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DOES EARNING PER SHARE (EPS) AFFECTED BY DEBT TO ASSET RATIO (DAR) AND DEBT TO EQUITY RATIO (DER)?

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Keywords:DAR (Debt to Asset Ratio), DER (Debt to Equity Ratio), EPS (Earning Per Share).

ABSTRACT

This research examines the impact of Debt to Asset Ratio (DAR), Debt to Equity Ratio (DER) on Earning Per Share (EPS) at basic industry and chemicals sector. This research used data based on available annual financial statements period 2015- 2018. The population of this research are 71 companies' basic industry and chemicals sector listed in Indonesia Stock Exchange, the sample selection using purposive sample because not all companies in basic industry and chemicals sector fit in this research criteria. The final sample chosen are 17 companies of basic industry and chemicals sector listed in Indonesia Stock Exchange. The data analysis technique used is multiple linear regression. The result of this research shows that Debt to Asset Ratio (DAR) has a significant negative effect on Earning Per Share (EPS), Debt to Equity Ratio (DER) has no significant effect on Earning Per Share (EPS). Debt to Asset Ratio (DAR) and Debt to Equity Ratio (DER) have simultaneous effect on Earning Per Share (EPS).

Keywords: DAR (Debt to Asset Ratio), DER (Debt to Equity Ratio), EPS (Earning Per Share).

INTRODUCTION

Economic movements are developing rapidly in the current era of globalization, where technology and information, transportation and also the business world are growing rapidly(Angelina, S., &Nugraha, 2020). This makes every company continuously strives to make improvements to its business. Financial managers have a role in raising funds, investing in assets, and managing assets wisely(Ayunitha, 2020). The use of larger debt will usually lead to expectations of

high returns on equity, but besides that hand debt will increase the risk for shareholders.

Before making a decision to invest, investors will usually do a company analysis. Financial statement information is one of the easiest types of information to obtain. Information from the financial statements can describe in general the development of the company's condition and what has been achieved(Widajatun, V. W., Rahmadzikrishafira, T. F., Nugraha, N. M., &Susanti, 2020). By using financial statements, investors can calculate the amount of revenue growth the company has achieved against the number of shares of the company.

Financial statements can be analyzed using financial ratios(Nugraha, N. M., Puspitasari, D. M., & Amalia, 2020). The amount of return on an investment usually uses profitability ratios, namely Earing Per Share (EPS). From the company's financial statements can be seen the amount of Earning Per Share (EPS) of a company(Pangemanan, S. S., &Talamati, 2015). The higher the EPS, the better the value of the company will cause the company to become healthier and have an impact on the high interest of investors to invest their funds in the company(Nugraha, N. M., &Riyadhi, 2019).

The Leverage Ratio shows how much debt is borne by the company, in other words shows the amount of funding needs of companies financed by debt(Brigham, E. F., & Houston, 2011). Measuring tools for corporate leverage are Debt to Asset Ratio (DAR) and Debt to Equity Ratio (DER). DAR shows how much total assets were spent by debt. Whereas DER is a ratio that measures the consideration between debt held by a company and its own capital. If the level of leverage is getting higher, the number of loans used by the company will also be greater so that it will have an impact on the greater financial risk faced by the company(Gitman, 2012).

The author is interested in examining the DAR and DER variables because it is a ratio that can reflect a company being able to finance business with loans compared to funds provided by shareholders. The author chose the DAR and DER variables because debt can be used to finance the expansion of companies that require large funds. This shows that the possibility of using debt to finance the company's expansion will also be large enough, so we need a measuring tool to determine whether with a large debt the company is able to pay its debts. In the basic industrial and chemical sectors, in fact, the increase in the value of DAR and DER is not always directly proportional to its EPS, so there is a gap between theory and reality that makes the writer interested in researching it.

The following is the average value of DAR, DER and EPS in companies in the basic and chemical sectors for the period 2015-2018:

Table 1. Average DAR, DER and EPS Basic and Chemical Industry Sectors for the 2015-2018

YearPeriod	DAR(%)	DER (%)	EPS (%)
2015	52.81	131, 61	-16.25
2016	49.32	76.30	19.97
2017	49.33	669.83	-9.75
2018	48.87	248.75	25, 40

Source: Corporate State Annual Financial Report (data processed)

Based on the table above, when DAR and DER decrease but EPS value increases, in theory the increase or decrease in DAR and DER value will always be directly proportional to EPS. For this reason, this study was conducted with the aim of studying the extent of the effect of DAR and DER on EPS both partially and simultaneously. A

LITERATURE REVIEW

Debt to Asset Ratio (DAR)

Debt to Asset Ratio is a ratio measuring the percentage of the amount of funds that comes from a loan(Sutrisno, 2013). The higher the ratio, the more debt funding that results in the acquisition of additional loans for companies will be more difficult because the company is feared unable to pay its debts with the assets it has(Kasmir, 2014). Conversely the smaller the ratio, the smaller the funding using debt. DAR can be obtained with the following formula:

$$\text{DAR} = \frac{TotalDebt}{TotalAssets}$$

Debt to Equity Ratio (DER)

Debt to Equity Ratio is the ratio used as a measure to see the balance between the use of debt owned by the company and its own capital(Husnan, S., &Pudjiastuti, 2012). The higher this ratio means that less capital is used compared to the debt. DAR can be obtained with the following formula:

$$\text{DER} = \frac{TotalDebt}{TotalEquity}$$

Earning Per Share (EPS)

Earning Per Share is a measure of a company's ability to determine the magnitude of profits earned by shareholders per share owned(Darsono, 2011).

Using EPS for a company is expected to provide an illustration for investors regarding the portion of profits obtained within a certain period with the ownership of shares owned. An investor buys and maintains company shares in order to obtain dividends or capital gains. Income is usually the basis for determining dividend payments and future stock price increases(Anita & Yadav, 2014). Therefore, shareholders are usually interested in EPS reported by the company. EPS can be obtained with the following formula:

$$\text{EPS} = \frac{NetProfitAfterInterestandTax}{NumberofSharesOutstanding}$$

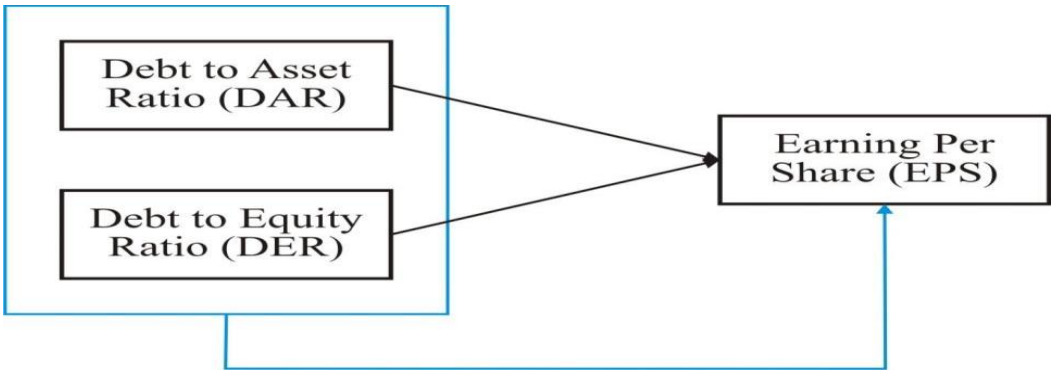

Figure 1. Research Paradigm

RESEARCH METHODS

This study uses a quantitative approach which is a deductive process of research by looking at general to specific patterns(Amalia, S., Fadjriah, N. E., &Nugraha, 2020). The research method used in this study uses a hypothesis through statistical data processing and testing, namely Descriptive-Verification analysis whose research results will be processed and conclusions drawn(Nuryaman& Veronica, 2015). Descriptive research methods are conducted where the research interprets the data obtained based on facts that appear in the study period, so that a clear picture of the object under study will be obtained (Octavia, D., &Nugraha, 2020).

The unit of analysis in this study is companies in the basic and chemical industry sectors listed on the Indonesia Stock Exchange which report their financial successive years 2015-2018. There are 71 companies that became the population in this study. And those who meet the research criteria by using purposive sampling (desired criteria) there are only 17 banking companies that are sampled in this study. Data collection techniques are carried out with literature study and internet research to collect corporate financial reports in the form of secondary data.

The analysis in this study uses a panel data regression which is a combination of time series data and cross sections. Panel data regression model according to Basuki and Prawoto (2016: 276) is as follows: A

$$Yit = \alpha + \beta 1X1it + \beta 2X2it + \mu it$$

Information:

Y = EPS
α = Constant
β1 = DAR Variable Regression Coefficient
β2 = Regression Coefficient of DER Variable
X1 = DARHypothesis
X2 = DER hypothesis
i = Entity (individual)

t = Time (period)
μ = Error opportunities (error)

To choose the most appropriate model for managing panel data, there are several tests that can be done as Chow Test, Hausman Test, and Lagrange Multiplier Test.

Chow Test

Chow Test is a test conducted to specify the Common Effect Model or Fixed Effect Model that is most suitable to be used in estimating panel data(Wijaya, J. H., & Nugraha, 2020). If the probability value is F> 0.05 then the Common Effect Model isappropriate for panel data regression. If the probability value is F <0.05 then the Fixed Effect Model isappropriate for panel data regression.

Hausman Test

Hausman Test is a statistical test performed to choose whether Fixed Effect Model or Random Effect Model most appropriate. If theprobability value Chi-Square > 0.05, which means Random Effect Model the suitableis used. If theprobability value Chi-Square <0.05, which means Fixed Effect Model the suitableis used.

Langrange Multiplier Test

Langrange Multiplier Test is conducted to estimate the Common Effect Model and the Random Effect Model, which model is more appropriate for research using panel data regression(Widajatun, V. W., Nugraha, N. M., &Ichsani, 2019). If the P-value <0.05 then the selected model is a Random Effect Model, and vice versa.

Determination Coefficient Test

Determination coefficient test is carried out in each study to measure the extent of the model's ability to explain the dependent variable (Nugraha, N. M., &Susanti, 2019). In this case the independent variables are DAR and DER, while the dependent variable is EPS. The smaller the value of the determination coefficient, the information required by the dependent variable is very limited can be requested by the independent variable. Conversely the greater the value of the coefficient of determination and close to 1, the independent variables in this study can provide the information needed by the dependent variable.

F Test (Simultaneous Significance Test)

The F test will discuss whether the independent variables that exist in research that are shared with the variables they support(Husnan, S., & Pudjiastuti, 2012). The chosen significance level is 5% (α = 0.05) or with a confidence level of 95% of the degree of freedom (dk) = n - k - 1 to obtain thevalue F_{table} as the boundary for the acceptance and rejection of the hypothesis.

T Test (Partial Test)

T test is a test of a partial regression relationship which aims to find out the significance of the effect of individual independent variables on the dependent variable, assuming other variables are constant(Nariswari, T. N., &Nugraha, 2020). The significance level chosen was 5% (α = 0.05) or with a confidence level of 95% of the degree of freedom (dk) = n - k - 1 to obtain thevalue T_{table} as the boundary area for acceptance and rejection of the hypothesis.

RESULTS AND DISCUSSION

Chow Test Results

Table 2. Chow Test Results

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

Effects Test	Statistic	d.f.	Prob.
Cross-section F	4.823186	(16,49)	0.0000
Cross-section Chi-square	64.315599	16	0.0000

Source: Data processed with *Eviews 11.0*

Table 2 shows that the cross-section F probability of 0.0000 <0.05 indicates a more appropriate selection of the model from the Chow test results, which is a fixed effect. But it needs to be tested with the Hausman test to make sure which is right to choose.

Hausman Test Results

Table 3. Hausman Test Results for Determining Fixed Effect or Random Effect

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	8.116722	2	0.0173

Source: Data processed with Eviews 11.0

Table 3 shows that Prob. Random cross section 0.0173 with a value <0.05 so that it can be concluded that the selection of a more suitable model in the Hausman test is a Fixed Effect Model.

Panel Data Regression Model

After conducting the Chow Test, the Hausman Test can be concluded that the estimation of panel data regression is more appropriate by using the Fixed Effect Model for this study(Susanti, N., Widajatun, V. W., Aji, M. B., &Nugraha, 2020).

Based on the results of data processing obtained from panel data regression between DAR and DER to EPS in the basic industry and chemical sector which are listed on the Indonesia Stock Exchange for the period 2015-2018. From the results of testing the models that have been applied, the model used in panel data regression in this study is a fixed effect model. Based on the calculations, we can find the following equation. A

Y = 61,32230 - 90,14432 DAR - 2,076603 DER

Here are the results of the panel data regression parameter estimation as follows:

Table 4. Panel Data Regression Equation

Dependent Variable: EPS
Method: Panel Least Squares
Sample: 2015 2018
Periods included: 4
Cross-sections included: 17
Total p anel (balanced) observations: 68

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	61.32230	10.86636	5.643316	0.0000
DAR	-90.14432	20.90450	-4.312197	0.0001
DER	-2.076603	1.039631	-1.997443	0.0513

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.659378	Mean dependent var	13.37574
Adjusted R-squared	0.534251	S.D. dependent var	21.36902
S.E. of regression	14.58345	Akaike info criterion	8.428788
Sum squared resid	10421.18	Schwarz criterion	9.048945
Log likelihood	-267.5788	Hannan-Quinn criter.	8.674513
F-statistic	5.269689	Durbin-Watson stat	2.009562
Prob(F-statistic)	0.000002		

Source: Data processed with Eviews 11.0

Determination Coefficient Test (R2)

Table 5. Determination Coefficient

Root MSE	12.37952	R-squared	0.659378
Mean dependent var	13.37574	Adjusted R-squared	0.534251
S.D. dependent var	21.36902	S.E. of regression	14.58345
Akaike info criterion	8.428788	Sum squared resid	10421.18
Schwarz criterion	9.048945	Log likelihood	-267.5788
Hannan-Quinn criter.	8.674513	F-statistic	5.269689
Durbin-Watson stat	2.009562	Prob(F-statistic)	0.000002

Source: Data processed by Eviews 11.0

The coefficient of determination of test results in Table 5 above, the value of R2 is 0.659378, which means the variability of the dependent variable is the EPS can be explained by the independent variables as DAR and DER in this study was

65.94%, while the rest of 34, 06% is elucidated by other variables not researched in this study.

F Test (Simultaneous)

Table 6. Simultaneous Hypothesis Testing

Dependent Variable: EPS
Method: Panel Least Squares
Date: 01/10/20 Time: 20:31
Sample: 2015 2018
Periods included: 4
Cross-sections included: 17
Total panel (balanced) observations: 68

Root MSE	12.37952	R-squared	0.659378
Mean dependent var	13.37574	Adjusted R-squared	0.534251
S.D. dependent var	21.36902	S.E. of regression	14.58345
Akaike info criterion	8.428788	Sum squared resid	10421.18
Schwarz criterion	9.048945	Log likelihood	-267.5788
Hannan-Quinn criter.	8.674513	F-statistic	5.269689
		Prob(F-statistic)	0.000002
Durbin-Watson stat	2.009562		Durbin-Watson stat

Source: Data processed with Eviews 11.0

The calculated F value is 5.269689 and greater than F table 3.14, in addition it can be seen through the significance value of 0.000002 <0.05, so that it is consistent with the hypothesis testing criteria of rejecting Ho and accepting Ha, meaning simultaneously DAR and DER significantly influence EPS.

T Test (Partial)

Table 7. Partial Hypothesis Testing

Dependent Variable: EPS
Method: Panel Least Squares
Date: 01/10/20 Time: 20:31
Sample: 2015 2018
Periods included: 4
Cross-sections included: 17
Total panel (balanced) observations: 68

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	61.32230	10.86636	5.643316	0.0000
DAR	-90.14432	20.90450	-4.312197	0.0001
DER	-2.076603	1.039631	-1.997443	0.0513

Source: Data processed with Eviews 11.0

Based on the partial test results table is as follows: A

1. The significance value of the DAR variable is 0.0001 <0.05 (level of significance). In addition, obtained T count of -4.312197 while T table -1.99714 means Tcount> T table is -4.312197> -1.99714. The conclusion is that Ho is rejected and Ha is accepted, this can mean partially the DAR variable has a significant effect on EPS in the negative direction.

2. The significance value of the DER variable is 0.0513> 0.05 (level of significance). In addition, obtained T count -1.9999443 while T table -1.99714 means T count> T table that is - 1.997443> -1.99714. The conclusion is that Ho is rejected and Ha is accepted, this can mean partially the DER variable has no significant effect on EPS in the negative direction.

The results exhibited that DAR had a significant negative effect on EPS in the Basic and Chemical Industry sector 2015-2018 period. This means that by increasing the DAR it will experience a decrease in EPS. The increase in the value of DAR is due to the influence of the global economy which has an impact on economic conditions in Indonesia such as fluctuations in the price of raw materials in the world which results in higher prices of main raw materials for production, thereby increasing business debt from the purchase of inventory and merchandise in line with increased sales. Another cause is the increase in bank debt used to add fixed assets and increase financing leases. By increasing the DAR on companies in basic and chemical industry sectors can increase sales, but the net profit generated actually decreases due to rising raw material prices and cannot increase the selling prices because it is bound by sales contracts with customers. The depreciationof rupiah against the dollar also has a negative impact on corporate profits resulting in exchange rate losses so that net income decreases and causes the value of EPS to fall.

Based on the results of the partial significance test (T test), DER affects EPS in a negative direction, meaning that the higher the value of DER, the lower EPS will be obtained. Because a high DER value can give a negative signal to investors on the Indonesia Stock Exchange which can reduce trading volume and have an impact on the EPS. The increase in the value of DER was caused by an increase in retained earnings and also the debt or liabilities of the company increased from the previous year used for additional working capital.

The results of the research ratio of DAR and DER simultaneously affect the EPS variable in companies at the basic and chemical industry sectors because the value of Fcount>Ftable, which is 5.765> 3.14 means that Ho is rejected and Ha is accepted, that is mean every change which occurs in all independent variables (DAR and DER) will affect the dependent variable, EPS. DAR and DER will give positive results if the profits obtained are greater than debt. These results provide the conclusion that management must pay attention to these independent variables for the achievement of shareholder welfare through the amount of money generated by each share of common stock owned by shareholders for their participation in the company.

CONCLUSION

1. Debt to Asset Ratio (DAR) and Debt to Equity Ratio (DER) have an effect to Earning Per Share (EPS) in basic industry and chemical company sector period 2015-2018.

2. Debt to Asset Ratio (DAR) has an effect to Earning Per Share (EPS) in basic industry and chemical company sector period 2015-2018. A

3. Debt to Equity Ratio (DER) has an effect to Earning Per Share (EPS) in basic industry and chemical company sector period 2015-2018.

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