

Review Article

The Impact of Bank Characteristics and Macroeconomic Conditions on the Growth of Bank Deposits in Indonesia, Period 2013-2018

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Abstract - This research aims to analyze the effect of Bank Characteristics and Macroeconomic Conditions on the Growth of Banking Deposits in the 2013-2018 Period. This research uses panel data on 116 commercial banks in Indonesia. The variables of this research are capital adequacy ratio, return on assets, cost of funds, total bank assets, gross domestic product, inflation, and interest with monthly data during 2013-2018. Data processing uses EViews (Econometric Views) version 7. The results of this research indicate that in the entire research sample, the capital adequacy ratio has a negative effect on the growth of deposits, return on assets has a positive effect on the growth of deposits, total bank assets negatively affect the growth of deposits, the gross domestic ratio has a negative effect on the growth of bank deposits, inflation has a positive effect on the growth of bank deposits, interest negatively affects the growth of deposits and while the cost of funds does not affect the growth of deposits.

Keywords — Capital ratio, return on assets, cost of funds, total bank assets, gross domestic product, inflation, interest, growth deposit.

I. INTRODUCTION

Banks play an essential role in boosting the Indonesian economy. One of them is as an intermediary institution, which is a financial intermediary between parties that possess funds (surplus units) and those who require funds (deficit units) and as an institution that functions to facilitate the flow of payment traffic (Suyatno, 1988: 1). The main business activity of a bank is to collect and distribute funds. Funds collection activities come from the bank itself, from depositors/customers, loans from other banks and Bank Indonesia, and other sources. Meanwhile, fund distribution activities can be carried out in various forms, for example, lending, investment activities, and in the form of fixed assets and inventory. Most sources, or around 88% of the bank's funding, come from customer deposits in the form of demand deposits, savings, and time deposits. These customer savings are often referred to as Third Party Funds (DPK; Dana Pihak Ketiga). As seen in the graph below:



Sources of Banking Funds in Indonesia

Source: SPI March 2018

The role of Third Party Funds is vital in bank business activities. One of them is to channel it back to the public in the form of credit, which is one source of bank income through loan interest income, which will determine the amount of the bank's profitability. Therefore every bank competes to collect deposits, which causes the growth of Third Party Funds.

In March 2018, the portion of non-core funding to total banking funding was relatively high at 76.67%; this shows that more bank funding comes from wholesale funding, which depends on large depositors and is not guaranteed by LPS (SPI March 2018). Wholesale funding tends to be unstable and sensitive to changes in interest rates, bank capital adequacy, the downgrading of bank credit, and bank profitability.

On the contrary, core funding is stable funding because it is obtained from retail funds or small depositors. They tend not to be sensitive to changes in interest rates. After all, LPS guarantees them. Although the banking funding structure is still dominated by unstable funding, the ratio of core depositors is relatively down compared to the previous year, from 27.34% to 26.12%. The Third Party Funds ratios above Rp2 Billion also experienced a decrease, which showed a reduced concentration of volatile funds.

The Third Party Funds is one crucial indicator of banking liquidity. At present, the liquidity of banks in Indonesia is decreasing; Bank Indonesia (BI) has raised the

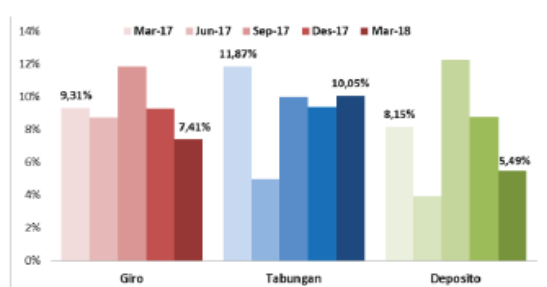


benchmark interest rate by 100 basis points (bps). When looking at the banking intermediation ratio or loan to deposit ratio (LDR), almost all large banks face tight liquidity. The average banking LDR has reached 92%. This means the liquidity that can be managed by banks is only 8% of the total third-party funds (DPK). Following the regulation of Bank Indonesia PBI No.15/15/PBI/ 2013 the lower limit of Banking LDR is 78% and with a limit of 92%.

According to Mr. Halim Alamsyah, as Chairman of the LPS Board of Commissioners at the LPS rate press conference on July 18, 2018, the average LDR was sacrificed because of the high number of loans but with a low Third Party Funds number. The increase in LDR was not in line with the acquisition of savings. Until May 2018, the loan growth in the banking industry was 10.26% or higher compared to the DPK growth of 6.4%. (Kontan, July 18, 2018).

If this condition is not controlled, there will be a risk of liquidity. Many researchers have emphasized that the fundamental role of banks as liquidity creators makes them vulnerable to liquidity risk (Ratnovski, 2013). Liquidity risk is a risk that occurs because banks cannot meet short-term obligations to the public when needed, which is caused by banks lacking liquidity. To avoid such situations and maintain financial stability, it is more desirable for banks to maintain an adequate liquidity shield (Arif & Nauman Anees, 2012).

Therefore to restore this condition, banks need to increase the collection of funds from the public to avoid the risk of liquidity, which will create banking deposit growth (Third Party Fund). From the graph below, it can be seen that the growth trend of Third Party Fund in QoQ (quarter on quarter) fluctuates, but in YoY (year on year), it decreases.



Trend Growth Deposit in Indonesia

Source: SPI March 2018

According to previous research written by Anamika Singh and Anil Kumar Sharma (2016), liquidity is needed by banks to carry out bank operations.; this facilitates the availability of funds in the event of expected or unexpected cash demands by the customer. One of the most significant sources of bank liquidity is Third Party Fund. For this reason, it is indispensable to collect third-party funds from customers. As occurred in India, the liquidity problems

faced are not due to inefficiencies in the banking system or negligence in regulations but rather because of the customer's sentiment to keep money in the bank toward the performance of banks in India as seen from the ability of bank capital, profitability, liquidity conditions, and bank size. Also, the customer depends on Indian macroeconomic conditions, particularly the level of gross domestic product, inflation, and interest.

Capital capability is vital for banks, where banks compete to increase their capital. Berger and Bouwman, 2009 stated that, following the concept of risk absorption, capital has a positive influence on bank liquidity; this implies that the high level of capital allows the creation of liquidity, specifically more Third Party Fund. This capital adequacy can be measured through the Capital Adequacy Ratio (CAR). Thus, with sufficient capital, the bank will aggressively raise funds from the public because the bank is considered able to cover the risk of bank liquidity.

Besides, in its business activities, every bank has a goal, which is to gain profit from the results of its business activities. This profitability can be measured through Return on Assets (ROA). The higher the ROA of a bank, the greater the level of profit achieved by the bank and the better the bank's position in terms of asset use (Utari, 2011). (Bonfim and Kim 2012) find that banks with high profitability are more likely to have low liquidity. Banks usually tend to be involved in risky projects to increase profitability. Hence, banks with high profitability will also give high interest to their customers. Therefore deposits in the bank will increase. From the profitability of a bank, one strategy to attract customers is to provide a high-interest rate compared to competing banks. Banks are competing to provide high deposit interest rates to their customers, in which bank interest rates can be measured using the Cost of Fund (CoF) ratio. COF refers to fees paid by banks to raise funds. Banks must collect more funding to reduce costs, and thus in a manner of economies of scale, the long-term costs can be reduced. Hence deposit growth will increase (Singh, 2016).

Subsequent from drawing customers to save their funds in the bank, with the amount of Third Party Fund collected, the bank can continue to carry out its business activities, explicitly directing it back to the public, investing, placing it in other banks, and others, therefore it, will generate a large number of total assets of a bank. According to research conducted by Bunda & Desquilbet (2008), they explain that the growth of bank deposits is also affected based on the total assets of the bank; small banks are needed to have more liquidity because external funding sources are limited, while large banks can have more liquidity little because they can manage funds from the interbank market and other sources. Therefore, banks are trying to raise funds from the public. Besides, banks with substantial total assets can increase product innovation that will attract customers to put their funds in the bank. For example, Bank Central Asia (BCA) provides a smooth innovation on its payment system.

In addition to internal factors, particularly bank characteristics, in carrying out their business activities, banks are also influenced by macroeconomic factors (Singh, 2016), where the condition of a country's economy can affect the growth of the country's banking deposits. One of the macroeconomic factors that influence deposit growth is GDP (Gross Domestic Product). GDP is generally used as an indicator of a country's economic health. For banks, GDP can be a crucial indicator to measure demand for banking services in the context of receiving deposits and providing financing. Theoretically, a higher GDP increases bank liquidity ratios because citizens have more money circulating on the financial markets, thereby reducing liquidity risk. (Saidc, 2017).

Besides GDP, another macroeconomic factor that can affect deposit growth is inflation. According to Sighn (2016), when the inflation rate of an economy increases, banks begin to have more liquidity to curb the effect of inflation on the economy. Therefore banks will try to raise funds from the public, and consequently, if the inflation rate is high, then the growth of deposits will rise.

In Indonesia, there is a central bank, which is Bank Indonesia, which issues a benchmark interest rate called the BI rate. Through this BI rate, banks will adjust their deposit interest rates, which will affect the growth of banking deposits. According to John Maynard Keynes, the interest rate is the price of using money. Keynes views interest rates as an economic phenomenon determined by the demand and supply of money. With the demand and supply of money needs, there will be ups and downs of interest in the market (Dahlan Siamat, 1995).

II. LITERATURE REVIEW

A. Construction of the theoretical model

The first research that becomes the reference material is an article (Future Business Journal, 2016) entitled An empirical analysis of macroeconomic and bank-specific factors affecting the liquidity of Indian banks written by Anamika Singh Anil Kumar Sharma from one of the Universities in India. This research discusses macroeconomic and bank-specific factors on bank liquidity in India.

After further investigation, the variables in this research begin with bank-specific factors consisting of Bank Size, Profitability, Deposits, Capital Adequacy, Funding Costs, and Macroeconomic Factors consisting of Monetary Policy, GDP, Crisis, Unemployment, and Inflation. With the presence of variables, bank-specific factors, as well as macroeconomic factors, can elucidate any factors that can affect bank liquidity in India, where the sources of bank liquidity are Third Party Fund, Capital, Securities, and others, where the most significant source of liquidity is the Third Party Fund. Factors that can affect bank liquidity are profitability, inflation, CAR, bank size, unemployment, and cost of funds, which affect the level of bank liquidity in India, while GDP is not positively related to bank liquidity in India. Thus, this research uses

macroeconomic factors, as well as bank-specific factors, as variables in determining factors that influence the movement of deposits.

The next research as a reference is in the form of a journal, specifically research conducted in 2017 by Aisyah Abdul Rahman, Ahmad Azam Sulaiman, and Noor Latifah Hanim Mohd Said, titled Does financing structure affect bank liquidity risk? This research discusses whether the financing structure affects liquidity risk. Empirical findings of this research add to the discussion of the influence of variable factors such as FS, SIZE, CAR, ROA, NPF, GDP, INF on liquidity risk. The results of this research are: (1) First, financing for the real estate sector is one of the significant variables. (2) Second, short-term FS stability (LCC) shows a positive relationship with long-term liquidity risk (NSFR) for both banks and banks as a whole, as well as for short-term liquidity risk (LCR) from Islamic banks. (3) Third, financing concentration (SPEC) examines the long-term liquidity risk (NSFR) of all, except for Islamic banks. Lastly, medium-term FS stability (VART) affects the long-term liquidity risk (NSFR) of Islamic banks, however, not for the others.

The third research, as a reference, is a Journal compiled by My Nguyen, Shrimal Perera, et al., 2017 with the title Bank market power, asset liquidity, and funding liquidity: International evidence. The result is that market forces do have an impact on bank assets and funding liquidity. Banks that do not have market power have more liquid assets and net lenders on the interbank market. On the contrary, dominant banks invest less in low-yield liquid assets and instead net borrowers on the interbank market. Furthermore, for certain levels of market power, ceteris paribus, banks in developed countries have less liquid assets and obtain more funds through the interbank market than developing countries. Bank size is negatively related to liquidity in developed countries, while it is contrary to developing countries.

B. Bank

Banks, according to Law of Republic of Indonesia Number 10 the Year 1998 dated November 10, 1988, concerning banking are: "Business entities that collect funds from the public in the form of deposits and distribute them to the public in the form of credit and other forms in order to improve the lives of many people.

C. Liquidity

Banking liquidity management is the ability of a banking institution to meet its short-term needs (Fahmi and Hadi, 2010: 40). One of the bank risks mentioned by Latumaerissa (2011: 143-144) is liquidity risk. Liquidity risk can be measured using a Loan to Deposit Ratio (LDR) ratio. According to Sudirman (2013: 158), this ratio can be formulated

$$LDR == \frac{\text{Amount of Third Party Credit}}{\text{Total of Third Party Fund}} \times 100\%$$

Liquidity risk is a risk that arises because banks cannot meet short-term obligations to the public when

needed, which is caused by banks lacking liquidity. Therefore, banks need to increase funding sources from the public, particularly Third Party Funds, which are an unlimited source of funding.

D. Deposits Growth

In the Banking Law of Republic of Indonesia No.10 of 1998, it is explained that Third Party Funds (DPK) are funds entrusted by the public to banks based on fund deposit agreements in the form of demand deposits, deposits, certificates of deposit, savings and or other similar forms. DPK can be formulated as follows:

DPK = Demand Deposit + Saving Deposit + Time Deposit

This funding source is the most important source of funds for a bank's liquidity. Where according to Anamika Singh (2016), liquidity is needed for banking operations and is a measure of the success of a bank if it can finance its operational activities from this funding source. Finding funds from this source is relatively easy when compared to other sources; this is also supported by research conducted by Jesti (2017) that increasing liquidity encourages an increase in Third Party Funds. The results of research conducted by Ervina (2016) also mentioned that Third Party Funds (DPK) affect the level of liquidity. Over time the bank will aggressively raise funds from the bank that causes the growth of deposits. The growth of Third Party Funds is measured by the comparison between the Third Party Funds differences in specific periods and the previous period with the Third Party Funds in the previous period. (Rahmadani 2011).

E. Bank's Characteristics

a) Capital (CAR)

A capital calculation can be performed in various ways; one of them is by measuring the CAR (Capital Adequacy Ratio) to estimate the adequacy of capital requirements for the applicable provisions. Capital Adequacy Ratio (CAR) shows the ability of capital to cover possible losses on loans and losses on investment in securities.

b) Profitability (ROA)

Profit / Profitability of a bank can be measured by the ROA ratio (Return on Assets. ROA shows the effectiveness of the company in generating profits by optimizing the assets owned. The higher the ROA of a bank, the greater the level of profits achieved by the bank and the better the position of the bank in terms of asset use (Utari, 2011).

c) Cost of Fund (COF)

According to Signh (2016), COF refers to fees paid by banks to raise funds. Understanding Cost of Fund according to Rachmat Firdaus (2001: 66) ", Cost of Fund is the cost that must be incurred by the bank for each fund that has been collected from various sources before being reduced by the minimum mandatory liquidity that must always be maintained by the bank." COF simply calculates

interest costs only and without regard to the classification of the use of funds.

d) Bank Size

The bank size variable is measured by the natural logarithm () of total assets; this is because the amount of total assets of each bank is different and has a high enough difference. Kurnia Dwi Jayanti (2013), size is the ratio of banks determined by total assets and private capital ownership (Rajan and Dahl, 2003). Bank Size is the ratio used to determine the size of wealth owned by a bank. The size of a bank's wealth can be seen from the total assets it possesses.

F. Condition Macroeconomic

a) GDP (Gross Domestic Bruto)

According to McEachern, Gross Domestic Product (GDP) (2000: 146): "Gross domestic product / GDP means measuring the market value of final goods and services produced by resources within a country for a certain period, usually one year. For banks, GDP can be a crucial indicator to measure demand for banking services in the context of receiving deposits and providing financing.

b) Inflation

In theory, inflation affects the banking world as a financial institution. As an institution whose primary function is mediation, banks are very vulnerable to inflation risks related to their fund mobility. One theory that explains the linkage is the theory of loaned funds (the Loanable Fund Theory). In this theory, if the amount of money demanded exceeds the amount provided, it can lead to an increase in the price of money or interest rates. The interest rate, in this case, is the interest rate that reflects the conformity between the deposit interest rate (supply-side) and loan interest rate (demand side). The most significant advantage of banks is the difference between savings and loan interest. Therefore banks must be able to manage and anticipate inflation as much as possible in order to maintain the level of balance mediation (Rivai, 2009).

c) Interest

According to John Maynard Keynes, the interest rate is the price of using money. Keynes regards interest rates as an economic phenomenon that is determined by the demand and supply of money. With the demand and supply of money necessity, there will be ups and downs of interest in the market (Dahlan Siamat, 1995). According to Rika (2012), in her research, there is a significant influence between deposit rates and deposits of Third Party Fundings. Which customers prefer 6-month time deposits because the interest rate is higher than other terms. Therefore, when the deposit interest rates increase, deposit growth will rise. In this research, the proxy used is the BI rate.

G. Framework

The author's framework of thinking explains the influence of the first independent variable (X1), which is the characteristics of the bank where the characteristics of the bank consist of CAR, ROA, CoF, and Bank Size and

their influence on the dependent variable (Y), namely the growth of deposits, also explained the influence of the second independent variable (X2) namely macroeconomic conditions consisting of GDP, Inflation and Interest on the dependent variable (Y), namely deposit growth

H. Relationship Between Variables

a) Relationship between Bank Characteristics (CAR, ROA, CoF, Bank Size) with Deposit Growth

Capital adequacy, where banks compete to increase their capital. Berger and Bouwman (2009) state that according to the concept of risk absorption, capital has a positive influence on bank liquidity. This implies that a high level of capital allows more liquidity to be created. This capital adequacy can be measured through Capital Adequacy Ratio (CAR). So with sufficient capital, the bank will aggressively raise funds from the public because the bank is considered able to cover the risk of bank liquidity. So that it can lead to growth in deposits. In addition, customers who have large funds also feel safe to save their funds in banks that have a large capital. Based on the explanation above, the hypotheses in this study are as follows:

Ho1: CAR has no influence on Growth deposit

Ha1: CAR has an influence on Growth deposit

First profitability, where every bank has a goal that is to get profit from the results of its business activities. This profitability can be measured through Return on Assets (ROA). The greater the ROA of a bank, the greater the level of profit achieved by the bank and the better the bank's position in terms of asset use (Utari, 2011). Bonfim and Kim (2012) find that banks with high profitability are more likely to have low liquidity. Banks usually tend to be involved in risky projects to increase profitability. So that banks will aggressively seek public funds so that savings increase. Based on the explanation above, the hypotheses in this study are as follows:

Ho2: ROA has no influence on Growth deposit

Ha2: ROA has an influence on Growth deposit

Liquidity conditions, where the size used uses the Cost of Fund (COF) ratio. COF refers to the fees paid by banks to raise funds (Sign, 2016). To reduce costs, banks must collect more funding so that economically of scale costs, in the long run, can be reduced. So that deposit growth should increase. Based on the explanation above, the hypotheses in this study are as follows:

Ho3: COF has no influence on Growth deposit

Ha3: COF has an influence on Growth deposit

Bank Size, which according to Bunda & Desquilbet (2008), explains that based on the availability of total assets, small banks are needed to have more liquidity because external funding sources are limited, while large banks can have less liquidity because they can regulate funds from the interbank market and other sources. So that small banks will try to raise funds from the public. In addition, banks with large total assets can increase product innovation that will attract customers to put their funds in

the bank. For example, Bank BCA provides innovation on the smooth payment system. Based on the explanation above, the hypotheses in this study are as follows:

Ho4: COF has no influence on Growth deposit

Ha4: COF has an influence on Growth deposit

b) Relationship between Macroeconomic Conditions and Deposit Growth

GDP with regard to macroeconomic factors is measured by the growth of Gross Domestic Product. GDP is generally used as an indicator of a country's economic health. For banks, GDP can be a key indicator to measure demand for banking services in the context of receiving deposits and providing financing. Theoretically, a higher GDP increases bank liquidity ratios because citizens have more money circulating on the financial markets, thereby reducing liquidity risk. (Saidc, 2017)Based on the explanation above, the hypotheses in this study are as follows:

Ho5: GDP has no influence on Growth deposit

Ha5: GDP has an influence on Growth deposit

Inflation, according to Singh (2016), when the inflation rate of an economy increases, banks begin to have more liquidity to curb the effect of inflation on the economy. So banks will try to raise funds from the public, and therefore if the inflation rate is high, then the growth of deposits will rise. Based on the explanation above, the hypotheses in this study are as follows:

Ho6: GDP has no influence on Growth deposit

Ha6: GDP has an influence on Growth deposit

According to Rika (2012), in her research, there is a significant influence between deposit rates on deposits. Where customers prefer 6-month time deposits because the interest rate is greater than other terms. So when deposit interest rates go up, deposit growth will go up. Based on the explanation above, the hypotheses in this study are as follows:

Ho7: GDP has no influence on Growth deposit

Ha7: GDP has an influence on Growth deposit

III. RESEARCH METHODOLOGY

A. Data

In this research, the researcher uses a quantitative approach. The quantitative approach is used to determine the effect of the relationship between the two variables. The quantitative approach comes from a deductive mindset, and this approach focuses more on detailed priorities in data collection and analysis. Thus, the approach is more concerned with measurement and sampling methods (Hair, 2014).

The objects of this research are 115 banks in Indonesia, consisting of 101 conventional commercial banks and 14 Islamic commercial banks, by using month on month (mom) data. The measurement period for five years (July 2013 to July 2018) to be able to see the growth of deposits.

After the researcher obtained all the information and data needed through the secondary data source, the researcher used EViews (Econometric Views) version 7, which is a Windows-based computer program that can be used to solve problems in the form of time series, cross-sections, and panel data, first, the writer conducts a normality test, then determines the panel data regression model whether to use the chow or haustman model to determine the fixed effect model or the common effect model, then continues to the classic assumption test, which is Multicollinearity Test, Heteroscedasticity Test, Autocorrelation Test and finally Hypothesis Testing, that is F Test and t-test.

B. Research Model

The determinant specification of deposits growth which is estimated has been formulated in the following equation:

$$\gamma = \frac{t-t_1}{t_1} \dots\dots\dots(3.1)$$

$$\gamma = \alpha + \beta_1 CAR_1 + \beta_2 ROA_2 + \beta_3 CoF_3 + \beta_4 SIZE_4 + \beta_5 GDP_5 + \beta_6 INF_6 + \beta_7 INT_7 + e \dots\dots\dots (3.2)$$

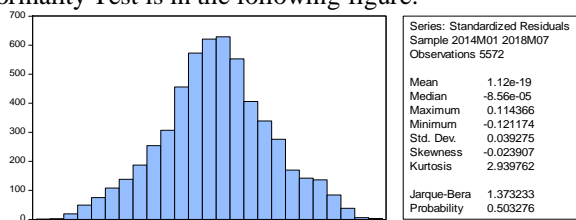
- γ=Growth deposit
- t= saving of this month
- t₁ = saving of last month
- CAR= Capital Adequacy Ratio
- ROA= Return on Asset
- CoF= Cost of Fund
- SIZE = Size Bank
- GDP = Gross Domestic Product
- INF= Inflation
- INT= Interest
- e = error term

The equation above to see how the influence of bank characteristics (CAR, ROA, CoF, and Bank Size) and macroeconomic conditions (GDP, inflation, and interest) on deposit growth. Where Equations 3.1 is a proxy of measurement of deposit growth. And equation 3.2 shows the relationship between bank characteristics (CAR, ROA, CoF, and Bank Size) and macroeconomic conditions (GDP, inflation, and interest) on deposit growth.

IV. RESULT AND DISCUSSION

A. Normality Test

The normality test aims to determine whether the research data is normally distributed or not. Because normally distributed data is one of the requirements to perform panel data regression analysis. The result of the Normality Test is in the following figure:



Histogram-Normality Test Graph

Source: Processed data

Based on Figure the histogram graph can be seen that the residuals of the regression results are normally distributed; this is because probability shows the value of 0.503276, and the probability value is above 0.05 (0.503276 > 0.05). It can be concluded that Ho is not rejected and means that the data to be analyzed has been normally distributed.

B. Classical Assumption Test

a) Multicollinearity Test

In the heteroskedasticity test, that is, by performing an independent variable regression using the glacier test where all variables are regressed using absolute residuals. If the probability is higher than the value of 0.05, it can be stated that the data does not contain heteroscedasticity; if the probability is smaller than the value of 0.05, there is heteroskedasticity. Based on data processed by Eviews9 using the glacier test, it can be seen that there is no probability coefficient in which the value is less than 0.05. Then it can be concluded that this research does not have heteroskedasticity.

b) Heteroskedasticity Test

In the heteroskedasticity test, that is, by performing an independent variable regression using the glacier test where all variables are regressed using absolute residuals. If the probability is higher than the value of 0.05, it can be stated that the data does not contain heteroscedasticity; if the probability is smaller than the value of 0.05, there is heteroskedasticity. Based on data processed by Eviews9 using the glacier test, it can be seen that there is no probability coefficient in which the value is less than 0.05. Then it can be concluded that this research does not have heteroskedasticity.

c) Autocorrelation Test

An autocorrelation test is used to find out if there is a correlation between one observation member and another observation, in this research uses the Durbin Watson (DW) test to detect the presence or the absence of autocorrelation in this research. The results of the regression equation are stated as passed the autocorrelation test if the DW-stat value is between 1.81 and 2.12, therefore there is no autocorrelation. The Durbin Watson test results are in the following table:

| | | | |
|--------------------|----------|-----------------------|-----------|
| R-squared | 0.019232 | Mean dependent var | 0.006309 |
| Adjusted R-squared | 0.017998 | S.D. dependent var | 0.040530 |
| S.E. of regression | 0.040164 | Akaike info criterion | -3.590279 |
| Sum squared resid | 8.975351 | Schwarz criterion | -3.580766 |
| Log likelihood | 10010.52 | Hannan-Quinn criter. | -3.586963 |
| F-statistic | 15.58649 | Durbin-Watson stat | 1.978244 |
| Prob(F-statistic) | 0.000000 | | |

Results of Autocorrelation Test

Source: Processed data

Based on the data processing carried out in the table above the DW value in the research model is 1.978244, which means that the Durbin Watson value is following established criteria. It can be concluded that the model in this research did not experience autocorrelation.

C. Determination of the Regression Model

From the test results between the chow test and the haustman test, it was found that the regression model using fixed-effect because the Chi-Square value results of the Hausman test with a fixed effect is smaller than the significance value of 0.05 and the Chi-Square probability value of the chow test that is the result of the model equation with the fixed effect is 0.0000.

a) Chow Test

Chow test is performed on the results of the Fixed effect equation regression with the result that the Chi-Square probability value that is the result of the model equation with fixed effect is 0.0000. This value is smaller than the significance value of 0.05, so it can be concluded that the results of the regression model in this study use the fixed effect test and can be continued to the Hausman Test.

b) Hausman Test

The Hausman test is carried out to determine the panel data regression model that will be used between fixed effects and random effects. The Hausman test was carried out with the results of the fixed effects regression model with the result that the Chi-Square value of the Hausman Test with a fixed effect was smaller than the significance value of 0.05, so it can be concluded that this study used a fixed-effect model

D. Analysis of Multiple Regression Results

Based on data processing, the results of the analysis can be shown in the previous table of this study using a fixed-effect model in accordance with the results of the Chow test that has been done previously, namely receiving H1, which means that in this study using the fixed-effect model approach. Furthermore, the panel data regression results with the fixed effect method in this study are presented in the following table:

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|----------------|-------------|------------|-------------|--------|
| C | 1.064424 | 0.178279 | 5.970536 | 0.0000 |
| CAR | -0.066433 | 0.035016 | -1.897238 | 0.0578 |
| ROA | 0.169405 | 0.024707 | 6.856564 | 0.0000 |
| COF | 0.000032 | 0.000031 | 1.052208 | 0.2927 |
| TOTAL_ASET_SIZ | | | | |
| E_ | -0.626935 | 0.362357 | -1.730159 | 0.0837 |
| GDP | -76.60936 | 12.93049 | -5.924709 | 0.0000 |
| INFLASI | 0.089976 | 0.049046 | 1.834499 | 0.0666 |
| INTEREST | -0.229606 | 0.078015 | -2.943081 | 0.0033 |

Source: Processed data

Results of Multiple Regression

Based on the results of the research regression obtained by the multiple linear regression equation as follows:

$$\text{Growth DPK} = 1.064424 - 0.066433\text{CAR} + 0.169405\text{ROA} - 0.626935\text{SIZE} - 76.60936\text{GDP} + 0.089976\text{INF} - 0.229606\text{INT}$$

The interpretation is as follows:

- A constant coefficient of 1.064424 means that if the variable CAR, ROA, COF, Total Assets, GDP, Inflation, and Interest are constant, then the growth deposit will increase by 1,064424 one unit.
- The CAR regression coefficient is -0.066433, which means that if CAR experiences an increase of 1%, the

growth deposit will decrease by -0.066433, assuming the conditions of other variables are constant.

- ROA regression coefficient of 0.169405, which means that if ROA has increased 1%, then the growth deposit will increase by 0.169405, assuming the conditions of other variables are constant.
- The regression coefficient of SIZE is 0.626935, which means that if SIZE has increased 1%, then the growth deposit will decrease by -0.626935, assuming the conditions of other variables are constant.
- The regression coefficient of GDP of -76.60936 means that if GDP has increased 1%, then the growth deposit will decrease by -76.60936, assuming the conditions of other variables are constant.
- The INFLATION regression coefficient of 0.089976, which means that if SIZE has increased 1%, then the growth deposit will increase by 0.089976, assuming the conditions of other variables are constant.
- The INTEREST regression coefficient is -0.229606, which means that if INTEREST increases 1%, then the growth deposit will decrease by -0.229606, assuming the conditions of the other variables are constant.

E. Determination Coefficient Test (R2) (Goodness of Fit Test)

The coefficient of determination test, called Adjusted R2, aims to show the ability of the model to explain the relationship between the independent variable and the dependent variable. The value in this test will always be between 0 and 1. If the result of Adjusted R2, the greater the ability of the independent variable to explain its effect on the dependent variable. The result is that the overall model produced has an adjusted R2 result of 0.016622 or 1.66%. It can be concluded that the independent variable in this study is able to explain the dependent variable (Growth deposit) of 1.66%, where the remainder of 98.44% is explained by other factors outside the variables in this study.

F. Hypothesis Testing

a) T-Test (Partial)

A partial test or t statistical was used to determine whether each variable of the independent variable has significance or influence toward the dependent variable. The conclusions that can be drawn from the t-test are seen in table 4.10 as follows:

| Variable | Coefficient | Std. Error | t-Statistic | Prob. | Result |
|------------------|-------------|------------|-------------|--------|-------------------|
| C | 1.064424 | 0.178279 | 5.970536 | 0.0000 | |
| CAR | -0.066433 | 0.035016 | -1.897238 | 0.0578 | Berpengaruh |
| ROA | 0.169405 | 0.024707 | 6.856564 | 0.0000 | Berpengaruh |
| COF | 0.000032 | 0.000031 | 1.052208 | 0.2927 | Tidak Berpengaruh |
| TOTAL_ASET_SIZE_ | -0.626935 | 0.362357 | -1.730159 | 0.0837 | Berpengaruh |
| GDP | -76.60936 | 12.93049 | -5.924709 | 0.0000 | Berpengaruh |
| INFLASI | 0.089976 | 0.049046 | 1.834499 | 0.0666 | Berpengaruh |
| INTEREST | -0.229606 | 0.078015 | -2.943081 | 0.0033 | Berpengaruh |

Source: Processed data

Results of Autocorrelation Test

Hypothesis 1 (H1) in this research is that the Capital Adequacy Ratio (CAR) effect on Growth Deposit. Based on the regression results in table 4.10, the CAR probability value of 0.0578 or smaller than the significance value of 0.1 ($0.0578 < 0.1$), and the CAR coefficient indicates a value of -0.066433; this reveals that CAR has a negative effect on Growth Deposit.

Hypothesis 2 (H2) in this research is that the Return on Assets (ROA) effect on Growth Deposit. Based on the regression results in table 4.10, the probability value of ROA is 0.0000 or smaller than the significance value of 0.05 ($0.0000 < 0.05$), and the ROA coefficient indicates a value of -0.169405; this proves that ROA has a positive effect on Growth Deposit.

Hypothesis 3 (H3) in this research is that the Cost of Fund (COF) does not affect Growth Deposits. Based on the regression results in table 4.10, the COF probability value of 0.2927 or higher than the significance value 0.01 ($0.2927 > 0.1$) and the COF coefficient indicates the value of -0.000032; this shows that COF does not affect Growth Deposit.

Hypothesis 4 (H4) in this research is that the Total Assets influence the Growth Deposit. Based on the regression results in table 4.10, the probability value of Total Assets is 0.0837 or smaller than the significance value of 0.01 ($0.0837 < 0.1$), and the coefficient of Total Assets shows the value of -0.626935; this shows that Total Assets negatively affect Growth Deposit.

Hypothesis 5 (H5) in this that research is Gross Domestic Products (GDP) affects Growth Deposit. Based on the regression results in table 4.10, the GDP probability value of 0.0000 or smaller than the significance value of 0.05 ($0.0000 < 0.05$) and the GDP coefficient indicates a value of -76.60936; this shows that GDP has a negative effect on Growth Deposit.

Hypothesis 6 (H6) in this research is that inflation affects the Growth Deposit. Based on the regression results in table 4.10, the Inflation probability value of 0.0666 or smaller than the significance value of 0.01 ($0.0666 < 0.1$), and the Inflation coefficient indicates a value of 0.089976; this shows that inflation has a positive effect on Growth Deposit.

Hypothesis 7 (H7) in this research is that Interest influences Growth Deposits. Based on the regression results in table 4.10 the Interest probability value of 0.0033 or smaller than the significance value of 0.05 ($0.0033 < 0.05$), and the inflation coefficient shows the value of -0.229606; this shows that interest has a negative effect on Growth Deposit.

b) F Test (Simultaneous)

Simultaneous test or F-test aims to examine more than one independent variable (CAR, ROA, COF, SIZE, GDP,

Inflation, and Interest) collectively having an influence on one dependent variable (Growth Deposit) using a significance level of 5%. Simultan test results (F-Test) in table 4.11 are as follows:

| | | | |
|--------------------|----------|-----------------------|-----------|
| R-squared | 0.017857 | Mean dependent var | 0.006321 |
| Adjusted R-squared | 0.016622 | S.D. dependent var | 0.040535 |
| S.E. of regression | 0.040197 | Akaike info criterion | -3.588628 |
| Sum squared resid | 8.991795 | Schwarz criterion | -3.579117 |
| Log likelihood | 10007.71 | Hannan-Quinn criter. | -3.585313 |
| F-statistic | 14.45460 | Durbin-Watson stat | 1.976316 |
| Prob(F-statistic) | 0.000000 | | |

Results of F Test

Source: Processed data

From the results of the simultaneous test (F-Test) in table 4.11, it can be seen that the probability value (F-statistic) is 0.000000, where this probability value is below the significance level of 5% ($0.000000 < 0.05$). It can be concluded that the results of the F-test (simultaneous) rejecting H_0 and H_a are not rejected, indicating that the CAR, ROA, COF, GDP, Inflation, and Interest variables simultaneously affect the Bank's Growth Deposit in Indonesia for the period 2013-2018.

G. Research Result Discussion

a) Effect of Capital Adequacy Ratio (CAR) on Growth Deposit

From the results of the t-test (partial) in this research, the coefficient value of the Capital Adequacy Ratio (CAR) with a coefficient indicates a value of -0.066433 which indicates that CAR has a negative relationship to Growth Deposit with a probability level of 0.0578 or smaller than the significance value of 10% ($0.0578 > 0.1$) which means it has an impact. Then it can be concluded that CAR has an influence on bank deposit growth in Indonesia for the period 2013-2018. The results of this research support the research conducted by Anamika Singhn Anil Kumar Sharma (2016), that CAR affects liquidity (Third Party Funds). The theory of Berger and Bouwman (2009) states that bank liquidity increases with an improvement in the capital adequacy ratio; this is following the concept of risk absorption, capital has a positive influence on bank liquidity; this implies that a high level of capital allows more liquidity to be generated. However, when banks begin to expand to attract third-party funds; therefore, in accounting, bank capital will decrease when liabilities (Third Party Funds) increase when total assets do not change.

b) Effect of Return On Assets (ROA) on Growth Deposit

From the results of the t-test (partial) in this research, the Return On Asset (ROA) coefficient of 0.169405 shows that ROA has a positive relationship to Growth Deposit with a probability level of 0.0000 or smaller than the significance value of 5% ($0.0000 < 0.005$) which means it has an impact. Then it can be concluded that ROA has a positive influence on bank deposit growth in Indonesia for the period 2013-2018. The results of this research support previous research conducted by Anamika Singhn, Anil Kumar Sharma (2016). Bonfim and Kim (2012) find that

banks with high profitability are more likely to have low liquidity; this is because banks will be more eager to extend credit to obtain higher profits. Therefore, banks will collect more deposits in order to be distributed in the form of credit. Also, with higher profits, banks will be able to provide substantial returns to their customers in order for the customers to be interested in depositing funds at the bank; this reflects that some customers in Indonesia tend to pay more attention to the bank's level of profitability, which can also reflect the good or bad performance of the bank.

c) The impact of Cost of Fund (COF) on Growth Deposit

From the results of the t-test (partial) in this research, the Cost of Fund (COF) coefficient of 0.000032 indicates that COF has a positive relationship to Growth Deposit with a probability level of 0.2927 or higher than the significance value of 5% ($0.2927 > 0.05$) which means have no impact. Then it can be concluded that COF has no influence on bank deposit growth in Indonesia in the period 2013-2018. The results of the research are not following the research conducted by Anamika Singhn, Anil Kumar Sharma (2016), which refers to the COF as the fees paid by banks for funds. Consequently, when interest rates rise, banks will usually also raise interest rates in order to maintain their customers. However, the results of this research reveal that COF does not affect; this could be since, in this period, banks were competing to find sources of liquidity, specifically the Third Party Funds or other funding to obtain their customers, regardless of how much the bank's cost of funds. COF is also not only a reflection of interest costs on the collection of deposits, but also from securities issued, loans received, and interbank liabilities. Hence, the COF ratio could not be prompted by the Third Party Funds but could be from securities issued, loans received, and interbank liabilities; this also reflects that the Deposit Insurance Corporation (LPS) has an essential role in the banking world. With the existence of regulations that LPS is about guarantees of bank customers and guarantors of up to 2 billion participants.

d) The impact of Total Bank Assets (SIZE) on Growth Deposit

From the results of the t-test (partial) in this research, the coefficient value of the Total Bank Assets (SIZE) of -0.626935 shows that SIZE has a negative relationship to Growth Deposit with a probability level of 0.0837 or smaller than the significance value of 10% ($0.0837 > 0.1$) which means it is influential. It can be concluded that SIZE has a negative influence on bank deposit growth in Indonesia in the period 2013-2018.

The results of this research support research conducted by Anamika Singhn Anil Kumar Sharma (2016), which results in the total bank assets affecting the bank liquidity (Third Party Funds). However, this is consistent with the theory of Bunda & Desquilbet (2008), explaining that based on the availability of total assets, smaller banks have more liquidity because their financing is limited, while large banks can have less liquidity because they provide substantial financing to debtors or involved in

profitable projects where one of the most significant sources of bank liquidity is Third Party Funds. Also, according to available data, banks that have substantial assets do not have high growth deposits. For example, Bank Mandiri, which has the most considerable assets in Indonesia, which is 0.020968, has a growth deposit of 0.0212515 as of July 2018. When compared with Bank Amar, which has a total asset of 0.014228 has a deposit growth of 0.338340; this reflects that banks with smaller assets tend to be more likely to have a larger growth deposit because, in a period of growth, this can also be caused by banks that have small total assets can provide higher deposit rates to attract customers while banks that have more substantial assets tend not to provide significant interest.

e) The Impact of Gross Domestic Product (GDP) on Growth Deposit

From the results of the t-test (partial) in this research, the Gross Domestic Product (GDP) coefficient of -76.60936 shows that GDP has a negative relationship to Growth Deposit with a probability level of 0.0000 or smaller than the significance value of 5% ($0.0000 < 0.005$) which means it has an impact. Then it can be concluded that GDP has a negative influence on bank deposit growth in Indonesia for the period 2013-2018.

The results of the research are not following the research conducted by Anamika Singhn Anil Kumar Sharma (2016). However, the results of this research are in line with research conducted by Bhati et al. (2015), Choon et al. (2013), Moussa (2015), and Bunda and Desquilbet (2008) confirm the GDP effect on bank liquidity (DPK). GDP is generally used as an indicator of a country's economic health. For banks, GDP can be a crucial indicator to measure demand for banking services in the context of receiving deposits and providing financing.

Theoretically, a higher GDP increases bank liquidity ratios because citizens have more money circulating on the financial markets, thereby reducing liquidity risk. However, in a recession, when credit decreases due to increased industry risk, banks tend not to extend credit; hence the liquidity (Third Part Funds) seems to increase (Saidc, 2017). Besides, in the GDP calculation formula, there is a consumption variable where, according to the Ministry of Finance (Metro Tv News 2017), GDP growth in Indonesia is still driven by household consumption of around 57% of GDP; this reflects that when GDP in Indonesia grows, consumption patterns of the population will grow. Therefore people's saving power will decrease.

f) The impact of Inflation on Growth Deposit

From the results of the t-test (partial) in this research, the value of the inflation coefficient of 0.089976 shows that inflation has a negative correlation to Growth Deposit with a probability level of 0.0666 or smaller than the significance value of 10% ($0.0666 > 0.1$), which means it has an impact. Then it can be concluded that inflation has a positive influence on bank deposit growth in Indonesia in the period 2013-2018.

The results of the research are not following the research conducted by Anamika Singh, Anil Kumar Sharma (2016). However, in line with research conducted by Vodova, 2011; Moussa, 2015; Bhati et al., 2013, our results show that when the inflation rate of an economy increases, banks begin to collect liquidity (Third Part Funds) to avoid the dangerous effects of inflation; this can also reflect that with a high inflation rate, people will tend to save due to rising prices of essential goods.

g) *The impact of Interest on Growth Deposit*

From the results of the t-test (partial) in this research, the Interest coefficient value of -0.229606 shows that Interest has a negative relationship to Growth Deposit with a probability level of 0.0033 or smaller than the significance value of 5% (0.0033 < 0.005), which means it is influential. Then it can be concluded that Interest has a negative influence on bank deposit growth in Indonesia for the period 2013-2018. The results of this research are consistent with research conducted by Nopirin (2000) that interest rates are costs that must be paid by borrowers for loans received and are a reward for lenders for their investments. Thus when deposit interest rates rise, deposit growth will increase.

The BI rate used as a reference for the interest rate will be raised by Indonesian banks when macroeconomic conditions decline. When economic conditions decline, banks can collect not many third-party funds. Therefore, when the BI rate rises, savings will decrease in the short term. However, in the long run, as part of monetary operations, it is expected that the public will be interested in placing funds in banks when interest is high. (LPS Analysis Report, 2018). According to data collected by researchers in 2014, the enormous BI rate was 0.077500, with an average negative deposit growth of -0.013102. When compared to 2017, the BI rate is only 0.042500, which is where the average deposit growth was 0.012285; this reflects that when the BI rate rises, the growth deposit weakens.

V. CONCLUSION

Based on the results of the analysis and discussion presented in the previous chapter, it can be concluded that the Bank's Characteristics, notably CAR variables, have a negative impact on growth deposits, ROA variables have a positive effect on growth deposits, COF variables do not affect growth deposits, Total Asset variables have a negative effect on growth deposit, and Macroeconomic Conditions particularly the GDP variable has a negative effect on the growth deposit, the Inflation variable has a positive effect on the growth deposit and, the Interest variable has a negative effect on the growth deposit

VI. SUGGESTION

A. *For Academics*

Suggestion for future research, it is expected to be able to add other variables such as Return On Equity, Net Interest Margin, et cetera because other variables not included in this study may affect growth deposits. Also,

researchers can add a more extended research period by enlarging the research sample to conduct a better and more accurate analysis of growth deposits.

B. *For Debtors*

Large depositors can pay attention to the performance of the intended bank before depositing funds at the bank to avoid the risk that will occur in the future.

C. *For Banks*

For banks to be able to pay attention to the growth of deposits in Indonesia because currently, the growth of deposits decreases. Banks need to pay attention to the composition of capital to be able to attract bank deposit funds; in addition to that, banks that have substantial total assets need to pay attention to funding strategies to create good deposit growth.

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