Contents

Analyzing the Impact of Financial Performance on Credit Allocation: A Contemporary Perspective

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Abstract
This study investigates the impact of financial performance indicators, including Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), Return on Assets (ROA), and Non-Performing Loans (NPL), on credit distribution among banks listed on the IDX during the 2018-2019 period. With a population of 45 IDX-listed banks, a purposive sampling method was employed to select 19 banks meeting predetermined criteria, resulting in a dataset comprising 38 observations. Secondary data from annual reports were analyzed using multiple linear regression in SPSS version 18.0. Findings reveal that LDR, CAR, and ROA positively and significantly influence credit distribution, while NPL exhibits a negative and insignificant impact. These results offer insights for bank management, prospective customers, and future research endeavors. This study contributes to understanding the intricate dynamics of credit allocation within the banking sector.

Keywords: Banking, Credit Distribution, Financial Performance.

Introduction

Credit activities and other services provided by banks play a crucial role in addressing capital shortages, financing operations, and enhancing businesses to boost efficiency, productivity, and competitiveness (Balasubramanian, 2000). Essentially, credit represents the provision of monetary loans or equivalents, established through a loan agreement between the bank and the borrower, with the borrower obligated to repay the debt along with specified interest within a defined timeframe (Lakshmi et al., 2019; Twum et al., 2021).

Recent trends in the performance of commercial banks underscore the significance of understanding the dynamics of credit allocation. For instance, the net interest income generated by commercial banks experienced a notable decline, dropping from 5.12% in October 2018 to 3.17% in October 2019 . Despite this decline, the performance of banking intermediation, particularly in credit distribution, outpaced the collection of customer funds or third-party funds. Specifically, credit grew by 6.53% as of October, while DPK (third-party funds) only rose by 6.4%.

Against this backdrop, it becomes imperative to explore the factors influencing credit distribution within the banking sector. This research aims to investigate the impact of several key variables, namely Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), Return on Assets (ROA), and Non-Performing Loans (NPL), on the lending activities of banks (Jung & Kim, 2015; Rahman et al., 2015; Twum et al., 2021). By analyzing these variables, the study seeks to shed light on the intricate relationship between financial performance indicators and the allocation of credit by banks. Through this exploration, the research aims to contribute to a deeper understanding of the mechanisms driving credit distribution, thereby addressing a significant research gap in the literature.

Literature review

Financial performance analysis is integral in assessing how effectively and correctly a company adheres to financial implementation rules. Compliance with standards such as those outlined in Financial Accounting Standards or GAAP (General Accepted Accounting Principles) is crucial in producing financial reports that accurately reflect the company's performance (AICPA, 2018; Ives, 2015). These financial reports serve as key indicators for evaluating company performance.

Banks, as defined by the Republic of Indonesia's Banking Law Number 10 of 1998, are entities tasked with collecting funds from the public, primarily in the form of savings, and redistributing these funds to the public through various means, including credit facilities, with the aim of enhancing the overall standard of living (Damayanti et al., 2020; Ives, 2015; Sibarani et al., 2020). With their core function centered around fund collection and the provision of banking services, banks play a vital role in facilitating economic activities.

Credit, as delineated in Banking Law no. 10 of 1998, involves the provision of funds based on an agreement between the bank and another party, obligating the borrower to repay the debt along with interest within a specified period (Iskandar, 2020; Shawar & Ahmed Siddiqui Associate Professor, 2019). This fundamental banking activity forms the basis for financial intermediation and economic growth.

Loan to Deposit Ratio (LDR), a key liquidity metric, represents the proportion of funds received by the bank that are subsequently channeled back to the community in the form of credit. A higher LDR typically indicates increased lending and investment activities, essential for stimulating economic growth (Blackburn & Hung, 1998; Sarker, 2019).

Capital Adequacy Ratio (CAR) compares a bank's capital to its risk-weighted assets (ATMR), assessing its ability to absorb losses and remain solvent (Abbott, 1983; Andros et al., 2020). This ratio serves as a crucial measure of a bank's financial strength and stability.

Return on Assets (ROA) reflects a company's profitability by measuring the efficiency of its asset utilization in generating profits. Higher ROA values indicate greater profitability, instilling confidence in borrowers and enabling banks to extend more credit (Djamaluddin et al., 2019; Yuhasril, 2019).

Non-Performing Loans (NPLs) are loans that have defaulted on repayment, posing a risk to a bank's financial health. Bank Indonesia sets a limit of 5% for NPLs, exceeding which may adversely affect the bank's health assessment (Bank Indonesia Regulation no. 15/2/PBI/2013). Managing NPLs is essential for maintaining the stability and soundness of the banking sector (Fibriyanti & Nurcholidah, 2021; Ives, 2015).

The hypotheses proposed in this study aim to investigate the relationships between key financial performance indicators and credit distribution. Specifically, H1 posits a positive relationship between Loan to Deposit Ratio and Credit Distribution, H2 suggests a positive association between Capital Adequacy Ratio and Credit Distribution, H3 proposes a positive impact of Return on Assets on Credit Distribution, and H4 hypothesizes a negative effect of Non-Performing Loans on Credit Distribution. Through empirical analysis, these hypotheses will be tested to provide insights into the determinants of credit allocation in the banking sector.

Methodology

This study adopts a quantitative research approach to investigate the relationship between financial performance indicators and credit distribution within banking

companies listed on the Indonesian Stock Exchange during the period of 2018-2019 (Akbar, 2019; Rodica et al., 2020).

The population for this research comprises banking companies listed on the Indonesian Stock Exchange during the specified timeframe. Employing a purposive sampling technique, banks that met predetermined criteria were selected as the sample for the study, resulting in a sample size of 19 banks.

Quantitative data extracted from the annual reports of the selected banks serve as the primary data source for this research. These reports, accessible via the Indonesian Capital Market Directory (ICMD) website at www.idx.co.id, provide comprehensive financial information necessary for analysis (Rahman et al., 2015; Rehman et al., 2019; Salim & Setyawan*, 2020).

Data collection is facilitated through documentation, involving the recording and review of pertinent information from the annual reports of the selected banks. Specifically, data pertaining to the independent variables, including Loan to Deposit Ratio, Capital Adequacy Ratio, Return on Assets, and Non-Performing Loans, are gathered. Additionally, information regarding the dependent variable, Credit Distribution, is collected to facilitate the analysis of its relationship with the independent variables (Rehman et al., 2019; Rodica et al., 2020).

By employing a quantitative research methodology and utilizing data from annual reports, this study aims to provide empirical insights into the factors influencing credit distribution within the banking sector. Through rigorous analysis of the collected data, the research seeks to contribute to a deeper understanding of the dynamics of credit allocation and its implications for financial performance within the Indonesian banking industry (Rodica et al., 2020; Twum et al., 2021).

Operational definition and measurement of variables

Loan to Deposit Ratio, calculated using the formula:

$$LDR = \frac{Amount\ of\ Credit\ Given}{Total\ Third\ Party\ Funds} \times 100\%$$

a. *Capital Adequacy Ratio*, calculated by formula:

$$CAR = \frac{Bank\ Capital}{Risk\ Weighted\ Assets} \times 100\%$$

b. *Return On Assets*, calculated using the formula:

$$ROA = \frac{Profit\ before\ tax}{Total\ assets} \times 100\%$$

c. *Non-Performing Loan*, menggunakan rumus:

$$NPL = \frac{Problematic\ Credit}{Amount\ of\ Credit\ Given} \times 100\%$$

d. Credit distribution is taken from the amount of credit provided in the banking company's annual report for the 2018-2019 period.

Analysis Techniques

For analyzing the relationship and significance of variables in this study, multiple linear regression analysis techniques are employed using SPSS version 18.0. Multiple linear regression enables the examination of how independent variables, such as Loan to Deposit Ratio, Capital Adequacy Ratio, Return on Assets, and Non-Performing Loans, collectively influence the dependent variable, Credit Distribution. This statistical method allows for the quantification of the impact of each independent variable on the dependent variable while controlling for the effects of other variables (Abbas et al., 2020; Azmi et al., 2018; DeRigne et al., 2016; Williams et al., 2015).

To ensure the reliability and validity of the regression results, classical assumptions are rigorously tested. These assumptions include normality, multicollinearity, heteroscedasticity, and autocorrelation. Normality testing assesses whether the residuals of the regression model are normally distributed, ensuring that the data meet the underlying assumptions of regression analysis. Multicollinearity testing examines the degree of correlation between independent variables, guarding against the issue of multicollinearity where independent variables are highly correlated, potentially inflating standard errors and compromising the reliability of regression coefficients (Altland, 2002; Liu, 2013).

Heteroscedasticity testing evaluates whether the variance of the residuals is constant across all levels of the independent variables. This is crucial for ensuring the validity of statistical inferences derived from the regression analysis. Autocorrelation testing examines whether the residuals exhibit a pattern of correlation over time, which could undermine the independence assumption of regression analysis (Dunn & Smyth, 2018).

By meticulously testing these classical assumptions, this study ensures the robustness of the multiple linear regression model utilized. If all assumptions are met, it indicates that the analytical model is appropriate for interpreting the relationship between the independent and dependent variables. Consequently, the regression results can be confidently interpreted to discern the determinants of credit distribution within the banking sector, offering valuable insights into the dynamics of financial performance and credit allocation in the Indonesian banking industry (Breusch, 1978; Kremers et al., 1992; Sinkey Jr., 1975).

Results and Discussions

Descriptive Statistical Analysis

Table 1

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
LDR (X_1)	38	47.5384	146.3757	86.063206	21.3855096
CAR (X_2)	38	9.0076	152.4577	25.362225	22.6347347
ROA (X_3)	38	-9.0042	2.7975	3.022239	2.2186027
NPL (X_4)	38	.0077	15.7525	3.978473	2.8036165
PENYALURAN KREDIT	38	23.4751	33.0787	9.497490	2.0007824
Valid N (Listwise)	38				

Source: SPSS Output Results.

The findings from Table 1 provide insights into the key variables under examination. In terms of Loan to Deposit Ratio (LDR), the analysis reveals a range from a minimum of 47.5384% to a maximum of 146.3757%, with an average value of 86.063206% and a standard deviation of 21.3855096%. Notably, the average LDR falls within the range prescribed by Bank Indonesia, typically set between 80% and 100%, indicating that the banks' lending activities are within acceptable parameters.

Regarding the Capital Adequacy Ratio (CAR), the study uncovers a spectrum spanning from a minimum of 47.5384% to a maximum of 146.3757%, with an average of 25.362225% and a standard deviation of 22.6347347%. Descriptive analysis suggests that, on average, the CAR meets the regulatory threshold set by Bank Indonesia, which typically mandates a minimum of 8%, ensuring that banks maintain sufficient capital to absorb potential losses.

The Return on Assets (ROA) exhibits a varied range, with a minimum value of -9.0042% and a maximum of 152.4577%, yielding an average of 3.022239%. The average ROA surpasses the threshold of 1.215% set by Bank Indonesia, indicating proficient management capabilities within commercial banks, capable of generating profits from their asset base.

In terms of Non-Performing Loans (NPLs), the analysis demonstrates a range from a minimum of 0.0077% to a maximum of 15.7525%, with an average value of 3.978473%. Notably, the average NPL value falls below the 5% standard stipulated by Bank Indonesia, indicating sound loan quality management within the banking sector.

Lastly, the average value of the credit distribution variable stands at 9.497490%, with a standard deviation of 2.0007824%. This indicates that the data distribution is well-balanced, as evidenced by the smaller standard deviation relative to the average. Overall, these findings provide a comprehensive understanding of the financial performance metrics and credit distribution dynamics within the Indonesian banking sector, shedding light on areas of strength and opportunities for improvement.

Classic assumption test

Upon conducting the classic assumption tests, the findings suggest that the regression model utilized in this study meets the required assumptions for robust analysis.

Beginning with the normality test, examination of the histogram and P-plot graphs indicates a distribution pattern that slightly skews to the right. Despite this slight deviation, the data remains fairly distributed, as depicted by the histogram graph. Moreover, the points on the P-plot graph consistently follow and approach the diagonal line, suggesting adherence to the assumption of normality. Thus, it can be inferred that the regression model satisfies the normality assumption, ensuring the reliability of subsequent analyses.

Moving on to the multicollinearity test, the results presented in Table 2 reveal tolerance values greater than 0.10 and Variance Inflation Factor (VIF) values below 10 for the variables Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), Return on Assets (ROA), and Non-Performing Loans (NPL). These findings indicate the absence of multicollinearity issues within the dataset, thereby affirming the validity of the regression model used for analysis.

Furthermore, the heteroscedasticity test, conducted through scatterplot analysis, demonstrates that the data points exhibit no discernible pattern and are evenly distributed both above and below the 0 point on the Y-axis. Consequently, it can be concluded that there are no heteroscedasticity problems present within the dataset, ensuring the robustness of the regression model.

Lastly, the autocorrelation test, as indicated by the Durbin-Watson (DW) statistic, yields a value of 1.409. Given a significance level of 5% and considering the number of observations (n = 38) and independent variables (k = 4), the calculated DW value falls between the lower and upper bounds (dL = 1.2614 and dU = 1.7223). Thus, it can be inferred that there is no autocorrelation issue within the model, indicating that the regression model is suitable for further analysis.

The comprehensive classic assumption tests confirm the validity and reliability of the multiple linear regression model employed in this study, providing a robust foundation for subsequent analyses and interpretations.

Multiple Linear Regression Analysis

The results of the multiple linear regression analysis are presented as follows:

The regression equation obtained is PK = 23.948 + 6.899LDR + 68.155CAR + 3.867ROA - 0.244NPL.

Breaking down the equation, the constant term (23.948) represents the predicted value of Credit Distribution when all independent variables, namely LDR, CAR, ROA, and NPL, are set to zero. Therefore, if there are no values for LDR, CAR, ROA, and NPL, the Credit Distribution is expected to be 23.948%.

Each regression coefficient provides insight into the impact of a one-unit change in the corresponding independent variable on the dependent variable, Credit Distribution. For instance, the coefficient for LDR (6.899) indicates that for every 1% increase in LDR, the Credit Distribution is predicted to increase by 6.899%. Conversely, if LDR decreases by 1%, the Credit Distribution is expected to decrease by 6.899%.

Similarly, the coefficient for CAR (68.155) signifies that a 1% increase in CAR is associated with a 68.155% increase in Credit Distribution. Conversely, a 1% decrease in CAR is anticipated to result in a 68.155% decrease in Credit Distribution.

The coefficient for ROA (3.867) reveals that a 1% increase in ROA corresponds to a 3.867% increase in Credit Distribution. Conversely, a 1% decrease in ROA is predicted to lead to a 3.867% decrease in Credit Distribution.

Lastly, the coefficient for NPL (-0.244) indicates that a 1% decrease in NPL is associated with a decrease of -0.244% in Credit Distribution. Conversely, a 1% increase in NPL is expected to result in a -0.244% increase in Credit Distribution.

The sign of each coefficient (+ or -) denotes the direction of the relationship between the independent variable (X) and the dependent variable (Y). A positive sign indicates that the variables move in the same direction, meaning an increase in the independent variable leads to an increase in the dependent variable, while a negative sign suggests an inverse relationship, where an increase in the independent variable results in a decrease in the dependent variable.

These regression coefficients provide valuable insights into the strength and direction of the relationships between the independent variables (LDR, CAR, ROA, and NPL) and the dependent variable (Credit Distribution), aiding in understanding the factors influencing credit allocation within the banking sector.

Coefficient of Determination

The coefficient of determination, often denoted as R squared, reveals the proportion of variability in the dependent variable, Credit Distribution, that can be explained by the independent variables, namely Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), Return on Assets (ROA), and Non-Performing Loans (NPL). In this analysis, the obtained R squared value of 0.311 indicates that approximately 31.1% of the variability in Credit Distribution can be accounted for by variations in LDR, CAR, ROA, and NPL.

This implies that these independent variables collectively contribute to explaining about one-third of the observed variation in Credit Distribution within the dataset. However, it's important to recognize that the remaining 68.9% of the variability in Credit Distribution is attributed to factors beyond the scope of this study. These unexplained factors may include variables not included in the regression model, as well as external influences and contextual factors that impact credit allocation within the banking sector.

Therefore, while the independent variables examined in this research offer valuable insights into the determinants of Credit Distribution, it's essential to acknowledge the presence of other variables and factors that influence credit allocation

but are not explicitly considered in the regression equation. These unaccounted factors may include macroeconomic conditions, regulatory policies, market dynamics, and managerial decisions, among others.

While the obtained R squared value provides an indication of the extent to which the independent variables explain the variability in Credit Distribution, it's crucial to recognize the limitations of the regression model and the presence of other influential factors outside the scope of this study. This underscores the complexity of credit allocation processes within the banking sector and the need for comprehensive and multi-faceted analyses to fully understand and address these dynamics.

Hypothesis test

The conducted hypothesis tests offer valuable insights into the statistical significance of the link between the independent variables, namely Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), Return on Assets (ROA), and Non-Performing Loans (NPL), and the dependent variable, Credit Distribution.

The Simultaneous Significant Test reveals that the estimated F-statistic of 3.541 is statistically significant with a p-value of 0.016. The estimated F-value above the crucial value of 2.892 and the significance level is below 0.05. This suggests that when LDR, CAR, ROA, and NPL are evaluated together, they jointly have a considerable impact on Credit Distribution.

When conducting the Partial Significant Test, analysing each independent variable individually offers additional insights:

a. The Loan to Deposit Ratio variable exhibits a computed t-value of 2.135, which is statistically significant at a significance level of 0.040. Since the estimated t-value above the critical value of 1.691 and the significance level is less than 0.05, this indicates that the alternative hypothesis (H1) is accepted. Hence, there is a clear and substantial correlation between Loan to Deposit Ratio and Credit Distribution.
b. The Capital Adequacy Ratio variable has a calculated t-value of 2.219, which is statistically significant at a significance level of 0.016. Since the estimated t-value exceeds 1.691 and the significance threshold is less than 0.05, we adopt H2, which suggests a positive and significant impact of Capital Adequacy Ratio on Credit Distribution.
c. The Return On Assets variable has a calculated t-value of 2.697, which is significant at a level of 0.010. Given that the computed t-value is greater than 1.691 and the significance level is less than 0.05, we can conclude that H3 is accepted. This suggests a favourable and substantial influence of Return On Assets on Credit Distribution.
d. In contrast, the Non-Performing Loan variable has a computed t-value of -9.520, which is statistically significant with a p-value of .000. Since the calculated t-value is less than 1.691 and the significance threshold is less than 0.05, we can reject H4. There is a strong and statistically significant inverse correlation between Non-Performing Loans and Credit Distribution.

The hypothesis tests confirm that LDR, CAR, ROA, and NPL jointly have a significant influence on Credit Distribution. In addition, the separate studies emphasise the distinct contributions of each independent variable, providing insight into their respective effects on Credit Distribution in the banking industry.

Discussion

The discussion on the influence of key financial performance indicators on credit distribution sheds light on the relationships established through empirical analysis, aligning with the relevant literature on banking operations and financial analysis.

Beginning with the Loan to Deposit Ratio (LDR), the findings corroborate the hypothesis positing a positive relationship with Credit Distribution. This is consistent with the broader understanding of LDR as a measure of a bank's lending capacity, supported by literature indicating that higher LDR values are associated with increased credit distribution (Blackburn & Hung, 1998). The observed significance underscores the importance of LDR in driving credit expansion within the banking sector.

Similarly, the positive and significant effect of Capital Adequacy Ratio (CAR) on Credit Distribution aligns with expectations and prior research, which highlights the role of CAR in bolstering a bank's ability to extend credit while maintaining financial stability (Abbott, 1983; Andros et al., 2020). The findings emphasize the pivotal role of CAR in safeguarding against potential risks and supporting credit allocation activities, contributing to the overall economic growth (Damayanti et al., 2020).

Moreover, the positive impact of Return on Assets (ROA) on Credit Distribution resonates with the literature, which underscores the importance of profitability in enabling banks to extend credit (Djamaluddin et al., 2019; Yuhasril, 2019). Higher ROA values signify efficient asset utilization and increased profitability, enhancing a bank's capacity to provide credit facilities and stimulate economic activity (Iskandar, 2020).

Conversely, the negative and significant effect of Non-Performing Loans (NPLs) on Credit Distribution is consistent with expectations and prior studies, underscoring the detrimental impact of NPLs on a bank's ability to extend credit and maintain financial health (Bank Indonesia Regulation no. 15/2/PBI/2013). Managing NPLs effectively is crucial for mitigating risks and sustaining credit provision, in line with regulatory guidelines and industry best practices (Ives, 2015).

The empirical findings provide valuable insights into the determinants of credit allocation within the banking sector, aligning with existing literature on financial performance analysis and banking operations. By confirming the relationships between LDR, CAR, ROA, NPLs, and Credit Distribution, this study contributes to a deeper understanding of the factors influencing credit dynamics in the Indonesian banking landscape (Damayanti et al., 2020).

Conclusion

Based on the hypothesis testing conducted using multiple linear regression analysis in SPSS Version 18.0, several conclusive findings emerge regarding the factors influencing Credit Distribution within the banking sector. Firstly, it is evident that Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), and Return On Assets (ROA) exhibit positive and significant impacts on Credit Distribution. These results underscore the crucial role of these financial performance indicators in shaping a bank's lending capacity and overall financial health. By effectively managing LDR, maintaining adequate capital reserves represented by CAR, and optimizing asset utilization reflected in ROA, banks can enhance their ability to allocate credit efficiently and support economic growth.

Conversely, Non-Performing Loans (NPLs) demonstrate a negative and significant effect on Credit Distribution. This emphasizes the detrimental impact of loan defaults and delinquencies on a bank's ability to extend credit and maintain stability. Managing NPLs effectively is imperative for mitigating risks and safeguarding the integrity of credit allocation processes within the banking sector.

Moving forward, the findings of this research offer valuable insights and implications for various stakeholders within the banking industry.

For bank managers and decision-makers, the results serve as reference and evaluation material for enhancing bank management practices, particularly in fund collection and allocation. By leveraging the identified determinants of Credit Distribution, banks can optimize their operational strategies to better serve the needs of their customers and foster sustainable growth.

Prospective customers can also benefit from these findings by gaining insights into a bank's performance as an intermediation institution. Armed with this knowledge, prospective customers can make informed decisions when selecting a bank to entrust with their funds, ensuring they choose a reliable and trustworthy institution.

Moreover, for future researchers, it is recommended to expand upon this study by incorporating additional independent variables that may influence credit distribution. Furthermore, increasing the sample size and extending the research period beyond 2018-2019 would provide a more comprehensive understanding of credit allocation dynamics within the banking sector.

However, it's important to acknowledge the limitations of this research, including the narrow observation period and the focus solely on internal bank factors. Future studies should aim to address these limitations and explore a broader range of factors impacting credit distribution to provide a more nuanced understanding of this critical aspect of banking operations.

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