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THE EFFECT OF NSFR, LCR, RRR, AND LDR ON CAR OF FOREIGN BANKS IN INDONESIA (Study on Foreign Banks in Indonesia for the Period 2018-2021)

Christopher Marcellino Tejosantoso, Erman Denny Arfinto [1], Foza Hadyu Hasanatina [2]

[1,2] Departemen Manajemen Fakultas Ekonomika dan Bisnis Universitas Diponegoro
Jl. Prof. Soedharto SH Tembalang, Semarang 50239, Phone: +622476486851

ABSTRACT

During the COVID-19 shock, banks have to absorb the impact of economic crisis by supplying vital credit to the corporate sector and households which affect the CAR of the banks. CAR represents the banks' health and can be affected by several liquidity ratios such as NSFR, LCR, RRR, and LDR. This study aims to unravel the effect of NSFR, LCR, RRR, and LDR on Capital Adequacy Ratio (CAR) of foreign banks operating in Indonesia for the period 2018-2021. The sample used in this study consists of 20 foreign banks operating in Indonesia for the period 2018-2021. Multiple regression analysis method is used to analyze the effect of independent variables on the dependent variable. The results of this study show that NSFR, LCR, and RRR partially has a positive and significant effect on CAR. Meanwhile, partially LDR has a positive and insignificant effect on CAR. Simultaneously, NSFR, LCR, RRR, and LDR variables affect CAR of foreign bank operating in Indonesia. Based on Adjusted R Square, simultaneously NSFR, LCR, RRR, and LDR have an effect on the CAR by 81% while the remaining 19% is influenced by other variables that have not been studied.

Keywords:NSFR, LCR, RRR,CAR

INTRODUCTION

During economic crisis such as COVID-19 pandemic, banks have to absorb the impact of economic crisis by supplying vital credit to the corporate sector and households (Demirgüç-Kunt, Pedraza, and Ruiz-Ortega, 2021). Such economic crisis can affect the health of the bank that can be assessed from capital level which according to Van Greuning and Bratanovic (2020), capital indicates the safety and soundness of a bank because capital determines how much bank's capital is able to cover possible losses that may occur and thus provides a foundation for preserving depositor faith in that bank. Moreover, the possible losses that may occur in banking can be caused by liquidity problem that can affect capital. There are several liquidity ratios that can affect CAR positively or negatively such as NSFR, LCR, RRR, and LDR.

Hong et al. (2014) states that NSFR is the ratio of a bank's available stable funding (ASF) compared with its required stable funding (RSF) which can be used for measuring a bank's funding stability over a one-year horizon. The more banks receive stable funding from third parties, the higher the bank's capital. If the bank cannot obtain stable funding from third parties, then the capital held by the bank cannot be sufficient for funding used for bank operations. The research conducted by Sari (2019) found that NSFR has a significant and positive effect on CAR. In addition, using GMM regression, Giordana and Schumacher (2017) found that NSFR has a significant and positive effect on CAR. However, Carsamer et al. (2021) found that NSFR has no effect on capital.

Hong et al. (2014) explain that liquidity coverage ratio (LCR) is a ratio which measures proportion between high-quality liquid assets to the total net cash outflows over a one-month horizon. If the LCR ratio is high, it means that the bank has HQLA stock containing high assets or cash that can be used as a capital to fund daily activities of the bank. On the contrary, if LCR ratio

[1] *Corresponding author*
[2] *Corresponding author*

is low, it indicates that the bank has low high-quality liquid assets which means that the bank's capital to fund daily activities is also low. Irawan and Anggono (2015) found that LCR does not have any significant effect on CAR. On the other hand, Dolgun and Mirakhor (2020) found mixed relationships between LCR and CAR. Dolgun and Mirakhor (2020) found that three out of four bank samples indicate that LCR has a negative relationship with CAR and one bank sample indicates that LCR is significantly and positively influencing CAR. In the other hand, Giordana and Schumacher (2017) found that LCR has a positive and not significant effect on CAR using GMM regression. However, Carsamer et al. (2021) found that LCR has a significant and negative impact on capital.

Ismal and Hidayat (2016) states that RRR is the minimum funds or deposits that must be maintained in each bank account and stored in central bank. In addition, RRR reflects the ability of a bank in collecting TPF or deposits especially the deposit rate (Ismal and Hidayat, 2016). If a bank has a higher funds or TPF, the CAR level of the bank will also increases. The higher the RRR, the greater the bank's liquidity is guaranteed by BI, so that if there is a liquidity problem, the bank can borrow directly from BI which will also increase the bank's capital. Widjanarko (2005) found that RRR does not have any significant effect on CAR. However, Shitawati (2006) found that RRR have a positive and significant effect on CAR.

The LDR is the proportion of a bank's total credit granted to its total cash received. The loan-to-deposit ratio measures a bank's ability to repay depositor withdrawals using credit as a source of liquidity. In other words, how far the provision of credit to lenders can offset the obligation to immediately fulfill the request of depositors who want to withdraw their money that has been used by the bank to provide credit. The higher LDR, the higher bank's liquidity is. High LDR indicates higher loans and higher Risk Weighted Asset (RWA) which leads to higher capital requirement for repaying depositor (Polat and Al-Khalaf, 2014). Abusharba et al. (2013) found that LDR has a positive and significant effect on CAR. On the other hand, in Saudi Arabia, Polat and Al-Khalaf (2014) found that LDR is affecting CAR negatively and significantly. Moreover, Widjanarko (2005) and Shitawati (2006) also found that LDR has a significant and negative influence on CAR.

Table 1
Research Gap

Variable		Author	Result
Independent	Dependent		
NSFR	CAR	Giordana and Schumacher (2017)	Significant and positive
		Sari (2019)	Significant and positive
NSFR	Capital	Carsamer et al. (2021)	No significant effect
LCR	CAR	Giordana and Schumacher (2017)	Not significant and positive
		Irawan and Anggono (2015)	No significant effect
		Dolgun and Mirakhor (2020)	Mixed
LCR	Capital	Carsamer et al. (2021)	Significant and negative
RRR	CAR	Widjanarko (2005)	No significant effect
		Shitawati (2006)	Significant and positive
LDR	CAR	Abusharba et al. (2013)	Significant and positive
		Polat and Al-Khalaf (2014)	Significant and negative
		Widjanarko (2005)	Significant and negative
		Shitawati (2006)	Significant and negative

The previous researches are inconclusive because the objects of observation used on those studies came from different countries and with different banks. In addition, there are also various external factors that could affect those studies such as inflation, GDP, policies, and others (Fahlevi et al., 2019). These mixed and inconsistent results from previous researches create an empirical gap

regarding the effect of NSFR, LCR, RRR and LDR on Capital Adequacy Ratio (CAR), so a more in-depth justification is needed to bridge those gaps.

This study uses foreign bank in Indonesia as the research object because foreign banks have a good ability to withstand adverse shocks due to branch companies can mobilize and redirect capital from their parent company or other branches (Fiechter et al., 2011). This means that the foreign bank in Indonesia have a good capital structure and it will be an interesting object since this study is using Capital Adequacy Ratio as the proxy to measure the health and safety of banks.

Apart from the contradictory evidence from the previous researches, the average of NSFR, LCR, RRR, LDR, and CAR of foreign banks in Indonesia has fluctuated over the last several years as can be seen in Table 2 below.

Table 2
The Average of NSFR, LCR, RRR, LDR, and CAR of Foreign Banks in Indonesia for Period 2018-2021 (%)

	NSFR	LCR	RRR	LDR	CAR
2018	132.74	289.39	7.70	128.53	29.76
2019	135.87	379.20	7.27	116.54	32.91
2020	150.95	491.57	6.05	135.51	35.59
2021	164.22	2071.78	6.96	20526.91	43.00

Source: Processed Data

From the Table 1.2, it can be seen that the average NSFR of foreign banks in Indonesia increased by 3.13% and the average CAR of foreign banks in Indonesia increased by 3.15% from 2018 to 2019. This indicates that NSFR has a positive relationship with CAR because the CAR increases when NSFR increases. This is in line with the findings of Giordana and Schumacher (2017) and Sari (2019) which stated that NSFR is affecting CAR positively. On the other hand, this discovery contradicts the findings of Carsamer et al. (2021) which stated that NSFR has no significant effect on capital.

Furthermore, the average LCR of foreign banks in Indonesia increased by 89.81% and the average CAR of foreign banks in Indonesia increased by 3.15% from 2018 to 2019. This indicates that NSFR has a positive relationship with CAR because the CAR increases when NSFR increases. This is in line with the findings of Giordana and Schumacher (2017) which stated that LCR has a positive effect on CAR but contradict the discovery of Carsamer et al. (2021) which stated that LCR has a negative effect on capital. In addition, this finding also contradicts the discovery of Irawan and Anggono (2015) which found that LCR has no significant effect on CAR.

The average RRR of foreign banks in Indonesia decreased by 0.43% but the average CAR of foreign banks in Indonesia increased by 3.15% from 2018 to 2019. This indicates that RRR has a negative relationship with CAR because the CAR increases when RRR decreases in 2018-2019. This is finding contradicts the discovery of Widjanarko (2005) which stated that RRR has no significant effect on CAR. However, in 2020-2021, the average RRR of foreign banks in Indonesia increased by 0.91% and the average CAR of foreign banks in Indonesia increased by 7.41% which indicates that RRR has a positive effect on CAR because the CAR increases as the RRR increases. This phenomenon contradicts the discovery in 2018-2019 which indicates that RRR has a negative relationship with CAR and also contradicts the discovery of Widjanarko (2005) which stated that RRR has no significant effect on CAR.

The average LDR of foreign banks in Indonesia decreased by 11.99% but the average CAR of foreign banks in Indonesia increased by 3.15% from 2018 to 2019. This indicates that LDR has a negative relationship with CAR because the CAR increases when LDR decreases in 2018-2019. This is finding contradicts the discovery of Abusharba et al. (2013) which found that LDR has a significant and positive effect on CAR. However, in 2019-2020, the average LDR of foreign banks in Indonesia increased by 18.98% and the average CAR of foreign banks in Indonesia increased by 2.68% which indicates that LDR has a positive effect on CAR because the CAR increases as the LDR increases. This phenomenon contradicts the discovery in 2018-2019 which indicates that LDR has a negative relationship with CAR and also contradicts the discovery of Polat and Al-

Khalaf (2014), Widjanarko (2005), Shitawati (2006) who stated that LDR has a negative effect on CAR

Because of the mixed results from previous researches and phenomenon gap above, a more in-depth justification is needed to bridge those gaps. In addition, to the best of my knowledge, none of the existing studies that have explored the effect of NSFR, LCR, RRR, and LDR on Capital Adequacy Ratio (CAR) of foreign banks operating in Indonesia for the period 2018-2021. The evidence of research void can be seen on Appendix 1, where no research has explored the effect of NSFR, LCR, RRR, and LDR on the Capital Adequacy Ratio (CAR) using foreign banks operating in Indonesia for the period 2018-2021 as the object of the observation. Therefore, to bridge those gaps, this study aims to unravel the effect of NSFR, LCR, RRR, and LDR on Capital Adequacy Ratio (CAR) of foreign banks operating in Indonesia for the period 2018-2021.

Research Objectives

1. To analyze the effect of NSFR on CAR of foreign banks in Indonesia.
2. To analyze the effect of LCR on CAR of foreign banks in Indonesia.
3. To analyze the effect of RRR on CAR of foreign banks in Indonesia.
4. To analyze the effect of LDR on CAR of foreign banks in Indonesia.

THEORETICAL FRAMEWORK AND HYPOTHESIS FORMULATION

During economic crisis such as COVID-19 pandemic, banks have to absorb the impact of economic crisis by supplying vital credit to the corporate sector and households (Demirgüç-Kunt, Pedraza, and Ruiz-Ortega, 2021). This causes liquidity problem that can affect capital. There are several liquidity ratios that can affect CAR such as NSFR, LCR, RRR, and LDR.

The Effect of NSFR on CAR

Hong et al. (2014) states that NSFR is the ratio of a bank's available stable funding (ASF) compared with its required stable funding (RSF) which can be used for measuring a bank's funding stability over a one-year horizon. The more banks receive stable funding from third parties, the higher the bank's capital. If the bank cannot obtain stable funding from third parties, then the capital held by the bank cannot be sufficient for funding used for bank operations. Therefore, it can be concluded that NSFR has a positive effect on CAR. This is the same with the studies conducted by Giordana and Schumacher (2017) and Sari (2019).

H1: NSFR has a positive effect on CAR of foreign bank branches operating in Indonesia.

The Effect of LCR on CAR

Hong et al. (2014) explain that liquidity coverage ratio (LCR) is a ratio which measures proportion between high-quality liquid assets to the total net cash outflows over a one-month horizon. If the LCR ratio is high, it means that the bank has HQLA stock containing high assets or cash that can be used as a capital to fund daily activities of the bank. On the contrary, if the LCR ratio is low, it indicates that the bank has low high-quality liquid assets which means that the bank's capital to fund daily activities is also low. Therefore, it can be concluded that LCR has a positive effect on CAR. This is in line with the study conducted by Giordana and Schumacher (2017).

H2: LCR has a positive effect on CAR of foreign bank branches operating in Indonesia.

The Effect of RRR on CAR

Reserve Requirement Ratio (RRR) is the level of liquidity guaranteed by the central bank (Bank Indonesia) as indicated by the amount of demand deposits deposited by banks to BI. The higher the RRR, the greater the bank's liquidity is guaranteed by BI, so that if there is a liquidity problem, the bank can borrow directly from BI which will also increase the bank's capital. With the increase in RRR, the bank's liquidity condition will be better and this has an impact on increasing CAR (Muljono, 1995). Therefore, it can be concluded that RRR has a positive effect on CAR. This is in line with the research done by Shitawati (2006).

H3: Reserve Requirement Ratio (RRR) has a positive effect on CAR of foreign banks operating in Indonesia.

The Effect of LDR on CAR

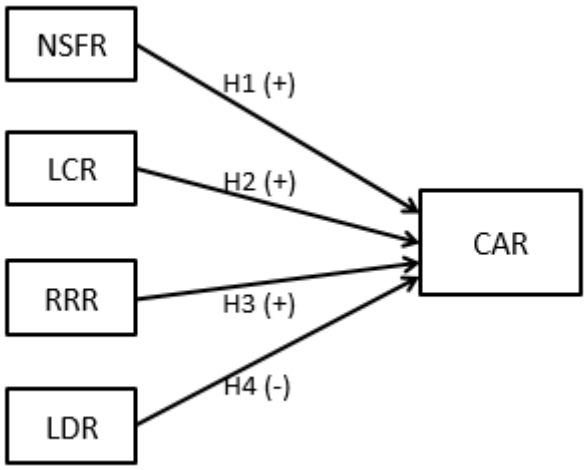
The LDR is the proportion of a bank's total credit granted to its total cash received. The loan-to-deposit ratio measures a bank's ability to repay depositor withdrawals using credit as a source of liquidity. In other words, how far the provision of credit to lenders can offset the obligation to immediately fulfill the request of depositors who want to withdraw their money that has been used by the bank to provide credit.

High LDR indicates higher loans and higher Risk Weighted Asset (RWA) which leads to higher capital requirement for repaying depositor (Polat and Al-Khalaf, 2014). Loan is the numerator for LDR and Capital is the numerator for CAR. As loans increase, the capital level will decrease because part of the capital will be used to fund the loan given to the lenders. The denominator of LDR is Third Party Funds (TPF) and the denominator of CAR is RWA. When TPF increases, the RWA will be decreased. This is because when the bank has more deposit, the RWA will be decreased. These indicate that when LDR increases, the CAR will decrease. Hence, it can be concluded that LDR has a negative effect on CAR. This is in line with the research done by Polat and Al-Khalaf (2014), Widjanarko (2005), and Shitawati (2006).

H4: LDR has a negative effect on CAR of of foreign banks operating in Indonesia.

Theoretical Framework

Figure 1
The Effect of NSFR, LCR, RRR, and LDR on CAR of Foreign Bank Operating in Indonesia



RESEARCH METHOD

This research uses four independent variables and one dependent variable. NSFR, LCR, RRR, and LDR are the independent variables in this research. The dependent variable used in this study is CAR. This research uses branch offices of a foreign bank domiciled abroad and operating in Indonesia which are listed in OJK during 2018-2021 as the research samples. The secondary data in this research was processed using IBM SPSS Statistics 25 software. The data was analyzed using classic assumption tests, multiple linear regression analysis. The hypotheses will be analyzed using T, F, and R^2 tests. The model for multiple linear regression is as follows:

$$Y = a + b1X1 + b2X2 + b3X3 + b4X4 + b5X5 + e$$

Explanation:

Y	= Return on Asset (ROA)
a	= constant
X1	= Non Performing Loan (NPL)
X2	= Capital Adequacy Ratio (CAR)
X3	= Net Interest Margin (NIM)
X4	= Loan to Deposit Ratio (LDR)
X5	= Debt to Equity Ratio (DER)
b1, …, bn	= Regression Coefficient
e	= error term

RESULTS AND DISCUSSION

Descriptive Analysis

Table 3
Descriptive Statistic for NSFR, LCR, RRR, LDR, and CAR

	N	Minimum	Maximum	Mean	Std. Deviation
NSFR	65	104.28	256.64	138.0560	31.87283
LCR	65	137.47	853.64	350.3280	195.49230
RRR	65	3.02	44.61	6.9689	5.63020
LDR	65	44.54	195.55	95.7602	30.77738
CAR	65	15.37	88.19	29.5837	14.54501
Valid N (listwise)	65				

Source: Processed data

Table 3 indicates that all variables are evenly distributed because the mean is bigger than the standard deviation.

Multiple Linear Regression Analysis

Table 4
Multiple Linear Regression Result

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-22.942	5.047		-4.546	.000
	NSFR	.259	.036	.567	7.209	.000
	LCR	.021	.005	.280	3.897	.000
	RRR	.756	.161	.292	4.693	.000
	LDR	.044	.028	.093	1.580	.119
a. Dependent Variable: CAR						

Source: Processed secondary data, 2022

From the Table 4 above, by paying attention to the numbers in the Unstandardized Coefficients Beta column, it can be seen that the coefficient for the independent variable X1(NSFR) is 0.259, X2(LCR) is 0.021, X3(RRR) is 0.756, X4(LDR) is 0.044 and a constant of -22.942. Therefore, the regression equation model obtained is as follow:

Y = -22.942 + 0.259 NSFR + 0,021 LCR + 0.756 RRR + 0.044 LDR + E

From the regression equation above, several things can be interpreted:

1. The constant value of the equation above is -22.942. This means that if X1(NSFR), X2(LCR), X3(RRR) and X4(LDR) have a value of 0 then the CAR value is -22.942.
2. The NSFR variable has a regression coefficient value of 0.259, which means a positive coefficient value indicates that the NSFR has a positive effect on CAR. This illustrates that every 1% increase in NSFR will increase CAR by 0.259 when other variables are considered constant.
3. The LCR variable has a regression coefficient value of 0.021, which means a positive coefficient value indicates that the LCR has a positive effect on CAR. This illustrates that every 1% increase in LCR will increase CAR by 0.021 when other variables are considered constant.
4. The RRR variable has a regression coefficient value of 0.756, which means a positive coefficient value indicates that the RRR has a positive effect on CAR. This illustrates that every 1% increase in RRR will increase CAR by 0.756 when other variables are considered constant.
5. The LDR variable has a regression coefficient value of 0.044, which means a positive coefficient value indicates that the LDR has a positive effect on CAR. This illustrates that every 1% increase in LDR will increase CAR by 0.044 when other variables are considered constant.

Hypotheses Testing

T Statistical Test (Partial)

Table 5
T Statistical Test (Partial) Result

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-22.942	5.047		-4.546	.000
	NSFR	.259	.036	.567	7.209	.000
	LCR	.021	.005	.280	3.897	.000
	RRR	.756	.161	.292	4.693	.000
	LDR	.044	.028	.093	1.580	.119
a. Dependent Variable: CAR						

Source: Processed secondary data, 2022

Based on the calculation of T table and Table 5 above, it can be seen the effect of each variable as follows:

a) The effect of NSFR on CAR
From the coefficients table, the T value of the NSFR variable is 7.209, meaning that T value > T table (7.209 > 2.00030) and a significant value of 0.000 < 0.05. Thus, the results show that H1 is accepted, meaning that partially the NSFR variable has a positive and significant effect on the CAR of foreign bank operating in Indonesia.

b) The effect of LCR on CAR
From the coefficients table, the T value of the LCR variable is 3.897, meaning that T value > T table (3.897 > 2.00030) and a significant value of 0.000 < 0.05. Thus, the results show that H2 is accepted, meaning that partially the LCR variable has a positive and significant effect on the CAR of foreign bank operating in Indonesia.

c) The effect of RRR on CAR
From the coefficients table, the T value of the RRR variable is 4.693, meaning that T value > T table (4.693 > 2.00030) and a significant value of 0.000 < 0.05. Thus, the results show that H3 is accepted, meaning that partially the RRR variable has a positive and significant effect on the CAR of foreign bank operating in Indonesia.

d) The effect of LDR on CAR
From the coefficients table, the T value of the LDR variable is 1.580, meaning that T value < T table (1.580 < 2.00030) and a significant value of 0.119 > 0.05. Thus, the results show that H4 is rejected, meaning that partially the LDR variable has a positive and insignificant effect on the CAR of foreign bank operating in Indonesia.

F Statistical Test (Simultaneous)

Table 6
F Statistical Test (Simultaneous) Result

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11132.060	4	2783.015	69.356	.000[b]
	Residual	2407.601	60	40.127		
	Total	13539.661	64			
a. Dependent Variable: CAR						
b. Predictors: (Constant), LDR, LCR, RRR, NSFR						

Source: Processed secondary data, 2022

Based on the calculation of F table and Table 6 above, it can be seen that the F value is 69.356. This means that F value > F table (69.356 > 2.52) and a significant value of 0.000 < 0.05. Thus, it can be concluded that simultaneously the NSFR, LCR, RRR, and LDR variables affect CAR of foreign bank operating in Indonesia.

Coefficient of Determination Test (R^2)

Table 7
Coefficient of Determination Test (R^2) Result

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.907[a]	.822	.810	6.33456
a. Predictors: (Constant), LDR, LCR, RRR, NSFR				

Source: Processed secondary data, 2022

The value of R Square can go up and down if one independent variable is added in the model and this will not happen when using Adjusted R Square (Ghozali, 2005). Based on this reason, in this study Adjusted R Square was used to analyze the data. According to Table 11 above, it can be seen that the Adjusted R Square value is 0.810, which means that 81% of CAR's variability can be explained by the independent variables. In other words, it can be concluded that simultaneously NSFR, LCR, RRR, and LDR have an effect on the CAR by 81% while the remaining 19% is influenced by other variables that have not been studied.

Discussion

The Effect of NSFR on CAR

Based on test result, the T value of the NSFR variable is 7.209, meaning that T value > T table (7.209 > 2.00030) and a significant value of 0.000 < 0.05. Thus, the results show that H1 is accepted, meaning that partially the NSFR variable has a positive and significant effect on the CAR of foreign bank operating in Indonesia. This means that the greater the NSFR, the CAR of the bank will increase.

This result can be interpreted that the higher available stable funding (ASF), the higher the bank's capital that can be used to fund the bank operations This is in line with the studies conducted by Giordana and Schumacher (2017) and Sari (2019) which found that NSFR has a positive and significant effect on CAR.

In addition, this also indicates that investors have to pay attention to NSFR ratio which can influence the CAR ratio to see an overview of the condition and performance of a bank to decide whether it can be profitable or not to be used as investment material. Moreover, bank managers have to improve their NSFR ratio because it can influence CAR ratio and the health of the bank. Furthermore, the government and bank regulators have to be careful and prudent in making policies and regulation regarding NSFR because it can affect CAR and the health of the bank.

The Effect of LCR on CAR

Based on test result, the T value of the LCR variable is 3.897, meaning that T value > T table (3.897 > 2.00030) and a significant value of 0.000 < 0.05. Thus, the results show that H2 is accepted, meaning that partially the LCR variable has a positive and significant effect on the CAR of foreign bank operating in Indonesia.

This result can be interpreted that when the LCR ratio is high, it means that the bank has HQLA stock containing high assets or cash that can be used as a capital to fund daily activities of the bank. On the contrary, if the LCR ratio is low, it indicates that the bank has low high-quality liquid assets which means that the bank's capital to fund daily activities is also low. This similar with the study conducted by Giordana and Schumacher (2017) which found that LCR has a positive and insignificant effect on CAR. However, in this study, it was found that LCR has a positive and significant effect on CAR.

In addition, this also indicates that investors have to pay attention to LCR ratio which can influence the CAR ratio to see an overview of the condition and performance of a bank to decide whether it can be profitable or not to be used as investment material. Moreover, bank managers have to improve their LCR ratio because it can influence CAR ratio and the health of the bank. Furthermore, the government and bank regulators have to be careful and prudent in making policies and regulation regarding LCR because it can affect CAR and the health of the bank.

The Effect of RRR on CAR

Based on test result, the T value of the RRR variable is 4.693, meaning that T value > T table (4.693 > 2.00030) and a significant value of 0.000 < 0.05. Thus, the results show that H3 is accepted, meaning that partially the RRR variable has a positive and significant effect on the CAR of foreign bank operating in Indonesia.

This result can be interpreted that with the increase in RRR, the bank's liquidity condition will be better and this has an impact on increasing CAR (Muljono, 1995). This is in line with the research done by Sari (2019) which found that RRR has a positive and significant effect on CAR.

In addition, this also indicates that investors have to pay attention to RRR ratio which can influence the CAR ratio to see an overview of the condition and performance of a bank to decide whether it can be profitable or not to be used as investment material. Moreover, bank managers have to improve their RRR ratio because it can influence CAR ratio and the health of the bank. Furthermore, the government and bank regulators have to be careful and prudent in making policies and regulation regarding RRR because it can affect CAR and the health of the bank.

The Effect of LDR on CAR

Based on test result, the T value of the LDR variable is 1.580, meaning that T value < T table (1.580 < 2.00030) and a significant value of 0.119 > 0.05. Thus, the results show that H4 is rejected, meaning that partially the LDR variable has a positive and insignificant effect on the CAR of foreign bank operating in Indonesia.

This result can be interpreted that that banks are able maintain their capital level even when the LDR fluctuates. This finding is not in accordance with the research done by Polat and Al-Khalaf (2014), Widjanarko (2005), and Shitawati (2006) which found that LDR has a negative and significant effect on CAR. In addition, this result is also not accordance with the research done by Abusharba et al. (2013) which found that LDR has a positive and significant effect on CAR.

In addition, this also indicates that investors have to pay attention to LDR ratio which can influence the CAR ratio to see an overview of the condition and performance of a bank to decide whether it can be profitable or not to be used as investment material. Moreover, bank managers have to improve their LDR ratio because it can influence CAR ratio and the health of the bank. Furthermore, the government and bank regulators have to be careful and prudent in making policies and regulation regarding LDR because it can affect CAR and the health of the bank.

CONCLUSION

1. Partially, NSFR has a positive and significant effect on CAR. The T value of the NSFR variable is 7.209, meaning that T value > T table (7.209 > 2.00030) and a significant value of 0.000 < 0.05. Thus, the results show that H1 is accepted, meaning that partially the NSFR variable has a positive and significant effect on the CAR of foreign bank operating in Indonesia.
2. Partially, LCR has a positive and significant effect on CAR. The T value of the LCR variable is 3.897, meaning that T value > T table (3.897 > 2.00030) and a significant value of 0.000 < 0.05. Thus, the results show that H2 is accepted, meaning that partially the LCR variable has a positive and significant effect on the CAR of foreign bank operating in Indonesia.
3. Partially, RRR has a positive and significant effect on CAR. From the coefficients table, the T value of the RRR variable is 4.693, meaning that T value > T table (4.693 > 2.00030) and a significant value of 0.000 < 0.05. Thus, the results show that H3 is accepted, meaning that partially the RRR variable has a positive and significant effect on the CAR of foreign bank operating in Indonesia.
4. Partially, LDR has a positive and insignificant effect on CAR. The T value of the LDR variable is 1.580, meaning that T value < T table (1.580 < 2.00030) and a significant value of 0.119 > 0.05. Thus, the results show that H4 is rejected, meaning that partially the LDR variable has a positive and insignificant effect on the CAR of foreign bank operating in Indonesia.
5. The F value is 69.356. This means that F value > F table (69.356 > 2.52) and a significant value of 0.000 < 0.05. Thus, it can be concluded that simultaneously the NSFR, LCR, RRR, and LDR variables affect CAR of foreign bank operating in Indonesia. Based on Adjusted R

Square, simultaneously the NSFR, LCR, RRR, and LDR have an effect on the CAR by 81% while the remaining 19% is influenced by other variables that have not been studied.

Research Limitation

As mentioned above, the results of this study are limited to relatively short observations of 4 years with a limited sample. The samples are taken only from Indonesia and not across countries. In addition, the financial ratios used as the basis for predicting CAR are limited to NSFR, LCR, RRR, and LDR.

Suggestion

1. For Banking Companies
   Banking companies have to improve their financial performance so that the soundness level of the banks can be maximized. In addition, the managers of the banks have to pay attention to factors that can affect the health of the bank, especially NSFR, LCR, RRR, and LDR which can influence the CAR ratio. This study found that NSFR, LCR, RRR, and LDR has a positive effect on CAR, this means that managers have to increase NSFR, LCR, RRR, and LDR ratios of the banks to increase the health of the bank.
2. For Further Researchers
   The predictive ability of 81% shown in the Adjusted R Square value indicates the need for other bank financial ratios that have not been included as independent variables affecting CAR such as bank management ratios and market sensitivity ratios which are also a part of the CAMEL ratio. In addition, further researchers can use wider range of samples and not only foreign banks operating in Indonesia but also abroad.
3. For The Government and Bank Regulators
   The government and bank regulators have to be careful and prudent in making policies and regulation, especially regarding NSFR, LCR, RRR, and LDR because these financial ratios can affect CAR and the health of the bank. The government and bank regulators must ensure that the minimum requirements for NSFR, LCR, RRR, LDR, and CAR is not too low because when these ratios are low, the health and safety of the bank will also be low.
4. For Investors
   In making investment decisions, investors have to pay attention to factors that can affect the health of the bank, especially NSFR, LCR, RRR, and LDR which can influence the CAR ratio to see an overview of the condition and performance of a bank to decide whether it risky or not to be used as investment material. For example, when the NSFR, LCR, RRR, LDR, and CAR ratios of the bank are below the minimum requirements, it means that the health of the bank is not good and it indicates that it is too risky to invest in that bank.

REFERENCES

Abusharba, M. T., Triyuwono, I., Ismail, M., & Rahman, A. F. (2013). Determinants of capital adequacy ratio (CAR) in Indonesian Islamic commercial banks. *Global review of accounting and finance*, *4*(1), 159-170.

Carsamer, E., Abbam, A., & Queku, Y. N. (2021). Bank capital, liquidity and risk in Ghana. *Journal of Financial Regulation and Compliance*.

Demirgüç-Kunt, A., Pedraza, A., and Ruiz-Ortega, C. (2021). Banking sector performance during the COVID-19 crisis. *Journal of Banking & Finance*, August 2021, 106305.

Dolgun, M. H., Ng, A., & Mirakhor, A. (2020). Need for calibration: applying a maximum threshold to liquidity ratio for Islamic banks. *International Journal of Islamic and Middle Eastern Finance and Management*.

Fahlevi, M., Irma, D., Maemunah, S., & Mahfud, I. (2019). The effect of financial performance, external factors, and operational ratio on CAR ratio of Sharia Commercial Banks in Indonesia. *Journal of Research in Business, Economics and Management*, *12*(2), 2348-2355.

Fiechter, J., Ötker, M. I., Ilyina, A., Hsu, M., Santos, M. A., & Surti, J. (2011). *Subsidiaries or branches: Does one size fit all?*. Internat. Monetary Fund.

Ghozali, I. (2005). *Aplikasi Analisis Multivariate dengan Program SPSS* (3rd ed.). Semarang, Indonesia : Diponegoro University Publishing Agency.

Giordana, G. A., & Schumacher, I. (2017). An empirical study on the impact of Basel III standards on banks' default risk: The case of Luxembourg. *Journal of Risk and Financial Management*, *10*(2), 8.

Hong, H., Huang, J. Z., & Wu, D. (2014). The information content of Basel III liquidity risk measures. *Journal of Financial Stability*, *15*, 91-111.

Irawan, K., & Anggono, H. A. (2015). A study of capital adequacy ratio and its determinants in Indonesian banks: A panel data analysis. *International Journal of Management and Applied Science*, *1*(9), 1-4.

Ismal, R., & Hidayat, S. E. (2016). A proposed formula for reserve requirement–financing to deposit ratio: The case of Islamic banking in Indonesia. In *Macroprudential regulation and policy for the Islamic financial Industry* (pp. 121-131). Springer, Cham.

Polat, A., & Al-khalaf, H. (2014). What determines capital adequacy in the banking system of kingdom of saudi arabia? A panel data analysis on tadawul banks. *Journal of Applied Finance and Banking*, *4*(5), 27.

Santoso, S. (1999). SPSS (Statistical Product and Service Solutions), Penerbit PT. *Elex Media Komputindo-Kelompok Gramedia, Jakarta*.

Sari, P. Y. (2019). Rasio Likuiditas dan NPL Terhadap Rasio Kecukupan Modal Setelah Implementasi BASEL III. *Edunomic: Jurnal Ilmiah Pendidikan Ekonomi Fakultas Pendidikan dan Sains*, *7*(1), 16-24.

Shitawati, F. A. (2006). *Analisis faktor-faktor yang berpengaruh terhadap capital adequacy ratio (studi empiris: Bank umum di indonesia periode 2001–2004)* (Doctoral dissertation, Program Pascasarjana Universitas Diponegoro).

Van Greuning, H., & Bratanovic, S. B. (2020). *Analyzing banking risk: a framework for assessing corporate governance and risk management*. World Bank Publications.

Widjanarko, B. (2005). *Analisis Faktor-faktor Yang Berpengaruh Terhadap Capital Adequacy Ratio (CAR)* (Doctoral dissertation, Tesis).