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EXCHANGE VALUE AS A MODERATED VARIABLES PROFITABILITY DETERMINANTS

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ABSTRACT

The purpose of this study to determine the factors that affect the company's profitability. The independent variables include activity, capital structure and firm size. The moderating variable is the currency exchange rate.

Design/methodology/approach: *the subjects of this research are food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange from 2006-2017. The sampling method used purposive. Panel data were analyzed using multiple regression..*

Finding*: The result showed that the activity ratio had a positive effect, the solvency ratio had no effect, the size of the company had no effect on profitability. But the exchange rate can moderate the effect of solvency on profitability.*

Original/Value*: This model was developed by including the exchange rate as a moderating variable. This is to explain exchange rate fluctuations, if there is currency depreciation, the amount of debt will increase which result in a decrease in profitability and vice versa.*

KEYWORDS: *Firm Activity, Capital Structure, Firm Size, Exchange Rate and Profitability.*

1. INTRODUCTION

Information on Profitability Company is always awaited by stakeholders. In line with signal theory, financial information submitted by companies provides signals for creditors, shareholders, government and society in making decisions. Profitability is the main indicator for creditors to decide to provide loans. Therefore, profitability is an indicator for shareholders to invest. For the government, the profitability of companies contributes to revenue that comes from taxes, so as to maintain the sustainability of the country. To increase company profitability, in line with the pecking order theory, companies prefer to use internal sources of funds and then external sources of funds.

Companies prefer internal funds because they do not need to pay transaction fees. The cost to obtain external financing is greater than internal. This is in line with the pecking order theory. The limited internal sources of funds, it is encouraging companies to use external sources of funds originating from loans and issuing shares are the last options.

In a free market, for neutral investors facing risk and a floating exchange rate applies, capital mobility between countries is smoother and investors place their wealth in assets that can provide the highest yield (1). The depreciation of the value of the domestic currency causes the price of imported goods to be more expensive and the price of exported goods is cheaper, this has a positive effect on the profitability of companies that export and has a negative effect on the profitability of companies that import raw materials (2). The increase in firm value is influenced by investment decisions, the lack of internal funds for investment can be overcome with external capital (3). Financing through foreign debt will affect the value of the company in the event of depreciation of the local currency (4)(2).

Although there are many studies to show the effect of solvency on financial performanc (4) (5) almost all majorities provide exchange rates as an independent variable. Exchange rate is a variable whose value variation cannot be influenced by the company (uncontrollable variable) so it should be used as a moderating variable.

To fill the research gap, a model was developed by including the exchange rate as a moderating variable. This is to explain exchange rate fluctuations, if there is currency depreciation, the amount of debt will increase which result in a decrease in profitability and vice versa. It can strengthen or weaken the relationship between capital structure and profitability. The moderating variable can strengthen or weaken the relationship between the independent variable and the dependent variable (6).

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Based on the foreign debt statistical report (SULNI) issued by Bank of Indonesia, foreign debt in the food and beverage sector tends to increase. The increase in foreign debt is related to the exchange rate. Table 1 shows the amount of external debt in the food and beverage sector.

Table 1. Amount of External Debt in the Food and Beverage Sector

Year	Amount Payable (Million US$)
2012	397
2013	348
2014	421
2015	408
2016	416
2017	530

Source: Bank of Indonesia Foreign Debt Statistics Report (SULNI).

The increase in the amount of foreign debt was followed by the weakening of the rupiah exchange rate. In 2012 the IDR/USD exchange rate was IDR 9,387 and in 2017 it became IDR 13,381 which meant that the rupiah depreciated by 42.55 percent (ADB, 2019) The amount of this depreciation rate has an impact on the company's financial performance (4). (7) . The high foreign debt of manufacturing companies has an effect on increasing the capital structure of the company and increasing interest costs. This condition worsens the solvency and profitability of the company, in the case of foreign debt decisions intended to increase profitability. The impact of capital structure (foreign debt) on the performance of manufacturing companies in the food and beverage sector in Indonesia can only be explained by using the exchange rate as a moderating variable. This is the novelty of this research.

2. THEORETICAL REVIEW AND HYPOTHESIS

A. Signal theory and pecking order

Signal theory explains the importance of reducing information asymmetry by providing or seeking information as a signal about company performance so that information recipients have a perception of company performance (8). This theory emphasizes on the existence of asymmetry information between the company and external parties. The company has more information about its performance and prospects than outsiders. Lack of outside information causes creditors and investors to protect themselves by assigning less value to the company. The way companies reduce information asymmetry is by submitting financial reports to outside parties. Company performance can be analyzed by analyzing financial ratios based on financial reports, such as liquidity ratios, activity, solvency, profitability. High profitability information such as ROE shows that the company's prospects are good, so that investors will respond positively to these signals and the firm's value will increase (9).

The pecking order theory explains that companies prefer to use internal funding rather than external, riskless debt than risky debt and the last one uses common stock (10). The premise is that there is no certain optimal target debt to equity ratio. Companies that are profitable generally require little external financing, on the other hand, companies that are less profitable will tend to use larger debt because internal

funds are insufficient and debt is the preferred external source. The hierarchy of sources of financing according to this theory is internal in the form of retained earnings, and external, namely debt and shares.

B. Variable

Profitability

Profitability is the company's ability to generate profits. Profit is obtained from income less expenses. To make a profit it is necessary to use resources. Profitability can be related to sales, total assets, and own capital. Profitability in relation to investment consists of return on assets (ROA) and return on equity (ROE) (11). Modified DuPont formula, linking total asset turnover (TATO), net profit margin (NPM), Financial Leverage Multilier (FLM) to determine the amount of ROE. Thus ROE = NPM x TATO x FLM (12). In this article profitability is measured using ROE, which is net income divided by common stock equity. The higher the ROE, the greater the profit obtained by shareholders and vice versa.

Activity

Company activity is measured by how effectively the company utilizes total assets or components of assets to generate sales, production, purchases that contribute to profitability. Total TATO shows the effectiveness level of the use of the company's overall

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assets in generating sales volume during a certain period. TATO indicates the efficiency of a company in using its assets to generate sales(12). Increased sales have the potential to increase profitability. Based on the modified DuPont formula, the higher the TATO, the higher the ROE.

Solvency

Solvency measures the company's ability to fulfill both short-term and long-term obligations. In this article, the solvency ratio is an indicator of the research variable, namely the debt to equity ratio (DER). This ratio is calculated from total debt divided by equity (13). The higher this ratio the greater the company uses debt and the greater the interest expense which can reduce the taxes paid by the company. DER is related to FLM in modified DuPont formula. If DER is total debt/total equity, then FLM is total assets/total equity. The more debt the company has, the higher the DER and FLM and the higher the ROE.

Company size

Determination of the size of the company can be determined based on total sales, total assets, average level of sales (14). Large companies have advantages over small companies. These advantages are: Large companies have better resources (financial, technological, human resources) or can achieve economies of scale that make them more competitive in international markets (15). With these various advantages, company size can determine cost efficiency and market share.

Exchange rate

In business activities, the US $ is seen as a strong currency in the world, so its use is required for many business transactions, including foreign loans. There are 3 (three) main factors that influence exchange rate movements (16), namely: fundamentals are related to economic indicators, technical factors are related to conditions of demand and supply of foreign exchange, and market sentiment is more caused by rumors or incidental political news. Changes in exchange rates can change the amount of costs and revenues, thus affecting profits. The exchange rate referred to in this article is IDR / US.

C. Correlation between variables

Effect of TATO on ROE

A large TATTOO shows that the company's performance can be stated to be good. Higher TATO means more efficient use of all assets in generating sales. The efficient use of all assets will result in higher expected profitability. This statement is supported by several research results, such as Yameen and Pervez (16)

Therefore:

Ha1: The activity ratio has an influence on the profitability of the food and beverage sub-sector manufacturing companies for the period 2006-2017.

Effect of DER on ROE

The increasing DER shows that company loans that can be used for company expansion and / or working capital are getting bigger. This can increase sales and company profitability. The greater the DER, the higher the FLM, so that it has an effect on increasing ROE. The statement is in line with the results of research conducted by Yameen and Pervez (16) proving that the capital structure as measured by DER has a positive effect on profitability (ROA)

oefficient of DER(0.109019) ind icates that for every one unit change in DER, There is a 0.109 unit change in ROA. It can beobserved that Regression coefficient of DER is statistically significant at 5% level of significance (Si

Therefore:

Ha2: DER has an influence on the ROE of the food and beverage sub-sector manufacturing companies for the period 2016-2017.

The effect of company size on profitability

Company size is shown from several things, such as organizational structure, number of employees, company assets, and number of shares outstanding. The bigger the company, the company's ability to expand and develop its business also tends to increase. This is because the company has greater resources which can increase the company's profit. Large companies not only produce and sell goods and services more efficiently but can also produce large quantities or new goods more efficiently (17). It shows that company size has a positive effect on company profitability. This statement is in line with the results of several studies conducted by (18) (19).

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Therefore:
Ha3: The ratio of company size has an influence on the profitability of the food and beverage sub-sector manufacturing companies for the period 2006 - 2017.

The effect of DER on ROE, with the exchange rate as the mediating variable

The depreciating exchange rate causes companies to buy raw materials, repay loans, including paying higher interest expenses. The increase in raw material prices will erode the company's profits if the company continues to sell its products at the same price. If the product price is increased, there is a tendency for people's purchasing power to decrease and it will also reduce company profits. The company's debt in foreign currency will increase if there is a weakening in the value of the rupiah. A decrease in consumer purchasing power or an increase in the cost of raw materials or an increase in interest costs due to the exchange rate will reduce company profits.

Exchange rate fluctuations have a negative and significant effect on the profitability of industrial companies (20). Globalization causes an increasingly limitless flow of goods. Increasing the need for investment funds in a country will be easier to obtain with loans from abroad. The sharp depreciation of the borrowing country's currency during an economic crisis causes the amount of debt to increase rapidly (21). The increase in the amount of debt due to this depreciation causes a decrease in the company's profitability. This impact will be greater if companies borrow funds from abroad and import raw materials but market their products domestically.

Based on this description:
Ha4: The exchange rate is able to moderate the effect of DER on the ROE of the food and beverage sub-sector manufacturing companies for the period 2006 - 2017.

3. RESEARCH METHODOLOGY

This study is an empirical study regarding how much the effectiveness of the activity ratio (TATO), solvency (DER) and company size (size) and the IDR to US $ exchange rate as a moderating variable on profitability (ROE) in food and beverage sub-sector manufacturing companies on the Stock Exchange Indonesia (BEI) with an observation period of 6 years (2012-2017). The data used in this study are secondary data. The data is in the form of financial reports published by manufacturing companies in the food and beverage sub-sector during 2012-2017 which are obtained from the official website of the Indonesia Stock Exchange www.idx.co.id. The sample was selected based on the purposive sampling method. The number of manufacturing companies in the food and beverage sub-sector in the observation year was 16, but the data were complete from 2012 to 2017 as many as 12 companies. The code of the twelve companies that were sampled were: AISA, CEKA, DLTA, ICBP, INDF, MLBI, MYOR, PSDN, ROTI, SKLT, STTP and ULTJ.

The operationalization of variables is shown in Table 2 below:

Table 2. Variable Operationalization Concept

Variables	Dimensional	Definition	Formula	Scale
Profitability	ROE	Comparison of total income to total equity	Total Income/ Total equity	Ratio
Activity	TATO	Comparison of net sales to total assets	Net Sales/ Total Assets	Ratio
Solvency	DER	Comparison of total debt to total equity	Total debt/ Total Equity	Ratio
Company/Firm Size	Size	The size of the company is indicated by the size of the company's total assets on an annual basis	Ln(total assets)	Ratio
Exchange rate	Exchange rate	Comparison of the value of money between IDR and US $	Ln (Selling Rate + Buying Rate)/2	Ratio

Testing using multiple regression test with a model before moderation, namely:
$ROE = \alpha + \beta1TATO + \beta2DER + \beta3Size + e$
And after moderation, namely:
$ROE = \alpha + \beta1TATO + \beta2DER + \beta3Size + \beta4 (DER * KURSUANG) + e$

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Information:
ROE = Profitability α = constant
TATO = Activity Ratio β1, β2, β3 = Coefficient
DER = Solvency e = error
SIZE = Company/Firm Size

4. RESULT & CONCLUSION

Descriptive statistical analysis conducted in this study used data from 12 manufacturing companies in the food and beverage sub-sector with a period of 6 years, from 2012 to 2017 or 72 observational data which can be seen in Table 3.

Table 3. Descriptive Statistical Analysis Result

	ROE	TATO	DER	SIZE
Mean	0,231399	1,273741	0,963737	14,99423
Median	0,158671	1,202835	1,011909	14,65099
Maximum	1,435333	3,057323	3,028644	18,33547
Minimum	-0,248705	0,546345	0,171404	12,42820
Std. Dev.	0,314255	0,547535	0,522605	1,517010
Skewness	2,657447	1,313557	0,993990	0,650496
Kurtosis	9,795179	4,783805	5,502121	2,614433
Jarque-Bera	223,2676	30,25105	30,63803	5,523720
Probability	0,000000	0,000000	0,000000	0,063174
Sum	16,66070	91,70937	69,38909	1079,584
Sum Sq. Dev.	7,011672	21,28545	19,39122	163,3937
Observations	72	72	72	72

Based on the data above, it is explained that:

- Profitability, which is proxied by ROE, has a maximum and minimum value of 1.435333 and -0.248705, respectively. The average value of the company size variable is 0.231399 and the standard deviation is 0.314255.
- Activities proxied by TATO have maximum and minimum values of 3.057323 and 0.546345, respectively. The average value of the activity variable is 1.273741 and the standard deviation is 0.547535.
- The solvency proxied by DER has a maximum and minimum value of 3.028644 and 0.171404, respectively. The average value of the solvency variable is 0.963737 and the standard deviation is 0.522605.
- Company or Firm size has a maximum and minimum value of 18.33547 and 12.42820, respectively. The average value of the firm size variable is 14.99423 and the standard deviation is 1.517010.

The independent variables in this study are the activity ratio (TATO), solvency (DER) and company/Firm size which are the predictors, while the dependent variable is profitability (ROE) and the moderating variable is the IDR exchange rate to US $. After passing the classical assumption test, a model test is carried out and based on the result of the Lagrangian multiplier test, it shows that the Breusch Pagan cross-section probability value is 0.00, which means that the random effect method is better than the common effect method. The results of hypothesis testing can be seen in Table 4.

Table 4. Result of Multiple Regression Analysis

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Variables	No Moderation Variables		With Moderated Variables	
	Coefficient	Probability	Coefficient	Probability
Constant	0,467939	0,4492	-1,374706	0,2043
TATO	0,104214	0,0435	0,162853	0,0033
DER	0,078252	0,0664	3,451936	0,0056
SIZE	-0,029658	0,4480	0,088662	0,2045
ER*DER			-0,358638	0,0065
Probability (F-Statistic)	0,048461		0,000000	
R-Squared	0,108736		0,925380	
Adjusted R-Squared	0,069416		0,905392	

Based on the result of data processing regarding the effect of the activity ratio (TATO), solvency (DER) and company/Firm size on profitability (ROE) with the exchange rate as a moderating variable carried out on 12 food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange. 2012-2017 period, the result of the analysis show the following:

1. The activity ratio (TATO) has a positive effect on profitability (ROE) in manufacturing companies in the food and beverage sub-sector listed on the Indonesia Stock Exchange.
2. The solvency ratio (DER) has no effect on profitability (ROE) in manufacturing companies in the food and beverage sub-sector listed on the Indonesia Stock Exchange.
3. Company size (size) has no effect on profitability (ROE) in manufacturing companies in the food and beverage sub-sector listed on the Indonesia Stock Exchange.
4. The exchange rate is able to strengthen the solvency ratio (DER) to profitability (ROE) in manufacturing companies in the food and beverage sub-sector listed on the Indonesia Stock Exchange.

Based on the result of the tests conducted, the activity variable has an effect on profitability. It is indicated by the profitability value of 0.0435 <0.05, which means that it is significant with a constant value of 0.104214. The bigger the TATO, the company can generate bigger profits. The result of this study is consistent with the research (21) which stated that activity has a positive effect on profitability.

Effect of Solvency on Profitability

Solvency ratio variable has no effect on profitability. It is indicated by the profitability value of 0.07> 0.05 with a constant of 0.08 which means it is not significant. The DER ratio of the company does not affect the company's profitability because the profits earned must be used again to pay debts, thereby reducing the value of the company's profits. The result of this study is in line with research (21). After adding the independent variable of exchange rate, the DER variable becomes significant so that it affects profitability. It is due to imports of large companies combined with the exchange rate so that it has an impact on profitability.

The Influence of Company Size on Profitability

Company size is measured based on the number of assets owned by the company. Firm size has no effect on profitability. It is indicated by the profitability value of 0.45> 0.05 with a constant of -0.03 which means it is not significant. The large size of the company does not guarantee that the company will generate increased profits. It is because large companies also have large expense components such as employee salaries, production costs, maintenance and so on. The result of this study is in line with the research (21)(22) which stated that company size has no effect on profitability.

Effect of Solvency on Profitability with Exchange Rate as a moderating variable

Based on the result of the tests conducted, the solvency variable which is moderated by the exchange rate can strengthen the relationship of the solvency variable to profitability. It is indicated by the profitability value of 0.07> 0.05 with a constant of 0.08 where the insignificant solvency variable before moderation turns into a profitability value of 0.01 <0.05 with a constant of 3.45 after moderation. Most of the raw materials for food & beverage industry companies come from foreign imports. With raw materials obtained from abroad, producers can produce products that can meet the target to be achieved. With imports, the industry can receive more raw materials so that they can be used for company operations. The result of this study is in line with research (23) (24).

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6. CONCLUSION

Based on the data analysis, DER has no effect on ROE. However, when including the IDR exchange rate against US $, it turns out that the exchange rate is able to mediate the positive effect of DER on ROE. Exchange rates can affect profitability, through revenue and costs. The IDR exchange rate against US $ depreciated during the research data. Exchange rates can affect profitability, through import, export, and loan activities. The depreciation of IDR will increase export competitiveness, even though there is an increase in import costs and loan installments including interest expenses. As long as the additional foreign exchange income from the company's exports is still greater than the additional burden on the import exchange rate and loan installments, the exchange rate is able to mediate the positive effect of DER on ROE.

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