ANALYSIS OF FACTORS AFFECTING CAPITAL ADEQUACY RATIO BETWEEN ISLAMIC BANK AND CONVENTIONAL BANK CASE STUDY – MANDIRI SYARIAH AND MANDIRI (2009-2016)

ANALISIS FAKTOR-FAKTOR YANG MEMPENGARUHI RASIO KECUKUPAN MODAL ANTARA BANK SYARIAH DAN BANK KONVENSIONAL
STUDI KASUS - MANDIRI SYARIAH DAN MANDIRI (2009-2016)

By :
Kartika Aprillia Kasmadi[1]
Linda Lambey[2]
Johan R. Tumiwa[3]

[123]Faculty of Economics and Business, International Business Administration, Management Program
Sam Ratulangi University Manado

E-mail :
[1]kartikakasmadi@gmail.com
[2]lindalambey@yahoo.com
[3]johantumiwa@gmail.com

Abstract : Banks are expected to perform their activities effectively and efficiently in order to reach financial goals. A healthy standard for banks in Indonesia is determined by Central Bank (Bank Indonesia), which is above 8% for the indication of capital adequacy ratio. This research analyses the relationship between capital adequacy ratio and its determinants between Mandiri and Mandiri Syariah bank. This research examines the simultaneous and partial influences between capital adequacy ratio and the variables of return on equity, net interest margin, loan/financing to deposit ratio, and bank size by using time series regression and using the quarterly period of 2009-2016. The results reveal that the independent variables simultaneously affect capital adequacy ratio for both banks, and by partially, the results confirm that return on equity and bank size significantly affect capital adequacy ratio. With this research, companies are encouraged to figure out the root problems on how to manage a stable financial statements that may lay on some of the variables that are discussed in this study.

Keywords : capital adequacy ratio, return on equity, loan to deposit ratio, financing to deposit ratio, bank size.

Abstrak : *Bank diharapkan dapat melakukan aktivitasnya secara efektif dan efisien guna mencapai suatu tujuan. Standar yang sehat untuk bank-bank di Indonesia ditentukan oleh Bank Indonesia (BI), di atas 8% untuk indikasi rasio kecukupan modal. Penelitian ini menganalisis hubungan antara rasio kecukupan modal dengan determinan antara bank Mandiri dan Mandiri Syariah. Penelitian ini menguji pengaruh simultan dan parsial antara rasio kecukupan modal dengan variabel return on equity, net interest margin, loan / financing to deposit ratio, dan ukuran bank dengan menggunakan metode regresi time series dan menggunakan triwulanan tahun 2009. -2016. Hasilnya menunjukkan bahwa variabel independen secara simultan mempengaruhi rasio kecukupan modal untuk kedua bank, dan secara parsial, hasilnya mengkonfirmasi bahwa return on equity dan ukuran bank berpengaruh secara signifikan terhadap rasio kecukupan modal.Dengan hasil yang didapat, perusahaan dihimbau untuk ebih memperhatikan akar permasalahan rasio permodalan untuk menggapai laporan keuangan yang stabil.*

Kata Kunci : rasio kecukupan modal, return on equity, loan to deposit ratio, financing to deposit ratio, ukuran bank

INTRODUCTION

Research Background

Banking industry has an important role in developing the financial system in every nation. This is because banking industry serves as a Financial Intermediary, which is an entity that acts as a middleman that brings together two parties, or in other words, the owner and user of funds. As stated before, banking industry supports national economy, therefore banking activities are encouraged to be effective and efficient in order to achieve economic goals. Nations now are facilitated with conventional banks along with Islamic banks. Banking Industry in Indonesia is now enlivened by the existence of Islamic banks, which offer financial products and investment in a different way than conventional banks that have long existed.

In some cases, both conventional and Islamic banks have similarities, especially in terms of technical acceptance of money, transfer mechanisms, general terms of obtaining financing and so forth. However, there is a fundamental difference between the two, and it is in the Islamic bank's principle (*akad*) that carried out the consequences of the world and hereafter (*ukhrawi*) because the contract is done under Islamic law. The basic characteristics of Islamic banking, among others, prohibit the application of usury and prohibit transactions based on speculative motives, making Islamic banks are identified as financing institutions that are closely related to the real sector, and this is a competitive advantage for Islamic banks.

One of the factors to be considered by bank to survive is to maintain a healthy capital adequacy ratio (CAR). Capital adequacy ratios ensure the efficiency and stability of a nation's financial system by lowering the risk of banks becoming insolvent. If a bank is declared insolvent, this shakes the confidence in the financial system and unsettles the entire financial market system. The mandate of the central bank is to maintain the stability of the monetary and banking system and capital adequacy is key to doing that, in addition to other measures. Depositors want their money to be safe. A safe bank should have a healthy balance sheet and should be strong enough to withstand shocks (such as a high volume of losses). Capital adequacy is one of the indications of such a capacity.

Research Objectives

The research objectives in this research are :

1. The simultaneous influence of ROE, NIM, LDR/FDR and BANK SIZE on CAR of both Mandiri bank and Mandiri Syariah bank.
2. The partial influence of ROE on CAR of both Mandiri bank and Mandiri Syariah bank.
3. The partial influence of NIM on CAR of both Mandiri bank and Mandiri Syariah bank.
4. The partial influence of LDR/FDR on CAR Mandiri bank and Mandiri Syariah bank.
5. The partial influence of SIZE on CAR both Mandiri bank and Mandiri Syariah bank.
6. The differences of factors affecting CAR of both Mandiri bank and Mandiri Syariah bank.

LITERATURE REVIEWS

Capital Adequacy Ratio (CAR)

Capital adequacy ratio is one important aspect in view of the health of a bank. The minimum capital adequacy ratio used in this study is still using the definitions contained in the Bank Indonesia Regulation No. 10/15/PBI/2008 dated 24 September 2008, the minimum capital requirement is 8% of risk-weighted assets (RWA) (Raharjo et al, 2014).

Return on Equity (ROE)

The return on equity ratio essentially measures the rate of return that the owners of common stock of a company receive on their shareholdings. Return on equity signifies how good the company is in generating returns on the investment it received from its shareholders (Nuviyanti and Anggono, 2014).

Bank Size (SIZE)

Bank size (SIZE) is represented by the total asset that bank currently holds. A bank's total assets are the total of equity and liabilities. Total equity is the owner's capital, while total liabilities are other parties' funds that it currently possesses (Rumangu et al, 2017).

Net Interest Margin (NIM)
        Net interest margin is used to measure the ability of management to generate net interest income. Net interest margin is the cost of financial intermediation, and is defined as net interest income divided by average earning assets of the bank (Büyükşalvarcı and Abdioğlu, 2011).

Loan to Deposit Ratio (LDR)
        The loan to deposit ratio (LDR) (or in Syariah's term, financing to deposit ratio) is used to asses a bank's liquidity indicator and is determined dividing the banks total loans by its total deposits (Nuviyanti and Anggono, 2014).

Previous Research
        One of the research found that focused on capital adequacy ratio and its determinants is conducted by Shingjergji and Hyseni (2015). They analyzed the influences of return on asset, return on equity, non-performing loans, equity multiplier, bank size and loan to deposit ratio on capital adequacy ratio. Using linear regression analysis, the result showed that return on asset and return on equity had no effect on capital adequacy ratio, while non-performing loans had a negative impact on it. Loan to deposit ratio and equity multiplier had negative effect on capital adequacy ratio, on the other hand, bank size had a positive impact on it. Nuviyanti and Anggono (2014) conducted a research focusing on the effects of selected financial ratios on capital adequacy ratio which confirmed that non-performing loan and return on asset had a positive correlation with capital adequacy ratio, while loan to deposit ratio and operating expense to operating income had a negative correlation with capital adequacy ratio. Thoa and Anh (2016), in their research, analysed the effects of net interest margin, liquidity, loan loss reserve, loans in total assets, bank size and leverage on capital adequacy ratio. The results were net interest margin and liquidity had positive effects on capital adequacy ratio, while loan loss reserve and loans in total assets had negative effects. Bank size and leverage had no effect on capital adequacy ratio.

Research Hypothesis
H1 : Return on equity (ROE), bank size (SIZE), loan to deposit ratio (LDR), and net interest margin (NIM) have simultaneous effect to capital adequacy ratio (CAR).
H2 : Return on equity (ROE) has significant effect to capital adequacy ratio (CAR).
H3 : Net interest margin (NIM) has significant effect to capital adequacy ratio (CAR).
H4 : Loan/Financing to deposit ratio (LDR/FDR) has significant effect to capital adequacy ratio (CAR).
H5 : Bank size (SIZE) has significant effect to capital adequacy ratio (CAR).
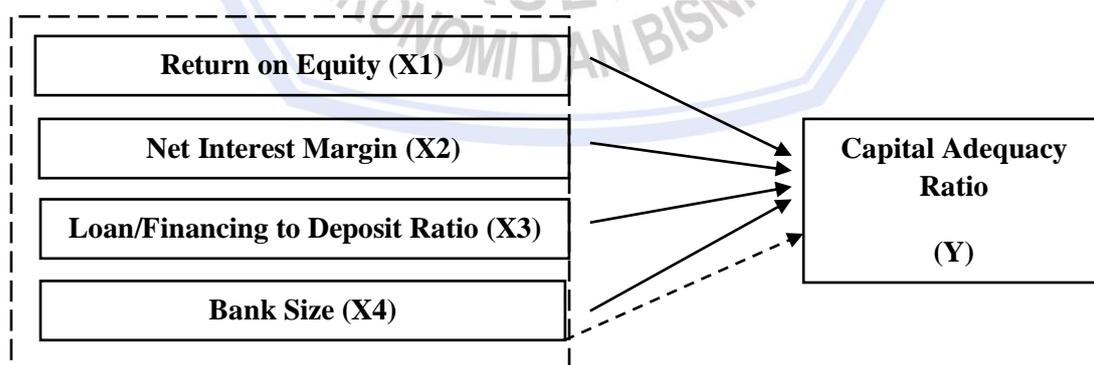
Conceptual Framework

Figure 1. Conceptual Framework

RESEARCH METHODS

Research Paradigm
        The data that is used in this research is secondary data, which is a numerical data, therefore the type of research is quantitative research.

Place and Time of Research

Place of research is in Sam Ratulangi University, Manado, Indonesia. The time in preparing the research was two months (July - August 2017), and to complete it, it will take around another two months (September - October 2017). So in total, it takes around four months (July – October 2017) to get the research done overall. If any complicated difficulties will appear in the meantime, it is possible to complete the research in a longer time than estimated.

Population and Sample

The population of this research is conventional commercial banks and Islamic commercial banks in Indonesia. This research uses purposive and convenience sampling. The samples taken are Mandiri Bank and Mandiri Syariah Bank in Indonesia with the quarterly financial reports that's provided by the official websites, from the period of 2009-2016, which is in total of 64 samples (32 for each bank).

Data Collection Method

This research will be using secondary data. The secondary data was collected from Mandiri and Mandiri Syariah's official online websites which are the quarterly financial report of both Bank Mandiri and Bank Mandiri Syariah from the period of 2009 to 2016.

Analysis Method

In this research, Time Series Regression will be used as the data analysis method. Time Series Regression will be used to analyze the capital adequacy ratio (CAR) and its determinants. A time series analysis starts by building a design matrix (X_t), which can include current and past observations of predictors ordered by time (t). Then, apply ordinary least squares (OLS) to the multiple linear regression (MLR) model to get an estimate of a linear relationship of the response (y_t) to the design matrix and β represents the linear parameter estimates to be computed. The residual terms can be extended in the MLR model to include heteroscedasticity or autocorrelation effects.

Time series regression equation for this research :

$$Y_t = \beta_0 + \beta X1_t + \beta X2_t + \beta X3_t + \beta X4_t + \varepsilon_t$$

Time series regression model for this research :

$$CAR_t = \beta_0 + \beta ROE_t + \beta NIM_t + \beta LDR/FDR_t + \beta NIM_t + \varepsilon_t$$

RESULT AND DISCUSSION

Result
Coefficient of Regression

Table 1. Coefficient of Regression Result Mandiri

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-60.638	40.520		-1.496	.146
	ROE	-.223	.077	-.549	-2.910	.007
	NIM	-1.025	1.442	-.168	-.711	.483
	LDR	-.049	.066	-.215	-.743	.464
	LogSIZE	10.568	5.304	.671	1.992	.057

a. Dependent Variable: CAR
Source: SPSS output (2017)

Return on equity (ROE), net interest margin (NIM), loan to deposit ratio (LDR), and bank size (SIZE) are the predictors that will be used in analysing the correlation with capital adequacy ratio (CAR) as the explanatory variable in this research. The regression model that is based on the analysis above is:

$$Y_t = 60.638 + 0.223X_{1t} + 1.025X_{2t} + 0.049X_{3t} + 10.568X_{4t} + \varepsilon_t$$

The constant value of 60.638 indicates that if return on equity, net interest margin, loan to deposit ratio, and bank size remain constant, then the value of capital adequacy ratio will decrease by 60.638 %.
The coefficient value of .223 means that if return on equity variable in this research is increased by 1%, capital adequacy ratio will change by 0.223%. The coefficient value of 1.025 means that if net interest margin variable in this research is increased by 1%, capital adequacy ratio will change by 1.025%. The coefficient value of .049 means that if loan to deposit ratio variable in this research is increased by 1%, capital adequacy ratio will change by 0.049%. The coefficient value of 10.568 means that if bank size variable in this research is increased by 1%, capital adequacy ratio will change by 10.568%.

Table 2. Coefficient of Regression Result Mandiri Syariah

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-3.606	9.224		-.391	.699
	ROE	-.042	.015	-.606	-2.867	.008
	NIM	.365	.592	.125	.616	.543
	FDR	.160	.059	.553	2.702	.012
	LogSIZE	.347	1.227	.053	.283	.779

a. Dependent Variable: CAR2
Source: SPSS output (2017)

Return on equity (ROE), net interest margin (NIM), financing to deposit ratio (FDR), and bank size (SIZE) are the predictors that will be used in analysing the correlation with capital adequacy ratio (CAR) as the explanatory variable in this research. The regression model that is based on the analysis above is:

$$Y_t = 3.606 + 0.042X_{1t} + 0.365X_{2t} + 0.160X_{3t} + 0.347X_{4t} + \varepsilon_t$$

The constant value of 3.6306 indicates that if return on equity, net interest margin, loan to deposit ratio, and bank size remain constant, then the value of capital adequacy ratio will decrease by 3.606 %. The coefficient value of .223 means that if return on equity variable in this research is increased by 1%, capital adequacy ratio will change by 0.223%. The coefficient value of 0.42 means that if net interest margin variable in this research is increased by 1%, capital adequacy ratio will change by .042%. The coefficient value of .160 means that if financing to deposit ratio variable in this research is increased by 1%, capital adequacy ratio will change by 0.160%. The coefficient value of .347 means that if bank size variable in this research is increased by 1%, capital adequacy ratio will change by 0.347%.

Coefficient Correlation and Determination

Table 3. Coefficient Correlation (R) and (R^2) Result Mandiri

R	R Square	Adjusted R Square	Std. Error of the Estimate
.802[a]	.644	.591	1.43173

Source: SPSS output (2017)

Based on the analysis above, the coefficient correlation value (R) is 0.802. It indicates that the correlation of all the independent and dependent variables is strong. To determine how much the contribution of

independent variables to the dependent variable, we need to test the determinant of the coefficient (R^2). R^2= 0.644, this value implies that the contribution of independent variables on dependent variable is 64.4%, while the remaining 35.6% is involved by other predictors or variables that have not been examined in this research.

Table 4. Coefficient Correlation (R) and (R^2) Resut Mandiri Syariah

R	R Square	Adjusted R Square	Std. Error of the Estimate
.601[a]	.362	.267	1.11273

Source: SPSS output (2017)

Based on the analysis above, the coefficient correlation value (R) is 0.601. It indicates that the correlation of all the independent and dependent variables is strong. To determine how much the contribution of independent variables to the dependent variable, we need to test the determinant of the coefficient (R^2). R^2= 0.362, this value implies that the contribution of independent variables on dependent variable is 36.2%, while the remaining 63.8% is involved by other predictors or variables that have not been examined in this research.

Simultaneous Test

Table 5. Simultaneously Test Result (F-Test) Mandiri

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	100.037	4	25.009	12.200	.000[b]
	Residual	55.346	27	2.050		
	Total	155.383	31			

Source : SPSS output (2017)

The table shows the result of F_{count} is 12.200. It means that the value is greater than the F_{table} ($F_{count} > F_{table}$), which means that H_0 is rejected and H_1 is accepted. The significance value on the table is 0.000 which is lower than 0.05 (5%), shows that the independent variables simultaneously and significantly affect the dependent variable. With that being said, both tests indicate that return on equity, net interest margin, loan to deposit ratio and bank size simultaneously have an significant influence on capital adequacy ratio.

Table 6. Simultaneously Test Result (F-Test) Mandiri Syariah

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16.439	4	4.110	3.056	.031[b]
	Residual	41.684	31	1.345		
	Total	58.123	35			

Source : SPSS output (2017)

The table shows the result of F_{count} is 3.056. It means that the value is greater than the F_{table} ($F_{count} > F_{table}$), which means that H_0 is rejected and H_1 is accepted. The significance value on the table is 0.031 which is lower than 0.05 (5%), shows that the independent variables simultaneously and significantly affect the dependent variable. With that being said, both tests indicate that return on equity, net interest margin, financing to deposit ratio and bank size simultaneously have an significant influence on capital adequacy ratio.

Partial Test
Table 7. Partial Test Result Mandiri

Independent Variables	T	Sig.
Return on equity (ROE)	-2.910	0.007
Net interest margin (NIM)	-.711	0.483
Loan to deposit ratio (LDR)	-.743	0.464
Bank Size (SIZE)	1.992	0.057

Source: Data processed (2017)

According to the table, the T_{count} of return on equity (ROE) is -2.910 which is greater than T_{table} of 2.052, based on the standard calculation required ($T_{count} > T_{table}$). The significance value of this variable is 0.007 which is lower than 0.05 (0.007 < 0.05). This means that return on equity (ROE) partially has a negative and significant effect to capital adequacy ratio (CAR). So, H_0 is rejected and H_2 is accepted. According to the table, the T_{count} of net interest margin (NIM) is –0.711 which is lower than T_{table} of 2.052, based on the standard calculation required ($T_{count} < T_{table}$). The significance value of this variable is 0.483 which is greater than 0.05 (0.483 > 0.05). This means that net interest margin (NIM) partially has negative but not significant effect to capital adequacy ratio (CAR). So, H_0 is accepted and H_3 is rejected. According to the table, the T_{count} of loan to deposit ratio (LDR) is -0.743 which is lower than T_{table} of 2.052, based on the standard calculation required ($T_{count} < T_{table}$). The significance value of this variable is 0.464 which is greater than 0.05 (0.464 > 0.05). This means that loan to deposit ratio (LDR) partially has a negative but not significant effect to capital adequacy ratio (CAR). So, H_0 is accepted and H_4 is rejected. According to the table, the T_{count} of bank size (SIZE) is 1.992 which is lower than T_{table} of 2.052, based on the standard calculation required ($T_{count} < T_{table}$). The significance value of this variable is 0.057 which is greater than 0.05 (0.057 > 0.05). This means that bank size (SIZE) partially has a positive but not significant effect to capital adequacy ratio (CAR). So, H_0 is accepted and H_5 is rejected.

Table 8. Partial Test Result Mandiri Syariah

Independent Variables	T	Sig.
Return on equity (ROE)	-1.891	0.068
Net interest margin (NIM)	.166	0.870
Financing to deposit ratio (FDR)	1.747	0.090
Bank Size (SIZE)	2.202	0.035

Source: Data processed (2017)

According to the table, the T_{count} of return on equity (ROE) is -1.891 which is lower than T_{table} of 2.052, based on the standard calculation required ($T_{count} < T_{table}$). The significance value of this variable is 0.068 which is greater than 0.05 (0.068 > 0.05). This means that return on equity (ROE) partially has a negative but not significant effect to capital adequacy ratio (CAR). So, H_0 is accepted and H_2 is rejected. According to the table, the T_{count} of net interest margin (NIM) is 0.166 which is lower than T_{table} of 2.052, based on the standard calculation required ($T_{count} < T_{table}$). The significance value of this variable is 0.870 which is greater than 0.05 (0.483 > 0.05). This means that net interest margin (NIM) partially has positive but not significant effect to capital adequacy ratio (CAR). So, H_0 is accepted and H_3 is rejected. According to the table, the T_{count} of financing to deposit ratio (FDR) is 1.747 which is lower than T_{table} of 2.052, based on the standard calculation required ($T_{count} < T_{table}$). The significance value of this variable is 0.090 which is greater than 0.05 (0.090 > 0.05). This means that financing to deposit ratio (FDR) partially has a positive but not significant effect to capital adequacy ratio (CAR). So, H_0 is accepted and H_4 is rejected. According to the table, the T_{count}

of bank size (SIZE) is 2.202 which is greater than T_{table} of 2.052, based on the standard calculation required ($T_{count} > T_{table}$). The significance value of this variable is 0.035 which is lower than 0.05 (0.035 < 0.05). This means that bank size (SIZE) partially has a positive and significant effect to capital adequacy ratio (CAR). So, H_0 is rejected and H_5 is accepted.

Discussion

According to the analysis test results in this research, return on equity (ROE), net interest margin (NIM), loan/financing to deposit ratio (LDR/FDR), and bank size (SIZE) as a whole, have a strong influence on capital adequacy ratio both in Mandiri and Mandiri Syariah banks. On the analysis of Mandiri bank, return on equity has a strong and negative influence to the capital adequacy ratio it holds. On the other hand, Mandiri Syariah has a negative effect to capital adequacy ratio, but not significantly. According to Djulianto (2014) in his research, the financial ratio of Mandiri Syariah bank, specifically the variable of return on equity, throughout the years, had a better performance than Mandiri bank's. The result of return on equity's partial influence to capital adequacy ratio in the analysis of Mandiri bank, is supported by Olarewaju and Akande (2016), in their researches which indicated that return on equity had a significantly negative impact to capital adequacy ratio. While the analysis result on Mandiri Syariah, the return on equity has no significant impact to capital adequacy ratio and it is supported by Shingjergji and Hyseni (2015) in their research which indicated that return on equity has no significant impact on capital adequacy ratio.

Net interest margin, in this research's result, has no significant impact on capital adequacy ratio in both Mandiri and Mandiri Syariah banks and it means the hypothesis is rejected because the significance value is greater than 5%. Although in Mandiri's case, net interest margin has negative relationship with capital adequacy ratio and in Mandiri Syariah's case, it has positive relationship with capital adequacy ratio. But the result shows that both banks' net interest margin do not affect capital adequacy ratio significantly. However, this result is supported by Büyükşalvarcı and Abdioğlu (2011) in their research, which also indicated that net interest margin (NIM) had no significant impact on capital adequacy ratio

Mandiri bank's analysis result shows that the loan to deposit ratio (LDR) has no significant impact on capital adequacy ratio. The similar case also happens to financing to deposit ratio (FDR) in Mandiri Syariah's analysis result, which indicates no significant impact to capital adequacy ratio. Although it has no significant influence, in the analysis results they also show that in Mandiri, loan to deposit ratio (LDR) has a negative relationship with capital adequacy ratio, while in Mandiri Syariah, financing to deposit ratio (FDR) has a positive relationship with capital adequacy ratio. This supports the research that was conducted by Masood and Ansari (2016), which indicated that loan to deposit ratio had no significant impact on capital adequacy ratio. In contrast a decreased loan to deposit ratio showed the lack of effectiveness of banks in lending.

Bank size, according to the analysis result in this research, has positive but not significant influence on capital adequacy ratio in Mandiri bank. On the other hand, according to Mandiri Syariah's analysis result, bank size has a positive and significant influence on capital adequacy ratio. This shows that between Mandiri bank and Mandiri Syariah bank, there is no big of a difference, since both bank sizes on each bank have positive relationships with capital adequacy ratio, but it is just a matter of significance level that differs them. In Mandiri Syariah's case, which indicates that banks size positively and significantly affect capital adequacy ratio, is supported by the research's result conducted by Shingjergji and Hyseni (2015), proved that bank size had a positive and significant influence on capital adequacy ratio, which meant that large sized banks had bigger amounts capital adequacy ratios.

CONCLUSION AND RECOMMENDATION

Conclusion

Based on the analysis, calculations, results and discussions, this research's conclusions are described as follows:
1. Return on equity, net interest margin, loan/financing to deposit ratio, and bank size do simultaneously affect capital adequacy ratio in both Mandiri and Mandiri Syariah banks.
2. Return on equity partially influences capital adequacy ratio negatively and significantly in Mandiri bank, while in Mandiri Syariah bank, return on equity partially influences capital adequacy ratio negatively but not significantly.

3. Net interest margin partially influences capital adequacy ratio negatively but not significantly in Mandiri bank, while in Mandiri Syariah bank, net interest margin partially influences capital adequacy ratio positively but not significantly.
4. Loan to deposit ratio partially influences capital adequacy ratio negatively but not significantly in Mandiri bank, while in Mandiri Syariah bank, financing to deposit ratio partially influences capital adequacy ratio positively but not significantly.
5. Bank size partially influences capital adequacy ratio positively but not significantly in Mandiri bank, while in Mandiri Syariah bank, bank size partially influences capital adequacy ratio positively and significantly.
6. Mandiri bank and Mandiri Syariah bank do perform some differences but not significant between the influences to the capital adequacy ratio.

Recommendation

This study is not only conducted for the purpose of analysis research and author's degree requirement, but also is expected to be beneficial for the public's purposes, such as:

1. Shareholders

   With this research, investors are expected to be more aware and strategic in making decisions on doing activities such as investing on financial intermediaries, considering that by this analysis results, investors may be able to read the financial conditions and understand it better, in order to gain profits and not suffer financial losses.

2. Banks

   Mandiri bank and Mandiri Syariah bank are expected to be more aware and efficient in managing the financial ratios that affect capital adequacy ratio. The healthiness of a bank is depended on the value of capital adequacy ratio. With this research, companies are encouraged to figure out the root problems on how to manage a stable financial statements that may lay on some of the variables that are discussed in this study.

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