

DETERMINANTS OF COMERCIAL BANKS' CAPITAL BUFFER IN INDONESIA (Study on 16 Biggest Comercial Banks Period 2004-2010)

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ABSTRACT

This study aims to analyze the determinants of capital buffer on 16 Biggest comercial banks in Indonesia. Research model based on Ayuso, et al. (2004), Tabak, et al. (2011), and Jokipii and Milne (2008). The model consists of 5 independent variables that are Return on Equity (ROE_{t-1}), Non Performing Loan (NPL), Increment of Capital Buffer (IncrBUFF), Loans to Total Assets (VLOAN), and Bank's Share Assets (BSA) and one dependent variable which is Capital Buffer (BUFF). This study conducted for the period 2004-2010. The empirical result showed capital buffer is affected mainly by two variables: Non Performing Loan and Increment of Capital Buffer. NPL positive sign signaling that comercial banks adopt a conservative behavior and do not take risks. Return on Equity (ROE_{t-1}) affected negaively to capital buffer, it is signaling that comercial banks in Indonesia may have unlimited acces to external capital and/or prefer their financing from equity. Loans to Total Assets (VLOAN) have negative and significant on influencing capital buffer, it also signaling that comercial banks in Indonesia use "bacward-looking" strategy by reducing their capital buffer during the boom of credit activities. Bank's Share Assets (BSA) finding is supporting Too Big To Fail (TBTF) nature that suggest the large banks tend to maintain their capital buffer lower than small banks.

Keywords : Capital Buffer, ROE_{t-1}, NPL, Increment of Capital Buffer, Loans to Total Assets, bank's Share Assets.

INTRODUCTION.

A financial service is industry that experienced the most rapid change and growth in many countries. Indonesia, with total population of approximately 240 million people and an average population aged 28 years, becoming a potential land for market penetration of banking. Moreover, the level of market penetration is still low by the number of people who have bank accounts only 40 million to 50 million peoples. In the last 20 years, the banking sector is always growing and still dominated by 82% of the assets of all financial sector assets, such as insurance, multi finance, pension funds, and securities companies (Info Bank Outlook, 2011).

Functions of the bank as an agent of trust is not only necessary for individuals and society as a whole, but also plays a role in facilitating economics growth and development of the country. In order to be well functioned, banks must have sufficient capital, good asset quality, good management and operated on the principle of prudence, and also making a profit. As a vital institution in the economy, it is necessary to control a healthy and stability by the banking regulator.

Precious lessons from the crisis of 1998 was indicated that the national banking industry still weak on regulation because it did not has a solid banking infrastructure, so it would be not easy to overcome internal and external shocks that come suddenly. The weakness of banking's regulation becomes challenges that still must be resolved in order to encourage economic growth at the expected level and keep the soundness and stability (Rivai, Veithzal, et al., 2007).

To enhance the soundness and stability of the financial system, regulators of banks impose the restricted regulation on the capital requirement, several instrument have been adopted for the

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regulation of banking institutions, the most prominent taking the form of the capital requirement regulation. As imposed by the 1988 Basel Capital Accord and its subsequent amendments, the regulation requires that banks hold a minimum amount of capital equal to eight percent (8%) of risk weighted assets. This ratio is known as the capital adequacy ratio (CAR). Incorporated banks in Indonesia generally maintain a capital adequacy ratio (CAR) well above the regulatory requirement. For example, the average CAR of licensed commercial banks were 18,8 per cent in the 2010, against an average required minimum of just 8 per cent, that means banks has 10,8 percent for their capital buffer (Bank Indonesia). This phenomenon is also common in other economies.

The excess of Capital Adequacy Ratio so called as Capital Buffer gets a great deal of attention in the economic literature considering that banks serve a pivotal role in the economy. However, the level of minimum CAR set by the regulator may not fully capture banks' risks. There could also be risks that do not concern the regulator, but affect banks' capital holding decisions, including financial distress caused by a loss of branches value. Such as, banks' views on the appropriate level of capital may differ from the minimum level set by the regulator.

Table 1.1
Capital Buffer Ratios Banking in Indonesia (%)

Year	CAR	Minimum CAR	Capital Buffer
2004	19,42	8	11,42
2005	19,3	8	11,3
2006	21,27	8	13,27
2007	19,3	8	11,3
2008	16,76	8	8,76
2009	17,42	8	9,42
2010	18,80	8	10,80

Source: Bank Indonesia (compiled)

Function of capital buffer in the banking industry is strickly needed to anticipate an increase of future losses and to anticipate when capital is rare and expensive in downturn period. Mishkin (2007) argued that banks also hold excess capital or capital buffer are made based on three most common reasons. First, bank capital aids to prevent bank failure. A bank maintains it's capital to reduce the chance of become insolvent. Banks will prefer to have a sufficient capital to act as cushion to absorb the losses. Second, the amount of capital affects returns for the equity holders of the bank. The higher the bank capital, the lower the return that the owners of the banks. There is a trade off between the safety and the returns to equity holders, so the bank managers had to set an optimal level of bank capital. Third, a minimum amount of bank capital is required by the regulators.

In chart above shown that commercial banks in Indonesia always generally maintains a capital adequacy ratio (CAR) well above the regulatory requirement (more than 8%). The highest level of capital buffer happened in 2006, this discussion become more interesting because the lowest level of Capital buffer occured in 2008, but afterward, level of Capital Buffer was always increase. The average CAR from 2004-2010 touched 18,89% against BASEL III only required 13% of minimum CAR. Too much CAR value is not good for banking industry, since it's excess capital can be used for runing the business of banking and maximizing of it's profit.

It is important to highlight that most of the comercial banks in Indonesia hold capital above the required minimum ratio. But unfortunately, study on capital buffer in Indonesia is still difficult to found. The discussion about capital buffer banks have not been touched yet in academic and policy level. This study wanted to analyze more about the determinants of capital buffer comercial banks in Indonesia, since that bank's CAR in Indonesia has reached a level of average 18,89% during the period 2004-2010, when the minimum capital regulations only required banks to have CAR equal to 8% and a new BASEL III only required CAR to 13%. It raises the question of what factors determine the actual amount of capital buffer held by banks.

LITERATURE REVIEW AND RESEARCH HYPHOTESIS

Bank Regulation

Bank regulations are a form of government regulation which subject banks to certain requirements, restrictions and guidelines. This regulatory structure creates transparency between banking institutions and the individuals and corporations with whom they conduct business, among other things. Given the interconnectedness of the banking industry and the reliance that the national and global economy hold on banks, it is important for regulatory agencies to maintain control over the standardized practices of these institutions.

Rose (2002) propose the principal reasons banks are subject to bank's regulation. First, to protect the safety of the public's saving, it is related to minimum requirements, requirements are imposed on banks in order to promote the objectives of the regulator. Often, these requirements are closely tied to the level of risk exposure for a certain sector of the bank. The most important minimum requirement in banking regulation is maintaining minimum capital ratios. Second, to control the supply of money and credit in order to achieve a nation's broad economic goals, such as high economic's growth, low inflation, and high employment. Third, to ensure equal opportunity and fairness in the public's access to credit and other vital financial services. Fourth, to promote public confidence in the financial system, so that savings flow smoothly into productive investment, and payments for goods and services are made speedily and efficiently. Fifth, to avoid concentrations of financial power in the hands of a few individuals and institutions. Sixth, to provide the government with credit, tax revenues, and other services. Seventh, to helps sectors of the economy that have special credit needs, such as housing, small business, and agriculture.

The capital regulation by the bank regulatory agencies has become one of the key instruments of modern banking regulation with aim to provide both a capital buffer during adverse economic conditions, as well as a mechanism aimed at preventing excessive risk ex ante (Rochet, 1992). And this regulations becomes an increasingly important tool to the safety of the public's saving, to the public's confidence in the financial system and to the limit on how much risk exposure banks can accept. In this role capital also serves protect the government's deposit insurance system from serious losses.

The capital regulation by the bank regulatory called as capital requirement sets a framework on how banks must handle their capital in relation to their assets. Globally, Basel Committee on Banking Supervision influences each country's capital requirements. In 1988, the Committee decided to introduce a capital measurement system commonly referred to as the Basel Capital Accords. The latest capital adequacy framework is commonly known as Basel III, This updated framework is intended to be more risk sensitive than the original one, but is also a lot more complex. The capital regulation rules those recomended by the BASEL Accord are minimum to be implemented by banks globally in across country with the aim to ensure a sound and stable financial environment.

THEORIES RELATED TO CAPITAL BUFFER

1. The Pecking Order Theory

Stewart C. Myers and Nicolas Majluf in (1984) stated that equity is more costly compare to other bank liabilities because of information asymmetries. Equity may also be disadvantaged because interest payments on debt are deducted from earnings before tax. Excess capital is hence expected to be negatively associated with equity cost. Therefore, previous studies have considered the return on equity (ROE) as a proxy variable for the direct cost of remunerating excess capital. Thus, this research expect a negative relationship between ROE and excess capital (capital buffer).

Banks may face adjustment costs in moving toward their optimal capital ratios. These costs arise both when the bank is raising new external capital and when it is shedding external capital (Estrella, 2004). In addition to the assumption of asymmetric information, changing capital level can be give a bad signal, thus making the bank reluctant to react quickly when capital shocks occur (Myers and Majluf, 1984). An excess, or a deficiency of capital can arise as a result of the difficulties in capital adjustment. However, the consequence of falling short of capital is probably more serious, so banks are more likely to be "over-capitalised" than "under-capitalised".

2. Too Big To Fail Consensus

A clear predictions about capital buffer obviously is related to the size of the bank. a consensus has been reached, where large banks tend to have lower capital buffer than small banks, due to the nature of the Too Big To Fail (Kane 2000; Mishkin 2006). In addition to Too Big To Fail, large bank is easily to get their financing from capital market and it has a comparative advantage to address the problem information to improve monitoring efforts to encourage them to strike a balance between cost supervision and the cost of equity. In turn, banks will reduce the cost of equity by way of lower capital reserves.

CAPITAL BUFFER

Bank's capital buffer (BUFF) is defined as the difference between the CAR ratio (ratio the adequacy of bank capital) to the regulatory capital minimum of 8%. Despite the safety and soundness benefits of capital regulation, requiring banks to hold increased levels of capital that does have costs and can be argued to be a binding constraint on bank behaviour.

Bank's capital buffers can view as a cushion, to absorb unexpected shock, if the financial distress costs from low capital and the costs of accessing new capital are high (Wong, et al. 2005). In addition, low capitalization banks are also easy to lose market confidence and reputation. Therefore, Furfine (2001) mentions that banks may hold capital buffers as insurance to avoid cost about market discipline and supervisory intervention if they approach or fall below the regulatory minimum capital ratio.

Basically there are three different types of costs associated to bank capital to the model of capital buffers, based on Ayuso et al. (2004), Lindquist (2004), Stolz and Wedow, (2009), Brown and Davis (2008), Fonseca and Gonzalez (2009), Nier and Bauman (2006), Jokipii and Milne (2008), and Tabak et al. (2011), including cost of holding capital, cost of bankruptcy or financial distress, and adjustment costs.

First, cost of holding capital. Holding capital implies direct costs of remunerating the excess of capital, that is the opportunity cost of the capital (Ayuso, et al., 2002). Therefore, banks' incentives to hold capital buffers depend on the cost of capital compared to the cost of deposits (Fonseca and Gonzalez, 2009). Theoretical analysis (see Myers and Majluf, 1984; Campbell, 1979) has argued that in the context of information asymmetries, equity is a more costly alternative to other bank liabilities. In this research, include the banks return on equity (ROE) in order to capture direct costs of remunerating excess capital. Ayuso et al. (2002), Jokipii and Milne (2008), and Prasetyantoko & Soedarmono (2010) uses ROE as a proxy of capital holding cost, the result was proving Return on Equity (ROE) has a negative on influencing capital buffer. It was different to the findings of Bauman Nier (2006), D'Avack & Lvasseur (2007) that found a positive correlation between ROE and capital buffer, it indicates there is a role of shareholders in disciplining market. Shareholders growing niche to increase of of the capital buffer to keep the market value (Park and Peristiani, 2007), this is in line with the forward looking theory by the Palia and Porter (2004), in which capital ratios used by banks to maintain their market power.

Second, Cost of bankruptcy also determines capital buffers, holding higher level of capital can ensuring banks to reduces the probability of bankruptcy and therefore so called the costs of failure, which include the loss of charter value, reputational loss and legal costs of the bankruptcy process (Tabak, 2011). As mentioned by Milne and Whalley (2001), higher levels of capital therefore reduce the risk of non-compliance and the subsequent costs of failure which are directly proportional to absolute value of the negative net worth of the failing bank. Jokipii and Milne (2008), Fonseca and Gonzalez (2009) used non-performing loan ratio to total loans (NPL) to proxy the banks risk and the result has found a positive correlation between NPL and capital buffers. While Alfon et al. (2005) found a negative correlation Between NPL and capital buffers. This is in line with the argument by Mishkin (2007) which states that the banks will prefer to have a sufficient capital to act as a cushion to absorb the losses.

Third, capital adjustment has important effect on determining capital buffers, since banks may face adjustment costs in moving toward optimal their capital ratios. Ayuso et al. (2002) using lag of capital buffers to proxy this cost, the result was showing a significant positive on influencing capital buffer. As mentioned in the theory, this research will use increment of capital buffer to proxy capital adjustment.

Finally, in this research also add some other determinants to find a real determinants that can effect to capital buffer's comercial banks in Indonesia, there are two other determinats that also included in this research such as the Loans to Total Assets (VLOAN) and Bank's Share Assets (BSA). VLOAN is considered in the analysis, it uses to determine wheather the higher loan's growth will effects in reducing capacity to raise bank's capital reserve or not. BSA also considered as independent variables, therefore in this study need to prove whether the bank with a substantial market power is relatively easier to get a profit so as to encourage banks to increase of capital reserves from the profit.

RESEARCH MODEL AND HYPHOTESIS

This study aims to determines the factors that affect the capital buffer of comercial banks in Indonesia. The data required in this study consisted of the factors influenced to affect the capital buffer of comercial banks in Indonesia as well as financial data bank which was considered to describe the bank's financial performance. The factors that affect the capital buffer are including cost of holding capital that proxy by Return on Equity (ROEt-1), cost of bankrupty which proxy by credit risk or non performing loan (NPL), cost of capital adjustment which proxy by Increment of Capital Buffer (Δ BUFF), and other determinants such as Loans to Total Assets (VLOAN), and Bank's Share Assets (BSA).

The Influence of Cost of Holding Capital proxy by Return on Equity (ROEt-1) toward Capital Buffer Banking in Indonesia

Based on Alfon et al. (2004), Ayuso et al. (2004), and Jokipii and Milne (2008), they use return on equity (ROE) as a proxy for the cost of holding capital or cost of financing. They use this proxy because when banks holding capital, it will implie direct costs of remunerating the excess of capital. The cost of equity is used to proxy cost of capital because it's more challenging to calculate as equity does not pay a set return to its investors. One of the determinant of Cost of equity is the expected Total Share Return (TSR) when investing in the company, is measured by looking at the past ROE of the company over the period $t-1$. The past of ROE might prove to be a very poor indicator of the future, this is the reason why a through analysis of the company's future projects should be undertaken, and would probably yield better predictions than a mere extrapolation of past numbers.

The finding show a negative relation between ROE and capital buffer. De Bondt and Prast (1999) also find that ROE is only negative and significant in countries with large stock markets (the United States, the United Kingdom and the Netherlands) suggesting that the argument of "opportunity cost of capital" holds only in countries were shareholder value is important and access to external finance relatively cheap. As noted by Jokipii and Milne (2008), ROE may well exceed the remuneration demanded by shareholders and to this extent is a measure of revenue rather than cost.

A high level of earnings substitutes for capital as a buffer against unexpected shocks. Thus, as raising capital through the capital markets is costly, retained earnings are frequently used to increase capital buffers. So the expected sign for ROE may be negative (Jokipii and Milne, 2008), but it also may be positive (Nier and Baumman, 2006). Moreover, when there are information asymmetries, a significant proportion of fluctuations in bank earnings is kept as retained earnings, and increases in earnings will spark increases in capital ratio, so we can expect a positive relation between ROE and capital. Consistent with this argument, Berger (1995), Nier and Baumann (2006), and Francesco d'Avack and Sandrine Levasseur (2007) find a positive relation between ROE and cost of capital. The opposing arguments and mixed empirical evidence lead us to include ROE as a control variable.

H1 : Return on Equity (ROEt-1) is more likely to give negative influence on Capital Buffer.

The Effect of Bankruptcy Costs or Financial Distress Proxy by Non Performing Loan (NPL) toward Capital Buffer Banking in Indonesia

The risk profile of each institution is proxied by NPL, which measures the non performing loans ratio (ratio of non performing loans to total loans). This is an ex post measurement of the risks assumed by the institution and, therefore, the theory predicts this coefficient should be positive

since higher risks increase the probability of meeting regulatory capital constraints and facing the related costs such as market discipline and supervisory intervention (Furfine, 2000; Estrella, 2004). Riskier banks should therefore raise capital. A negative coefficient however would indicate "moral hazard" behaviour, where banks assume higher risks with lower buffers. It could also indicate more sophisticated risk management systems, allowing banks to hold lower buffers for the same amount of risk (Alfón et al., 2005).

H₂ : Non Performing Loan (NPL) is more likely to give positive influence on Capital Buffer

The Effect of Adjustment Cost proxy by Increment of Capital Buffer (Δ BUFF) toward Capital Buffer Banking in Indonesia

As argued by Ayuso et al. (2002) and Estrella (2004), lag of Capital Buffer ($BUFF_{t-1}$) coefficient may be interpreted as a measure of adjustment costs in capital buffers. The lagged endogenous is introduced to reflect the presence of adjustment costs in attaining the desired level of capital for banks and its expected sign is thus positive. Since the capital buffer decisions not only determined by adjusting capital buffer in the period before ($t-1$), but also determined by capital buffer in this period (t), so the right variable for capital adjustment is increment of capital buffer by seeing decreasing or increasing of the turning point.

H₃ : Increment of Capital Buffer (Δ BUFF) is more likely to give positive influence on Capital Buffer

The Effect of Other Determinants (Loans to Total Assets, and Bank's Share Assets) toward Capital Buffer Banking in Indonesia

The loans' to total assets ratio (VLOAN) are also considered in the analysis. VLOAN expected to relate positively to Capital Buffer (BUFF). Eventhough Prasetyantoko and Soedarmono (2010) showed the negative impact of VLOAN toward Capital Buffer (BUFF), this suggests that the more bank distribute their credit, the smaller level of capital buffer being reserved. But this research agree with positive corelation between Loans to Total Assets and Capital Buffer, it's come from the logic of bank risk. Simple logic that we can imply is the higher Loans to Total Assets value, the riskier banks will face, since banks investing their business more in credit.

This research also agree with Too Big To Fail consensus that states large bank prefer to maintain low capital buffer. Large bank can be seen from Bank's Share Assets value, which banks with high share assets mean they have big total assets, or in the other word, it can be included to category of large bank. Very clear prediction has been reached, where large banks tend to have lower capital ratios than small banks, due to the nature of the Too Big To Fail (TBTF) (Mishkin 2006).

H₄ : Loans to Total Assets (VLOAN) is more likely to give positive influence on Capital Buffer

H₅ : Banks Share Assets (BSA) is more likely to give negative influence on Capital Buffer.

RESEARCH METHOD

Research Variables

Research variable is an attribute that has a particular variant to be learned and to be drawn the conclusions from it. This study used two types of variables, these are input variables and output variables. Input variable is a independent variable, or in this case is the factors that affect the input to the banks' capital buffer. And the output variable is the capital buffer itself. Input and output variables used in this study was based on the literature review and in accordance with the established hypothesis. Research variables used in this research are:

- a. Independent variables consist of:
 1. Return on Equity (ROEt-1)
 2. Non Performing Loan (NPL)
 3. Increment of Capital Buffer (Δ BUFF)
 4. Loans to Total Assets (VLOAN)

5. Bank's Share Assets (BSA)
- b. Dependent variable used in this research is Capital Buffer (BUFF)

Population and Sample

The data used in this study is secondary data from longitudinal data or a group of individual data includes data 16 biggest banks in the market share of Third Party Funds (TPF) are:

- a. Have a total value of deposits of at least 12 trillion in 2004 and at least 16 trillion in 2010.
- b. Object of study in Indonesia examined the banking industry during years 2004-2010. The reason the use of these data as research data for the 16 largest commercial banks are controlled more than 75 percent share of total market share of existing commercial banks, so that samples can be considered to represent the banking industry as well. The reason the time period was chosen as the study time period start from 2004 was due Indonesian Banking Architecture (API) program start being implemented in that year, and in this research border until year of 2010 because of recent data that researchers can get is 2010.

The data used is a data of performance bank indicators that include the total assets, total deposits and total loans contained in the balance sheet and financial ratios of banks that were subjected to experiments. Data obtained from the financial statement's commercial bank publications of Bank Indonesia and some of the data obtained from the website address of the bank concerned. As well as other information that is relevant to the issues to be investigated. Banks that were subjected to experiments can be seen as follows. Bank Mandiri, Bank Rakyat Indonesia, Bank Central Asia, Bank Negara Indonesia, Bank Tabungan Negara, Bank Danamon, Bank Bukopin, Bank International Indonesia, Bank CIMB Niaga, Bank Permata, PAN Indonesia Bank, Bank Mega, Bank OCBC NISP, Bank UOB Buana, HSBC and CITIBANK.

Analysis Method

In this study using the method of multiple linear regression analysis (Multiple linear regression method). Multiple regression analysis is used to determine the closeness of the relationship between capital buffer (dependent variable) with the factors that influence it (the variable independent). The equation model of regression which will be tested areas follows:

$$\text{Capital Buffer (BUFF)} = a + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + E$$

Where,

a = constant

b1 – b6 = regression coefficient of each variable

X1 = Return on Equity (ROEt-1)

X2 = Non Performing Loan (NPL)

X3 = Increment of Capital Buffer (Δ BUFF)

X4 = Loans to Total Assets (VLOAN)

X5 = Bank's Share Assets (BSA)

E = error term (confounding variables) or residual

Result Findings

From the regression result known that the coefficient of determination (adjusted R square) value is 0,121. It means 12,10% of capital buffer can be influenced by BSA, ROE t-1, NPL, IncrBUFF, and VLOAN. Then the rest (100% - 12,10% = 87,90%) of capital buffer can be influenced by another cause outside the model.

Based on ANOVA test or F test result, F result obtained is 3,638 with significant level of 0,002. The significance value is less than 0,05 (0,002 < 0,05) hence the regression model which consist of predictors variables (Bank's Share Assets, Return on Equity, Non Performing Loan, Increment of Capital Buffer, and Total Loans to Total Assets) is applicable to predict Capital Buffer.

Table 1
Multiplr Linear Regression Result
Coefficients^a

Model	Unstandardized Coefficients		Standardized	T	Sig.
	B	Std. Error	Coefficients		
(Constant)	17,305	3,074		5,629	0,000
ROE <i>t-1</i>	-,0028	0,011	-0,237	-2,609	0,010
NPL	0,283	0,127	0,211	2,232	0,028
IncrBUFF	0,019	0,117	0,015	0,161	0,872
VLOAN	-0,134	0,048	-0,282	-2,817	0,006
BSA	-0,123	0,104	-0,119	-1,190	0,237

a. Dependent Variable: BUFF

$$Y = 17,305 - 0,237 \text{ ROEt-1} + 0,211 \text{ NPL} + 0,015 \text{ IncrBUFF} - 0,282 \text{ VLOAN} - 0,119 \text{ BSA}$$

Where:

X1 =Return on Equity (ROEt-1)

X2 = Non Performing Loan (NPL)

X3 = Increment of Capital Buffer (Δ BUFF)

X4 = Loans to Total Assets (VLOAN)

X5 = Bank's Share Assets (BSA)

E = error term (confounding variables) or residual

INTERPRETATION AND RESULT DISCUSSION

The Influence of ROEt-1 to Capital Buffer

From the result finding between ROE t-1 and capital buffer has shown result of t test - 0,237 and significant value was 0,010. By using significant limit of 0,05, so the significance value has to be smaller than 0,05. In which, this value still below 0,05, it means ROE has negative and significant in determining banks' capital buffer. So, the first hypothesis or H1 that states Return on Equity (ROE t-1) is more likely to give negative influence on capital buffer is accepted. This mainly finding is consistent with Alfon et al. (2004), Ayuso et al. (2004), and Jokipii and Milne (2008), they aslo found a negative correlation between ROE and capital buffer. It is signaling that banks in Indonesia may have an unlimited access to external capital and / or prefer financing from equity.

The Influence of NPL to Capital Buffer

The theory predicts non performing loan (NPL) should be positive in determining capital buffer since higher risks increase the probability of meeting regulatory capital constraints and facing the related costs such as market discipline and supervisory intervention (Furfine, 2000; Estrella, 2004). This finding has shown a consistent result with the theory prediction since t test result is 0,211 and significant at 0,028. The significant value still below 0,05. It means NPL has positive and significant in determining banks' capital buffer. So, the second hypothesis or H2 that indicates Non Performing Loan (NPL) is more likely to give positive influence on capital buffer is accepted. This positive sign signaling that banks adopt a conservative behavior and do not take risks. It's occur since higher risks will increase the probability of meeting regulatory capital constraints and facing the related costs such as market discipline and supervisory intervention (Furfine, 2000; Estrella, 2004).

The Influence of Increment of Capital Buffer to Capital Buffer

From the result finding between incremental capital buffer and capital buffer has shown result of t test 0,015 and significant at 0,872. The third hypothesis or H3 that states incremental capital

buffer (IncrBUFF) is more likely to give positive influence on capital buffer is accepted, even though the finding shows a positive sign but insignificant in determining banks' capital buffer. Introducing Increment of capital Buffer (IncrBUFF) as a proxy of capital adjustment cost in the model does not give better point estimates. Increment of Capital Buffer (IncrBUFF) has the minimum value -11,65 and the maximum value 10,33. IncrBUFF Mean value is -1,35 and the standard deviation of 4,09. In that data shows Standard deviation value bigger than Mean, it shows a gap between the lowest and highest of IncrBUFF data. So, It can be said that Increment of capital Buffer is a very bad proxy of the capital adjustment cost in aggregate data. As conducted by Ayuso, et al (2002), Jokiipi and Milne (2008), their research used lag of capital buffer as proxy for capital adjustment cost, it will be better result if the further research follow them and change increment of capital variable buffer into lag of capital buffer.

The Influence of Loans to Total Assets to Capital Buffer

From the result finding between Loans to Total Assets and Capital Buffer has shown result of t test -2,817 and significant at 0,006. The significant value shows below 0,05, it means that Total Loans to Total Assets (VLOAN) has negative and significant in determining banks' capital buffer. So, this finding shows different with the fourth hypothesis or H4 that states VLOAN is more likely to give positive influence on capital buffer. A phenomenon that should be VLOAN influence positive on influencing capital buffer, it's occurred since higher risk due to the large amount of credit distributed, but in this case VLOAN becomes negative on influencing its capital buffer. This negative and significant sign occurred because banks already have capital buffers above required by BASEL III only 5%. As shown in Table 4.1 Statistic Descriptive minimum value of capital buffer 1,94% and maximum value of capital buffer 32,19%. The average of capital buffer shown 9,70% against capital buffer required by BASEL III only 5%, a mandatory capital conservation of 2,5% and a countercyclical buffer of 2,5 % during periods of high credit growth.

The Influence of Banks' Share Assets to Capital Buffer

From the result finding between Bank's Share Assets and Capital Buffer showed t-test result is -0,119 but insignificant at 0,237. According to the hypothesis of "too big to fail", large banks may be inclined to hold lower capital buffers since they know that in the event of difficulties they will receive support from the regulator (Ayuso et al., 2002). However, introducing Banks Share Assets (BSA) in the model does not give better point estimates. The result shows a negative but insignificant. We can look at statistic descriptive, BSA average is 4,821 and the standard deviation is 5,068. Standard deviation has greater value than Mean, it shows the data gap between the lowest and highest BSA. So, it can be said BSA variable to be less good to predict capital buffer. It may be argued that BSA is a very bad proxy of the bank size in aggregate data. The last hypothesis or H5 that was indicated Bank's Share Assets (BSA) is more likely to give positive influence on capital buffer is accepted. This finding indicates that the more powerful banks in share of total assets, the more conservative banks will maintain their capital buffer. This finding is supporting Too Big To Fail (TBTF) theory that states large banks tend to maintain their capital buffer lower than small banks (Jokiipi dan Milne, 2008; Ayuso et al, 2002).

CONCLUSION, LIMITATION, AND SUGGESTIONS

Conclusions

From research analysis and findings which has been elaborated before and based on data obtained from research as which has been discussed in this paper, hence the conclusion are as follows:

1. Based on the partial results of hypothesis test can be concluded as follows:
 - a. ROEt-1 variable has a significant positive effect on bank's capital buffer. So the hypothesis of H1 which states that the ratio of ROEt-1 has a positive effect on bank's capital buffer is accepted.
 - b. NPL variable has a significant positive effect on bank's capital buffer. So the hypothesis of H2 which states that the NPL ratio has a positive effect on bank capital buffer is accepted.
 - c. Incremental Capital Buffer variable has a positive but insignificant effect on bank's capital buffer. So the hypothesis of H3 which states that Incremental of capital buffers ratio has

- positive effect on bank's capital buffer is accepted.
- d. Loans to Total Assets variable and significant negative affect on bank's capital buffer. Thus the hypothesis of H4 which states that the ratio of Loans to Total Assets positively affect on the bank's capital buffer is not accepted.
 - e. Share Assets variable has negative but insignificant impact on bank's capital buffer. So the hypothesis of H5 which states that the ratio of the Share Assets has positive effect on bank capital buffer is accepted.
2. Result of F test obtained is 4,050 with significant level of 0,002. The significance value is less than 0,05 ($0,002 < 0,05$) hence the regression model which consist of predictors variables (Share of Assets, Return on Equity, Non Performing Loan, Increment of Capital Buffer, and Loans to Total Assets) can be applied to predict Capital Buffer.
 3. From the regression result known that the coefficient of determination (adjusted R square) value is 0,121. It means 12,10% of Capital Buffer can be influenced by Share Assets, ROEt-1, NPL, IncrBUFF, and Loans to Total Assets. Then the rest ($100\% - 12,10\% = 87,90\%$) of Capital Buffer can be influenced by another cause outside the model.

Research Limitation

Limitations of this research are:

1. Lack of sample number, since this research did not use small bank's size as samples. The samples are 16 biggest commercial banks in Indonesia, so the other sample outside those 16 biggest commercial banks are not counted as samples.
2. Lack of some other variables such as macroeconomics variables in determining capital buffer.
3. The time period of analysis is relatively short (7 years), the results may be different if a longer period time frame is used.

Suggestions

Based on conclusions explained before and research findings, hence submitted suggestions as follows:

1. For Bankers

- a. The negative and significant sign on the variable Loans to Total Assets signals that banks in Indonesia agree the higher credit is distributed to depositors, the smaller capacity of banks to raise capital buffer. Since the number of capital buffer is already high with more than 5% that required by BASEL III. The average of capital buffer showed 9,70% against capital buffer required by BASEL III only 5%, a mandatory capital conservation of 2,5% and a countercyclical buffer of 2,5 % during periods of high credit growth. It is really needed for banks to optimize their capital buffer by decreasing their capital buffer. So for all banks, to decrease their capital buffer, they have to distribute more loans to their depositors.
- b. The negative and significant sign on the variable ROE t-1 signals that banks in Indonesia may have an unlimited access to external capital and / or prefer financing from equity. To optimize bank's capital buffer, It is really needed for banks to decrease their capital buffer. Therefore, to decrease their capital buffer or excess capital, banks must increase their financing from equity, so the level of ROE will be higher.
- c. Non performing loan interact positively with the capital buffer. It is signaling that banks adopt a conservative behavior and do not take risks. So, for the riskier banks should raise capital to minimize their risk. Therefore, For optimizing bank's capital buffer, banks have to reduce the number of non performing loan. Reducing Non Performing Loan can be done by decreasing presence of substandard loans, doubtful and bad debts.
- d. The negative signal between Share Assets and Capital Buffer signaling that Share Assets have similarity with Size variable. This finding is supporting Too Big To Fail (TBTF) theory that suggest the large banks tend to maintain their capital buffer lower than small banks. So, to decrease banks capital buffer, they have to increase their share assets.
- e. Increment of capital buffer affects positively to capital buffer. Therefore, to optimize bank's level CAR, banks have to decrease their capital buffer. To decrease bank's capital buffer, banks have to increase increment of capital buffer by increasing their own capital buffer in



the t period than in the $t-1$ period or by adjusting more higher of previous capital buffer.

2. For Civitas Academica

For Civitas Academica, the author do hope this research will ignite a study about capital buffer since this study still untouched by civitas academica.

3. For Future Research

The author hope there will be more research on capital buffer in the future. The future reasearch is very needed since this research still have a lot of lack and mistake. But it should be added another variables such as macroenomics variable and extend period of study. Finally, it would be interesting to widen the sample of study by adding other countries such as ASEAN countries that have same similarity with Indonesia.

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