemic COVID-19), a significant increase in MSME NPL ratios was observed during the pandemic, indicating that existing supervision and risk mitigation systems were not sufficiently effective in handling crisis conditions.

The findings suggest that the ideal preventive measures for implementing prudential principles involve two key aspects: (1) strengthening banks' internal supervision of MSME debtors to ensure credit utilization aligns with agreed purposes, and (2) integrating credit insurance as part of loan agreements for MSMEs to minimize the risk of default. Additionally, educating and supporting MSMEs in credit management remain critical elements that require further enhancement by banks.

These conclusions align with Philipus M. Hadjon's theory of preventive legal protection, which emphasizes the importance of prevention over resolution once problems have occurred. Existing regulations, particularly those from OJK, need to be adjusted to incorporate elements of credit insurance and risk-based supervision to foster a more sustainable credit ecosystem. Thus, a more comprehensive application of prudential principles is expected to reduce MSME NPL ratios, support the growth of the MSME sector, and maintain the stability of the banking system in Indonesia.

Summary

This study explores the implementation of prudential principles in banking regulations as a preventive measure to reduce Non-Performing Loans (NPLs) in credit disbursement to Micro, Small, and Medium Enterprises (MSMEs) in Indonesia. Data collected from OJK, conventional banks (Bank Mandiri, BNI, BRI, and BPR), and interviews with 50 MSME actors from 2018 to 2024 were analyzed across three phases: pre-COVID-19, during the COVID-19 pandemic, and post-COVID-19.

The findings indicate that NPL levels increased significantly during the pandemic due to inadequate internal bank supervision and a lack of active support for MSMEs in managing credit. Although formal procedures, such as collateral requirements, were implemented, they were insufficient to prevent NPLs effectively. This study recommends integrating credit insurance into MSME loan agreements and strengthening internal bank supervision as crucial preventive strategies. Additionally, banks should adopt a proactive approach by providing education and guidance to MSME debtors.

The results align with Philipus M. Hadjon's theory of preventive legal protection, which emphasizes the importance of regulations and practices designed to anticipate risks before they occur. The study recommends regulatory adjustments by OJK to include risk-based supervision and mandatory credit insurance to foster a more sustainable and inclusive credit ecosystem for MSMEs, while also enhancing the stability of the banking sector.

Research Implications and Recommendations

The findings of this study have significant implications for strengthening the regulatory framework and practical implementation of prudential principles in bank credit disbursement to MSMEs in Indonesia. From a regulatory perspective, the Financial Services Authority (OJK) needs to update existing policies by incorporating mandatory credit insurance in MSME loan agreements and developing more specific risk-based supervision guidelines. These measures aim to mitigate Non-Performing Loan (NPL) risks more effectively.

Practically, banks must enhance internal supervision by developing proactive control systems, including regular monitoring of fund utilization by debtors and more comprehensive reporting mechanisms. Additionally, training bank staff on the specific challenges faced by MSMEs is urgently needed so that banks can provide relevant guidance to their debtors.

The study also recommends that banks integrate proactive support mechanisms for MSMEs, such as financial education programs, business management assistance, and sustainability planning. Technology can

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also be leveraged to monitor credit performance digitally and provide real-time insights into the financial health of debtors. Fintech solutions could streamline the processes of loan application, disbursement, and repayment, while ensuring compliance with prudential principles. Furthermore, collaboration between OJK, banks, and other stakeholders needs to be strengthened to create a shared framework that supports best practices in credit risk management.

Implementing these measures is expected to reduce MSME NPL ratios, strengthen the stability of the banking sector, and drive sustainable economic growth at the national level.

Research Limitations and Suggestion for Future Research

This study has several limitations that need to be acknowledged. First, the scope of the data is limited to the regulatory and banking practices in Indonesia, which may render the findings less applicable to banking systems in other countries. Second, the study only involved four major conventional banks (Bank Mandiri, BNI, BRI, and BPR) and 50 MSME actors as respondents. While this represents a significant portion of the MSME credit context, it may not fully capture the diversity of experiences and challenges faced across different sectors. Third, data collection relied solely on interviews and secondary data analysis, and deeper methodological approaches, such as longitudinal studies or experiments, were not applied to evaluate the long-term effectiveness of policies. Additionally, this study focused primarily on preventive measures to avoid NPLs, without further exploring repressive approaches or resolutions once NPLs occur.

For future research, it is recommended to conduct similar studies involving a larger number of respondents, including MSMEs from various industrial sectors and geographic regions, to provide a more comprehensive picture. Future research could also expand the focus to international comparisons to identify best practices from other countries with more advanced banking regulatory frameworks. Moreover, mixed-method approaches or longitudinal studies could be employed to better understand the changing dynamics of MSME credit and the long-term impact of prudential principle implementation. Further studies could also explore the role of financial technology (fintech) in enhancing MSME credit supervision, as well as collaborative approaches between banks and government institutions to create a more inclusive and sustainable credit ecosystem. By taking these steps, future research is expected to make a more significant contribution to the development of a banking system that supports MSME growth while maintaining economic stability.

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CrediT Authorship Contribution Statement

Miftah Idris: Writing = original draft, methodology, conceptualization, data. Hasbir Paserangi: Writing = original draft, conceptualization, Theoretical Analysis, conceptualization. Padma D. Liman: Writing = Theoretical Analysis, investigation. Oky Deviany: Writing = software, resources, project administration.

Data Availability

Data will be made available on request.

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