Factors affecting the number of banking loans during the covid-19 pandemic (empirical study on Indonesian conventional commercial banks in 2020-2021)

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ABSTRACT
This article discusses the factors that affect the amount of bank credit during the covid-19 pandemic. The decline in the number of loans disbursed in early 2020 led to overall economic instability. This phenomenon has sparked interest in researching factors affecting the amount of credit to provide solutions to the problems faced. Unlike previous research, this research focused on the amount of credit disbursed during the Covid-19 pandemic. In addition, this study also used all samples of conventional commercial banks registered with financial services authorities in Indonesia. The data used are banking financial reports in 2020 and 2021. This study analyzes banking performance as measured by the ratio of CAR, OEOI, LDR, NIM, and ROA whether or not it affects the amount of credit disbursed during the Covid-19 pandemic. The research method used is a test of classic assumptions and multiple linear regression analysis. The analysis results show that CAR, NIM, and ROA significantly positively affect the amount of credit distributed. Meanwhile, the LDR significantly negatively affects the amount of credit disbursed. These four variables affect the amount of credit disbursed by the bank. Bank management must pay attention to banking performance, especially the ratio of CAR, NIM, ROA and LDR so that the role of banks in disbursing loans remains optimal during the Covid-19 pandemic. The limitation in this study is that the number of variables studied is only 5 that have not shown a major influence in influencing the amount of credit disbursed. Further research is expected to examine many variables that show a large influence on the amount of credit disbursed to provide solutions for banks in increasing the amount of credit.

KEYWORDS
Banking credit; Capital Adequacy Ratio (CAR); Operating Expenses Operating Income (OEOI); Loan to Deposit Ratio (LDR); Net Interest Margin (NIM); Return On Assets (ROA)

Introduction
In early 2020, the Covid-19 Virus began to enter Indonesia. The Indonesian Ministry of Health stated that in December 2019 the Covid-19 Virus or Coronaviruses appeared for the first time in Wuhan, China. Its rapid spread throughout the world has caused this pandemic to be very feared by the world community, including Indonesia. The impact of this pandemic has not only caused concerns in the field of public health, but also has an impact on the Indonesian economic sector. The impact is not only for small communities, but companies, governments and all other agencies are affected by this pandemic. It is inevitable that the impact of the Covid-19 Pandemic on the banking sector. The role of the banking sector is very important in building the economy in Indonesia. According to (Fahrial, 2018), banks have an important role and strategy in supporting national economic development. One of the roles of banks is to distribute funds to the public in the form of credit to improve people’s living standards.

The Ministry of Finance of the Republic website stated that during the Covid-19 pandemic, the banking sector and the government are trying to restore credit demand. In the High-Level Seminar on Banking Supervisory and Regulatory held on November 16, 2020, the Minister of Finance, Sri Mulyani Indrawati revealed that the challenge faced by the banking sector in economic recovery is to restore credit demand that has fallen due to the Covid-19 Pandemic. The decline in the number of loans in 2020 is feared that there will continue to be a decline in optimizing the role of banks, one of which is channeling funds to the public in the form of credit so that it has an impact on the national economy. The following is data on credit demand in the years before the pandemic and after the pandemic:
Table 1. Number Of Banking Credit In 2017-2020 (In Billion Rupiah)

| BANK TYPE                    | 2017       | 2018       | 2019       | 2020       |
|------------------------------|------------|------------|------------|------------|
| Persero Bank                 | 1,988,419  | 2,244,789  | 2,438,272  | 2,456,205  |
| BPD                          | 393,439    | 426,051    | 469,530    | 493,422    |
| National Private Bank        | 2,208,615  | 2,428,580  | 2,534,509  | 2,415,930  |
| Branch of a bank domiciled aboard | 211,486   | 258,593    | 241,450    | 182,060    |
| TOTAL                        | 4,801,959  | 5,358,013  | 5,683,761  | 5,547,617  |

In addition to declining demand for loans, the internal ratio of banking performance at the beginning of the pandemic also decreased. The decrease occurred in the ratios of CAR, BOPO, LDR, NIM, and ROA as follows:

Table 2. Internal ratio of banking performance

| Ratio  | 2019 | 2020 |
|--------|------|------|
| CAR    | 23.54| 21.67|
| OEOI   | 80.65| 88.84|
| LDR    | 93.39| 92.55|
| NIM    | 4.9  | 4.31 |
| ROA    | 2.48 | 1.59 |

From the phenomenon of a decrease in the number of loans disbursed that occurred at the beginning of the Covid-19 pandemic, researchers were interested in finding the factors that caused the decline. For this reason, researchers conducted this study using several journals as a reference in conducting research.

Literature review

From previous studies, various research results were obtained regarding the factors that affect the amount of credit disbursed. The theory used in this study is the theory of supply and demand for money.

The Theory Of Money Supply And Demand

In the classical money supply theory, the money supply is carried out by banks supervised by the government by determining loan interest rates. A high-interest rate will reduce the money supply, while a low-interest rate will increase the money supply. The demand and supply of money will affect the liquidity of the bank. Liquidity can be seen from a short-term and long-term perspective. According to Friedman, in the long run there is a close relationship between the growth of the amount of money circulating and linear inflation (Mishkin, 2014). In research Haryanto et al. (2017), the modern money supply theory popularized by Keynes says that the money supply is not fully influenced by interest rates but by certain factors that are influenced by economic conditions. The supply and demand for money will remain high even though interest rates are rising, providing economic growth and conditions are healthy and capital can be used optimally. At this time the government lowered lending rates to increase lending. However, this was not entirely successful because during the Covid-19 pandemic, credit disbursement continued to decline. This other factor will be examined to see what factors affect credit distribution other than the loan interest rate.

Banking Credit

One of the functions and duties of a bank is to collect funds from the public in the form of savings and distribute funds to the public in the form of a credit to improve people’s standard of living. The distribution of funds in the form of credit requires analysis in order to be able to provide benefits for the bank. In research Alanshari et al. (2018), credit is something that the community needs to encourage and launch business activities. In other words, credit is a bill whose value can be measured using money. The elements contained in the credit include trust, agreement, period, risk and remuneration. Credit distribution using funds reaches 70-80% of the bank's business volume. To measure credit distribution, it is equal to the amount of credit disbursed by banks in a certain period (Febriansyah et al., 2022).

Capital Adequacy Ratio (CAR)

Capital Adequacy Ratio (CAR) is a ratio used to measure a bank's ability to capitalize and write off reserves to cover credit. This is in line with the statement Harmayati et al. (2019), which says that CAR is an indicator of the
health of bank capital that assesses capital adequacy to cover current risk exposures and anticipate future exposures. According to (Nurlette, 2021), the provision of minimum capital for banks operating in Indonesia is as follows:

1. Capital for banks established and headquartered in Indonesia consists of core capital and complementary capital.
2. Capital for branch offices of a bank domiciled abroad consists of net funds from head offices and branch offices outside Indonesia.

According to POJK number 11/POJK.03/2016 the minimum ratio owned by banking sector companies is 10%. According to the attachment to the Draft Circular Letter of the SEOJK Financial Services Authority Number 09/03/2020, the Capital Adequacy Ratio (CAR) ratio can be calculated using the following formula:

\[
\text{CAR} = \frac{\text{Capital (a)}}{\text{ATMR (b)}} \times 100\%
\]

Operating Expenses Operating Income (OEOI)

Operating Expenses Operating Income (OEOI) is the ratio between operating costs and income, showing the operational activities carried out. The smaller the OEOI ratio will show the optimal efficiency level because operating expenses are smaller than the nominal operating income (Haryanto et al., 2017). According to Panuntun & Sutrisno (2019), Bank profits are obtained from the difference between operating income and operating costs incurred (OEOI). The Bank will try to reduce or reduce operational costs to increase profits. The lower the OEOI ratio, the more efficient the bank is in its operational activities. According to the attachment to the Draft Circular Letter of the SEOJK Financial Services Authority Number 09/03/2020 calculates the ratio of Operating Expenses to Operating Income (OEOI) with the following formula:

\[
\text{OEOI} = \frac{\text{Total operating expenses}}{\text{Total operating income}} \times 100\%
\]

Loan To Deposit Ratio (LDR)

Arniati et al. (2018), explain that the Loan to Deposit Ratio (LDR) is a ratio used to measure the composition of the amount of credit given compared to the number of third party funds or own capital used. Loan to Deposit Ratio measures the bank's ability to repay obligations to customers who have provided their capital with loans given to debtors. LDR states a measure of the bank's ability to repay the customer's capital that has been given by relying on the credit provided as a source of liquidation (Pranata, 2015). To calculate the amount of the Loan to Deposit Ratio according to the Circular Letter of the Financial Services Authority or SEOJK Number 09/03/2020 as follows:

\[
\text{LDR} = \frac{\text{Total loans (a)}}{\text{Total of third party funds (b)}} \times 100\%
\]

Net Interest Margin (NIM)

Net Interest Margin (NIM) is a proxy for market risk which is calculated by comparing net interest income with total loans disbursed by banks. According to Yulita VMS et al. (2020), calculating the Net Interest Margin (NIM) ratio is to assess the extent to which bank management can generate net interest income by managing its productive assets. According to Natalia (2015), a high Net Interest Margin (NIM) ratio shows the effectiveness of banks in placing productive assets. If interest income from earning assets increases, it will impact the bank's net profit. According to the attachment of the Draft Financial Services Authority Circular Letter Number 09/03/2020 NIM can be calculated as follows:

\[
\text{NIM} = \frac{\text{Net interest income (a)}}{\text{Total loans disbursed by banks (b)}}
\]

Return On Assets (ROA)

Return On Assets (ROA) is a ratio that shows how capable a bank is of optimizing its assets’ use in generating a return. According to Fayaupon (2021), Return On Assets (ROA) is used to measure the ability of bank management to gain profits from asset management activities owned by banks. The higher the ROA ratio, the more optimal bank management is in utilizing its assets to obtain profits. According to Ester Saumur (2021), Return On Assets (ROA) functions to estimate the efficiency and effectiveness of an entity in obtaining profit. If the ratio has increased, it can be said that the optimal use of assets in a bank is to obtain profits. According to the Financial Services Authority (OJK), the ROA percentage level must be > 1.5%. The greater the ROA level of the bank, the healthier the bank's performance if it is measured using the Return On Assets (ROA) Ratio. SEOJK Financial Services Authority Circular Number 09/03/2020 explained that Return On Assets (ROA) can be calculated using the following formula:

\[
\text{ROA} = \frac{\text{Profit after tax (a)}}{\text{Average total assets (b)}}
\]
Methods

The research sample consisted of 96 Indonesian conventional commercial banks with a research period of 2 years, so N observations were 192. Research data which is secondary data can be calculated from the published annual reports of banks. The research method used is descriptive statistics, classical assumption test and multiple regression analysis with the following research model:

\[ Y = a + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \varepsilon \]

Results

Descriptive statistical results

| Table 3. Descriptive Statistics Results |
|----------------------------------------|
| Variable | N | Minimum | Maximum | Mean  | Std. Deviation |
|-----------|---|---------|---------|-------|---------------|
| CAR       | 192 | 10.95   | 257.53  | 34.8816 | 27.85267 |
| OEOI      | 192 | 0.82    | 287.86  | 90.2780 | 35.79734 |
| LDR       | 192 | 0.00    | 996.74  | 90.6715 | 76.51396 |
| NIM       | 192 | -2.58   | 13.52   | 4.3577  | 2.10009 |
| ROA       | 192 | -14.75  | 4.97    | 1.0179  | 2.79346 |
| LN Y      | 192 | 13.25   | 20.68   | 16.5096 | 1.51708 |

Classic Assumption test results

The classical assumption test is a regression model obtained from the ordinary least squares method or Ordinary Least Square that produces the best bias linear estimator. This test aims to determine that the linear estimator produced by the regression model is good so that the results obtained can be accounted for (Zulfikar, 2014). There are 3 classical assumption tests used as follows:

Normality test

According to Febriansyah et al. (2022), the normality test is a test used to see whether the normal distributed residual value or not. The normality test in this study uses the Kolmogrov-Smirnov test by looking at the significance of the residuals generated and from the normal probability plot graph approach. The results of the normality test as seen from the Kolmogrov-Smirnov test are as follows:

| Table 4. One-Sample Kolmogorov-Smirnov Test |
|---------------------------------------------|
| N | 192 |
| Normal Parameters | Mean | 0.0000000 |
| | Std. Deviation | 1.30366662 |
| Most Extreme Differences | Absolute | 0.053 |
| | Positive | 0.053 |
| | Negative | -0.031 |
| Test Statistic | 0.053 |
| Asymp. Sig. (2-tailed) | .200^-d |

Data is normally distributed
The normality test, described using a normal probability plot graph, results in a spread of data (points) following a diagonal line indicating that the data is normally distributed. The normal probability plot graph can be seen as follows:

**Figure 1. Normal Probability Plot**

### Heteroscedasticity Test

In this study, the scatterplot pattern was spread. If the data has a certain pattern, it indicates the occurrence of heteroskedasticity and if the data does not have a clear pattern and the point spreads above and below the number 0 on the Y axis, it indicates that there is no occurrence of heteroskedasticity (Zulfikar, 2014). Figure 2 it can be seen the distribution of data that forms a scatterplot pattern as follows:

**Figure 2. Heteroscedasticity Test Results**

### Multicollinearity Test

According to Setyaningrum et al. (2020), multicollinearity is a condition that indicates one or more dependent variables can be expressed as a linear combination of other independent variables. In this test, the researchers analyzed the value of tolerance and Variance Inflation Factor (VIF). The tolerance value > 0.10 and the VIF limit < 10.00 indicates no multicollinearity. The results of the multicollinearity test are as follows:

**Table 5. Multicollinearity Test Results**

| Model  | Collinearity Statistics | conclusion       |
|--------|-------------------------|------------------|
|        | Tolerance | VIF          |                  |
| 1      | (Constant) |             |                  |
| CAR    | 0.977     | 1.023       |                  |
| OEOI   | 0.584     | 1.714       |                  |
| LDR    | 0.972     | 1.029       |                  |
| NIM    | 0.914     | 1.094       |                  |
| ROA    | 0.547     | 1.830       |                  |
| a. Dependent Variable: Y (Credit Distribution) |          |                  |

### Multiple Linear Regression Analysis

In this study, multiple linear regression analysis was used to test the effect of the independent variables consisting of 5 variables, namely Capital Adequacy Ratio (X1), Operating Expenses on Operating Income (X2), Loan to Deposit Ratio (X3), Net Interest Margin (X4), Return On Assets (X5), on the dependent variable, namely Credit Distribution (Y).
The results of the calculation of multiple linear regression analysis using the SPSS 26.0 program can be seen in table 4.6 as follows:

### Table 6. Multiple Linear Regression Test Results

| Model  | Unstandardized Coefficients | Standardized Coefficients | t     | Sig.      |
|--------|-----------------------------|---------------------------|-------|-----------|
|        | B                           | Std. Error | Beta   |           |           |
| (Constant) | 15.5644                     | 0.434   | 35.837 | 0.000     |
| CAR    | 0.0104                      | 0.003   | 0.192  | 3.001     | 0.003     |
| OEOI   | 0.0010                      | 0.004   | 0.013  | 0.161     | 0.872     |
| LDR    | -0.0029                     | 0.001   | -0.150 | -2.138    | 0.020     |
| NIM    | 0.1394                      | 0.048   | 0.193  | -2.298    | 0.004     |
| ROA    | 0.1923                      | 0.046   | 0.354  | 4.148     | 0.000     |

a. Dependent Variable: amount of credit

From the table, the relationship between the independent variable and the dependent variable can be formulated as follows:

\[
Y = 15.5644 + 0.0104X_1 + 0.0010X_2 - 0.0029X_3 + 0.1394X_4 + 0.1923X_5
\]

### Coefficient of Determination Test

The results of the coefficient of determination in this study can be seen from the value of R Squares in table 4.10 as follows:

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|---|----------|-------------------|---------------------------|---------------|
| 1     | 0.511 | 0.262   | 0.242             | 1.32117                   | 0.908         |

In table 4.8 above the R Squares value is 0.262 which shows that the independent variables consisting of CAR, OEOI, LDR, NIM, and ROA have an influence of 26.2% in influencing the amount of credit disbursed by conventional banks. The remaining 73.8% is influenced by other factors not included in this regression equation model.

### Discussion

From the research model above, it can be seen that the CAR, OEOI, NIM and ROA variables have a positive effect while the LDR variable has a negative effect on the amount of credit disbursed. The multiple linear regression test results in a t-test to see a significant relationship between the independent and dependent variables. The significance value of the CAR, LDR, NIM and ROA variables is smaller than 0.05 so the variables are significantly related. The OEOI variable's significant value is greater than 0.05, so it does not have a significant effect.

At the beginning of the Covid-19 Pandemic, which occurred in 2020, during this period, banking performance experienced a decline which significantly affected banking operations. The decline in the CAR ratio during the Covid-19 pandemic resulted in a decrease in the amount of credit at Indonesian conventional banks. A low CAR ratio results in bank credit risk due to an unstable capital condition that can lead to credit risk. With this unstable capital, banks will reduce the amount of credit to reduce the risk due to losses arising from lending. The results of this study are from research conducted by (Melinda et al., 2021; Riadi, 2018; Arianti et al., 2016), which says that the ratio of CAR (Capital Adequacy Ratio) has a significant positive effect on lending in 2020 and 2021.

The correlation coefficient value of the OEOI variable is 0.001 which means that there is a positive influence between Operating Expenses and Operating Income on the amount of credit. The significance value of 0.872 is greater than 0.05, meaning that the OEOI variable has no significant effect on Credit Distribution. Operating Expenses Ratio Operating Income increased due to an increase in operating expenses during the year which was not accompanied by an increase in operating income. This increase indicates that the bank is not operating efficiently. In this case the increased Operational Expenses mean that they are not allocated to increase the number of credits during the Covid-19 Pandemic. According to research conducted by Niu et al. (2021), as a result of the Covid-19 Pandemic phenomenon,
it is difficult for banks to face the risk of returning liquidity. This increase in operating expenses is allocated to deal with the increased liquidity risk during the Covid-19 pandemic.

The correlation coefficient value of the LDR variable is -0.003, which means a negative effect on the Loan to Deposit Ratio (LDR) on Credit Distribution. The significance value of 0.020 is smaller than 0.05, which means that the LDR variable has a significant effect on the number of loans but negatively. The negative influence of the Loan to Deposit Ratio (LDR) on credit distribution means that if the LDR ratio increases, credit distribution decreases, this happens because during the Covid-19 Pandemic, banks had liquidity difficulties in funding credit growth. In this condition, the bank will focus on increasing customer withdrawals to deposit funds in the bank by increasing the interest rate on funds so that they can return to recover funding for loan growth disbursed by banks. This statement is in line with research conducted by Panuntun & Sutrisno (2019), which explains that the LDR level has a significant negative effect. It is possible that with the high LDR, management is worried about their credit quality, so when the LDR increases, they actually reduce their lending.

The results showed that the correlation coefficient was 0.139, which means it positively influences the amount of credit. The significance value of 0.004 which is smaller than 0.05 means that the Net Interest Margin (NIM) significantly positively affects the amount of credit. The decline in credit distribution at the beginning of the Covid-19 pandemic caused the government to issue several policies, one of which was a reduction in loan interest rates. The NIM level that increases or is greater will indicate the effectiveness of the bank in carrying out operational activities is getting higher. The NIM level increases will increase the company’s profit. Large profits will be allocated in the placement of productive assets allocated in the form of credit. This study is also by research conducted by (Haryanto et al., 2017; Arianti et al., 2016), stating that NIM has a positive and significant influence on the amount of credit extended by conventional commercial banks.

The correlation coefficient value of Return On Assets (ROA) is 0.192, indicating a positive influence between Return On Assets (ROA) on Credit Distribution. A significance value of 0.000 is smaller than 0.05, meaning the effect is significant. If the ROA is high, the bank has also used its assets optimally and obtained optimal opinions. With the smooth operation of these operational activities, it will be easier for banks to approve loan disbursements proposed by customers because banks earn optimally. The decline in the level of Return On Assets (ROA) during the Covid-19 pandemic influenced the decline in the level of bank lending. These results are also by research conducted by (Molek et al., 2016; Widyawati, 2020), that ROA has a positive and significant effect on lending.

**Conclusion**

This study aims to determine the factors that affect the amount of credit disbursed by banks. Of the five banking performance measured, there are four variables that have a significant influence on lending. The ratio of CAR, NIM and ROA has a significant positive effect on the amount of credit disbursed, while the LDR variable negatively affects credit distribution. When the performance ratios of CAR, NIM, ROA and LDR banks experience significant changes, it will affect the number of bank loans disbursed. During the Covid-19 pandemic, the banking industry experienced a decrease in the number of loans disbursed due to inadequate banking performance due to unstable global economic conditions. Banks in Indonesia should pay more attention to internal management to improve the quality of the banking performance ratio. Maintaining more stable banking operations will greatly affect the national economy.

The limitation in this study is that the factors studied have not included 50% of the factors that affect the amount of credit disbursed. So that there are many other factors that have not been studied that are likely to affect the amount of credit disbursed. For the next researcher, you should be able to conduct research by taking variables such as banking risk or external banking factors so as to be able to find more other factors that affect the amount of credit channeled by banks.

**References**

Alanshari, F., & Marluis, D. (2018). Prosedur Pemberian Kredit KPR Pada PT Bank Tabungan Negara (Persero) Tbk Cabang Pembantu Bukittinggi. *Akademi Keuangan Dan Perbankan Padjadang*, 2014, 1–11.

Arianti, D., Andini, R., & Aniati, R. (2016). Pengaruh Bopo, Npl, Npl Dan Car Terhadap Jumlah Penyaluran Kredit Pada Perusahaan Perbankan Yang Go Publik Di Bursa Efek Indonesia Periode Tahun 2010-2014. *Journal of Accounting*, 2(2), ISSN: 2502-7697.

Arniani, Rohana, T., & Sinuhaji, E. (2018). Pengaruh Loan to Deposit Ratio terhadap Non Performing Loan. *Jurnal Ilmiah : Jurnal Ilmu Manajemen*, 6(1), 77–82.

Ester Saumur, E. (2021). Pengaruh Npl, Ldr Dan Roa Terhadap Penyaluran Kredit Pada Bank Umum Konvensional Yang Terdaftar Di Bursa Efek Indonesia Periode 2018-2020. *Probisnis (e-Journal)*, 14(2), 20–28. https://doi.org/10.35671/probisnis.v14i2.1318

Fahrial. (2018). Vol. 1 No.1 Edisi 2 Oktober 2018 https://journal.ensiklopediaiku.org/Ensiklopedia of Journal. J(1), 179–184.

Fayaupon, M. I. A. (2021). Analisis Pengaruh Roa, Npl dan BI Rate Terhadap Penyaluran Kredit di Industri Perbankan Periode Tahun
