DETERMINANTS OF NON-PERFORMING BANK LOANS LISTED ON THE INDONESIA STOCK EXCHANGE FOR THE 2016-2020 PERIOD

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ARTICLE INFO	ABSTRACT
  Keywords: *Non-performing Loans, BOPO, Loan to Deposit Ratio, Capital Adequacy Ratio, Net Interest Margin*	This study aims to analyse the effect of BOPO, Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), Net Interest Margin, Oil Price, inflation, and Interest Rate on Non-performing Loans (NPL) of banks listed on the Indonesia Stock Exchange during 2016-2020. The total population of banks listed on the IDX is 46 banks. In contrast, the sample in this study is part of the population, which is 32 banks. This study is quantitative, so the data analysis method used is a statistical method—the analysis of these data using Econometric Views (Eviews) software version 12.0. The results showed that BOPO has a positive and significant effect on bank NPLs, LDR has a positive but not significant effect on NPLs, CAR has a negative and significant effect on NPLs, NIM has a negative and significant effect on NPLs, Oil Price has a positive and significant effect on NPLs, inflation has a negative but not significant effect on NPLs, and Interest Rate has a positive and significant effect on NPLs. Banks must pay attention to the reference and rules of the regulator, the Financial Services Authority, as a guideline where the maximum limit for the NPL ratio is 5% so that the quality of banking credit can be maintained. Investors it is expected to be able to make considerations in investing by analyzing the company's condition through financial statements published by banks by looking at the ratio of Non-Performing Loans as a crucial consideration.

INTRODUCTION

The quality of banking assets is one of the leading indicators capable of showing the soundness of a bank. The quality of banking assets is reflected in the Non-Performing Loan (NPL) ratio, which is one of the measurements of the bank's business risk ratio, which shows the amount of non-performing credit risk that exists in a bank (Harun, 2016). Non-Performing Loans (NPL) are loans classified into several groups, namely current loans, doubtful loans, and bad loans (Supeno, 2017). A non-Performing Loan (NPL), according to Ismail (2010) is a condition where the debtor cannot pay his obligations to the bank, namely the obligation to pay

the instalments that have been promised at the beginning of the agreement (Putriningtyas, 2021).

The 2019 coronavirus disease, or covid-19 pandemic, which has become an international pandemic, is no exception in Indonesia. The impact of the COVID-19 pandemic is the weakening of economic sectors in almost all of the world, including Indonesia. Economic growth from January-September 2020 decreased to 2.03%. In the second quarter of 2020, the Indonesian economy was recorded at -5.32% (y-o-y) (BPS, 2020). This decline occurred for two consecutive quarters, meaning that Indonesia was experiencing an economic recession due to the COVID-19 pandemic (Sumarni, 2020).

The economic downturn and recession have a direct impact on entrepreneurs where the level of business income decreases and has an impact on the ability of the company. The declining financial capacity of the company certainly has an impact on the ability to pay obligations to banks, so there is a risk of an increase in the Non-Performing Loan (NPL) ratio in Indonesian banking in general (Dewantara & Nufitasari, 2021).

As an intermediary institution, the main business activity of a bank is to provide loans, wherein the bank will benefit in the form of interest income which is helpful for activities for bank operations. Banks earn income on interest on loans given to customers (Harun, 2016). Borrowing funds given to the public by banks can not be separated from the failure to pay. Failure to pay or so-called non-performing loans is a bank's inability to collect back the loans issued. As a result, the bank's operational activities cannot be carried out correctly. Therefore, non-performing loans are a reference to determine bank performance. The higher the value of non-performing loans, the bank will be considered less good (Chosyali & Sartono, 2019).

The Covid-19 condition caused a spike in non-performing loans (NPL) at banks in Indonesia. Data published by the Financial Services Authority (OJK) notes that NPLs at commercial banks that provide credit to the public continued to increase from 2016 to 2020 (Amalia, 2022). Based on OJK Statistics December 2020, the trend of Non-Performing Loans for Commercial Banks in Indonesia between 2016 and 2020 tends to fluctuate. However, at the end of 2020, it was recorded that the NPL of Commercial Banks in Indonesia had increased and recorded the highest number compared to the previous periods both in percentage terms (3, 06%) or nominally (Rp 167,707 billion).

Failure to pay can be caused by several factors, either internal or external. External factors are in the activities of the bank's operational efficiency, loan amount, bank liquidity and margin on interest. Meanwhile, external factors include world oil prices, inflation and Bank Indonesia interest rates. All of these factors can have an influence on the performance of the bank in running its business (Aviliani et al., 2014).

Operational costs and operating income (BOPO), or the so-called efficiency ratio, is the ratio used to measure whether the bank has used all of its production factors effectively and efficiently (Harun, 2016). Bank managerial activities can be measured so that it can be seen the efficiency of costs incurred by the bank to support its business (Pandia, 2012). The smaller the value of the efficiency ratio means the bank has good efficiency. Banks that are efficient in controlling costs in management will lead to better bank performance. So that the efficiency ratio is thought to have an effect on non-performing loans. Efficiency ratio can have an influence on debtors' non-performing loans (Aryani et al., 2016).

Loan to Deposit Ratio (LDR) is the amount of funds that commercial banks can release on credit (Harun, 2016). The loan to deposit ratio will measure the amount of credit that will be given by the bank based the funds raised by the bank (Wild et al., 2005). The higher the loan to deposit ratio, the higher the profit generated by the bank. In addition, the high loan to

deposit ratio will lead to higher risks to be faced by banks. This is due to the debtor being unable to complete the payment, resulting in non-performing loans.

Capital adequacy ratio is a capital that shows the bank's ability to provide funds for the bank's operational needs and accommodate the risk of loss of funds caused by operating activities (Harun, 2016). The capital adequacy ratio owned by the bank is at least 8% based on Bank Indonesia Regulation No. 3/21/PBI/2001. The higher the capital adequacy ratio owned by the bank will indicate high bank liquidity so that the risk to the bank will be smaller. However, Aryani et al. (2016) actually got different results that the capital adequacy ratio had no effect on non-performing loans.

Net interest margin is the managerial ability to manage productive assets to generate net interest income (Pandia, 2012). Bank managerial looks to be productive if the value of the net interest margin gets bigger. The more productive the management of the bank, the lower the risk of problems faced by the bank. Thus, banks can manage loans given to debtors, thus it is hoped that non-performing loans will not occur (Setiyaningsih et al., 2015).

World crude oil prices, inflation and interest rates are external factors that cause bad loans to occur in banks. With the increase in world crude oil prices, inflation and changes in interest rates, there will be an increase in prices due to an increase in the cost of distributing goods in the world. As a result, cost overruns arise so that costs become higher, so that the risk of the debtor's ability to repay credit increases. Bad credit. Research conducted by Al-Khazali and Mirzaei (2017) states that world crude oil prices can have an impact on banks due to the inability of corporations to pay their credits (Attar & Islahuddin, 2014).

Non-Performing Loans is the inability of banks to collect back the credit that has been issued by the bank (Harun, 2016). The change in credit classification from current credit to NPL is gradual through a process of decreasing credit quality. NPL shows that the ability of bank management in managing non-performing loans provided by banks. So that the higher this ratio, the worse the quality of bank credit, causing the number of non-performing loans to be greater, so the possibility of a bank in a problematic condition is greater. According to Bank Indonesia Regulation No. 15/2/PBI/2013 concerning Status Determination and Follow-Up Supervision of Conventional Commercial Banks article 4 paragraph (2), Banks are considered to have potential difficulties that endanger their business continuity if non-performing loans (NPLs) on a net basis are more than 5% of the total credit (Fattawi, 2021).

Based on the formulation of the problem in this study, the purpose of this study is to analyze the effect of BOPO on non-performing loans of banks listed on the Indonesia Stock Exchange during 2016-2020. Then analyze the effect of the loan to deposit ratio on non-performing loans in banks listed on the Indonesia Stock Exchange during 2016-2020. As well as analyzing the effect of the capital adequacy ratio on non-performing loans for banks listed on the Indonesia Stock Exchange during 2016-2020.

Margaretha and Kalista (2016) found that BOPO, Financial ratio, Loans to asset ratio, Credit growth Deposit rate and rupiah reserve requirement had no impact on NPL, Bank size, ROA, ROE had a significant impact on NPL. In addition, Vanni and Rokman (2017) found that FDR had a negative and significant effect on the NPF, the exchange rate had a positive and significant effect on the NPF, Inflation had no effect on the NPF, Simultaneously the three variables had a significant effect on the NPF. Bolarinwa et al. (2021) found that PROF, Leverage, Liquidity had a significant negative effect on NPL, Bank Size, Capital, Inflation, Economic growth had a positive effect on NPL.

Based on the research objectives, the benefits of this research are to contribute ideas and input in the development of knowledge and analysis, especially those directly related to the analysis of non-performing loans. The results of the research are expected to be a reference in

the process of analysis or study of factors that affect non-performing loans in banking. And this research can be used as study material for further research in academic circles.

Effect of Capital Adequacy Ratio on Non-Performing Loans

Capital adequacy ratio is a capital that shows the bank's ability to provide funds for the bank's operational needs and accommodate the risk of loss of funds caused by operating activities (Harun, 2016). The capital adequacy ratio owned by the bank is at least 8% based on Bank Indonesia Regulation No. 3/21/PBI/2001. The higher the capital adequacy ratio owned by the bank will indicate high bank liquidity so that the risk to the bank will be smaller.

The size of the banking capital adequacy ratio (CAR) indicates the level of cash adequacy ratio owned by the bank to meet operational needs and accommodate the risk of loss of funds caused by operating failures. The greater the CAR of the banking system, it is projected that the bank will be more able to withstand losses from failure, so that the relationship between CAR has a negative effect on Non-Performing Loans (Hermina & Suprianto, 2016).

The results of previous research by Ad'hadini and Kusumawardhani (2016) have investigated the factors that affect banking NPLs (a case study on conventional commercial banks) where the results obtained are that CAR has a negative effect on NPL while BOPO, LDR and credit growth have a positive effect (Siringoringo, 2017). Research from Mikri (2014) on the determinants of NPL with a case study in the European zone also shows the results that CAR and ROE have a negative effect on NPL. In addition, the results of research from Usman (2015) regarding the NPL of the banking industry stated that the CAR ratio had a negative effect on NPL. From the description of the theory and previous research, the author proposes a hypothesis:

H3: Capital Adequacy Ratio has a negative effect on Non Performing Loans.

Effect of Net Interest Margin on Non-Performing Loans.

Net interest margin is the managerial ability to manage productive assets to generate net interest income (Pandia, 2012). Bank managerial looks to be productive if the value of the net interest margin gets bigger. The more productive the management of the bank, the lower the risk of problems faced by the bank. Thus, banks can manage loans extended to debtors, thereby preventing non-performing loans from occurring.

Net Interest Margin (NIM) is a financial ratio resulting from the comparison between interest income to assets, which is also the difference between deposit interest and loan interest. The higher the Net Interest Margin (NIM) will indicate the more effective a bank is in placing earning assets in the form of credit, so that the Net Interest Margin ratio has a negative effect on Non Performing Loans.

The results of previous research from Barus (2016) have investigated the factors that affect NPL where the results obtained are that NIM, BOPO, LDR, firm size and inflation together affect NPL. Meanwhile, Ozili et al. (2020) mention other results where the NIM ratio has no effect on NPL. From the description of the theory and previous research, the author proposes a hypothesis:

H4: Net Interest Margin has a negative effect on Non Performing Loans

Effect of Oil Price on Non-Performing Loans.

World oil is included in the main trading commodity where the fluctuations in the price of world oil have an impact and become a determinant of the rise and fall of the prices of goods as a whole. Oil price is one component of the fixed cost for some companies, so that if a company has credit to the bank, the fluctuations in the oil price will also have an impact on the

company's ability to pay credit obligations to the bank. Therefore, under these conditions, Oil Price has a positive effect on Non-Performing Loans.

The results of previous research from Nadalizadeh et al. (2019) with the title "The Impact of Oil Price Movements on Bank Nonperforming Loans (NPLs): The Case of Iran" suggest that Oil Price has a significant positive effect on NPL. While other research from the description of the theory and previous research, the author proposes a hypothesis:

H5: Oil Price has a positive effect on Non-Performing Loans

Effect of Inflation on Non-Performing Loans.

Inflation can be interpreted as a process of increasing the prices of goods continuously. However, this does not mean that the prices of various goods have increased by the same percentage, but that they do not occur simultaneously, the most important thing is that there is an increase in the general price of goods continuously during a certain period (Nopirin, 2000). The occurrence of inflation will affect the development and economic growth of a country and have an impact on the ability of the debtor to pay credit obligations to the bank. For this condition, oil price has a positive effect on Non-Performing Loans because the higher the inflation rate will have an impact on the increase in the bank's NPL ratio.

The results of previous research from Bolarinwa et al. (2021) with the research title "determinants of non-performing loans after recapitalization in the Nigerian banking industry: Does efficiency matter?" which discusses the relationship between failure to pay, efficiency in banks and re-capitalization. The results show that inflation and economic growth have a positive effect on NPL, while BOPO, LDR and credit growth have a positive effect. Research from Mikri (2014) on the determinants of NPL with a case study in the European zone also shows the results that inflation, LDR, ROA have a positive and significant impact on NPL. Other research from Barus (2016) also mentions that inflation has a positive impact on NPLs. From the description of the theory and previous research, the author proposes a hypothesis:

H6: Inflation has a positive effect on Non Performing Loans

Effect of Interest Rate (BI Rate) on Non-Performing Loans.

Interest rate (BI Rate) is a common reference for banks in Indonesia in determining the price (Pricing) given to customers. An increase in the interest rate will directly have an impact on increasing bank lending rates, thereby increasing the risk of default. For these conditions, the Interest rate has a positive effect on Non-Performing Loans.

The results of a previous study by Barus (2016) with the title "Analysis of factors that affect Non-Performing Loans at Commercial Banks in Indonesia" suggest that the benchmark interest rate has a significant impact on NPL. From the description of the theory and previous research, the author proposes a hypothesis:

H7: Interest Rate has a positive effect on Non Performing Loans.

METHOD

This study is useful for knowing and analyzing the determination that can affect non-performing loans in banks listed on the Indonesia Stock Exchange. This study suspects that there are 7 variables that can affect non-performing loans (NPL), namely efficiency ratio (BOPO), Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR), Net Interest Margin (NIM), World Oil (OIL PRICE) , Inflation (INFLATION), and Interest Rates (BI RATE).

According to Sugiyono (2019), the object of research is an attribute or nature or value of people, objects or activities that have certain variations that are determined by researchers to be studied and then drawn conclusions. This study uses the object of research, namely general

banking listed on the Indonesia Stock Exchange from 2016-2020 as many as 32 companies/ banks (Ridha, 2017).

The dependent variable in this study is Non Performing Loan (NPL). Non-Performing Loans are defaults made by the debtor. Non-Performing Loans are calculated by the number of defaults divided by the amount owed. The NPL variable is a measure of the quality of bank assets (credit disbursed) that affects the soundness and profitability of a bank (Adicondro & Pangestuti, 2015).

The population is a generalization area consisting of: objects/subjects that have certain qualities or characteristics determined by researchers to be studied and then drawn conclusions (Sugiyono, 2019). The population of this study is all banks listed on the Indonesia Stock Exchange in the 2016-2020 period with a total of 46 banks. According to Sugiyono (2019) the sample is part of the number and characteristics possessed by the population. Samples taken from the population must be truly representative. The sample in this study is part of 46 banks listed on the Indonesia Stock Exchange for the period 2016-2020 with certain criteria using purposive sampling.

Table 1
Research Sample

Criteria	Quantity	Information
Number of Banking Companies on IDX 2016-2020	46	Whole
Number of Banking Companies Publishing Incomplete Financial Statements 2016-2020	(14)	Sample Reduction Factor
Number of Banking Companies Publishing Complete Financial Statements 2016-2020	**32**	**Samples for analysis**

Source: BEI accessed in June 2021

The type of data in this study uses secondary data. Secondary data is data obtained indirectly from data sources. The data sources for this research are from the official website www.idx.co.id, www.bi.go.id, www.bps.go.id, as well as other library materials, namely journals, books and previous research.

This research is a quantitative research so that the data analysis method used is a statistical method. The data obtained will be analyzed using the method of linear regression analysis of multiple panel data or more commonly known as panel data regression analysis. The data analysis with the help of software Econometric Views (Eviews) version 12.0. According to Karini and Filianti (2018), panel data regression is used to determine whether there is a significant effect of more than one independent variable on the dependent variable and is a regression technique that combines time series data and cross section data.

RESULTS AND DISCUSSION

Banking is a company engaged in finance that has the main products, namely savings and financing. The banking sector is currently growing very rapidly every year both in terms of financial statements and shares that have gone public. Business prospects in the banking sector also prove to be very profitable every year which will later attract investors to invest their capital in the company. The shares of banking companies also increase every year because many investors are interested in investing in this company sector for investment purposes to meet future needs. The research population used in this study were all banking companies listed on the Indonesia Stock Exchange for the 2016-2020 period as many as 46 issuers consisting of BUKU 1, BUKU II, BUKU III and BUKU IV banks.

The object of research is an object or place that is targeted in research. The objects in this research are some of the banks listed on the Indonesia Stock Exchange (IDX) as many as 32 banks. The research object was 32 banks, which were chosen with the consideration that the research object had complete financial reports from 2016-2020.

A. Descriptive statistics

Table 2
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
BOPO	60	40.03	235.2	90.13391	24.64428
LDR	60	34.645	163	86.39255	18.98872
CAR	60	9.01	66.43	22.42499	8.051019
NIM	60	0.47	9.30	6.05563	12.53803
OIL PRICE	60	47.78	67.18	56.9816	6.686526
INFLASI	60	1.68	3.61	2.832	0.645305
Interest Rate /BI rate	60	3.75	6	4.75	0.760668
NPL	60	0	9.92	2.72075	1.692631

Source: Eviews version 12 (processed)

Analysis of the results of descriptive statistics, namely N is the amount of data processed in the core research, which is 160 data consisting of BOPO, LDR, CAR, NIM, Oil Price, Inflation, Interest Rate, and NPL.

In general, based on the results of the analysis per each of the above variables, it can be explained as follows:

1. The average BOPO value is 90.13%, this shows that the overall BOPO ratio is still not efficient because every 100 banks have to incur operational costs of 90. The average BOPO is still above the regulatory requirements in which based on Bank Indonesia Circular No. 15/7/DPNP dated March 8, 2013, it is explained that the BOPO ratio that must be maintained is not more than 85%.

2. The average value of LDR is 86.39%, this shows that of the total third party funds and own capital of 100 banks channeling in the form of credit is 86.39. In accordance with the Circular Letter of Bank Indonesia No.13/24/DNP of 2011 concerning the soundness of banks based on the LDR ratio, it can be determined that the LDR value of 86.39% generally falls into the criteria of a bank with a fairly healthy category (85% < LDR < 100%).

3. The average value of CAR is 22.42%, this shows that the minimum amount of capital compared to all risk-weighted assets (RWA) is 22.42%. In accordance with Bank Indonesia Regulation No.15/PBI/2013 of 2013 concerning the soundness of banks based on the CAR ratio, it can be determined that the CAR value of 22.42% generally falls into the criteria of a very healthy bank (12% < CAR).

4. The average value of NIM is 6.05%, this shows that the margin of net interest income compared to earning assets (credit disbursed) is 6.05%. In accordance with the Circular Letter of Bank Indonesia No.13/24/DNP of 2011 concerning the soundness of banks based on the NIM ratio, it can be determined that the NIM value of 6.05% is generally included in the criteria for banks in the very healthy category (3% < NIM).

5. The average value of NPL is 2.72%, this shows the number of non-performing loans compared to total loans is 2.72%. In accordance with the Circular Letter of Bank Indonesia No.13/24/DNP of 2011 concerning the soundness of a bank based on the NPL ratio, it can be determined that the NPL value of 2.72% is generally included in the criteria for a bank in the healthy category (2% LDR 5%).

Based on the results of the above calculations, it can be seen that the lowest (minimum) BOPO of 40.03 is found at PT. Bank Capital Indonesia, and the highest (maximum) value of 235.2 is found at PT. Bank of India Indonesia, while the average is 90,13391. This means that for every 100 income, 90 operating costs are incurred. In the Circular Letter of Bank Indonesia No. 15/7/DPNP dated March 8, 2013, it is explained that the BOPO ratio that must be maintained is not more than 85%.

Based on the results of the above calculations, it can be seen that the lowest LDR (minimum) of 34.6 is found at PT. Bank Capital Indonesia, and the highest (maximum) value of 163 is found in PT. Bank BTPN, while the average score is 86.3925. The value of the standard deviation of the LDR variable is smaller than the average value, so it can be interpreted that the LDR has a low level of data variation. Bank Capital's low LDR condition in 2020 was due to internal policies to maintain liquidity stability by increasing the portion of deposits with higher interest rates and a decrease in loans extended to maintain credit quality, while the high LDR condition at Bank BTPN in 2019 was due to very high credit growth reaching 108.05% compared to 2018 from the original total loan disbursement of Rp. 68.1 trillion to Rp. 141.7 trillion, but it was not matched by the growth of Third Party Funds (DPK) which only grew 22.7% in 2019.

The CAR ratio based on the above calculation shows the lowest (minimum) CAR value of 9.01 which is found in PT. Bank BPD Banten, and the highest (maximum) value of 66.43 is found at PT. Bank INA Perdana, while the average value is 22,42499. The value of the standard deviation of the CAR variable is smaller than the average value, so it can be interpreted that the CAR has a low level of data variation. The capital condition (CAR) of PT Bank INA Perdana was strong in 2017 due to a very high capital increase and was getting stronger after the 2nd right issue with total equity from Rp482.71 billion in 2016 to Rp1,204.18 billion in 2017. While the CAR ratio of Bank BPD Banten in 2019 was low due to the condition of the bank's capital being increasingly eroded due to current year losses and plans for additional capital from the regional government and the issuance of new debt securities to be carried out in 2020, the capital recorded in 2019 was Rp. 173.994 billion with an RWA value. reached IDR 1.93 trillion.

From the results of the calculation of the NIM ratio recorded for the lowest number (minimum) of 0.47 contained in PT. Bank Mayapada Internasional, and the highest (maximum) value of 9.30 is found at PT. Danamon Indonesia, while the average score is 6.05563. The value of the standard deviation of the NIM variable is greater than the average value, so it can be interpreted that the NIM has a high level of data variation. The low NIM condition at Bank Mayapada International in 2020 was due to a decrease in outstanding credit so that interest income also decreased, in 2020 the realization of interest income was Rp. 5.1 trillion, down from 2019 which was Rp. 8.9 trillion. As for the NIM ratio of PT. Danamon Indonesia's high in 2017 was influenced by the condition of interest income growth of 3% from the original in 2016 of Rp13.1 trillion to Rp14.1 trillion in 2017 and on the other hand, the cost of TPF interest was successfully reduced by 14.2% in 2017. 2017 compared to the previous year.

Based on the above calculation results for the Oil Price variable, the lowest (minimum) value is 47.78 in 2020 and the highest (maximum) value is 67.18 in 2019, while the average value is 56.9816. The standard deviation value of the Oil Price variable is smaller than the average value, so it can be interpreted that Oil Price has a low level of data variation. The condition of this value is in accordance with the condition of oil price fluctuations in the research year.

For the Inflation variable based on the calculation results, the lowest (minimum) value is 1.68 in 2020 and the highest (maximum) value is 3.61 in 2017, while the average value is 2.832. The value of the standard deviation of the inflation variable is smaller than the average value, so it can be interpreted that the inflation variable has a low level of data variation. The condition of this value is in accordance with the conditions of fluctuations in Inflation in Indonesia in 2016 to 2020.

Based on the research results for the Interest Rate (BI rate) variable, the lowest (minimum) value of 3.75 is in 2020 and the highest (maximum) value of 6 in 2018, for the average value is 4.75. The value of the standard deviation is smaller than the average value, so it can be categorized as Interest Rate variable having a low level of data variation. The value of the Interest Rate is taken from data sources throughout the research year period.

Based on the results of the above calculations, it can be seen that the lowest (minimum) NPL of 0 is found at PT. National Nobu, and the highest (maximum) value of 9.92 is found in PT. Bank Yudha Bhakti, while the average value is 2,72075. The value of the standard deviation of the NPL variable is smaller than the average value, so it can be interpreted that the NPL has a low level of data variation. The good NPL condition of Bank National Nobu in 2016 occurred due to maintained credit quality, while the high NPL condition at Bank Yudha Bhakti in 2018 was due to a decrease in the collectability of one of the dominant Debtors a.n Altamoda Group so that the NPL ratio increased from the previous year of 2.07% to 9.92% in 2018.

B. Inferential Statistics
1. Research Model Selection

In this study, the estimation of the panel data regression model used is based on three models, namely: Common Effect Model, Fixed Effect Model, and Random Effect Model. To find out which model is the best that will be used in this study, it must be analyzed further.

Table 3
Conclusion of Panel Data Regression Model Testing

No	Model	Test	Results
1	Test Chow	Common Effect vs Fixed Effect	Fixed Effect
2	Test Hausman	Fixed Effect vs Random Effect	Random Effect
3	Test Lagrange Multiplier	Common Effect vs Random Effect	Random Effect

Source: Processed by researchers (2022)

2. Panel Data Analysis with Selected Model

Based on the Chow, Hausman and LM tests, it can be seen that the best estimation model in this study is the Random Effect Model (REM). So this study uses the model as the basis for determining the hypothesis. The panel data regression estimation using the random effect model in Table 4.6 proves that, BOPO, CAR, NIM, OIL PRICE and INTEREST (reference interest rate) have an effect on the Non-Performing Loans (NPL) of banks. Meanwhile, LDR and INFLATION have no effect on the Bank's Non-Performing Loans (NPL).

3. Simultaneous Test (F Test)

The calculated F is 6.621 and the significance level is 0.0000. F count (6.621) > F table (1.94) or probability value (0.000) < 0.05 so that the panel data regression model can be used to predict the dependent variable simultaneously or simultaneously has a positive and significant effect on Non-Performing Loans.

4. Model Feasibility (Coefficient of Determination) – R2

Based on the selection of the best model with REM, the results of the analysis can be seen as follows:

Table 4
Total panel (balanced) observations: 160

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Information
	-		-		
C	0.610914	0.416937	1.465244	0.1449	
BOPO	0.026767	0.004745	5.641513	0.0000	H1 Accepted
LDR	0.002063	0.006217	0.331737	0.7405	H2 Rejected
CAR	-0.025668	0.012949	-1.982303	0.0492	H3 Accepted
NIM	-0.018358	0.006487	-2.829984	0.0053	H4 Accepted
OIL	0.012703	0.004856	2.615762	0.0098	H5 Accepted
INFLASI	-0.150926	0.083606	-1.805212	0.0730	H6 Rejected
INTEREST	0.238150	0.058200	4.091941	0.0001	H7 Accepted

Weighted Statistics					
R-squared	0.233677	Mean dependent var	1.240577		
Adjusted R-squared	0.198385	S.D. dependent var	1.281967		
S.E. of regression	1.147783	Sum squared resid	200.2457		
F-statistic	6.621379	Durbin-Watson stat	1.843128		
Prob(F-statistic)	0.000001				

Unweighted Statistics					
R-squared	0.237659	Mean dependent var	2.720750		
Sum squared resid	347.2728	Durbin-Watson stat	1.051259		

Based on the results of the analysis above, it can be seen that the R-squared value is 0.234. As is known, the coefficient of determination is used to measure how far the model's ability to explain the dependent variable is. If the value of R Squared is close to 1, it can be said that the strength of the model is strong. In this study, the value of R square is 0.234, which means that the independent variables in explaining the dependent variation have limited (weak) abilities.

The results of a low R-squared indicate the weak influence of the independent variable, where the influence of the independent variable is only 23.4% or in other words, other factors outside the independent variables studied reach 76.6%. This can happen partly because the research sample used is the NPL balance at each position at the end of the year (31 December) for the research period in 2016-2020 but does not include or take into account the previous NPL balanced position so that it does not accumulate in nominal terms.

In addition, other factors that can affect the condition of the bank's NPL are external factors, especially the decline in the financial condition of the borrower (debtor) so that payment of obligations to the bank also decreases, resulting in a new NPL.

5. Partial Test (t-Test)

Hypothesis test is used with t-test. To determine the significant decision, it can be seen in 2 ways, namely t count > t table (df = n-k, 1.655) or probability value < 0.05.

Table 5
Total panel (balanced) observations: 160

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Information
BOPO	0.026767	0.004745	5.641513	0.0000	H1 Accepted
LDR	0.002063	0.006217	0.331737	0.7405	H2 Rejected
CAR	-0.025668	0.012949	-1.982303	0.0492	H3 Accepted
NIM	-0.018358	0.006487	-2.829984	0.0053	H4 Accepted
OIL	0.012703	0.004856	2.615762	0.0098	H5 Accepted
INFLASI	-0.150926	0.083606	-1.805212	0.0730	H6 Rejected
INTEREST	0.238150	0.058200	4.091941	0.0001	H7 Accepted

Explanation of the t-test based on the table above with reference to the REM model obtained information that:
1. The probability value of BOPO is 0.0000 (p < 0.05) so that H1 is accepted.
2. The probability value of LDR is 0.7405 (p > 0.05) so that H2 is rejected.
3. The probability value of CAR is 0.0492 (p < 0.05) so that H3 is accepted.
4. The NIM probability value is 0.0053 (p < 0.05) so that H4 is accepted.
5. OIL probability value is 0.0098 (p < 0.05) so that H5 is accepted.
6. The probability value of INFLATION is 0.0073 (p > 0.05) so H6 is rejected.
7. The probability value of INTEREST is 0.0001 (p < 0.05) so that H7 is accepted.

Based on the results of the panel data regression selection to determine the determinants of the NPL of banks listed on the IDX in the 2016-2020 period, it can be seen the coefficient value of each variable with the panel data regression equation as follows:

The above equation can be interpreted as follows:
1. The BOPO coefficient value is 0.0267 with a significance of 0.0000. The significance value is <0.05, the effect of the BOPO variable is positive and significant on the NPL. If there is an increase in BOPO by one unit, the NPL variable will increase by 0.0267 with the assumption that the BOPO, LDR, CAR, NIM, OIL PRICE, Inflation and Interest Rate (BI Rate) variables are constant.
2. The LDR coefficient value is 0.0021 with a significance of 0.7405. The significance value >0.05 means that the effect of the LDR variable is positive but not significant on the NPL. If there is an increase in LDR by one unit, then the NPL variable will increase by 0.0021 with the assumption that the BOPO, LDR, CAR, NIM, OIL PRICE, Inflation and Interest Rate (BI Rate) variables are constant.
3. The CAR coefficient value is -0.0257 with a significance of 0.0492. The significance value <0.05 means that the effect of the CAR variable is negative and significant to the NPL. If there is an increase in CAR by one unit, the NPL variable will decrease by 0.0257 with the assumption that the BOPO, LDR, CAR, NIM, OIL PRICE, Inflation and Interest Rate (BI Rate) variables are constant.
4. The NIM coefficient value is -0.183 with a significance of 0.0053. The significance value is <0.05, the effect of the NIM variable is negative and significant on the NPL. If there is an

increase in NIM by one unit, then the NPL variable will decrease by 0.0267 with the assumption that the BOPO, LDR, CAR, NIM, OIL PRICE, Inflation and Interest Rate (BI Rate) variables are constant.

5. The OIL coefficient value is 0.0127 with a significance of 0.0098. The significance value is <0.05, the effect of the OIL variable is positive and significant on the NPL. If there is an increase in OIL by one unit, the NPL variable will increase by 0.0127 with the assumption that the BOPO, LDR, CAR, NIM, OIL PRICE, Inflation and Interest Rate (BI Rate) variables are constant.

6. The value of the inflation coefficient is -0.1509 with a significance of 0.0730. The significance value >0.05 means that the effect of the inflation variable is negative and not significant to the NPL. If there is an increase in inflation by one unit, the NPL variable will decrease by 0.1509 with the assumption that the BOPO, LDR, CAR, NIM, OIL PRICE, Inflation and Interest Rate (BI Rate) variables are constant.

7. Interest coefficient value is 0.2381 with a significance of 0.0001. The significance value <0.05 means that the effect of the Interest variable is positive and significant on the NPL. If there is an increase in Interest by one unit, the NPL variable will increase by 0.2381 with the assumption that the BOPO, LDR, CAR, NIM, OIL PRICE, Inflation and Interest Rate (BI Rate) variables are constant.

C. BOPO against Non-Performing Loans

In this study, the results showed that BOPO had a positive and significant effect on NPL. The level of effectiveness of banking companies in carrying out their efficiency is reflected in the BOPO ratio, as it is known that the BOPO ratio is used to measure the ability of bank management to manage operational costs so as to produce optimal operating income.

According to Bank Indonesia regulations, BOPO is a comparison between total operating expenses and operating income. Operational efficiency is carried out by the bank in order to find out whether in its operations related to the bank's main business, it is carried out correctly (in accordance with the expectations of management and shareholders) and is used to show whether the bank has used all its production factors effectively and effectively. The operating efficiency of a bank projected by BOPO affects the bank's performance. The lower the BOPO Ratio, the more efficient the bank is in its operations and vice versa.

A bank with a high BOPO ratio indicates that the bank is not operating efficiently because the high value of this ratio shows the large amount of operational costs that must be incurred by the bank to obtain operating income. In addition, a large amount of operating costs will reduce the amount of profit that will be obtained because operating costs or expenses act as a deduction factor in the income statement.

The results of this study are in line with the research proposed by Agustiningtyas (2018) where the results of his research suggest that BOPO has an effect on NPL. In addition, there are also research results from Rizal and Taswan (2020) which state that BOPO has a positive and significant effect on NPL.

D. LDR to Non-Performing Loans

This study shows that LDR has a positive but not significant effect on NPL. The loan to deposit ratio will measure the amount of credit that will be given by the bank based on the funds raised by the bank (Kasmir, 2016). The higher the loan to deposit ratio, the higher the profit generated by the bank. In addition, the high loan to deposit ratio will lead to higher

risks to be faced by banks. This is due to the debtor being unable to complete the payment, resulting in non-performing loans.

The LDR variable shows the amount of savings in the form of savings, current accounts and time deposits in banks and is used for lending. This is due to the higher savings deposits, current accounts and time deposits in banks, the higher the bank's ability to channel credit so that the potential for non-performing loans also increases.

The higher the loan to deposit ratio, the higher the profit generated by the bank. In addition, the high loan to deposit ratio will lead to higher risks to be faced by banks. This is due to the debtor being unable to complete the payment, resulting in non-performing loans.

The results of this study are in line with the research proposed by Halim (2016) where the results of his research, namely LDR have a positive effect on NPL. In addition, there are also research results from Suryanto (2015) which state that LDR has a significant effect on NPL. As well as the results of research from Ad'hadini and Kusumawardhani (2016) which states that LDR has a positive effect on NPL.

D. CAR against Non-Performing Loans

The results showed that CAR had a negative and significant effect on NPL. Capital adequacy ratio is capital that shows the bank's ability to provide funds for the bank's operational needs and accommodate the risk of loss of funds caused by operating activities (Harun, 2016). Capital is one of the important factors for banks in carrying out their operations, developing business businesses, and anticipating the risk of loss. Banks are required to anticipate the emergence of risks, this is because various forms of large risks can occur in banks. The regulator requires every banking company to be able to meet the adequacy of the CAR to ensure that each bank has sufficient cushion to absorb a reasonable amount of losses so that the resilience of the banking industry in general in Indonesia can be maintained properly. Resilience in capital adequacy (CAR) is one of the greater risk mitigations, namely the collapse of one bank which can have a systemic impact on the banking industry as a whole in Indonesia.

The higher the capital adequacy ratio owned by the bank will indicate high bank liquidity so that the risk to the bank will be smaller. The results of the study are in line with research from Usman (2015) which states that CAR has a negative effect on NPL, besides that it is also in accordance with research from Mikri (2014) which suggests that CAR has a negative effect on NPL. The results of testing the effect of CAR on NPL have a negative and significant effect on NPL. The test results are in accordance with the developed theory and framework.

E. NIM to Non-Performing Loans

The results showed that NIM had a negative and significant effect on NPL. According to Moussa and Majouj (2016), Net Interest Margin (NIM) is a ratio used to measure the ability of bank management to manage their productive assets to generate net interest income. In addition, NIM is also an important policy factor because it shows how efficient the bank's performance is in managing Third Party Funds (DPK) which will be allocated as loans and will generate interest for the bank. The greater this ratio, the higher interest income on productive assets managed by the bank, so that the probability of a bank being in trouble is getting smaller. Net Interest Margin (NIM) is one of the most important factors that measure the efficiency of a bank as an intermediary in managing savings and providing loans. According to several studies, high NIM is a barrier to investment and is likely to affect economic growth in various ways, especially in developing countries.

The higher the Net Interest Margin (NIM) will indicate the more effective a bank is in placing earning assets in the form of credit, which shows the bank's ability to maintain the quality of loans disbursed so as to provide optimal interest income for banks. This is the same as when the Net Interest Margin (NIM) shows a low percentage, this shows that the bank is not able to manage productive assets properly so that the interest income earned is not optimal. The low NIM is an indication of a tendency for the emergence of bad loans (NPL) which erodes bank interest income. The results of testing the effect of NIM on NPL have a negative and significant effect, so that the test results are in accordance with the theory and framework that was developed.

The results of this study contradict the research of Ayopo and Benet (2018), where the results of the research state that the NIM variable has a significant positive impact on NPL, in addition to the results of Melnik's research (2018) which states that NIM has no effect on NPL. However, it is in line with research from Barus (2016) which suggests that NIM has a significant impact on NPL.

F. OIL to Non-Performing Loans

The results showed that Oil Price had a positive and significant effect on NPL. Oil prices are an important determinant in showing the performance of the global economy. Overall, rising oil prices encourage transfers from oil-importing countries to importing countries. The magnitude of the direct effect of an increase in oil prices depends on the share of the cost of oil from national income, the degree of dependence on oil imports and the ability of end users to reduce their consumption and shift from petroleum to non-petroleum. In addition, another factor is how the increase in gas prices can affect the increase in oil prices, the intensity of gas for the economy as well as the impact of higher price increases from the form of substitute energy reserves. Naturally, the increase in oil prices and higher price increases in the long term are sustained, giving a larger macroeconomic impact. For oil-exporting countries, price increases will directly increase real national income through an increase in the value of exports. This condition will be reversed if there is an economic crisis from its trading partner country which will reduce export demand.

The conditions mentioned above illustrate that world oil is included in the main trading commodity where the fluctuations in the price of world oil have an impact and become a determinant of the rise and fall of the prices of goods as a whole. Oil price is one component of the fixed cost for some companies, so that if a company has credit to the bank, the fluctuations in the oil price will also have an impact on the company's ability to pay credit obligations to the bank. The results of testing the effect of Oil Price on NPL have a positive and significant effect on NPL. The results of this study contradict the research of Idris and Nayan (2016) which states that oil price has a negative and significant effect on NPL, as well as research from Ayopo and Benet (2018) which also suggests that oil price has a negative impact on NPL.

G. Inflation on Non-Performing Loans

The results showed that inflation had a negative and insignificant effect on NPL. In addition to having an impact on the economy and investment, the effect of inflation also has an impact on bank interest rates. Inflation plays an important role in the process of economic tug-of-war so that the country's economy remains and continues to grow. A growing economy will show market activities where the economic activity of every level of

society continues to move. When inflation can still be said to be at a normal level, not too high or not too low, then economic stability is maintained.

In controlling inflation, the central bank will use interest rates. Inflation is the continuous increase in general prices in the economy. While the interest rate is the fee that must be paid on the loan funds provided. As for when a customer deposits money or applies for a loan to a bank, the interest rate applied is the nominal interest rate. The interest rate includes the real interest rate as well as a premium for inflation.

Rising inflation will have an effect on rising nominal interest rates. Even though real interest rates are fixed, the premium for inflation may rise. In order for economic growth to continue steadily, the interest rate must be higher than the inflation rate. The explanation of the two is that to lend money to encourage economic growth, interest rates must be higher than inflation. This is because higher interest rates than inflation can increase the value of the currency. It would be different if interest rates were lower than the inflation rate.

The effect of inflation on bank interest rates can be divided into two, namely when inflation is high and when inflation is low. When inflation is high, and the general price of goods and services increases, the central bank will make policies to reduce the inflation rate. However, to control when inflation is high, the central bank will raise interest rates to reduce inflation.

According to the explanation above, inflation does have an impact on bank lending rates, but this does not show a direct relationship that inflation has an impact on increasing NPLs because there are still other factors that have an impact on increasing bank NPLs.

The results of testing the effect of inflation on NPL have a negative and insignificant effect. This means that inflation does not have a direct role in the process of bad credit in banks. This study is in line with the research of Hada et al. (2020) which states that inflation has a negative effect on NPL, but contradicts the research of Bolarinwa et al. (2021) which suggests that inflation has a positive impact on NPL and also contradicts the research of Indrawan (2013) which states that inflation has no impact on NPL.

H. Interest (BI Rate) on Non-Performing Loans

The results of the study show that interest (BI rate) has a positive and significant effect on NPL. The increase in the BI Rate will have an impact on the economy and the real sector. Economic growth will slow down. On the other hand, an increase in the BI Rate will result in an increase in bank interest rates. Banks can increase interest rates on deposits or loans. The increase in central bank interest rates will also trigger the cost of funds or the cost of borrowing funds for business actors to be much more expensive. Consumers will also bear the rising interest costs such as financing for Home Ownership Credit (KPR) and motor vehicle loans.

The increase in the BI Rate will have an impact on the economy and the real sector. Economic growth will slow down. On the other hand, an increase in the BI Rate will result in an increase in bank interest rates. Banks can increase interest rates on deposits or loans. An increase in deposit interest rates will encourage people to postpone consumption activities because they choose to save their funds in banks. An increase in deposit interest rates will increase the bank's cost of funds. If you don't want margins to be depressed, banks must raise lending rates. The bank's move to increase loan interest rates will face the risk of non-performing loans.

In accordance with the explanation above, any increase in Interest (BI Rate) will directly have an impact on increasing bank lending rates, thereby increasing the risk of default. The results of testing the effect of Interest Rate on NPL have a positive and

significant effect on NPL. This means that the test results are in accordance with the developed theory and framework. The results of this study contradict the research of Ahmad and Bashir (2013) which states that the interest rate has a negative effect on NPL. However, it is in line with research by Fabio (2021) where it was stated that the benchmark interest rate had a positive effect on NPL and research from Barus and Erick (2016) which stated that the BI rate had a significant effect on NPL.

CONCLUSION

Based on the results of the analysis and discussion, it is further concluded that BOPO has a positive and significant effect on the NPL of banks listed on the IDX in the 2016-2020 period. Then the LDR has a positive but not significant effect on the NPL of the Bank listed on the IDX in the 2016-2020 period. CAR has a negative and significant effect on the NPL of banks listed on the IDX in the 2016-2020 period. NIM has a negative and significant influence on the NPL of the Bank listed on the IDX in the 2016-2020 period. Oil Price has a positive and significant effect on the NPL of Banks listed on the IDX in the 2016-2020 period. And inflation has a negative but not significant effect on Bank NPLs listed on the IDX in the 2016-2020 period. And the Interest Rate (BI Rate) has a positive and significant effect on the NPL of Banks listed on the IDX in the 2016-2020 period.

Banks must pay attention to the variables that in the research results have a negative and positive impact on the Non-Performing Loans variable. References and rules from the regulator, namely the Financial Services Authority, serve as guidelines where the maximum limit for the NPL ratio is 5% so that the quality of bank credit can be maintained.

Banks can also pay attention to other factors outside of research variables that can affect the level of NPL. Several other factors that can influence and need attention include the increase or decrease in the financial condition of the debtor (borrower), the quality factor of collateral (collateral) where there is a delay in the execution process due to the lengthy auction process.

Banks also need to pay attention to the quality factor of credit analysis carried out by HR in the credit unit to ensure that the credit distribution process is late on target and in accordance with applicable SOPs.

REFERENCES

Ad'hadini, N. D., & Kusumawardhani, A. (2016). Analisis Pengaruh Bank Size, LDR, BOPO, Pertumbuhan Kredit, Dan CAR Terhadap Non Performing Loan (studi kasus pada bank umum konvensional yang terdaftar di bei tahun 2010-2014). *Diponegoro Journal Of Management*, *5*(3), 263–275. Google Scholar

Adicondro, Y. Y., & Pangestuti, I. R. D. (2015). *Analisis Pengaruh Pertumbuhan GDP, Tingkat Suku bunga, Pertumbuhan Ekspor, Pertumbuhan Kredit Dan Bopo Terhadap Non Performing Loan Pada Bank Umum Di Indonesia Tahun 2010-2014*. Fakultas Ekonomika dan Bisnis. Google Scholar

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: Jurnal Riset Akuntansi Dan Keuangan*, *1*(2), 120–133. Google Scholar

Ahmad, F., & Bashir, T. (2013). Explanatory power of macroeconomic variables as determinants of non-performing loans: Evidence form Pakistan. *World Applied Sciences Journal*, *22*(2),

243–255. Google Scholar

Al-Khazali, O. M., & Mirzaei, A. (2017). The impact of oil price movements on bank non-performing loans: Global evidence from oil-exporting countries. *Emerging Markets Review*, *31*, 193–208. Elsevier

Amalia, L. R. N. (2022). *Analisis Komparasi Kinerja Keuangan Sebelum dan Sesudah Penerapan PSAK 71 atas Cadangan Kerugian Penurunan Nilai Aset Keuangan Kredit pada Perbankan (Studi Kasus pada PT. Bank Rakyat Indonesia (Persero), Tbk Tahun 2018-2020)*. Fakultas Ekonomi dan Bisnis. Google Scholar

Aryani, Y., Anggraeni, L., & Wiliasih, R. (2016). Faktor-faktor yang memengaruhi non performing financing pada bank umum syariah Indonesia periode 2010-2014. *Al-Muzara'ah*, *4*(1), 44–60. Google Scholar

Attar, D., & Islahuddin, M. S. (2014). Pengaruh penerapan manajemen risiko terhadap kinerja keuangan perbankan yang terdaftar di Bursa Efek Indonesia. *Jurnal Administrasi Akuntansi: Program Pascasarjana Unsyiah*, *3*(1). Google Scholar

Aviliani, A., Siregar, H., Maulana, T. N. A., & Hasanah, H. (2014). The impact of macroeconomic condition on the banks performance in Indonesia. *Bulletin of Monetary Economics and Banking*, *17*(4), 379–402. Google Scholar

Barus, A. C. (2016). Analisis Faktor-Faktor yang Mempengaruhi non performing loan pada bank Umum di Indonesia. *Jurnal Wira Ekonomi Mikroskil*, *6*(2), 113–122. Google Scholar

Bolarinwa, S. T., Akinyele, O., & Vo, X. V. (2021). Determinants of nonperforming loans after recapitalization in the Nigerian banking industry: Does efficiency matter? *Managerial and Decision Economics*, *42*(6), 1509–1524. Google Scholar

Chosyali, A., & Sartono, T. (2019). Optimalisasi Peningkatan Kualitas Kredit Dalam Rangka Mengatasi Kredit Bermasalah. *Law Reform*, *15*(1), 98–112. Google Scholar

Dewantara, R., & Nufitasari, D. (2021). Politik Hukum Pengaturan Mengenai Tindakan Pencegahan Non Performing Loan pada Bank dalam Masa Pandemik dengan Pendekatan Konsep Bifurkasi Hukum. *Jurnal Bina Mulia Hukum*, *6*(1), 66–83. Google Scholar

Fattawi, M. F. (2021). *Strategi Penyelesaian Pembiayaan Murabahah Bermasalah Pada PT. Bank Sumut SyariahKantor Cabang Pembantu Simpang Kayu Besar*. Universitas Islam Negeri Sumatera Utara Medan. Google Scholar

Hada, R. I. P., Fanggidae, R. E., & Nursiani, N. P. (2020). Flexible Working Arrangement Dan Pengaruhnya Terhadap Work-Life Balance Pada Resellers Online Shop. *Jurnal Ekobis: Ekonomi Bisnis & Manajemen*, *10*(2), 162–171. Google Scholar

Halim, M. (2016). Faktor Internal Dan Faktor Eksternal Yang Mempengaruhi Non-Performing Loan Di Bank Pemerintah Dan Bank Swasta Jawa Timur Periode 2008-2012. *CALYPTRA*, *4*(2), 1–20. Google Scholar

Harun, U. (2016). Pengaruh Ratio-ratio Keuangan Car, Ldr, Nim, Bopo, Npl Terhadap Roa. *Jurnal Riset Bisnis Dan Manajemen*, *4*(1), 67–82. Google Scholar

Hermina, R., & Suprianto, E. (2016). Analisis Pengaruh Car, Npl, Ldr, Dan Bopo Terhadap Profitabilitas (Roe) Pada Bank Umum Syariah (Studi Kasus Pada Bank Umum Syariah di BEI 2008–2012). *Jurnal Akuntansi Indonesia*, *3*(2), 129–142. Google Scholar

Idris, I. T., & Nayan, S. (2016). The joint effects of oil price volatility and environmental risks on non-performing loans: evidence from panel data of organisation of the petroleum exporting countries. *International Journal of Energy Economics and Policy*, *6*(3), 522–528. Google Scholar

Indrawan, R. (2013). *Analisis Pengaruh LDR, SBI, Bank Size dan Inflasi terhadap Non Perforning Loan Kredit Kepemilikan Rumah ((Studi Kasus Bank PERSERO T ahun 2006-2012)*. Google Scholar

Ismail, M. F. (2010). *Factors that contribute to high Non-Performing Loan (NPL): A case study on Agrobank, Dungun branch, Terengganu Darul Iman*. Google Scholar

Karini, A., & Filianti, D. (2018). Analisis Perbandingan Kinerja Keuangan Bank Syariah di Indonesia, Malaysia, Brunei dan Thailand Periode 2011-2016. *Jurnal Ekonomi Syariah Teori Dan Terapan*, *5*(10), 835–847. Google Scholar

Kasmir, S. (2016). Analisis Laporan Keuangan, cetakan ke-7. *Jakarta: PT Raja Grafindo Persada*. Google Scholar

Margaretha, F., & Kalista, V. (2016). Faktor yang mempengaruhi non performing loan pada bank di Indonesia. *Jurnal Kesejahteraan Sosial*, *3*(01). Google Scholar

Moussa, M. A. Ben, & Majouj, W. (2016). Determinants of Bank Net Interest Margin: Case of Tunisia. *International Journal of Finance & Banking Studies (2147-4486)*, *5*(3), 103–116. Google Scholar

Nadalizadeh, A., Kiani, K., Hoseini, S., & Peykarjou, K. (2019). The Impact of Oil Price Movements on Bank Nonperforming Loans (NPLs): The Case of Iran. *Petroleum Business Review*, *3*(1), 63–78. Google Scholar

Nopirin, N. (2000). Pengantar Ilmu Ekonomi Makro dan Mikro. *Yogyakarta: BPFE UGM*. Google Scholar

Ozili, P. K., Salman, A., & Ali, Q. (2020). The impact of foreign direct investment inflows on nonperforming loans: The case of UAE. *Available at SSRN 3742785*. Google Scholar

Pandia, F. (2012). Manajemen dana dan kesehatan bank. *Jakarta: Rineka Cipta*. Google Scholar

Putriningtyas, E. (2021). *Analisis dampak penyelamatan kredit terhadap Non Performing Loan (NPL) dan produktivitas pinjaman di BPR Sumber Artha Waru Agung*. UIN Sunan Ampel Surabaya. Google Scholar

Ridha, N. (2017). Proses penelitian, masalah, variabel dan paradigma penelitian. *Hikmah*, *14*(1), 62–70. Google Scholar

Rizal, A., & Taswan, T. (2020). *Analisis Pengaruh Capital, Inefisiensi, Dana Pihak Ketiga Dan Size Terhadap Non Performing Loan Pada Bank Umum Konvensional*. Google Scholar

Setiyaningsih, S., Juanda, B., & Fariyanti, A. (2015). Faktor-Faktor Yang Memengaruhi Ratio Non Performing Loan (Npl). *Jurnal Aplikasi Bisnis Dan Manajemen (JABM)*, *1*(1), 23. Google Scholar

Siringoringo, R. (2017). Analisis Fungsi Intermediasi Perbankan Indonesia (Studi Kasus Bank Umum Konvensional yang Tercatat di BEI Periode 2012-2016). *Jurnal Inspirasi Bisnis Dan*

Manajemen, *1*(2), 135–144. Google Scholar

Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif R&D*. Bandung: Alfabeta. Google Scholar

Sumarni, Y. (2020). Pandemi Covid-19: Tantangan ekonomi dan bisnis. *Al-Intaj: Jurnal Ekonomi Dan Perbankan Syariah*, *6*(2), 46–58. Google Scholar

Supeno, W. (2017). Analisis Prioritas Penanganan Kredit Bermasalah Dalam Rangka Menyehatkan Kualitas Kredit Pada Bank Perkreditan Rakyat. *Widya Cipta: Jurnal Sekretari Dan Manajemen*, *1*(1), 8–17. Google Scholar

Suryanto, S. (2015). Non performing loans on regional development bank in Indonesia and factors that influence. *Mediterranean Journal of Social Sciences*, *6*(4), 280. Google Scholar

Usman, B. (2015). Determinan Non Performing Loan (NPL) pada Industri Perbankan (Bukti Empiris Perusahaan Go Publik di Bursa Efek Indonesia). *Jurnal Aplikasi Manajemen*, *13*(4), 547–556. Google Scholar

Wild, J. J., Subramanyam, K. R., & Halsey, R. F. (2005). Analisis laporan keuangan. *Edisi Delapan, Buku Kesatu. Alih Bahasa: Yanivi Dan Nurwahyu. Jakarta: Salemba Empat*. Google Scholar