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Credit Distribution as a Mediation of Loan to Deposit Ratio, Operational Costs on Operational Income and Non Performance Loan to Return on Asset

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ABSTRACT

This research study aims to analyze the effect of: (1) LDR on ROA, (2) BOPO on ROA, (3) NPL on ROA, (4) Lending on ROA, (5) LDR on Lending, (6) BOPO on Lending, (7) NPL on Lending, (8) LDR on ROA through Lending, (9) BOPO to ROA through Lending, (10) NPL to ROA through Lending. Using quantitative research, a population of 129 banks in the period and purposive sampling technique. The results of this study prove that LDR has a significant positive effect on ROA so that the hypothesis is accepted; BOPO has a significant negative effect on ROA so that the hypothesis is accepted; NPL has no effect on ROA so that the hypothesis is rejected; lending has a significant positive effect on ROA so that the hypothesis is accepted; LDR has no effect on lending so that the hypothesis is rejected; BOPO has a significant positive effect on lending, so the hypothesis is accepted; NPL has a significant negative effect on lending, so the hypothesis is accepted; lending is unable to mediate the effect of LDR on ROA, so the hypothesis is accepted; lending is able to mediate the effect of BOPO on ROA, so the hypothesis is accepted; and lending is unable to mediate the effect of NPL on ROA, so the hypothesis is accepted.

INTRODUCTION

Banks are financial institutions whose main activity is collecting funds from the community and channeling these funds back to the community as well as providing other banking services (Simamora et al., 2023). One of the problems facing banks is their financial performance. Assessing its performance is very important. An assessment to determine the condition of a bank usually requires a measuring instrument. Bank Indonesia sets provisions for standardizing income generating capabilities. An increase in income or profits from total assets owned by a bank can illustrate the condition of the bank and its management capabilities as well. A bank health assessment is carried out to see whether the bank's health level is in a healthy, unhealthy, quite healthy and unhealthy position. The level of bank health is the result of a qualitative assessment consisting of various aspects that influence the condition or performance of a bank through assessing capital factors, asset quality, management, profitability and sensitivity to market ratios (Hasbi et al., 2024). Based on this statement, Bank Indonesia issued new regulation no. 6/10/PBI/2004 dated April 12 2004 concerning CAMELS (Capital, Asset Quality, Management, Earning, Liquidity, Sensitivity to Market Risk) analysis for assessing bank health levels. The aspects contained in the analysis use financial ratios. There are several bank financial ratios used in this research, such as Return On Assets (ROA), Loan to Deposit Ratio (LDR), Non-Performing Loans (NPL), and Operating Expenses over Operating Income (BOPO).

It is known that one of the main activities of banks to gain profits is by distributing credit. According to (Utami & Wuryani, 2020), lending is the main activity for a bank and the amount distributed will determine the amount of profit the bank will obtain. If they want to increase profits, banks must increase the amount of credit distributed. Therefore, if credit distribution increases, it will have an effect on increasing ROA. Credit distribution is influenced by several variables including LDR, NPL, and BOPO (Y. M. W. Putri, 2016).

Research related to credit distribution, for example Putri's research (Y. M. W. Putri, 2016) concluded that LDR had a positive and insignificant effect on credit distribution. In contrast, research by (Dewi, 2019)concluded that LDR had no effect on credit distribution. Another research conducted by (Desryl, 2017) concluded that BOPO had a significant effect on credit distribution. In contrast, research by (Puspitasari & Musaroh, 2018) concluded that BOPO had no significant effect on credit distribution. Furthermore, research by (Prasasti et al., 2017) concluded that NPLs had a significant negative effect on credit distribution. On the other hand, research by (R. N. A. Putri et al., 2020) concluded that the NPL ratio does not have a significant effect on credit distribution.

Based on the gaps in several studies that are inconsistent regarding the influence of LDR, BOPO and NPL on ROA, the influence of LDR, BOPO and NPL on credit distribution and the influence of credit distribution on ROA. This is what underlies researchers to be able to find novelty in this research. The novelty in this research is that credit distribution is a mediating variable for LDR, BOPO and NPL on ROA. Thus, the aim of this research is to analyze the effect of: (1) LDR on ROA, (2) BOPO on ROA, (3) NPL on ROA, (4) credit distribution on ROA, (5) LDR on credit distribution, (6) BOPO to credit distribution, (7) NPL to credit distribution, (8) LDR to ROA through credit distribution, (9) BOPO to ROA through credit distribution, (10) NPL to ROA through credit distribution.

Several studies have explored the influence of financial ratios on bank profitability, especially focusing on variables such as Loan to Deposit Ratio (LDR), Non-Performing Loans (NPL), and Operating Expenses over Operating Income (BOPO) on Return on Assets (ROA). Putri (2016) found that LDR had a positive but insignificant impact on credit distribution, whereas (Khairiyah et al., 2022)concluded that LDR had no significant effect on credit distribution. In contrast, (Desryl, 2017) identified that BOPO significantly influences credit distribution, while (Puspitasari & Musaroh, 2018) reported the opposite. Studies on NPLs also show mixed results; (Ma'Rufah et al., 2017) highlighted a significant negative impact of NPLs on credit distribution, while (R. N. A. Putri et al., 2020) argued that NPLs do not significantly affect credit distribution. This inconsistency across studies highlights the complexity of banking operations and the varying impacts of financial ratios on bank performance.

Although numerous studies have analyzed the relationship between LDR, BOPO, NPL, and ROA, there remains a significant gap concerning the mediating role of credit distribution in these relationships. Prior research often focused on direct relationships without considering the potential of credit distribution as a mediating variable that could provide deeper insights into how these financial ratios influence profitability. Additionally, there is a lack of consensus regarding the extent to which credit distribution impacts ROA and whether it can effectively mediate the influence of LDR, BOPO, and NPL. This study aims to bridge this gap by examining the mediating role of credit distribution in the relationship between key financial ratios and bank profitability.

The novelty of this research lies in its comprehensive approach to evaluating credit distribution as a mediating variable between LDR, BOPO, NPL, and ROA. While previous studies have predominantly examined the direct effects of financial ratios on bank profitability, this study introduces a mediating perspective, providing a nuanced understanding of how credit distribution influences the impact of these ratios on ROA. By incorporating this mediation analysis, the research offers fresh insights into the dynamics of bank financial management, particularly highlighting the strategic role of credit distribution in enhancing bank performance.

The primary objective of this research is to analyze the effect of LDR, BOPO, and NPL on ROA, with a specific focus on the mediating role of credit distribution. This study aims to: (1) investigate the direct effects of LDR, BOPO, and NPL on ROA; (2) explore the influence of these variables on credit distribution; and (3) assess whether credit distribution mediates the relationship between financial ratios and ROA. The findings of this study are expected to provide valuable insights for bank management in optimizing financial strategies to enhance profitability. Additionally, the research offers practical recommendations for policymakers and investors to better understand the dynamics of bank operations and improve decision-making processes in the banking sector.

This research uses the ROA ratio to measure bank management's ability to obtain overall profits. According to (H. F. Ismail, 2018), the greater the ROA of a bank, the greater the level of profit achieved by the bank and the better the bank's position in terms of asset use. Research by (Pujayanti, 2020) proves that to maintain or increase ROA it is necessary to pay attention to several factors that influence it, including the Capital Adequacy Ratio (CAR), LDR, NPL, and BOPO. Therefore, researchers only use LDR, NPL, and BOPO as independent variables that influence ROA.

METHOD

This research was conducted at Conventional Commercial Banks listed on the Indonesia Stock Exchange (BEI) for the 2019-2021 period. Using quantitative research, the population was 129 banks for that period and with purposive sampling techniques a total of 63 banks were obtained for that period. Secondary data in the form of research variables was obtained using documentation techniques in the form of financial reports published by the IDX accessed via idx.co.id. After the data was collected, it was then analyzed using path analysis. However, previously classical assumptions were tested: normality, multicollinearity, heteroscedasticity, autocorrelation. To test the hypothesis, the t-test is used. The variables are measured as follows.

LDR is measured using the formula: the amount of credit provided divided by third party funds multiplied by 100%. BOPO is measured using the formula: operational costs divided by operating income multiplied by 100%
NPL is measured using the formula: non-performing loans (criteria 3,4,5) divided by total loans multiplied by 100%. ROA is measured by the formula: profit before tax divided by total assets) multiplied by 100%
Credit distribution is measured: total credit given in rupiah, then calculated

RESULTS AND DISCUSSION

The results of the classical assumption test are presented in Table 1 below.

Table.1 Summary of Classic Assumption Test Results

Test Assumptions	Test Equipment	Conclusion
Multikolinieritas	VIF	Does not violate classical assumptions

Heteroskedastisitas	Scatter Plot	Does not violate classical assumptions
Autokorelasi	Durbin Watson	Does not violate classical assumptions
Normalitas	Kolmogorof-Smirnov	Does not violate classical assumptions

Source: secondary data processed by researchers in 2022

In Table 1 above, it appears that the results of the classical assumption test show that nothing has been violated, so path analysis can be used as an analytical tool in this research.

Hypothesis Testing Results

The results of the path analysis are summarized in Table 2 below.

Table. 2 Summary of Path Analysis Results

Influence	Standarized Coeffisien	Value-t	Sig.	Hypothetical conclusion
LDR (X_1) to Credit distribution (Z)	0,309	2,484	0,216	H-1: rejected
BOPO (X_2) to Credit distribution (Z)	0,131	1,066	0,029	H-2: accepted
NPL (X_3) to Credit distribution (Z)	-0,033	-2,263	0,023	H-3: accepted
LDR (X_1) to ROA (Y)	0,276	2,904	0,005	H-4: accepted
BOPO (X_2) to ROA (Y)	-0,111	-2,236	0,022	H-5: accepted
NPL (X_3) to ROA (Y)	0,268	1,260	0,340	H-6: rejected
Credit distribution (Z) to ROA (Y)	0,488	5,157	0,000	H-7: accepted
X_1 to Z to Y = 0.309*0.488 = 0.151 < 0.276		H-8: accepted		
X_2 to Z to Y = 0.131*0.488 = 0.0639 > -0.111		H-9: accepted		
X_3 to Z to Y = - 0.033*0.488 = -0.0478 < 0.268		H-10: accepted		

Source: secondary data processed by researchers in 2022

Based on Table 2, to find out whether credit distribution (Z) is able to mediate the influence of LDR (X1) on ROA (Y), it is determined by multiplying the indirect path coefficient X1 to Z to Y, the result is 0.151, while the direct path coefficient X1 to Y is 0.276. Because the indirect path coefficient is smaller than the direct path coefficient, it can be stated that credit distribution (Z) is unable to mediate the effect of LDR (X1) on ROA (Y). Next, to find out whether credit distribution (Z) is able to mediate the effect of BOPO (X2) on ROA (Y), it is determined by multiplying the indirect path coefficient X2 to Z to Y, the result is 0.0639, while the direct path coefficient X2 to Y is minus 0.111. Because the indirect path coefficient is greater than the direct path coefficient, it can be stated that credit distribution (Z) is able to mediate the effect of BOPO (X2) on ROA. Next, to find out whether credit distribution (Z) is able to mediate the effect of NPL (X3) on ROA (Y), it is determined by multiplying the indirect path coefficient X3 to Z to Y, the result is minus 0.0478, while the direct path coefficient X1 to Y is 0.276. Because the indirect path coefficient is smaller than the direct path coefficient, it can be stated that credit distribution (Z) is unable to mediate the effect of NPL (X3) on ROA.

The results of this research prove that there is a significant positive influence of LDR on ROA, indicated by the sig value. 0.000 is smaller than 0.05 with a standardized regression coefficient that has a positive sign of 2.290. If LDR is increased by 1 percent, then ROA will also increase by 22.90 percent, assuming other variables remain constant. The greater the ROA of a bank, the greater the level of profit achieved and the better the bank's position in terms of the use of its assets. The results of this research are in line with (Husein et al., 2017) research showing that the LDR ratio has a significant positive effect on ROA. This is also supported by research by (Ratih et al., 2017) which states that banks must maintain the LDR level so that the bank can obtain maximum profits so that LDR has an effect on ROA. The greater the ROA, the greater the level of profit achieved and the better the bank's position in terms of the use of its assets. In this case, the LDR which increases every year without exceeding a predetermined limit will increase the profits obtained by the bank from interest income. (Riyadi, 2003) stated that the higher the LDR, the higher the company's profits, assuming the bank distributes credit effectively.

The results of this research prove that there is a significant negative influence of BOPO on ROA, indicated by the sig value. 0.022 is smaller than alpha 0.05 with a standardized regression coefficient that has a negative sign of 2.236. If BOPO is reduced by 1 percent, then ROA increases by 22.36 percent, assuming other variables remain constant. This is because the increase in operational costs is not followed by an increase in operational income, resulting in a decrease in profit before tax and ultimately reducing ROA. The results of this research support Faisal's research (Syafrial, 2019)

The results of this research prove that NPL has no effect on ROA, shown by the sig value. 0.346 is greater than alpha 0.05 with a standardized regression coefficient that has a positive sign of 1.260. If NPL is increased, then ROA is not affected, assuming other variables remain constant. However, bank profits can still increase with a certain NPL, because the source of bank profits is not only obtained from interest, which can have an influence on increasing ROA. The results of this research contradict (Murtiningrum, 2023) research.

The results of this research prove that credit distribution has a significant positive effect on ROA as indicated by the sig value. 0.000 is smaller than 0.05 with a standardized regression coefficient that has a positive sign of 5.157, meaning that if credit distribution increases by 1%, then ROA will also increase by 51.57%. Taswan (2015) states that there is an influence on credit distribution with ROA, namely that placement in the form of credit will contribute to interest income for the bank which will have an impact on the profits obtained by the bank. The results of this research support Farida's research (Farida, 2015).

The results of this research prove that LDR has no effect on credit distribution, shown by the sig value. 0.216 is greater than 0.05 with the standardized regression coefficient having a positive sign of 2.484, meaning that the rise and fall of LDR has no impact on ROA. However, if you still find banks with high LDR levels, this means that the bank is not efficient in maximizing income from funds lent to the public. This can happen because banks have not fully implemented the principle of prudence in distributing credit. The results of this research do not support Putri's research (Y. M. W. Putri, 2016)

The results of this research prove that BOPO has a significant positive effect on credit distribution, indicated by the sig value. 0.029 is smaller than 0.05 with a standardized regression coefficient that has a positive sign of 1.066, meaning that if BOPO increases by 1%, then credit distribution will also increase by 10.66%. This is because the increasing BOPO at a bank is due to the bank's policies in realizing bank effectiveness and efficiency in the long term, for example promotion, innovation and employee training. The existence of this policy causes the BOPO ratio to be high but does not reduce the level of credit disbursement. (M. B. A. Ismail, 2018). stated that the greater the BOPO, the more inefficient the operational costs incurred by the bank so that the bank is in trouble. The results of this research support Syafi'i's research (Desryl, 2017)

The results of this research prove that NPLs have a significant negative effect on credit distribution, indicated by the sig value. 0.023 is smaller than 0.05 with a standardized regression coefficient that is negative 2.263, meaning that if the NPL decreases by 1%, then credit distribution will actually increase by 22.63%. The decrease in NPL reflects the smaller occurrence of problem loans arising, so that the distribution of credit provided by a bank can increase. The results of this research support the research of (Prasasti et al., 2017) The results of this research prove that credit distribution is unable to mediate the effect of LDR on ROA. This happens because to distribute credit, banks do not only rely on funds from third parties but can be sourced from their own capital, funds sourced from banks or from shareholders. Therefore, credit distribution does not function as a mediating variable.

The results of this research prove that credit distribution is able to mediate the effect of BOPO on ROA. If a bank further reduces operational expenses and increases its operating income, the bank will become more efficient so that credit distribution can grow and the profits obtained by the bank will also increase. Therefore, in this research, credit distribution can be a mediating variable.

The results of this research prove that credit distribution is unable to mediate the effect of NPL on ROA. No matter how big the credit disbursement by the bank does not affect the NPL on ROA because to minimize the potential for an increase in NPL the bank still disburses credit to continue making a profit. Therefore, credit distribution does not function as a mediating variable.

CONCLUSION

The results of this research conclude that: firstly, LDR has a significant positive effect on ROA, so the hypothesis is accepted. Second, BOPO has a significant negative effect on ROA, so the hypothesis is accepted. Third, NPL has no effect on ROA, so the hypothesis is rejected. Fourth, credit distribution has a significant positive effect on ROA, so the hypothesis is accepted. Fifth, LDR has no effect on credit distribution, so the hypothesis is rejected. Sixth, BOPO has a significant positive effect on credit distribution, so the hypothesis is accepted. Seventh, NPL has a significant negative effect on credit distribution, so the hypothesis is accepted. Eighth, credit distribution is unable to mediate the effect of LDR on ROA, so the hypothesis is accepted. Ninth, credit distribution is able to mediate the effect of BOPO on ROA, so the hypothesis is accepted. Tenth, credit distribution is unable to mediate the effect of NPL on ROA, so the hypothesis is accepted.

Suggestions for banks, the findings of this research can be used as a consideration in predicting factors that influence the amount of credit disbursement to increase ROA and for banks to be able to monitor more intensively the movement of NPL, BOPO and LDR so that their values do not violate the provisions set by Bank Indonesia so that they do not classified as a special mention bank

It is hoped that the results of this research will be useful for investors who will invest in banking companies as a consideration in making investment decisions.

Suggestions for future researchers are to replace other variables that are thought to influence credit distribution and ROA or research Islamic banking companies that have gone public, so that the results can broaden thinking and develop knowledge related to credit distribution and ROA.

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