

Conference Paper

Capital Buffer in Indonesia: Do Adjustment Cost and Business Cycle Matter?

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Abstract

This study aims to determine the capital buffer determinants of go public banks in Indonesia from 2012 to 2016. The sample selection was based on purposive sampling which resulted in 23 samples of go public banks. The capital buffer is the dependent variable, and the adjustment cost is proxied by the lag of capital buffer ($BUFF_{t-1}$), and business cycle proxied by GDP growth are the independent variables. The technique of the analysis is multiple regression analysis. The study results show that: (1) the adjustment cost has a positive and significant impact on capital buffer of go public banks in Indonesia; and that (2) business cycles have a negative and significant impact on capital buffer of go public banks in Indonesia.

Keywords: capital buffer, adjustment cost, business cycles

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1. Introduction

In economic activities, almost all parties, including individuals, groups, communities, institutions or agencies, have been dealing with banks because banks are the intermediary institutions between various parties, especially those who are over-funded and those who lack funds. According to Kasmir (2012), the bank is an institution in a business entity whose main activity is to receive funds from parties that have excess funds in the form of deposits and channel them to parties who lack funds in the form of credit.

As a business entity or a company engaged in financial services, banks need capital. Besides serving to fulfill the banking regulator requirements, bank capital also functions as a buffer for all various risks and shocks in the future.

Given the importance of the capital to banks, Indonesian Central Bank as the banking regulator as well as the highest authority has issued regulation related to capital requirements that must be fulfilled by banks. Based on the Basel Accord I, banks are required to have a minimum amount of capital as much as 8% of Risk Weighted Assets (RWA). Basel

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It draws some criticisms and needs to be corrected in order to be more comprehensive, and is revised into Basel II.

Capital regulations in Basel II are based on risk, supervision and market discipline. The implementation of Basel II is expected to be able to improve the banking health and resilience systems and to achieve risk-based capital. This is important, considering the activities in the bank are full of high risks and uncertainties.

The follow-up of Basel II is Basel III. Developed countries have applied Basel III on their banking systems. In Indonesia, the implementation of Basel III is being prepared in order to be implemented in 2019. Capital rules in Basel III focus more on the needs of banks to provide buffers to face risks in the economic crisis, which, therefore, results in banking stability.

Banking capital cannot be separated from the Capital Adequacy Ratio (CAR). CAR is used to measure the capital adequacy owned by banks to support assets that contain some risks. CAR is a capital adequacy ratio that shows the banks' ability to maintain sufficient capital and the bank management ability to identify, measure, monitor and control the emerging risks, and it can also affect the amount of capital (Almia, 2005). In accordance with the Central Bank of Indonesia's regulations in Regulation No. 15/12 / PBI / 2013, which is also supported by the Financial Services Authority (FSA) Regulation No. 11 / POJK. 03/2016 on Commercial Banks' Capital Requirements, the minimum CAR is 8%. This means that the higher the CAR, the stronger the bank's ability to handle risks. This indicates that bank capital is in a healthy condition.

In addition to general capital, both the Central Bank of Indonesia and the FSA also stipulated the need for additional capital above the minimum capital obligation which functions as a capital buffer. The capital buffer is a difference between the capital adequacy ratio owned by a bank and the minimum capital adequacy ratio required by the banking regulator. Capital buffer serves as a buffer against risk in the event of a shock in the future (Noreen, 2016). For example, a bank has a CAR of 19% while the minimum CAR required by the banking regulator is 8%; thus, there is a capital buffer of 11% which serves to anticipate uncertain things in the future.

Banks that have high CAR will create a high potential capital buffer. In maintaining the ratio of capital buffers, banks are faced with a dilemma. A high capital buffer will have an impact on an increasing level of customer confidence to the bank. High capital buffers reflect that banks are safe from shocks because banks have sufficient capital reserves to cover possible losses and difficult situations in the future that is full of uncertainty. However, capital buffers that are too high will cause banks to lose the potential to

get maximum profits because the capital reserves should actually be used for credit distribution and more profitable investments.

On the other hand, a low capital buffer will decrease the level of customer confidence in the bank, because banks are considered to have a high risk in the event of business shocks and failures in the future. Thus, the bank needs to set an optimal capital buffer. This is in line with Milne and Whalley (2001) who state that there is a trade-off between benefits and costs if they have a capital buffer. The phenomenon of the 1997 financial crisis and the 2008 global crisis has caused capital buffers to become a serious concern in the banking industry, coupled with the implementation of Basel III banking regulations that focus on risk-based capital, making this research on go public banking companies in Indonesia very feasible to be performed.

Ayuso (2002; 2004) conducted research on banks in Spain, Erizalde and Repullo (2004), Lindquist (2004) researched banks in Norweigia, Stolz, and Wedow (2005) researched banks in German. They agreed that capital buffers could be influenced by the cost of holding capital, the cost of financial distress and the adjustment costs. Cost of holding capital are proxied by Return on Equity (ROE), the cost of financial difficulties or bank risk is proxied by Non-Performing Loans (NPLs) and adjustment costs are proxied by the previous years' capital buffer lag (lag BUFF ($t-1$)). ROE shows a negative relationship with capital buffers, meaning that banks with high returns will use profits to increase capital so that it will hold lower capital buffers as collateral. In other words, high returns will increase bank confidence so that there is no need for banks to hold high capital buffers. NPL has a negative effect on capital buffers, meaning that increased NPLs indicate that bank risks increase along with the rising costs of financial difficulties due to non-performing loans, which will reduce capital buffer as a buffer for banks when an economic shock occurs. Adjustment costs indicate a positive relationship between lag of capital buffer and capital buffer.

Avack and Lavasseur (2007), who have conducted several studies on banks in several countries in Europe, noted that capital buffers are influenced by capital costs proxied by ROE, bank risk proxied by NPLs and economic and business cycles proxied by Gross Domestic Product (GDP). ROE has a positive effect on the capital buffer, NPL has a negative effect on capital buffer and GDP has a negative effect on the capital buffer.

Boucinha (2008), who conducted several studies on banks in Portugal, suggested that capital buffers are influenced by bank risk proxied by NPL, the size of the company proxied by total assets and the cost of capital proxied by ROE. NPL has a negative effect on the capital buffer. Total assets have a negative effect on capital buffers, meaning that

banks that have large assets tend to have high confidence so they will reserve a smaller capital buffer to anticipate future risks.

Based on this phenomenon and the implementation of Basel III banking regulations which will be implemented in 2019, research related to capital buffers on go public banks in Indonesia is very feasible to be conducted. Basel III is a regulation that requires that bank capital to be risk-based. Therefore, before implementing Basel III, it is important to examine whether go public banks in Indonesia are ready to apply it.

The researchers were interested in examining the phenomenon of capital buffers in Indonesia. The object of this study is several go public banks listed on the Indonesia Stock Exchange. This research was interesting considering that go public banks listed on the Indonesia Stock Exchange vary in characteristics in terms of capital, assets and business entity form (Infobank, 2015). The diversity of characteristics have driven the researchers to analyze the go public banks in Indonesia. The limitation of this research are only using two independent variables, namely adjustment cost and business cycle

2. Methods

This study is causative research which shows the relationship between the effect of independent variables on the dependent variable. The object of this research is all go public banks listed on the Indonesia Stock Exchange. The population of this study was 41 banks. Based on the purposive sampling, 24 banks were selected during the five-year observation period starting from 2012 to 2016, resulting in 120 observations.

Variables used in this study include independent variables and dependent variables. Independent variable consists of adjustment cost (X1) and business cycles (X2). The dependent variable (Y) is the capital buffer.

The research model is as follows: $BUFi, t = \beta_0 + \beta_1 BUFi, t-1 + \beta_2 CYCLE, t + \varepsilon_i, t$

In this research, the technique of data analysis is multiple linear regression. Prior to the regression analysis, the classical assumption test was carried out first. The classical assumption test includes a normality test, multicollinearity test, autocorrelation test, and heteroscedasticity test. In addition, the model feasibility test is also needed in the form of a determination coefficient test (R²), F test and hypothesis test (*t*-test).

TABLE 1: Operational definition of variable.

Variables and Proxy	Source	Description	Measurement	Scale
Dependent Variable (Y)				
Capital Buffer (Buff)	Noreen (2016), Xu (2016), Bocinha (2008), Avack and Levasseur (2007), Lindquist (2004), Ayuso (2002;2004)	Difference in the bank's capital adequacy ratio (CAR) with minimum capital adequacy regulation (8%)	CAR Ratio- <i>Minimum Regulatory Requirement (8%)</i>	Ratio
Independent Variable (X)				
Adjustment Cost	Noreen (2016), Xu (2016), Bocinha (2008), Avack and Levasseur (2007), Lindquist (2004), Ayuso (2002;2004)	Capital Buffer for the previous period ($t-1$)	Lag of Capital Buffer (Buff $t-1$)	Ratio
Business and Economic Cycle	Noreen (2016), Avack and Levasseur (2007)	Gross Domestic Product	GDP rate	Ratio

3. Results and Discussion

By using multiple regression data analysis, the outlier test and the classical assumption test, which includes a normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test, were performed before testing the hypothesis. The results of the classical assumption test of this study fulfilled all assumptions so that the model testing with hypothesis testing was allowed to be done.

The results of the analysis of each variable's characteristics are shown in Descriptive Statistics below.

TABLE 2: Descriptive statistics.

	N	Minimum	Maximum	Mean	Std. Deviation
Buff $t-1$	120	2.03	17.57	8.6006	3.09657
GDP	120	4.88	6.26	5.3920	0.53948
Buff	120	2.03	26.50	9.5718	3.71849
Valid N (listwise)	120				

For the first independent variable, adjusting cost proxied by Buff $t-1$ has the lowest value is 2.03% which is owned by PT. Bank Mayapada International, Tbk and the highest value is owned by MNC Bank at 17.57%. The average value is 8.60% with a standard deviation of 3.09..

For business cycle variables proxied by GDP growth, the minimum value is 4.88 in 2015 and the maximum value is 6.26 in 2012. The average value is 5.39 and the standard deviation is 0.53.

For the dependent variable, which is the capital buffer proxied by Buff, the minimum value is 2.03 on PT. Bank Mayapada International, Tbk and the maximum value is 26.50 on PT. Bank Mandiri, Tbk. The average value is 9.57 and the standard deviation is 3.71.

The data analysis technique used in this study is multiple regression analysis. The independent variable in this study was used to predict and explain the dependent variable. The results of the multiple regression analysis are shown in the Table 3.

TABLE 3: Summary of hypothesis testing.

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.726	2.696		3.608	0.000
	Bufft-1	0.779	0.080	0.649	9.751	0.000
	GDP	-1.272	0.459	-0.185	-2.772	0.006

Based on the table above, the lag of capital buffer is shown to have a positive and significant effect on the capital buffer of go public banks in Indonesia. This means that an increasing lag value of the capital buffer will increase the value of the capital buffer of this year. The results of this study are in line with Ayuso et al (2002), Esterella (2004), Wong *et al* (2005), Avack (2007), Jokipii and Milne (2008), Bocinha (2008), Francis and Osborne (2009)

Lag of capital buffer is used to measure adjustment costs that measure the bank's ability to generate optimal capital. Banks that have a high capital buffer lag will tend to have a high capital buffer in the current year. The results of this study which state that adjustment cost has a positive and significant effect on capital buffer means that lag of capital buffer has a defining role in determining the capital buffer for the current year. Thus, the bank can estimate the optimal capital buffer if the bank is faced with the choice of a dilemma of whether to prioritize profitability or liquidity.

Business cycles are one of the macroeconomic variables used in this study. Based on previous theories and research, the improvement or deterioration of the Indonesian economy influences the bank's decision in determining its capital buffer. This study shows that economic and business cycles proxied by GDP growth have a negative and significant effect on the capital buffer. That is, when GDP growth decreases, it will result in an increase in the capital buffer. Business and economic cycles that experience a decline cause the business risks to increase. Increased business risk forces banks to

set high capital buffers as the bank's effort to cover risks. The results of this study are in line with the research of Avack and Lavesseur (2007), Francis and Osborne (2009) and Noreen (2016).

4. Conclusion

In reality, banks indeed face a dilemma in determining the optimal capital buffer, because there is a trade-off between profitability and liquidity. The capital buffer that is too high will show that the bank has good liquidity, so it will increase the customer's trust to stay as the bank customer. However, it will eliminate the potential to get higher profits because the funds in many banks are embedded in the capital rather than other investment activities that are more profitable. It is expected that with the results of this study, banks can determine the optimal amount of capital buffer by using lag of capital buffer and business cycles as a basis for consideration. Lag of capital buffer which has a positive and significant effect on the capital buffer, which means that if the capital buffer in the previous year was high, the bank could suppress the capital buffer for the current year in order to achieve an optimal capital buffer. On the other hand, business cycles have a negative effect on capital buffers. This means that if the economy experiences a decline, the business risk will increase; thus, the banks can increase its capital buffer to cover the risk. By taking into account the lag of capital buffer and the economic and business cycle, it is hoped that the banks will be more careful in making decisions about their capital buffer.

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