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DETERMINANTS OF CAPITAL ADEQUACY RATIO BANK IN INDONESIA (CASE STUDY ON BANKS LISTED ON THE IDX)

Reni Marlina, Sekolah Tinggi Ilmu Ekonomi Ekuitas, Indonesia

ABSTRACT

Banking as a delegate establishment assumes a significant part in the economy and performs well and is sounds. The Capital Adequacy Ratio (CAR) is a measure of how important capital is to banking. OJK has set a new classification for banks based on their core capital. The objective of this research is to ascertain the factors that influence the Capital Adequacy Ratio (CAR) of Indonesian stock exchange-listed banks. The multiple linear regression approach is utilized in this study. The Capital Adequacy Ratio (CAR) is the dependent variable, and the Return on Assets, Loan-to-Deposit Ratio, Net Interest Margin, Operating Expenses, and Operating Income are the independent variables. In view of the exploration results, there is a huge impact of Return On Resources (ROA), Net Interest Edge (NIM), Working Expenses of Working Pay (BOPO), and Credit to Store Proportion (LDR) on the Capital Sufficiency Proportion.

Keywords: Return on Asset, Capital Adequacy Ratio, Loan to Deposit Ratio, Operating Expense to Operating Income, Net Interest Margin

1. Introduction

The banking industry is one of the significant support points in the economy and monetary administrations which controls around 80% of the resource portion of the monetary administrations industry in Indonesia.

Operations The COVID-19 pandemic that has occurred in Indonesia since the beginning of 2020 also has an impact on the banking industry, one of which is credit quality pressure. OJK has issued POJK No. 11/POJK.03/2020 regarding the Covid 19 stimulus, in which there is a policy regarding credit restructuring until March 31, 2020 and then extended to March 31, 2023 with the aim of maintaining banking stability and the performance of debtors restructuring Covid 19 which has improved. Based on OJK data, the number of credit restructuring as of July 2021 carried out by 101 banks in Indonesia is Rp. 779 trillion with a total of 5.1 million debtors divided into the MSME and non MSME sectors. Thus, banks need additional capital to maintain liquidity conditions so that the commitment to ownership of national banking capital is needed to maintain the sustainability of bank performance during the Covid-19 pandemic, with sufficient capital, banks can be even stronger in supporting their operations. There are several ways that banks can do to maintain their capital adequacy, either through additional capital directly from the controlling shareholder or by not distributing dividends. The bank's Capital Adequacy Ratio (CAR) in March 2020 decreased from 23% to 21%, but in the September 2021 period it has increased again to 25%.

The capital structure of banking is fundamentally different from the capital structure of companies in the non-financial industry, due to differences in business and operational characteristics. Banks need a buffer to meet the minimum capital requirements required by the regulator in this case is the Financial Services Authority (OJK). Bank capital has an important role, namely as a level of safety and an indicator of the level of bank soundness. In addition, the Roadmap for the development of Indonesian banking for 2020-2025 is listed in pillar 1, namely strengthening the structure and competitive advantage by increasing banking capital, which includes 4 work programs, namely the first to monitor the fulfillment of the bank's minimum core capital with a target in 2020-2025 where the minimum core capital for banking is in accordance with the established regulations, the second work program is to formulate provisions and procedures regarding exit policies, among others, for banks that do not meet the minimum core capital with a target of 2020-2023 and regarding conversion provisions for commercial banks to rural banks for banks that do not meet the minimum capital and target year 2020-2022 as well as regarding procedures regarding exit policies, while for the third work program is to adjust the grouping of commercial banks with the 2020 target, namely studies related to the grouping of commercial banks and in 2021-2022 regarding provisions related to grouping commercial banks, the following is the CAR data of banks in Indonesia for the period.

Table 1.
Asset, Credit, TPF,CAR, ROA,NIM, OEOI and LDR Bank Konvensional
in Indonesia period 2019-2020

Indikator	Dec 2019	Mar 2020	June 2020	Sept 2020	Dec 2020
Asset (Rp Milion)	8.212.586	8.443.184	8.313.961	8.686.707	8.780.681
Credit (Rp Milion)	5.391.846	5.483.846	5.316.379	5.290.086	5.235.027
TPF (Rp Milion)	5.709.670	5.924.944	5.987.088	6.338.774	6.342.538
CAR (%)	23,40	21,67	22,55	23,52	23,89

ROA (%)	2,47	2,57	1,94	1,76	1,59
NIM (%)	4,91	4,31	4,46	4,41	4,45
OEOI (%)	79,39	88,84	84,94	86,15	86,58
NPL Net (%)	1,16	0,98	1,13	3,14	3,06
LDR (%)	94,43	92,55	89,10	83,46	82,54

Source : Statistic Perbankan Indonesia, OJK

In view of table 1 above, it very well may be seen that total banking assets increased from December 2019 to March 2020 but decreased in June 2020 and increased in September 2020. The number of loans extended continued to decline from March 2020 to December 2020 while for DPK always increased from December 2019 to December 2020. For CAR, it decreased to 21.67% in March 2020 compared to December 2019 which was 23.40 and continued to increase from June 2020 to December 2020. For ROA, the trend is decreasing starting from March 2020 to December 2020. For NIM tends to fluctuate and for BOPO it increases from June 2020 to December 2020, NPL tends to increase from March 2020, from 0.98% to 1.13% in June 2020 and increase to 2.14% in September 2020 and December 2019 it fell to 3.06 . The LDR continued to decline from December 2019 to December 2020.

Several previous studies on CAR have been led by Batani et al (2014), Mouss (2018), and Dreca (2013). The results of Batani et al (2014) study state that bank size has a adverse effect on CAR and LAR, ROW, ROA and EQR have a positive relationship and RAR (risk asset risk) and DAR (deposit asset ratio) have no effect on CAR. Actas et al (2015) led a study on CAR in Europe which stated that leverage had a negative difference on CAR. Hafez (2018) led a concentrate in Egypt and stated that LDR before and after the crisis had no impact on CAR while size had a positive relationship with CAR, and ROA had a beneficial impact effect before the crisis and had no effect in the post-crisis period. The results of Dreca's research (2013) state that loan deposits, size and ROA have a opposite effect on CAR , although ROA and leverage have a positive difference on CAR for all banks in Bosnia. The results of research from Iloska (2014) show that there is a positive difference of Net Interst Margin on CAR in the Mecedonian. Research from Abusharbeh et al (2013) states that liquidity has a positive difference on CAR. Research by Moussa (2015) states that Size, (CAP), Loan to assets (TLA), ROE and deposit to total assets have a negative difference on CAR while ROA, Capital in credit Operation (CFC) , Operating Expenses to Total Assets (CEA) and inflation rate have no effect on CAR. Nuryati and Anggono (2014) produced research that BOPO, ROE and NIM had Several previous studies on CAR have been led by Batani et al (2014), Mouss (2018), and Dreca (2013). The results of Batani et al (2014) study state that bank size has a negative difference on CAR and LAR, ROW, ROA and EQR have a positive relationship and RAR (risk asset risk) and DAR (deposit asset ratio) have no effect on CAR. Actas et al (2015) led a study on CAR in Europe which stated that leverage had a negative difference on CAR. Hafez (2018) led a study in Egypt and stated that LDR before and after the crisis had no impact on CAR while size had a positive relationship with CAR, and ROA had a positive difference before the crisis and had no effect in the post-crisis period. The results of Dreca's research (2013) state that loan deposits, size and ROA have a negative difference on CAR, while ROA and leverage have a positive difference on CAR for all banks in Bosnia. The results of research from Iloska (2014) show that there is a positive difference of Net Interst Margin on CAR in the Mecedonian. Research from Abusharbeh et al (2013) states that liquidity has a positive difference on CAR. Research led by Moussa (2015) states that Size, Capitalization of banks a

negative difference on CAR in IDX listed bank while NPL and ROA had a positive difference on CAR. Based on research from Bambang et al (2019) that the efficiency ratio and NPL have no effect on CAR, on the contrary, bank size and LDR have a negative relationship to CAR. Thoa & Anh (2017) led research on banks in Vietnam and found that bank size, leverage, loan loss reserve, net interest margin, loan to asset ratio and liquidity affect CAR. The results of research from Bahtiar et al (2019) show that bank size, leverage, loan loss reserves, net interest margin, loan asset ratio have a significant effect on CAR while liquidity has no effect on CAR. Research from Sri et al (2015) shows the results that credit risk and profitability performance together have a significant effect on CAR.

There are still divergent outcomes based on these studies' findings, resulting in the phenomenon of a research gap between the findings of previous studies. In light of the foundation that has been expressed, the issue examined in this study is the Determinant of the Capital Sufficiency Proportion of banks in Indonesia (a contextual analysis of banks recorded on the IDX).

2. Literature Review

Bank capital is a significant part that will decide the course of banking tasks. A soundnes bank major areas of strength for has to do banking business tasks. Bank capital is utilized to keep up with the degree of liquidity so that banks can run their activities without liquidity issues. Satisfactory bank capital is expected to energize credit development and expect credit risk. The first party in a bank, the shareholders, invest money into the bank as bank capital. This money serves as an important absorber in the event of a loss (risk loss). Capital is also an investment made by shareholders, who are required to keep it in the bank at all times and are not obligated to return it.

In light of Bank Indonesia Guideline No. 15/12/PBI of 2013 concerning the base capital adequacy requirements for business banks, it is expressed that banks are expected to fulfill the base capital sufficiency necessities for business banks.

In POJK No. 11/POJK.03/2016 article 2 in regards to the Base Capital Adequacy Necessity for Business Banks, Banks are expected to give least capital as per the profile of risk. The Minimum Capital Adequacy Ratio is used for the minimum capital requirement. For banks with a risk profile rating of 1, the minimum capital provision is set at 8% (eight percent) of Risk Weighted Assets (RWA). For banks with a risk profile rating of 2, the minimum capital provision is set at 10% (ten percent) to less than 11% (eleven percent) of RWA. For banks with a risk profile rating of 3, the minimum capital provision is set at 11% (eleven percent) to 14% (fourteen percent) of RWA.

Capital Adequacy Ratio, Return On Assets (ROA), Operational Efficiency (OEOI), Market Risk (NIM), and Liquidity (LDR) are the capital ratio variables used in this study. Capital Adequacy Ratio is a capital proportion that shows the bank's capacity to give assets to business improvement motivations and oblige the risk of loss of assets brought about by bank functional exercises. CAR shows the degree to which the decrease in bank resources can in any case be covered by accessible bank value, the higher the CAR, the better the position of a bank.

The ability of bank management to generate overall profits is measured by the ratio known as return on assets. According to Gumanti (2011), a bank's ROA is a measure of how well it uses its assets and how much profit it makes (Gumanti, 2011). According to Dendawijaya (2005), the loan-to-deposit ratio (LDR) is a measure of a bank's ability to meet its obligations to

customers who have invested their funds by relying on loans as a source of liquidity. The higher this proportion, the lower the liquidity limit of the bank so the chance of a bank in disturbed conditions will be much more prominent. The ability of a bank's operating income to cover its operational costs is the goal of the operational efficiency measure known as operational efficiency (OEOI). The OEOI ratio is set at 90% by Bank Indonesia because if it is higher than 90% or close to 100%, the bank may be considered ineffective in its operations.

3. Research Method

The methodology and techniques utilized in this examination information assortment is utilizing optional information. Multiple linear regression analysis employing panel data (pooled data) is the analytical model. The condition model used to test the speculation is as per the following:

$$Y = \propto + \beta 1ROA + \beta 2LDR + \beta 3BOPO + \beta 4NIM + \varepsilon \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

To sellect the most suitable model utilized in overseeing board information, there are a few tests that can be done by Gujarati (2012), specifically the F-Measurable Test (Chow test), Hausman test, and Lagrange Multiplier test. The classical assumption test is then carried out following the model selection.

4. Result and Discussion

The objects in this study are banks listed on the IDX, a number of 40 banks. Prior to playing out the relapse, in this review, an examination of the best model suspicions was completed with 3 strategies, to be specific normal impact, fixed impact, and arbitrary impact. In view of the examination of the presumptions of the Normal Impact Model, Fixed Impact Model and Arbitrary Impact Model, the information shows that the one with the most elevated R-squared level is the Decent Impact Model, which is 66.81%. The selection test, which includes the Chow and Hausman tests, is the next step in this study's data processing process. In the board information relapse model, there are three kinds of models, specifically the Common Impact Model, Fixed Effect Model and Random Effect Model. To get an accurate estimate, it is therefore necessary to test the model choice. Generally, the aftereffects of board information relapse testing utilizing the Proper Impact Model technique are as per the following:

Table 2.
Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.257534	7.165494	-0.315056	0.7531
X1	0.486873	0.998393	0.487657	0.6263
X2	-0.901988	0.610927	-1.476426	0.1414
X3	0.343140	0.084293	4.070779	0.0001
X4	-0.022437	0.049465	-0.453588	0.6506

Table 3.

Effect Specification

Cross-section fixed (dummy variables)			
R-squared	0.668142	Mean dependent var	23.77203
Adjusted R-squared	0.595336	S.D. dependent var	13.69440
S.E. of regression	8.711452	Akaike info criterion	7.331296
Sum squared resid	14874.32	Schwarz criterion	7.969414
Log likelihood	-835.7556	Hannan-Quinn criter.	7.588411
F-statistic	9.177050	Durbin-Watson stat	1.960046
Prob(F-statistic)	0.000000		

The Fixed Effect Model test table can show the following regression equation:

Y = C + X1 + X2 + X3 + X4 ……...…...…...….(2)
Y = -2,26 + 0,49 X1 + -0,90 X2 + 0,34 X3 + -0,02 X4…….....…….(3)

Y = Capital Adequacy Ratio
C = Koefisien
X1 = Koefisien Return On Asset (ROA)
X2 = Koefisien Net Interest Margin (NIM)
X3 = Koefisien Operating Expense to Operating Income (OEOI)
X4 = Koefisien Loan to Deposit Ratio (LDR)

The results of the partial test in this study are contained in the following table:

Table 4.
Result of The Partial Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Description
C	-2.257534	7.165494	-0.315056	0.7531	Not signifikan
X1	0.486873	0.998393	0.487657	0.6263	Not signifikan
X2	-0.901988	0.610927	-1.476426	0.1414	Not signifikan
X3	0.34314	0.084293	4.070779	0.0001	Signifikan
X4	-0.022437	0.049465	-0.453588	0.6506	Not signifikan

a. Testing on Return On Assets (ROA)

The Return On Asset (ROA) variable has a statistical test value of 0.486873. While the likelihood is 0.6263 > 0.05 (α) and that implies that measurably ROA has no critical and positive contrast on the Capital Adequacy Ratio. Moreover, the coefficient esteem is 0.486873. Positive relapse coefficient esteem implies that the rising ROA will build CAR as well as the other way around, actually intending that on the off chance that the productivity proportion expands it will build the worth of bank capital as such benefits impact changes in capital. The rising productivity got by the bank will expand the bank's presentation in creating benefits and can influence the expansion in bank capital.

b. Testing on Net Interest Margin (NIM)

The measurable test for the Net Interest Margin (NIM) variable is - 1.476426. while the likelihood is 0.1414 > 0.05 (α) and that implies that genuinely the NIM information has no huge and negative distinction on the Capital Adequacy Ratio. Besides, the coefficient esteem is - 0.901988. The aftereffects of the review show that the expansion in bank effectiveness in the utilization of useful resources doesn't essentially influence the capacity of banks to give least required capital. Even though a portion of capital is taken from profits, the insufficient NIM value has little effect on the ability to provide minimum capital. This is conceivable in light of the fact that the amount of interest pay isn't excessively huge contrasted with the organization's net gain which additionally incorporates other working pay

c. Testing on Operating Expense of Operating Income (OEOI)

The factual test for the variable Operating Expense Operating Income (OEOI) is 4.070779. The probability, which is 0.0001 0.05 (), indicates that the OEOI has a statistically significant and positive impact on the Capital Adequacy Ratio. Besides, the coefficient esteem is 0.34314. Thus, on the off chance that the OEOI increments by 1%, the Capital Adequacy Ratio Proportion will increment by 0.01 percent. This is because, if the bank runs its business effectively, it will see an increase in profit, which in turn will lead to an increase in the CAR. Banks that have some control over their functional costs will get most extreme benefit on the grounds that the bank's working pay surpasses the working costs caused and this benefit will build the bank's capital (Bukian and Sudiartha, 2016).

d. Testing on Loan to Deposit Ratio (LDR)

The Loan to Deposit Ratio (LDR) variable has a statistical test value of -0.453588. LDR does not have a statistically significant and negative impact on the Capital Adequacy Ratio if the probability is 0.6506 0.05 (). Besides, the coefficient esteem is - 0.022437. This happens in light of the fact that the higher the LDR, the lower the CAR since banks utilize existing assets for loaning. Hypothetically, assuming the LDR increments, it intends that there is an expansion in all out credits conceded with a higher rate contrasted with the rate expansion in all out outsider supports which brings about an expansion in Risk Weighted Assets (RWA) which makes cause CAR to decrease. (Cahyono and Anggraini, 2015).

Table 5.
Simultan F Test

R-squared	0.668142	Mean dependent var	23.77203
Adjusted R-squared	0.595336	S.D. dependent var	13.69440
S.E. of regression	8.711452	Akaike info criterion	7.331296
Sum squared resid	14874.32	Schwarz criterion	7.969414
Log likelihood	-835.7556	Hannan-Quinn criter.	7.588411
F-statistic	9.177050	Durbin-Watson stat	1.960046
Prob(F-statistic)	0.000000		

The results of the hypothesis test show the Prob (F-statistic) of 0.000000, because the prob is < 5%, the hypothesis is accepted that there is a significant impact of ROA, Net Interest Margin (NIM), Operating Expense of Operating Income (OEOI) , and Loan to Deposit Ratio (LDR) to Capital Adequacy Ratio.

This study examines determinants of Capital Adequacy Ratio Bank in Indonesia. The findings suggest that Bank must pay attention to Return On Asset, Operating Expense, Operating Income and Loan to Deposit Ratio to obtain optimal Capital Adequacy Ratio specifically to comply with the provisions of the bank's CAR based on FSA regulations as the basis indicator for the bank's soundness level.

5. Conclusion

Based on the results of the research discussion, it can be concluded that in
The results of the hypothesis test show the Prob (F-statistic) of 0.000000, because the prob is < 5%, the hypothesis is accepted that there is a significant effect of Return On Assets (ROA), Net Interest Margin (NIM), Operating Expense of Operating Income (OEOI) , and Loan to Deposit Ratio (LDR) to Capital Adequacy Ratio. In Conclusion, the empirical data from this study propose that Return On Asset , Net Interest Margin, Operating Expense Operating Income and Loan to Deposit Ratio are important variable that influence's bank Capital Adequacy Ratio. Based on these findings are expected to be useful for potential investors as additional information and considerations in making investment decisions in banking companies and also can be used as a basis planning for fund management in order to obtain optimum Capital Adequacy Ratio. The limitations in this study is the number of research samples is limited. Further researchers can add other variables that can affect bank Capital Adequacy Ratio.

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