Capital Adequacy Ratio And Factors Determinant Study on Islamic Rural Bank in Indonesia

by Sutrisno & Bagus Panuntun

Submission date: 09-Apr-2023 10:30AM (UTC+0700)
Submission ID: 2059326645
File name: OK_07_2022-12-BAGUS_AND_SUTRISNO-ASSRJ.docx (68.9K)
Word count: 3611
Character count: 18561

Capital Adequacy Ratio And Factors Determinant Study on Islamic Rural Bank in Indonesia

Bagus Panuntun and Sutrisno
Department of Management – Faculty of Business and Economics
Universitas Islam Indonesia - Yogyakarta
Bagus.panuntun@uii.ac.id
sutrisno@uii.ac.id

Abstract

Capital for banks is very important because it serves as a reserve to cover if the bank suffers a loss, so the government determines bank capital as measured by a minimum capital adequacy ratio (CAR) of 8%. The purpose of this study was to examine the factors that affect the capital adequacy ratio (CAR). Factors thought to influence CAR are profitability measured by return on assets (ROA), liquidity risk measured by financing to deposit ratio (FDR), financing risk measured by non-performing financing (NPF), operating risk as measured by operating expense to operating income ratio (OEIR), bank size (SIZE) as measured by the natural log of total assets. The population of this research is Islamic Rural Banks (IRBs) in Indonesia as many as 165 banks with a sample of 75 banks. Observation period for 6 years (2016-2021) with quarterly data. To test the hypothesis, a panel data regression analysis tool was used. After testing the model, it turns out that the best model is the fixed effect model. The results of the research using the fixed affect model show that profitability and operating risk (OEIR) have no effect on CAR, while financing risk (NPF) has a significant but positive effect. While FDR has a significant and negative effect on CAR and Size has a significant and positive effect on CAR.

Keyword:
Capital adequacy ratio, profitabilitas, financing to deposit ratio, non-performing financing

Introduction

Capital is a very important factor for banks, because capital serves to protect depositors from bank losses due to bank management mismanagement (Rivai, Sudarto, & Veitzal, 2013). Bank capital is also a back-up if the bank in operation suffers a loss. The importance of bank capital is so important and in order to support a strong, healthy and stable financial system, the government through the Financial Services Authority (FSA) regulates bank capital through FSA Regulation Number 11/PFSA.03/2016 concerning the Minimum Capital Adequacy Ratio for Commercial Banks. In the FSA regulation, the obligation to provide minimum capital is determined by a capital adequacy ratio (CAR) of 8%. CAR is measured by comparing bank equity with risk-weighted assets. In addition, to keep capital safer, banks are required to provide a capital buffer of 2.5%. Capital adequacy regulations were adopted from the Bassel Committee on Banking Supervision, namely BASEL I, II and III which set a minimum CAR of 8% (Masood & Ansari, 2013).

Banks as business-oriented institutions, the goal is to obtain optimal profits. Bank profitability Some of it is not distributed to owners, but will be used to increase bank capital, so that higher profits will increase bank capital. The results of research from Anggareni, Zuhroh, & Suliswanto (2021), Putra, Asyik, & Fidiana (2020), Abiodun, Abdul-Azeez, & Adewale (2020) and Nuviyanti & Anggono (2014) also found a positive and significant effect

between profitability and capital adequacy ratio (CAR). However, the findings of (Fauziah & Iskandar, 2015), (Dao & Nguyen, 2020), (Anisa & Sutrisno, 2020), and (Al-Harby, 2019) are on the contrary, profitability has a negative effect, this is possible because the profits distributed The amount to the owner is so large that the retained earnings are small which in the end is not able to increase the CAR.

The bank's business is trust, so it must convince customers that the bank can be trusted. In order to be trusted, banks must be able to maintain liquidity so that if there are customers who take their funds, they are always available, including providing funds for financing. IRBs liquidity is measured by the financing to deposit ratio (FDR), where the higher the FDR, the more funds needed to be disbursed. One source of funds that can be utilized is bank capital, so that FDR has a negative effect on CAR. This is in accordance with the results of research from (Nuviyanti & Anggono, 2014), (Mursal, Darwanis, & Ibrahim, 2019), and (Sudiyatno, Puspitasari, Susilowati, Sudarsi, & Udin, 2019) which found a negative effect between FDR and CAR. However, some researchers found a positive effect between FDR and CAR (El-Ansary & Hafez, 2019), (Fauziah & Iskandar, 2015), and (Abusharba, Triyuwono, Ismail, & Rahman, 2013).

The financing provided by the IRBs must be given carefully in accordance with the principles of providing financing. Banks may not provide as much financing as possible in order to achieve the target, but must be careful so that all financing is included in the current category. If you are not careful, you will face financing risk, namely non-performing financing (NPF). The amount of NPF will reduce profitability because NPF will be treated with costs, so that it will have the potential to reduce profits which have an impact on decreasing CAR. Thus, the amount of NPF can reduce CAR. (Risyanto & Soraya, 2021), (Anggareni et al., 2021), (Abiodun et al., 2020), and (Abusharba et al., 2013) found a negative effect between NPF and CAR. However, (Fauziah & Iskandar, 2015), (Raharjo, Hakim, Manurung, & Maulana, 2014), and (Nuviyanti & Anggono, 2014) actually found that NPF had a positive effect on CAR.

To increase profits, banks must operate efficiently, because banks in their activities face operating risks in the form of operating expenses in order to earn profits. Operational risk is measured by operating costs compared to operating income (OEIR). The higher the OEIR, the smaller the profit generated, which results in smaller retained earnings so that it will reduce the CAR. Therefore, IRBs must be able to reduce operating costs as small as possible in order to obtain large profits. The results of research from (Risyanto & Soraya, 2021), (Dao & Nguyen, 2020), dan (Anisa & Sutrisno, 2020), found a negative effect between OEIR and CAR. However, there are several studies that found no effect between OEIR on CAR (Anisa & Sutrisno, 2020) and (Abusharba et al., 2013).

The size of the IRBs as measured by total assets is not the same, there are IRBs with a large number of assets and there are small ones. The larger the assets of the IRBs, the greater the opportunity to provide financing to customers. Thus, large banks have the ability to generate greater profits. The size of the bank will also increase customer confidence in the bank so that the funds that can be mobilized will also increase. As the results of research from (Risyanto & Soraya, 2021), (Setiawan & Muchtar, 2021), (Fauziah, Latief, & Jamal, 2020), and (Aktas, Acikali, Bakin, & Celik, 2015) which found a positive influence banks with CAR. However, several studies have found the opposite result, namely bank size has a negative effect on CAR (Usman, Lestari, & Puspa, 2019), (Thoa, Anh, & Minh, 2020), and (Lihn et al., 2019).

Theoretical Review and Hypotheses Development

Iskamic rural bank (IRBs)

Conditions in Indonesia, most of the population in rural areas are poor households, micro, small and medium enterprises (MSMEs). They are not covered by banking services, so they cannot take advantage of the loan services provided by the bank. Even some poor households take advantage of the services of shadow banks that charge high interest rates. This condition is an opportunity for IRBs operating in rural areas to provide financing services to poor households and MSMEs (Priyadi, Utami, Muhammad, & Nugraheni, 2021). IRBs is very important in developing the rural economy, so it should focus more on financing MSMEs and poor households (Widarjono, Anto, & Fakhrunnas, 2020).. According to the 2021 Sharia Banking Statistics, the number of IRBs in Indonesia is 165 IRBs spread across 23 provinces.

Profitability and capital adequacy

Bank as a profit-oriented institution, so that in operating it will optimize profits. The profit earned will be used to compensate owners in the form of dividend payments and some of it is not shared (retained earnings) will be used again as additional capital. Thus, higher profits can increase capital. Profitability can be measured by return on assets (ROA) and return on equity (ROE). ROA measures the ability to generate profits with all assets owned while ROE measures the ability to earn profits compared to equity. The results of research from (Setiawan & Muchtar, 2021), (Anggareni et al., 2021), (Abiodun et al., 2020), dan (Abusharba et al., 2013) show that profitability as measured by ROA has a positive effect on capital adequacy. .

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

Liquidity and Adequacy of Capital Adequacy

Liquidity in addition to the ability of banks to meet withdrawals of public funds is also the ability of banks to fulfill financing commitments (Rivai et al., 2013). Liquidity is very important because it involves public trust regarding the safety of the funds they deposit. Liquidity can be measured by the financing to deposit ratio (FDR), which is a comparison between the financing provided and third party funds (Mursal et al., 2019). The higher this ratio, the higher the financing provided, which of course requires larger funds. The need for large funds for financing can be met with third party funds, using bank capital. Thus, the higher the FDR, the lower the capital adequacy ratio. This is supported by (Sudiyatno et al., 2019), (Mursal et al., 2019), dan (Nuviyanti & Anggono, 2014). Thus the proposed hypothesis is:

H_2: Liquidity risk (FDR) has a negative effect on capital adequacy

Financing risk and capital adequacy

One of the most feared by banks is the non-payment of both principal and yield financing, which is called non-performing financing (NPF). This NPF will be charged as a cost, so it will reduce profits. The larger the NPF has the potential to reduce profits, thereby reducing the opportunity to increase retained earnings and reduce equity. A decrease in equity causes a decrease in CAR, so that NPL has a negative effect on CAR. (Anggareni et al., 2021) and (Abusharba et al., 2013) who examined Islamic banks determined the negative effect of NPF on capital adequacy. Likewise, (Abiodun et al., 2020) and (Abiodun et al., 2020) who examined conventional banks also found a negative effect between NPL on CAR.

H_3: Financing risk (NPF) has a negative effect on capital adequacy

Operating risk and capital adequacy

One of the bank's efforts to increase profitability is to increase bank efficiency. The level of bank efficiency is measured by the ratio of operating costs to operating income (OEIR). To increase efficiency, banks must be able to reduce their operating costs. The higher the OEIR

the more inefficient and will reduce profits, because profits are derived from the difference in operating income minus operating costs. The decrease in profit causes a decrease in equity which in turn will lower the CAR. This result is supported by (Risyanto & Soraya, 2021) who researched Islamic banks to find a negative effect between OEIR and capital adequacy. The results of research on conventional banks also found a negative effect between OEIR and capital adequacy (Dao & Nguyen, 2020), (Sudiyatno et al., 2019), and (Nuviyanti & Anggono, 2014). Thus the proposed hypothesis is:

H_4: Operational risk (OEIR) has a negative effect on capital adequacy

Bank size and capital adequacy

The size of the bank, which is proxied by the total assets of the bank, shows the size of the bank. Large banks have the opportunity to be known and trusted by the public and have a higher ability to channel funds. Thus, large banks must be able to provide higher capital (Fauziah et al., 2020). Research on Islamic banks found a positive influence between bank size and CAR (Risyanto & Soraya, 2021) and (Fauziah et al., 2020). The conventional bank research also found a positive influence between size and CAR (Setiawan & Muchtar, 2021) dan (Aktas et al., 2015).

H_5: Size has a positive effect on capital adequacy

Research Method

Population nd sample

The population in this study is Islamic rural banks (IRBs) in Indonesia, which until now are 1655 banks. Samples were taken as many as 75 IRBs with purposive sampling technique. The data collection period is for six years from 2016 to 2021 with quarterly data, so that 1,600 data are collected.

Research variable

This study consists of the dependent variable, namely the capital adequacy ratio (CAR) and five independent variables consisting of profitability (ROA), liquidity risk (FDR), financing risk (NPF), operating risk (OEIR), and Bank size (SIZE). The measurement variables are as follows:

Table 1: Variables and Measurement

Variables	Symbol	Measurement
Capital Adequacy	CAR	Equity/Assets weighted risk
Profitability	ROA	EAT/Total Assets
Liquidity risk	LDR	Total loan/Third party fund
Financinf rist	NPL	Non perform loan/Total loan
Operating risk	OEIR	Operating expense/operating income
Bank Size	SIZE	Ln Total Asset

Data analysis

The research data is in the form of panel data or a combination of cross section data and time series data, so to test the hypothesis, panel data regression analysis will be used. There are three panel data regression models, namely the common effect model (CEM), fixed effect model (FEM), and random effect model (REM). From the three models, the best model will be selected with Chow-test, Hausman-test and Lagrange Multiplier or LM-test. The panel data regression equation is as follows:

$$CAR_{t-1} = \alpha + \beta_1 ROA_{t-1} + \beta_2 FDR_{t-1} + \beta_3 NPF_{t-1} + \beta_4 OEIR_{t-1} + \beta_5 SIZE_{t-1} + \varepsilon$$

Result and Discussion

Descriptive Statistics

The following is a description of the data from the data tabulation results in the form of minimum, maximum, and average values.

Table 2: Descriptive Statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
CAR (%)	1600	8.500	149.500	25.931	1.789.382
ROA (%)	1600	-52.200	109.200	1.878	658.972
FDR (%)	1600	11.180	321.150	91.065	2.764.820
NPF (%)	1600	0.230	75.560	10.107	860.816
OEIR (%)	1600	43.410	286.350	83.561	3.518.667
SIZE (Ln)	1600	5.380	15.150	10.817	113.552
Valid N (listwise)	1600				

Source: Data processed

Table 3 shows that CAR has a minimum value of 8.50%, a maximum of 149.5% with an average of 25.93%. These results indicate that bank capital is very good because it is above the minimum requirement of 8% and even reaches more than 25% on average. Profitability (ROA) shows a minimum value of minus 52.20%, a maximum of 109.20% with an average of 1.88%, meaning that the profitability of the IRBs is good even though there are IRBs that lose very big. Liquidity risk (FDR) has a minimum value of 11.18%, a maximum of 321.15%, with an average of 91.07%. This result shows that the FDR is good but there are banks that have too low and too high an FDR. Financing risk (NPF) shows a minimum value of 0.23%, a maximum of 75.56% with an average of 10.11%. This result shows that the financing risk is very high because the minimum NPF is 5%. Meanwhile, the operating risk (OEIR) has a minimum value of 43.41%, a maximum of 286.35%, with an average of 83.56%. These results indicate that the IRBs has been operating efficiently because the average is relatively low.

Model Test

In panel data regression analysis, there are three equation models namely Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To choose the best model, it is necessary to test the model. Table 3 are the results of the test model.

The first step is to test between CEM and FEM using the Chow-test with the condition that FEM will be chosen if the p-value <0.05. Table 3 shows the prob. 0.000 < 0.05, thus FEM is better than CEM. The next step is to choose a model between FEM and REM using the Hausman-test, provided that FEM will be chosen if the p-value <0.05. The calculation results produce a p-value of 0.000 < 0.05, so it can be concluded that the best model is the Fixed Effect Model (FEM). The third step is choosing the best model between REM and CEM using the Lagrange Multiplier test (LM-test). However, because both test results show the best FEM, the LM-test does not need to be carried out.

Table 3: The Result of Chow-test and Hausman-test

Type of test	Test Summary

Chow-test	Statistic	d.f	prob
	10,8299	99	0.0000
Hausman-test	Chi-sq Statistic	Chi-sq d.f	prob
	38,3248	7	0.0000

Source: Data processed

Panel Data Analysis with Fixed Effect Model

From the results of the model test, it was found that the Fixed Effect Model became the best model, so that further analysis of the test results from the FEM to be used, as shown in table 4 below:

Table 4: The Result of Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3708398.	454403.4	8.161.026	0.0000
ROA	0.031365	0.021070	1.488.604	0.1368
FDR	-0.094803	0.014190	-6.681.156	0.0000
NPF	1.574.386	5.439.364	2.894.431	0.0039
OEIR	0.035180	0.019363	1.816.903	0.0694
SIZE	0.083869	0.011345	7.392.369	0.0000
R-squared	0.092697	Mean dependent var		2700583.
Adjusted R-squared	0.088708	S.D. dependent var		1864942.
S.E. of regression	1780304.	Akaike info criterion		3.162.745
Sum squared resid	5.05E+15	Schwarz criterion		3.165.434
Log likelihood	-25293.96	Hannan-Quinn criter.		3.163.744
F-statistic	2.323.594	Durbin-Watson stat		0.814100
Prob(F-statistic)	0.000000			

Source: Data processed

The results showed that the significance level of 0.1368 was greater than the requirement of 0.05, so it can be concluded that profitability has no effect on capital adequacy. Thus the rise and fall of capital does not affect bank capital. This is probably because IRBs' profits are too small to be sufficient to be distributed to shareholders as compensation for paid-in capital. When viewed from the average profit of IRBs, it is still very small and even many IRBs suffer losses, so that profitability cannot be relied on to increase bank capital. These results are not in accordance with the results of research from (Anggareni et al., 2021), (Putra et al., 2020), (Abiodun et al., 2020), and (Nuviyanti & Anggono, 2014) which found a positive effect between profitability and CAR. However, these results are consistent with (Fauziah & Iskandar, 2015), (Dao & Nguyen, 2020), (Anisa & Sutrisno, 2020), and (Al-Harby, 2019) who found profitability had no effect on CAR.

Liquidity risk as measured by FDR produces a significance value of 0.000 which is smaller than 0.05 with a negative coefficient, meaning that FDR has a significant and negative effect on CAR. The higher the FDR the lower the CAR, the higher the FDR indicates the higher the funds used for financing. The higher the need for financing, one of the alternative sources of funds comes from bank capital, so that high financing will reduce bank capital. These results are in accordance with the results of research (Nuviyanti & Anggono, 2014), (Mursal et al., 2019), and (Sudiyatno et al., 2019). However, some researchers have found that financing risk

has a positive effect, arguing that the greater the FDR, the greater the financing provided, so that it is able to generate greater profits and in the end will increase capital (Yolanda, 2017), (Fauziah & Iskandar, 2015), and (Abusharba et al., 2013).

The results of the financing risk hypothesis (NPF) test result in a significance value of 0.0039 which is smaller than the requirement of 0.05, with a positive coefficient. These results indicate that the NPF has a significant but positive effect, so it is not in accordance with the hypothesis which states that the NPF has a negative effect on the capital adequacy ratio (CAR). Judging from the descriptive statistical data, the average NPF of IRBs is very high, which is above 10%, much higher than the minimum requirement of 5%. Likewise, the average CAR shows very high, which is above 25%, meaning that IRBs' capital is still very large compared to the minimum requirement of 8%, so that IRBs are less efficient in managing their capital. These results contradict (Risyanto & Soraya, 2021), (Anggareni et al., 2021), (Abiodun et al., 2020), (Anisa & Sutrisno, 2020) and (Abusharba et al., 2013) which found a negative effect. between financing risk and CAR. However, it is supported by (Fauziah & Iskandar, 2015), (Raharjo et al., 2014), and (Nuviyanti & Anggono, 2014) who found a positive influence between NPF on CAR.

The size of the bank (SIZE) produces a significance value of 0.000 which is smaller than the condition of 0.05, meaning that the size of the bank has a significant and positive effect on CAR. These results indicate that IRBs with large assets have a higher opportunity to raise funds from the public and distribute them to customers. Large banks also have a higher ability to generate profits so they can increase their capital. These results are in accordance with the hypothesis and are in accordance with the results of research from (Setiawan & Muchtar, 2021), (Aktas et al., 2015), (Runtu, Saerang, & Pangemanan, 2017), (Al-Harby, 2019), and (Fauziah et al., 2020) who found a positive effect of Size on CAR.

Conclusions and Recommendations

Based on the results of hypothesis testing and discussion, it can be concluded that there are two proven hypotheses, namely liquidity risk has a significant negative effect on CAR and bank size (size) has a positive effect on CAR, and there are two variables that are not significant, namely profitability (ROA) and operating risk (OEIR).) so that it has no effect on bank capital, and there is one significant variable but the coefficient is the opposite of the hypothesis, namely financing risk (NPF) which has a significant and positive effect on CAR.

These results are expected to be utilized by the management of IRBs in Indonesia in the context of managing their capital, especially on factors that significantly affect capital adequacy. Capital is a very important aspect for banks so that capital management must be managed properly and carefully. These results are also expected to provide additional references for further researchers, so that they can develop further by adding research variables, both internal and external factors.

Capital Adequacy Ratio And Factors Determinant Study on Islamic Rural Bank in Indonesia

ORIGINALITY REPORT

16%	17%	13%	7%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

7%

★ repository.stei.ac.id

Internet Source

Exclude quotes	On	Exclude matches	< 1%
Exclude bibliography	On		