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The Determinant of Foreign Custodian Bank Profitability in Indonesia (Study in Foreign Custodian Bank Period 2015-2020)

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ABSTRACT

This research aims to analyze the factors that affected the profits of foreign custodian banks in Indonesia as measured in return on equity (ROE). The research object was selected through the convenience sampling method with the criterion of being a branch office of a foreign bank that also functions as a custodian bank in Indonesia. It uses panel data regression which has several cross section and time series data with the selected model being the Fixed Effect Model. This research aims to determine the effect of external factors consisting of the JISDOR and the conditions of the covid-19 pandemic, as well as the influence of internal factors consisting of the NIM ratio, the balance sheet NOP ratio, and the LAFCTA ratio on BAK's ROE. The results showed that BAK has applied effectively risk management as outlined in a risk management framework to facilitate the management of all business activities with the aim of maximizing risk-adjusted returns while remaining within risk-appetite limits. Based on the results of the study, BAK profitability as measured in ROE, both simultaneously and partially influenced significantly by the independent variables JISDOR exchange rate, balance sheet NOP ratio, Dummy Covid-19, NIM ratio and LAFCTA ratio with an R2 value of 0.860261 meaning the goodness of fit of the model can be explained by 86.03%, the remaining 13.97% is explained by other factors outside the model. In addition, there is a positive correlation of 0.5374796 between the LAFCTA ratio and the balance sheet PDN ratio where there is a tendency to build position by increasing the LAFCTA ratio thereby increasing the balance sheet PDN ratio. This could have an impact on reducing the supply of USD on the foreign exchange market. The results of this research can be used as input for Bank Indonesia, the Financial Services Authority, and the Deposit Insurance Corporation in establishing policies, particularly those related to financial system stability. In addition, the results of this study can also be used as a reference for commercial banks regarding the implementation of market risk and liquidity risk management in managing bank assets and liabilities.

Keywords: custodian bank, foreign currency, pandemic, profitability

INTRODUCTION

Based on data from Bank Indonesia, the average daily volume of foreign exchange transactions ranges from $4 billion to $6 billion with a composition of around 37% for derivative transactions and about 63% for Spot transactions. The development of the volume of foreign exchange transactions was generally influenced by the decision of the Fed (Central Bank of America) decision in setting the benchmark interest rate which impacted the inflow or outflow of foreign investment funds in the Indonesian financial market. With regards to the entry of foreign capital flows through the Indonesian capital market, the role Foreign Bank Branch

Office (KCBA) in Indonesia has a licensed as custodian (hereinafter referred to as "Foreign Custodian Bank" or "BAK") is very important because BAK is used as a custodian of foreign investors who invest in the Indonesian capital market. The reasons why foreign investors in the Indonesian financial market choose BAK as a custodian that stores and manages their portfolios are due to:

a. BAK's head office is in a developed country and has a network of offices spread across various countries so that the mobility of transfers of funds/movement of foreign investment between countries can be carried out easily, safely, and efficiently.
b. BAK has effective and reliable risk management and is supported by adequate information system technology and human resources so that the portfolio it manages is measurable and the risks are controlled.

In the study by Budiman et al. (2004), the dominance of foreign banks in foreign exchange transactions makes these foreign banks act as 'price makers', while national banks tend to act as 'price takers'. There is a relationship closely, namely between the inflow of foreign capital, BAK's position as a custodian and price maker in the foreign exchange market, as well as the implementation of reliable risk management. These three things really support BAK's business activities so that they are able to generate income, including from:

a. Custodian service activities: storage services, transaction settlement and handling, revenue collection, unit registry, and sub-registry.
b. Treasury activity: benefits derived from foreign exchange trading (foreign exchange trading), securities trading, and income from borrowing and lending funds in the money market (money market).

BAK's position as a price maker, the application of reliable risk management, and information regarding inflows or outflows of foreign investors' funds owned by BAK greatly support BAK's treasury transaction activities, especially in the foreign exchange market so that it can generate significant profits. Even in the condition that Indonesia is being hit by the Covid-19 pandemic, where national commercial banks are experiencing a decline in profits reaching -33% during the 2020 period, BAK 1 only experienced a decrease in profits of -12%, even BAK 2 experienced an increase in profits of 169 % and BAK 3 experienced a profit increase of 21%.

Based on BAK's monthly publication reports for the positions of December 2019 and December 2020, the financial performance of the three BAKs was relatively good, even though in 2020 the Indonesian economy experienced a downturn due to the Covid-19 pandemic since early 2020 as shown in Table 1 below. BAK's Non-Performing Loan (NPL) development in March 2019 ranged from 0.29% to 1.47%, far below the National Commercial Bank's NPL of 2.52%. Furthermore, in December 2020, the NPL of 3 (three) BAK ranged from 0.23% to 1.75%, far below the National Commercial Bank's NPL of 3.06%. Meanwhile, from a profit perspective, the profits of BAK 2 and BAK 3 increased from IDR 276,318 million and IDR 1,268,734 million respectively in December 2019 to IDR 743,827 million (up 169%) and IDR 1,541,131 million respectively (up 21%) in December 2020. However, BAK 1's profit experienced a slight decline, namely from IDR 3,937,211 million in December 2019, it fell to IDR 3,479,917 million (down 12%). Nonetheless, the profits of the three BAKs are still far better than those of the National Commercial Bank, which fell by 33% in 2020, from IDR 156,487,000 million in December 2019 to IDR 104,718,000 million.

Table 1. Development of loans to non-bank third parties, NPLs, and Profits(in million IDR)

Bank name	December 2019			December 2020			Profit Change
	Credit	NPLs	Profit	Credit	NPLs	Profit	
BAK 1	44,777,477	1.47%	3,937,211	39,793,968	1.13%	3,479,917	-12%
BAK 2	28,927,478	1.17%	276,318	22,113,757	1.75%	743,827	169%
BAK 3	10,826,611	0.29%	1,268,734	9,091,883	0.23%	1,541,131	21%
National Commercial Bank	5,616,992,000	2.52%	156,487,000	5,481,560,000	3.06%	104,718,000	-33%

Source: OJK Financial Statistics December (2020)

Based on the background of BAK's profit conditions described above, researchers are interested in conducting research on why BAK's profits remain high under various economic conditions, both when the USD/IDR exchange rate fluctuates sharply and when the Covid-19 pandemic outbreak occurred in early 2020. This research was conducted to find out how much influence external factors have, namely the Spot USD/IDR-Jakarta Interbank Spot Dollar Rate (JISDOR) and the conditions of the Covid-19 pandemic, as well as internal factors, namely the ratio Net Open Position on the balance sheet (NOP), the ratio of Net Interest Margin (NIM) and the ratio of Liquid Assets in Foreign Currency to Total Assets (LAFCTA), affects the profitability of BAK which is measured in Return On Equity (ROE). Several previous studies regarding the factors that influence the profit/performance of commercial banks in Indonesia have been carried out by Dwijayanthy and Naomi (2009), Pratito and Puspitasari (2015), Mosey et al. (2018), Sabrina and Muharam (2015). The research gap between previous studies is that in general these studies were carried out before 2020 so they did not study the impact of the co-19 pandemic. In addition, it does not look at the core business and the role of banks in financial markets (as price makers or price takers) and does not examine the reliability of risk management which has a significant effect on the ability to generate profits.

In this study, the profits of 3 BAK operating in Indonesia will be analyzed with a sampling period of 2015-2020. The reason for using this sampling period is because this period has represented various conditions for Indonesia's economic development, both under normal conditions, namely before the Covid-19 pandemic occurred, as well as when economic conditions were down, namely when the Covid-19 pandemic occurred in early 2020. From this study, we will also observe the gaps from the differences in the results of previous studies, so that based on the research problem, research questions or research questions can be arranged as follows:

1. How is risk management implemented at BAK in minimizing market risk potential (exchange rate risk and interest rate risk) and liquidity risk?
2. How do changes in external and internal factors affect BAK's profits both partially and simultaneously?
3. What are the managerial implications for the influence of changes in external and internal factors at BAK?

LITERATURE REVIEW

Commercial Banks

Based on Banking Act No. 7 of 1992 concerning Banking, Bank Public is a bank that carries out its business activities conventionally or based on Sharia principles which in its activities provide services in payment traffic and money circulation. Commercial Bank business activities include:

a. Collecting funds from the public in the form of deposits in the form of demand deposits, time deposits, deposit certificates, savings, and or other equivalent forms;
b. Give credit;
c. Issuing debt acknowledgment letters;
d. Transferring money both for own interests and for the benefit of customers;
e. Buy, guarantee, or sell bills of exchange that have been accepted by the bank,

promissory notes, Bank Indonesia Certificates, Bonds, and so on.

Custodian Bank

Custodian Bank is a commercial bank that has obtained approval from the Financial Services Authority (OJK) to carry out business activities as a custodian as stipulated in Article 43 of Law number 8 of 1995 concerning Capital Markets. As an ordinary custodial institution, the Custodian Bank performs the function of collective safekeeping for securities that are legally registered on behalf of its customers. In accordance with the provisions of POJK Number 53/POJK.04/2020 dated 3 December 2020 concerning Securities Accounts with Custodians, as a depository of securities and/or assets owned by customers, Custodian Banks function to carry out management actions for securities belonging to customers such as:

1. Receive dividend payments that are the rights of its customers, including interest on bonds such as bonus shares, rights issues, warrants, and other rights, which are then credited to the customer's fund account.
2. Completing securities transactions and the process of transferring ownership of securities, including collecting payment from the buyer if the customer's securities are resold.
3. Be a customer representative to attend the General Meeting of Shareholders (GMS) or Extraordinary General Meeting of Shareholders (EGMS) of issuers whose shares are owned by the customer (with the power of attorney from the customer).
4. Manage taxes related to receiving dividends, bonus shares, interest on bonds, and other rights, including administering double tax avoidance for foreign customers whose countries have double tax avoidance agreements with Indonesia and completing tax refunds.

Financial statements

Financial reports are the end result of the accounting process which provides useful information for decision-making by various parties (Halim, 2008). Hery (2012) explains that financial reports are basically the result of an accounting process that can be used as a tool to communicate financial data or company activities to interested parties. The conclusion from the two notions of financial statements is the end result of the accounting process that is collected and compiled to be used as a report that can provide financial report users in making decisions.

Financial Statement Analysis

The purpose of financial statement analysis itself is essentially to assist users in predicting the future of the company by comparing, evaluating, and analyzing trends from various aspects of the company's finances (Wahyudiono, 2014). Financial statement analysis is used to achieve several objectives, including: as an initial screening tool in choosing investment alternatives or mergers; as a forecasting tool regarding future financial conditions and performance; as a process of diagnosing management problems, operations or other problems; or as an evaluation tool for management (Darminto, 2011). It can be concluded that the analysis of financial statements aims to determine the existing financial condition in order to know the impact that can affect the existence of the company and the company's performance later.

Financial performance

Financial performance is an analysis that is carried out to see how far a company has implemented it by using the rules of financial implementation properly and correctly (Fahmi, 2012). Analysis of bank financial performance begins with reviewing financial report data, calculating, comparing or measuring, interpreting, and providing solutions. Calculations made to analyze a bank's financial performance can be carried out using various analytical

techniques, including by using ratio analysis techniques. These financial ratios are then compared with existing benchmarks, comparing financial ratio values obtained from year to year is useful for knowing the condition of the results of the calculation is good or not good (Parathon et al., 2013). It can be concluded that financial performance is an assessment made to determine the extent to which the condition of the company is by using comparisons and applicable rules.

Profitability and Profitability Ratios

Harahap (2011), profitability describes a company's ability to earn profits through all existing capabilities and sources such as sales activities, cash, capital, number of employees, number of branches, and so on. The profitability of a company can be measured by connecting the profits or profits derived from the main activities of the company with the wealth or assets owned to generate company profits (operating assets).

Another opinion was put forward by Munawir (2014), the definition of profitability or profitability is a company's ability to generate profits during a certain period. The profitability of a company is measured by the success and ability of the company to use its assets productively, thus the profitability of a company can be determined by comparing the profits earned in a period with the total assets or the amount of capital of the company.

Based on the definition above, it can be seen that profitability is a company's ability to earn profits during a certain period with the capital or assets owned by the company. In the company's operations, profit is an important element in ensuring the sustainability of the company. The optimal use of all the resources owned by the company will enable the company to obtain high profits/profits. Profit/profit is the result of the revenue generated by the company minus the costs incurred.

The profitability ratio is a ratio to assess a company's ability to make a profit. This ratio also provides a measure of the effectiveness of a company's management. This is indicated by the profit generated from sales and investment income. The point is that the use of this ratio shows the efficiency of the company. The use of profitability ratios can be done by using comparisons between various components in financial reports (Kasmir, 2016).

METHODS

The study was conducted on 3 BAKs in Indonesia that were purposively selected by foreign investors as custodians for their investment needs in the Indonesian financial market. The time of this research was conducted during the period 2021–2022. This study uses secondary data for the period January 2015 to December 2020 (monthly data) sourced from:

a. Publication reports from 3 (three) BAK: Annual report, quarterly report, and monthly report.
b. Bank Indonesia Monthly Commercial Bank Report (LBU), Bank Indonesia Financial Statistics, OJK Financial Statistics, Ministry of Finance DJJPR Statistics and Bloomberg.

The data processing technique used in this study uses panel data regression analysis (panel data regression). The panel data regression process was carried out using Eviews software version 10. Furthermore, secondary data processing and other sources used Microsoft Excel software. The time series data used in this study are monthly data from January 2015 to December 2020, and the number of samples (cross-sections) used is 3 (three) BAK. Based on the research hypothesis, the research model is formulated as follows:

$$ROE_{it} = \beta_0 + \beta_1 JISDOR_{it} + \beta_2 Dummy\ Covid\text{-}19_{it} + \beta_3 NOP_{it} + \beta_4 LAFCTA_{it} + \beta_5 NIM_{it} + \epsilon_{it}$$

Where:

i = BAK cross-section data (i=1,2.3); t = 2015 – 2020 time series period (monthly); ROE = Return on Equity (%); β0 = Constant; β1, …, β5 = Regression parameters; ε = Error term; JISDOR =

USD/IDR Spot Exchange Rate Change (%); DC19 = Dummy Covid-19 (D=0 before 2020; D=1 year in 2020); NOP = Balance Sheet NOP Ratio (%); LAFCTA = Ratio of Liquid Assets in Foreign Currency to Total Assets (%); NIM = Net Interest Margin Ratio (%).

Conceptual Framework

In this study, the ROE period of BAK that was observed was the period from 2015 to 2020. Researchers will look at the condition of the profits of the three BAKs as a whole and then proceed with an analysis of the profitability ratios of BAK in the form of ROE. The external factors that were observed were the JISDOR exchange rate and conditions before and during the Covid-19 pandemic, while the internal factors that were observed were the NOP balance sheet maintained by the bank at the end of the day, the NIM ratio, and the LAFCTA ratio. Next, it will be tested the effect of these variables simultaneously and partially have a significant effect on BAK's ROE. Furthermore, researchers will also look at the managerial implications of the influence of external and internal factors that affect the BAK's ROE. The effect of the JISDOR exchange rate, conditions before and during the Covid-19 pandemic, balance sheet NOP ratio, NIM ratio, the NIM ratio, as well as the ratio of LAFCTA to ROE BAK can be outlined in the framework model in Figure 1 below.

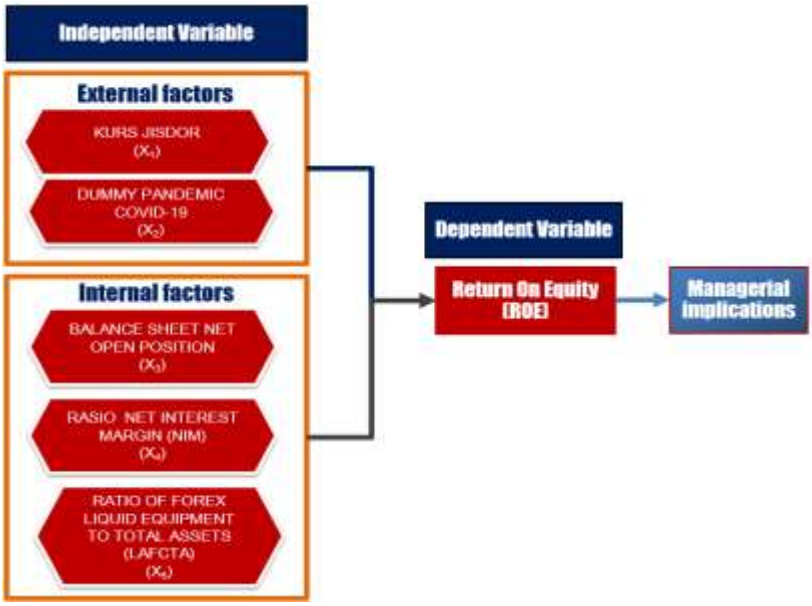


Figure 1 Conceptual framework

Research Hypothesis

This study will test the hypotheses of the research model, namely the effect of the independent variables on the dependent variable. The research hypothesis is:

Hypothesis 1: The JISDOR exchange rate has a positive effect on BAK's ROE.

Hypothesis 2: The Covid-19 Pandemic Dummy has a positive effect on BAK ROE.

Hypothesis 3: Balance Sheet NOP ratio has a positive effect on BAK ROE.

Hypothesis 4: Net Interest Margin (NIM) ratio has a positive effect on ROE BAK.

Hypothesis 5: The ratio of Liquid Assets in Foreign Currency to Total Assets (LAFCTA) has a positive effect on ROE BAK.

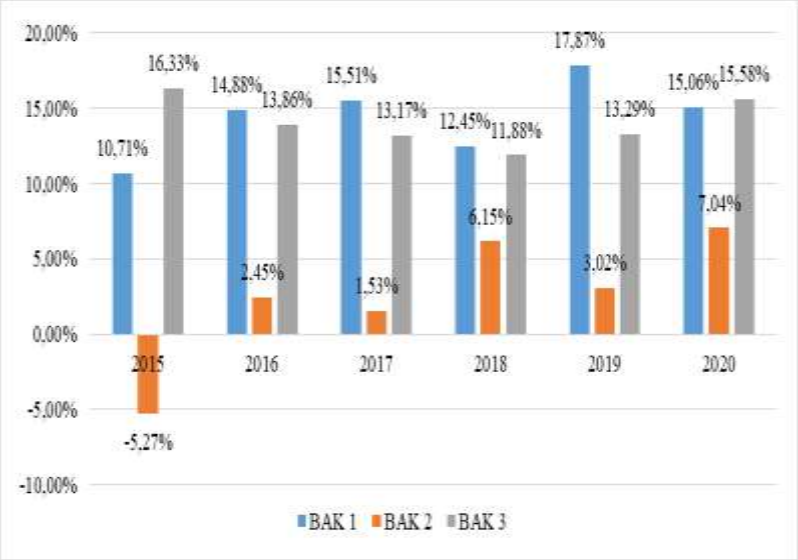
RESULT AND DISCUSSION

Descriptive Analysis

BAK performance

The development of BAK ROE for the 2015-2020 period in Figure 2 shows positive developments and tends to increase with an average ROE of BAK 1 reaching

14.41%, BAK 2 of 2.49%, and BAK 3 of 14.02%. ROE for BAK 2 and BAK 3 even increased during the Covid-19 pandemic in 2020 compared to the pre-Covid-19 period. In 2020 position, ROE BAK 2 increased from 3.02% in 2019 to 7.04% in 2020. Likewise, ROE BAK 3 increased from 13.29% in 2019 to 15.58% in 2020. On the other hand, ROE BAK 1 experienced a slight decrease from 17.87% in 2019 to 15.06% during the Covid-19 pandemic in 2020.



Source: Commercial Bank Monthly Reports for the 2015-2020 period
Figure 2. Development of BAK ROE for the 2015-2020 period

Research Variables

The variables examined in this study include ROE data as the dependent variable, then the JISDOR exchange rate, ratio NOP, NIM ratio, and LAFCTA ratio as independent variables of the three BAK which can be seen in Table 2 below.

Table 2. Descriptive Analysis of Research Variables

Variable Description	ROE	JISDOR	NOP	NIM	LAFCTA
Means	12.64%	0.43%	-5.65%	4.52%	12.97%
Maximum	39.31%	14.99%	109.74%	6.98%	31.95%
Minimum	-5.27%	-7.39%	-128.07%	1.82%	2.28%
std. Deviation	6.72%	2.64%	34.85%	1.38%	4.76%
Observations	213	213	213	213	213

Source: Commercial Bank Monthly Report (processed)

Table 2 above shows that the number of observations or the number of observations of 3 BAK Banks has as many as 213 data during the observation period (February 2015-December 2020). The results of the descriptive analysis for the research variable data which is monthly data from January 2015 to December 2020 are as follows:

a. ROE shows an average of 12.64% with a standard deviation of 6.72%. The highest ROE of 39.31% occurred in BAK 3 in February 2015 in line with an increase in operating income of IDR 76,542 million. On the other hand, the lowest ROE of -5.27% occurred in BAK 2 in December 2015 due to an increase in impairment losses on loans from IDR 724,843 million in December 2014 to IDR 1,648,259 million in December 2015.
b. The JISDOR exchange rate shows an average fluctuation of 0.43% with a standard deviation of 2.64%. The highest fluctuation in the JISDOR exchange rate of 14.99% (the Rupiah weakened) occurred in March 2020, from IDR 14,234 in February 2020 to IDR 16,367 in March 2020 due to the worsening Indonesian economy due to the Covid-19 pandemic, which

prompted foreign investors to withdraw their funds from Indonesian capital market which has an impact on the weakening of the IDR exchange rate. The lowest JISDOR exchange rate fluctuation of -7.39% (the rupiah strengthened) occurred in April 2020, namely from IDR 16,367 in March 2020 to IDR 15,157 in April 2020 due to the influence of the issuance of global bonds of USD 4.3 billion by the Government of Indonesia.

c. The balance sheet Net Open Position (NOP) shows an average of -5.65% with a standard deviation of 34.85%. The lowest NOP position (short) of -128.07% occurred in BAK 2 in April 2018, partly due to BAK 2 selling USD to foreign investors who were repatriating with the source of funds coming from SBN sales of around IDR 13.45 trillion. On the other hand, the highest NOP position (long) of 109.740% occurred in BAK 3 in November 2015, partly because banks made purchases of USD due to the impact of increased foreign investment in SBN (inflows) of IDR 19.75 trillion.
d. *Net Interest Margins* (NIM) show an average of 4.52% with a standard deviation of 1.38%. The lowest NIM of 1.82% occurred in February 2018 at BAK 3 which did have a relatively low average NIM because it only extended loans to corporate customers with relatively low interest. Furthermore, the highest NIM of 6.98% occurred in January 2017 and April 2017 occurred in BAK 1 due to lending to retail customers with significant interest rates (eg credit card customers).
e. *The ratio of Liquid Assets in Foreign Currency to Total Assets* (LAFCTA) shows an average of 12.97% with a standard deviation of 4.76%. The lowest LAFCTA ratio of 2.28% occurred in August 2019 at BAK 3 where banks sold USD as reflected in short NOP positions that increased from -39.21% in July 2019 to -44.89% in August 2019. With sales in USD, the LAFCTA ratio decreased from 7.05% in July 2019 to 2.28% in August 2019. Meanwhile, the highest LAFCTA ratio was 31.95% in November 2015 at BAK 3 where banks purchased USD as reflected in long NOP position increased from -12.91% in October 2015 to 109.74% in November 2015.

Model Selection Analysis

Based on the Chow test results it is found that the Fixed Effect Model (FEM) is better than the Common Effect Model (CEM). While the Random Effect Model (REM) even though it meets the criteria for the selected model, on the results of the Hausman Test there is a notification "Period test variance is invalid. Hausman statistic set to zero" which indicates REM is invalid for use. Considering that CEM and REM do not meet the selected model, the appropriate model to use is FEM which has fulfilled the Chow Test.

Analysis of Panel Data Regression Results

The results of panel data regression using the Fixed Effect Model (FEM) approach through two tests using the Chow Test and Hausman Test can be seen in Table 3 below.

Table 3. Factors affecting ROE

No.	Parameters/Independent Variables	Coefficient Value	T-Statistics	probability
1.	Constanta	-1.292845	-1.722700	0.0872
2.	JISDOR	0.413302	3.349450	0.0001
3.	Balance Sheet NOP	0.109954	24.16857	0.0010
4.	Net Interest Margins	1.391772	4.942436	0.0000
5.	LAFCTA	-0.146234	-3.908545	0.0001
6.	Dummy Covid-19	8.110048	1.872643	0.0632
7.	**R-Squared**	**0.860261**		
8.	Prob (F-Statistic)	**0.000000**		

The estimation results of this study indicate that the panel data regression model has an R2 value of 0.860261, meaning that the goodness of fit of the model can be explained by 86.03%, and the remaining 13.97% is explained by other factors outside the model. The F test, with a p-value that is less than the significant level (0.000000) so that it is less than the critical value of 5% and 10% shows that the independent variables as a whole have a significant effect on the dependent variable ROE BAK. From the regression results above, the regression equation is obtained as follows:

ROE = -1.292845 + 0.413302*JISDOR + 0.109954*NOP + 1.391772*NIM - 0.146234*LAFCTA + 8.110048*DC-19

The Effect of the JISDOR Exchange Rate on ROE

The JISDOR exchange rate change variable with a probability value of 0.0001 has a positive and significant effect on ROE with a coefficient of 0.413302, meaning that every 1% change in the JISDOR exchange rate will increase ROE by 0.413302%. The positive effect of changes in the JISDOR exchange rate on ROE shows that the greater the weakening of the Rupiah exchange rate against the USD, the greater the profit/ROE of BAK. The role of BAK as a price maker can jointly influence the movement of the USD/IDR Spot rate on the foreign exchange market so that it moves in a direction that benefits BAK. The significant and positive influence of JISDOR exchange rate fluctuations/changes on BAK's ROE both partially and simultaneously, in line with Salihin's research (2020) that the Rupiah exchange rate had a positive effect on banking profitability for the 2017-2019 period both partially and simultaneously.

Effect of Net Open Position (NOP) on ROE

The balance sheet NOP ratio variable with a probability value of 0.0010 has a positive and significant effect on ROE with a coefficient of 0.109954, meaning that every change in the balance sheet NOP ratio is 1%, and ROE will increase by 0.109954%. The positive effect of changes in the ratio of NOP on the balance sheet to ROE is due to the role of BAK as price makers in the foreign exchange market which is able to influence the development of the JISDOR exchange rate. Changes in the Balance Sheet NOP ratio in line with developments in foreign currency exchange rates will be beneficial thereby increasing BAK's ROE.

The superiority of BAK's risk management in mitigating the market risk of foreign currency exchange rates is able to control changes in the Balance Sheet NOP in the direction of JISDOR movements. BAK uses the internal application of the Value at Risk (VaR) model in measuring exposure and potential exchange rate risk. By applying the internal VaR model consistently and accurately measuring it, both risk exposure and inherent risk can be minimized or prevented as early as possible. In addition to the internal model used by BAK, periodic backtesting is also carried out to measure the accuracy of real profits/losses due to changes in the JISDOR exchange rate. The significant and positive effect of the balance sheet NOP ratio on BAK ROE both partially and simultaneously, is in line with Pratito and Puspitasari's research (2015) that NOP has a positive effect on banking profitability for the 2017-2019 period both partially and simultaneously.

Effect of Net Interest Margin (NIM) on ROE

The NIM ratio variable with a probability value of 0.0000 has a positive and significant effect on ROE with a coefficient of 1.391772, meaning that every 1% change in NIM will increase ROE by 1.391772%. The significant and positive influence of the NIM ratio on ROE is due to BAK having accurate and reliable interest rate risk management so that in determining the amount of NIM it has taken into account the magnitude of interest rate risk exposure

faced by BAK. In mitigating interest rate risk, BAK 1 and BAK 2 use sensitivity PV01 to manage interest rate risk, namely the change in portfolio value due to a 1 basis point (bp) change in the market yield curve.

On the other hand, BAK 3 manages interest rate risk exposure from Non-Maturity Deposits (NMDs) through a replication portfolio approach to determine the average repricing maturity of the portfolio. BAK 3 also measures changes in the Economic Value of Equity (ΔEVE) as a decrease in the maximum economic value of the banking book based on the six standard scenarios stipulated by the Basel Committee on Banking Supervision (BCBS).

The effect of a significant and positive NIM ratio on BAK ROE both partially and simultaneously, is in line with the research of Mosey et al. (2018) that simultaneously NIM (market risk) has a significant effect on profitability (ROA) at BUMN Commercial Banks for the 2012-2016 period.

Effect of LAFCTA Ratio on ROE

The independent variable LAFCTA ratio with a probability value of 0.0001 has a significant and negative effect on ROE with a coefficient of -0.146234, meaning that for every 1% change in LAFCTA, ROE will increase by minus 0.146234%. The significant and negative effect of the LAFCTA ratio on ROE is due to the fact that the higher the LAFCTA ratio, the lower the interest income because the yield of liquid assets is lower than the cost of funds that must be paid. BAK tends to maintain a significant LAFCTA ratio, especially when there is pressure on the Rupiah against the USD exchange rate such as in November 2015 when the LAFCTA ratio reached 31.95% of Total Assets.

BAK's liquidity risk management is very strict in maintaining sufficient liquidity to meet the needs of its customers (especially foreign investors). BAK maintains the Liquidity Coverage Ratio (LCR) set by OJK at a minimum of 100% for the next 30 (thirty) days (stress scenario) in significant numbers, for example in December 2020 the LCR ratio for BAK 1 reached 311.82%, BAK 2 was 194 %, and BAK 3 of 725%. The high LCR ratio of the three BAKs will ultimately reduce BAK's profits.

The effect of the significant and negative LAFCTA ratio both partially and simultaneously on BAK ROE, is in line with the research of Sabrina and Muharam (2015), where Liquid Assets to Total Assets (LATA) as the control variable has a significant and negative influence on Bank profitability (ROA).

Effect of Dummy Covid-19 on ROE

The Dummy Covid-19 variable with a probability value of 0.0632 has a positive and significant effect on ROE with a coefficient of 8.110048, meaning that the influence of the Dummy Covid-19 condition has a positive impact on increasing BAK profits/ROE with an increase of 8.11 times. The significant and positive influence of the Dummy Covid-19 variable on ROE is because BAK 1, BAK 2, and BAK 3 are able to implement market risk and liquidity risk management in a measurable and effective manner with adequate internal controls. The results of this study are in line with the research of Xiazi and Shabir (2022), that the conditions of the Dummy Covid-19 pandemic have a positive effect on the bank performance (in ROA/ROE) for banks that have a better institutional environment and advanced/modern financial developments, both partially and simultaneously.

Based on Xiazi and Shabir's research (2022), the adverse effects of the COVID-19 pandemic on bank performance were higher in smaller, undercapitalized, and less diversified banks. At the same time, a better institutional environment and financial development have significantly increased the strength and resilience of banks. These findings have practical implications for regulators and policymakers in the face of the unprecedented uncertainty caused by the COVID-19 epidemic.

Managerial Implications

Based on the results of the research that has been done, the managerial implications that can be used are as follows:

A. Bank Indonesia

The increase/decrease in the balance sheet PDN ratio is positively correlated by 0.5374796 with the LAFCTA ratio, meaning that the more a Bank increases the long position of balance sheet PDN, the LAFCTA ratio will also tend to be higher. Furthermore, the higher the LAFCTA ratio, the lower the supply of USD in the foreign exchange market, thereby affecting the volatility of the rupiah exchange rate. Based on the above analysis, Bank Indonesia needs to review the Balance Sheet PDN regulations as previously enforced in the 2004 – 2010 period to minimize the potential for excessive increases in foreign exchange liquidity ratio, namely:

1) Bank Indonesia Regulation 2004/ 2005 concerning NOP regarding limiting the ratio of NOP on the balance sheet to a maximum of 20% so that there is no imbalance between the source of funds and the use of funds in foreign currency.
2) Setting a reasonable LAFCTA ratio so that the supply of USD on the foreign exchange market is not disrupted due to a high LAFCTA ratio. Further research is needed regarding the ideal conditions for the LAFCTA ratio by comparing the LAFCTA ratio at other banks such as Bank Mandiri, Bank BCA, Bank Danamon, and so on.

B. Financial Services Authority (OJK)

OJK as a bank supervisor needs to monitor the volatility of the balance sheet NOP ratio and the LAFCTA ratio, especially at BAK and top banks that dominate the foreign exchange market. If this has a negative impact both on foreign exchange market and on other banks, it is necessary to coordinate with Bank Indonesia to take policy steps deemed necessary to make conducive financial market and minimize supply imbalances.

C. Deposit Insurance Agency (LPS)

Excessive LAFCTA ratios at certain BAK will have a negative impact on the adequacy of foreign exchange liquidity at other banks in meeting the foreign exchange needs of their customers. In this case, if LPS assesses that the LAFCTA ratio is excessive, LPS needs to determine the maximum LAFCTA ratio. If a bank maintains a LAFCTA ratio that exceeds the maximum amount set by LPS, then LPS can charge an additional guarantee premium so that the bank does not accumulate excessive amounts of foreign currency liquid assets.

D. Commercial Banks

The results of the BAK panel data regression can be used as a source of information for commercial banks in mitigating exchange rate risk and liquidity risk by monitoring the development of balance sheet NOP ratios and BAK LAFCTA ratios considering that as price makers, the size of these variable ratios will affect movements in the Rupiah exchange rate.

E. For Researchers

It is hoped that this research can contribute to the literature and provide knowledge as empirical evidence in the field of financial markets and complement previous studies that have been conducted by previous researchers. Furthermore, for researchers, it can be used as reference material or references to conduct similar research that is closely related to the development of financial market variables and the performance of commercial banks.

CONCLUSION

The implementation of effective risk management is fundamental and the main thing in BAK's financial and operational management. Risk management is outlined in a risk management framework to make it easier for BAK to manage all business activities with the aim of maximizing risk-adjusted returns while remaining within BAK's risk-appetite limits. All

transaction/operational activities, especially those with exposure to market risk and liquidity risk, are identified and measured for risks, then their implementation is monitored and the results evaluated regularly by BAK Management in order to minimize risks and optimize returns.

Based on the results of the study, BAK profitability as measured in ROE, both simultaneously and partially, was significantly influenced by the independent variables JISDOR exchange rate, balance sheet PDN ratio, Dummy Covid-19, NIM ratio and LAFCTA ratio with an R2 value of 0.860261 meaning goodness of fit of the model can be explained by 86.03%, the remaining 13.97% is explained by other factors outside the model. For the independent variable LAFCTA ratio, the results of this study are different from previous research, which has a negative effect, while all other independent variables have a positive effect. This is because during the study period, income from foreign exchange and interest on placement of funds from liquid assets were still lower than the cost of funds to purchase foreign exchange.

Based on the results of the panel data regression model analysis, there is a positive correlation of 0.5374796 between the LAFCTA ratio and the Balance Sheet NOP ratio. There is a tendency when the Rupiah exchange rate is under pressure the LAFCTA ratio tends to increase so that the balance sheet NOP ratio also increases. This could have an impact on reducing the supply of USD on the foreign exchange market. The managerial implication of these conditions is the need for the attention of Bank Indonesia, the Financial Services Authority and the Deposit Insurance Corporation to monitor/supervise the development of the LAFCTA ratio and the ratio of PDN to bank balance sheets. Furthermore, reviewing the Balance Sheet PDN regulations that were enacted in 2004 and regulating the size of a reasonable LAFCTA ratio. On the other hand, the implementation of reliable and consistent risk management by BAK, especially market risk and liquidity risk, can serve as a reference for Commercial Banks in implementing robust and reliable risk management.

Declaration by Authors

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