

Internal Factors Affecting the NPL of State-Owned Commercial Banks

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ABSTRACT: Banking in Indonesia generally relies on loan interest income to finance its operations. Not all loans are risk-free; some have significant risks and can threaten the bank's health. NPL measures a bank's ability to overcome failure to take credit from debtors. This study aims to analyse the influence of internal factors, namely: CAR, LDR, NIM, and OEOI, on NPLs of State-Owned Commercial Banks in 2015-2022. The research was conducted using a qualitative descriptive method with panel data using the annual financial reports of Bank BRI, Bank BNI, Bank Mandiri, and Bank BTN for 2015 - 2022. The results of this study indicate that CAR and BOPO have a significant positive effect on NPL, while LDR and NIM have a significant negative effect on NPL. To maintain an NPL of 2.99%, state-owned commercial banks must maintain a CAR ratio of 20%, LDR of 89.30%, NIM < 5%, and OEOI of 76.62%.

Keywords: CAR, LDR, NIM, NPL, OEOI, State-Owned Commercial Banks



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INTRODUCTION

Indonesia's economic growth from year to year continues to improve inseparable from the role of banking, which is one of the driving sectors of the country's economy; banking as a source of funding is expected to grow various sectors of people's businesses and increase the economic capacity of entrepreneurs and MSMEs which have an impact on the country's economic growth.

Banking as a financial institution plays an essential role in managing funds from parties with excess funds and channelling these funds to those who need them. The distribution of loan funds is also called lending. However, not all loans are directed back smoothly; this condition is due to the inability of the debtor or customer to return the loan with interest within the specified time, also called bad credit. Low economic growth, high inflation rates, high-interest rates, and severe problem loans cause bad loans. The size of the bank influences the high number of non-performing loans, the rate of return on assets, and the level of solvency ([Ćurak et al., 2013](#); [Nguyen et al., 2021](#); [Sahiti & Sahiti, 2021](#)).

Banking is the heart of a country, especially for developing countries. As one of the drivers of the country's economy, banks must always maintain the soundness of capital, asset quality,

management, profitability and liquidity by receiving funds from the public in the form of savings, giro, and deposits to be cancelled back to the public in the form of credit.

Banking in Indonesia generally relies on loan interest income as the primary income in financing its operations. Not all credit extended is risk-free; some have sizable risks and can threaten the bank's health. So to measure a bank's ability to overcome failure to take credit from debtors, the NPL ratio can be used.

The net NPL ratio of State-Owned Commercial Banks will fall throughout 2021. This decrease is one sign that the quality of lending is getting better. NPL can be influenced by 3 (three) things, namely internal bank factors, internal debtor factors, and non-bank and external debtor factors. Internal factors can be in the form of Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Net Interest Margin (NIM), and Operating Expenditure to Operating Income (OEOI), while external factors are SBI Interest Rates, Inflation, and Bank Size.

Non-performing loans mostly grew from the middle of 2019 to early 2022. It started to decline from mid-2022 to the end of the analyse period. Even though non-performing loans have started to decline, their portion of total loans is still very high. That's why this problem must find the best solution. Banks need help to solve this problem because the process will take a long time. Government involvement through the financial authorities is needed to overcome this problem ([Agić & Dušanić Gačić, 2021](#); [Alshiqi & Sahiti, 2021](#); [Chiu et al., 2014](#)).

Previous research on the factors that affect NPL shows that operating efficiency, profitability, capital adequacy ratio, and income diversification significantly negatively affect NPL ([Khan et al., 2020](#)). While the variables that have a significant negative effect on NPL, namely the conventional level: return on equity, capital adequacy ratio, market share based on assets, unemployment, and time. Meanwhile, the net interest margin significantly positively affects NPL ([Kumar et al., 2018](#)). CAR has a significant positive effect on NPL. Bank Size and Bank Age significantly negatively affect NPL, while Profitability has no significant negative effect on NPL DMB in Nigeria. This research finds that the determinants of NPL have a mixed impact on NPL in Nigeria ([OWONYE & OBONOFIEMRO, 2022](#)). According to ([Firmansyah & Sari Sam, 2022](#)), the NPL of State-Owned Commercial Banks is simultaneously influenced by the Loan to Asset Ratio, Third Party Funds, Earning Assets Quality, and Loan Interest Rates. Partially, NPL is negatively affected by Loan to Asset Ratio and Third-Party Funds, while Earning Assets Quality significantly affects NPL. Only the Lending Rate does not affect NPL.

The results differ from the research conducted ([Mensah & Adjei, 2015](#)) that bank-specific factors (i.e., last year's NPL, bank size, NIM, and current year's credit growth) and macroeconomic variables (i.e., previous year's inflation, GDP growth per capita and effective exchange rate) has a significant effect on NPLs in the bank. The sub-sample estimates also show bank-specific factors (i.e., last year's NPLs and current year's loan growth) and macroeconomic factors (i.e., real effective exchange rate, per capita GDP growth, and the prior year's inflation) influence the NPLs of these banks—big bank. However, while bank-specific factors (i.e., last year's NPL and current year's

credit growth) are important in explaining NPL, macroeconomic factors are not necessary for explaining NPL for small banks.

NPL has a significant positive effect on the ratio of exports to imports, and inefficiency and asset size have a negative effect on the GDP growth rate, capital adequacy, and inflation rate. Low economic growth is the leading cause of high NPLs in Nepal and shows that efficient management and effective financial policies are necessary for a stable financial system and economy (Koju et al., 2018). The results of the VECM model confirm the considerable significance of GDP per capita, gross wages, and loan interest rates on household loan NPLs. The response function results show a positive effect of per capita GDP and loan interest rates on NPL and a negative effect of real wages on NPL. The decomposition of the variance in the forecast period confirms the increase in the level of explanation of NPLs by GDP per capita, gross wages, and lending rates (Bukowski & Kosztowniak, 2022).

(Ranjan & Dhal, 2003) Research states that the term of credit variable significantly affects NPL due to customers' risk preference, which is influenced by bank size and changes in macroeconomic conditions. In addition, bank size has a different impact on the NPL level. In terms of credit variables, high-interest rates burden customers, causing an increase in NPLs.

Based on this, the researcher is interested in discussing further and conducting research on the internal factors that influence the NPL of State-Owned Commercial Banks. This study aimed to determine and analyse the influence of internal bank factors simultaneously and partially, namely: CAR, LDR, NIM, and OEOI, on the NPL of State-Owned Commercial Banks.

METHOD

By the concepts and definitions contained in (Cooper, D. R., & Schindler, 2011) and (Sekaran & Bougie 2017), this study designed a research design that explained a series of activities and plans based on time, research questions, resources, and types of information to be explored, references for analysis of studies of relationships between variables and procedures for each research and in the plan the design structure submitted to the process and the expected design results are valid, objective, efficient, and effective.

The analytical method used is Secondary Data Analysis, one the research methods. Secondary data analysis analyses pre-existing quantitative or qualitative data to generate new questions or verify previous research (Lichtman, 2005).

The variables studied are CAR, LDR, NIM, BOPO, and NPL, defined operationally as shown in Table 1.

Table 1. Variable Operational Definitions

No	Variable	Definition	Parameter	Scale
1	Capital Adequacy	Comparison of the ratio between the ratio of capital to risk-	$CAR = \frac{capital}{Risk\ Weighted\ Assets} \times 100\%$	Ratio

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	Ratio (CAR) (X ₁)	weighted assets and according to government regulations (Kasmir, 2018), (Ismail, 2010)		
2	Loan to Deposit Ratio (LDR) (X ₂)	The ratio between total credit disbursed and total deposited funds (Dendawijaya, 2005), (Zuliyana et al., 2022)	$LDR = \frac{\text{total credit disbursed}}{\text{third - party funds}} \times 100\%$	Ratio
3	Net Interest Margin (NIM) (X ₃)	The ability and reliability of banking management in managing its productive assets to generate net interest income for a certain period (Kasmir, 2014), (Anshary et al., 2021)	$NIM = \frac{\text{Net interest income}}{\text{Average earning assets}} \times 100\%$	Ratio
4	Operating Expenditure to Operating Income (X ₄)	The ratio measures the level of efficiency and ability of a bank to carry out its operational activities (Dendawijaya, 2005), (Martono, 2009)	$OEOI = \frac{\text{operating expenditure}}{\text{operating income}} \times 100\%$	Ratio
5	Non-Performing Loan (NPL) (Y)	Banking inaccuracies cause bad loans and customers who intentionally or unintentionally do not fulfil their obligations. (Kasmir, 2018), (Putra Gumilar Sambas et al., 2021)	$NPL = \frac{\text{Total Non Current Credit}}{\text{Total credit disbursed}} \times 100\%$	Ratio

LDR, CAR, OEOI, NIM, and NPL data are sourced from annual financial reports published by Bank BRI (<https://bri.co.id/>), Bank Mandiri (<https://bankmandiri.co.id/>), Bank BNI (<https://www.bni.co.id/id-id/>), and Bank BTN (<https://www.btn.co.id/>) during 2015-2022. The data analysis method uses panel data regression to combine time series data and cross-section data, which is processed using E-Views Version 12. The equations used in this study are as follows:

$$NPL_{it} = a + 1 LDR_{it} + 2 CAR_{it} + 3 OEOI_{it} + 4 NIM_{it} + it$$

RESULT AND DISCUSSION

Capital Adequacy Ratio (CAR) of State-Owned Public Banks During 2015-2022

CAR indicates a bank's ability to increase capital to overcome the risk of loss, protect customers and maintain banking stability. The greater the CAR value reflects, the better the banking ability to deal with a possible risk of loss

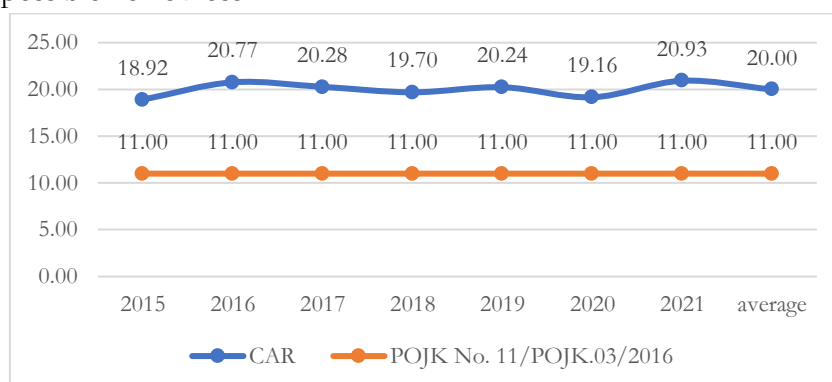


Figure 1. Average CAR of State-Owned Public Banks During 2015-2022

During 2015-2022, the CAR of state-owned commercial banks was at the maximum level required by the Financial Services Authority (OJK) of 11%; for seven years, the average CAR of state-owned commercial banks was 20%. This ratio is optimal for maintaining bank profitability, anticipating potential risks, sustaining business activities and developing sustainably.

Loan to Deposits Ratio (LDR) of State-Owned Public Banks During 2015-2022

LDR is an indicator to measure a bank's ability to meet short-term obligations by dividing total credit by total Third-Party Funds. Banking liquidity needs to be managed to meet customers' needs to collect funds and distribute loans to customers. A high LDR causes the Bank to need more liquidity; if the LDR is low, the bank has sufficient liquidity, but its income may be lower because it earns income through disbursed loans.

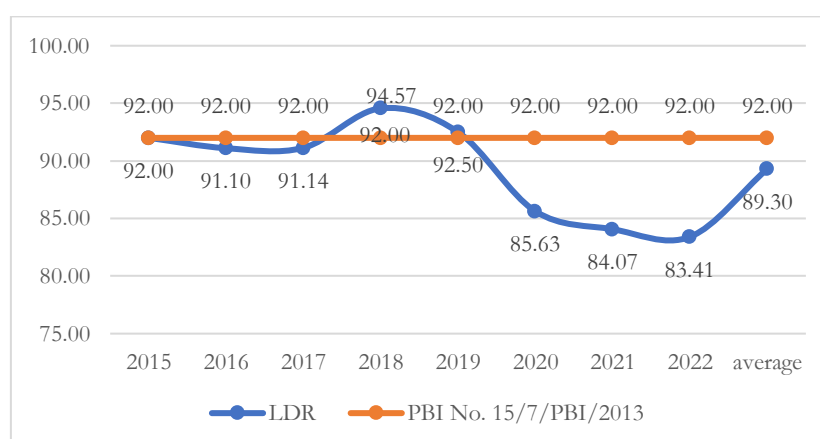


Figure 2. Average LDR of State-Owned Public Bank During 2015-2022

During 2015-2022 the average LDR at state-owned commercial banks was 89.30%; this ratio was below Bank Indonesia's provisions of 92%, which means that 89.30% of public funds collected have been channelled into credit. The bank manages the remaining 10.70% of the funds as liquidity.

Net Interest Margin (NIM) of State-Owned Public Banks During 2015-2022

NIM is the net interest margin used to measure the division between the bank's interest income and the amount of interest given to the lender.

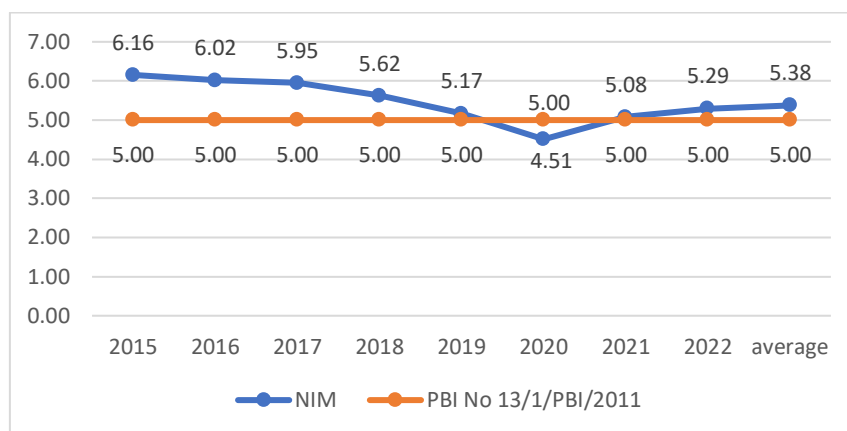


Figure 3. Average NIM of State-Owned Public Banks During 2015-2022

During 2015-2022, the NIM of state-owned commercial banks was 5.38%, exceeding Bank Indonesia's maximum standard of 5%. Indonesia is listed as a country with the highest banking NIM in Asean. Cambodia 5.35%, the Philippines 3.56%, Meanwhile Singapore 1.21%. NIM is used to measure the level of bank profitability. Generally, a high NIM indicates high profit for the bank. The high NIM indicates that the Indonesian banking market could be more efficient and competitive. Factors that cause high NIM are internal factors (management), external factors such as industrial climate (market concentration) and macro factors (i.e., inflation rate and economic growth).

Operating Expenditure to Operating Income (OEOI) of State-Owned Public Banks During 2015-2022

OEOI is an indicator to measure a bank's efficiency in carrying out its activities. Operating expenses represent interest expense given to customers while operating income represents interest earned from customers. The smaller the OEOI value, the more efficient banking operations.

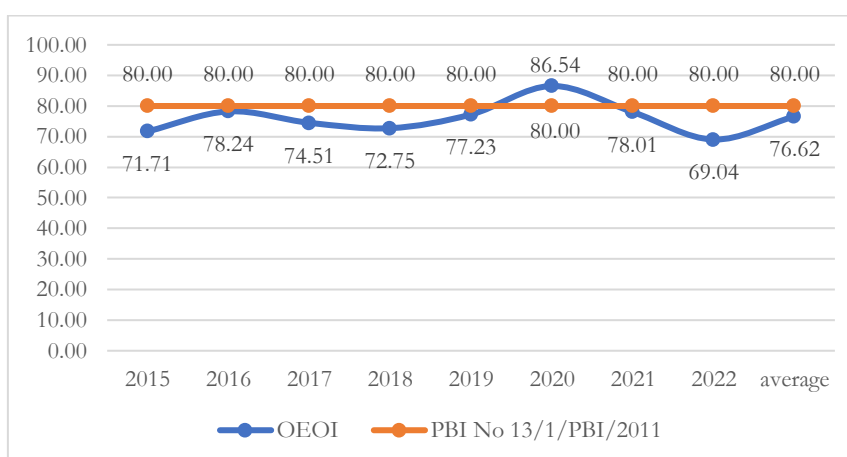


Figure 4. Average OEOI of State-Owned Public Bank During 2015-2022

During 2015-2022 OEOI of State-Owned Commercial Banks was 78.62% under Bank Indonesia Regulations, namely 80%. This decrease is because state-owned commercial banks have fully

implemented digitalisation, affecting efficiency and business growth. The main goals are faster growth, speed of processing and service to customers, and cost efficiency.

Non-Performing Loan (NPL) of State-Owned Public Banks During 2015-2022

NPL is a form of problem in the loan payment process. Generally, this is caused by the economic crisis, which increased the percentage of bad loans.

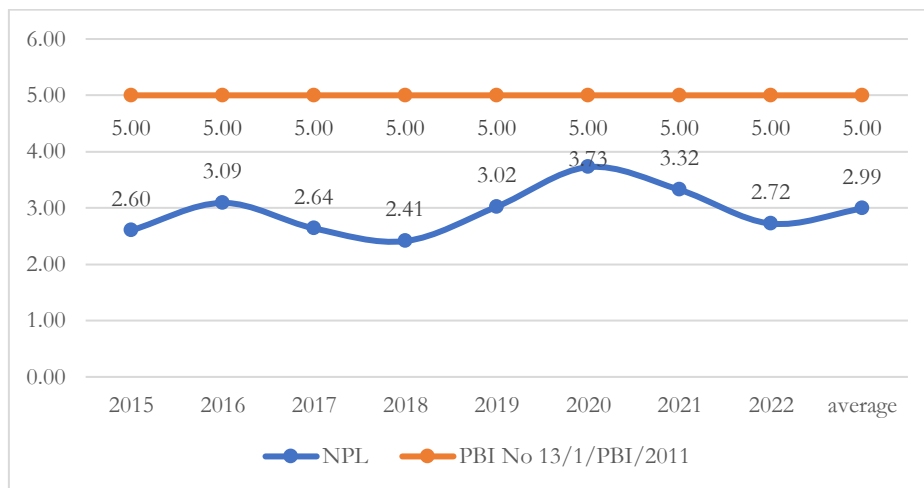


Figure 5. Average NPL of State-Owned Public Banks During 2015-2022

During 2015-2022 the NPL of state-owned commercial banks was 2.99%, which is below Bank Indonesia's standard of 5%, which is possible due to the relaxation of bank credit restructuring from 2020 to 31 March 2023 and possibly extended to 2024. This is done to maintain the momentum of accelerating national economic recovery, banking stability, and improved debtor performance. The decline in NPLs was also due to timely credit payments and stable macroeconomic and business conditions.

Panel data analysis with Eviews 12 produces the selected output, namely the common effect model, as shown in Table 2 below:

Table 2. Output Common Effect Model

Dependent Variable: NPL
 Method: Panel Least Squares
 Date: 04/09/23 Time: 21:58
 Sample: 2015 2022
 Periods included: 8
 Cross-sections included: 4
 Total panel (balanced) observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CAR	0.1175	0.0484	2.4294	0.0221
LDR	-0.0225	0.0101	-2.2376	0.0337
NIM	-0.2041	0.0814	-2.5075	0.0185
OEOI	0.0599	0.0084	7.1044	0.0000
C	-0.8402	1.5080	-0.5572	0.5820
Root MSE	0.3438	R-squared		0.7785

Mean dependent var	2.9419	Adjusted R-squared	0.7457
S.D. dependent var	0.7423	S.E. of regression	0.3743
Akaike info criterion	1.0152	Sum squared resid	3.7833
Schwarz criterion	1.2443	Log likelihood	-11.2436
Hannan-Quinn criter.	1.0911	F-statistic	23.7271
Durbin-Watson stat	1.3886	Prob(F-statistic)	0.0000

The Effect of CAR, LDR, NIM, and OEOI on NPL of State-Owned Commercial Banks

Table 2 shows that the variables CAR, LDR, NIM, and OEOI have a significant effect on NPL with an r-squared value of 0.7785 which means that the four independent variables, namely CAR, LDR, NIM, and OEOI, simultaneously affect NPL of 77.85 %, the remaining 22.15% is influenced by other bank internal factors such as interest rates, bank size, and bank age.

The Effect of CAR on NPL of State-Owned Commercial Banks

CAR is used to cover the risk of occurrence, which affects capital reduction. The risks that may occur are in the form of credit risk and operational and market risk. The minimal CAR impacts slow the development of the bank's business ([Diyanti & Widyarti, 2012](#)).

The research results in Table 2 show that CAR significantly affects NPL (Prob. 0.0221 < 0.05) with a coefficient value of 0.1175. This means that CAR has a significant positive effect on NPL. This study's results align with the study's results ([Jusmansyah & Sriyanto, 2017](#)) and ([OWONYE & OBONOFIEMRO, 2022](#)), which concluded that CAR had a significant positive effect on NPL. If the CAR is increased, it is predicted to increase NPL, so the current CAR of state-owned commercial banks is already at the ideal proportion of the NPL level. The average CAR of state-owned commercial banks is 20%, one of which is to anticipate risks that may arise, such as bad loans (NPL).

The Effect of LDR on NPL of State-Owned Commercial Banks

Funds collected from the community are then channelled in the form of credit as main income banks. However, the credit extension must be balanced with an increase in customer deposits so that this does not happen with high NPLs.

The research results show that LDR significantly affects NPL (Prob. 0.0337 > 0.05) with a coefficient value of -0.0225. This means LDR has a significant negative effect on NPL. The increase in the LDR of State-Owned Commercial Banks will reduce the ability to bear the risk of any risky credit or productive assets. The results of this study reject the theory that the higher the amount of credit disbursed, the higher the NPL.

The results of this study are in line with the results of research conducted by ([Astrini et al., 2018](#)) ([Mada & Arfianto, 2015](#)), ([Barus & Erick, 2017](#)), ([Agustiningtyas, 2018](#)), ([Maulida & Wahyuningsih, 2021](#)) and ([Abyanta et al., 2020](#)) which states that LDR has a significant negative effect on NPL. This means that the large number of loans disbursed does not increase the NPL ratio.

The Effect of NIM on NPL of State-Owned Commercial Banks

NIM is interest expense in subtracting interest income, where net interest income is obtained from the results of loans obtained from banks. A high NIM ratio increases NPL because the loans given to debtors are higher while a small bank lower obtains the funds.

The results showed that NIM significantly affected NPL (Prob. 0.0185 < 0.05) with a coefficient of -0.2041, which means that NIM has a significant negative effect on NPL. This study's results align with the research results (Putri & Pohan, 2022) and (Shingjergji, 2013), which concluded that NIM has a negative effect on NPL. This means that the increasing receipt of net interest income affects the decreasing ability to bear the risk of any risky credit or productive assets. If the interest income from disbursed loans increases, most disbursed loans will be paid off, reducing the number of non-performing loans.

The Effect of OEOI on NPL of State-Owned Commercial Banks

BOPO is used to determine whether operating costs are higher than operating income. The high operational costs incurred put the bank in a troubled condition. Conversely, if operating income exceeds operating costs, the bank is more efficient in carrying out its operational activities.

The results showed that OEOI significantly affected NPL (Prob. 0.000 < 0.05). This is because if operating costs are higher than operating income, operating costs could be more efficient. This study's results align with research conducted (Barus & Erick, 2017) and (Agustiningtyas, 2018), which concluded that OEOI had a significant positive effect on NPL. This suggests that the higher the OEOI, the higher the NPL. This can happen because if operating costs are higher than operating income, the operational costs incurred are inefficient, which can put the bank in a problematic condition.

CONCLUSION

CAR had a significant positive effect on NPL. If the CAR is increased, it is predicted to increase NPL, so the current CAR of state-owned commercial banks is already at the ideal proportion of the NPL level. The average CAR of state-owned commercial banks is 20%, one of which is to anticipate risks that may arise, such as bad loans (NPL).

LDR has a significant negative effect on NPL. This means that the large number of loans disbursed does not increase the NPL ratio. The increase in the LDR of State-Owned Commercial Banks will reduce the ability to bear the risk of any risky credit or productive assets.

NIM has a significant negative effect on NPL. The high NIM indicates that the Indonesian banking market is less efficient and less competitive. Factors that cause high NIM are internal factors (management), external factors such as industrial climate (market concentration) and macro factors (i.e., inflation rate and economic growth).

OEOI had a significant positive effect on NPL. This suggests that the higher the OEOI, the higher the NPL. This can happen because if operating costs are higher than operating income, the

operational costs incurred could be more efficient, which can put the bank in a problematic condition.

The results of this study prove that state-owned commercial banks have good asset quality. To maintain asset quality, state-owned commercial banks must maintain an NPL of 2.99% by maintaining a CAR ratio of 20%, LDR of 89.30%, NIM < 5%, and OEOI of 76.62%.

This research is limited to internal factors, such as CAR, LDR, BOPO, and NIM. We have not included the variable interest rates, bank size, and bank age as another internal bank factor.

Future research can examine internal customer factors and external bank factors such as inflation, the BI rate, exchange rates, and economic growth.

REFERENCE

- Abyanta, N. P., Kepramareni, P., & Ardianti, P. N. H. (2020). Non-Performing Loan Dan Faktor-Faktor Yang Memengaruhi. *Kharisma: Kumpulan Riset Akuntansi*, 12(1), 1–16. <https://e-journal.unmas.ac.id/index.php/kharisma/article/view/517/485>
- Agić, Z., & Dušanić Gačić, S. (2021). SPECIFIC BANKING DETERMINANTS OF NON-PERFORMING LOANS: THE CASE OF BOSNIA AND HERZEGOVINA. *EMC Review - Časopis Za Ekonomiju - APEIRON*, 22(2). <https://doi.org/10.7251/emc2102546a>
- Agustiningtyas, M. (2018). Analisis faktor - faktor yang mempengaruhi non performing loan (npl) kredit pada bank umum di Indonesia (studi pada bank umum yang terdaftar di BEI periode 2016-2017). *Prive*, 1(2), 120–133. <http://ejurnal.unim.ac.id/index.php/prive/article/view/247/112>
- Alshiqi, S., & Sahiti, A. (2021). Risk management and profitability of commercial banks of western balkans countries of kosovo, albania, north macedonia, and serbia. *Journal of Eastern European and Central Asian Research*, 8(1), 81–88. <https://doi.org/10.15549/jeccar.v8i1.633>
- Anshary, M., Labetubun, H., Kembauw, E., Ningsih, S., Putra, S., Hardiyanti, S. E., Bairizki, A., Mutafarida, B., Arfah, Fitriana, Triwardhani, D., Silaen, N. R., Alimuddin, A., Wicaksono, G., Fauziah, & Rahmawati, I. (2021). Manajemen Perbankan (Sebuah Tinjauan Teori dan Praktis). In *Manajemen Perbankan (Sebuah Tinjauan Teori dan Praktis)*.
- Astrini, Km. S., Suwendra, I. W., & Suwarna, I. K. (2018). Pengaruh CAR, LDR dan Bank Size Terhadap NPL pada Lembaga Perbankan yang Terdaftar di Bursa Efek Indonesia. *E-Journal Bisma Universitas Pendidikan Ganesha Jurusan Manajemen*, 4(1), 34–41. <https://doi.org/https://doi.org/10.23887/bjm.v4i1.21977>
- Barus, A. C., & Erick. (2017). Analisis Faktor-Faktor yang Mempengaruhi Non-Performing Loan pada Bank Umum di Indonesia. *Jurnal Wira Ekonomi Mikroskil*, 6(2), 113–122. <https://doi.org/10.55601/jwem.v6i2.325>
- Chiu, C.-R., Chiu, Y.-H., Fang, C.-L., & Pang, R. -zhi. (2014). The performance of commercial banks based on a context-dependent range-adjusted measure model. *International Transactions in Operational Research*, 21(5), 761–775. <https://doi.org/10.1111/itor.12069>

- Cooper, D. R., & Schindler, P. S. (2011). Business research methods (11th ed.). In *Business Research Methods*.
- Ćurak, M., Pepur, S., & Poposki, K. (2013). Determinants of non-performing loans -evidence from Southeastern European banking systems. *Banks and Bank Systems*, 8(1), 46–53. <https://www.businessperspectives.org/index.php/journals/banks-and-bank-systems/issue-179/determinants-of-non-performing-loans-evidence-from-southeastern-european-banking-systems>
- Dendawijaya, L. (2005). Manajemen Perbankan Edisi Revisi Sembilan. In *Ghalia Indonesia*.
- Diyanti, D., & Widyarti, E. T. (2012). Analisis Pengaruh Faktor Internal dan Eksternal terhadap Terjadinya Non-Performing Loan (Studi Kasus pada Bank Umum Konvensional yang Menyediakan Layanan Kredit Pemilikan Rumah Periode 2008 - 2011). *Diponegoro Journal of Management*, 1(4), 290–299. <https://ejournal3.undip.ac.id/index.php/djom/article/view/821/795>
- Firmansyah, & Sari Sam, Muh. (2022). Faktor-Faktor Yang Mempengaruhi Non-Performing Loan Pada Bank BUMN di Indonesia Tahun 2010-2019. *JURNAL SOSIAL EKONOMI DAN HUMANIORA*, 8(2). <https://doi.org/10.29303/jseh.v8i2.25>
- Ismail. (2010). Manajemen Perbankan: Dari Teori Menuju Aplikasi. In *Jakarta : Kencana*.
- Jusmansyah, M., & Sriyanto, A. (2017). Analisis Pengaruh CAR, BOPO dan ROA Terhadap Non-Performance Loan. *Jurnal Akuntansi Dan Keuangan*, 2(1), 46–65. <https://doi.org/http://dx.doi.org/10.36080/jak.v2i1.374>
- Kasmir. (2014). Bank dan Lembaga Keuangan. Jakarta : Rajawali Pers. In *Angewandte Chemie International Edition*, 6(11).
- Kasmir. (2018). Analisa Laporan Keuangan. *Rajawali Pers*.
- Khan, M. A., Siddique, A., & Sarwar, Z. (2020). Determinants of non-performing loans in the banking sector in developing state. *Asian Journal of Accounting Research*, 5(1). <https://doi.org/10.1108/AJAR-10-2019-0080>
- Koju, L., Koju, R., & Wang, S. (2018). Macroeconomic and Bank-Specific Determinants of Non-Performing Loans: Evidence from Nepalese Banking System. *Journal of Central Banking Theory and Practice*, 7(3). <https://doi.org/10.2478/jcbtp-2018-0026>
- Kumar, R. R., Stauvermann, P. J., Patel, A., & Prasad, S. S. (2018). Determinants of non-performing loans in banking sector in small developing island states: A study of Fiji. *Accounting Research Journal*, 31(2). <https://doi.org/10.1108/ARJ-06-2015-0077>
- Lichtman, M. (2005). Review: Janet Heaton (2004). Reworking Qualitative Data. *Forum : Qualitative Social Research*, 6(3). <https://www.qualitative-research.net/index.php/fqs/article/view/40/83>
- Mada, R. P., & Arfianto, E. D. (2015). Analisis faktor-faktor yang mempengaruhi non performing loan (NPL) di Indonesia (studi pada bank umum konvensional yang terdaftar di Bank Indonesia tahun 2011-2014). *Diponegoro Journal of Management*, 4(3), 1–11. <https://ejournal3.undip.ac.id/index.php/djom/article/view/13245/12803>

- Martono. (2009). Bank dan Lembaga Keuangan. *Ekonesia Fakultas Ekonomi UII: Yogyakarta*, 127.
- Maulida, V. I., & Wahyuningsih, D. (2021). DETERMINAN FAKTOR SPESIFIK BANK TERHADAP NON-PERFORMING LOAN GROSS DAN NON-PERFORMING LOAN NET PADA BANK PEMBANGUNAN DAERAH. *JABE (Journal of Applied Business and Economic)*, 8(1), 102–115. <https://doi.org/10.30998/jabe.v8i1.6639>
- Mensah, F. A., & Adjei, A. B. (2015). Determinants of non-performing loans in Ghana banking industry. *International Journal of Computational Economics and Econometrics*, 5(1), 35. <https://doi.org/10.1504/ijcee.2015.066207>
- Nguyen, D. T., Do, H. T., Thu Nguyen, T. T., & Nguyen, N. B. (2021). Implementation of internal capital adequacy and assessment process in vietnamese commercial banks. *Asian Economic and Financial Review*, 11(11), 873–893. <https://doi.org/10.18488/JOURNAL.AEFR.2021.1111.873.893>
- OWONYE, B., & OBONOFIEMRO, G. (2022). DETERMINANTS OF NON-PERFORMING LOANS IN THE NIGERIA BANKING INDUSTRY. *International Journal of Management & Entrepreneurship Research*, 4(11). <https://doi.org/10.51594/ijmer.v4i11.402>
- Putra Gumilar Sambas, I., Azhar Azhar Affandi, H., Purnamasari, L., & Sunarsi, D. (2021). ANALISIS LAPORAN KEUANGAN. In M. Abdullah Rosyid (Ed.), *Cipta Media Nusantara (CMN)*. Cipta Media Nusantara (CMN). [https://books.google.co.id/books?hl=id&lr=&id=iRFUEAAAQBAJ&oi=fnd&pg=PR1&dq=buku+analisis+rasio&ots=HVLhBS5uXA&sig=pd5Hijg3kpx8XplyWECw0gL_Lq0&redir_esc=y#v=onepage&q=buku analisis rasio&f=false](https://books.google.co.id/books?hl=id&lr=&id=iRFUEAAAQBAJ&oi=fnd&pg=PR1&dq=buku+analisis+rasio&ots=HVLhBS5uXA&sig=pd5Hijg3kpx8XplyWECw0gL_Lq0&redir_esc=y#v=onepage&q=buku%20analisis%20rasiao&f=false)
- Putri, L. T. C., & Pohan, F. S. (2022). FAKTOR-FAKTOR PENENTU NON-PERFORMING LOAN PADA BANK KOMERSIAL DI INDONESIA. *Jurnal Bisnis, Manajemen, Dan Teknososiopreneur*, 1(1). <https://doi.org/10.31326/bimtek.v1i1.1253>
- Ranjan, R., & Dhal, S. C. (2003). Non-Performing Loans and Terms of Credit of Public Sector Banks in India: An Empirical Assessment. *Reserve Bank of India Occasional Papers*, 24(3), 81–121.
- Sahiti, A., & Sahiti, A. (2021). The commercial banks' credit risk efficiency: Empirical evidence from Kosovo. *Journal of Eastern European and Central Asian Research*, 8(2), 240–254. <https://doi.org/10.15549/jeecar.v8i2.635>
- Sekaran, U., & Bougie, R. (2017). Metode Penelitian Bisnis Edisi 6 Buku 2. In *Jakarta: Salemba Empat*.
- Shingjergji, A. (2013). The Impact of Bank-Specific Variables on the Non-Performing Loans Ratio in the Albanian Banking System. *Research Journal of Finance and Accounting*, 7.
- Zuliyana, M., Turi, L. O., Juminawati, S., Prihartini, D. A., Nasution, I. H., Armein, E., Svinarky, I., Herina, H., Silaen, M. F., Butarbutar, N., & Yusran, R. R. (2022). Bank & Lembaga Keuangan Non-Bank. In *Eureka Media Aksara*.