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CAPITAL BUFFER AND ITS DETERMINANT CASES IN ISLAMIC BANK IN INDONESIA

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Abstract

In accordance with the regulations imposed in Basel III, banks must provide capital reserves above the minimum capital adequacy ratio or a capital buffer of 2.5%. Capital buffer is calculated by reducing the CAR available with minimum CAR. The purpose of this research is to examine the factors that influence capital buffer. Factors suspected of having an effect on capital buffer are financing risk (NPF), liquidity risk (FDR), profitability (ROA), net profit margin (NPM), and operational risk (OEIR). The population in this research is 13 Islamic banks in Indonesia, while the sample taken is 10 Islamic banks that have complete financial reports. The research results showed that the financing risk (NPF) and operational risk (OEIR) have a significant and negative effect on the capital buffer, while liquidity risk (FDR) and profitability (ROA) have a significant and positive effect on the capital buffer, whereas net profit margin (NPM) does not affect the capital buffer.

Keywords: capital buffer, financing risk, liquidity risk, operating risk, profitability, net profit margin

Introduction

Islamic banking has always been an interesting topic to study, because Islamic banks have different characteristics from conventional banks. According to Islamic Banking Statistics in 2017 (OJK, 2018), Islamic banking in Indonesia still shows significant growth in both total assets, third party funds, and financing provided. Unfortunately, even though Islamic banking is growing rapidly, its contribution to the national banking sector is no more than 5%.

In order to realize a healthy and stable financial system, financial regulators have enacted regulations related to bank capital adequacy. Bayuseno and Chabahib (2014) revealed that the capital adequacy regulation was adopted from the Basel Committee on Banking Supervision, namely, BASEL I, II and III. The Basel agreement stipulates a minimum capital adequacy ratio (CAR) of 8%. BASEL III also requires that banking institutions have a capital buffer to deal with various risks faced.

In almost all European countries, as of 2019, the minimum capital of 10.5% is set, including capital buffers, which means a minimum CAR of 8% plus 2.5% capital buffer (Distinguin et al., 2012). Even in Switzerland, capital in 2019 must be provided at 19%, of which 9% can be placed in government bonds. Capital buffer is also proclaimed in the Baltic (Braslins and Arefjevs, 2014).

Capital buffer is defined as the difference between the capital adequacy ratio (CAR) owned by banks and the minimum banking capital requirements imposed by regulators (Bralins and

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Arefjevs, 2014). Capital buffer can be a protector that can absorb various risks that may arise (Wong et al., 2005). According to Bank Indonesia, capital buffer is an additional capital that serves as a buffer to anticipate losses in the event of excessive credit growth and / or bank financing that has the potential to disrupt financial system stability

Capital buffer is very important for banks to deal with various risks and economic shocks that may occur at any time. A high capital buffer shows the bank is getting stronger and it is expected that the community will trust the bank more and eventually they will use the services of the bank. There are several factors that influence capital buffers, including the level of profitability, risk of financing, bank liquidity requirements, and bank efficiency measured by the ratio of operating costs to operating income (OEIR).

Bank profitability has an effect on the capital buffer because, with the higher profits of the bank increasingly providing opportunities to increase capital buffers, the profits earned will be partially set aside as retained earnings and will be accumulated on own capital, so as to increase the capital buffer. The findings of Belem and Gartner (2013) in Brazil and Haryanto (2015) in Indonesia show that profitability has an effect on capital buffer; however, Noreen et Al. (2016) found a significant and negative effect between profitability as measured by ROA on capital buffers.

Financing risk as measured by non-performing financing (NPF) causes a decrease in profits because it will be a cost and reduce profits. Higher NPF has the potential to reduce profits and even cause losses. This loss must be covered by capital, thus, it will reduce the capital buffer. Bayuseno and Chabahib (2014) found a positive effect between credit risk as measured by NPL and capital buffer. However, Zhu and Chen (2016) found that, in China, the NPL had a negative effect on capital buffers, while Al-Tamimi and Obeidat (2013) in Jordan found that NPLs did not affect the capital buffer.

The liquidity of Islamic banks as measured by financing to deposit ratio (FDR) shows that the higher the FDR, the higher the financing provided. The higher the FDR, the higher the bank's income, which, in turn, will increase the bank capital. The results of Zhu and Chen's (2016) research show that, in China, the LDR has a positive effect on capital buffers. Similarly, Belem and Gartner (2013) also found a significant effect between LDR and capital buffer. Meanwhile, Bayuseno and Chabahib (2014) and Haryanto (2015) found a non-significant effect of LDR with capital buffer. In contrast, Masood and Zulfikar (2016) found LDR had a negative effect on capital adequacy.

Bank management must be able to control net profit magin (NPM), because NPM is an indicator used to determine the ability of bank management in terms of managing productive assets so that they can generate net income. The greater the NPM ratio, it will affect the increase in bank income obtained from productive assets managed by the bank properly. The higher the NPM, it will be able to increase the capital buffer, because it indicates the bank's profit is higher so that it can enlarge the capital buffer. Mili et al. (2014) found a positive effect between NIM and CAR, while Raharjo et al. (2014) found that NIM does not affect CAR.

Bank management is also required to work efficiently, which is able to reduce operational costs to a minimum. Efficiency is measured by the ratio between operating costs and operating income (BOPO). This ratio is used to measure the level of efficiency and ability of banks to carry out their operations. BOPO is also often called the efficiency ratio an used to measure the ability of

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bank management to control operational costs against operating income. The smaller the ratio, it means the more efficient the operational costs incurred by the bank concerned. Low BOPO is expected to be able to produce a higher profit level, so that it can be used to increase the bank's capital buffer. However, Haryanto (2015) and Sutrisno (2018) in Indonesia and Al-Tamimi and Obeidat's (2013) research in Jordan found a non-significant effect on capital adequacy.

Literature Review and Hypothesis

Profitability and capital buffer

The purpose of the company is to gain profits and from these profits some are used to pay dividends and part are retained earnings. The higher the profit, the greater the retained earnings, so, the higher the retained earnings, the more it will increase the amount of their own capital. Thus, high profit will increase the capital buffer. Belem and Gartner (2013) in Brazil found a positive and significant influence between profitability and capital buffer, as did Haryanto (2015) in Indonesia.

H_1: Profitability (ROA) has a positive effect on capital buffer

Non-performing financing and capital buffer

One of the risks of banking is the failure to collect financing installments, which results in high financing problems. Non-performing financing (NPF) is a measure of financing risk where a higher NPF indicates a bank failure in operation, because NPF will reduce profits and can even cause losses. If the bank experiences a loss, it will reduce capital, which will reduce the capital buffer. Eliskovski (2013) in Macedonia and Zhu and Chen (2016) in China found a negative influence between credit risk and capital buffer.

H_2 : Non-performing financing (NPF) has a negative effect on capital buffer

Financing to deposit ratio and capital buffer

Financing to deposit ratio (FDR) shows the amount of financing provided compared to public funds. The higher the FDR, the higher the financing provided. The main income of Islamic banks comes from financing, thus, higher financing will increase income, which will ultimately increase profits. Thus, the higher the FDR, the larger the capital buffer. Belem and Gartner (2013) and Haryanto (2015) found that liquidity risk as measured by LDR had a positive effect on capital buffer.

H_3: Financing to deposit ratio (FDR) has a positive effect on capital buffer, net profit margin and capital buffer

The quality of bank management, which is usually proxied by net profit margin, becomes a variable that affects the amount of the capital buffer. NPM is used to measure management's ability to generate net interest income divided by productive assets. NPM reflects the cost of financial intermediation, so that the higher the NPMs, the higher the capital buffers available. Mili et Al. (2014) found that NIM in conventional banks had a positive effect on capital adequacy and Sutrisno (2018) found that NPM had a positive effect on capital buffer in Islamic rural banking in Indonesia.

H_5: Net profit margin (NPM) has a positive effect on capital buffer

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Operating expense to income ratio and capital buffer

One of the important aspects in banking is efficiency in order to increase the bank's profitability. In the very tight competition in the banking industry, the advantages of efficiency are highly recommended. Efficiency is measured by operating expense to income ratio (OEIR), meaning that the higher the ratio, the higher the operating costs, which results in lower bank profits. With the decreasing profitability of the bank, it will reduce the opportunity to increase capital, because bank profits that are not distributed will be retained earnings and increase capital, which will ultimately reduce the capital buffer. Raharjo (2014) found a negative effect between OEIR and buffer capital.

H_6: Operating expense to income ratio (OEIR) has a negative effect on capital buffer

Based on the background, in addition to the study of the theories and hypotheses described above, the research framework can be detailed as follows.

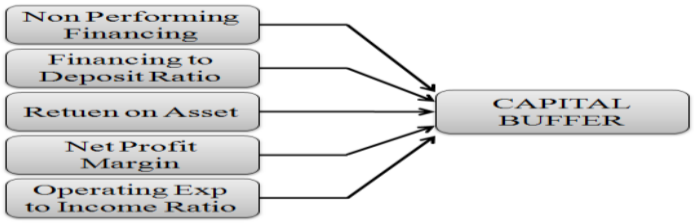

Figure 1: Research Framework

Methods

Population and Sample

The population in this research was 13 Islamic banks operating in Indonesia. The samples taken were 10 Islamic banks that submitted quarterly financial statements during the observation period. The observation period is four years (2015 - 2018) with quarterly data.

Research Variables

The research variables consist of two types, the dependent variable is the variable that is influenced by capital buffer and the independent variable is the variable that is expected to affect the dependent variable, consisting of profitability, credit risk (NPL), liquidity risk (FDR), net profit margin (NPM) and operational risk (OEIR). The following are the definitions of variables and how to measure them

Table 1: Variable and Measurement

No	Variable	Symbol	Measurement
1	Capital Buffer	BUFF	CAR available - CAR minimum
2	Return on Asset	ROA	EAT/Total Asset
3	Non-Performing Financing	NPF	Non-performing financing/Total Financing
4	Financing to Deposit Ratio	FDR	Total Financing/Third Party Fund
5	Net Profit Margin	NPM	Net Profit/Net Financing
6	Operating Expense to Income Ratio	OEIR	Operating expense/operating income

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Data Analysis

To test the hypothesis, a partial test (t test) will be used using a confidence level of 95% or a significance level of 5%. The hypothesis is proven if the results of the significance test are greater than the required 5%. The analytical tool to test variables affecting capital buffer uses multiple regression models with the following formulations:

$$BUFF = \alpha + \beta_1 ROA + \beta_2 NPF + \beta_3 FDR + \beta_4 NPM + \beta_5 OEIR$$

Where:

BUFF = Capital buffer
ROA = Return on Assets
NPF = Non-Performing Financing
FDR = Financing to deposit ratio
NPM = Net profit Margin
OEIR = Operating expense to operating income ratio

Results and Discussion

Before testing the hypotheses, classical assumption tests were carried out. The results showed that the multicollinearity test, the autocorrelation test and the heteroscedasticity test passed the classical assumption test. Next, the hypotheses were tested using multiple regressions. The table below shows the results of the data processing using multiple linear regression analysis.

Table 2: Hypothesis Test Result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.106	8.181		1.113	0.268
	NPF	-1.564	0.589	-0.102	-2.656	0.009
	FDR	0.531	0.033	0.781	16.052	0.000
	ROA	3.855	0.599	0.306	6.438	0.000
	NPM	0.108	0.457	0.012	0.236	0.814
	OEIR	-0.472	0.089	-0.265	-5.278	0.000

a. Dependent Variable: BUFF

b. Source: Data processed

The research results of the NPF variable show a significance value of 0.009, smaller than the required level of significance, so that the financing risk (NPF) has a negative and significant effect on the capital buffer. The greater the NPF, it shows the collectability of financing is getting worse and has the potential to reduce the profitability of the company. The decrease in profits will reduce retained earnings, which will reduce capital. As a result, the capital buffer will decrease. Therefore, the management of Islamic banks must press the NPF as little as possible to maintain a constant increase in bank profits in order to increase CAR and capital buffers. The research results are in line with Sutrisno (2018) who found a negative effect between the risk of financing (NPL) and the capital buffer on Islamic rural banks in Indonesia. The research results are also in line with the findings of Al-Tamimi and Obeidat (2013), Belem and Gartner (2013), Eliskovski (2013) and Zhu and Chen (2016).

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Liquidity risk as measured by financing to deposit ratio (FDR) shows that the significance value is smaller than required, so that FDR has a significant and positive effect on capital buffer. The amount of the FDR shows the amount of financing given to the customer; the greater the FDR, the greater the financing provided. The main income of Islamic banks comes from financing, so that greater FDR will potentially increase profits. The greater the profit, the greater the potential increase in bank capital, which will increase capital buffer. These results are in accordance with the results of Zhu and Chen (2016) who found a positive influence between FDR and capital buffers in rural banking in China. Sutrisno (2018) also found the same thing in Islamic rural banking in Indonesia, while Al-Tamimi and Obeidat (2013) found a positive influence between FDR and capital adequacy ratio (CAR).

Profitability as measured by return on assets (ROA) shows that the significance value is smaller than what is required, so that ROA has a significant and positive effect on capital buffer. Profitability is the bank's ability to generate profits. The higher the ROA, the higher the profit obtained by the bank. Profit is one of the sources of capital for banks; the greater the profit, the higher the return on earnings potential, which will increase capital buffer. This result is in accordance with the findings of Belem and Gartner (2013) in Brazil and Haryanto (2015) in Indonesia who found a significant effect between profitability and capital buffer. The same results were found by Wang and Ke (2012), Al-Tamimi and Obeidat (2013) and Eliskovski (2013) . However, Noreen et al. (2016) and Sutrisno (2018) found that profitability did not affect the capital buffer.

The net profit margin variable (NPM) produces a significant value greater than the required significance level, so that NPM statistically does not affect the capital buffer. Thus, the high and low NPM will not affect the capital buffer. Management effectiveness as measured by NPM is indeed indirectly able to influence the capital adequacy ratio (CAR), so it cannot influence the capital buffer. This is in accordance with the research results of Raharjo et al. (2014) who found an insignificant influence between the NIM and the capital adequacy ratio (CAR). However, Mili et Al. (2014) and Sutrisno (2017) found a positive and significant effect between NPM and capital buffer.

Operational risk measured by operating expenses to operating income ratio (OEIR) has a significant but negative effect on capital buffer. OEIR shows the costs incurred by Islamic banks, meaning that the higher the OEIR, it has the potential to reduce profits, meaning it will reduce retained earnings, which will ultimately reduce capital adequacy. The decline in CAR will have an impact on the decrease in capital buffer. These results support the research of Zhu and Chen (2016) in China and Al-Tamimi and Obeidat (2013) who conducted research in Jordan.

Conclusion

Based on the results of the discussion above, it can be concluded that there are four hypotheses which are proven, that liquidity risk (FDR) and profitability (ROA) have a significant and positive effect, while the financing risk (NPF) and operational risk (OEIR) have significant but negative effects. There is one variable that is not significant, namely the net profit margin.

The results of this research are expected to be utilized by the management of Islamic banks in order to control the capital buffer. It can also be developed by further research by adding other variables that might influence the capital buffer

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References

Al-Tamimi, K.A., Obeidat, S.F,. 2013. Determinants of Capital Adequacy in Commercial Banks of Jordan an Empirical Study. *International Journal of Academic Research in Economics and Management Sciences*. Vol. 294). 44-59

Belém, V. C and Gartner, I. R. 2016. Empirical analysis of Brazilian banks' capital buffers during the period 2001-2011. R. *Cont. Fin. – USP*. Vol 27 (70). 113-124

Bayuseno, V and Chabahib,. M. 2014. Analysis of Factors Affecting Banking Capital Buffers in Indonesia. *Diponegoro Journal Of Management*. Vol 3 (4). 1-13

Braslins, G and Arefjevs, I,. 2014. Basel III: countercyclical capital buffer proposal- the case of Baltics. *Procedia - Social and Behavioral Sciences*. Vol 110. 986 – 996

Distinguin, et.al 2012. Bank Capital buffer and Liquidity: Evidence from US and European Publicly Traded Banks. *Journal of University de Limoges*, pp 1-54

Eliskovski, M,. 2013. The Determinants Of Capital buffer In The Macedonian Banking Sector. *JCEBI*. Vol.1(2). 19 – 33

Haryanto, S. 2015. Determinan Capital buffer: Empirical Study of the National Banking Industry. *Modernisasi*, Vol 11 (2). 108-123

Masood, U and Zulfiqar, S,. 2016. Determinants of Capital Adequacy Ratio" A Perspective from Pakistani Banking Sector. *International Journal of Economics, Commerce and Management*. Vol. 4 (7). 247-273

Mili, M, Sahut, J. M and Trimeche, H. 2014. Determinants of the Capital Adequacy Ratio of a Foreign Bank's Subsidiaries: The Role of the Interbank Market and Regulation of Multinational Banks. *Working Paper*. IPAG Business School. Paris-France

Noreen, U, Alamdar, F and Tariq, T, 2016. Capital buffers and Bank Risk: Empirical Study of Adjustment of Pakistani Banks. *International Journal of Economics and Financial Issues*. Vol 6(4), 1798-1806

Otoritas Jasa Keuangan , 2018, Sharia Banking Statistics 2017, Jakarta

Raharjo, P. G,. Hakim, D. B,..Manu rung, A. H. and Maulana, T. N. A,. 2014. Determinant Of Capital Ratio: A Panel Data Analysis On State-Owned Banks In Indonesia. Bulletin of Monetary, *Economics and Banking*, Vol 16 (4) . 369-385

Sutrisno. 2018. Factors determinant of bank capital buffer: empirical study on islamic rural banking in Indonesia. *Advances in Social Science, Education and Humanities Research (ASSEHR)*. volume 186. 84-87

Wang, C and Ke, X. 2012. Determinants of Bank Capital: Evidence from the U.S, *Master Thesis*. Simon Fraser University

Wong, et.al 2005. Determinants of the Capital Level of banks in Hongkong. *Hongkong Monetary Authority Quarterly Bulletin*, pp. 14-37.

Zhu, C and Chen, L,. 2016. An Empirical Study on the Capital buffer of Rural Commercial Banks in China. *Journal of Finance and Economics*, Vol. 4 (3), 97-102