

# THE DER AND ROE PROXY TOWARDS STOCK PRICES: EVIDENCE FROM INDONESIA AT FOOD AND BEVERAGE SUBSECTOR MANUFACTURING COMPANIES 2010-2019

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**Abstract-** This study purposes of establishing debt's influence towards Equity Ratio with Stock Prices proxy, ROE proxy towards Stock Prices, and both of them towards Stock Prices at Food and Beverage sub-sectors manufacturing company listed in the Indonesia Stock Exchange. This study make use of quantitative data, with a research sample of Fifteen enterprises through purposive sampling technique. The research period uses 2010-2019 years. These simple and multiple linear regression analysis techniques are used to answer the alternative hypothesis using the estimation and statistical tests. This study indicates that DER has a negative and insignificant influence on Stock Prices. In contrast, ROE proxy has a positive and significant towards Stock Prices, and DER and ROE proxies simultaneously can impact Stock Prices.

**Keywords:** DER, ROE Proxy, and Stock Prices.

## I. INTRODUCTION

The food and beverage industry is a large and fast-growing group of companies in Indonesia. The development of the food and beverage industry cannot be separated from Indonesia's population, which continues to increase every year. As the population increases, the volume of demand for consumer products also increases [1]. Food and beverage companies will continue to exist and are the most resilient to crisis conditions than other sectors because in a crisis condition or not, food and beverage products will still be needed [2]. A business activity carried out by a company, of course, has several goals that business owners and investors as investors want to achieve. Because each owner and investor wants the capital they invest in the company, they expect a return on the invested capital to provide additional capital and prosperity for the owner and all employees. For management, the benefits obtained are targets that have been previously set. The achievement of profit targets is significant because achieving the targets that have been set is an achievement for the management. Companies that want to continue developing their business can certainly increase their business capital by selling shares in the capital market.

The stock price of a company reflects the worth of the enterprises in the eyes of the public. If the enterprises' share price is high, its value is good in the public's eyes and vice versa. Therefore the stock price is essential for the company. Investors in the capital market need to obtain information related to stock price fluctuations to decide which company shares are eligible to be selected to invest their excess funds [3]. The price of shares on the

stock exchange is determined according to the law of supply and demand. The more people who want to buy shares, the stock price will incline to move up; conversely, the more individual or business people who will en-cash the stock, the stock price will incline to move down [4].

The following is data on the average stock price of food and beverage subsector manufacturing companies listed on the Indonesia Stock Exchange for the 2010-2019 period.

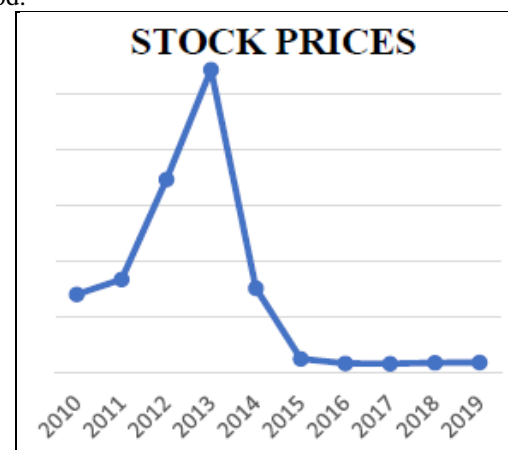


Figure 1: Stock Prices as the average in Manufacturing Firms at the Food and Beverage Sub-Sector

Source: Data processed by researchers (2020)

The graph above shows that the stock price as average at food and beverage subsector manufacturing firms fluctuated in 2010-2019 each year. In 2010 the share price

reached IDR 28,212 per share. However, it immediately increased in 2013 to IDR 109,034 per share. Then in 2015, it experienced a drastic decline reaching IDR 4,970 per share and continued to decline in 2016-2018 of IDR 3,531 per share, but in 2019, it increased again by IDR 3,737 per share even though it did not experience a drastic increase like the previous year. Stock prices as an indicator of company value are influenced by fundamental and technical factors, where these factors together form market forces that directly affect stock transactions so that stock prices will increase or decrease. The DER ratio can be used to indicate the level of risk in a company. The lower the DER level in a company, the greater the enterprises' potential to guarantee its debts with the enterprises' equity. The higher the value of DER, the higher the monetary risk in an enterprise [5]. The profitability ratio is one of the financial ratios analyzes that can be used in measuring firm's performance. The profitability ratio portrays the enterprise's power to earn profits by way of sales and investment. A profitability ratio is used in ROE proxies, which measures the enterprise's power to obtain an available return for shareholders. This ratio represents the fruitfulness of management (as an enterprise agent) for determining a greater return on shareholders [6]. The research objectives determine each of the effects of the DER and ROE proxies towards Stock Prices, and simultaneously at Food and Beverage sub-sector Manufacturing Companies 2010-2019.

## II. LITERATURE REVIEW

According to Kasmir (p.157), DER is a ratio used to judge debt to available equity. The DER can be used to indicate the level of risk in a company. The lower the DER level in a company, the greater the enterprise's power to guarantee its debts with the firm's equity. The higher the share of DER, the higher the monetary risk in a company. So each company must pay more attention to every decision that will be taken on its funds to minimize risk and keep the company stable in gaining profits [7]. Based on Fahmi (p.98) states that ROE Proxy is a ratio used to evaluate the level to which an enterprise affects its origin to serve a revert on equity [8]. Fundamental and technical factors influence stock prices as an indicator of company value. These factors form market forces that directly affect stock transactions so that stock prices will increase or decrease. The two proxies above are measurements of financial statement components, performance analysis is carried out to determine the company's financial condition. This analysis is also a tool in assessing the financial condition and yield of operations of a firm. Given the importance of this ratio analysis for parties with interest in the company's financial position and development [9]. According to Harsono (2013, p19), shares are evidence as to the issues of the certificate of ownership of a person or entity against the enterprise, which can also be construed as investors' addition as an investment in an enterprise so that they have a claim over the firm's assets and income. [10].

This study computes a research model to answer the research objectives in the background. Model is actually

something small in size that is meant to describe reality. Furthermore, the model is constructed thru definite parameter with certain limitations that are in terms of form, content, structure, quantity, and meaning. The conceptual model describes the relationship between the factors that have been identified and is significant for understanding the research problem [11,12]. This research model is a derivative of the frame of mind, which is a temporary explanation of the relationship between variables and various other factors in the study.

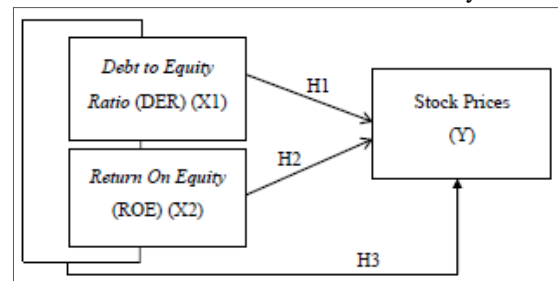


Figure 2: Research Model

Source: Data constructed by researchers (2020)

To reply to the proposed research analysis, this study formulates a hypothesis as follow:

H1, H2: Each of the effects of DER and ROE proxy towards Stock Prices (alternative hypotheses 1,2). Besides, simultaneously the effect of DER and ROE proxy towards Stock Prices (alternative hypotheses 3).

## III. RESEARCH METHODS

The author's nature in preparing this study is causality with quantitative data—the type of research data obtained indirectly through intermediary media. The secondary data taken by researchers is the company's financial statements. The population take the food and beverage sub-sector manufacturing firms, which are accessed through [www.idx.co.id](http://www.idx.co.id). The sample used 15 companies as samples in this sub-sector because they had complete data available listed on the Indonesia Stock Exchange in 2010-2019. The method of analysis used is simple and multiple linear regression. This analysis was established to determine the effect of DER and ROE proxies as independent variables towards Stock Prices.

The data analysis technique in this study used statistical analysis, in which data processing was carried out using data panel software to obtain more accurate results. The simple linear regression model using panel data to determine the estimation model has three approaches i.e. each of the common-effect, the fixed-effect, and the random-effect model. And for multiple linear regression using the normality, multicollinearity, heteroscedasticity, and autocorrelation test, and also doing hypotheses testing using the t statistical test and f test [13].

## IV. RESULTS

Descriptive statistics provide data, containing the minimum, maximum, average, and deviation score. The following is table 1,2 which results from descriptive

statistics of panel data from all research samples with 150 observations between DER and Stock Prices and ROE Proxy and Stock Prices.

TABLE 1  
OUTPUT RESULTS OF DESCRIPTIVE STATISTICS  
(DER and Stock Prices)

	Minimum	Maximum	Mean	Std. Dev
DER	-2.1300	28.5900	1.7494	4.0414
Stock Prices	4.1430	13.9970	7.5697	2.0453

Source: Own Calculation from Software (2020)

From table 1, The DER has a mean value of 1.7494 with a standard deviation of 4.0414. The highest DER value was 28.5900, while the lowest DER value was -2.1300.

TABLE 2  
OUTPUT RESULTS OF DESCRIPTIVE STATISTICS  
(ROE and Stock Prices)

	N	Minimum	Maximum	Mean	Std. Dev
ROE Proxy	150	-68.4500	153.0000	19.236	29.7840
Stock Prices	150	4.1430	13.9970	7.5697	2.0453

Source: Own Calculation from Software (2020)

From table 2, The ROE proxy has a mean value of 19.236 with a standard deviation of 29.7840. The highest ROE value was 153.0000, while the lowest ROE value was -68.4500.

From both table 1 and 2, The Stock Prices has an average value (mean) of 7.5697 with a standard deviation of 2.0453. The highest Stock Prices value was 13.9970, while the lowest Stock Prices value was 4.1430. Normality is testing for the regression model by the standardized residual values distribute normally or not. How to do this normality test can be done with a normal probability plot graph analysis approach

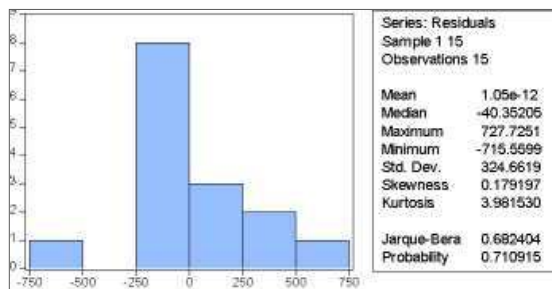


Figure 3: Normality test (Jarque-Bera)

Source: Output from Software (2020)

The residual value is nominally distributed in this approach if the line (dots) representing the actual data will follow or close to the diagonal line. From the test yields above, the Jarque-Bera probability is 0.6824 > 0.05, which implies that the research data standard residuals are normally dispersed.

The multicollinearity test done the view the variance inflation factors (VIF) score, which requires a score of less than 10.

TABLE 3  
OUTPUT RESULTS OF MULTICOLLINEARITY TEST

	Variance	Uncentered	Centered
		VIF	
Constant	59988.28	7.317254	NA
DER	36577.78	6.141247	1.077520
ROE	112.3744	4.595053	1.077520

Source: Own Calculation from Software (2020)

Table 3 shows that the Centered VIF score for both DER and ROE is 1.077520, where the score is less than 10, it can be appointed that there is no multicollinearity matter between factors.

The heteroscedasticity examination is taken to determine else or not; there are deviations out of the classical assumptions. Heteroscedasticity shows entire observations in the regression model what the similarity of variants of the residuals. In the model regression, the prerequisite should be met the absence of the heteroscedasticity phenomenon. This test uses white-heteroscedasticity; if the probability value is > 0.05, there is no phenomenon of heteroscedasticity, or otherwise.

TABLE 4  
OUTPUT RESULTS OF HETEROSCEDASTICITY TEST (White)

	F-statistic	Obs*R-Square	Scaled explained SS
Score	0.365794	2.533443	2.417132
Prob. (5,9)	0.8597	0.7715	0.7889

Source: Own Calculation from Software (2020)

From table 4, where the Prob. The value indicates the p-value Chi-square (5) on Obs\*R-Square is 0.7715. Because the p-value is 0.7715 > 0.05, Ho is Accepted so that it can be concluded that there are no symptoms of heteroscedasticity in the research model.

TABLE 5  
OUTPUT RESULTS OF AUTOCORRELATIONS TEST (Breusch-Godfrey Serial Correlation LM Test)

	F-statistic	Obs*R-Square
Score	1.678446	3.769842
Prob. (2,10)	0.2352	0.1518

Source: Own Calculation from Software (2020)

From table 5, This test uses the Breusch-Godfrey Serial Correlation LM Test, where the Prob. The value indicates the p-value Chi-square (2) on Obs\*R-Square is 0.1518. Because the p-value is 0.1518 > 0.05, H0 is Accepted so that it can be deduced that there is no serial

autocorrelation matter.

## RESEARCH DISCUSSIONS

In accordance with the yields of the t-test, it is concluded that the regression coefficient is -105.6791. So that the DER has a negative and insignificant influence towards Stock Price's ( $H_1$  Rejected), the negative coefficient value shows the opposite effect between the Debt to Equity Ratio and changes in Stock Price's, that is, if the DER decreases by 1 (one) squad, the Stock Prices will decrease by 105.6791 squads assuming the other variables are constant. The regression analysis results accept or follow the existing theory that if the use of debt is greater than that of own capital, it will impact the decline in firm value. This research yield in opposite with findings of the effect of leverage has a positive and significant influence towards financial performance [2] but reinforced by the counting of the solvency ratio, these findings in a healthy and proper condition for the enterprises studied [5]. A high DER level will indicate the high dependence of the firm's capital on outsiders so that its burden is getting heavier. If the company bears a heavy burden, the company's share price will decrease.

In accordance with the yields of t-test, it is concluded that the regression coefficient is 25.16891. So that the ROE proxy has a positive and significant influence towards Stock Price's ( $H_2$  Accepted), the positive coefficient value shows the in line effect between the Return on Equity and changes in Stock Price's, that is, if the Return on Equity decreases by 1 (one) squad, the Stock Prices will decrease by 25.16891 squads assuming the other variables are constant. The results of the regression analysis reject or are not following the theory that if the value of ROE is high, it will increase the value of the share price because the more efficient it is in using its own capital that is done by the company to generate profits for shareholders and an increase in ROE will increase company performance to generate profits. So that investors will be interested in buying shares, and the company has increased. This research yield in line with findings of the effect of profitability has a positive and significant influence towards financial performance [2], and in opposite but weakened by the counting of the profitability ratio, these findings in bad condition for the enterprises studied [5], then the enterprise has not been able to generate profits through all its capabilities and resources [9].

The simultaneous test is carried out to see the independent variables' effect on the dependent variable. Then the f-table is 4.67. From the regression yields, it can be deduced that the calculated F-stats (2.822) > the F-table (4.67) ( $H_3$  Accepted) so that it can be concluded that the independent variables together impact the dependent variable. And at the value of the share price coefficient of 6765,641, the variable DER and ROE proxies are considered constant, with the Stock Prices will increase by 6765,641.

## V. CONCLUSION

According to the yields of research established regarding the influence of DER and ROE proxies towards Stock Prices at food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange 2010-

2019. The conclusion drawn in this study is that the DER has a negative influence. And also not significant towards Stock Prices at food and beverage sub-sector manufacturing companies.

ROE proxy has a positive and significant influence on Stock Prices at food and beverage sub-sector manufacturing companies. Simultaneously, DER and ROE proxies can affect Stock Prices at food and beverage sub-sector manufacturing companies.

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