



## The Impact of BOPO, ROE and NIM on Corporate Value: An Empirical of Banking Sector in LQ45 Stock

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### ABSTRACT

The purpose of this study is to determine how the development of Operating Expenses to Operating Income, Return On Equity, Net Interest Margin and *Price Earning Ratio* and how the variable effect of Operating Expenses on Operating Income, *Return On Equity*, and *Net Interest Margin* partially and simultaneously on the Company Value proxied by PER ( *Price Earning Ratio*). The method used in this research is descriptive quantitative with multiple linear regression analysis. The results showed that the variables Operating Expenses to Operating Income, *Return On Equity* partially had a significant effect, and the *Net Interest Margin* variables partially did not have a significant effect on the *Price Earning Ratio*. Variable Operating Expenses to Operating Income, *Return On Equity*, *Net Interest Margin* simultaneously have a significant effect on the *Price Earning Ratio*.

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### INTRODUCTION

The main goal of a company is to increase the value of the company characterized by a high level of prosperity of shareholders. To achieve this goal, a company needs many parties involved, namely from the internal and external sides. On the internal side, there is the owner of the company, also the managerial party consisting of the board of commissioners, directors and managers. On the external side, investors are the main pillars for achieving company goals, both foreign and local investors so that the company continues to develop and is able to expand its business (Awaluddin, 2022; Iskanto, 2015; Syihhabudin et al., 2023).

There are two factors that affect the rise and fall of company value, namely internal factors and external factors. Internal factors are variables that can be controlled by the company because they are *internal*. These variables include company size, profitability, dividend policy and funding decisions. External factors are variables that cannot be controlled by the company, including interest rates, foreign exchange rates, inflation, and capital market conditions. However, the company is able to control only internal variables, one of which is the profitability of the enterprise. Fluctuations in the company's profitability can be seen in the financial statements, ratios that can be representative in the banking sector include Corporate Expenses of Corporate Revenue (BOPO), Return On Equity (ROE), and Net Interest Margin (NIM).



Table 1. Fluctuations of BOPO, ROE and NIM

Year	PER	BOPO	ROE	NIM
2011	12,64	69,83	27,86	6,46
2012	12,04	67,6	26,92	6,26
2013	9,8	66,75	25,63	6,38
2014	12,39	69,95	23,41	6,28
2015	15,49	72,23	21,57	6,48
2016	20,75	73,27	17,71	6,38
2017	16,56	70,39	17,49	6,07
2018	14,69	69,78	17,3	5,77
2019	39,97	73,59	13,5	5,39
2020	15,09	81,93	9,96	4,91

Source: IDX

The movement of BOPO, ROE and NIM is quite volatile, so did PER. However, the increase in the third profitability ratio is not always directly proportional to the increase in PER. For example, in 2013, the decline in the value of BOPO should have caused PER to increase, but the opposite happened, namely PER also decreased. Then when the NIM value increases, the PER decreases. Furthermore, in 2019, when the ROE value decreased, on the contrary, PER increased.

This research can provide an overview of how the variable Operating Expenses Operating Income (BOPO), Return On Equity (ROE), and Net Interest Margin (NIM) affect company value which is known from the large number of Price Earning Ratio (PER) so that it can be an illustration of how Investment decisions are made by investors. Also can be used as a reference for investment decisions to be made.

This study significant to be a guideline and reference in further research regarding the effect of Operational Expenses Operational Income (BOPO), Return On Equity (ROE), and Net Interest Margin (NIM) on Firm Value in the banking sector listed on the LQ45 stock index.

Research conducted by (Harahap & Hairunnisah, 2017) shows that partially ROE has no significant effect on Corporate Value. Also conducted by Halimah & Komariah, as partially BOPO has no significant effect on Corporate Value.

## LITERATURE REVIEW

BOPO is a ratio that measures a company's ability to effectively manage operating expenses (Kasmir, 2018). According to (Surat Edaran Bank Indonesia No.15/15/PBI/2013, 2013), the ideal BOPO ratio value is between 50% - 75% with a maximum value of 85%. ROE is a ratio that measures a company's ability to generate profits using shareholders' equity (Kasmir, 2018). According to (Bank Indonesia, 2015) the minimum ROE value is 12%. NIM is a ratio that measures the ability of bank management to manage productive assets to generate net interest income (Kasmir, 2018). According to (Peraturan Bank Indonesia No. 13/1/PBI/2011, n.d.) the best standard *Net Interest Margin* is more than 5% average banking.

Research conducted by (Indriawati et al., 2018) stated that profitability affects the movement of company value. In his research, it is said that investors tend to see the company's ability to obtain high profits in making investments. In addition, referring to a study conducted by (Nagara & Syafitri, 2018) is stated that company value is a description of the company's performance conditions that affect the market and investors' valuation of the company. If the financial performance is good, the returns obtained will have a big impact on the prosperity of the owner. In the study, the BOPO, ROE, and NIM variables had a significant effect on the value of companies proxied with PBV (*Price to Book Value*).

In calculating returns, it can be done using the Capital Assets Pricing Model (CAPM) or Arbitrage Pricing Theory (ABT) (Abdillah & Putra, 2021). However, in this study CAPM is more suitable for use because it is only related to one factor, namely profitability.

In addition, research conducted by (Harahap & Hairunnisah, 2017) proved that ROE, BOPO, and NIM have a significant effect on company value, as well as the (suwardika dan mustanda, 2017). (Halimah & Komariah, 2017) that BOPO and ROA have a significant effect on Company Value, research conducted I 2017 as well.

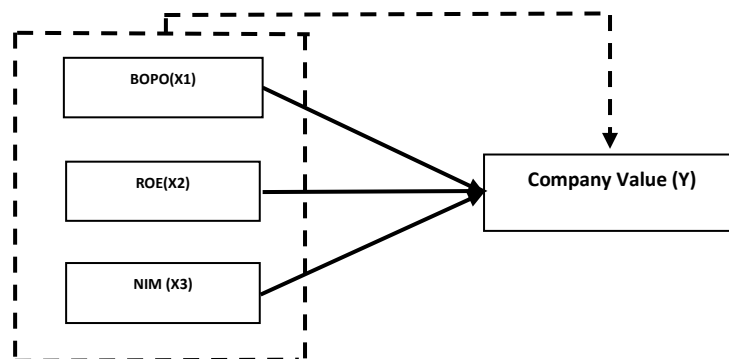


Figure 1. Research Paradigm

## METHOD

The data in this study were processed using the software called Eviews 12. This study uses secondary data, namely data obtained from an agency, book, journal, or other source that was not obtained directly by the researcher (Sugiyono, 2018) The data source comes from [www.idx.co.id](http://www.idx.co.id) and. The Banking Sector stock index LQ 45 was the population in this study and obtained four samples using *purposive sampling* techniques. The free variables in this study are Operating Income Operating Expenses, Return On Equity, and Net Interest Margin as well as Company Value as bound variables.

Table 2. Research Samples

No	Stock Code	Issuer Name
1	BBCA	PT. Bank Central Asia Tbk
2	BMRI	PT. Bank Mandiri (Persero) Tbk
3	BBRI	PT. Bank Rakyat Indonesia (Persero) Tbk
4	BBNI	PT. State Bank of Indonesia (Persero) Tbk

Source: Data processed.

## RESULT AND DISCUSSION

The data used in this study is panel data, which is a combination of time series and cross section data. So a stationarity test is needed to test the data so that false regressions do not occur caused by non-stationary time series data. Time series data is said to be stationary when the average value and variance are constant. The *t-statistical* value must be smaller than the *critical value* and the probability must be smaller than the significance level of 0.05. If the data is found to be stationary at the level level, it is continued to the level of *first difference*.



Table 3. BOPO Stationarity Test

Null Hypothesis: D(BOPO) has a unit root		
Exogenous: Constant		
Lag Length: 2 (Automatic - based on SIC, maxlag=9)		
	t-Statistic.	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-5.601412	<b>0.0000</b>
Test critical values:	1% level	-3.626784
	5% level	-2.945842
	10% level	-2.611531

Source: Data processed

The table 3 above shows the result of the stationariness test on the *first difference* with the probability of the *Augmented Dickey-Fuller test statistical* value of  $0.0000 < 0.05$  and the t-statistic value  $-5.601412 < \text{criticals value } -2.945842$ . Then it can be concluded that the BOPO variable has stationary data.

Table 4. ROE Stationarity Test

Null Hypothesis: D(ROE) has a unit root		
Exogenous: Constant		
Lag Length: 0 (Automatic - based on SIC, maxlag=9)		
	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-6.791982	<b>0.0000</b>
Test critical values:	1% level	-3.615588
	5% level	-2.941145
	10% level	-2.609066

Source: Data processed

The table 4 shows if one variable uses *first difference*, then the other variable must also use the same level. The *Augmented Dickey-Fuller* probability value is  $0.0000 < 0.05$  and the *t-statistical* value is  $-6.791982 < \text{critical value } -2.941145$ . So it can be concluded that the *Return On Equity* variable has stationary data.

Table 5. NIM Stationarity Test

Null Hypothesis: D(NIM) has a unit root		
Exogenous: Constant		
Lag Length: 0 (Automatic - based on SIC, maxlag=9)		
	t-Statistic	Prob.*
<b>Augmented Dickey-Fuller test statistic</b>	-7.384726	<b>0.0000</b>
Test critical values:	1% level	-3.615588
	5% level	-2.941145
	10% level	-2.609066

Source: Data processed

The table 5 shows the probability value of the Net Interest Margin variable is  $0.0000 < 0.05$  and the *t-statistical* value is  $-7.384726 < -2.941145$ . based on these results, it can be concluded that the data on the *Net Interest Margin* variable is stationary because it meets the required criteria.

Table 6. PER Stationarity Test

Null Hypothesis: D(PER) has a unit root		
Exogenous: Constant		
Lag Length: 0 (Automatic - based on SIC, maxlag=9)		
	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-9.508801	0.0000
Test critical values: 1% level	-3.615588	
5% level	-2.941145	
10% level	-2.609066	

Source: Data processed

Based on table 6 results of data processing carried out by the researcher above show that the value the probability of the Augmented Dickey-Fuller test is  $0.0000 < 0.05$  and the t-statistic value is  $-9.508801 < \text{critical value } -2.941145$ . so it can be concluded that the data on the variable is stationary. After stationary tests were carried out on the four variables studied, it was found that all variables had stationary data because they met the criteria, namely probability  $< 0.05$  significance level and t-statistic value  $< \text{critical value}$ .

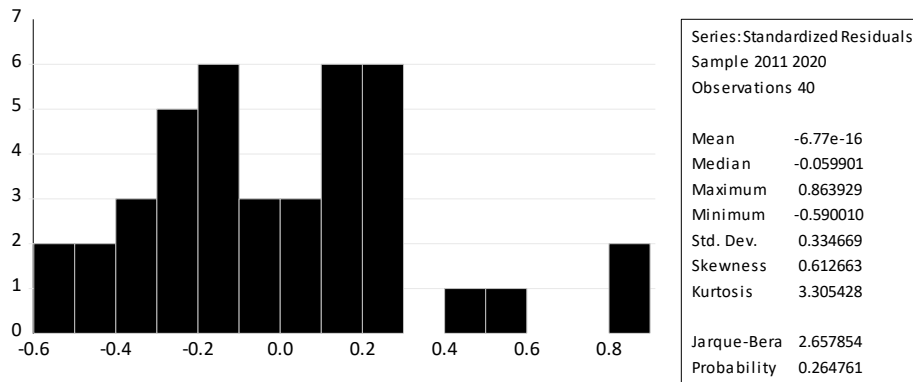


Figure 2. Normality Test

Based on the above normality test on Figure 2, a *Jarque-Berra* value of  $0.264761 > 0.05$  was obtained. So it can be concluded that the model in this study is normally attributed.

The MulticholnearityTest aims to find out whether there is a correlation between free variables or not. A good correlation value between variables is  $< 0.10$  so as to avoid the symptoms of multicollinearity.

Table 7. Multicollinearity Test

	BOPO	ROE	BEFORE
BOPO	1.000000	-0.667295	-0.318854
ROE	-0.667295	1.000000	-0.641946
BEFORE	-0.318854	-0.641946	1.000000

Source: Data processed



From the table 7 result of the multicholnearity test, we can see the entire correlation value between free variables  $<0.10$ . Then it can be concluded that the regression model in this study does not occur symptoms of multicholnearity.

The Heteroskedasticity test aims to determine whether there is a variance dissimilarity that the residual has in the regression model. The data can be said to have no symptoms of heteroskedasticity if the  $pvalue > 0.05$ .

Table 8. Heteroskedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	6.487988	9.981229	0.650019	0.5198
BOPO	-0.007528	0.122166	-0.061624	0.9512
ROE	0.059930	0.135449	0.442451	0.6608
BEFORE	-0.530269	0.758005	-0.699559	0.4887

Source: Data processed

Based on the table 8 above, it can be seen that the entire free variable has a probability value of  $> 0.05$ . Then it can be concluded that the regression model in this study did not occur symptoms of heteroskedasticity.

Table 9. Autocorrelation Test

R-squared	0.281757	Mean dependent var	15.35575
Sum squared resid	1192.744	<b>Durbin-Watson stat</b>	<b>1.785594</b>

Source: Data processed

The table 9 above shows that *Durbin Watson's* (DW) value of 1.784494 was obtained. For  $k = 3$  and  $N = 40$  obtained a value of  $du$  1.6589 less than a DW value of 1.785594 less than  $(4-DU)$  2.3411. So that the value of  $DU < DW < (4-DU)$  or  $1.6589 < 1.785594 < 2.3411$ , the regression model in this study did not occur autocorrelation.

The Chow Test is performed to determine the most appropriate model between the Common Effect Model (CEM) and the Fixed Effect model (FEM).

By hypothesis:

Ho: *Common Effect Model*

Ha: *Fixed Effect Model*

Accept Ho if the  $pvalue > 0.05$  so that the *Common Effect Model* is appropriate

Reject Ho if the  $pvalue < 0.05$  so that the *Fixed Effect Model* is appropriate.

Table 10. Chow Test

Redundant Fixed Effects Tests			
Equation: Untitled			
Test cross-section fixed effects			
Effects Test	Statistic	D.F.	Prob.
Cross-section F	2.949309	(3,33)	0.0470

Cross-section Chi-square	9.501387	3	0.0233
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Source: Data processed

Based on the results of the table 10 Chow Test above, a probability of  $0.0470 < 0.05$  was obtained. It can be concluded that  $H_0$  was rejected and  $H_a$  was accepted. So the *Fixed Effect Model* is the model selected in this Chow Test.

The *Hausman Test* is performed to determine the most appropriate model between the Fixed Effect Model (FEM) and the *Random Effect Model* (REM).

By hypothesis:

$H_0$ : *Random Effect Model*

$H_a$ : *Fixed Effect Model*

Accept  $H_0$  if the *pvalue*  $> 0.05$  so that the *Random Effect Model* is appropriate.

Reject  $H_0$  if the *pvalue*  $< 0.05$  so that the *Fixed Effect Model* is appropriate

Table 11. Hausman Test

Correlated Random Effects - Hausman Test			
Equation: FEM			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.273816	4	<b>0.0820</b>

Source: Data processed

Based on the results of the Hausman Test above, a probability of  $0.0820 > 0.05$  was obtained. It can be concluded that  $H_0$  is accepted and  $H_a$  is rejected So that the *Random Effect Model* is the chosen model.

The *Lagrange Multiplier* test is performed to determine the most suitable model between the Common Effect Model or the *Random Effect Model*.

By hypothesis:

$H_0$ : *Common Effect Model*

$H_a$ : *Random Effect Model*

Accept  $H_0$  if the *pvalue*  $< 0.05$  so that the *Fixed Effect Model* is appropriate.

Reject  $H_0$  if the *pvalue*  $> 0.05$  so that the *Random Effect Model* is appropriate.

Table 12. Lagrange Test

Lagrange Multiplier Tests for Random Effects			
Null hypotheses: No effects			
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives			
	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	0.144876	0.017553	0.162430
	(0.7035)	(0.8946)	(0.6869)

Source: Data processed

Based on the results of the *Lagrange Multiplier* Test above, Breusch-Pagan values of  $0.7035 > 0.05$  were obtained. It can be concluded that  $H_0$  was rejected and  $H_a$  was accepted So that the *Random Effect Model* was the chosen model.



Table 13. EstimationModelSelected Random Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	67.73335	13.29393	5.095058	0.0000
BOPO	-0.627145	0.162711	3.854338	0.0005
ROE	0.515455	0.180404	2.857222	0.0071
BEFORE	0.217457	1.009582	0.215393	0.8307
Weighted Statistics				
Root MSE	5.460642	R-squared	0.281757	
Mean dependent var	15.35575	Adjusted R-squared	0.221904	
S.D. dependent var	6.525380	S.E. of regression	5.756022	
Sum squared resid	1192.744	F-statistic	4.707448	
Durbin-Watson stat	1.785594	Prob(F-statistic)	0.007137	
Unweighted Statistics				
R-squared	0.281757	Mean dependent var	15.35575	
Sum squared resid	1192.744	Durbin-Watson stat	1.785594	

Source: Data processed

Based on the data above, a multiple linear regression equation of panel data can be obtained as follows:

$$\text{Price Earning Ratio} = 67.73335 - 0.627145(\text{BOPO}) + 0.515455(\text{ROE}) + 0.217457(\text{NIM})$$

The coefficient of determination is used to find out the extent of the influence exerted by the free variable in describing the variance of the bound or dependent variable.

Table 14. Coefficient of Determination

R-squared	0.281757	Mean dependent var	15.35575
Sum squared resid	1192.744	Durbin-Watson stat	1.785594

Source: Data processed

Based on the above table of coefficients of determination, the value of the R-squared is 0.281757. This means that the ability of the variables to describe the related variables is only 28.18%, while the remaining 71.82% is influenced by other variables that were not studied in this study.

The purpose of the t test is to determine the relationship or influence of each independent variable to the independent variable. Partial hypothesis testing can be done by comparing the t-count with the t-table in a significant degree  $\alpha$  0.05 or 5%. The criteria for acceptance or rejection of the partial hypothesis or Test t are as follows:

If t-count < t-table then  $H_0$  is accepted, then if t-count > t-table then  $H_0$  is rejected.

$\alpha = 0,05$  ; n = sample ; k = variable (dependent and independent)

t-table = n – k = 40 – 4 = 36

Then : **t-table = 1.68830**

Table 15. t-test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	67.73335	13.29393	5.095058	0.0000

<b>BOPO</b>	-0.627145	0.162711	3.854338	0.0005
<b>ROE</b>	0.515455	0.180404	2.857222	0.0071
<b>BEFORE</b>	0.217457	1.009582	0.215393	0.8307

Source: Data processed

The results of the partial hypothesis or t-test for this study are:

1. Based on the t test table above, it can be concluded that the BOPO variable has a regression coefficient value of -0.627145 which means that the BOPO variable has a negative influence on the Company Value. If there is an increase in BOPO by 1 unit, it will reduce the Company Value (*Price Earning Ratio*) by -0.627145. The BOPO variable has a significant effect on the Company Value (*Price Earning Ratio*) because the t-count value is  $3.854338 > t\text{-table } 1.68830$  and the probability value is  $0.0005 < 0.05$  so it rejects  $H_0$  and accepts  $H_a$ . Based on these results, it can be concluded that BOPO has a negative and significant influence on the Company Value of Banking Companies LQ 45 Indonesia Stock Exchange for the 2011-2020 period.
2. Based on the t test table above, it can be taken that the ROE variable has a regression coefficient value of 0.515455 which means that the ROE variable has a positive influence on the increase in Company Value. Every increase of 1 unit of ROE variable, there is also an increase of 0.515455 in the Company Value. The ROE variable also has a significant influence because the t-count value is  $2.857222 > t\text{-table } 1.68830$  and the probability value is  $0.0071 < 0.05$  so it rejects  $H_0$  and accepts  $H_a$ . Based on these results, it can be concluded that ROE has a positive and significant influence on the Company Value of Banking Companies LQ 45 Indonesia Stock Exchange for the 2011-2020 period.
3. Based on the t-test table above, it can be taken that the NIM variable has a regression coefficient value of 0.217457 which means that the NIM variable has a positive influence on the increase in Company Value. Every increase of 1 unit of NIM variable, there is also an increase of 0.217457 in the Company Value. However, the NIM variable has an insignificant influence because the t-count value is  $0.215393 < t\text{-table } 1.68830$  and the probability value is  $0.8307 > 0.05$  so it rejects  $H_a$  and accepts  $H_0$ . Based on these results, it can be concluded that NIM has a positive but not significant influence on the Company Value of Banking Companies LQ 45 Indonesia Stock Exchange for the 2011-2020 period.

The F Significance Test or F test is carried out to determine the influence of all independent variables on the dependent variable simultaneously.

$$\alpha = 0,05 ; df 1 = k - 1 = 4 - 1 = 3 (N_1) ; df 2 = n - k = 40 - 4 = 36 (N_2)$$

Then : f-table = **2.87**

Table 16. f Test			
Weighted Statistics			
Root MSE	5.460642	R-squared	0.281757
Mean dependent var	15.35575	Adjusted R-squared	0.221904
S.D. dependent var	6.525380	S.E. of regression	5.756022
Sum squared resid	1192.744	F-statistic	4.707448
Durbin-Watson stat	1.785594	Prob(F-statistic)	0.007137



Source: Data processed

The simultaneous hypotheses or f tests in this study are:

Ho :  $\beta_1, \beta_2, \beta_3, \beta_4 = 0$  (There is no significant effect between Operating Income Operating Expenses (BOPO), *Return On Equity* (ROE), and *Net Interest Margin* (NIM) simultaneously on the Company Value of the Banking Sector LQ 45 Stock Index for the 2011-2020 Period).

Ha:  $\beta_1, \beta_2, \beta_3, \beta_4 \neq 0$  (There is a significant influence between Operating Income Operating Expenses (BOPO), *Return On Equity* (ROE), and *Net Interest Margin* (NIM) simultaneously on the Company Value of the Banking Sector LQ 45 Stock Index for the 2011-2020 Period).

Based on the table of f test results above, an *F-statistical* or F-count value of 4.707448 > an F-table value of 2.87 with a probability value of 0.007137 < 0.05 was obtained. So it can be concluded that independent variables affect the dependent variables simultaneously, which means that Ho is rejected and Ha is accepted.

## DISCUSSION

Based on the results of the study from the effect of Operating Income Operating Expenses, *Return On Equity*, and *Net Interest Margin* on the Company Value of Banking Companies LQ 45 for the 2011-2020 period, the following conclusions can be drawn:

The development of Operating Income Operating Expenses (BOPO) of banking companies LQ 45 among which the lowest BOPO value is owned by PT. Bank Central Asia in 2018 with a gain of 58.20%. Highest score by PT. Bank Negara Indonesia with 93.30% in 2020. The lowest average value occurred in 2013 at 66.75% and the highest average in 2020 at 81.93%.

The development of *Return On Equity* (ROE) of LQ 45 banking companies includes the lowest ROE value of 2.9% by PT. Bank Negara Indonesia in 2020 with the highest value of 42.49% was achieved by PT. Bank Rakyat Indonesia in 2011. The lowest average value occurred in 2020 with a gain of 9.95% and the highest average of 30.41% in 2011. The development of *Net Interest Margin* (NIM) of banking company LQ 45 among which the highest NIM value was obtained by PT. Bank Rakyat Indonesia in 2011 was 9.58% and the lowest owned by PT. Bank Negara Indonesia by 4.5% in 2020. The lowest average value occurred in 2020 with a gain of 5.37% and the highest average occurred in 2015 of 6.88%.

The development of the *Price Earning Ratio* of banking companies LQ 45 among which the lowest PER value is owned by PT. Bank Negara Indonesia amounted to 8.51x in 2013 and the highest was obtained by PT. Bank Central Asia at 35.08x. The lowest average was in 2013 at 10.78 and the highest average in 2019 at 23.14x.

Partially, Operating Income Operating Expenses (BOPO) negatively and significantly affect the value of the banking company LQ 45. *Return On Equity* (ROE) has a positive and significant influence on the value of the banking company LQ 45. *Net Interest Margin* (NIM) has a positive but not significant influence on the value of the banking company LQ 45. Simultaneously, Operating Expenses of Operating Income (BOPO), *Return On Equity* (ROE), *Net Interest Margin* (NIM) affect the Value of Banking Companies LQ 45 for the 2011-2020 period.

## CONCLUSION

This paper shows that the movement of company value depends on several variables, including Operating Income, Operating Expenses (BOPO), *Return On Equity* (ROE), and *Net Interest Margin* (NIM). Although partially, *Net Interest Margin* (NIM) does not have a significant effect. For future

research, it is recommended to examine the impact of other variables, both external and external such as macroeconomic impacts on company value.

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