The Effect of BCA, BRI and Bank Mandiri Performance on The Indonesia Composite Index

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Artikel Info	*Abstrak*
   	The Indonesia Composite Index (ICI) serves as a tool to measure and compare stock price movements in the capital market. The purpose of the research is to analyze the impact of the Operational Efficiency, Net Interest Margin, and Non-Performing Loan Ratios on Bank BCA, BRI, and Bank Mandiri as independent variables. Data used in this research was taken from the Financial Services Authority. The result from the F test shows a significant relationship in Operational Efficiency, Net Interest Margin, and Non-Performing Loan on the Bank BCA, BRI, and Mandiri towards the Indonesia Composite Index. Meanwhile, the t-test shows a significant relationship between Non-Performing Loan on the Bank BCA, Net Interest Margin on the Bank BRI, and all variables on the Bank Mandiri to Indonesia Composite Index. Based on Adjusted R Square; Operational Efficiency Ratio, Net Interest Margin, and Non-Performing Loan towards to Indonesia Composite Index is 88% while the rest of it 12% were influenced by other factors

INTRODUCTION

The Indonesia Composite Index (ICI) serves as a tool to measure and compare stock price movements in the capital market (Setiawan & Mulyani, 2020). One factor which may affect the ICI are banks as a financial institution that is run by the government or privately as a means to manage and channeling funds. Therefore, the ratio in the bank can affect the ICI (Hanafi & Imelda, 2020). Several bank ratios can affect the ICI one of which is the Operational Efficiency Ratio (OER) as a comparison between operating costs and operating income. If there is an increase in the OER ratio in a bank, then it can be said that the performance of a bank is bad because it is inefficient and ineffective in managing its operational expenses against operating income, so this can cause a decrease in the ICI (Suryadi, Mayliza, & Ritonga, 2020). The second variable is the Net Interest Margin (NIM) is a ratio to measure the ability to manage a bank's assets. If the NIM ratio decreases at a bank this can cause a decline in income of a bank, which in turn causes a decrease in the ICI (Andarista, Winarni, & Finanto, 2020) and the last variable is Non-Performing Loan (NPL) which measures the ability of credit management performance in a bank. The increase in NPL ratio can cause losses to banks due

to inefficient management in managing bad loans. This can cause a decrease in ICI (Munawar & Maulana, 2018).

(Sitoresmi & Herawaty, 2020) Research on "The Effects of Financial Distress and Fraud Financial Statement on Moderated Stock Returns By Earning Management in Banking Companies Registered at IDX 2013-2015" from his research concluded that the BOPO variable has a positive influence on stock returns. (Wuri, Winarni, & Wijayani, 2020) conducted a study entitled "The Effect of Asset Management, Earnings Per Share and Net Interest Income Against Stock Prices (at BUMN Banks Listed on the Indonesia Stock Exchange Period 2009-2018)" the research explained that net interest income (Net Interest Margin) simultaneously and partially have a value significant to stock prices. (Nureny, 2019) research "Financial Performance and Share Prices of Banks of State-Owned Enterprises in Indonesia" which concluded that the variables consisted of Net Interest Margin (NIM), Non Performing Loans (NPL) and Operational Costs to Operating Income (BOPO) simultaneously has a significant effect to the stock price index and partially NIM, NPL and BOPO does not have a significant effect on the stock price index.

In the previous research, the independent variable only focused on the stock price index and stock returns, while this research will examine the effect of the performance of 3 banks on the ICI because the 3 banks above are the largest in Indonesia, but needs further research through this research. The purpose of this research was to determine the effect of the ratio of OER, NIM, and NPL at Bank BCA, BRI, and Bank Mandiri on ICI as a performance analysis of Bank BCA, BRI and Bank Mandiri in ICI.

RESEARCH METHODS

The variables used in this research are (i) Independent Variable; a. Operational Efficiency Ratio (OER) Bank BCA (X_1), b. Net Interest Margin (NIM) Bank BCA (X_2), c. Non-Performing Loan (NPL) Bank BCA (X_3), d. Operational Efficiency Ratio (OER) Bank BRI (X_4), e. Net Interest Margin (NIM) Bank BRI (X_5), f. Non-Performing Loan (NPL) Bank BRI (X_6), g. Operational Efficiency Ratio (OER) Bank Mandiri (X_7), h. Net Interest Margin (NIM) Bank Mandiri (X_8), i. Non-Performing Loan (NPL) Bank Mandiri (X_9). (ii) Dependent Variable; Indonesia Composite Index (ICI) (Y).

Data Collection Technique

The data used in this research uses secondary data obtained from (Otoritas Jasa Keuangan, 2020) from 2010 to 2019.

Data Analysis Techniques

The analysis technique used in the study used multiple regression analysis models utilizing SPSS version 17, this test was carried out based on the classical assumption tests such as normality test, autocorrelation test, heteroscedasticity test, simultaneous F test, partial t-test and coefficient of determination.

Multiple Regression Analysis

Multiple regression analysis is an analysis of the influence of one or more independent variables (X) with one or more related variables (Y). Regression analysis can be determined by the multiple regression equation formula. The similarity is $Y = \alpha + \beta 1 X1 + \beta 2 X2 + \beta 3 X3 + e$ (Kadir & Wahyudi, 2019).

Normality Test

This test is conducted to determine whether the data in this study are normally distributed or not using the normal PP Plot graphical method of standardized residual cumulative probability (Praptiningsih & Yetty, 2020).

Autocorrelation Test

Autocorrelation test is used to test whether there is a correlation between the independent variable and the dependent variable by looking at the value of the Durbin Watson (DW) (Munawara & Hadianib, 2020).

Heteroscedasticity Test

This test is carried out to determine the presence or absence of heteroscedasticity using scatterplot regression (Saragih & Girsang, 2020).

Multicollinearity Test

Multicollinearity test is a test used to find out whether there is a correlation between independent variables by looking at the tolerance value and the VIF value (Destiana & Jubaedah, 2017).

F Test (Simultaneous)

Simultaneous F test is a test used to determine the effect of all independent variables on the dependent variable by comparing the $F_{calculate}$ value with the F-table and the significant value (Yusmalina, Lasita, & Haqiqi, 2020).

The T-test (Partial)

The partial t-test is a test used to determine the effect of independent variables on the dependent variable individually by looking at significant values (Rianto, 2018).

Coefficient of Determination

The coefficient of determination is used to determine the percentage (%) of the influence of the relationship between the independent variables on the dependent variable by looking at the adjusted R square value (Alfaruq, Achmad, & Mahendra, 2019).

RESULT AND DISCUS

Multiple Regression Analysis

The multiple regression analysis equations are $Y = \alpha + \beta 1 X1 + \beta 2 X2 + \beta 3 X3 + e$ and can be explained as follows:

Table 1. Multiple Regression Analysis Coefficients

Model	Unstandardized Coefficients	
	B	Std. Error
(Constant)	6803.330	3312.446
OER BCA	-25.850	24.883
NIM BCA	141.535	274.220
NPL BCA	3241.527	1378.564
OER BRI	48.925	28.296
NIM BRI	-497.898	124.013
NPL BRI	-670.297	446.265
OER Mandiri	-102.648	28.004
NIM Mandiri	927.412	425.423
NPL Mandiri	1478.617	492.311

a. Dependent Variable: IHSG

In the above regression equation model, it can be explained as follows:

$$Y = 6803.330 - 25.850 X1 + 141.536 X2 + 3241.527 X3 + 48.925 X4$$
$$-497.898 X5 - 670.297 X7 + 927.412 X8 + 1478.617 X9$$

Based on the above equation it can be explained as follows:

1. The constant (α) of 6803.330 shows the constant of ICI (Y), assuming the value of each independent variable (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9) is constant.

2. The regression coefficient OER BCA(X_1) of -25.850 indicates a negative relationship, which means that between OER with ICI shows the opposite relationship, meaning that any increase in the value of OER will result in a decrease in the value of ICI and any decrease in OER will increase ICI.

3. The regression coefficient NIM BCA (X_2) of 141.536 indicates a positive relationship, which means that between NIM with ICI showed a unidirectional, meaning that any increase in the value of NIM with ICI will increase the value of ICI and any decrease in NIM will result in a decrease in the value of ICI.

4. The regression coefficient NPL BCA (X_3) of 3241.527 indicates a positive relationship, which means that between NPL with ICI showed a unidirectional, meaning that any increase in the value NPL with ICI will increase the value ICI and any decrease in NPL will result in a decrease in the value ICI.

5. The regression coefficient OER BRI (X_4) of 48.925 indicates a positive relationship, which means that between OER with ICI showed a unidirectional, meaning that any increase in the value OER with ICI will increase the value ICI and any decrease in OER will result in a decrease in the value ICI.

6. The regression coefficient NIM BRI (X_5) of −497.898 indicates a negative relationship, which means that between NPL with ICI shows the opposite relationship, meaning that any increase in the value NIM with ICI will result in a decrease in the value ICI and any decrease in NIM will increase the value ICI.

7. The regression coefficient NPL BRI (X_6) of −670.297 indicates a negative relationship, which means that between NPL with ICI shows the opposite relationship, meaning that any increase in the value NPL with ICI will result in a decrease in the value ICI and any decrease in NPL will increase the value ICI.

8. The regression coefficient OER Bank Mandiri (X_7) of −102.648 indicates a negative relationship, which means that between OER with ICI shows the opposite relationship, meaning that any increase in the value OER with ICI will result in a decrease in the value ICI and any decrease in OER will increase the value ICI.

9. The regression coefficient NIM Bank Mandiri (X_8) of 927.412 indicates a positive relationship, which means that between NIM with ICI showed a unidirectional, meaning that any increase in the value NIM with ICI will increase the value ICI and any decrease in NIM will result in a decrease in the value ICI.

10. The regression coefficient NPL Bank Mandiri (X_9) of 1478.617 indicates a positive relationship, which means that between NPL with ICI showed a unidirectional, meaning that any increase in the value NPL with ICI will increase the value ICI and any decrease in NPL will result in a decrease in the value ICI.

Normality test

If the points spread around the diagonal line and follow the direction of the diagonal line, the data is normally distributed (Praptiningsih & Yetty, 2020).

Figure 1. Normal P-Plot
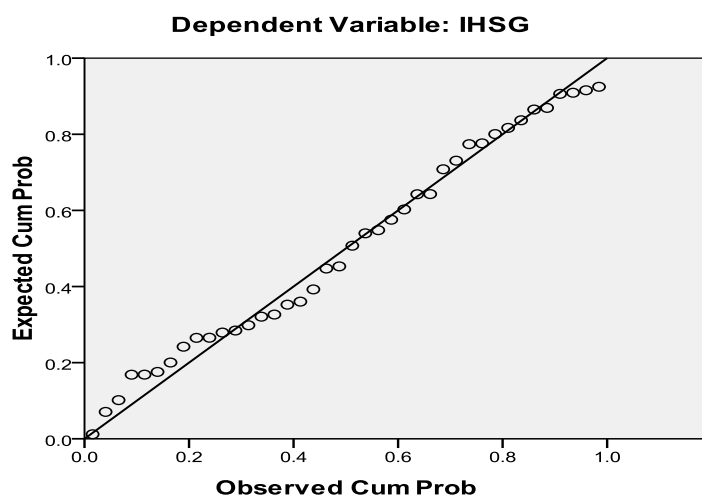
The results normal P-P Plot graph display of standardized residual cumulative probability shows that the points spread around the diagonal line

and follow the direction of the diagonal line, which means the data is normally distributed.

Autocorrelation Test

If the DW value is between -2 to +2, it can be concluded that there is no autocorrelation between the independent variables and the dependent variable (Munawara & Hadianib, 2020).

Table 2. Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. An error of the Estimate	Durbin-Watson
1	.953[a]	.908	.880	350.89842	1.734

a. Predictors: (Constant), NPL Mandiri, OER BCA, NIM BRI, NIM Mandiri, OER BRI, NPL BCA, BOPO Mandiri, NIM BCA, NPL BRI

b. Dependent Variable: IHSG

Based on table 2 above the value obtained value Durbin Watson for 1.734 is between -2 to +2, which means that the variable OER, NIM, and NPL in bank BCA, BRI, and Bank Mandiri to ICI does not contain autocorrelation.

Heteroscedasticity Test

If the pattern of points spreads above and below the number 0 on the X and Y axis, it can be concluded that there is no heteroscedasticity (Saragih & Girsang, 2020).

Figure 2. Scatterplot
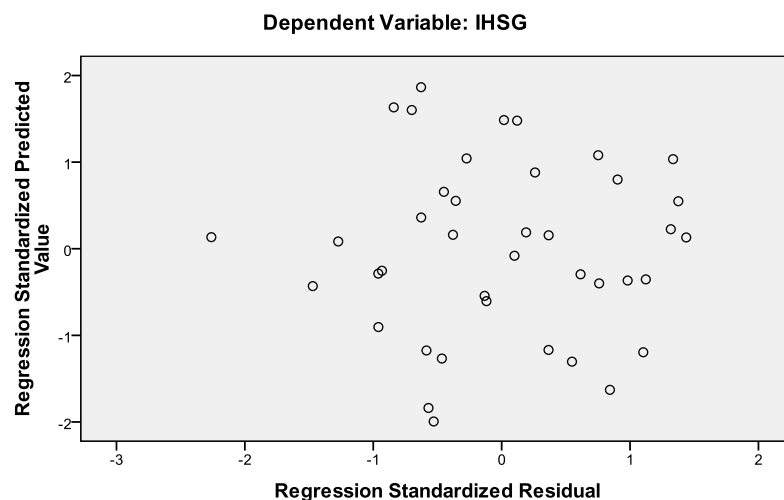
In the scatterplot graph in this research shows the pattern of points spread above and below the number 0 on the X and Y axis, it can be concluded that there was no heteroscedasticity in this research.

Multicollinearity Test

If the tolerance value>0.10 and VIF value<10, it can be concluded that there is no multicollinearity between independents variables (Destiana & Jubaedah, 2017).

Table 3. Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
OER BCA	.548	1.824
NIM BCA	.149	6.725
NPL BCA	.151	6.631
OER BRI	.210	4.755
NIM BRI	.255	3.916
NPL BRI	.147	6.822
OER Mandiri	.162	6.176
NIM Mandiri	.176	5.686
NPL Mandiri	.164	6.096

a. Dependent Variable: IHSG

Based on the SPSS test results above, it shows that the OER, NIM and NPL variables from BCA Bank have a tolerance value>0.1 and a VIF value<10. In the OER, NIM and NPL variables from BRI Bank have a tolerance value>0.1 and a VIF value<10. In the OER, NIM and NPL variables from Mandiri Bank have a tolerance value>0.1 and a VIF value<10. So it can be concluded that there is no multicollinearity between independent variables that have been regressed.

F Test (Simultaneous)

If the F-calculate value>F-table and a significant value<0.05, it can be concluded that there is a significant influence between the independent variables on the dependent variable (Yusmalina et al., 2020).

Table 4. F Test (Simultaneous)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.635E7	9	4039108.172	32.804	.000[a]
	Residual	3693891.073	30	123129.702		
	Total	4.005E7	39			

a. Predictors: (Constant), NPL Mandiri, OER BCA, NIM BRI, NIM Mandiri, OER BRI, NPL BCA, OER Mandiri, NIM BCA, NPL BRI

b. Dependent Variable: IHSG

Based on table 4 above obtained value of F-calculate of 32.804 with a value of F-table at 2.20 (33.615>2.20) and significant value for 0.000 which showed that simultaneous variables OER, NIM and NPL of BCA, BRI and Mandiri Bank significant effect on the ICI .

T Test (Partial)

If the value of sig<0.05 then the independent variable (X) has a partial effect on the dependent variable. However, if the value of sig>0.05 then the independent variable there is no partial effect on the dependent variable (Rianto, 2018).

Table 5. T Test(Partial)

Model	t	Sig.
(Constant)	2.054	.049
OER BCA	-1.039	.307
NIM BCA	.516	.610
NPL BCA	2.351	.025
OER BRI	1.729	.094
NIM BRI	-4.015	.000
NPL BRI	-1.502	.144
OER Mandiri	-3.665	.001
NIM Mandiri	2.180	.037
NPL Mandiri	3.003	.005

a. Dependent Variable: IHSG

Based on the table above it is found that the value of OER and NIM variables from BCA has a value of sig > 0.05, which means that the OER variable and the NIM at BCA have no significant effect on ICI. However, the NPL variable of BCA has a value of sig < 0.05 which means that the variable NPL at BCA effect ICI. Meanwhile, at BRI the NIM variable has a value of sig < 0.05, which means the NIM variable at BRI has a significant

effect on ICI, but the OER and NPL variables of BRI have a value of sig>0.05, which means the OER and NPL variables at BRI have no significant effect on ICI and on the OER, NIM and NPL variables at Mandiri Bank have a sig <0.05 meaning that the BOPO, NIM and NPL variables from Mandiri Bank have a significant effect on the ICI.

Coefficient of Determination

The coefficient of determination can be seen by using the value of the adjusted R square (Alfaruq et al., 2019).

Table 6. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. The Error of The Estimate	Durbin-Watson
	.953[a]	.908	.880	350.89842	1.734

a. Predictors: (Constant), NPL Mandiri, OER BCA, NIM BRI, NIM Mandiri, OER BRI, NPL BCA, OER Mandiri, NIM BCA, NPL BRI

b. Dependent Variable: IHSG

Based on the SPSS output above the Determination Coefficient (Adjusted R Square) value is 0.880. This can be explained that the dependent variable ICI (Y) is influenced by the independent variables OER, NIM, and NPL from BCA, BRI, and Mandiri Bank by 88 %, while the remaining 12 % is influenced by other factors outside the model. Based on the above research it can be seen that at BCA only it's NPL variables that affect the ICI, and has a positive influence, meaning that any increase in NPL value at the BCA can cause an increase in the ICI value and any decline in NPL value at the Bank BCA can cause a decrease on the value of the ICI. BRI has an influence on the ICI only NIM, NIM at Bank BRI has a negative influence on the ICI, which means that any increase in the value of the NIM at the BRI will cause a decrease in the ICI value and any decline in the value of the NIM at the BRI can cause an increase on the value of the ICI. Meanwhile, at Mandiri Bank, all variables affect the ICI. However, the NIM and NPL variables of Mandiri Bank have a positive influence on the ICI, which means that any increase in the value of NIM and NPL in Mandiri Bank can cause an increase in the ICI value, while the OER variable in Mandiri Bank has a negative influence on the ICI, which means that each increase in the value of OER Mandiri Bank can cause impairment of ICI and any decline in the value of OER at the Mandiri Bank can cause an increase in the value of the ICI. This is the opposite direction from research (Nureny, 2019) which concluded that the Net Interest Margin (NIM), Non-Performing Loans (NPL), and Operational Efficiency Ratio (OER) partially NIM, NPL and OER did not significantly influence the index stock price.

CONCLUSION

The results of the simultaneous test (F test), indicate that there is a significant influence between the independent variables on BCA, BRI, and Mandiri Bank on the ICI. Based on the t-test, it was found that BCA had the NPL variable influencing the ICI. Meanwhile, BRI Bank has an influence on ICI only for NIM and all variables of Mandiri Bank affect the ICI. Based on the test Adjusted R Square result shows that the independent variables (OER, NIM, and NPL) at BCA, BRI, and Mandiri Bank influence the dependent variable (ICI) at 88%. While the remaining 12% is influenced by other factors outside the model. From the test results above it was found that the Mandiri Bank has the most influential independent variables towards ICI, so we can conclude that Mandiri Bank has more influence on ICI compared to BRI and BCA.

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