AN INFLUENCE OF DEBT TO ASSET RATIO, TOTAL ASSET TURNOVER AND FIRM SIZE ON RETURN ON ASSET IN BUMN PERKEBUNAN NUSANTARA GROUP COMPANIES FOR THE 2016-2020 PERIOD

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Abstract. One of the state-owned companies that exists to support the national economy is the Perkebunan Group. The Company of Perkebunan Group is fully aware of the internal and external challenges related to finances as well as tight business competition, one of which is profitability which influences investors' interest in the returns provided. This research method uses multiple linear regression analysis with a purposive sampling technique. Data processing uses tools in the form of the EVIEWS 12 statistical application with the best Random Effect Model (REM) test results. The results of the f test research show that Debt to Asset Ratio, Total Asset Turnover and Firm Size simultaneously influence Return on Assets with a probability value of 0.000000. The results of the t test research show that the Debt to Asset Ratio and Total Asset Turnover variables partially influence Return on Assets, while the Firm Size variable partially has no influence on Return on Assets. The research results of the coefficient of determination in this study were 0.6553, meaning that the ability to explain the model in this study was 65.5%. So this research can be used as a consideration in evaluating the performance of the BUMN Perkebunan Nusantara Group company to increase company value.

Keywords: Debt to Asset Ratio, Total Asset Turnover, Firm Size, Return on Asset

1 INTRODUCTION

One of the BUMN companies that is currently experiencing a change in the business climate is the Perkebunan Nusantara Group, which is because the company is facing strict competition so it affects the ability of the company to compete. In view of this, the Perkebunan Group is required to implement a variety of organized and planned strategies that can affect significant improvements in the company's operational and financial improvements (1).

Perkebunan Group is present with the aim of increasing the national income and growth of the national economy as a whole. Therefore, the Group Perkebunan should be able to make its contribution because the government gives capital injections to a number of BUMN including Group Perkebunan to maximize the performance of the company (2).

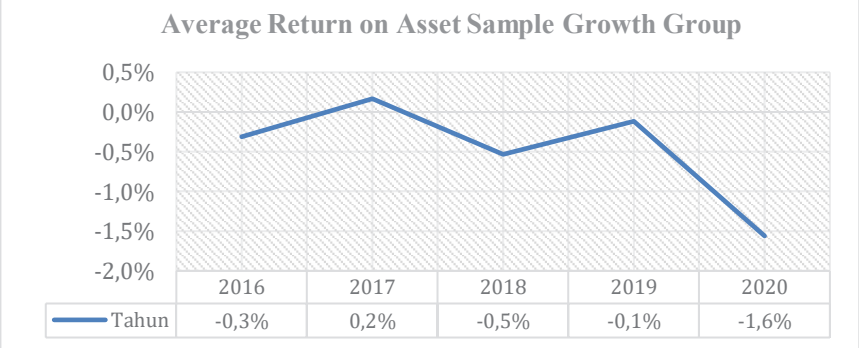
Perkebunan Group is fully aware that running a business presents internal and external problems to the company. The majority of difficulties faced by companies are the result of financial obligations of previous periods that have had a negative impact on the company's operations. As for the biggest challenge facing companies, it is to improve their financial performance due to the heavy burden of debt. The company's effort is a financial restructuring that is concentrated on two things, namely, withdrawal of new loans and bank debt escalation (1).

Perkebunan Group recorded losses in 2016 due to a decrease in asset value (impairment) caused by the value of non-productive assets that did not reach its value potential (3). The high burden on the Group's Perkebunan due to inefficient use of off-farm assets can affect productivity (4). One of the subsidiaries of the Perkebunan Group suffered from poor financial performance, which affected the suspension of the entire operational activities of one of its subsidiary companies in an effort to restructure and improve the situation (5). Still faced with poor corporate conditions, Perkebunan Group in 2019 has an unmanageable debt value which affects the overall performance of the company (6). The problem of debt and poor performance is still at the root of the problem of the Perkebunan Group. The same thing happened in 2020 when the company was burdened with debt of Rs 4.8 trillion. From this issue, the organizational structure was modified by cutting the number of directions in each company from three directions to one (7).

Seeing from the description of the phenomenon above, a useful metric to assess the financial performance of a company is profitability. A profitability ratio called a Return on Assets (ROA) is used to measure how well a business uses its assets to generate profits. (signalling theory) (8).

The following is a graph of the development of the ROA of the Group Perkebunan Nusantara Company during the five-year period 2016-2020:

Picture 1.1 Average Growth ROA of Group Perkebunan 2016-2020



(Source: *website* Perkebunan Grup Company)

The graph above shows that the Group Perkebunan ROA is declining, especially in 2020. Companies with good performance will generate ROAs from year to year that are increasing anyway. Based on the illustration of Figure 1.1 above, it is indicated that the Group Perkebunan have problems with the profitability ratio of ROA. It is therefore very important to carry out further research regarding the causes of the decline in the group Perkebunan profitability. As for the alleged factors influencing the profitability projected by the Return on Asset are Debt to Asset Ratio, Total Asset Turnover and Firm Size.

Over the past five years, the Group Perkebunan have had an average DAR of 51% of this percentage showing good criteria in meeting the industry standard DAR (9). Although there was a fluctuation of DAR during the period, in 2016-2017 DAR increased by 5% this happened because of the increase in short-term bank debt. However, the decline of DAR occurred in 2018 by 1% due to a decrease in the debt of banks in the form of outstanding loans to banks. The increase of DAR was again in 2019 by 5% driven by the increase of tax debts. Entering 2020, Perkebunan Group experienced a decline in the value of long-term debt that pushed DAR down by 1%.

The ratio of TATO Group Perkebunan during the period 2016-2020 tends to experience value increases. However, the Group Perkebunan in the five-year period has an average TATO of 0.28 times. The presentation indicates that TATO's industry standards are not as good as twice, indicating that the company has not been able to maximize its assets to generate sales (9). In 2016-2017, TATO experienced an increase of 0.05 times this occurred due to an increase in revenues of all commodities. However, in 2018 there was a decrease of 0.09 times this due to sales of all goods below the estimated RKAP. TATO increases in 2019 and 2020 were 0.01 times and 0.03 times due to sales increases dominated by palm coconut.

Firm Size Group Perkebunan during the period of 2016-2020 experienced an increase in value. During the five-year period, the value of the size of the Group's Perkebunan company grew from year to year. The size of the company indicates that the company is able to make maximum profit from the assets it owns. In 2017, there was an increase in the company size of 97.3%, in 2018 of 6.6%, in 2019 of 4.3% and in 2020 of 1.6%. Although the Group has experienced a significant increase in firm size over the period of 5 years, the ROA obtained by the Group does not coincide with the increase in company size that significantly increased from year to year.

Based on the explanation of the variables above, it can be concluded that the Perkebunan Group is not operating well in carrying out its business. As evidenced by

recurring debt problems, under-standard asset management, and non-maximum sales. Perkebunan Group is one of the BUMN companies that has not distributed its dividend to shareholders in recent periods (10). The above phenomenon proves that in the course of that time the company could not give return to the state of the profits obtained. Division of deviden not performed by the Group Perkebunan indicates that there is something wrong with the management of assets that may interfere with the performance of the company so affecting the profit generated not maximum. Therefore, research on Debt to Asset Ratio, Total Asset Turnover and Firm Size against Return on Asset in Group Perkebunan is important to be studied in depth so that the results of the analysis of the variable being studied can be found and can be a finding in knowing specific factors that can affect the financial health of group Perkebunan.

From the background description of the problems that have been described above, the author took the title of the study: "An Influence of Debt to Asset Ratio, Total Asset Turnover and Firm Size on Return on Asset in BUMN Perkebunan Nusantara Group Companies for The 2016-2020 Period".

2 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Literature Review

Signalling theory is a theory of the presence of information asymmetry in financial statements with external parties. Companies protect themselves by offering a lower price to the company because they know more about the internal conditions and future prospects of the company than external parties (11). Asymmetry of information that covers reports and information from the company can provide guidance to stakeholders on how to make decisions based on the data in the report, which will affect the company (12).

Capital structure can be explained by the Pecking Order Theory which states that the main focus of management is carried out through internal transactions as the primary source of the margin profit a business generates from its operations. Businesses with big profits will be encouraged to use their profits as profits before using external funds or as debts if the business needs them. Alternatively, after using internal funds, managers have two more options, namely, taking debt and issuing shares. Managers would act in line with the Pecking Order Theory if they concentrated on providing funding in this way. Pecking Order Theory is based on the internal capability of a business, which covers its size and profitability, which is valued on the basis of potential capital gains (13).

A profitability ratio is a measure that is commonly used to measure how well a company is able to make a profit by using all its assets such as assets, capital and sales. According to (14) a profitability ratios is a ratio that measures how well the performance of a business in evaluating its ability to generate a profit over time and the level of management success in running a business. ROA is the ratio of a company's ability to use its assets to generate net profit, or how efficient the use of the assets, is shown (15). Here's the ROA formula:

$$Return\ on\ Assets\ = \frac{Earning\ After\ Tax}{Total\ Assets}$$

The following is an ROA indicator that can be a parameter for evaluating the effectiveness of companies utilizing assets in generating profits, according to (16):

Table 2.1 ROA Industry Standard

No	Industry Standard	Criteria
1	> 5,98%	Very Good
2	3,98% - 5,98%	Good
3	2,98% - 3,97%	Good Enough
4	1% - 2,97%	Less Good

Leverage is a ratio that shows how much debt is used for business expenditure. In general, the solvency ratio can be used as a guideline to determine how well a company can handle its long-term and short-term financial obligations (17). DAR is the ratio used to calculate how much business operating costs arise from debt. The larger the DAR ratio, the higher the financial risk associated with the company (15). Here's the DAR formula:

$$Debt\ to\ Asset\ Ratio\ = \frac{Total\ Debt}{Total\ Assets}$$

Here's an indicator of DAR that can be a parameter for assessing the company's dependence on debt in the financing of assets it owns, according to (9):

Table 2.2 DAR Industry Standard

No	Industry Standard	Criteria
1	≥ 90,00%	Bad
2	71,00% - 89,00%	Less Good
3	51,00% - 70,00%	Good

4	36,00% - 50,00%	Good Enough
5	≤ 35,00%	Very Good

Activity is the ratio used to assess how well a business uses its current resources, such as sales, loans, inventories, and other resources. The activity ratio is useful in evaluating a company's performance compared to its competitors based on periodic trends in comparative company analysis. The activity or asset management ratio is used to measure how well and efficiently a company manages its assets (18). TATO is the ratio used to assess how well the entire company's resources are allocated to enhance sales efforts. The more efficient the company's operations, the higher the ratio (15). Here's the TATO formula:

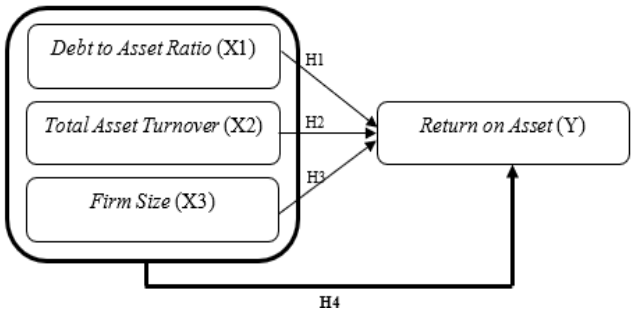
$$Total\ Assets\ Turnover\ = \frac{Sales}{Total\ Assets}$$

According to (9) the TATO indicator in looking at good company conditions is at least twice, which means the company is able to optimize the use of assets to generate sales.

Firm Size is a scale of measurement of the large and small corporations measured by the logarithm of the total natural assets (log size) or total sales. The size of the small business increases with the increase in total assets or sales, and vice versa. The financial characteristics of a company can be determined by looking at its size. Because they are more accessible or more flexible, large and stable corporations are more likely to gain capital from capital markets than small corporations.(19). Here's the firm size formula:

$$Firm\ Size\ =\ Ln(Total\ Asset)$$

2.2 Conceptual Framework



Picture 2.1 Conceptual Framework

Based on the theoretical description and conceptual framework above, the research hypothesis can be formulated as follows:

H1: It is suspected Debt to Asset Ratio has a significant impact on the Return on Assets in the BUMN Perkebunan Nusantara Group in the period 2016-2020.

H2: It is suspectedTotal Asset Turnover has a major impact on Return upon Assets of the BUMN Perkebunan Nusantara Group Company in the Period 2016-2020.

H3: It is suspected Firm Size has a substantial influence on the Return On Assets in BUMN Perkebunan Nusantara Group Company in the 2016-20 period.

H4: It is suspected Debt To Asset Ratio, Total Asset Turnover and Firm Size simultaneously have a significant effect on Returns On Asset in the BUMN Perkebunan Nusantara Group Company in the 2016-20 period.

3 RESEARCH METHODS

The research approach used in this study is an associative quantitative approach, which aims to find out the relationship between a bound variable and a free variable using secondary data. Population is the whole object being studied. The object of this study is the BUMN Farming Nusantara Group Company Period Year 2016-2020. The population of this research is the whole of the Nusantara Farming Group Company from Nusantara I Farming Department to Nusantara XIV Farming Company in the period of 2016-2020 which totalled 14 companies. The sampling technique used in this research is the non-random sampler technique. Using the purposive sampler selection technique to select samples from different populations based on certain criteria, namely, the annual financial report of BUMN Farming Nusantara I - XIV Company published in full from the period of 2016-2020. Based on these criteria there are 8 subsidiaries of BOMN Farmings Nusantara Group that are used as samples in this study. This is based on several reasons for sampling, namely the availability of data during the study year period and the completeness of the variable indicators studied. These companies are as follows:

Table 3.1 Sample BUMN Perkebunan Nusantara Group Company

NO	COMPANY CODE	COMPANY NAME
1.	PTPN 3	PT Perkebunan Nusantara III
2.	PTPN 4	PT Perkebunan Nusantara IV
3.	PTPN 7	PT Perkebunan Nusantara VII

4.	PTPN 9	PT Perkebunan Nusantara IX
5.	PTPN 10	PT Perkebunan Nusantara X
6.	PTPN 11	PT Perkebunan Nusantara XI
7.	PTPN 12	PT Perkebunan Nusantara XII
8.	PTPN 13	PT Perkebunan Nusantara XIII

The study uses a data processing tool called EVIEWS 12 software to test the impact of Debt to Asset Ratio, Total Asset Turnover and Firm Size on Return on Asset. The data used in this study is panel data. The following are the first four stages of data analysis, the panel data regression model to determine the best model used (CEM, FEM or REM) through the selection of the chow test model, the haudman test and the lagrange multiplier test. Second, the classical assumption test to assess whether the regressive model shows a significant relationship through the normality test, the multicolinerity test, and the heteroskedastisity test. Thirdly, double linear regression analysis to determine the influence of one variable on another variable, here's a double lineary regression:

$$Y = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + e$$

Dimana:

Y : *Return on Asset* (ROA)

a : konstanta

$\beta_1, \beta_2, \beta_3$: coefficient estimate variable X1, X2, X3

X_1 : *Debt to Asset Ratio* (DAR)

X_2 : *Total Asset Turnover* (TATO)

X_3 : *Firm Size*

i : BUMN Perkebunan Nusantara Grup Company

t : Period (year 2016-2020)

e : Standart eror

Fourthly, the hypothesis test is carried out with the t test to determine the partial influence between variables, the f test to find out the simultaneous influence of independent variables on dependent variables and the determination coefficient test (R^2) to measure the proportion of the independent variable in explaining the model in this study.

4 RESULTS AND DISCUSSION

This study aims to test and analyze the influence of DAR, TATO and Firm Size on Return on Asset on the BUMN Farming Group. Before testing the hypothesis, it is necessary to perform the following steps:

4.1 Panel Data Regression Model Selection Test

4.1.1 Chow Test

The Chow test is used to determine whether a fixed effect model (FEM) is better than a common effect model (CEM)

H0 = CEM model acceptable when cross-section prob > 0.05

H1 = FEM model acceptable when cross-section prob < 0.05

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.298896	(7,29)	0.0000
Cross-section Chi-square	47.079205	7	0.0000

(Source: EVIEWS 12 output (data processed 2023))

The chow test results showed that Chi-Square's cross-section probability value of 0.0000 < 0.05 then H0 was rejected and H1 received, which means that the better model used in the chow trial was the Fixed Effect Model (FEM).

4.1.2 Hausman Test

The Hausman test is used to choose between the Fixed Effect Model (FEM) and the Random Effect model (REM).

H0 = REM model acceptable when cross-section prob > 0.05

H1 = FEM model acceptable when cross-section prob < 0.05

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	4.153393	3	0.2454

(Source: EVIEWS 12 output (data processed 2023))

The test results showed that the cross-section probability value of 0.2454 > 0.05 then H0 was accepted and H1 was rejected, which means that a better model used in

the test was the Random Effect Model (REM).

4.1.3 Lagrange Multiplier Test

The Lagrange Multiplier test is used to choose between a common effect model (CEM) and a random effect model (REM).

H0 = CEM model acceptable when cross-section prob > 0.05

H1 = REM model acceptable when cross-section prob < 0.05

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	18.73402 (0.0000)	1.596239 (0.2064)	20.33026 (0.0000)

(Source: EVIEWS 12 output (data processed 2023))

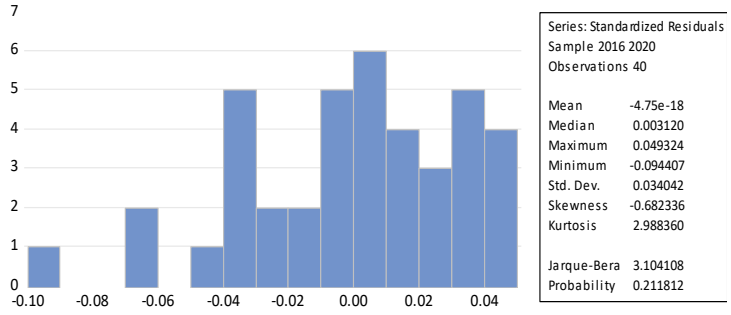
The LM test results showed that the cross-section probability value of 0.0000 < 0.05 then H0 was rejected and H1 was accepted, which means that the better model used in the LM trial is the Random Effect Model (REM).

Based on the results obtained above, the estimate model is known to be worthy of use with the 3 model significance tests that have been performed, so the model used is the random effect model (REM) as a reference in the classical assumption trial.

4.2 Classical Assumption Test

4.2.1 Normality Test

A normality test is a test used to test a regression test whether residual values are distributed normally or not, i.e. using a jarque-berra test. (JB test). If prob value > 0.05 then the data is distributed normally but if prob value < 0.05, the data does not distribute normally.



(Source: EVIEWS 12 output (data processed 2023))

From the results of the normality test above it can be seen that the probability value of Jarque-Bera (JB test) is 3,104108 > 0.05 with a p-value of 0.211812 > 0.05, it can

then be concluded that the residual value is normally distributed which means the classical assumption test in the regression model has met the normality assumptions.

4.2.2 Multicollinearity Test

A multicolinearity test is a test used to determine whether there is a correlation or relationship between free variables in a regression model. To detect whether there are correlations between variables it is possible to determine by looking at the VIF (Variance Inflation Factor) value. If the VIF value is below 10 then it can be concluded that the regression model does not have a multicolinearity problem.

	DAR	TATO	FS
DAR	1.000000	0.218571	-0.087614
TATO	0.218571	1.000000	-0.202821
FS	-0.087614	-0.202821	1.000000

(Source: EVIEWS 12 output (data processed 2023))

The results of the multicolinearity test above show that no independent variable has a correlation coefficient above > 0.90 so it can be concluded that the entire variable in this study has no multicolinarity problem.

4.2.3 Heteroscedasticity Test

The heteroskedastisity test is a test that is used to see whether in a regression model there is any residual variance inequality from one observer to another observer. This study of heteroskedastisity testing is carried out with absolute residual 2 test, when the probability value of each variable is > 0.05 then it can be concluded that there is no problem of heteroskedasty or regression model is not heteroshedasty.

Dependent Variable: RESABS
Method: Panel EGLS (Cross-section random effects)
Date: 08/03/23 Time: 20:42
Sample: 2016 2020
Periods included: 5
Cross-sections included: 8
Total panel (balanced) observations: 40
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001192	0.012029	0.099082	0.9216
DAR	-0.000288	0.002339	-0.123194	0.9026
TATO	0.002201	0.008193	0.268583	0.7898
FS	0.000117	0.000382	0.307371	0.7603

(Source: EVIEWS 12 output (data processed 2023))

The results of the heterocadastisity test above indicate that the value of each independent variable is > 0.05 so it can be concluded that there is no problem with heterocedasty.

4.3 Double Linear Regression Analysis Test

Double regression analysis is a test performed to determine the magnitude of the influence of the independent variables DAR, TATO, FS on the ROA dependent variable. This analysis uses the best model in the test that has been performed, the random effect model. The results of the random effects model are shown in the model below:

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 08/03/23 Time: 20:01
Sample: 2016 2020
Periods included: 5
Cross-sections included: 8
Total panel (balanced) observations: 40
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.025499	0.066362	-0.384245	0.7031
DAR	-0.132020	0.018369	-7.186970	0.0000
TATO	0.179548	0.060449	2.970249	0.0053
FS	0.001040	0.001980	0.525041	0.6028

(Source: EVIEWS 12 output (data processed 2023))

Based on the results of the regression analysis table above can be known the coefficient of each variable used in the analysis of double regression.

$$Y = \alpha + \beta_1 DAR_{it} + \beta_2 TATO_{it} + \beta_3 FS_{it} + e$$

$$Y = -0{,}025499 - 0{,}132020X_1 + 0{,}179548X_2 + 0{,}001040X_3 + e$$

The multiplication of the regression equation above is as follows:

a. Coefficient

   A constant coefficient of -0,025499 means that when DAR, TATO and firm size are 0 then ROA values have decreased by α that is 0,025499.

b. Coefficient Regresion Debt to Asset Ratio

   The value of the DAR coefficient of -0,132020 shows that there is a negative or indirect relationship between DAR and ROA. This indicates that if the DAR variable has an increase of 1% then the ROA value will fall by 0.132020 assuming other variables are fixed.

c. Coefficient RegresionTotal Asset Turnover

   The TATO coefficient value of 0.179548 indicates that there is a positive or directional relationship between TATO and ROA. This indicate that if the TATO variable is increased by 1% then the ROA value will increase by 0.17950 assuming other variables are constant.

d. Coefficient Regresion Firm Size

The value of a firm size coefficient of 0.001040 indicates that there is a positive or direct relationship between firm size and ROA. This suggests that if the firm size variable is increased by 1% then the ROA value will increase by 0.00140 assuming other variables are constant.

4.4 Hypothesis Test

4.4.1 T Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.025499	0.066362	-0.384245	0.7031
DAR	-0.132020	0.018369	-7.186970	0.0000
TATO	0.179548	0.060449	2.970249	0.0053
FS	0.001040	0.001980	0.525041	0.6028

(Source: EVIEWS 12 output (data processed 2023))

Based on the above table, the results of the t test indicate the impact of DAR, TATO and firm size on ROA in detail described below:

a. The effect of Debt to Asset Ratio on Return on Asset

Debt to Asset Ratio has a coefficient value of -0,132020 which is a negative value. From such a value it can be interpreted that DAR has a negative effect on ROA and it is known that DAR have a significance value of 0,0000 < 0,05 meaning that DAR partially has a significant effect on the ROA. The result of the t test on the variable DAR is obtained t count of 7,1869 > t which is the table 1,683851 then H0 is rejected and H1 is accepted meaning that the Variable DAR has significant impact on the return on asset. (ROA).

b. The effect of Total Asset Turnover on Return on Asset

Total Asset Turnover has a coefficient value of 0.179548, which is a positive value. From these values it can be interpreted that TATO has a positive influence on ROA and it is known that Tato has a probability value of 0,0053 < 0,05, which means TATO partially has a significant influence upon ROA. The test results on TATO variable obtained t count of 2.970249 > t table is 1.683851 and the significance value is 0.0053< 0,05 then H0 is rejected and H1 is accepted meaning TATO is significantly influenced by ROA.

c. The effect of Firm Size on Return on Asset

Firm Size memiliki nilai koefisien sebesar 0,001040 yakni bernilai positif. Dari

nilai tersebut dapat diinterpretasikan bahwa *firm size* memiliki nilai probabilitas sebesar 0,6028 > 0,05 artinya *firm size* secara parsial tidak berpengaruh terhadap ROA. Hasil uji t pada variabel FS diperoleh t hitung sebesar 0,525041 < t tabel yaitu 1,683851 dan nilai signifikansi 0,6028 > 0,05 maka H0 diterima dan H1 ditolak artinya variabel FS tidak berpengaruh terhadap ROA.

4.4.2 F Test

R-squared	0.655324	Mean dependent var	-0.009392
Adjusted R-squared	0.626601	S.D. dependent var	0.032351
S.E. of regression	0.019768	Sum squared resid	0.014068
F-statistic	22.81530	Durbin-Watson stat	2.067525
Prob(F-statistic)	0.000000		

(Source: EVIEWS 12 output (data processed 2023))

Firm Size has a coefficient value of 0.001040 which is a positive value. From these values it can be interpreted that firm size has a probability value of 0,6028 > 0.05 which means firm size partially has no influence on ROA. The result of the test t on the FS variable obtained t count of 0.525041 < t table is 1.683851 and the significance value is 0.6028> 0.05 then H0 is accepted and H1 is rejected meaning FS variables are not affected by ROA.

4.4.3 Determination Coeffisient Test

R-squared	0.655324	Mean dependent var	-0.009392
Adjusted R-squared	0.626601	S.D. dependent var	0.032351
S.E. of regression	0.019768	Sum squared resid	0.014068
F-statistic	22.81530	Durbin-Watson stat	2.067525
Prob(F-statistic)	0.000000		

(Source: EVIEWS 12 output (data processed 2023))

Based on the results of the determination coefficient test above, the adjusted R-Square value is 0.655324 or 65,5324%. The value of this determination factor shows that independent variables consisting of DAR, TATO and firm size are able to explain ROA variables, while the remaining 34.4% are influenced or explained by other variables not included in the research model.

4.5 Result

4.5.1 The effect of Debt to Asset Ratio on Return on Asset

Based on the results of the test of the above hypothesis, it is known that DAR has a significant negative impact on ROA, where if DAR has an increase then there is a decrease in ROA instead, if DAR is decreased there is an increase in the ROA.

From the above description, it is known that group crops have poor DAR values that affect negative ROA values. In the context of signalling theory, companies with poor financial performance tend to find ways to signal that they have better prospects than they do. Companies seek to improve ROA or provide a more positive view of their performance through financial reporting.

In connection with the pecking order theory, if a company is more likely to use internal financing for investments than debt, then the financing occurs according to the grand theory. However, in reality, the company chooses external financing of debt that is not in accordance with the great theory so that it affects the company's financial performance towards returns or returns to shareholders.

The significant relationship between DAR and ROA Agriculture Group in this study is because DAR is a major factor in influencing financial performance. The characteristics of the short-term or long-term investment plants engaged by the Agriculture Group play an important role in this connection. Plants like palm coconut, rubber, tea, and coffee require large initial investments and long growth cycles before yielding optimal results. Therefore, the level of dependence on debt through DAR can provide the necessary funding for long-term investments. With the influence of the commodity nature of the planting enterprise, the significant relationship between DAR and ROA reflects that the use of debt can contribute positively to the return on investment and profit in support of the Group's long-term sustainability.

4.5.2 The effect of Total Asset Turnover on Return on Asset

Based on the results of the hypothesis test, it is known that TATO has a significant positive effect on ROA, where if TATO increases then ROA also increases in reverse, if the TATO decreases then the ROA is also decreasing. It can then be concluded that H0 rejected and H1 accepted means TATO has a significant influence on ROA on BUMN Perkebunan Nusantara Group for the period 2016-2020.

From the above description is known in conjunction with the signalling theory that the company is able to raise TATO efficiently so that it can give a positive signal to investors and shareholders. The increase TATO indicates that a company has managed to use its assets more effectively to generate revenue, which can be seen as a positive sign.

In connection with the pecking order theory, companies that succeed in raising TATO may be more likely to use internal sources of funding to finance their growth

and expansion, rather than relying on external debt. It could mean that companies follow the principle of pecking order theory efficiently. TATO's influence on ROA reflects that companies take a wise approach in choosing their sources of funding, so that they can ultimately support stronger financial performance.

The influence of TATO on ROA and in connection with the two grand theories suggests that the company manages to use assets effectively to generate higher revenues. This has a positive effect on the company's image so it can attract the interest of investors and shareholders because the company is considered to be able to benefit them and support financial strategies in accordance with signaling theory and pecking order theory.

The significant relationship between TATO and ROA Agriculture Group in this study is because TATO is a major factor in influencing financial performance. The characteristics of the short-term or long-term investment plants engaged by the Agriculture Group play an important role in this connection. Short-term investment plants, such as fruit, sugar, droplets, and tobacco, which have short growth cycles, can yield faster. In this context, high TATOs indicate efficiency in utilizing assets to generate sales, thus increasing ROA. A faster rate of turnover of assets can have a positive impact on the immediate income generated from short-term investments. Whereas on long-term investment plants, such as palm coconut, rubber, tea and coffee reflect the sustainable strategy of planting to create added value from its assets that take time to flourish. So it affects the significant relationship that TATO has with the Growth ROA Group that became a variable in this study.

4.5.3 The effect of Firm Size on Return on Asset

Based on the test of the hypothesis, it is known that firm size has no significant positive influence on ROA, where if firm size increases then ROA also increases instead, if firm sizes decrease then also ROA decreases. Then it can be concluded that H0 accepted and H1 rejected means firm size has no influence on ROA on BUMN Perkebunan Nusantara Group Company Period Year 2016-2020.

From the above description is known in connection with the signalling theory that the larger the size of the company, which is reflected in the increase in total assets can be interpreted as a positive signal. A significant increase in the total assets in the company can be a signal that the company is experiencing healthy growth and has the potential to generate greater revenue.

In conjunction with the pecking order theory, the size of the corporate size scale reflected in the total assets can affect the company's financing options. Large-scale corporations tend to have more sources of financing, such as retained profits, which can be used to support the growth and expansion of a corporate business or an investor's capital. Nevertheless, the size of the company's scale does not affect the ROA or the rate of return to shareholders.

There was no significant relationship between firm size and ROA of the Group in this study because firm size was not a major factor in influencing financial performance. However, the commodity character of cultivated crops such as palm oil, rubber, tea and coffee, which are long-term investment crops, can be more dominant in influencing the value of ROA. The management of plant assets, long growth cycles, and variation of yields are more influential factors than the firm size itself. So it affects the insignificant relationship that the firm size and ROA of the Growing Group have become the variables in this study.

4.5.4 The effect of Debt to Asset Ratio, Total Asset Turnover & Firm Size on Return on Asset

The results of the research on the double linear regression test showed simultaneously that DAR, TATO and firm size influenced the ROA on the BUMN Perkebunan Nusantara Group Company for the period 2016-2020. This can be seen from the regression result which shows that the significance value is 0.000000 and the value of f counts is greater than the f table. The high TATO value indicates that the company is able to use the assets it owns to increase the company's sales so that there is an increase in corporate profits. The high firm size indicates the company has a large scale of corporate size so that it can sustain performance that affects the increase in profit.

5 CONCLUSION

5.1 Conclusion

The study aims to test the impact of Debt toAsset Ratio, Total Asset Turnover and Firm Size on Return on Asset on BUMN Perkebunan Nusantara Group in the period 2016-2020. Based on the results of research conducted using the EVIEWS 12 application, the following conclusions can be drawn:

1. The test results partially showed that the DAR and TATO variables had a significant impact on ROA while the Firm Size variables did not have a significant effect on the ROA in BUMN Perkebunan Nusantara Group for the period 2016-2020.
2. The t test results partially showed that the DAR variable has the most dominant result in affecting the ROA on the BUMN Perkebunan Nusantara Group in the period of 2016-2020, which is 0.0000.
3. The f test results simultaneously showed that the variables DAR, TATO and Firm Size have a concurrent and significant influence on the ROA of the BUMN Perkebunan Nusantara Group for the period 2016-2020.
4. The determination coefficient results show R-Square value of 0.655324 or 65.5%, which means that the independent variable used in this study has the ability to explain the dependent variable of 65.5% and the remaining 34.4% is described by other variables outside this study model.

5.2 Suggestion

Based on the results of the research carried out by the author, then the researchers can give the following suggestions:

1. This research can be considered in evaluating the performance of BUMN Perkebunan Nusantara Group to be able to increase the value of the company through variables in this research: Debt to Asset Ratio, Total Asset Turnover and Firm Size.
2. This research can be considered to increase the value of Return on Asset by focusing on the character of the commodities that each company is engaged in and putting competent resources in it according to the nature of the company's commodity.
3. The financial ratio used in this study consists of the Debt to Asset Ratio, Total Asset Turnover and Firm Size can be used as an investor's consideration in looking at the company's performance in terms of profitability. This research is useful to understand whether a company is in good health or in financial difficulties and to see the prospects for good or bad in the future.
4. Further research is suggested to develop more indicators besides Debt to Asset Ratio, Total Asset Turnover, and Firm Size. This is because there is a possibility that other indicators not included in this study, such as Net Profit Margin and Current Ratio also influence Return on Asset. In addition, using different data processing models and tools can increase the likelihood of getting more accurate predictions.

Reference

1. Holding Perkebunan Nusantara 2017. Enhancing Group Performance, Improving Group Confidence. 2017;(2).
2. KumparanBISNIS. Alasan Pemerintah Tetap Suntik Modal ke BUMN Rugi. 2022.
3. Holding Perkebunan Nusantara. Jejak Langkah Transformasi untuk Mencapai Tujuan. 2016;232–3. Available from: http://www.ptpn3.co.id/assets/img/annual/Annual Report (Indonesia) PTPN III 2016.pdf
4. Pernando A. Pabrik Gula Warisan Belanda Ini Tunggak Utang Berisiko Pailit [Internet]. Bisnis.com. 2017 [cited 2023 May 17]. Available from: https://kabar24.bisnis.com/read/20171015/78/699023/pabik-gula-warisan-belanda-ini-tunggak-utang-berisiko-pailit
5. Pontianak K, Irawan YK. PTPN XIII Berhenti Beroperasi untuk Sementara [Internet]. Kompas.com. 2018 [cited 2023 May 17]. Available from: https://ekonomi.kompas.com/read/2018/07/26/162326526/ptpn-xiii-berhenti-beroperasi-untuk-sementara?page=all
6. Holding Perkebunan Nusantara 2019. Strengthening Synergizing Sustaninng. 2019;1–566.
7. Detikfinance. Dipangkas Erick Thohir, Puluhan Jabatan Direksi PTPN Hilang! [Internet]. detikfinance. 2020 [cited 2023 Apr 27]. Available from: https://finance.detik.com/berita-ekonomi-bisnis/d-5031059/dipangkas-erick-thohir-puluhan-jabatan-direksi-ptpn-hilang
8. Linda R. Pengaruh Current Ratio, Debt To Asset Ratio, Total Asset Turnover, Return On Asset, Return On Equity Dan Net Profit Margin Terhadap Perubahan Laba. Manag Stud Entrep J … [Internet]. 2022;3(1):159–68. Available from: https://www.yrpipku.com/journal/index.php/msej/article/view/401%0Ahttps://www.yrpipku.com/journal/index.php/msej/article/download/401/285
9. Kasmir. Analisis Laporan Keuangan. Jakarta: PT Raja Grafindo Persada; 2016. 46.
10. Holding Perkebunan Nusantara 2020. Performing Beyond Boundaries. 2020;1–620.
11. Sukantini NKA, Novitasari NLG, Dewi NLPS. Pengaruh Corporate Social Responsibility (Csr) Terhadap Nilai Perusahaan Yang Di Moderasi Oleh Profitabilitas. KARMA (Karya Riset Mahasiswa Akuntansi [Internet]. 2021;(2008):280–7. Available from: http://e-journal.unmas.ac.id/index.php/karma/article/view/1640
12. Razak A, Guritno Y, Putra AM. Pengaruh Ukuran Perusahaan, Net Profit Margin, dan Total Asset Turn Over terhadap Pertumbuhan Laba (The Effect of Company Size, Net

Profit Margin, and Total Asset Turn Over on Profit Growth). J Akuntansi, Keuangan, dan Manaj. 2021;3(1):1–13.

13. Ariawan EZS. Determinan Struktur Modal: Perspektif Pecking Order Theory dan Trade-off Theory. J Technopreneursh Econ Bus Rivew. 2022;3(2):121–36.
14. Kasmir. Analisis Laporan Keuangan. Edisi Pertama. Jakarta: PT Raja Grafindo Persada; 2019.
15. Siswanto E. Buku Ajar Manajemen Keuangan Dasar. Malang; 2021.
16. Lukviarman N. Corporate Governance. Solo: PT Era Adicitra Intermedia; 2016.
17. Dharmos HI. Analisis Pengaruh Rasio Keuangan Terhadap Pertumbuhan Laba dengan Ukuran Perusahaan Sebagai Variabel Moderating Pada Perusahaan Manufaktur Sektor Industri Otomotif Yang Terdaftar di Bursa Efek Indonesia. 2021;6.
18. Zuliyanti I, Andika AD, Oemar A. Pengaruh Likuiditas, Solvabilitas Dan Rasio Aktivitas Terhadap Nilai Perusahaan Dengan Profitabilitas Sebagai Variabel Intervening (Studi Kasus Pada Perusahaan Perkebunan Yang Terdaftar di Bursa Efek Indonesia Tahun 2015-2019). BISMA J Bisnis dan Manaj [Internet]. 2021;8(8):1–20. Available from: https://jurnal.unej.ac.id/index.php/BISMA/article/view/7550
19. Sitanggang A, Purba AM. Pengaruh Asymetric Informaition, Leverage Dan Ukuran Perusahaan Terhadap Manajemen Laba (Studi Empiris Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia Tahun 2011-2013). J Riset Akuntansi Keuangan. 2022;8(1):1–7.