

THE EFFECT OF LOAN PERFORMANCE ON PROFIT GROWTH WITH OPERATIONAL COSTS AND OPERATING INCOME (OCOI) AS INTERVENING VARIABLES IN COMMERCIAL BANKS IN INDONESIA

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Abstract

This study aims to analyze and determine the effect of loan performance on profit growth with operational costs and operating income (OCOI) as intervening variables in commercial banks in Indonesia. The data analysis technique in this study uses Partial Least Square (PLS) using Smart PLS software. This data analysis technique is used to facilitate researchers in data processing and analysis. The results show that the loan performance coefficient positively and significantly affects profit growth. The results of testing loan performance on profit growth show a path coefficient of 0.372 with a t-statistic value of 3.504. The t-statistic value is smaller than the t-table value (1.96). The coefficient of operating costs and operating income shows a negative and significant impact on profit growth. The results of the OCOI test on profit growth show a path coefficient of -0.638 with a t-statistic value of 6.324. The t-statistic value is greater than the t-table value (1.96). The loan performance coefficient through operational costs and operating income is negative and not significant to profit growth. The results of testing the performance of loans through OCOI on profit growth show a path coefficient of -0.174 with a t-statistic value of 1.756. The t-statistic value is smaller than the t-table value (1.96).

Keywords: *Loan Performance, OCOI, Profit Growth.*

1. INTRODUCTION

Since the last decade, the banking industry as an intermediary institution has experienced the most rapid development, both in terms of business volume, mobilization of public funds, and lending. Such a situation was made possible as a result of deregulation in the banking sector carried out by the government through Bank Indonesia (BI) on June 1, 1983. Deregulation in the banking sector in that year greatly influenced the pattern and strategy of bank management, both in terms of bank liabilities and assets. Such a situation forces banks to be more creative and innovative in developing and obtaining new funding sources (Laras Prapilia, 2015).

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The main objective of operating a conventional company is to make a profit. Profit can be information needed by investors in assessing the performance of a company (Savitri, 2011). Large profits will determine the rate of return for investors, this is very useful for investors in making decisions to invest their funds (Gunawan and Wahyuni, 2013). The author found a research gap in the results of several previous studies. Research conducted by Muhammad Rizki (2019) found that the capital adequacy ratio has a significant positive effect on the profit growth variable, the non-performing loans ratio has no significant negative effect on the profit growth variable, the asset return ratio has a negative and significant effect on profit growth the loan to deposit ratio has no effect negatively significant to the earnings growth variable. Research conducted by Mislinawati and Dewi maya sari (2007) shows that Return On Assets (ROA) has an effect on Profit Growth, and Operational Costs Against Operating Income (OCOI) has an effect on Profit Growth. The results of research from Abraham Guicheldy and Iswandi Sukartaatma) show that the variable Capital Adequacy Ratio (CAR) has a positive and not significant effect on Profit Growth of 0.394, Non-Performing Loans (NPL) has a positive and insignificant effect on Profit Growth of 0.940 and Operational Costs Operating Income (OCOI) has a negative and significant effect on Profit Growth of 0.007.

Thus further research is needed regarding the effect of loan performance on profit growth with operating costs and operating income (OCOI) as intervening variables in Indonesian commercial banks during 2017-2021.

2. RESEARCH METHOD

The research design used in this study is a quantitative research method. Quantitative methods are often also called traditional, scientific, positivistic, and discovery methods. A quantitative research method is a research method based on the philosophy of positivism, used to examine certain populations or samples. The sampling technique is generally taken randomly, data collection uses research instruments, and data analysis is quantitative/statistical in nature with the aim of testing the hypotheses that have been set. (Sugiyono: 2012).

The population is a generalized area consisting of objects or subjects that have certain qualities and characteristics determined by the researcher to be studied and then conclusions drawn. So, the population is not only people but also objects and other natural objects. Population is also not just the amount that exists in the object or subject being studied but includes all the characteristics or properties possessed by the subject or object. The population in this study are all commercial banks listed on the Indonesia Stock Exchange (IDX) and have financial reports for the 2017-2021 period.

The sampling method in this study used purposive sampling with certain considerations. The considerations and sampling criteria used in this study are as follows:

- 1) Commercial banks listed on the Indonesia Stock Exchange in 2017-2021.
- 2) Commercial banks that did not suffer losses during the 2017-2021 observation period.
- 3) Commercial banks whose total net profit has increased every year from 2017-2021.

Based on the criteria above, 8 commercial banks meet the requirements as research samples, namely:

Table 1 List of Research Samples

NO	Stock Kode	Company Name
1.	BBCA	PT Bank Central Asia Tbk.
2.	BBNI	PT Bank Negara Indonesia (Persero) Tbk
3.	BBRI	PT Bank Rakyat Indonesia (Persero) Tbk
4.	BJTM	Bank Pembangunan Daerah Jawa Timur Tbk
5.	BNGA	PT Bank CIMB Niaga Tbk
6.	MEGA	Bank Mega Tbk
7.	NISP	PT Bank OCBC NISP Tbk
8.	NOBU	PT Bank Nationalnobu Tbk.

Source: researcher (2022)

The type of data used is secondary data, namely company financial data from all commercial banks in Indonesia, and this data has been processed and documented from the company, such as financial reports for the period 2017 to 2021.

The data collection method used in this study is documentation, namely observing data by studying and knowing existing data in the form of documentation, archives, and notes according to the problem to be studied.

In this study, there are three variables, namely the independent variable consisting of loan performance (X1), OCOI as a variable (Z), and one dependent variable, namely profit growth (Y). OCOI (Z) is a comparison between Operational Costs and Operating Income in measuring the level of efficiency and ability of a bank to carry out its operational activities. Loan performance (X1) is goods or services that are the obligation of one party to be paid to another party by a written or oral agreement, which is stated or implied and must be repaid within a certain period. Profit Growth (Y) is an increase in net profit expressed as a

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percentage generated by the company in one year so that it can describe the results of the company's financial performance in managing its assets.

Table 2 List of Research Samples

Variable	Proxy	Scale
OCOI	$BOPO = \frac{\text{Operating expenses}}{\text{Operating income}} \times 100\%$	Ratio
Profit Growth	$LDR = \frac{\text{Operating income}}{\text{Operating income}} \times 100\%$	Ratio
Profit Growth	$\text{Profit Growth} = \frac{\text{Current year's net profit} - \text{Last year's net profit}}{\text{Last year's net profit}}$	Ratio

Source: researcher (2022)

The data analysis technique used in this study uses Partial Least Square (PLS) using Smart PLS software. According to Ghazali (2006), PLS is an alternative approach that shifts from a covariance-based SEM approach to a variant-based one. SEM which is based on covariance generally tests causality/theory while PLS is more of a predictive model. This data analysis technique is used to facilitate researchers in data processing and analysis. This data analysis technique uses statistical tools with the help of SmartPLS (Partial Least Square). This SmartPLS will explain in detail the data analysis method.

3. RESULTS AND DISCUSSION

In this study, two analyzes will be carried out. First, to see the effect of loan performance on profit growth, is done using Partial Least Square (PLS). Second, to analyze the effect of loan performance on profit growth with operational costs and operating income as intervening variables.

3.1 Descriptive Analysis

Descriptive statistics are used to describe the data used in research. In this study, the descriptive statistical data measures used were the minimum value (min), maximum

value (max), average value (mean), and standard deviation (std. deviation). Descriptive statistics of the variables used in this study can be seen in the table below:

Table 3 Results of Descriptive Statistical Analysis

	N	Minimum	Maximum	Mean	Std. Deviation
Y	35	51.38	97.64	78.2554	13.07614
Z	35	54.02	93.03	73.1840	9.10166
X	35	1.22	34.41	11.2499	11.84388
Valid N (listwise)	35				

Source: Data SmartPLS 3.0

In Table 3 above the results of the descriptive statistical test, it is known that the average value (mean) derived from the Y variable data shows a result of 78.2554. The standard deviation for this variable is 13.07614. The maximum value of this variable is 97.64, while the minimum value of this variable is 51.38.

The results of the descriptive statistical test of the average value (mean) derived from the data variable Z showed a result of 73.1840. The standard deviation for this variable is 9.10166. The maximum value of this variable is 93.03, while the minimum value of this variable is 54.02.

The results of the descriptive statistical test for the average (mean) value derived from variable X data showed a result of 11.2499. The standard deviation for this variable is 11.84388. The maximum value of this variable is 34.41, while the minimum value of this variable is 1.22.

To find out the description of the condition of the variables in this study, a descriptive analysis was carried out. The variables used in this study include independent variables, dependent variables, and intervening variables. The independent variable consists of loan performance with the LDR indicator. The dependent variable consists of profit growth with profit growth indicators. Meanwhile, the intervening variables are operational costs and operating income with OCOI indicators. The sample in this study was seven companies listed on the Indonesian stock exchange. The observation period is carried out for 5 years, namely 2017-2021.

3.2 Analisis Outlier Model

Data processing techniques use the SEMPLS method to assess the fit of a model of a research model (Ghozali, 2006). One of them is the analysis of the outer model. The outlier model analysis is used to test whether the measurements used are feasible to be used as valid measurements.

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3.2.1 Convergent Validity

The convergent validity of a measurement model with a reflective indicator model is assessed based on the correlation between the item score or component score and the construct score calculated by PLS. The reflective measure is said to be high if it correlates more than 0.70 with the construct you want to measure. However, for research in the early stages of developing a measurement scale, a loading value of 0.5 to 0.60 is considered sufficient (Ghozali, 2006).

Table 4 Convergent Validity Value
Outer Loading

	Variable X	Variable Y	Variable Z
OCOI			1.000
LDR	1.000		
Profit Growth		1.000	

Source: Data SmartPLS 3.0

The results of processing with smartPLS 3.0 can be seen in Table 4. The value of the outlier model or the correlation between constructs and variables already meets convergent validity because the indicator has a loading factor value of 0.70. The Manifest of OCOI has a correlation value to the construct of 1,000 which indicates the fulfillment of the convergent validity value. As in table 4, it shows the correlation value of the OCOI indicator to the construct of 1,000. The correlation value of the LDR indicator to the construct is 1,000. The correlation value of profit growth to the construct is 1,000. This indicates that all loading factors have values above 0.70 so that the constructs for all variables are no longer eliminated from the model.

3.2.2 Discriminant Validity

Discriminant validity of the measurement model with reflective indicators is assessed based on the cross-loading of measurements with constructs. If the construct's correlation with the measurement items is greater than the size of the other constructs, it will indicate that the construct predicts the size of the block better than the size of the other blocks (Ghozali, 2006).

Table 5 Discriminant Validity Results
Cross Loadings

	Variable X	Variable Y	Variable Z
OCOI	0.273	-0.537	1.000
LDR	1.000	0.198	0.273
Profit Growth	0.198	1.000	-0.537

Source: Data SmartPLS 3.0

From table 5 it can be seen that the loading factor value for each indicator of each variable has a higher value compared to the correlation indicators of other variables. Thus forming a reliable and valid model.

3.2.3 Composite Reliability dan Average Variance Extracted

Another method for assessing discriminant validity is to compare the square root of the average variance extracted (AVE) value for each construct with the correlation between other constructs in the model. The validity and reliability criteria can also be seen from the reliability value of a construct and the AVE value of each construct. The construct is said to have high reliability if the value is 0.70 and the AVE is above 0.50. Table 6 will present the composite reliability and AVE values for all variables.

Table 6 Composite Reliability and AVE Values

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)	
Variable X	1.000	1.000	1.000	1.000	Reliable
Variable Y	1.000	1.000	1.000	1.000	Reliable
Variable Z	1.000	1.000	1.000	1.000	Reliable

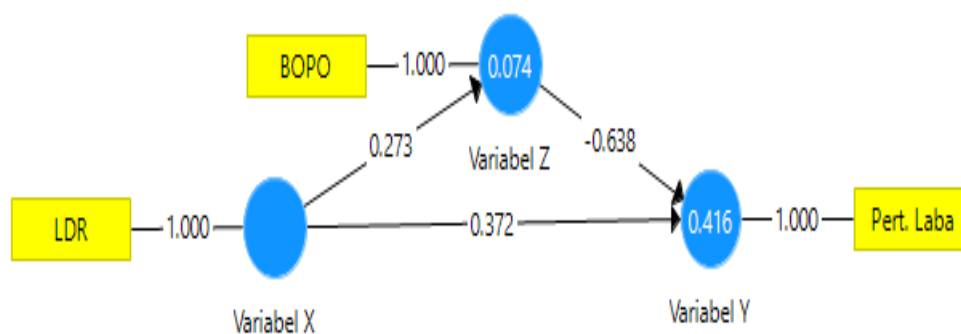
Source: Data SmartPLS 3.0

Based on Table 6 it can be seen that the composite reliability value has a value above 0.70 for all constructs. Therefore, no reliability problems were found in the model formed. Likewise, the Average Variance Extracted (AVE) value of each construct has a value above 0.50. Thus all constructs meet the criteria that are reliable in accordance with the recommended criteria.

3.3 Structural Model Analysis

Structural model testing was carried out to see the relationship between constructs, significance value, and R-Square of the research model. The structural model was evaluated using the R-Square for the t-test dependent construct and the significance of the structural path parameter coefficients. After modifying the model to obtain the best model, the structural model is obtained as follows:

Figure 1 Structural Model



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In assessing the model with PLS it starts by looking at the R-Square for each dependent variable. Table 4.8 is the result of R-Square estimation using SmartPLS 3.0.

Table 7 R-Square Value

	R Square	Adjusted R Square
Variable Y	0.416	0.380
Variable Z	0.074	0.046

Source: Data SmartPLS 3.0

Based on Table 7 it can be seen that this study uses two variables that are influenced by other variables, namely the profit growth variable which is influenced by the loan performance variable. Then the profit growth variable is influenced by loan performance and operational costs and operating income.

Table 7 shows that the R-Square value for the profit growth variable is 0.416, which means that the model is able to explain 41.6% of the variables that affect profit growth. The OCOI variable is 0.074, which means the model is able to explain 7.4% of the variables that affect OCOI.

Through the R-Square it can also be calculated the value of Predictive Relevance (Q²). The value of Predictive Relevance (Q²) is predictive of relevance for the constructive model. Q-Square measures how well the observed values are produced by the model and also the parameter estimates. A good Q-Square has a value greater than 0. Q-Square can be calculated using the following formula:

$$Q^2 = 1 - (1 - R^2_{YX})(1 - R^2_{YZ})$$

$$Q^2 = 1 - (1 - 0.416)(1 - 0.074)$$

$$Q^2 = 0.1776$$

3.4 Hypothesis Analysis

The significance of the estimated parameters provides very useful information about the relationship between the research variables. The basis used in testing the hypothesis is the value contained in the output result for inner weight. Tables 8 and 9 provide an output estimate for structural model testing.

Table 8 Result for inner weight

	Original sample (O)	Sample Average (M)	Standar Deviasi (STDEV)	T Statistik (O/STDEV)	P Values
Variable X -> Variable Y	0.372	0.367	0.106	3.504	0.000
Variable X -> Variable Z	0.273	0.269	0.134	2.033	0.043
Variable Z -> Variable Y	-0.638	-0.639	0.101	6.324	0.000

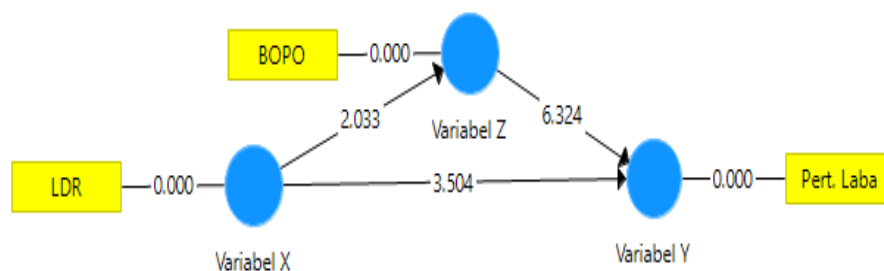
Source: Data SmartPLS 3.0

Table 9 Result for inner weight

	Original sample (O)	Sample Average (M)	Standar Deviasi (STDEV)	T Statistik (O/STDEV)	P Values
Variable X -> Variable Y	-0.174	-0.175	0.099	1.756	0.080
Variable X -> Variable Z					
Variable Z -> Variable Y					

Source: Data SmartPLS 3.0

Figure 2 Structural Model (Bootstrapping)



In PLS statistical testing of each hypothesized relationship is carried out using a simulation. In this case, the bootstrap method was carried out on the sample. Testing with bootstrap is also intended to minimize the problem of abnormal research data. The results of testing with bootstrapping from the PLS analysis are as follows:

3.4.1 Testing the Hypothesis That Loan Performance Affects Profit Growth

The results of testing loan performance on profit growth show a path coefficient of 0.372 with a t-statistic value of 3.504. The t-statistic value is smaller than the t-table value (1.96). This result means that loan performance has a significant positive effect on profit growth, so the hypothesis is accepted.

3.4.2 OCOI Hypothesis Testing has an Effect on Profit Growth

The results of the OCOI test on profit growth show a path coefficient of -0.638 with a t-statistic value of 6.324. The t-statistic value is greater than the t-table value (1.96). This result means that OCOI has a significant negative effect on profit growth, so the hypothesis is rejected.

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3.4.3 Testing the Performance Hypothesis of Loans Through OCOI has an Effect on Profit Growth

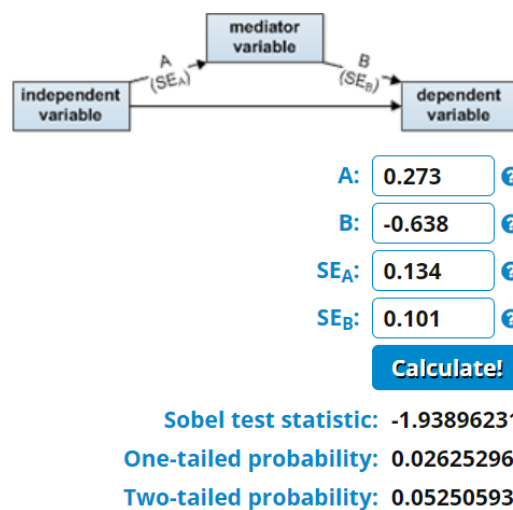
The results of testing the performance of loans through OCOI on profit growth show a path coefficient of -0.174 with a t-statistic value of 1.756. The t-statistic value is smaller than the t-table value (1.96). This result means that loan performance through OCOI has a negative and insignificant effect on profit growth, so the hypothesis is rejected.

3.5 Sobel Test Results

The Sobel test is used to determine the effect of the mediating variable, namely OCOI. A variable is called an intervening variable if the variable influences the relationship between the independent and dependent variables. Testing the mediation hypothesis can be carried out using a procedure developed by Sobel (1982) and known as the Sobel test (Ghozali, 2018).

Testing the mediating effect between the intervening variables and the X variable on Y is carried out by calculating the Sobel formula. To test the strength of the indirect influence of the intervening variables that mediate the independent variables on profit growth, the Sobel test is performed which is calculated by multiplying the paths.

Figure 3 Sobel Test indirect effect of intervening variables



Source: Sobel Test Calculator (2023)

From the calculation above, the statistical value (z-value) for the influence of the OCOI variable as an intervening variable between loan performance and profit growth variables is -1.93896231 and the significance of the One-tailed probability is 0.02625296. Because the p-value $\alpha = 0.05$, it can be concluded that the indirect effect is not significant. The t value of -1.93896231 is smaller than 1.96 which means that the

mediation parameter is negative and not significant. So thus the model of the indirect effect of the loan performance variable on profit growth through OCOI is rejected.

3.2 Effect of Loan Performance on Profit Growth

Loan performance affects profit growth. The loan performance coefficient shows a positive and significant impact on profit growth. The results of testing loan performance on profit growth show a path coefficient of 0.372 with a t-statistic value of 3.504. The t-statistic value is smaller than the t-table value (1.96). The results of the study show that theoretically, there is a unidirectional relationship between LDR and profit growth so if the LDR ratio increases, profit growth will also increase. This means that if the LDR increases, profit growth will also increase. The results of this study corroborate the results of Robin's research (2013) that partially for the Loan to Deposit Ratio (LDR) has a positive effect on profit growth.

3.2 Effect of Operational Costs and Operating Income on Profit Growth

Operating costs and operating income affect profit growth. The coefficient of operating costs and operating income shows a negative and significant impact on profit growth. The results of the OCOI test on profit growth show a path coefficient of -0.638 with a t-statistic value of 6.324. The t-statistic value is greater than the t-table value (1.96). The results of the study show that theoretically, Operational Costs or Operating Income are used to measure the level of efficiency and the ability of a bank to carry out its operations. The lower the OCOI ratio, the better the performance of the bank's management. If the lower the OCOI value, the more efficient the bank is in controlling its operational expenses so that the profit growth obtained increases.

3.2 Effect of Loan Performance on Profit Growth through Operational Costs and Operating Income

Loan performance through operating costs and operating income affects profit growth. The loan performance coefficient through operational costs and operating income is negative and not significant to profit growth. The results of testing the performance of loans through OCOI on profit growth show a path coefficient of -0.174 with a t-statistic value of 1.756. The t-statistic value is smaller than the t-table value (1.96). The results showed that the effect of loan performance on profit growth through OCOI had a negative and insignificant effect. In other words, the effect of loan performance on profit growth was not determined by the presence of OCOI or OCOI did not mediate the effect of loan performance on profit growth. The results of this study are in line with research conducted which states that OCOI has a negative and significant effect on credit growth but is not significant in influencing profit growth.

3.2 The indirect effect of variables based on the Sobel test

Based on the results of the Sobel test calculation, it shows that the statistical value (z-value) for the effect of the OCOI variable as an intervening variable between loan performance and profit growth variables is -1.93896231 and the significance of the One-tailed probability is 0.02625296. Because the p-value $\alpha = 0.05$, it can be concluded that the indirect effect is not

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significant. The t value of -1.93896231 is smaller than 1.96 which means that the mediation parameter is negative and not significant.

4. CONCLUSION

Conclusions that can be drawn from the results of this study include:

- 1) The effect of loan performance on profit growth is significantly positive. That loan performance has a positive influence on profit growth. The higher the loan performance ratio (LDR) indicates the greater the amount of funds disbursed in the form of loans. This will provide greater interest income which will increase profit growth.
- 2) The effect of operational costs and operating income (OCOI) on profit growth is significantly negative. With so many branches spread throughout Indonesia, the Bank must be able to reduce operational expenses. In addition, the potential for obtaining operational income must be further optimized. Bank management must be even more creative in efforts to increase operating income margins against operating expenses.
- 3) The effect of loan performance on profit growth through operational costs and operating income. The test results with SmartPLS 3.0 that have been carried out show that the OCOI variable cannot be used as an influencing intervening variable loan performance on profit growth. These results indicate that to increase profit growth, it is better to do it directly by increasing loan performance. This means that in increasing profit growth from interest income, bank lending does not require OCOI because a high LDR ratio indicates a greater number of loans disbursed. This will provide greater interest income which will increase profit growth.

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