IMPLEMENTATION OF THE INDONESIAN BANKING ARCHITECTURE AS A BLUEPRINT OF THE DIRECTION AND ORDER OF THE NATIONAL BANKING SYSTEM: EMPIRICAL STUDY OF INDONESIAN COMMERCIAL BANKING

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ABSTRACT

This study aims to examine the influence of Capital Adequacy Ratio (CAR), earning assets, and liquidity against Return on Asset (ROA) in the conventional bank which has the biggest asset listed in Indonesian Stock Exchange (IDX) during the period of 2006 to 2010. This research used time series data from Bank Indonesia's report and financial reports annually published by banking firms listed in IDX. After passing the purposive sampling, there were 27 conventional banks listed in IDX as sample in this study. By using multiple regression analysis (F-test), results showed that CAR, Non Performing Loan (NPL), and Non Performing Loan (NPL) collectively have significant influence on ROA. However, by using individual analysis (t-test), NPL has a negative and significant influence on ROA, while CAR and LDR have no significant influence on ROA.

Keywords: *financial performance, Indonesian Banking Architecture (IBA), Banking system, IDX*

ABSTRAK

Penelitian bertujuan untuk menguji pengaruh Capital Adequacy Ratio (CAR), aktiva produktif, dan likuiditas terhadap Return on Asset (ROA) pada bank konvensional yang memiliki aset terbesar yang terdaftar di Bursa Efek Indonesia (BEI) selama periode 2006 sampai 2010. Penelitian menggunakan data time series dari laporan Bank Indonesia dan laporan keuangan tahunan yang diterbitkan oleh perusahaan-perusahaan perbankan yang terdaftar di BEI. Setelah melewati purposive sampling, 27 bank konvensional yang terdaftar di BEI digunakan sebagai sampel dalam penelitian ini. Dengan menggunakan analisis regresi berganda (F-test), hasil penelitian menunjukkan bahwa CAR, Non Performing Loan (NPL), dan Non Performing Loan (NPL) secara kolektif memiliki pengaruh yang signifikan terhadap ROA. Akan tetapi, dengan menggunakan analisis individu (t-test), NPL memiliki pengaruh negatif dan signifikan terhadap ROA, sedangkan CAR dan LDR tidak berpengaruh signifikan terhadap ROA.

Kata kunci: *kinerja keuangan, Arsitektur Perbankan Indonesia, sistem perbankan, BEI*

INTRODUCTION

Bank is a financial institution that has an important role in national economy as a financial intermediary. Besides, bank also an industry that its business activities rely on public trust so the bank's health needs to be preserved (Merkusiwati, 2007). Since the second semester in 2008, money market in various parts of the world has experienced unfavorable conditions. This situation is triggered by subprime mortgage crisis in USA that extends to investment, financial derivatives product, and commodity market. Based on Infobank, for banking sector in Indonesia, the crisis generally is caused by a lack of liquidity in foreign currency, scarcity of credit facilities as an effect of the consolidation policy conducted by the bank on its credit portfolio, increases in interest rate, and increases in cost of credit along with the rise of credit risk (Fitriyana, 2011). Even though facing much pressure due to global financial crisis spreading widely, Indonesian banking performance in 2008 is relatively stable. The increasing of monitoring function and cooperation with relevant authorities with the issuance of some regulation of Bank Indonesia and government play significant role in maintaining banking security from the negative impact of financial market turmoil. Banks in Indonesia succeeded in increasing its intermediary function and doing consolidation process with positive results. (Bank Indonesia, 2008)

According to Merkusiwati (2007), company performance assessment for management can be interpreted as an assessment of the achievements. In this case, profit can be used as a measure of achievement in a company. Company performance assessment is important to do, either by management, shareholder, government, or any other parties who is concerned and related to the wealth distribution among them. Generally, there are five valuation aspects to assess banking performance which called CAMEL (Capital, Assets, Management, Earning, and Liquidity). It is also supported by the Decree of Director of Bank Indonesia in 1999. The Capital aspect includes CAR, the assets aspect includes NPL, and the earning aspects include Net Interest Margin (NIM) and Operation Efficiency (BOPO), while the liquidity aspects include LDR and reserve requirement (RR, in Indonesian usually called as GWM). Four of five aspects which are capital, assets, management, earning, and liquidity are analyzed with financial ratio.

Measurement of the ability to generate profit (profitability) in the banking industry that is often used is the Return on Equity (ROE) and Return on Assets (ROA). ROA focuses on company's ability to generate earnings from its business activities, while ROE only measure the return on investment from company's owner on that business (Sudiyatno & Suroso, 2010). Next, this study would use ROA as a performance measurement in the banking industry.

Capital Adequacy Ratio (CAR) is a benchmark of capital assessment in the context of a health level owned by every bank. The CAR magnitude is measured through a ratio between banks's Capitals to Risk Assets Ratio (CRAR). Since the crisis period until today, CAR becomes the main reference in determining a bank's health as in declares in the Decree of Director of Bank Indonesia in 1999. The Governor of Bank Indonesia officially announced the implementation of Indonesian Banking Architecture (IBA) which is a blueprint of the direction and national banking order in the future. One of IBA programs is changing the minimum capital requirement for commercial banks (including Bank Pembangunan Daerah) into IDR 100 billion with a minimum CAR 8% at the latest in 2010. Determination of CAR as a variable that affects profitability is based on its relationship with the risk level of a bank. According to Werdaningtyas (2002), the height of capital ratio can protect customers, thereby increasing customer trust against the bank.

Based on Susilo, Triandaru, and Santoso's (1999) study, one of a bank risks is credit risk. Credit risk refers to the risk faced by the bank because of distributing the funds in the form of loans to the public. Because of many things, a borrower might not fulfill its payments to the bank such as loan

principal, interest, and others. The unfulfilled obligation of customer to the bank can cause the bank to suffer losses from uncollectable earnings that has been predicted previously. Financial ratio used as a proxy of risk value is a Non Performing Loan (NPL) ratio. The lower the ratio of NPL, the lower the credit risk a bank has to bear.

Liquidity plays an important role in managing banking performance. One of the measurements to measure bank liquidity is by using Loan to Deposit Ratio (LDR). The rule of LDR level according to Bank Indonesia is 110% maximum (Achmad & Kusumo, 2003). It is called liquid if the bank can pay all of its debt especially short term debts (savings, current accounts, and deposits) and also able to pay and meet all credit requests (Suyatmin, 2006). The more illiquid the bank is the customer trust towards the bank will collapse which leads to withdrawal funds and decreases in performance.

Some researchers have conducted research on the influence of Capital Adequacy ratio (CAR), Earning Assets, and Liquidity against Return on Assets (ROA). Azwir (2006) examined the effect of some variables such as CAR, BOPO, LDR, NPL, and PPAP (the allowance for possible losses earning asset) against ROA. It showed that CAR gives a positive and significant effect on ROA. The result is also supported by the research of Restiyana (2011), Ponco (2008), and Sudiyatno and Suroso (2010), with the results show that CAR provides a positive and significant influence on ROA. In contrast with those studies, the research conducted by (Adyani, 2011), which examined the factors that affect the profitability (ROA), shows negative and significant influence on ROA. In line with the research of Adyani, the research of Kusumaningrum (2011) and Fitriyana (2011) about the effect of CAR to ROA also indicates negative and significant influence.

Sari (2011) analyzed the influence of CAR, NPL, BOPO, NIM, LDR, and PPAP on banking performance. The result summarized that NPL has a negative and significant influence to ROA, as same as Adyani (2011) and Restiyana (2011). However, this result is inversely proportional to Kusumaningrum (2011) which showed that NPL has no influence to ROA. This result is also confirmed by Azwir (2006), Fitriyana (2011), and Ponco (2008).

Ponco (2008) showed that LDR has a positive and significant influence on ROA, as well as Restiyana (2011), (Azwir, 2006), and Kusumaningrum (2011). However, the result is in contrast with Sudiyatno and Suroso (2010) which indicate that LDR has no significant influence on ROA in the banking sector. The result is supported by Fitriyana (2011) and Adyani (2011) which indicate that LDR has no influence to ROA.

Research Hyphoteses

Capital Adequacy Ratio (CAR) is commonly known in bahasa Indonesia as *Rasio Kecukupan Modal*. It means as the number of equity needed to cover the risk of loss which arises from the risky asset investments and financing all fixed assets and bank inventory. Entire banks existed in Indonesia are required to provide a minimum capital of 8% of CRAR. The amount capital of a bank will affect the amount of earning assets. So, the higher the utilization of an asset, the bigger the capital needed. Therefore, the greater the Capital Adequacy Ratio (CAR) the higher the profit will be earned. On the other hand, the smaller the risk of a bank the greater the profit earned by the bank (Kuncoro & Suhardjono, 2002). The result is supported by Azwir (2006), Sudiyatno and Suroso (2010), Restiyana (2011), and Ponco (2008) which suggest that the Capital Adequacy Ratio (CAR) has a positive and significant influence on Return on Assets (ROA). Based on the above review, the hypothesis proposed is as follows:

H_1: Capital *Adequacy Ratio* (CAR) has a positive and significant influence on Return on Asset (ROA).

Non Performing Loan (NPL) is the ratio of the amount of nonperforming loans in a bank's loan portfolio to the total amount of outstanding loans the bank holds. Non Performing Loan (NPL) reflects the amount of credit ratio faced by bank. Bank can conduct its operation properly if the NPL's value is fewer than 5%. The increasing rise in NPL value will cause Allowance for Loan and Lease Losses (PPAP) insufficient, so that the bad credit must be taken into account as an expense (cost) that directly affects a bank's profit. Then, because of a few profit accumulations, the cost should be charged to capital (Dunil, 2005). Thus, the higher the NPL the smaller the profit earned, and that will make the ROA becomes increasingly small; on the other hand, the higher the NPL the lower the performance of a bank. Adyani (2011), Fitriyana (2011), and Kusumaningrum (2011) showed that Non Performing Loan (NPL) has a negative and significant influence on Return on Assets (ROA). Based on the premises, the hypothesis developed is as follows:

H_2: Non Performing Loan (NPL) has a negative and significant influence on Return on Assets (ROA).

Loan to Deposit Ratio (LDR) is the ratio used to measure a bank's total outstanding loans for a period to its total deposit balance of public funds and equity used over the same period (Kasmir, 2003). If the LDR ratio is on the standard set by Bank Indonesia (80%–110%), the profit earned by the bank will increase (assuming that the bank is able to distribute its credit effectively). By increasing the profit, ROA will also increase, since profit is a component to form ROA. Ponco (2008), Azwir (2006), Kusumaningrum (2011), and Restiyana (2011) indicated that Loan to Deposit Ratio (LDR) has a positive and significant influence on Return on Assets (ROA). Based on the results of empirical research, it can be hypothesized as:

H_3: Loan to Deposit Ratio (LDR) has a positive and significant influence on Return on Assets (ROA).

METHOD

The data used in this study were secondary data obtained from the publication issued by Indonesian Stock Exchange (IDX), Indonesian Capital Market Directory (ICMD) in 2010 (Institute for Economics and Financial Research, 2011), and banking directory from each bank. According to the classification of data collection, the analysis in this study used cross sectional data. It means the data collected was based on companies listed in Indonesia Stock Exchange.

Population in this study is banking company listed in Indonesian Stock Exchange (IDX) and Indonesian Capital Market Directory (ICMD) in 2010. The number of populations in this study is 29 banks. The sampling technique was done through purposive sampling method with the purpose to get a sample in accordance with the research objectives. Purposive sampling method is a sampling method based on a specific criterion. The criteria are as follows: (1) banking company that has gone public in Indonesian Stock Exchange (IDX); (2) banking company listed on Indonesian Capital Market Directory (ICMD) in 2010; (3) banking company that belongs to a public bank; (4) publicizing the financial statement during the period of research (2006-2010).

Based on the criteria, there are 27 banking companies as a sample. The sample in this study can be seen in Table 1.

Tabel 1 Sample of Conventional Banks Period 2006-2010

BANKS	BANKS
• PT. Bank Mandiri (Persero) Tbk.	• PT. Bank HimpunanSaudara 1906, Tbk.
• PT. Bank Rakyat Indonesia (Persero) Tbk.	• PT. Bank QNB KesawanTbk.
• PT. Bank Central Asia Tbk.	• PT. Bank OCBC NISP Tbk.
• PT. Bank Negara Indonesia (Persero) Tbk.	• PT. Bank Pundi Indonesia Tbk.
• PT. Bank CIMB NiagaTbk.	• PT. Bank Capital Indonesia Tbk.
• PT. Bank Danamon Indonesia Tbk.	• PT. Bank ArthaGrahaInternasionalTbk.
• PT. Bank Panin Indonesia Tbk.	• PT. Bank EkonomiRaharjaTbk.
• PT. Bank PermataTbk.	• PT. Bank Mayapada International Tbk.
• PT. Bank Internasional Indonesia Tbk.	• PT. Bank ICB BumiputeraTbk.
• PT. Bank Tabungan Negara (Persero) Tbk.	• PT. Bank Mega Tbk.
• PT. Bank BumiArtaTbk.	• PT. Bank MutiaraTbk.
• PT. Bank WinduKentjanaInternasionalTbk.	• PT. Bank BukopinTbk.
• PT. Bank Nusantara ParahyanganTbk.	• PT. Bank Tabungan PensiunanNasionalTbk.
• PT. Bank Victoria International Tbk.	

Source: Indonesian Capital Market Directory 2010 (from IDX website)

RESULTS AND DISCUSSION

Table 2 shows Adjusted R Square (R^2) value obtained is 0.441. This means that 44.1% of ROA can be explained by CAR, NPL, and LDR, while the remaining 55.9% explained by other variables. Table 2 also shows a column of F change (F-value) and Sig. F Change which can be used to determine whether CAR, NPL, and LDR can influence ROA altogether. The column of F change (F-value) shows the value of (7,843) $>F_{table}$ (3.03) with the significance of F (*Sig. F*) 0.001 less than 0.05. Based on the test, it can be inferred that CAR, NPL, and LDR provide significant influence altogether to the ROA.

Table 2 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of The Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	0.711[a]	0.506	0.441	1.99722	0.506	7.843	3	23	0.001	1.869

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

Source: Secondary data processed

Durbin-Watson column in Table 2 is used to determine the existing of autocorrelation in a regression model. The requirement to pass autocorrelation test is the Durbin-Watson value must be in the range of 1.55 to 2.46. Based on the column, it can be seen that the Durbin-Watson value is 1.869. Therefore, it can be concluded that the data used on this study has no autocorrelation.

Table 3 Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics	
	B	Std. Error	Beta			Zero-Order	Partial	Part	Tolerance	VIF
Constant	-2.515	2.339		-1.075	0.239					
CAR	0.102	0.058	0.267	1.755	0.093	0.397*	0.334	0.257	0.928	1.077
NPL	-0.348	0.095	-0.555	-3.653*	0.001	-0.628*	-0.606	-0.536	0.932	1.073
LDR	0.042	0.026	0.231	1.573	0.129	0.223	0.312	0.231	0.995	1.005

Note: Sign * show significant variable between another variable
Source: Secondary data processed

Based on Table 3, it can be noted that the regression equation formed can be as follows:

$$ROA = -2.515 + 0.102CAR – 0.348NPL + 0.042LDR + e.$$

The constant value magnitude of -2.515 suggests that if a whole independent variables are not considered as influential against ROA or are constant, then the magnitude of ROA value is -2.515. The CAR coefficient magnitude of 0.102 indicates that there is a positive relationship between CAR and ROA. So, if the CAR value is getting bigger, then the ROA value will be bigger. The NPL coefficient magnitude of -0.348 indicates a negative relationship between NPL and ROA. It means the bigger the value of NPL the smaller the value of ROA, and vice versa. LDR coefficient magnitude of 0.042 indicates a positive relationship between LDR and ROA. It means the bigger the value of LDR the bigger the value of ROA.

There is a Correlation column in Table 3 that shows the relationship magnitude between independent variables and dependent variable. In this table, it can be seen that only variable of CAR and NPL that has a close relationship with ROA. There is a VIF column that can also be seen in Table 3, which indicates the existing of multicollinearity. To be passed on multicollinearity test, the VIF value has to be higher than 10 (VIF > 10). Based on its requirement, the VIF value in Table 3 shows that regression model in this study has no multicollinearity.

It can be seen also in Table 3 a t-test result. It shows the relationship of independent variables and dependant variable. Based on Table 3, the value obtained of $t\text{-}_{value}$ for CAR variable is 1.755 with level of significance 0.093. The value of $t\text{-}_{value}$(1.755) >$t\text{-}_{table}$(1.71387) with significance t (sig-t) 0.093 is greater than 0.05. So it can be concluded that H_1 is rejected. It means that there is no significant influence between CAR and ROA. For the NPL, the value of $t\text{-}_{value}$ (-3.653) <$t\text{-}_{table}$ (-1.71387) with significance t (sig-t) 0.001 is less than 0.005. So it can be concluded that H_2 is not rejected. It means that there is a negative and significant influence between NPL and ROA. For the last variable, LDR, the value of $t\text{-}_{value}$ is 1.573 with level of significance is 0.129. The value of $t\text{-}_{value}$ (1.573) < $t\text{-}_{table}$ (1.71387) with significance of t-value is greater than 0.05. So it can be concluded that H_3 is rejected. It means that there is no significant influence between LDR and ROA.

Increasingly, tight business competition requires the company to improve its performance in order to attract public attention, so that people are willing to allocate their funds or investors are willing to invest their money. The performance of a company can be seen on the company's financial reports. The reason this research used banking company as a sample is because the banking sector plays a significant role in the economy of a country which also dominates the national financial sector (Purwanto, 2010). The 27 conventional banks taken as sample from the total population 29 banks, therefore there were 2 banks eliminated because of its incompleteness secondary data required in this study.

Based on the result, CAR has a positive but no significance influence on ROA. It is indicated by the t-value greater than $t\text{-}_{table}$ with the significance more than 0.05. This means that the influence of CAR on ROA is low and statistically not significant on the significance level below 5%, or in other words H_1 is rejected. This happens because in 2008 Bank Century experienced a case resulting the CAR ratio of Bank Century was far below the standards imposed by Bank Indonesia. This greatly affects the result of the research. Result of this study is consistent with Adyani (2011), Fitriyana (2011), and Kusumaningrum (2011). However, this result does not agree with Azwir (2006), Restiyana (2011), Ponco (2008), and Sudiyatno and Suroso (2010) in which these studies indicate that CAR has significant influence on ROA.

The result of NPL against ROA indicates that NPL has a negative and significant influence on ROA. It means if the NPL declines, it will increase the bank performance which is proxy by the ROA indicator. It is indicated with the value of $t\text{-}_{value}$ smaller than $t\text{-}_{table}$ with the significance less than 0.05, so that H_2 is not rejected. It is characterized by the average level of NPL in the study is at a safe level, which is below 5%. This indicates that most of banks in Indonesia have already kept its credit distribution very well. Result of this study is in accordance with the study of Adyani (2011), Restiyana (2011), and Sari (2011). However, these results differ from Azwir (2006), Ponco (2008), Fitriyana (2011), and Kusumaningrum (2011) which indicate that the NPL variable has no significant influence on ROA.

The result of LDR against ROA indicates that LDR has no significant influence on ROA. This is showed by the T-value less than T_{tabel} value with the significance greater than 0.05, so it can be concluded that H_3 is rejected. This result illustrates the condition of banks in the BEI which is generally inefficient, so that the revenue of the funds distributed to the public cannot be maximized. Their inefficiencies can be caused because of credit failures, thereby increasing the bank charge. This result is supported by Adyani (2011), Fitriyana (2011), and Sudiyatno and Suroso (2010). However, on the other hands, the result study is in contrast with Azwir (2006), Ponco (2008), and Suwandhani (2008) which indicates that LDR has a positive and significant influence on ROA.

CONCLUSION

Based on the collective test result using F-test, it is obtained that F-value (7.843) > $F\text{-}_{table}$ (3.03) with the significance F (sig-F) 0.001 or less than 0.05. It infers that CAR, NPL, and LDR collectively give a significant influence on ROA. Furthermore, based on the individual test result using t-test, it can be inferred as follows. Capital Adequacy Ratio (CAR) variable against Return on Assets (ROA) variable gives a positive but no significant influence. This statement is based on t-value > $t\text{-}_{table}$ with significance F (Sig-F) 0.093 or greater than 0.05, which concludes that $H_{1\ is}$ rejected. Non Performing Loan (NPL) variable against Return on Assets (ROA) variable gives a negative and significant influence. The statement is based on the value of $t\text{-}_{value}$ (3.65) < $t\text{-}_{table}$ (-1.71) and the significance of F (sig-F) is 0.001 or less than 0.05, so that the H_2 is not rejected. Loan to Deposit Ratio (LDR) variable against Return on Assets (ROA) variable has no significant influence. The statement is based on the value of $t\text{-}_{value}$ (1.57) < $t\text{-}_{table}$ (1.71) with significance F (sig-F) is 0.12 or greater than 0.05, so that the H3 is rejected.

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