

The Effect of Liquidity, Leverage and Bank's Size of the Profitability Conventional Banks Listed on Indonesia Stock Exchange

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ABSTRACT

The purpose of this study is to determine the impact of liquidity, leverage and bank' size of the profitability conventional banking sector as the influencer of economic movements in this country. This study employed the total of 29 conventional banks listed on Indonesia Stock Exchange during the period of 2010-2019. There are total of 290 observations made in the study. The dependent variable used in this study is bank's profitability measured by return on asset (ROA), return on equity (ROE) and net interest margin (NIM). The independent variables are liquidity measured by loan to deposit ratio (LDTR), leverage measured by equity to asset ratio (ETAR) and bank size measured by natural log of total asset (LNTA). The result shows that liquidity was observed to has insignificant negative impact on bank's ROA and ROE, and positively affect NIM but statistically insignificant. While leverage has negative but insignificant impact on ROA and NIM, and significantly has negative affect on ROE. Meanwhile, bank size has positive and significant impact on ROA, then has insignificant negative impact on ROE, and significantly has negative affect on NIM. This study could help the internal management of Indonesian conventional banking sector to make policy and decision in order to improve bank's profitability.

1. INTRODUCTION

The Banking sector has an important influence on economic movements. Banks has contributed many activities for improvement of economic activities, including its mediation and its financial activities, are necessary for economic growth and any country. In several financial system, banks are more important than markets in channeling funds from savers to spenders, or are equally important (Monnin and Jokipii, 2010; Garcia and Guerreiro, 2016). When the country economy is bank-dominated, on the one hand, the failure of financial institution could bring a huge impact on overall financial system (Budhathoki, Rai, Lamicchane, Bhattarai, Rai, 2020). The financial crisis from 2008 which led to chaos of major world economies, especially USA and European Union countries, highlighted the importance of factors which determine bank's profitability. A sound and profitable banking activities is a requirement for sustainable economic development and limit economic downturn such as financial panics and to avoid adverse budgetary consequences on the government (Ben Naceur and Omran, 2011). Therefore, the researches, bank management, financial markets and banking supervisors interested in analyzing the determinants of bank profitability (Messai, Gallali and Jouini, 2010).

In banking sector, profitability has always been a central measure to determine or analyze company's performance. Changes in bank's profitability could affect the national economic progress as profits influence the investments decision of companies. Therefore, an adequate profitability is important and critical for bank's long-term survival and success. (Menicucci and Paolucci, 2018).

In current situation, Indonesian government is facing the challenge on recovering economic condition where many sectors are collapsed due to the impact of pandemic. This action needs banking sector as the key role player to restore the credit demands and attract investments. Therefore, the banking sector need to pay attention to their profitability as it is critical for the success of bank management and bring impact on financial system. The determinants of profitability of conventional banks is important to manage stability, efficiency and competitiveness of the banking industry (Dietrich and Wanzenried, 2014). Therefore, this study tries to investigate the factors that affect profitability in Indonesian banking sector.

Many studies have been conducted in some countries in order to identified factors that affect bank's profitability. The main conclusion from the most studies revealed that most of the factors come from internal (Menicucci and Paolucci, 2018). Naturally, there's no specific profitability measurement that superior to others. From the previous studies there are some various choices of profitability measurement *return on assets* (ROA) (Shah, 2012; Ahmed Sheikh & Wang, 2013; Le & Phan, 2017) dan *return on equity* (ROE) (Chaklader & Chawla, 2016) and *net interest margin* (NIM) (Budhathoki et al, 2020). There are also many factors influencing banks profitability with diverse way because different types of banks have different purposes with profitability (Budhathoki, et al., 2020).

The aim of this study to find the effect of liquidity, leverage and bank size on its profitability and how those factors affect bank's profitability. This paper provides as follows. Section 1 presents the introduction of banking sector. Section 2 review the existing relevant literature on the factors that affect bank's profitability. Moreover, research hypotheses based on existing theories are also developed in this section. Section 3 outlines the research methodology and

data sample. Moreover, this section will explain the econometric model applied and describes the independent and dependent variables used in the regression analysis. Section 4 shows the empirical finding of the study and will be concludes with some suggestion for future research in section 5.

2. LITERATURE REVIEW

Profitability. Profitability is the ability to generate benefit from all business activities of an organization, firm, or company. Profitability measures management efficiency in the use of organizational resources to add business value. Profitability can be considered as a relative term as measurement of profit and its relationship to other elements which directly affect the company's profit. Profitability is also the relationship of income with several balance sheet gauges that show the relative ability to earn income (Elsharif, 2016).

Return on assets (ROA) is one of profitability indicator used to measure the efficiency of a company in generating profits from the management of company assets (Andersson and Minnema, 2018). ROA shows the company's relative profit to total assets owned, calculated by the ratio of net income to total assets (Almaqrari and Al-Homaidi, 2018). ROA is a measurement tool suitable for company managers and stakeholders (Andersson and Minnema, 2018). The second of most used measurement of profitability is Return on equity (ROE, shows the efficiency of a company in generating a profit from each unit of shareholder equity, also known as net assets or assets less liabilities. ROE shows how companies use investment to generate revenue growth, which is calculated by dividing net income with total equity (Almaqrari & Al-Homaidi, 2018).

Net interest margin (NIM) is the company's net interest income which is the result of the difference between interest income and interest expense, with average income assets (Marinković and Randović, 2014). The NIM reflects how the company's pricing policies, mix of assets and liabilities of the company are available. The NIM is set by the bank to cover all intermediation risks and costs. An adequate interest margin must be able to generate sufficient income to raise capital when the risk increases (Marinković and Randović, 2014). NIM can be calculated by dividing net interest income with the company's total assets (Paolucci, 2016).

Liquidity and Profitability. Liquidity defined as a company's ability to convert its assets into cash in a short time without losing value. Liquidity can be measured using the loan to deposit ratio (LDTR) where the total loan is divided by the total deposit (Budhathokhi et al, 2020). A dilemma that is often faced in liquidity is achieving the desired trade-off between liquidity and profitability. When banks want to maximize profitability, on the other hand, the liquidity situation can decrease because the bank uses available assets and equity to increase profitability. Thus, it will affect the company's ROA and ROE (Manyo and Ogakwu, 2013). Properly managed liquidity monitoring will serve as the basis for making banking decisions based on the bank's liquidity situation to avoid losses (Waleed, Pasha and Akhtar, 2012). Regarding the liquidity relationship with NIM, Sen, Chen, Kao and Yeh (2010) assume that banking financial system is market-based, if liquidity is low and the company has more illiquid assets, the NIM will increase due to the bank's operations. will receive interest income from the management of

bank assets (Marozva, 2015). Contrary to their recent findings which state that banks with low liquidity must raise money from the market to fill the funding gap (Marozva, 2015).

Based on research conducted on 28 Nepalese commercial banks, shows that LDTR as liquidity measurement tool has a negative effect on ROA. The study found that the increasing of LDTR (lower liquidity) will decrease bank's ROA (Budhathoki et al., 2020). In the other side, Ximenes and Li (2018) have different argument on LDTR effect on ROA, where LDTR is actually able to positively affect ROA in commercial banks listed on Thailand Stock Exchange.

LDTR that shows the level of bank's liquidity could possibly negatively affect the bank's ROE. Bank's LDTR level can describe liquidity position, where increasing LDTR means that the liquidity is declining (Budhathoki et al., 2020). However, in other study, LDTR has a positive effect on return on equity owned by a bank, this is based on the results of research conducted on commercial banks in Thailand (Ximenes and Li, 2018).

Leverage and Profitability. According to Bringham and Houston (2013) leverage is a measure that shows the extent to which fixed income securities (debt and preferred stock) are used in the company's capital structure. Leverage is calculated by distributing equity capital divided by total asset ratio (Budhatokhi et al., 2020). Leverage is the use of source assets by banks which have fixed costs in order to increase the potential profit of the shareholders and a level of the company's ability to use fund assets or funds that have fixed expenses in order to realize the company's goals to maximize the wealth of the company's owner. The company's capital structure determined based on leverage, the structure captures the extent to which companies depend on debt as part of financing structure (Berk & DeMarzo, 2013).

Research conducted on 28 commercial banks in Nepal used the ratio of equity capital to total assets as an indicator to measure bank's financial leverage. The ratio of equity capital to total assets can be an important factor in achieving maximum profit for banks. The capital owned by a bank can minimize the risks that might occur, and increases in bank capital, and also able to create maximum profits in its operational activities. The result shows the ratio of equity capital to total assets which shows the level of bank's financial leverage is positively affect bank's ROA (Budhathoki et al., 2020). This result is in line with research conducted on commercial banks in Thailand where the equity capital to total assets of a bank can positively and significantly affect the ROA (Ximenes and Li, 2018).

The ratio of equity capital to total assets, which is used as an indicator to measure bank's financial leverage, can negatively affect a bank's ROE, but not significantly, based on research conducted on 28 commercial banks in Nepal. This negative effect caused by high cost of equity capital compared to deposits, where if the value of equity capital in the bank increases, the bank pay more costs. As the result, bank profit margins will decrease and reduce bank profitability (Budhathoki et al., 2020). In contrast to research conducted by Budhathoki et al. (2020), the ratio of equity capital to total assets actually has a positive effect on ROE based on research conducted on commercial banks in Thailand (Ximenes and Li, 2018).

The ratio of equity capital to total assets, which is used as an indicator to measure bank's financial leverage, can positively affect a bank's NIM based on research conducted on 28 commercial banks in Nepal (Budhathoki et al., 2020). In general, the ratio of equity capital to total assets owned by a bank has a positive effect on bank profitability. Research conducted on

commercial banks in Thailand has proven that the bank's equity capital to total assets has a positive effect on the bank's NIM (Ximenes and Li, 2018).

Bank size and Profitability. Bank size means varieties and amount of production capabilities or the quantity and variety of services or businesses it can offer simultaneously to its customers. Simply put, the best indication of a company is the size of the company is the size of its management or the number of assets owned compared to other companies in the same industry (Sritharan, 2015). Size is usually measured by gross sales or gross value of assets, logarithm of total assets, number of employees, and sales turnover (Budhathoki and Rai, 2020). Growth in company size can be in the form of revenue, profit, assets or number of employees all of which are important for improving financial health and profitability. This study aims to determine whether an increase or decrease in the size of commercial bank assets has an effect on bank profitability.

The conducted on 28 commercial banks in Nepal shows that the natural logarithm of total assets as an indicator for measuring bank size has a positive effect on the return on assets of banks (Budhathoki et al., 2020). Bank size as an independent variable used in research on several commercial banks from various countries in Asia has a positive effect on bank's profitability as measured by ROA (Ashraf et al., 2017). Other researchers also stated same result with research conducted by previous researchers, Rahman et al. (2015) stated that bank size as measured by the natural logarithm of total assets has a positive effect on ROA. The research was carried out on commercial banks in Thailand as well succeeded in proving that the natural logarithm of total assets owned is positively and significantly affect bank's ROA (Ximenes and Li, 2018). Bank size has a positive effect on bank's ROE based on the results of research conducted on 28 commercial banks in Nepal (Budhathoki et al., 2020). Ashraf et al. (2017) state that bank size has a positive effect on a bank's profitability measured by ROE. Based on the research results obtained, it can be concluded that the bigger a bank is, the easier it is for the bank to generate profits. In line with that, Alper and Anbar (2011) also found that bank size is able to positively affect the ROE. Ximenes and Li (2018) also state that bank size has a positive effect on ROE based on the results of research conducted on commercial banks in Thailand. Natural logarithm of total assets as an indicator used in measuring bank size has a positive effect on a bank's profitability as measured by NIM (Budhathoki et al., 2020). Research conducted on commercial banks in Thailand by Ximenes and Li (2018) also shows that bank size has a positive effect on NIM.

3. RESEARCH METHODS

This research is conducted to examine the effect of liquidity, leverage, and bank size on bank profitability (ROA, ROE and NIM). The study was conducted to see bank performance as measured by profitability indicators on conventional banks listed on the Indonesia Stock Exchange (IDX) in 2010 to 2019 period. Referring to the research model conducted by Budhathoki et al. (2020) which also tested the effect of liquidity, leverage, and bank size on bank profitability. Hypotesis type testing is carried out in this study. Budhathoki et al. (2020) use return on assets (ROA), return on equity (ROE), and net interest margin (NIM) as indicators for measuring bank profitability and measured by the following formula:

Return on Assets

$$ROA = \frac{Net\ Income}{Total\ Assets} \dots\dots\dots 1$$

Net Interest Margin

$$NIM = \frac{Net\ Interest\ Income}{Total\ Assets} \dots\dots\dots 2$$

Return on Equity

$$ROE = \frac{Net\ Income}{Total\ Equity} \dots\dots\dots 3$$

This study uses three independent variables as factors that affect bank’s profitability. There are liquidity, leverage and bank size measured by the following formulas:

Liquidity

$$Liquidity = \frac{Total\ Loans}{Total\ Deposits} \dots\dots\dots 4$$

Leverage

$$Leverage = \frac{Equity\ Capital}{Total\ Assets} \dots\dots\dots 5$$

Bank’s Size

Bank’s size = Natural logarithm of total assets

Collecting method. This research was conducted using secondary data of financial statement of Indonesian commercial banks during period of 2009 to 2019. The secondary data was obtained and collected from various sources with intermediary media. Data was obtained through the official website of Indonesia Stock Exchange (www.idx.co.id). **Sampling Method.** The sampling method used in this research was purposive sampling. The population used as sample in this research meet the criteria required as follows:

1. Indonesian commercial banks listed on Indonesia Stock Exchange (IDX) during the period 2010 to 2019.
2. Commercial banks have published annual financial reports, from 2010 to 2019 and have never been delisted during that period.
3. Commercial banks use Rupiah currency in their financial annual report and are available completely on Indonesia Stock Exchange (IDX) from 2010-2019.

Statistical test. The statistical test conducted in this research are model test (Chow and Hausman), F-test, Goodness of Fit test (Adjusted R Square) and T-test. **Analyzing Method.** Multiple linear regression analysis method is a method used to analyze the data in this study, using Statistical Product and Service Solutions (SPSS) software. This study uses three types of basic models with the following forms:

Model 1:

$$ROA = \alpha + \beta_1 (LTDR) + \beta_2 (ETAR) + \beta_3 (LNTA) + \epsilon_{ij} \dots\dots\dots 6$$

Model 2:

$$ROE = \alpha + \beta_1 (LTDR) + \beta_2 (ETAR) + \beta_3 (LNTA) + \epsilon_{ij} \dots\dots\dots 7$$

Model 3:

$$NIM = \alpha + \beta_1 (LTDR) + \beta_2 (ETAR) + \beta_3 (LNTA) + \epsilon_I \dots\dots\dots 8$$

Description:

ROA = Return on Assets

ROE = Return on Equity

NIM = Net Interest Margin

LTDR = Loan to Deposit Ratio

ETAR = Equity to Asset Ratio

LNTA = Natural Log of Total Assets

4. RESULTS**Model Test**

Chow test. Table 1 reporting a summary of Chow test. This test conducted to determine the best model among common effect and fixed effect.

Table 1. Chow Test Result

Model	Prob. Cross-Section Chi-Squared	Decision	Descriptive
Model 1	0.0054	H ₀ rejected	Fixed Effect Model
Model 2	0.0002	H ₀ rejected	Fixed Effect Model
Model 3	0.0000	H ₀ rejected	Fixed Effect Model

Source: Reviews data processing result (2020)

The test result show Probability Cross Section Chi-Squared value on first model is $0.0054 < 0.05$, H₀ is rejected. Shows that the first model uses Fixed Effect Model. The Probability Cross Section Chi-Squared value on second model is $0.0002 < 0.05$, H₀ is rejected. Therefore, the second model use Fixed Effect Model. Probability Cross Section Chi-Squared value on third model is $0.0000 < 0.05$, H₀ is rejected. Shows that the third model also use Fixed Effect Model.

Hausman test. Table 2 reporting a summary of Hausman test. The test conducted to determine the best model among common effect and fixed effect. This test also used to detect the heterogeneity in the characteristics of each model.

Table 2. Hausman Test Result

Model	Prob. Cross- Section Random	Keputusan	Keterangan
Model 1	0.0000	H ₀ rejected	<i>Fixed Effect Model</i>
Model 2	0.0000	H ₀ rejected	<i>Fixed Effect Model</i>
Model 3	0.0000	H ₀ rejected	<i>Fixed Effect Model</i>

Source: Reviews data processing result

The test result show Probability Cross Section Random value on first model is $0.0000 < 0.05$, H₀ is rejected. Shows that the first model use Fixed Effect Model. The Probability Cross Section Random value on second model is $0.0000 < 0.05$, H₀ is rejected. Therefore the second model use Fixed Effect Model. Probability Cross Section Random value on third model is $0.0000 < 0.05$, H₀ is rejected. Shows that the third model also use Fixed

Effect. F-test. This test conducted to test how big are the effects of independent variables on dependent variable. Table 3 reporting the summary of F-test.

Table 3. F-test Result

Model	<i>F-Statistik</i>	<i>Prob. F-Statistik</i>
Model 1	7.573473	0.000068
Model 2	8.587524	0.000000
Model 3	22.87966	0.000000

Source: Eviews data processing result

The number of Prob. F-statistic on model 1 is $0.0000 < 0.05$, H_a is accepted. It can be concluded that all independent variables (liquidity, leverage and bank size) simultaneously have a significant effect on dependent variable (profitability). On model 2 the Prob. F-statistic is $0.0000 < 0.05$, H_a is accepted, means that all independent variables (liquidity, leverage and bank size) simultaneously have a significant effect on the dependent variable (profitability). On model 3 the Prob. F-statistic is $0.0000 < 0.05$, H_a is accepted, means that all independent variables (liquidity, leverage and bank size) simultaneously have a significant effect on the dependent variable (profitability). Goodness of fit test. This test conducted to find out whether the independent variables in the modles are able to explain changes in dependent variable. this test used to measure how much the role of independent variables affect dependent variable. the adjusted R2 value range between 0 and 1 ($0 < \text{adjusted R}^2 < 1$). Decision making can be seen through the amount of adjusted R2 value in the regression model. Table 4 shows the result of Goodness of fit test.

Table 4. Goodness of Fit Result

Model	<i>R-Squared</i>	<i>Adjusted R-Squared</i>
Model 1	0.073595	0.063878
Model 2	0.507826	0.448689
Model 3	0.733270	0.701221

Source: Reviews data processing result

According to Table 4, Adjusted R-squared on model 1 is 0.0638 or 6.38%, means that all independent variables can explain the dependent variable by 6.38%, the remaining 93,62% are explained by other variables outside the model. Adjusted R-squared on model 2, is 0.4486 or 44.86%, means that all independent variables can explain the dependent variable by 44.86%, the remaining 55.14% are explained by other variables outside the model. On model 3, Adjusted R-squared is 0.7012 or 70.12%, means that all independent variables can explain the dependent variable by 70.12%, the remaining 29.88% are explained by other variables outside the model.

Descriptive Statistic Result

Table 5 is reporting a summary of the descriptive statistics of three response variables such as Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM). This study is using three independent variables, they are liquidity, leverage, and bank's size. The results of the descriptive statistics from this study is stated in Table 5 below:

Table 5. Descriptive Statistic Result

Variabel	N	Minimum	Maximum	Mean	Std. Deviation
ROA	290	-0.117280	0.034100	0.009160	0.017581
ROE	290	-1.065950	0.512000	0.073507	0.162868
NIM	290	0.002900	0.129540	0.043629	0.019016
Liquidity	290	0.000000	1.598900	0.803976	0.169465
Leverage	290	0.044930	0.290230	0.129378	0.044264
Bank's Size	290	14.26124	21.07164	17.70629	1.635476

Source: Reviews data processing result

Descriptive statistics result gives us mean of return on assets was 0.009160 and deviation of mean was 0.017581. For mean of return on equity was 0.073507 and its deviation was 0.162868. Net interest margin has 0.043629 for mean value and 0.019016 for its standard deviation. Next variable is liquidity, mean value of liquidity was 0.803976 and it has the deviation of 0.169465. Mean value of leverage was 0.129378 and deviation was 0.044264. The last variable is bank's size, which has a mean value of 17.70629 and 1.635476 for it deviation value.

The table states variable and quantitative measures of minimum, maximum, mean, and standard deviation. The results reveal that mean value of net interest margin is higher than the mean value of return on assets based on sample of 29 banks used in this study. This result is implying that Indonesian banks were found to be involved in traditional loan business and to earn very low amount from asset diversification. Based on the result of descriptive statistical on Table 5, the value of return on equity's mean of Indonesian commercial banks was much higher than return on assets and also net interest margin, the higher value is suggesting that they benefited from leverage effects. The standard deviation value of return on equity was much higher than return on assets and net interest margin, its similarly with the standard deviation value of bank's size. The higher of standard deviation indicates much more volatility among the other variable.

Regression Analysis Result

This study mainly focused on regression analysis results. Table 6 reports the effect of liquidity, leverage, and bank's size on profitability as dependent variables measured by return on assets, return on equity, and net interest margin.

Table 6. Regression Analysis Result

Variables	ROA		ROE		NIM	
	Coef.	Prob.	Coef.	Prob.	Coef.	Prob.
C	-0.0534	0.0098	0.5735	0.0183	0.1670	0.0000
Liquidity	-0.0018	0.7802	-0.0207	0.7594	0.0103	0.0876
Leverage	-0.0441	0.3079	-0.9241	0.0010	-0.0200	0.3275
Size	0.0039	0.0005	-0.0205	0.1823	-0.0073	0.0000

Source: Reviews data processing result

Based on **Table 6**, the result shows that liquidity has a negative but insignificant impact on ROA and ROE, while on NIM, liquidity has positive and insignificant impact. The lower value

of loan to deposit ratio indicates the higher value of bank's liquidity, and also, we can say that the higher value of this ratio will decreasing ROA and ROE, vice versa. Increasing the volume of loans on bank's asset would be creating the higher volume of non-performing loans on bank. The higher volume of non-performing loans will give a bad effect on bank's profitability specially for return on assets. Based on table 6, in our study is the same as the result of Budhathoki *et al.* (2020). The high value of loan to deposit ratio (low value of liquidity) will give the lower value of return on assets (Budhathoki *et al.*, 2020). The same result also found by Adelopo, Liodyking and Tauringana (2018) and Satyakama and Bhusan (2019) where there is a negative effect on liquidity to return on assets.

The low value of equity to total assets ratio indicates the high value of leverage on bank financing, vice versa. In our study, equity to total assets ratio affecting bank's profitability negatively for ROA, ROE and NIM. Table 6 shows us the negative but insignificant effect of leverage on ROA, in line with the study of (Garcia and Trindale (2018); Gadzo and Asiamah (2018)). This study also found that equity to total assets ratio has a negative and significant effect on ROE. The high value of leverage has a bad effect on bank's profitability that measuring by ROE, it indicates that increasing bank's leverage would be decreasing the value ROE on bank (Budhathoki *et al.*, 2020). This result also in line with the study of (Zalalem (2020); Gadzo and Asiamah (2018)). The result of regression test also found a negative but insignificant effect of leverage on net interest margin (NIM) as a measurement of bank's profitability. This result in line with the study of (Doyran (2013); Bhati *et al.* (2019)). Based on previous studies, the high value of leverage would be decreasing the value of NIM on bank's profitability.

Based on **Table 6** bank's size has positive effect on ROA, but size affecting negatively on ROE and NIM. Budhathoki *et al.* (2020) also found the same result, bank's size has positive significant impact on ROA for several commercial banks that operating in Nepal. Larger banks has the benefit from economies of scale and greater diversification that would reduce risk and cost, because of reducing of risk and cost so bank's profitability will increase significantly. This result also in line with the study of (Fidanoski *et al.* (2017); Adelopo *et al.* (2018)). On the other side, bank's size affecting negatively on ROE and NIM of bank. Bank's size has negative insignificant effect on return equity which in line with the study of (Tharu and Shresta (2019); Aladwan (2015); Gatzi and Akoto (2010)). The higher value of bank's size will reduce return on equity of bank. Bank's size has negative and significant impact on net interest margin of bank. This result in line with the study of (Ahmad and Matemilola (2013); Kasman *et al.* (2010)). According to our findings, we suggest that bank should pay more attention on leverage and bank's size. The high value of the ratio of bank's leverage associated with both a decline in risk to equity and tax subsidy. A bank with a high leverage might suggest that it is operating with overcautious policies, and it would be a bad effect for the highly conservative management because of it would decreasing bank's profitability. The internal management has to be more

cautious the impact of the increasing of bank size such as asymmetric information problem and bureaucratic problem which led to more cost for bank to manage its operationalization.

5. CONCLUSION AND SUGGESTION

The purpose of this study was to examine the effect of liquidity (measuring by loan to deposits ratio), leverage (measuring by equity to total assets ratio), and bank's size (measuring by natural logarithm of total assets) on bank's profitability that measuring by three measurement (return on assets, return on equity, and net interest margin). To examine these variables, data was collected from bank's financial statements of 29 commercial banks of Indonesian bank. The study concludes that liquidity or loan to deposits ratio has the negative but insignificant effect on return on assets and return on equity of bank. On the other side, liquidity affecting net interest margin positively but insignificant. Leverage that measuring by equity to total asset ratio has negative impact on all measurement of bank's profitability, except for return on equity that has insignificant impact. Bank's size has a positive and significant impact on return on assets, but affecting negatively on return on equity and net interest margin.

Overall, our results should help banking sector to manage and maximize their profitability by focusing on managing leverage and bank size. This result could give insight to the managers regarding their operative daily decisions. The government should improve the regulation regarding bank's activity that could affect the financial system. We are aware that this study has limitation in observation time. The inclusion of additional independent factors of our study such as capital adequate ratio (CAR) and gross domestic product (GDP) would help the next research to identify bank profitability.

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