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The Effect of Earnings Management and Signaling on Loss Loan Provision: The Role of Bank Capitalization

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ABSTRACT

Objective – Loan loss provision is an accrual for the banking industry, and therefore has a significant effect on bank accounting earnings and capital requirements. Previous studies showed inconsistent results for the relationship between earnings management, signaling, and loan loss provision. The difference in the results is thought to be caused by bank capitalization. Therefore, this study aims to investigate the role of bank capitalization on the effect of earnings management and signaling on loan loss provision.

Methodology – The sample consists of 86 conventional banks in Indonesia for the period of 2015-2019. Furthermore, this study used panel data analysis of multiple regression.

Findings – The results showed earnings management has no effect on loan loss provision. In contrast, signaling has a positive and significant effect. Although bank capitalization is not proven to weaken the effect of earnings management on loan loss provision, it strengthens the positive effect of signaling on loan loss provision.

Novelty – This study proves that bank capitalization has an important role in moderating signaling impact on loan loss provision but not for the effect of earnings management. This is due to the potential for earnings management in banks is relatively low because banks are highly regulated entities and with regulated governance mechanisms limit the managers' discretionary accounting decisions.

Type of Paper: Empirical

JEL Classification: G23, G32.

Keywords: Bank Capitalization, Earnings Management, Signaling

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1. Introduction

The banking sector plays an important role in the local and global economy (Lobo, 2017). Credit from these institutions has a risk where customers are unable to repay principal and interest due to unfavorable economic circumstances and other factors. Therefore, to reduce this challenge, banks create a reserve to face the risk of loss through productive assets investment. The amount estimated to establish this provision is known as Loan Loss Provision, which is a risk management tool used to reduce losses in bank loan portfolios.

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This provision is an expense determined by a bank to allow for non-performing loan losses (Cho & Chung, 2016). Furthermore, it reflects a decision at a certain point in time, which is derived from management discretion (Bikker & Metzemakers, 2005). Therefore, loan loss provision becomes a possible

account for banks to manage earnings. Income management is a choice of accounting policies made by managers to achieve certain earnings reporting (Scott, 2015). In this management, there is a concept that uses an agency theory approach. This theory explains that its practices are influenced by conflict of interest between parties (principal) and management (agent).

Estimating loan loss provision is also important to determine a bank performance when carrying out its function of providing loans. In fact, it is a very large and significant accrual for the banking industry, and therefore has a significant effect on earnings and capital requirements (Huang & Wang, 2013; Kanagaretnam, 2004). Previous studies have shown that the main tool for earnings management is the provision of credit losses (Agénor & Zilberman, 2015; Ahmed et al., 1999; Asokan Anandarajan et al., 2007; Chang et al., 2011; Kanagaretnam, 2004). Also, loan loss is the concern of regulators and accounting standard setters because (1) the provision is a very significant discretionary accrual, (2) it has a direct effect on bank interest margins and overall profit, (3) it is related to the principle of micro prudence, which is important for regulators regarding the reliability of financial statement, (4) it has become a debated accounting number in financial reports since the global financial crisis in 2008 (Elleuch & Taktak, 2015; Bank Loan Loss Provisions Research: A Review, 2017). Therefore, bank managers tend to increase loan loss provision in periods of high operating income, in order to reduce the volatility of reported earnings (Kanagaretnam et al., 2010).

Previous studies showed inconsistent results for the relationship between earnings management and loan loss provision. In fact, some studies do not find evidence that earnings management is carried out through loan loss provision (Ahmed et al., 1999; Curcio & Hasan, 2015). In contrast, other studies showed that banks use credit loss provisions for earnings management (Amidu & Kuipo, 2015; Asokan Anandarajan et al., 2007; Lassoued et al., 2017; Shrieves & Dahl, 2003). An evidence of inconsistent results is the relationship between potential signals and loan loss provision (Ahmed et al., 1999; Asokan Anandarajan et al., 2007; W. H. Beaver & Engel, 1996; Leventis et al., 2011; Liu et al., 1997). Therefore, there is a gap that needs to be examined. The result differences is thought to have been caused by some factors such as bank capitalization (Bouvatier et al., 2014; Kanagaretnam, 2004), which is the amount of capital owned by the bank, and exceeds the minimum requirements to meet regulatory standards (Gambacorta & Mistrulli, 2004).

Based on conducted literature, there is still a limited study which examined capitalization role in moderating the effect of earnings management and signaling on loan loss provision. The next section of this paper discussed literature review, method, results, and conclusion.

2. Literature Review

2.1 Earnings Management and Loan Loss Provision

Previous studies used loan loss provision in measuring earnings management (W. H. Beaver & Engel, 1996; Kanagaretnam, 2004; Lassoued et al., 2017; Liu et al., 1997). This is a reasonable measure of accruals in the banking sector. Banks with high pre-managed earnings have a positive effect on discretionary loan loss provisions, however, those with low pre-managed earnings have a negative effect on discretionary credit (Kanagaretnam, 2004).

Lassoued et al (2017) showed banks in Middle Eastern and North African countries with more concentrated share ownership use loan loss provisions for earnings management. Meanwhile, those with family ownership reduce this practice (Lassoued et al., 2017). Anandarajan reported that commercial banks in Australia conduct earnings management more aggressively using loan loss provisions compared to those that are not listed (Asokan Anandarajan et al., 2007). Furthermore, Amidu & Kuipo found that banks in African countries were involved in earnings management during the 2002-2009 period and showed there was an increase in sensitivity to income diversification through a decrease in interest income, as the market share increased (Amidu & Kuipo,

2015). Laventis et al examined the effects on provision for credit losses and application of IAS 39 on financial instruments in banks listed on the European Union stock exchange. It was discovered that earnings management using the provision for loan losses after the application of IAS 39 proved to be significantly reduced (Leventis et al., 2011). This means IAS 39 application improved earnings quality with a tendency to reduce management through provision for credit losses. Based on the discussion, the hypothesis is as follows:

Hypothesis 1: Earnings management has a negative effect on loan loss provision.

2.2 Signaling and Loan Loss Provision

Signaling is carried out by management to provide information on future earnings performance to external parties. Meanwhile, Anandarajan carried out a study on banks in Australia and stated that they did not use loan loss provisions for signaling high profits to investors (Asokan Anandarajan et al., 2007). Furthermore, Ahmed et al (1999) provided empirical evidence that signaling is represented by earnings for the next period. There is also a positive relationship between stock returns and provision for credit losses. In other words, the market sees loan loss provisions as a signal of private information about future profits rather than credit losses (W. Beaver et al., 1989). Other studies stated that the positive relationship between changes in earnings for the next year and the discretionary availability of loan loss provision indicates a signal of an increase in profit to clients and investors (Bouvatier et al., 2014; Curcio & Hasan, 2015). Based on the above explanation, the following hypothesis is determined:

H2: Signaling has a positive effect on loan loss provision.

2.3 Bank capitalization role in moderating the effect of earnings management on loan loss provision.

Previous studies reported inconsistent results from the relationship between earnings management and loan loss provisions. Ahmed et al (1999) found no evidence that earnings management was carried out with provision for credit losses in the US. Furthermore, Curcio & Hasan, (2015) provided evidence that during the financial crisis, European banks using the Euro currency did not use loan loss provisions for discretionary purposes (Curcio & Hasan, 2015). Also, Anandarajan reported that commercial banks in Australia practiced earnings management more aggressively using loan loss provisions compared to those not listed (Asoka Anandarajan et al., 2007). Lassoued et al (2017) showed that banks in Middle Eastern and North African countries whose shareholdings are more concentrated use loan loss provisions for earnings management while those with family ownership reduce this practice (Lassoued et al., 2017). Furthermore, Amidu & Kuipo (2015) found that banks in African countries were involved in earnings management during the 2002-2009 period and claimed that there was an increase in the sensitivity of earnings management to income diversification through a decrease in interest income, as the market share of banks increased. Although the differences in the results of these studies are thought to be caused by several factors such as ownership concentration and the regulatory environment (Bouvatier et al., 2014), as well as capital structure (Kanagaretnam, 2004). Capitalization is the amount of capital owned by a Bank that exceeds the minimum requirements to meet regulatory standards (Gambacorta & Mistrulli, 2004). Therefore, those with weak capital get involved in income smoothing through the provision of loan losses (Shrieves & Dahl, 2003). Meanwhile, a different study showed that banks with high capitalization performed income smoothing compared to those with low capitalization (Kanagaretnam et al., 2004). Based on the above discussion, the hypothesis is as follows:

H3: Bank capitalization weakens the negative effect of earnings management on loan loss provision.

2.4 Bank capitalization role in moderating the effect of signaling on loan loss provision.

Previous studies showed inconsistent results on the relationship between signaling and loan loss provision. The provision for loan losses is negatively related to changes in future earnings (Ahmed et al., 1999). Meanwhile, Anandarajan et al (2007) examined banks in Australia and provided empirical evidence that they did not use credit loss provisions to signal information with the aim of attracting investors to show higher profits. Liu et al (1997) also concluded that good news signaled by discretionary credit loss provisions are more important for banks that have high motivation to present good news, which are the characteristics of those with low capital regulations and the potential to face non-performing loans. Beaver et al (1989) stated that after controlling for non-performing loans, banks with high reserves for credit losses also have a high market to book ratio. Furthermore, Wahlen (1994) concluded that after controlling for non-performing loans, banks with high provision for loan loss have higher abnormal returns. Leventis et al (2011) tested commercial banks in the European Union during 1999 to 2008 and found that banks with financial challenges did exceptionally by using loan loss provision to provide signals about the prospects for future profits.

Bank capitalization provides a basis for risk signals, and managers who maintain neutrality provide a bank security signal by choosing a value which is greater than the cost minimizing rate (Hughes & Mester, 1998). Clarine (2015) showed banks with good capitalization have low financial risk, therefore they have the potential to survive crisis and show financial stability. Kanagaretnam et al stated that the tendency to signal differently in each bank is negatively related to size or capitalization (Kanagaretnam et al., 2004). Large banks have the potential to become the center of attention and are monitored by regulators and analysts, hence the managers will have little private information to carry out signal mechanisms through credit loss provisions. This results in using less signaling tools including credit loss provisions to communicate their private information. Based on this discussion, the following hypothesis was established.

H4: Bank capitalization strengthens the positive effect of signaling on loan loss provision.

3. Research Methodology

Population of this study are conventional banks, namely local and foreign-owned banks operating in Indonesia. The period is 4 years from 2015 to 2018, and the reason for choosing the study period is due to the ease and completeness of the required data. Furthermore, secondary data were used from the annual report available on the investor relations menu found on the website of each bank.

Sample selection was carried out by purposive sampling method using the following criteria (Sekaran & Bougie, 2019), namely: 1. Indonesian Conventional Banks operating in the period 2015-2019; 2. Those that are not subsidiaries of other banks; 3. Those that publish annual reports and complete financial statements which can be accessed on their official website. Therefore, based on the selected criteria, there are 86 banks (344 firm-years of observation can be analyzed)

The variables consist of earnings management, signaling, bank capitalization, and loan loss provision. The earnings management was measured through a model developed by W. H. Beaver & Engel (1996) which is shown below:

$$ALL_{it} = \beta_0 + \beta_1 COit + \beta_2 LOAN_{it} + \beta_3 NPA_{it} + \beta_4 \Delta NPA_{it} + \varepsilon_{it}$$

Where: ALL is allowance for loan loss provision, CO is charge off loan, Loan is total credit, and NPA is Nonperforming Assets. All variables are deflated with total equity.

Signaling is measured using model developed by Bouvatier et al (2014) and Curcio & Hasan (2015) which is shown as below:

$$Signaling_{it} = \frac{EBTP_{it+1} - EBTP_{it}}{(TA_{it} + TA_{it+1}) / 2}$$

where: EBTPit+1 is earnings before tax and provision for company i and year t, EPTPit is earnings before tax and provision for company I and year t, TAit is Total Assets for company i-year t, and TAit+1 is Total Assets for company I and year t+1.

Bank capitalization is measured using model developed by Gambacorta & Mistrulli (2004) which is indicated below:

$$BankCap = \frac{TC - (RCAR \times RWA)}{TC}$$

where: BankCap is bank capitalization, TC is total capital, RCAR is regulated capital adequacy ratio, and RWA is risk-weighted asset

In line with the empirical literature, several control variables are used to capture differences in bank characteristics such as Size (bank size), Liquidity, and Leverage (Bitar et al., 2016; Ramos-tallada, 2015). Size is measured using natural logarithm of total assets (Kolsi & Grassa, 2008), while liquidity is measured using loan to deposit ratio (Prisman et al., 1986). In addition, leverage is measured using debt to total equity (Kanagaretnam et al., 2010).

The research model is expressed in the following regression equation:

Regression model to test hypothesis 1 and 2.

$$IndekLLP = \beta_0 + \beta_1 ManajLaba + \beta_2 Signaling + \varepsilon$$

Regression model to test hypothesis 3 and 4.

$$IndekLLP = \beta_0 + \beta_1 ManajLaba + \beta_2 Signaling + \beta_3 ManajLaba*KapBank + \beta_4 Signaling*KapBank + \beta_5 Size + \beta_6 Leverage + \beta_7 LDR + \varepsilon$$

4. Results and Discussion

Descriptive Statistics

Table 1 shows that earnings management has a high standard deviation as compared to the mean. This indicates that sample variability for earnings management is quite high. On average, the value of earnings management is quite low, which is 0.09. Signaling variable also has a higher standard deviation than the mean. This means that sample variability for signaling is also heterogeneous. Bank capitalization has quite the same value for both in average and standard deviation; this means that each firm in the sample are homogeneous or low variability. The average value of bank capitalization is 19,5%. This value shows that bank capitalization is above the regulated capital adequacy ratio of 8%. LDR and Leverage standard deviation is higher than the mean. It indicates that the sample has a high variability. The size variable has a standard deviation lower than the mean. This shows that the sample variability for size is quite low or homogeneous.

Table 1 Descriptive Statistics

Variables	Min	Max	Mean	Standard Deviation
Earnings Management	0.0004	5.7550	0.0932	0.3659
Signaling	-0.1112	0.1127	0.0020	0.0180
Bank Capitalization	0.0252	1.5130	0.1947	0.1841
LDR	0.0732	12.7282	1.0808	1.1094
Leverage	0.1600	1231.2938	14.7866	82.1597
Size	13.1115	20.9832	16.7586	1.6215

This study used panel data analysis because the data contained time series observations of banks (Gujarati & Porter, 2009). Although, before the hypothesis test, a classical assumption test was conducted. The results showed the data are normal and free from autocorrelation, heteroscedasticity, and multicollinearity. Subsequently, chow and hausman tests were conducted.

The Result of Hypothesis 1 and 2

Results of the test for hypotheses 1 and 2 are presented in the tabel 1 below.

Table 2 Empirical Results

Var Dependent: Loan Loss Provision

Independen Variables	Expected Sign	Model 1 (H1 & H2)		Model 2 (H3 & H4)	
		Coeffiecient	Prob	Coefficient	Prob
Earnings Management	-	-0.038	0.156	0.021	0.447
Signaling	+	0.412	0.038**	-0.396	0.241
BankCap*Earnings Management		-	-	2.667	0.574
BankCap*Signaling		-	-	4.756	0.001***
LDR		-0.004	0.451	-0.002	0.649
Leverage		-0.0000	0.134	-4.588	0.718
Size		0.056	0.000***	0.062	0.000***
Prob		2.21	0.000	2.01	0.000
Adj R2		0.15		0.83	
N		344		344	

***Significant at 1 percent; ** Significant at 5 percent; *significant at 10 percent

Note: BankCap: Bank Capitalization; LDR: Loan to Deposit Ratio

Table 1 shows earnings management has no effect on loan loss provision, with a p-value of 0.447 (above 0.05). This finding is supported by descriptive statistics which show that the average value of earnings management is quite low at 0.09. This findings do not support Beaver & Engel (1996), Kanagaretnam (2004), and Liu et al (1997). Bank has become a business organization that is different from other commercial businesses and is highly regulated (Aoki & Patrick, 1994). In fact, governance mechanism can limit the manager's discretionary accounting decisions, therefore, the potential for earnings management is relatively low (Sakawa & Watanabel, 2019). Also, signaling has a positive and significant effect on loan loss provision with a p-value of 0.038 (below 0.05). This results support previous studies by Ahmed et al (1999), Bouvatier et al (2014) and Curcio & Hasan (2015).

The effect of moderation in bank capitalization is also presented in table 1. The interaction between capitalization and earnings management showed a p-value of 0.574 (above 0.05). This mean capitalization does not moderate the influence of earnings management on loan loss provision. However, the interaction of capitalization and signaling showed a p-value of 0.001 (below 0.05) with coefficient of 4.756. Furthermore, the empirical results showed bank capitalization strengthens the positive effects of signaling on loan loss provision. Hence, the higher the capitalization, the more power to generate profits. This finding support Clarine (2015), which stated that banks with good capital have the potential to survive the financial crisis and demonstrate stability.

The test on control variables shows that size has a negative and significant influence on loan loss provision. The results indicate the larger the size of the company, the higher the value of loan loss provision. Leverage has no effect on loan loss provision. In addition, LDR (loan to deposit ratio) has no influence on loan loss provision.

5. Conclusion.

Based on the above discussion, it can be concluded that earnings management has no effect on loan loss provision. Meanwhile, signaling has a positive and significant effect. Also, bank capitalization does not moderate the influence of earnings management on loan loss provision, but it strengthens the positive effect of signaling. This study has a limitation in collecting data because not all of banks consistently publish annual reports on their website. Therefore, further study is recommended on Islamic banks to determine the results consistency.

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