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

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### INTRUODUCTION

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

Latifah, Sumantri

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 (X1), b. Net Interest Margin (NIM) Bank BCA (X2), c. Non-Performing Loan (NPL) Bank BCA (X3), d. Operational Efficiency Ratio (OER) Bank BRI (X4), e. Net Interest Margin (NIM) Bank BRI (X5), f. Non-Performing Loan (NPL) Bank BRI (X6), g. Operational Efficiency Ratio (OER) Bank Mandiri (X7), h. Net Interest Margin (NIM) Bank Mandiri (X8), i. Non-Performing Loan (NPL) Bank Mandiri (X9). (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 \( Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \) (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 (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 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 \( Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \) and can be explained as follows:
**The Effect of BCA, BRI and Bank Mandiri Performance on The Indonesia Composite Index**

Latifah, Sumantri

| Model            | Unstandardized Coefficients | 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:

\[
Y = 6803.330 - 25.850X_1 + 141.536X_2 + 3241.527X_3 + 48.925X_4 - 497.898X_5 - 670.297X_7 + 927.412X_8 + 1478.617X_9
\]

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

1. The constant \((\alpha)\) of 6803.330 shows the constant of ICI \((Y)\), assuming the value of each independent variable \((X_1, X_2, X_3, X_4, X_5, X_7, X_8, X_9)\) 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<sup>a</sup> | .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. |
|-----------|----------------|----|-------------|-------|------|
| Regression| 3.635E7        | 9  | 4039108.172 | 32.804| .000 |
| 1 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-calculated 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 BRI have no 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 | .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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Latifah, Sumantri

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