Effect of Capital Adequacy Ratio (CAR), Net Interest Margins (NIM), and Loans to Deposit Ratio (LDR) On Profitability (Case Study in Banking Companies Listed on the Exchange Effect Indonesia Period 2017-2019)

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ABSTRACT: The purpose of this study is to see and analyze the effect of Capital Adequacy Ratio (CAR), NetInterest Margin (NIM), and Loan to Deposit Ratio (LDR) on the profitability (ROA) of banking companies listed on the Indonesia Stock Exchange (IDX) for the 2017 period. -2019. this type of research is a quantitative study using secondary data. The data research method in this research is thedocumentation method. the sample of this research is banking companies listed on the Indonesia StockExchange for the period 2017-2019 using purposive sampling. Samples that met the criteria in this studywere 31 banks. The data analysis method in this research is multiple linear regression analysis, simultaneous test and partial test.

The results of the study simultaneously CAR, NIM, and LDR have a significant effect on banks profitability. Meanwhile, partially CAR has no effect on bank profitability (ROA), while NIM has a significant effect on bank profitability (ROA), and LDR has no effect on bank profitability (ROAs).

KEYWORDS: Capital Adequacy Ratio (CAR), Net Interest margins (NIM), loans to Deposits Ratio ,profitability (ROA)

I. INTRODUCTION

In the economy of a country, the role of banks is very important as intermediary institutions finance. Banks play an important role as an intermediary party between parties with excess funds andparty which lack fund. In except in Indonesia with through management fund whichsaved then the funds are used to improve the welfare of the community. So thatits existence becomes the backbone that plays an important role as a support for the economy of a country country.

If there is a failure in the banking sector it can lead to financial instability which bother system economy national. By because that level health bank must attention for a better economy. Healthy or not a bank can be seen through performance something bank. Performance bank could be measured and seen through report finance with using the financial ratios method. The ultimate goal to be achieved by a company, no except company banking is obtain profit, level ability bank in generating profits can be measured using profitability ratios through financial reports bank which concerned.

Ratio profitability give size level effectiveness management something company. Profitability in the banking world can be calculated using *Return on Assets* (ROA). *Return on Assets* (ROA) focuses on the company's ability to earn deep *earnings* the company's operations by utilizing its assets. In this research factors that influence bank performance as measured by ROA (*Return on Assets*). ability to maintain sufficiency capital proxied by CAR (*Capital Adequacy ratios*), ability in manage ethnic group flower which proxied with NIM (*Net Interest margins*),and the ability to maintain its liquidity level which is proxied by LDR (*Loan to Deposit ratios*).

On table 1. dynamics movement ratios finance banking from period year 2017until 2019 recorded in table following this:

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Table 1. Condition Bank General 2017-2019

Ratio	2017	2018	2019
ROA (%)	2.38	2.50	2.47
CAR (%)	23,18	22.89	23,40
NIM (%)	5,15	5.00	4.91
LDR (%)	89.56	94.04	94,43

Source: Reports Finance OJK Annual

From table 1., could is known that average ROA throughout year 2017 until 2018 ROA experience increase as big 0.12%. Ratio return on Assets (ROA) on year 2018 showing 2.50% and in year 2019 showing 2.47%, Thing this showing exists decline as big 0.03% on year2019.

The average *Capital Adequacy Ratio* (CAR) in 2017 was 23.18%, then experienced decreased by 0.29% to 22.89% in 2018. In 2019 CAR increased by 0.51%, to 23.40%. Looking at the CAR and ROA movements, it can be seen that this has occurred inconsistency between the two ratios. Where in 2018, where CAR has decreased, but ROA experience increase.

If seen consistency data, score average ROA and NIM showing exists inconsistency. Inyear 2017 and 2018, ROA own connection which no consistent to NIM on year the,where ROA is experiencing an increase of 0.12%, but at the same time NIM experience a decrease of 0.15%.

The average *Loan to Deposit Ratio* (LDR) in 2017 was 89.56% and the LDR in in 2018 of 94.04%, it can be seen that the LDR throughout 2017 to 2018 experienced an increase of 4.48%. Throughout 2018 to 2019 the LDR has increased again by 0.39%. There is an inconsistent relationship between LDR and ROA. In the year of 2018-2019 when LDR has increased but at the same time ROA has decreased by 0.03%.

Based on the background above, the researcher is interested in taking the title, "The Effect of *Capital Adequacy Ratio* (CAR), *Net Interest Margin* (NIM), and *Loan to Deposit Ratio* (LDR) to Profitability (Studies Case on Company Banking which Registered in Exchange Effect Indonesia Period2017-2019).

II. LITERATURE REVIEW
Ratio Profitability

The profitability ratio is a ratio to assess the company's ability to search profit. Use ratio profitability could conducted with use ratio Amongvarious components that exist in financial reports, especially balance sheet financial reports and profit reports make a loss. Measurements can be made for several operating periods. The goal is to be visible the development of the company within a certain time span, either decreasing or increasing, all at once find the cause of the change (Cashmere, 2019: 198).

To measure the profitability ratios commonly used is ROA (*Return on Assets*). One measure to see banking financial performance is through ROA (*Return on Assets*). ROA (*Return on Assets*) is used as a measure of financial performance and is used as a variable dependent because ROA is used to measure the effectiveness of the company in producing profit with utilise assets which owned. According to Cashmere (2019: 203) ROA is resultsreturn investment or more known ROI (*Return on investment*) or *returns on total assets* which is ratio which show results (*returns*) on total assets which used in company.The greater the ROA, the better the financial performance, because of the rate of return (*returns*) the more big. If ROA increase, means profitability company increase, so thatimpact finally is welfare improvement which enjoyed by holder share.

According to Bank Indonesia circular letter number 13/24/DPNP dated 25 October 2011 The ROA set for banks in Indonesia is at least 1.5%. According to Dahlan Siamat (2005: 213) ROA could counted with the formula:

Factors affecting ROA which is a measure of profitability used by researchers, including: CAR (*Capital Adequacy Ratio*), NIM (*Net Interest Margin*), and LDR (*Loan to Deposit Ratio*)

$$ROA = \frac{\text{Laba sebelum pajak}}{\text{Total aset}} \times 100\%$$

CAR (*Capital Adequacy Ratio*)

Bank Indonesia stipulates CAR (*Capital Adequacy Ratio*), namely the obligation to provide capital minimum that must always be maintained by each bank as a certain proportion of total assets Weighted According Risk (ATMR). According to Cashmere (2019:

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234) CAR is a ratio which used to measure capital and allowance for possible losses in bearing credit, especially risk which happen because flower fail billed. The more big ratio the will the more goodcapital position (Achmad, 2003).

The higher the capital ratio shows the higher the capital owned by the bank,so that the bank is stronger to bear the risk of each credit given. Bank capital increased and increased lending shows that banks are able to finance operation bank, and circumstances profitable this could give contribution to bank company profitability. However, according to Dahlan Siamat (2005:288), regardless of the amount of capitalbank, if the bank's productive asset portfolio is managed in an unhealthy manner, for example credit quality many are classified as unhealthy, it is difficult for a bank to survive. Bank Indonesia issuesregulation about standard level adequacy capital which where in Bank regulations Indonesia Number 15/ 12 /PBI/2013 concerning the Minimum Capital Adequacy Requirement for Commercial Banks has been stated that the bank must provide minimum capital of 8% (eight percent) of the Weighted Assets By Risk (ATMR) for bank. According to bye Siamat (2005: 209) CAR countable with formula:

NIM (*Net Interest Margins*)

According to Dendawijaya (2006:122) *Net Interest Margin* (NIM) is the ratio used for measuring the ability of bank management to manage its earning assets to produce net interest income. The greater this ratio, the higher the interest income on assets productive which managed bank, so that's a possibility something bank in condition problem small.

$$CAR = \frac{\text{Modal Bank}}{\text{ATMR}} \text{ X } 100\%$$

Net interest income is obtained from interest income minus interest expense. For parties bank management, the NIM ratio shows how much net interest the bank earns, as distributor fund to party which need. Because activity effort the main thing is the, so ratioNIM is an important factor for the survival of the bank, and the management bank must always strive so that the NIM ratio is in a high enough position, so that profits are obtained will permanent tall. With height profit which obtained, so performance finance the willincrease also.

The standard set for the NIM ratio according to Bank Indonesia Circular No. 6/23/DPNP year 2004 is more from 3%. According to bye Siamat (2005: 213) for count NIM use formula:

$$NIM = \frac{\text{Pendapatan Bunga Bersih}}{\text{Aktiva Produktif}} \text{ X } 100\%$$

LDR (*Loans to Deposit Ratio*)

The main objective of banking is to generate profits from credit activities, so it is necessary noticed its liquidity. Wrong one ratio which often used for analyze level liquiditynamely LDRs. LDR (*Loan to Deposit Ratio*) is the ratio used to measure composition the amount of credit given is compared to the amount of public funds and their own capital used (Cashmere, 2019: 227).

According to Dahlan Siamat (2005: 344), if the value of the LDR ratio is high, it describes less good liquidity position of the bank. However, if the LDR ratio is low, it means that the bank cannot manage it its intermediary function optimally, due to the large number of idle *funds* so that zoom out chance bank for obtain reception which more big (Aulia Nazala:2016). Then Bank Indonesia issued a circular letter Number 6/23/DNDP year 2004 safe limit of a bank's LDR is between 85% to 100%. If a bank is in the range of 85% up to 100%, the bank is able to channel credit effectively, and profits are earned the bank will increase, so that profitability will also increase. So, the higher the *Loan to Deposit Ratio* (LDR), the bank's profit will increase (assuming the bank is able distribute the credit with effective), with increasing profit banks then performance banks too increase.

The LDR ratio is calculated by comparing credit with third party funds where credit isused is the total credit given to third parties, and does not include credit given to party other. Whereas fund party third is giro, savings, and deposit whichno including interbank. For count LDR using the formula:

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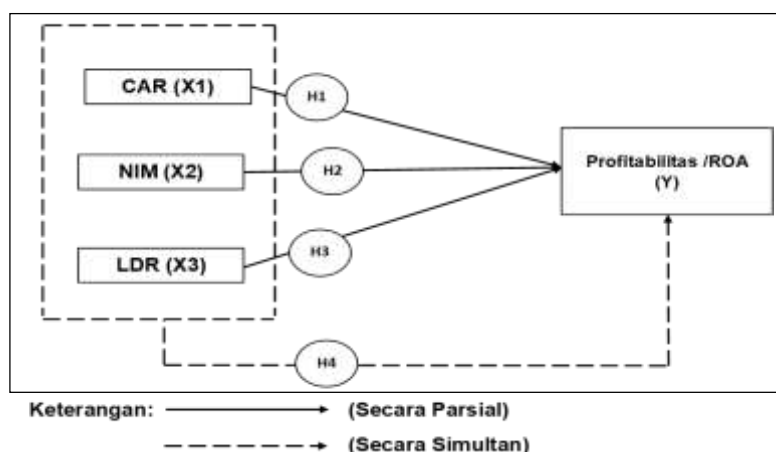
Framework Thinking

Image 1. Framework Thinking

RESEARCH METHODS

Type Study

The type of research used is descriptive quantitative research. Quantitative research is research that is completed with statistical calculations, while the type of research is descriptiveis research conducted to determine the value of each variable, either one variable or more its nature independent for get description about variables the (Wiratna, 2018:172).

Definition operational Variable

On research this variable dependent is profitability (Y). Whereas variable (X) are *Capital Adequacy Ratio* (CAR) (X1), *Net Interest Margin* (NIM) (X2), and *loans to Deposit Ratio* (LDR) (X3).

Population and Sample

The data population in this study is that there are 44 banking companies listed on the Stock ExchangeIndonesia on year 2017-2019. And for sample in study this is 31 company banking listed on the Indonesia Stock Exchange that meets the criteria set for be a sample. The data collection technique used in this research is to use purposive sampling technique, the criteria for sampling were determined in this study are as follows: 1) Banking companies listed on the Indonesia Stock Exchange for three years consecutive years, namely from 2017 to 2019. 2) Banking companies that registered on the Indonesia Stock Exchange which has issued financial reports for 3 consecutive years also (2017-2019) accordingly with data which needed in variable study.

$$LDR = \frac{\text{Total Kredit}}{\text{Dana pihak ketiga}} \text{ X } 100\%$$

RESULTS AND DISCUSSION

Analysis Linear Regression Double

Analysis regression double useful for know there is nope connection variable independent of the dependent variable. The independent variables in this study are CAR, NIM, and LDR whereas variable dependent in study this is ROA. Based on results processingdata using spss obtained summary as following:

Table 2. Linear Regression Test Double

Coefficients [a]

Model	Unstandardized Coefficients		standardized Coefficients	t	Sig.
	B	std. Error	Betas		
(Constant)	-.548	.710		-.771	.443

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1	CAR	-9.709E-005	.016	-.001	-.006	.995
	NIM	.282	072	.391	3,930	.000
	LDR	007	007	094	.950	.345

a. dependent Variables: ROA
Source: *outputs* spss 20.

Based on the results of the output table data above, the regression equation is as follows:Y = a + B1X1 + B2X2 +B3X3 +e
ROA = -3.831 + 0.228 X1 + 1.059 X2 + 0.375 X3

Test Partial (Test t)

In this study, the partial influence of each independent variable was tested formulated by CAR, NIM, and LDR on the dependent variable formulated by ROA. As for result test t of each variable is as following:

Table 3. Test Partial (t test)
Coefficients [a]

Model	Unstandardized Coefficients		standardized Coefficients	t	Sig.
	B	std. Error	Betas		
(Constant)	-.548	.710		-.771	.443
1 CAR	-9.709E-005	.016	-.001	-.006	.995
NIM	.282	072	.391	3,930	.000
LDR	007	007	094	.950	.345

a.   dependent Variables: ROA
Source: outputs spss 20.

Based on t table provision a = 0.05:2 = 0.025 with df = n – 2 (df = 93 – 2 => 91) and fromtable t found at 1.98638. Then it can be seen the effect of each variable as follows:

1. Influence CAR (X1) on ROA (Y)

The statistical results of the t analysis test for the *Capital Adequacy Ratio* (CAR) variable were obtained t value count (-0.006) < t table (1.98638) and with a significance level of 0.995 > 0.05, it means H_0 be accepted and H_a rejected. With results this could concluded that in a manner Partial variable CAR no effect on variable ROA.

2. Influence NIM (X2) to ROA (Y)

The statistical results of the t analysis test for the *Net Interest Margin* (NIM) variable obtained a value t count (3,930) > t table (1.98638) and with level significance 0.00 > 0.05, means H_0 rejected andH a be accepted. With results this could concluded that in a manner Partial variable NIM influentialpositive significant to variable ROA.

3. Influence LDR (X3) on ROA (Y)

The statistical results of the t analysis test for the *Loan to Deposit Ratio* (LDR) variable obtained a valuet count (0.950) < t table (1.98638) and with a significance level of 0.345 > 0.05, it means that H_0 be accepted and H_a rejected. With results this could concluded that in a manner Partial variable LDR no effect on variable ROA.

Test Appropriateness Model (Test F)

Test F used for test influence variable free in a manner together to variablebound. Test F can explained by using analysis of variance (ANNOVAS).

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Table 4. Simultaneous Test (Test F)

ANOVA [a]

Model		sum of Squares	df	Means Square	F	Sig.
1	Regression	25,602	3	8,534	6,285	.001 [b]
	residual	120,852	89	1,358		
	Total	146,454	92			

a. dependent Variables: ROA

b. Predictors: (Constant), LDR CAR, NIM

Source: outputs spss 20.

Based on table on, obtained test hypothesis in a manner simultaneous (Test F) score F $_{count}$ (6,285) > F table (2.71) and level significance a = 0.001, so 0.001 < 0.05. With results this could concluded thatindependent variables (CAR, NIM, and LDR) together have a significant effect on dependent variable (ROA).

Analysis Coefficient Determination (R ^{2})

Under this results analysis coefficient determination is as following:

Table 5. Coefficient Determination

Model Summary [b]

Model	R	R Square	djusted RSquare	. Error of the Estimates
1	.418 [a]	.175	.147	1.16528

a. Predictors: (Constant), LDR CAR, NIM

b.   dependent Variables: ROA

Source: *outputs* spss 20.

Based on the test results of the coefficient of determination in the table above, the value of R Square is in the regression model obtained 0.175. This means the contribution made to CAR, NIM, and LDR collectively to bank profitability of 17.5%. Hence the resulting influencethe CAR, NIM, and LDR variables on ROA are as much as 17.5%. While the remaining 82.5%. explained variable else that no put in model study this.

Influence *Capital adequacy Ratio* (CAR) To Profitability (ROA)

Based on table 3, it is known that the statistical results of the t analysis test for the Capital Adequacy variable are known Ratio (CAR) obtained score tcount (0.472) < ttable (2.04523) and with level significance 0.641>0.05, so H0 be accepted and Ha rejected it means variable CAR no influential to variable ROA.However seen from capital Bank general on period research shows very good, where the value of the CAR ratio is more than far above the minimum bank CAR standard determined by BI. This matter in accordance with the theory of Dahlan Siamat (2005:288), regardless of the size of the bank's capital, if the portfolio productive assets of banks are managed in an unhealthy manner, for example, many credit quality is classified as nothealthy, it is difficult for a bank to survive, in the sense that it will not be able to contribute to level profitability banking concerned. Results study this supported by study Praise sustainable(2018), Nyimas Villa goddess (2017) where variable CAR in a manner Partial no influential to ROAbut different from the results of research conducted by Dewi Nurhayati (2012) who said that variable CAR influential positive and significant on ROA.

Influence *Net Interests margins* (NIM) To Profitability (ROA)

Based on table 3 is known results statistics test analysis t for variable Net Interest margins(NIM) obtained score tcount (2,607) > ttable 56 (2.04523) and with level significance 0.015 > 0.05,so H0 rejected and Ha be accepted it means variable NIM influential significant to variable ROA.Thing this corresponding with theory Dendawijaya (2006:122), that the more big ratio this so increasing income flower on asset productive which managed bank, so that possibility somethingbank in condition problem small, so profit bank (ROA) also will increase. Results study this the same as research conducted by Nurus Saadatul (2017), Ismadi (2019) where a NIM give that influence positive for ROA.

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Influence *loans to Deposits Ratio* (LDR) To Profitability (ROA)

Based on table 3 is known results statistics test analysis t for variable loans to Deposits Ratio(LDR) obtained score tcount (0.516) < ttable (2.04523) and with level its significance 0.610 >0.05, so H0 be accepted and Ha rejected it means variable LDR no influential to variable ROA.Based on score ratio LDR on period study show fluctuating on each

respectively company banking on every the year. There is company banking with score ratio LDRwhich low and there is company banking with score ratio tall. Thing this corresponding with theory DahlanSiamat (2005: 344), if the ratio is high it describes the bad position of bank liquidity. However, if the LDR ratio is low, it means that the bank cannot manage its intermediary function properly optimal, because many fund which unemployed (*idle fund*) so that zoom out chancebank to obtain greater revenue (Aulia Nazala: 2016). Therefore Banks Indonesia issued a circular letter Number 6/23/DNDP of 2004 the safe limit of a bank's LDRis between 85% and 100%. In order for banking companies to obtain profitability, then the value ratio LDR must be guarded so that no too low and no too high.

The results of this study are the same as the research conducted by Puji Lestari (2018) and NurusSaadatul (2017) which states that LDR has no effect on ROA. But different with results study which conducted by goddess Nur Biological (2012) which put forward that LDRhas a positive influence on LDR.

c. Influence CAR, NIM, and LDR kindly Simultaneous To Profitability

Based on the results of research and calculations obtained the magnitude of the simultaneous effect for CAR, NIM, and LDR to ROA is 0.257 or 27.5%. This means that 27.5% ROA is affected bythird variable free CAR, NIM and LDR. Whereas for test hypothesis in a manner simultaneous obtained (TestF) Fcount (3.287) > Ftable (2.71) and a significance level a = 0.037, so 0.037 <0.05. With From these results it can be concluded that the independent variables (CAR, NIM, and LDR) together significant effect on the dependent variable (ROA). The results of this study are in line with the results study before which conducted by Ismadi (2019), Praise sustainable (2018), and Maryati (2017) whichstate that CARs, NIMs and LDRs influential on profitability (ROAs).

The results of the t test showed that CAR did not affect ROA, while NIM influential positive significant to ROA, and LDR no influential to ROA. From From this explanation, it can be concluded that the CAR, NIM, and LDR t tests have an effect which different to price share. Ratio CAR no influential to ROA, becauseregardless of the size of the bank's capital, if the bank's productive asset portfolio is managed in an unhealthy manner, it is difficult for a bank to survive, in the sense that it will not be able to contribute to level profitability banking concerned. Whereas for ratio NIM influential positive significant to ROA, because the more big ratio this so increasing income flower

on productive assets managed by the bank, the bank's profit (ROA) will also increase. And for the ratio LDR has no effect on ROA, because if the ratio value is less than and more than standard LDR value, so will difficult company banking will reach profitability which expected.

Whereas in the F test table it says that the ratio of CAR, NIM, and LDR to ROA. ThingThis is a result which shows that to get profit by using ratio ROA must go hand in hand with CAR, NIM, and LDR, due to increased adequacy capital with ratio CAR, increase income flower on assets productive with ratio NIM,and increasing liquidity with the assumption that banks can channel their credit effectively with ratio LDR will support on income which later distributed to asset and Becomesadder for contribution profit.

CONCLUSION

Based on the results of data analysis from research that has been conducted on CAR, NIM, and LDR to profitability banking which be measured with ROA, so study this could concludedas following: 1) Based on results test t, variable CAR and LDR no influential toprofitability (ROA) of banking companies listed on the Indonesia Stock Exchange. Whereas for the NIM variable has a significant effect on profitability (ROA) in banking companies which are listed on the Indonesia Stock Exchange. 2) Based on the results of the F test, CAR, NIM, and LDR variables has a significant effect on profitability (ROA) in banking companies listed in Exchange Effect Indonesia.

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