Analysis of Determinants That Influence the Profitability of Conventional Banks in Indonesia

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Abstract : This research aims to examine the factors that influence the level of profitability in conventional banking in Indonesia in 2010-2019. This research uses Return on Assets (ROA) as a ratio to describe the level of profitability of commercial banks in Indonesia. The object of this research is conventional banking in Indonesia, with a research sample of 6 groups of conventional banks, namely Persero Banks, Foreign Exchange Private Banks, Non-Foreign Exchange Private Banks, Regional Development Banks (BPD), Joint Venture, and Foreign Banks. The analytical method used in this research is panel data regression analysis with Random Effect Model (REM). The research shows that the spread interest rate, Bank Indonesia Certificate (SBI), and third party funds (DPK) have a positive and significant effect on Return on Assets (ROA). Meanwhile, the interbank liability variable has a negative and significant effect on Return on Assets (ROA). Simultaneously, spread interest rate, SBI, third party funds, and interbank liabilities influence ROA.

Keywords : Conventional Bankings, Profitability, Random Effect Model (REM), Return on Assets.

Abstrak : Penelitian ini bertujuan untuk meneliti faktor-faktor yang memengaruhi tingkat profitabilitas pada perbankan konvensional di Indonesia pada tahun 2010-2019. Penelitian ini menggunakan Return on Assets (ROA) sebagai rasio dalam menggambarkan tingkat profitabilitas bank umum di Indonesia. Objek penelitian ini adalah perbankan konvensional di Indonesia, dengan sampel penelitian 6 kelompok bank konvensional, yaitu Bank Persero, Bank Swasta Devisa, Bank Swasta Non Devisa, Bank Pembangunan Daerah (BPD), Bank Campuran, dan Bank Asing. Penelitian ini dilakukan dengan metode analisis regresi data panel dengan menggunakan data sekunder yang diambil dari Statistik Perbankan Indonesia (SPI) yang diterbitkan oleh Otoritas Jasa Keuangan (OJK). Variabel penelitian ini adalah Return on Assets (ROA) sebagai variabel dependen, spread interest rate, Sertifikat Bank Indonesia (SBI), dana pihak ketiga (DPK) dan kewajiban antar bank sebagai variabel independen. Hasil penelitian menunjukkan bahwa spread interest rate, Sertifikat Bank Indonesia (SBI), dan dana pihak ketiga (DPK) berpengaruh positif dan signifikan terhadap Return on Assets (ROA). Sedangkan variabel kewajiban antar bank berpengaruh negatif dan signifikan terhadap Return on Assets (ROA). Secara simultan, spread interest rate, SBI, DPK, dan kewajiban antar bank berpengaruh terhadap ROA.

INTRODUCTION

The era of globalization means that all aspects of life can be carried out more widely, faster and more easily, including economic and financial transactions. In the process of economic transactions, both domestically and internationally, financial institutions are one of the important institutions needed by the state as institutions that not only function as implementing agents for economic and financial transactions, but also can finance national development and as a intermediation institution that can improve the level of living of society. One of the financial institutions that is familiar in everyday life is bank which is defined as a legal entity whose purpose is to collect money from the general public in the form of deposits and channel it to the general public in the form of credit or other forms in order to improve the lives of people.

A bank needs to make a profit if it wants to carry out its function as an intermediary institution properly, because the profit will cover the costs incurred when the bank operates. In general, profit is defined as the balance of the difference between a company's income and expenses over a certain period of time or duration. A bank can be considered profitable when the income earned by the bank is more than the expenses that must be made in a certain amount of time. Profits in the banking sector are divided into two parts, which are interest income and non-interest income. Interest income is the largest component of income in banking sector. In addition, interest income can also be generated from other components, such as interest from Bank Indonesia's cash deposit system, Bank Indonesia Certificates (SBI), or other securities holdings (in Rupiah and foreign currencies) at Bank Indonesia or other parties.

The earnings of banks are generally indicated by the level of profitability that can be measured by ratios, one form of ratio is Return on Assets (ROA). ROA is a parameter of profitability to measure how much a bank earns on the total assets owned by the bank.

The components of Return on Assets (ROA) measurement include total assets and total income. Figure 1 explains the movement of total assets and total income for the entire group of conventional banks in Indonesia from 2015-2019 (data is presented using the last 5 years of research period as an overview). From Figure 1, it is found that both total assets and total income have an increasing trend throughout 2015-2019. The highest increase was recorded in 2017 with total assets increasing by 9.77 percent and income increasing by 21.3 persent.

Figure 1. *Total Assets and Income of Conventional Banks in Indonesia From 2015-2019.*
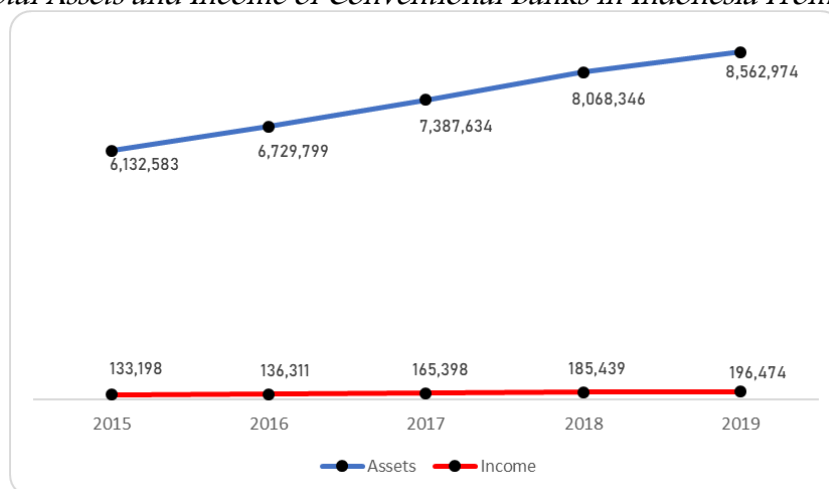
Source: Otoritas Jasa Keuangan

Figure 2. *Return on Assets of Conventional Banks in Indonesia From 2015-2019.*
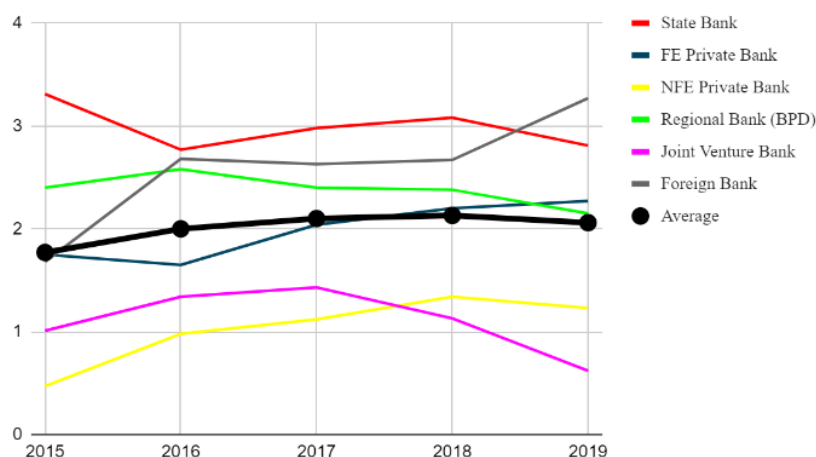
Source: Otoritas Jasa Keuangan

Based on Figure 2, it can be seen that the ROA of each bank has a fluctuating movement that tends to decrease throughout 2015-2019. Of the six bank groups, only foreign banks whose ROA has relatively increased in the same length of periode. It can be seen that in 2019 there were two groups of banks that experienced an increase in ROA, namely foreign exchange banks and foreign banks.

This description of the movement of total assets, total income, and ROA level then raises interest in why there was a decrease in ROA in 2019, when total assets and total income in the same year actually increased. This research will analyse factors that determine the profitability of conventional banks in Indonesia (in this research the profitability level will be represented by Return on Assets ratio) from 2010-2019. The object of this research is conventional banks in Indonesia because the level of Return on Assets of conventional banks meets the requirements set by Bank Indonesia (> 1.5 percent) compared to Islamic banks, and the number of conventional banks in Indonesia is much more than Islamic banks.

METHODS

This research uses 6 groups of conventional banks in Indonesia; state-owned bank, foreign exchange private bank, non foreign exchange private bank, regional development bank (BPD), joint-venture bank, and foreign bank. The data obtained for this research are secondary data, in the form of panel data. Panel data is a combination of time series data and crosssection data. The time series data used in this research spans 10 years (2010-2019). All data obtained in this research are from Financial Services Authorities (OJK).

This research uses panel data regression analysis techniques using the random effect model (REM). Panel data is a combination of cross-section and time series data, where the same cross-section units are measured at different times. In this research, Return on Assets (ROA) are used as the dependent variable. Meanwhile, spread interest rate, Certificate of Bank Indonesia (SBI), third-party funds, and interbank liabilities are acted as independent variables.

Table 1. Details of Variables and Units.

Variable Type	Variable	Unit
Dependent Variable	Return on Assets (ROA)	Percent
Independent Variable	Spread interest rate	Percent
	Certificate of Bank Indonesia (SBI)	Rupiah
	Third-party funds	Rupiah
	Interbank liabilities	Rupiah

Source: Personal Document

Return on Assets (ROA) is a profitability ratio that assesses the managerial ability of a bank in generating income from each of its business assets within a certain period of time. Return on Assets can be formulated as:

$$\text{ROA} = \text{"Net Profit"} / \text{"Total Assets"} \text{ "x 100\%"} \quad (1)$$

The source of the bank's assets is in the form of liabilities and capital owned by the bank itself. Bank capital comes from shares sold by the bank to the public and from profits earned by the bank in the previous year. Bank liabilities are obtained by borrowing from other parties, such as Bank Indonesia, other banks, non-bank financial institutions, companies, and public funds or deposits. Then the loans and deposits obtained by the bank become a source of the bank's funds to extend credit to people in need so as to generate profits. Then banks' assets are also in the form of purchases of securities, such as stocks, bonds, and Bank Indonesia Certificates (SBI). Then the bank will earn profits through interest received on loans and securities owned by the bank.

From Equation (1), theory and the explanations above, the theoritical model of this research can be built as follows:

$$\text{Profit} = f(\text{Income, Cost}) \quad (2)$$
$$\text{Profitability} = f(\text{Income, Cost}) \quad (3)$$
$$\text{ROA} = f(\text{SIR, SBI, DPK, IBL}) \quad (4)$$

This research uses panel data method with random effect model. Random effect model is an estimation technique that estimates and integrates disturbance variables (error terms) that may appear between individuals and time. The random effect model assumes that there are differences in intercepts for each individual, so there are two residuals: the overall residual or residual combination between time series and cross-section and the individual residual or residual derived from each cross-section of data. By using the random effect model (REM), Equation (4) can be derived as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + v_{it} \quad (5)$$

To reduce data disparity caused by unit differences (see Table 1 to see the variable's unit) and ensure that the regression results are more linear, the DPK, SBI, and IBL variables are converted into logarithmic form as follows:

$$Y_{it} = \beta_0 + \beta_1 \text{SIR}_{1it} + \beta_2 \text{LSBI}_{2it} + \beta_3 \text{LDPK}_{3it} + \beta_4 \text{LIBL}_{4it} + v_{it} \quad (6)$$

RESULTS AND DISCUSSION
Research Results

Based on the results of detemining the best model using the Chow, Hausman, and Langrage-Multiplier test in Table 2, Table 3, Table 4, the best model used in this research is the random effect model (REM). Therefore, this research is using Generalized Least Squares (GLS) and does not need to perform heteroskedasticity test and autocorrelation test.

Table 2. Chow Test.

Effects Test	Statistic	d.f	Prob.
Cross-section F	9,425947	(5,50)	0,0000
Cross-section Chi-square	39,841472	5	0,0000

Source: Personal Document

Table 3. Hausman Test.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2,336944	4	0,6741

Source: Personal Document

Table 4. Langrage-Multiplier (LM) Test.

	Test Hypothesis		
	Cross-section	**Time**	**Both**
Breusch-Pagan	30,74140 (0,0000)	1,967449 (0,1607)	32,70884 (0,0000)

Source: Personal Document

Table 5. Classic Assumption Test

Assumption Classic Test	Testing Characteristic	Results	Conclusion
Multicolinearity	Value < 0.9 (no multicolinearity detected)	All variables have < 0.9	No multicolinearity detected.

Source: Personal Document

Table 6. Estimation Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0,036670	0,784521	0,046742	0,9629
SIR	0,250283	0,063911	3,916132	0,0003
LSBI	0,163146	0,075553	2,159346	0,0352
LDPK	0,184215	0,059475	3,097356	0,0031
LIBL	-0,266814	0,122804	-2,172683	0,0341
Weighted Statistics				
R-squared		0,595401		
Adjusted R-squared		0,565976		
F-statistic		20,23426		
Prob(F-statistics)		0,000000		

Source: Personal Document

Table 6 explains estimation results using random effect model (REM). Interest rate spread, third-party funds, and Bank Indonesia Certificates, have positive coefficients, indicating that the three variables have a positive relationship with the dependent variable, namely ROA. The interbank liabilities variable has a negative coefficient, which means that the greater the interbank liabilities owned by commercial banks, the lower the level of ROA.

The estimation results of the F statistical test in Table 6 show an F-statistic value of 20.23426 and a probability of 0.000000. Then the determination of the F table is carried out by calculating the degree of freedom (df = k minus 1 and n minus k). From the results of the calculation of the degree of freedom, the F table result is 2.54, so the F-count value of 20.23426 is greater than the F table value of 2.54. From these results, it can be concluded that the independent variables, namely interest rate spread, third-party funds, Bank Indonesia Certificates, and interbank liabilities, simultaneously affect the dependent variable, namely return on assets (ROA).

Discussion

The revenue and profit components experienced an increasing trend each year, although it was slightly hampered in 2015 and 2016. In 2017, expense activity decreased by 1.38 percent. In the same year, net profit experienced a sharp increase of 23.1 percent. This sharp increase was caused by several things, such as the increase in commercial bank interest income by 5.31 percent from Rp681.46 trillion in 2016 to Rp717.66 trillion. Then the assets of commercial banks also increased, which amounted to 9.76 percent, from Rp6,729.79 trillion to Rp7,387.14 trillion in the following year. Total commercial bank lending also increased by 8.24 percent, which was

coupled with an increase in deposits of 9.35 percent from Rp4,836.75 trillion in 2016 to Rp5,289.2 trillion in 2017.

Figure 3. Profit/Loss Statement of Commercial Banks in Indonesia in 2010-2019 (Billion Rupiah)
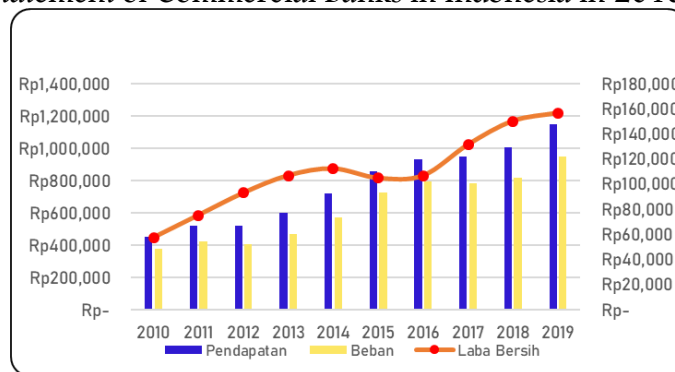
Source: Otoritas Jasa Keuangan

The ability of a bank to earn profits within a certain period of time is called profitability. Return on assets is the profitability ratio used in this study. Bank Indonesia sets a standard of healthy ROA at 1.5 percent, so banks that have ROA levels at and above 1.5 percent have a good profitability profile.

Figure 4. Return on Assets of Conventional Banks in Indonesia From 2010-2019.
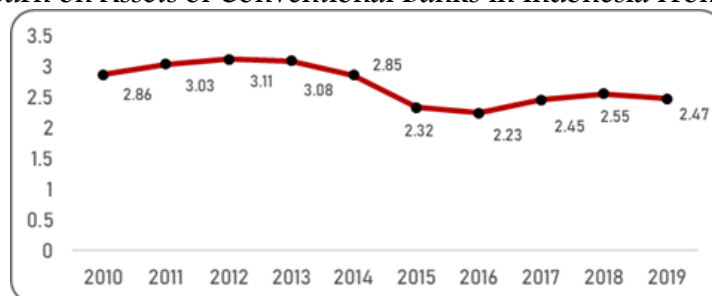
Source: Otoritas Jasa Keuangan

Based on Figure 4, the growth of return on assets fluctuated from 2010 to 2019. In 2015, the level of ROA decreased by 3.88 percent and increased again in 2017, which was also the largest increase during that period, amounting to 9.86 percent. Then in 2018, ROA again experienced an increase and then decreased in 2019. In 2019, the ROA level decreased by 3.14 percent.

Spread Interest Rate

Banks run their businesses by providing financial services and managing them in such a way as to generate the highest possible profit. Bank business activities will generate income, which is divided into two parts: interest income and non-interest income (fee-based income). Interest income contributes 74 percent of total income; thus, interest income is the largest and most important component of the bank's operational activities. Interest income has a positive and statistically significant effect on profitability, which is described through ROA. The relationship is explained by the fact that an increase in interest income will increase the bank's profit, which will indirectly increase the level of profitability of the bank.

Interest income is earned through the difference between the loan interest charged to customers who lend money to the bank and the interest expense that the bank must incur for raising funds from the public. The difference is called the interest rate spread, whose growth is described in Figure 5.
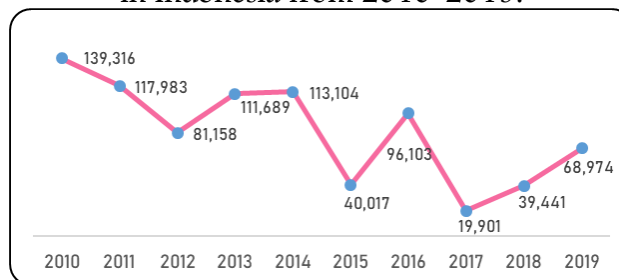
Figure 5. Spread interest rate of Conventional Banks in Indonesia From 2010-2019.
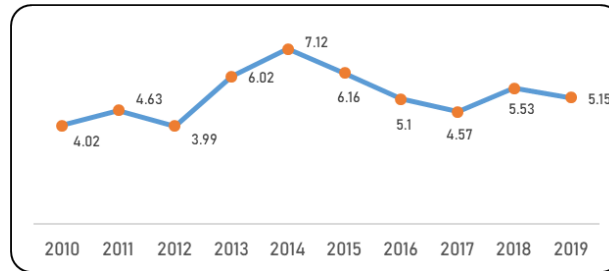
Source: Otoritas Jasa Keuangan

Certificate of Bank Indonesia (SBI)

Figure 6. The Amount of Certificate of Bank Indonesia Stored By Conventional Banks in Indonesia from 2010-2019.
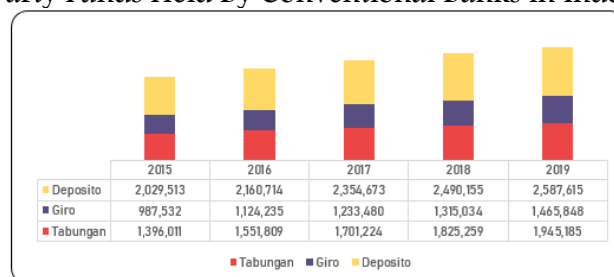

Source: Otoritas Jasa Keuangan

The development of the number of SBIs showed fluctuating movements in the 2010–2019 period. Starting in 2010, commercial banks in Indonesia deposited SBI amounting to Rp139 trillion, and then the amount decreased until 2012 to Rp81.16 trillion. In 2013, the amount of SBI increased to Rp111 trillion, and Rp113 trillion in 2014.

However, in 2015, the amount of SBI decreased sharply to Rp40 trillion and then increased rapidly in 2016 to Rp96.1 trillion. Then in 2017, the amount of SBI was at its lowest level of Rp19.9 trillion then increased again to Rp39.4 trillion and Rp69 trillion in 2018 and 2019.

Third-Party Funds (DPK)

One of the components of bank expenses is interest expense the largest portion of which comes from third-party funds (DPK). Time deposits are the most popular type of third-party funds, with an average composition of 44.5 percent of total third-party funds. From Figure 6, it can also be concluded that the total DPK has increased every year, in 2010-2014, the total DPK of commercial banks amounted to Rp2,338 - Rp4,114 trillion. Then starting from 2015 to 2019 the amount of deposits also always experienced positive growth from year to year. In 2015 the total deposits amounted to Rp4,413 trillion then increased by 9.6 percent to Rp4,836.7 trillion in 2016. Then in 2017 total deposits increased by 9.35 percent to Rp5,289.4 trillion. In 2018, total deposits increased by 6.45 to Rp5,630 trillion and in 2019 increased by 6.5 percent to Rp5,998.6 trillion.

**Figure 7.** Total Third-Party Funds Held By Conventional Banks in Indonesia From 2015-2019.

	2015	2016	2017	2018	2019
Deposito	2,029,513	2,160,714	2,354,673	2,490,155	2,587,615
Giro	987,532	1,124,235	1,233,480	1,315,034	1,465,848
Tabungan	1,396,011	1,551,809	1,701,224	1,825,259	1,945,185

Source: Otoritas Jasa Keuangan

Interbank Liabilities

Banks have liquidity reserves, the amount of which has been determined by Bank Indonesia. If a bank has minimal liquidity reserves, it will jeopardize the bank itself because the bank's ability to pay its obligations or collateral becomes increasingly limited and the possibility of bankruptcy becomes greater.

The movement of interbank liabilities owned by conventional banks in Indonesia has increased from year to year during 2013-2019. In 2015, total interbank liabilities were at the level of Rp161 trillion. Then in the following year it increased by 4.62 percent to Rp168 trillion. In 2017, interbank liabilities increased by 9.31 percent to Rp184 trillion. In 2018, interbank liabilities increased again to Rp 192 trillion and in 2019 amounted to Rp197.5 trillion.

Figure 8. The Amount of Interbank Liabilities Owned By Conventional Banks in Indonesia From 2010-2019.
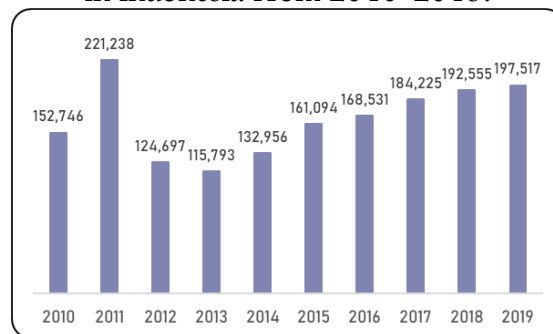
Source: Otoritas Jasa Keuangan

CONCLUSIONS

Based on the research results, it can be concluded that bank profitability is influenced by interest rate spreads, Bank Indonesia Certificates (SBI), third-party funds (DPK), and interbank liabilities. The decrease in return on assets (ROA) that occurred in 2019 was caused by interbank liabilities, which always increased, so it is necessary to control the amount of interbank liabilities owned by banks so that bank profitability is maintained.

Limitations

During the research, there were several limitations that can be considered for conducting future research. First, this research only examines conventional banks in Indonesia, so the scope of the research is not broad enough. Moreover, the research data obtained from the Financial Services Authority (OJK) website, which is considered insufficiently complete, may hinder the research process.

Future Research

Based on the limitations of the study, it is expected that future research should examine other research objects, such as Islamic banks, to see the behavior and factors that affect profitability in Islamic banks. Furthermore, the limited data available on the Financial Services Authority website cannot provide maximum information, so it is hoped that the Financial Services Authority will always improve and add data to the annual report publication.

ACKNOWLEDGEMENTS

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