
FACTORS INFLUENCING BANKS CAPITAL ADEQUACY RATIO IN INDONESIAN BANKS: CASE STUDY AT COMMERCIAL BANK LISTED PERIOD 2010-2015

FAKTOR-FAKTOR YANG MEMPENGARUHI RASIO KECUKUPAN MODAL BANK DI BANK-BANK INDONESIA: SEBUAH STUDI KASUS PADA BANK-BANK KOMERSIAL PERIODE 2010-2015

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Abstract: Banks play a major role in foresting the economy of a nation. It serves as an intermediary for people with excess of money to the people in need of money. In carrying out its function, banks must maintain the capital adequacy that is used to assess its ability to bear risk that might occur. This research focuses on examining the factors that influence Indonesian commercial banks capital adequacy ratio (CAR). Fixed effect with least square dummy variable and 61 commercial banks as sample is used in the research. The result shows that operating expense to operating income ratio and total asset has a positive and significant influence to CAR. NIM is shows positive relationship with CAR this variable is found to be statistically significant. High level of capital will increase cash reserves that can be used to extend credit and high solvency level will open greater opportunities for the bank to improve its profitability. Conversely, low solvency level will reduce the bank's ability to improve profitability, reduce public trust and affect its continuity.

Keywords: *capital adequacy ratio (Car), net interest margin (nim), operating expense to operating income ratio (oeoi), total asset*

Abstrak: Bank memainkan peran penting dalam pembenahan ekonomi suatu bangsa. Dan juga berfungsi sebagai perantara antara orang yang memiliki kelebihan materi seperti uang dan orang-orang yang membutuhkan uang. Dalam menjalankan fungsinya, bank harus menjaga kecukupan modal yang digunakan untuk menilai kemampuannya juga menanggung risiko yang mungkin terjadi. Penelitian ini difokuskan untuk menguji faktor - faktor yang mempengaruhi rasio kecukupan modal bank komersial Indonesia (CAR). Fixed effect variable dummy terkecil (LSDV) dan 61 bank umum sebagai sampel digunakan dalam penelitian. Hasil penelitian menunjukkan bahwa rasio beban usaha terhadap pendapatan operasional dan total aset berpengaruh positif dan signifikan terhadap CAR. NIM menunjukkan hubungan positif dengan CAR variabel ini ditemukan signifikan secara statistik. Tingkat modal yang tinggi akan meningkatkan cadangan kas yang dapat digunakan untuk memperpanjang kredit dan tingkat solvabilitas yang tinggi akan membuka peluang lebih besar bagi bank untuk meningkatkan profitabilitasnya. Sebaliknya, tingkat solvabilitas yang rendah akan mengurangi kemampuan bank dalam meningkatkan profitabilitas, mengurangi kepercayaan masyarakat dan mempengaruhi kontinuitasnya.

Kata Kunci: *rasio kecukupan modal (Capital adequacy ratio / car), margin bunga bersih (nim), rasio beban usaha terhadap pendapatan operasional (oeoi), total aset*

INTRODUCTION

Research Background

The supervision of the existence of banking sector in Indonesian is necessary in order to make it run properly as expected. According to *undang-undang RI nomor 10 tahun 1998, tentang: bank wajib memelihara tingkat kesehatan bank sesuai dengan ketentuan kecukupan modal, kualitas asset, kualitas manajemen, likuiditas, rentabilitas, solvabilitas, dan aspek lain yang berhubungan dengan usaha bank, dan wajib melakukan kegiatan usaha sesuai dengan prinsip kehati-hatian*. The banks play a major role in fostering the economic well-being of a state. Their basic objective is to bridge the gap between the people who have surplus funds and the ones who have the scarcity of funds. The role of financial institutions as financial intermediaries is well established and is highly regulated throughout the world. The banks have to suffer huge losses due to their non-performing loans and the bank capital is badly impaired. Therefore it is very necessary to dig out the factors which determine the capital adequacy ratio so that the other elements may also be taken in to account for a better capital management (Usmanmassod & Sanauallah Ansari, 2016). In carrying out its function, banks must maintain a capital adequacy ratio, because the capital is also very important to assess the health of the banks and also related to the solvency of the bank. Capital is used to assess how much the bank's ability to bear risks that might occur. Banks that have a high level of risk will be solvable. Likewise banks that have small risk identify less solvable, high levels of capital will increase cash reserves that can be used to extend credit, so that the high solvency level will open up greater opportunities for the bank to improve its profitability. Conversely, bank solvency level low will reduce the bank's ability to improve its profitability, it can even reduce the public trust, so that will adversely affect its survival. The Banks Companies have always been restricted to lend money with respect to the laid down criterion or a bar on advances up to a certain level.

The capital adequacy ratio is currently one of the most significant issues in the Indonesian banking system, which evaluates the amount of efficiency and stability of the bank. In Indonesian banking regulations, Capital Adequacy can be percentage ratio of a financial institution's primary capital to its assets (loans and investments), used as a measure of its financial strength and stability. The credit risk is the main threat to banks and stringent measure should be taken to address it. The genuine capital strength of a bank is gauged after the analysis of the riskiness of its assets (Pasha, Srivenkataramana, and Swamy, 2012). After the monetary turmoil of 2008 the confidence in the banking system all over the world became dubious as the financial empires which were established for more than half a century became insolvent. The learning comes with experience and afterwards the regimes throughout the world are pursuing the banks to elevate their capital, amplify their financial footing and curtail their risk associated assets. In the case of failure of injecting fresh capital the perilous assets must be curtailed (Abba, Peter, and Inyang, 2013).

Figure 1 below shows that capital adequacy ratio for period 2010 until 2015 of Indonesian bank that the data are available. The graph shows fluctuating conditions and has wide range of capital adequacy ratio when it compared with minimum capital adequacy ratio standard.

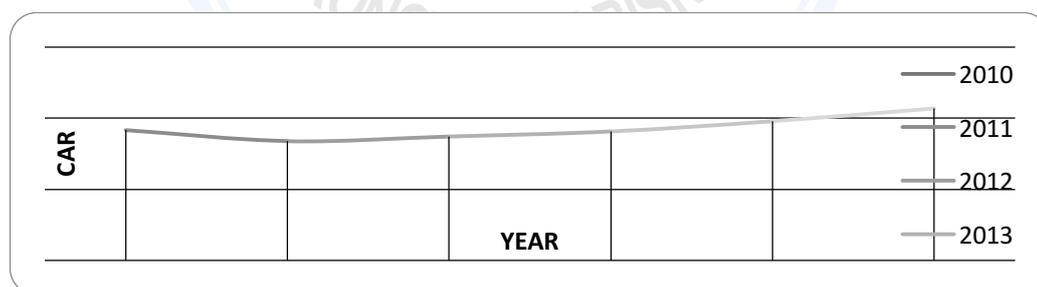


Figure 1. Commercial banks CAR

Source: Otoritas jasa keuangan (2017)

According to the graph above, the author will check the condition of banks in Indonesia that has been influenced of variables which affect its capital adequacy ratio. The evaluation of capital adequacy ratio helps bank to maintain the condition.

In this chart, shows the explanation about the CAR condition during 2010 till 2015, why CAR increases every year since 2011. Based on OJK, the condition of CAR was changing during the period of 2012-2015. It means the CAR condition during that period was dynamic even during the serious economic crisis globally in 2008. The aim of this research also when we viewed from the chart, which is worth noting that is, why the condition of CAR there reaching 20%, this is what makes us wonder, from where the bank produces CAR for it.

THEORETICAL REVIEW

Bank and commercial bank

According to *Undang-undang RI no. 10, 1998*, bank is “*Badan usaha yang menghimpun dana dari masyarakat dalam bentuk simpanan dan menyalurkannya kepada masyarakat dalam bentuk kredit dan atau bentuk bentuk lainnya dalam rangka meningkatkan taraf hidup rakyat banyak*”.

Bank is an institution, usually incorporated with power to issue its promissory not intended to circulate a money (know as bank notes) or to receive the money of others on general deposit, to form a joint fund that shall be used by the institution, for its own benefit, for one or more of the purpose of making temporary loans and discounts, of dealing in notes, foreign and domestic of exchange, coin, bullion, credits, and the remission of money, or with both this powers, and with privileges, in addition to these basic power, of receiving special deposits and making collection for the holders of negotiable paper, if the institution sees fit to engage in such business.

In 1948, the privy council (England) bank is a company with carries on as its principle business the accepting of deposits of money on current account or otherwise, subject to with drawal by cheque, draft or order.

Capital Adequacy Ratio (CAR)

Is the indicator of capital adequacy to absorb any risk and cover any losses. The capital adequacy ratio level also determined by ability the banks generate profit and then the assets allocation fund accordance with risk level. The standard of capital adequacy ratio is 8%.

Net interest margin

The higher level of net interest margin also will increase CAR. Considering banks main activity is to act as financial intermediary which gather and distribute fund from the people, the cost and income of a bank are dominated by the interest expense and revenue. Net interest margin ratio is used to measure bank's ability to manage its productive asset to earn net interest income. Net interest margin is the ratio between net interest income gained by reducing interest income with interest expense, divided by productive asset. Bank Indonesia set the minimum standard of 2% NIM ratio for commercial banks to be categorized healthy bank.

OEOI

Measure level of efficient and ability of bank, and influence to CAR, Operational cost ratio is used to measure the level of efficiency and ability of banks in conducting their operations. Operational Cost Ratio to Operating Income (BOPO) is often called the efficiency ratio used to measure the bank's management capability in controlling operational costs against operating income.

LOGTA

Bank size is represented by the total asset a bank currently possessed. Bank's total asset consist of total equity and total liabilities. Total equity is the owner capital, while total liabilities is other parties fund it currently holds. The largest component of banks' total liabilities is the third party fund or the customers' deposit account

Literature review

Harley Tega Williams (2011) study the relationship between capital base and some macroeconomic, financial structure and banking variables using an error correction model during 1980 – 2008 in Nigeria. As dependent variable the author uses capital adequacy base while as independent variables are used: total loans,

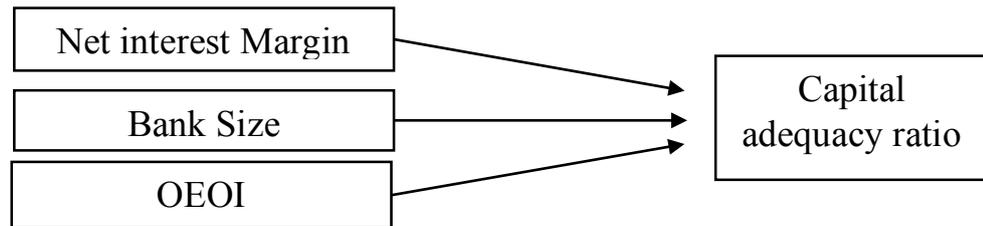
money supply, interest rate, inflation rate, demand deposit, political instability, exchange rate, liquidity risk, openness of the economy and investments. The author concludes that the money supply is a very important determinant of the capital adequacy base in Nigeria having a high and very strong level of significance. The real interest rate is negatively related to capital adequacy base meaning that an increase of real interest rate dampen the capital adequacy base. The real exchange rate is a significant determinant but its coefficient is not as expected while the deposit liabilities and liquidity risk are not statistically significant. The author finds out that investments and political instability are correctly signed and statistically significant to explain the capital adequacy base in Nigeria. Yuanjua and Xiao Shishun (2012) analyze the relationship between the capital adequacy ratio (CAR) and some internal banking variables using regression analysis from 2005-2010. They use capital adequacy ratio as dependant variable while as independent variable they use: ROA, ROE, EPS, deposit loan ratio (DLR) and NPL. From the regression results the authors find a positive relationship between ROA and CAR but a negative relationship between ROE and CAR. In the same time is noticed a negative relationship between CAR and credit risk (NPL) and also liquidity risk (LDR).

Ahmet Büyükkalvarcı and Hasan Abdiođlu (2011) investigate the determinants of the capital adequacy ratio (CAR) in the Turkish banks using data from annual reports during 2006 – 2011 for 120 observations using secondary data. The capital adequacy ratio is used as dependant variable while as independent variables are use indicators that measure: banks size, deposits, loans, loan loss reserves, liquidity, profitability, net interest margin and leverage. From the regression results the authors find that loans, loans loss reserves, leverage, ROA and ROE have a significant relationship with CAR while bank size, deposits, liquidity and net interest margin do not have effect on the CAR in the Turkish banks. Leila Bateni, HamidrezaVakilifard&FarshidAsghari (2014) study the relationship between capital adequacy ratio and bank size, loan to asset ratio, ROE, ROA, equity ratio, deposit asset ratio and risk asset ratio using data from six private Iranian banks during 2006 – 2012 with a total of 41 observations for each variable. From the regression results is noticed that the independent variables explain 71.15% of the variation of the dependent variable (CAR). First of all is to emphasize that risk asset ratio (RAR) and deposit asset ratio (DAR) do not have any impact on capital adequacy ratio. Bank size has a negative relationship with CAR while loan to asset ratio (LAR), equity ratio (EQR) and ROA have a positive and significant relationship with CAR.

An extensive cross country study was conducted by Shehzad, de Haan, and Scholtens (2010) where in data for three years from 2002 to 2007 just before the economic turmoil was collected. The sample comprised of 500 banks from 50 countries across the globe. The study had the novelty of having two dependent variables simultaneously and involved the risk and the buffer against the risk i.e. non-performing loans and capital adequacy.

Romdhane (2012) gathered bi annual data of eighteen banks operating in Tunisia in order to find out the explanatory variables of the capital sufficiency ratio. The financial reforms took place in Tunisian in 2001 and the time period ranged from 2002 to 2008. The study variables included the provision held by the bank against the loans, the variation of deposit based on the influx and outflow, the widely used ration of loan to deposits, and average capital adequacy ratio of all sample banks and size of the institution on the basis of total assets. The findings revealed the advances to deposit ratio has a significant positive impact the capital adequacy as with the maximum share of loans in deposits the risk and profitability both increase. The size of bank negatively influences the capital sufficiency. The variability of deposit also positively affects the adequacy ratio.

Shingjergji and Hyseni (2015) recently attempted to unfold the influencing power of the institution wide variables on the capital adequacy ratio in the Albanian banking setup the study was motivated due to over dominant role of Albanian's financial sector in the economy due to embryonic capital markets. The data comprised of quarterly observations spanned from 2007 to 2014

Conceptual framework**Figure 2. Conceptual Framework***Source: journal of economic, 2017***Banks capital adequacy factors influencing:**

Operating expense to operating income (OEOI), Net interest margin (NIM), Total asset (LOGTA),

Hypothesis

Panel Data Regression Model will be used in this research. The model equation is:

Estimation equation

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_m X_{mit} + \mu_i + \epsilon_{it}$$

H 1: NIM have impact on CAR.

H0: $\beta_1 = 0$

H1: $\beta_1 \neq 0$

H 2: OEOI have impact on CAR.

H0: $\beta_3 = 0$

H1: $\beta_3 \neq 0$

H 3: LOGTA have impact on CAR.

H0: $\beta_4 = 0$

H1: $\beta_4 \neq 0$

RESEARCH METHODOLOGY**Types of Research**

Causal-comparative study is a study undertaken to describe the scheme and effect relationship that is deeper than two or more of the facts and the properties of the object under study. This study aimed to determine the cause or reason for the differences in behavior or status of individual groups. Causal-comparative study is a follow up from correlational studies. If the correlational studies describe the degree of relationship between two or more facts and properties of objects studied, the causal-comparative study illustrates such a causal link (Sumanto, 1995:107)

Place and research time

For the place in this research i did in Indonesian, for the research time from february until april 2017.

Population and sample

The population of this research is the commercial banks in Indonesia and 71 commercial banks are included in the sample.

Data and collection method

This research is using secondary data as the main sources. The secondary data is being collected from bank's annual report (from bank's websites and BEI), Bank of Indonesia, and OJK

Data and analysis method

To analyze data used mixed liner method. This general model of mixed linear method:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_m X_{mit} + \mu_i + \epsilon_{it}$$

Regression analysis using seven variable

Estimation equation

$$CAR_{it} = \alpha + \beta_1 NIM_{it} + \beta_2 LOGTA_{it} + \beta_3 OEOI_{it} + \mu_i + \epsilon_{it}$$

Table 1. Measurement of variable and operational description

Dependent Variables	Proxy	Measurement	Source
Capital adequacy	CAR Ratio	$\frac{\text{owner's equity}}{ATMR} \times 100\%$	Bank Annual Report
Independent Variables	Proxy	Measurement	
Net Interest Margin	Net Interest Margin Ratio	$\frac{\text{Interest Income} - \text{Interest Expense}}{\text{Earning Asset}}$	Bank Annual Report
Expense Management	Operating Expense to Operating Income Ratio	$\frac{\text{Operating Expense}}{\text{Operating Income}} \times 100\%$	Bank Annual Report
Bank Size	Total Assets	logaritma of <i>Total Assets</i>	Bank Annual Report (Processed)

Source: journal of economic

This is table of variable that have a relationship with capital adequacy ratio, all the variable in this table base on formula of each variable. Which is to measure wether to influence in capital adequacy ratio or not.

RESULT AND DISCUSSION**Research Result****Descriptive statistic****Table 2. Descriptive statistic**

	N	range	minimum	maximum	mean	Std.deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std.Error	Statistic
CAR	366	38.04	8.34	46.38	18.4024	.28244	5.40345
NIM	366	16.27	1.77	18.04	6.3516	.13284	2.54143
OEOI	366	124.05	53.00	177.05	81.4540	.67913	12.99244
LOGTA	363	3.22	11.74	14.96	13.1452	.03746	.71362
Valid N (listwise)	363						

Source: Data Processed, 2017

In table 2 is given a descriptive analysis of the factors that are taken into consideration in this paper. The main descriptive statistics of the variables were calculated to understand the features of the tested variables. As shown in table above, the capital adequacy ratio has mean value of 18.4% with minimum value of 8.34% and has maximum value of 46.38%. It means that commercial banks in Indonesian has already maintain their

capital adequacy ratio. Meanwhile the operating expense to operating income has mean value 81.4% and minimum of 53%. It indicates their uses operating effectively. Expense Management as seen from the operating expense to operating income ratio shows the most efficient banks in managing it expense, according to this variable, Bank Mandiri, Bank BTPN, Bank Kalteng, and Bank Mestika Dharma are the most efficient ones for these banks OEIO stays at 50-70 % in some period. Most of the commercial banks are operating in above 70 % operating expense to operating income ratio with the highest one is above 170% percent produced by Bank SBI Indonesia. Together with Bank Andara and Bank Mutiara, Bank SBI Indonesia are considered most inefficient bank, for the OEIO is above 100% ratio for some period. If the OEIO is above 100% it means that the bank operating expense exceeds its operating income or the revenue acquired from operation can no longer covers the expense in operation, Banks with inefficient operation will experience loss. While, net interest margin has mean value of 6.3% and maximum of 18.4%, the commercial bank's ability to generate net interest margin in middle level, the high NIM ratio has become consideration for the regulators, and Bank Indonesia has taken action by creating policy to reduce it. The policy includes the reduction of BI rate. LogTA measurement is the logarithm value of total asset. Total Asset value are needed to be change for statistics and estimation purposes for the value of other variables are in ratio measurement so it will be troublesome if real total asset value is used in the analysis. The highest value of LOGTA is 14.96 which hold by Bank Mandiri. Bank Mandiri, Bank BRI, Bank BCA, Bank BNI and Bank CIMB Niaga are the 5 biggest bank in Indonesia. These banks operate with total asset above Rp. 200 trillion. While the smallest banks in the industry are Bank Andara, Bank Antar Daerah, and Bank Ganesha which only hold total asset bellow 2 trillion IDR.

The mean value of capital to total asset ratio of commercial banks in Indonesia is 13.35. In average commercial banks operate only with 13% of equity while the other 86% of total asset comes from liabilities especially from third party fund. Lowest level of capital to total asset ratio is Bank Antar Daerah in 2014, at this period this bank only have 5% of its total asset comes from equity while other 95% fund came from liability. The highest value of capital ratio found in Bank National Nobu at 2010, which reaches 88.86%. In 2010, Bank National Nobu is expanding by having more capital injected at the period, which explains the high level of capital ratio. By the next year the expansion of Bank National Nobu has proven successful. In 2011 Bank National Nobu asset has increased significantly almost three times the year before. Without reducing the equity and by the increases in total asset from liability, Bank National Nobu capital ratio decreases to 38% and in the next year reduced to 21% level. The decreasing of capital ratio happened because the bank has acquired more fund from the third party. Bank with high capital will expect to operate in big scale by managing large amount of third party fund.

Fixed Effect Least Square Dummy Variable (LSDV)

In Fixed Effect LSDV model, dummy variables are introduced to the model. The dummy variables identify each bank in the observation.

Table 3. Coefficient estimates

source	Numerator df	Denominator df	f	sig
Intercept	1	363.000	3.913	.049
NIM	1	363.000	8.883	.003
OEIO	1	363	39.781	.000
LOGTA	1	363.000	4.136	.043
ID	60	363	6.510	.000

a. Dependen variable

Source: Data Processed, 2017

In table 3 it explains the relationship between the variables, where from the results of this data we can see in the table 3. Relationship between dependent variable and independent variable, also ne explained when looking at table 4, and to be clear about to explain this table, we can see from the discussion.

Table 4. Analysis Result

Parameter	Estimate	Std.error	df	t	Sig.	95% Confidence Interval	
						Lower Bound	Upper bound
Intercept	-40.121408	20.686547	363.000	-1.939	.053	-80.801931	.559914
NIM	.758088	.254353	363.000	2.980	.003	.257898	1.258278
OEOI	.175563	.027835	363	6.307	.000	.120824	.230301
LOGTA	3.154937	1.554937	363.000	2.034	.043	.104365	6.205539

Source: Data Processed, 2017

Table 4 shows the result from the SPSS. The analysis using Fixed Effect Least Square Dummy Variables in Panel Data Regression Model shows the coefficient for each variable. The intercept coefficient is -40.12, NIM is 0,75, OEOI is 0,17, LOGTA is 3,15. The interpretation of this table will be explained in the next part, the Discussion Section.

Discussion

In 2010, Indonesian economy has experienced significant growth. By that time and the next two years, GDP growth is above 6% (Source: World Bank). After the contraction in 2009, the economy has begun to be in upward trend. Indonesia has experience three year of consecutive significant growth. These periods were the time of expansion for firms as demand for product rises. Firms invest to increase capacity, the investment can come from equity or loan, specifically bank loan as firm source of fund. Accordance with the economic growth, bank's credit also grew significantly. Commercial banks credit grew above 22% from 2010 to 2012

In this research the bank environment, where we analyze CAR through NIM, OEOI, LOGTA. In this study we analyze about the influence of explanatory variable on the dependent variable. According to the results of SPSS using LSDV Fixed Effect, seen from the result there seems to be a positive relationship between NIM to CAR. This contraction of the economy has bad impact for firms. These firms which once enjoyed the growth of demand, try to expand by borrowing money from bank. Unfortunately, when the economy growth declines, it created problems for these firms. Mining industry in Indonesia is the worst affected by the condition for at the same time Price of mining commodity also decreased globally. Many firms went in to trouble because of the condition. Due to this condition some firms can no longer perform and pay from the time of expansion when the economy is growing significantly. These things create non-performing loans for banks. When firms went bankrupt it will no longer pays the loan. These loan will be included as cost for the banks. Banks will use CKPN (cadangan kerugian pengurangan nilai). Then, the net interest margin (NIM) of domestic banks, averaged 5.47% or the highest in ASEAN. Another important note is that the level of efficiency of Indonesian banks is still low.

There is seems to be positive relationship of operating expense to operating income, log total asset and total credit total asset to CAR. The positive relationship is as expected for the increase in OEOI, or the increase in cost will reduce banks profit. On the table result, estimated coefficient of OEOI is 0,17%, this result can be interpreted as for every increase by 1%in OEOI will decrease CAR by 0,17%, or in the contrary, the decrease of 1 % in OEOI will increase CAR by 0,17%. Assuming other things remain constant.

OEOI of other country's banking industry in ASEAN range from 40-60% (Source: www.beritasatu.com). Clearly Indonesian commercial banks still being inefficient with average OEOI is at 83% level. The high level of OEOI in commercial banks is caused by the expansion they perform. Banks are opening more branches and acquiring new building and employees therefore increasing operational cost. By doing

expansion banks can reach more customer. The expansion increases commercial banks total asset and third party fund which have been rising since 2005.

Total asset is measured by logarithm of total asset. As seen from the SPSS output, logarithm value of total asset estimated coefficient is 3,15%. The result interpretation is for increase of 1 value in logarithm of total asset it will decrease CAR by 3.15% assuming other things remain constant. It can also be said that for every increase by ten times of bank's total asset will decrease CAR by 3,15%, assuming *ceteris paribus*. Can conclude that total asset has insignificant influence to CAR.

CONCLUSIONS AND RECOMMENDATION

Conclusions

Based on the analysis result there are several conclusions that can be drawn from this research. The conclusions for the research are as follow:

1. Operating expense to operating income has positive significant to capital adequacy ratio. Each increase of one percent of operating expense to operating income ratio meanwhile has decreased capital adequacy ratio amount 0.17. With this, we can see that the bank's management capabilities in controlling the OEOI the more efficiencies that banks issue. Clearly Indonesian commercial banks still being inefficient with average OEOI is at 83% level. The high level of OEOI in commercial banks is caused by the expansion they perform. Banks are opening more branches and acquiring new building and employees therefore increasing operational cost. By doing expansion banks can reach more customer. The expansion increases commercial banks total asset and third party fund which have been rising since 2005.
2. LOGTA has positive significant to capital adequacy ratio. As seen from the SPSS output, logarithm value of total asset estimated coefficient is 3,15%. The result interpretation is for increase of 1 value in logarithm of total asset it will decrease CAR by 3.15% assuming other things remain constant. It can also be said that for every increase by ten times of bank's total asset will decrease CAR by 3,15%, assuming *ceteris paribus*. Can conclude that total asset has insignificant influence to CAR.
3. NIM has positive significant to CAR. The net interest margin (NIM) of domestic banks, averaged 5.47% or the highest in ASEAN. Another important note is that the level of efficiency of Indonesian banks is still low. The limit of NIM ratios that can earn incentives is that banks have NIM ratios lower than 4.5 percent, which apply to all books. And also can be seen from the NIM of commercial banks increased by 116 basis points (bps) or 1.16% from 4.23% per December 2014 to 5.39% per December 2015 as the industry average.

Recommendation

Based on the conclusions and research findings, it is recommended to Indonesian commercial banks, especially the 61 banks included in the sample, some strategies in order to increase and keep their capital adequacy:

- 1 For 61 commercial bank
The author suggests, the banks should maintain capital adequacy ratio. Capital adequacy ratio is one of indicator for bank condition. If the bank can maintain the capital adequacy ratio accordance with standard it will get some benefit as follows, first trusted by any party especially shareholders and depositors, create of fair competition in the global financial markets, create the healthy bank condition, be able to support of any conditions like a bankrupt and can sustain until period of time, be able to absorb some risk.
- 2 For investor
The author suggest for investors who will invest the money, it must be noticed and observed the financial ratio of the bank, such as capital adequacy ratio in order to minimize the higher risk and maximizing of return from investment.
- 3 For further research
The author recommend to the next research of number of variables can be added in order to increase the significant model and also period of time can be extended so can be the best result for the further

research. Then, for the next, could be widen of content such as comparison of CAMELS versus Risk Based Bank Rating affected toward Capital Adequacy Ratio Bank in Indonesia and also could be determine the variables affect towards whole the bank in Indonesia.

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