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**THE EFFECT OF INTERNAL FACTORS ON CAPITAL STRUCTURE  
AND ITS IMPACT ON FIRM VALUE: EMPIRICAL EVIDENCE FROM  
THE FOOD AND BEVERAGES INDUSTRY LISTED ON INDONESIAN  
STOCK EXCHANGE 2013-2017**

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**Abstract:**

*This research aims to analyze the effects of profitability (ROA), liquidity (CR), assets growth, and firm size towards capital structure (DER) and the impact on firm value (PBV). This research uses secondary data from yearly financial statement of food and beverages companies listed in Indonesian Stock Exchange for period 2013-2017. The research design uses descriptive quantitative research and causality. Sampling method uses purposive sampling method, with some predetermined criteria, the number of sample is 17 manufacturing companies. The analysis technique used is panel data regression. The research results shows that the profitability (ROA) and firm size partially have negative effect and not significant on capital structure (DER). The liquidity (CR) and assets growth partially have negative effect and significantly on capital structure (DER). Then the capital structure (DER) partially have positive effect but not significantly influences the firm value (PBV). The profitability (ROA) partially have positive effect and significant on firm value (PBV). The liquidity (CR) and assets growth partially have negative and significant effect on firm value (PBV), and firm size partially have negative and not significant effect on firm value (PBV). Simultaneously profitability (ROA), liquidity (CR), assets growth and firm size effect on capital structure (DER). On the other side, simultaneously profitability (ROA), liquidity (CR), assets growth and firm size have effect on firm value (PBV).*

**Keywords:** Return on Assets; Current Ratio; Asset Growth; Firm Size; Capital Structure; Firm Value.

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## **1. Introduction**

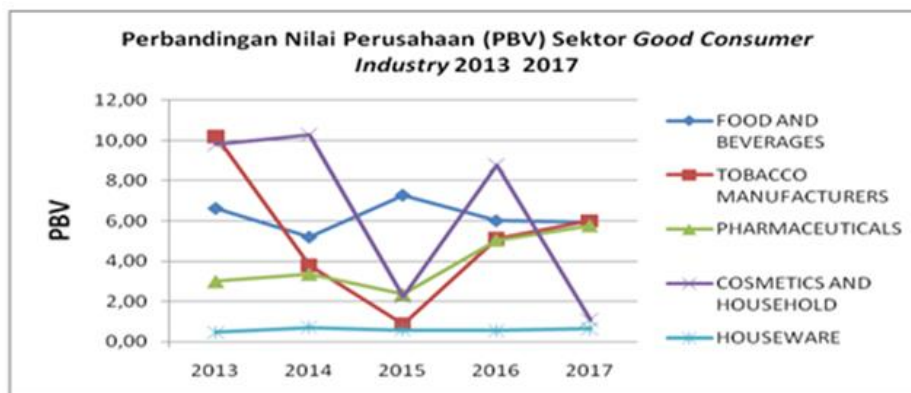
The company has a long-term goal of maximizing profit and increasing shareholder prosperity through the company's value maximization (Sartono, 2010). Winarto (2015) with the increasing of firm value, the company can obtain many benefits, among others, access to source of fund from

capital market, high selling price or value when the company is merged. Firm value can describe the company's performance. Hermuningsih (2013) define that the firm value is very important because it can reflect the company's performance that eventually can affect investor perception of the company.

Firm value is very essential because it reflects firm's performance that could affect to investors' perception towards the firm (Purwanto and Agustin, 2017). Firm value can be interpreted as expected value of shareholder's investment and expectation of company's total value (Sugihen, 2003). Brigham and Houston (2001) explain that there are several ratio approaches for assessing market price such as price earning ratio (PER), price to book value (PBV), market book ratio (MBR), dividend yield ratio and dividend payout ratio (DPR). In this research used price to book value (PBV) as a measurement of firm value. PBV is the price ratio per book value which is measured by the relationship between the stock price and the book value per share. The proxy also draws on research Hermuningsih (2013), Purwohandoko (2017), Hirdinis (2019) and Paminto et. al. (2016) were used PBV as measure of firm value.

PBV shows the relationship between stock market price and book value per share (Jones,2000). According to Hirdinis (2019) PBV is used to show how far a company can make a firm value relative to the amount of capital invested. The higher ratio of PBV, the more successful companies in creating value for shareholders. By knowing of PBV value, the investor can choose stocks which are undervalued or overvalued. Ahmed and Nanda (2004) also stated that PBV can be used as investor's consideration to choose the stock to be purchased as well as a price indicator of stock value. Based on the data, the value of PBV in food and beverages companies listed on the Indonesia Stock Exchange 2013-2017 is shown in graph 1.1.

Graphs 1.1 shows fluctuation firm value of Consumer Goods Industry listed on Indonesian Stock Exchange 2013-2017.



Graph 1.1: Firm value of Good Consumer Industry listed on Indonesian Stock Exchange 2013-2017

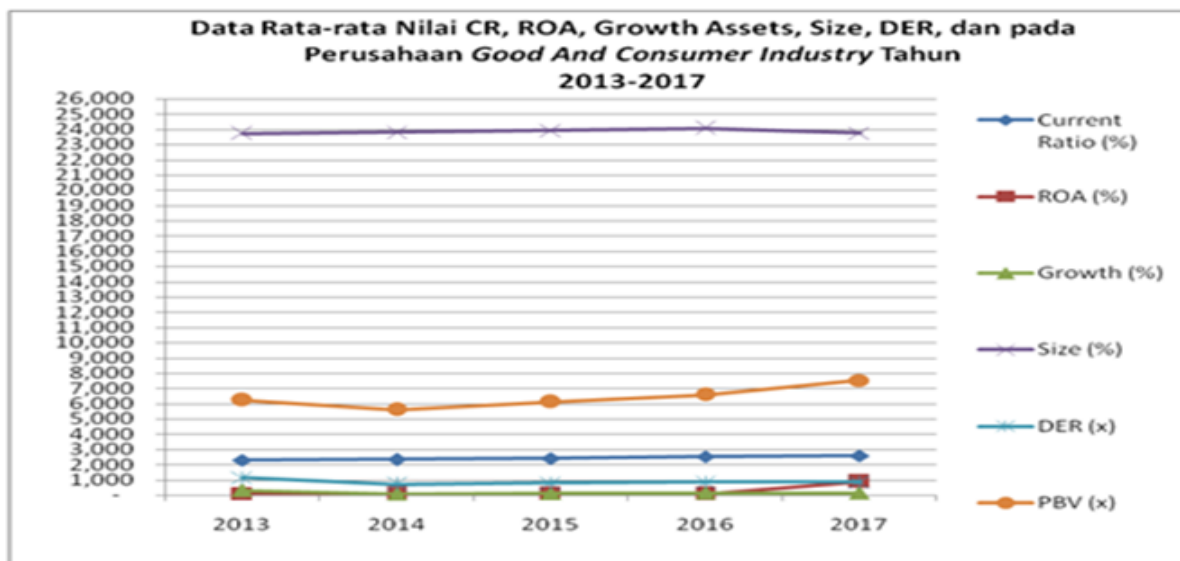
On the graph 1.1. shows that average value of PBV increased or decreased normally from the year 2013 – 2017. In year 2013, the PBV value showed a number of 6,61 (x) and decreased to 5,19 (x) in 2014. While in year 2015, the PBV value increased by 2 times from the previous year to be 7,19 (x). Furthermore, in 2016-2017, PBV value declined not too large only range by 1 (x). From this data, we can make summary that food and beverages industry have good firm value fluctuations. It can be seen from the increase and decrease in value that is not too significant.

PBV value is determined by the company’s funding decisions, this is one capital structure policy. The capital structure policy influences its shareholders return and risk. The objective of a company should therefore be directed towards the maximization of its value by examining the capital structure decision (Pandey, in Ogbulu and Emeni, 2012). Brigham and Houston (2001) said that the optimum capital structure is capital structure that can maximizes the company’s stock price. The financial manager must plan an optimum capital structure for his company. Every company needs to find out their optimal capital structure, because different company specific factors that affect their capital structure. Every company has different capital structure when they try to maximize the overall value (Priya et.al, 2015).

Research has been done by Hirdinis (2019) proved that the capital structure has positive and significant effect on firm value. The research consistent with research conducted by Hermuningsih (2013), Priya et al. (2015) and Purwohandoko (2017) who stated that the capital structure has significant positive effect on firm value.

Capital structure is the ratio of the debt value to the own capital, that is reflected in the company’s financial statements. Capital structure can be proxy by Debt to Equity Ratio, which is total debt divided by total equity. According to Hirdinis (2019) stated that if value of DER gets higher, then the firm value will increase, as long as, the DER has not reached its optimum point in accordance with trade-off theory. There are many factors that effect on the capital structure. Brigham and Houston (2001), determinants of capital structure is sales stability, asset structure, operating leverage, growth, profitability, tax, controlling, management attitude, firm size, and financial flexibility. Data of company performance that can be effect to the capital structure and firm size for food and beverages industry listed on the Indonesian stock exchange 2013-2017 are shown in Graph 1.2.

Graph 1.2. Company financial performance food and beverages industry listed on Indonesian Stock Exchange 2013-2017.



Graph 1.2: Company financial performance of food and beverages Industry listed on Indonesia Stock Exchange 2013-2017.

The profitability is the ability of company to earn profits in relation to sales, total assets and own capital (Sartono, 2010). Profitability is important on maintaining the company activity in the long run, and reflects the company's prospect. This way all company will try to increase their profitability on assuring their business continuance (Hermuningsih, 2013). Every company wants to rise up the profitability level on high and stable condition.

According to Purwohandoko (2017) profitability became one of the most influential factors in the capital structure. Companies that have high profitability level will reduce the debt, due to the company has retained earnings to rely on internal resources and relatively reduce the use of debt. According to Brigham and Ehrhard (2010) profitability ratio can be indicated by gross profit margin, return on assets, return on equity, return on investment, profit margin, and earning power. On this research, we measure profitability with return on assets (ROA). ROA shows the company's ability to get profits from assets used (Sartono, 2010).

On the graph 1.2 shows that the average of ROA to fluctuate from year 2013-2017. The value of ROA has decreased in year 2014, namely from 10,6% being 8,23% or equal to 2,4%. But the value of ROA has increased in year 2015-2017. The decreasing ROA in 2014 was in line with decrease in PBV 5,60 (x) and DER 0,72 (x). The effect of ROA on DER is not accordance with the theory namely company with high ROA levels generally use relatively little debt. While the effect of ROA on PBV value in accordance with the theory, namely the high profitability will be able to increase stock price as a measure of firm value.

Winarto (2015), Annisa and Chabachib (2017) stated that profitability has a positive and significant effect on firm value. On other side, Umayyah and Salim (2018), Purwohandoko (2017), Chen (2011) stated that profitability has no significant effect on firm value (PBV). Umayyah and Salim (2018) stated that profitability has a positive and significant effect on capital structure. Different were expressed by Pahuja and Sahi (2012) stated that profitability has no effect on capital structure.

According to Ross et al. (2010) stated that liquidity can be interpreted as the level of company ability to be able to pay its debts that have matured. Each company must maintain their level of liquidity because it will have an impact on corporate funding activities. Jacob and Taslim (2017) said that the company can be said liquid if the company can fulfill the obligation at maturity. The level of liquidity can be measured by ratio of liquidity. Current Ratio is one of financial ratio that can be used to measure a company's ability to its pay short term debt (Gitman et al., 2010).

On the graph 1.2 shows that CR has increased from year 2015-2017. In year 2015, CR has increased to 241,3%. This increasing was also followed by an increase of firm value (PBV) and capital structure (DER) to each 6,12 (x) dan 0,81 (x). In year 2016 CR was increased 10,9% from 241,3% to 252,3%. The effect of CR on DER and PBV is relevant with the theory. Company that have high current ratio (CR) mean that they have sufficient current assets to return their current debts so they provides an opportunity to obtain convenience in obtaining debt from investors (Ozkan, 2001).

Several researchs have been conducted to determine relationship between liquidity, capital structure and firm value. Nugroho (2006), Pahuja and Sahi (2012) argued that liquidity has a

positive and significant effect on capital structure. The other side Mouamer (2011) stated that no significant relationship between capital structure and liquidity. Serghiescu and Viorela (2014) also stated that liquidity ratio is negatively affecting the total debt companies. Annisa and Chabachib (2017) argued that CR has no significant negative effect on PBV. Umaiyah and Salim (2018) stated that Current Ratio (CR) has a insignificant positive effect on corporate value (PBV). Jacob and Taslim (2017) stated that the current ratio has a significant effect on firm value. The bigger the current ratio shows the higher company's ability to fulfill obligations in short terms and increase the firm value.

Company growth can show how far the company can adjust in the economic systems in the same industry. According to Purwohandoko (2017), the company growth is an indicator of how company's development or growth in the given period. Brigham and Gapensky (1996) also argued that growth of the companies need large funding from external parties (investors and creditors). Sheikh and Wang (2011) stated that company growth can affect on the capital structure. In this research, the company growth is measured by the proportion of assets changes, to compare the increase or decrease in the total assets.

In year 2014 the assets growth declined significantly, from 32% to 9%. The decrease was also followed by a decrease in the PBV value and DER. Assets growth began to increase in year 2015-2017, which was equal to 1,5% - 2%. According to Esperanca et al. (2003), Gul et al. (2013), Sheikh and Wang (2011) the company's growth will affect to the structure of capital. Meanwhile, according Gathogo and Ragui (2014) the company's growth has no effect against the capital structure. Paminto et al. (2016) stated that company growth has negatively and significant affect on the firm value. Safrida (2008) proved that the firm growth has insignificant negative effect on firm value.

The large of firm size shows that the company is increasing, so investors will give positive respond and firm value will increase. Thus, firm size reflects the size or amount of assets owned by the company and has an influence on the value of the company (Van Horne and Wachowicz, 2008). Firm size can be show by using total assets, total net sales, average sales, and average total assets.

According to the trade-off theory there is a positive relationship between firm size and capital structure, because the large of companies are more well diversified, stable of cash flows, and having less potential for financial distress. Several researchs have been conducted to determine relationship between firm size, capital structure and firm value. Manoppo and Arie (2016) stated that firm size has a positive effect on firm value. Niesh and Velnampy (2014) prove that firm size has no effect on firm value. Gul et al. (2013) the firm size has significant positive influence on the capital structure.

The average of firm size food and baverages industri in 2013-2017 has increased from 2013-2016. The firm size increased annually from 2013-2016 with an averages increase of 0,11% per year. In year 2015, firm size was increased of 0,101%, which was followed by increase of PBV and DER with each amount 0,518 (x) dan 0,092 (x).

Based on the background and identification, the problems to be examined are as follows:

- 1) What is the effect of ROA, CR, assets growth, and firm size on DER?
- 2) What is the effect of ROA, CR, assets growth, and firm size on PBV?

- 3) How does DER influence on PBV?
- 4) What is the influence of ROA, CR, assets growth, and firm size on PBV with DER as an intervening variable?

### **Firm Value (Price to Book Value)**

Suad (2008) firm value is a price that is willing to be paid by prospective buyer when the company is sold. The greater firm value means that the financial position and corporate prospects are getting better (Rajhans, 2013). The go public company has a purpose to maximize the welfare shareholders who present the stock price of the company. Thus the higher of firm value, the higher level of shareholders welfare. According to Brigham and Ehrhardt (2010), the ratio of market value linking between stock price and company revenue. The market value ratio is a way of measuring company value.

According to Brigham and Houston (2001) there are several approach to ratio analysis in market valuation, namely price earning ratio (PER), price to book value (PBV), market book ratio (MBR), dividend yield ratio and dividend payout ratio (DPR). The proxy used in this research is PBV. Price to book value (PBV) is comparing between stock price and book value per share. The high PBV value can describe a high stock price compared to the price to book value per share. The high stock price can make good value for shareholders. The success of company to make this value certainly gives hope to shareholders to get higher profit (Sartono, 2010).

### **Capital Structure**

Capital structure is the proportion of a company's long term permanent funding, that it shows by leverages, preferred stock, and common stocks (Van Horn and Wachowicz, 2008). According to Brigham and Ehrhardt (2010) that capital structure is mix between leverage and equity. The decisions of a capital structure include its choice of the target capital structure, average leverage maturity, and specifications of the types of financing used. A manager must make a capital structure decisions that is designed to maximize the firm value.

The company's capital structure is affected by any factor such as stability of sales, assets structure, operating leverage, growth, profitability, income tax, management actions, management attitude, attitudes of lenders and rating agencies, market and internal conditions of the company and financial flexibility (Brigham and Houston, 2001). Capital structure is proxied by debt to equity ratio (DER). DER is a ratio used to measure the level of debt usage to the total shareholder's equity owned by the company.

### **Profitability**

Profitability is the ability of company to get profit which is related to sales, total assets, and equity (Sartono, 2010). According to Brigham and Ehrhardt (2010), profitability is the net result of financial company policies and decisions. Zuhro (2019) stated that profitability ratio is usually made to measure the success of a firm and indicators to evaluate the manager's performance. The following financial ratios can be used to measure the profitability of company such as Gross Profit Margin (GPM), Net Profit Margin (NPM), Return on Asset (ROA), and Return on Equity (ROE).

In this research, profitability is represented by ROA (Return on Assets). According to Sartono (2010) said that ROA shows the company's ability to get profits from assets used. ROA is an assessment of profitability on total assets by comparing post-tax profits with average total assets.

### Liquidity

Company liquidity is indicated by the size of current assets, namely cash, securities, account receivable and inventory (Sartono, 2010). According to Gitman et al. (2010) liquidity refers to overall financial solvency of the company, in this case it is interpreted as an ease of paying bills. There are two measuring of liquidity namely current ratio and quick ratio.

Current ratio is one of financial ratio that can be used for to measure a company's ability to its pay short term debt (Gitman et al., 2010). According to Sartono (2010) the higher current ratio, the greater company's ability to pay short term financial debt. The level of current ratio shows that the results of 200% or 2,00 in general have been satisfactory for the company and this ratio level is used as a starting point in conducting research and is only a habit (Munawir, 2007).

### Assets Growth

Company growth is an indicator of how company's development or growth in the given period (Purwohandoko, 2017). Company growth can be measured as growth in total assets, where the growth of past assets illustrates future profitability and future growth (Taswan, 2003). In this research, the growth is proxied by assets growth. Assets growth is calculated by the difference of total assets in current period and previous period against total assets in previous period.

### Firm Size

According to Moeljadi (2014) firm size will be important for investors and creditors as it will be associated with their investment risk. Firm size can affect the company's debt policy. The bigger company need more fund to run the company's operations. Firm size is measured using Ln total assets. According to Brealey et al. (2007), company with large assets will use the resources available as much as possible to generate maximum business profits and companies with small assets also generate profits in accordance with their resources.

## 2. Materials and Methods

The framework of the research can be seen in Figure 1 below:

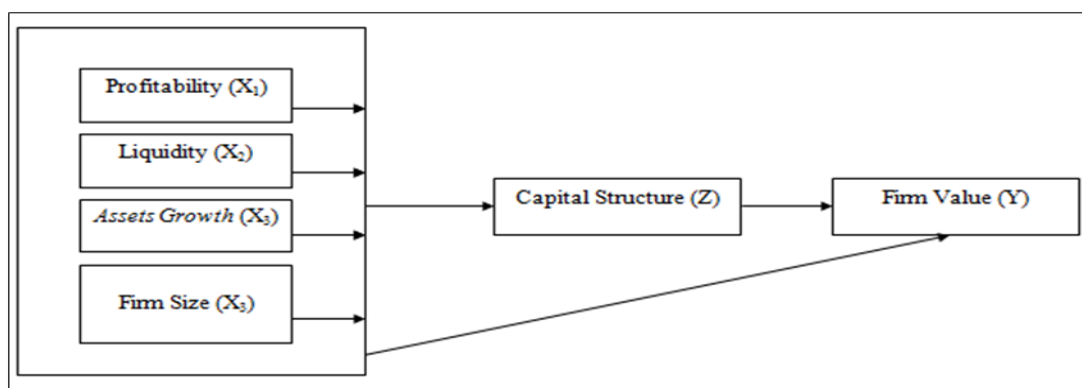


Figure 1: Thinking Framework

Based on the above framework, the proposed hypothesis is as follows:

Profitability (ROA) has an affect on capital structure (DER)

Liquidity (CR) has an affect on capital structure (DER)

Assets Growth has an affect on capital structure (DER)

Firm size has an affect on capital structure (DER)

Capital structure (DER)has an affect on firm value (PBV)

Profitability (ROA) has an affect on firm value (PBV)

Liquidity (CR) has an affect on firm value (PBV)

Assets Growth has an affect on firm value (PBV)

Firm size has an affect on firm value (PBV)

Profitability (ROA), Liquidity (CR), Assets Growth, and firm size simultaneously influence on firm value (PBV)

Profitability (ROA), Liquidity (CR), Assets Growth, and firm size simultaneously influence on capital structure (DER)

The design of this research used was description quantitative research and causality which aim to determine the influence of two or more variable. There were three variables of independent variables (ROA, CR, Assets Growth, and Firm Size), intervening variable (DER) and dependent variable (PBV).

The population of this research is companies in the food and beverages sub-sector listed on Indonesia Stock Exchange in 2013 to 2017. The selection of samples in the research was done by purposive sampling method. Below is the criteria:

Table 1: Sampling Process

No	Criteria	Amount
1	Company Food and Beverages sub-sector listed on IDX from 2013 – 2017	21
2	Company Food and Beverages sub-sector has incomplete data	(4)
	Number of companies that have meet criteria	17

Source: IDX data

In this research the definitions and measurements of each variable are presented in table 2.

Table 2: Definition operational and Variable Measurements

No	Variable	Indicator	Scale
1.	Firm Value (Y)	$PBV = \frac{\text{Price per Share}}{\text{Book Value per Share}}$	Ratio
2.	Capital Structure (Z)	$DER = \frac{\text{Total Debt}}{\text{Total Capital}}$	Ratio
3.	Profitability (X <sub>1</sub> )	$ROA = \frac{\text{Net Profit after Tax}}{\text{Total Assets}}$	Ratio
4.	Liquidity (X <sub>2</sub> )	$CR = \frac{\text{Current Assets}}{\text{Curren tLiabilities}}$	Ratio
5.	Assets Growth (X <sub>3</sub> )	$AG = \frac{\text{Total Assets} - \text{Total Assets} (t - 1)}{\text{Total Assets} (t - 1)}$	Ratio
6.	Firm Size (X <sub>4</sub> )	$SZ = \ln (\text{TotalAssets})$	Value

Source: Literature (2018)



The data used in this research are secondary data, quantitative, time series and cross section or panel data. Data collection was recorded by observing, noting and analyzing the financial statements of companies in the food and beverages sub-sector from year 2013 to 2017 listed IDX. Data obtained through internet media by downloading from site [www.idx.co.id](http://www.idx.co.id).

The data are analyzed by panel data regression analysis model using Eviews version 8. Before panel data regression analysis, descriptive analysis is conducted. According to Dencik et al. (2018) said descriptive statistics are used to describe the patterns or conditions of a variable sample. The tools of analysis used to describe these patterns are usually such as mean, median, modes, standard deviations and others.

According to Gurajati and Porter (2012) regression analysis is dependency study of one dependent variables, on one or more independent variables. It is for to find out the relationship between one dependent variable (Y) with several independent variable (X). The panel data equation model is as follows:

- 1)  $PBV = a + b_1 ROA + b_2 CR + b_3 AG + b_4 SZ + e_i$
- 2)  $DER = a + b_1 ROA + b_2 CR + b_3 AG + b_4 SZ + e_i$
- 3)  $PBV = a + b_1 DER + e_i$

There are three panel data regression model namely the common effect, fixed effect and random effect. The selection of best model is using the Chowtest, Hausman test and Lagrange Multiplier / LM. Assumting testing is done using: by Multicollinearity and Heterocedasticity Test.

Multicollinearity is a condition where there is a perfect linear relationship between independent variables in the regression model. According to Neter et al. dalam Masngudi and M. Noor Salim (2012) it is recommended to look at the Variance Inflation Factor (VIF), if the VIF value is less than 10, there is no multicollinearity. Heteroscedasticity is a condition where there is an inequality of variants from residuals for all observations in the regression model. In this research used Breusch-Pagan-Godfrey test for detected heterocedasticity. The conditions used, if the value of chi square probability is greater than 5%, it means there is no heteroscedasticity in the model.

Hyphothesis testing in panel data regression model can be tested for accuracy through:

- 1) Significance test or t-test are used to determined the level of significance between independent variables and dependent variabel by partially. In this research the significance level adopted was 0.05 or 5%. Decision criteria:  
Ho is accepted if  $-t \text{ counts} \geq -t \text{ table}$  or  $t \text{ count} \leq t \text{ table}$  (no effect)  
Ho is rejected if  $-t \text{ counts} < -t \text{ table}$  or  $t \text{ count} > t \text{ table}$  (effect).
- 2) The F test is used to determine whether the independent variables collectively have a significant effect on the dependent variable. Decision criteria:  
Ho is accepted if  $F \text{ count} < F \text{ table}$  (effect) or if the P value  $> \alpha$   
Ho rejected if  $F \text{ count} > F \text{ table}$  (effect) or if the P value  $< \alpha$

Intervening testing research uses Path Analysis. According to Ghozali (2011) path analysis is used to find causality between variables. In describing the path diagram that need to take note about one-headed arrows are regression and two-headed arrows are correlation relationships. A direct relationship occurs if one variable affect to another variable without a third variable as meadiator

(intervening) between the two variables. Indirect relationship occurs if there is a third variable that mediate the relationship between the two variables. If the value of  $R12+R32>R22$ , intervening variable is said to be able to mediate the relationship between independent variable and dependent variable.

### 3. Results and Discussions

Descriptive statistics are used to show data characteristics of the variables tested. The results of descriptive statistics are shown in table 3.

Table 3: Descriptive Statistics Test Results

	PBV	CR	ROA	ASSET GROWTH	SIZE	DER
Mean	6.204160	1.963754	0.081268	0.314760	23.70656	1.142184
Median	2.796978	1.578870	0.059884	0.119761	26.52961	1.079509
Maximum	38.69095	8.637842	0.657201	8.850241	30.66678	5.201483
Minimum	0.163382	0.143319	-0.097058	-0.685272	14.64153	0.040291
Std. Dev.	9.241130	1.460583	0.122182	1.055231	5.554020	0.849285

Source: Output Eviews 8, Processing data

#### Data Analysis of Equation 1

The first model estimation uses chow test. Chow test result using software Eviews 8 obtained a probability value of 0,0000 smaller than 0,05. It can concluded that the fixed effect model is better than the common effect model. The second test model estimation uses Hausman test. Hausman test found a probability value of 0,000 smaller than 0,05. It was concluded that the fixed effect model was better than random effects model. From the result of the two models, the best model chosen is the fixed effect model.

The result of multicollinearity test obtain each VIF value of variable less than 10, so it can be concluded that the equation were no multicollinearity problem. The results of heteroscedasticity test using Eviews 8 obtained the value of probability for each variables greater than 5%, so that it can be concluded that there is no problem of heteroscedasticity.

Based on the results of model estimation test, the fixed effect model is the best model. Below is the result from Eviews 8 for this model.

Table 4: Regression Model Equation 1

Variable	Fixed Effect Model			Information
	Coefficient	t-Statistic	Prob.	
C	2,7709	3,3446	0,0014	
ROA	-1,9237	-1,9301	0,0580	Not Significant
Current Ratio	-0,1554	-2,1138	0,0384	Significant
Assets Growth	-0,1291	-2,4730	0,0161	Significant
Firm Size	-0,0475	-1,4010	0,1660	Not Significant
F-statistic	13,3088			
Prob (F-statistic)	0,0000			

Source: E views 8 Data Processing Results

$$DER = \alpha + \beta ROA + \beta CR + \beta AssestGrowth + \beta FirmSize$$

$$DER = 2,771C - 1,924ROA - 0,155CR - 0,129AG - 0,047SZ$$

From the table above, the significance test results are as follows:

- 1) Variable profitability (ROA) has a t-count value is  $-1,9301 > -1,9901$  and the probability value  $0,0580 \geq 0,05$ . This is means that profitability (ROA) has a partially negative and not significant effect on the capital structure (DER).
- 2) Variable liquidity (CR) has a t-count value is  $-2,1138 < -1,9901$  and the probability value  $0,0384 \leq 0,05$ . This is means that liquidity (CR) has a partially negative and significant effect on the capital structure (DER).
- 3) Variable assets growth (AG) has a t-count value is  $-2,4730 < -1,9901$  and the probability value  $0,0161 \leq 0,05$ . This is means that assets growth (AG) has a partially negative and significant effect on the capital structure (DER).
- 4) Variable firm size (SZ) has a t-count value is  $-1,4010 > -1,9901$  and the probability value  $0,1660 \geq 0,05$ . This is means that firm size (SZ) has a partially negative and not significant effect on the capital structure (DER).
- 5) The test result show that F value is 13,3088 with significant level of  $0,000 < 0,05$ , indicates that the variabel profitability (ROA), liquidity (CR), assets growth (AG) and firm size (SZ) simultaneous have a significant effect on DER.

### Data Analysis of Equation 2

Chow test result using software Eviews 8 obtained a probability value of 0,0000 smaller than 0,05. It can concluded that the fixed effect model is better than the common effect model. The second test model estimation uses Hausman test. Hausman test found a probability value of 0,9516 bigger than 0,05. It was concluded that the random effect model was better than fixed effects model. From the results the best model chosen is the random effect model.

The result of multicollinearity test obtain each VIF value of variable less than 10, so it can be concluded that the equation were no multicollinearity problem. The results of heteroscedasticity test using Eviews 8 obatained the value of probability for each variables greater than 5%, so that it can be concluded that there is no problem of heteroscedasticity.

Based on the result of model esetimation test, the random effect model is the best model. Below is the result from Eviews 8 for this model.

Table 5: Regression Model Equation 2

Variable	Random Effect Model			Information
	Coefficient	t-Statistic	Prob.	
C	1,2491	1,8395	0,0695	
ROA	2,1181	2,4532	0,0163	Significant
Current Ratio	-1,3548	-2,0861	0,0402	Significant
Assets Growth	-0,9840	-2,0043	0,0484	Significant
Firm Size	-0,2125	-0,8213	0,4139	Not Significant
F-statistic	3,6196			
Prob (F-statistic)	0,009191			

Source: Eviews 8 Data Processing Results

$$PBV = \alpha + \beta ROA + \beta CR + \beta Assest\ Growth + \beta FirmSize$$

$$PBV = 1,2491C + 2,1181ROA - 1,3548CR - 0,9840AG - 0,2125SZ$$

From the table above, the significance test results are as follows:

- 1) Variable profitability (ROA) has a t-count value is  $2,4532 > 1,9901$  and the probability value  $0,0163 \leq 0,05$ . This means that profitability (ROA) has a partially positive and significant effect on the firm value (PBV).
- 2) Variable liquidity (CR) has a t-count value is  $-2,0861 < -1,9901$  and the probability value  $0,0402 \leq 0,05$ . This means that liquidity (CR) has a partially negative and significant effect on the firm value (PBV).
- 3) Variable assets growth (AG) has a t-count value is  $-2,0043 < -1,9901$  and the probability value  $0,0484 \leq 0,05$ . This means that assets growth (AG) has a partially negative and significant effect on the firm value (PBV).
- 4) Variable firm size (SZ) has a t-count value is  $-0,8213 > -1,9901$  and the probability value  $0,4139 \geq 0,05$ . This means that firm size (SZ) has a partially negative and not significant effect on the firm value (PBV).
- 5) The test result show that F value is 3,6196 with significant level of  $0,009191 < 0,05$ , indicates that the variabel profitability (ROA), liquidity (CR), assets growth (AG) and firm size (SZ) simultaneous have a significant effect on firm value (PBV).

### Data Analysis of Equation 3

Chow test result using software Eviews 8 obtained a probability value of 0,0000 smaller than 0,05. It can concluded that the fixed effect model is better than the common effect model. The second test model estimation uses Hausman test. Hausman test found a probability value of 0,5586 bigger than 0,05. It was concluded that the random effect model was better than fixed effects model. From the result of the two models, the best model chosen is the random effect model. Below is the result from Eviews 8 for this model.

Table 6: Regression Model Equation 3

Variable	Random Effect Model			Information
	Coefficient	t-Statistic	Prob.	
C	4,3875	1,7888	0,0773	
DER	1,5904	1,5402	0,1273	Not Significant
F-statistic	2,3917			
Prob (F-statistic)	0,1257			

Source: Eviews 8 Data Processing Results

$$PBV = \alpha + \beta DER$$

$$PBV = 4,387C + 1,590DER$$

The significance test (T-Test analysis) results are DER has a positive and not significant effect on PBV because the t-count value is  $1,5904 < 1,9901$  and the probability is  $0,1273 \geq 0,05$ . increasing the firm value.

Based on the results of research that has been conducted on food and baverages industry in the period 2013-2017, the results are that:

- 1) Profitability (ROA) has no significant negative effect on capital structure (DER). These results indicate that the value of profitability increases, then the capital structure of company decreases. Weston and Brigham (1998) companies that have high profitability (ROA) generally use relatively little debt. This is because with high profitability (ROA), it is possible for companies to capitalize on retained earnings. According to Myers and Majluf (1984) in the pecking order theory explain that companies with high profitability tend to use their own capital more than company with lower profitability.  
This result is not relevant with static trade off theory, which stated that higher profitability drives a greater level of debt. This is supported Pahuja and Sahi (2012) which said that profitability has a negative and not significant effect on capital structure (DER). On the contrary, Umayah and Salim (2018) stated that profitability (ROA) has positive and significant effect on capital structure (DER).
- 2) Liquidity (CR) has negative and significant effect on capital structure (DER). The result indicates when the value of liquidity (CR) increases, the capital structure of a company decreases. According to Ramlall (2009) that the higher company's liquidity, the reduced use of debt. This is relevant with the pecking order theory that companies have high liquidity prefer funding with internal funds, so repayment of current debt will reduce the level of corporate debt. Company that have a greater composition of current assets can use these fund for investment. So, the low company's liquidity will reduce the amount of capital structure.  
This is in line with the results of Nugroho (2006), Pahuja and Sahi (2012). The results of this research is not relevant with Mouamer (2011) stated that no significant relationship between capital structure and liquidity.
- 3) Asset growth has a negative and significant effect on capital structure (DER). Companies that have high growth can improve sales stability. There are sales fluctuations encouraging the company to not overuse debt. The results of this study supported by Titman and Wessels (1998) stated that the cost in relation to the agency's relationship between shareholders and bondholders would be high in the emerging industry, so that there was a negative relationship between growth and debt.  
This is different with the pecking order theory which stated the companies that have fast growth rate use more external capital. The result of study support the research conducted Eriotis et al. (2007) that the growth rate is negatively related fo financial leverage. In contrast to the results by Purwohandoko (2017), Gathogo and Ragui (2014) the company's growth has not affect on the structure of capital
- 4) Firm size has a negative and not significant on the capital structure (DER). According to the pecking order theory there is a negative relationship between firm size and debt ratio, because asymmetric information is not a problem for large companies. So, the capital costs on the large company will be relatively smaller compared to small company (Mouamer, 2011). The larger firm size does not guarantee the survival of the company or progress of the company's operational activities. Thus, the firm size does not guarantee the interest of investors and creditors for investing their funds into the company.  
This research does not relevant with trade of theory which stated that the larger company are easier to obtain loans and access to the capital markets. Creditor will give a larger debt to the big company with the asumption that the smaller company has a possibility of bankruptcy.

The results of this study support to the research conducted by Pahuja and Sahi (2012) that firm size has negative and not significant effect to debt regulation in the capital structure of manufacturing companies registered in India. This study does not support to research of Zuhro (2009) whose the results indicate that the firm size has positive effect on the leverage (DER).

- 5) Capital structure (DER) has a positive and not significant effect on firm value. The positive direction shows that the better composition of capital structure (DER) of company, then the firm value is higher. Company must be able to determine how much debt is used by company, so that it can increase firm value. Brigham and Houston (2001) show that the use of leverage can increase the firm value because in the tax calculation, the interest charged due to the using of debt is deducted first, resulting the company get tax relief. Signalling theory predicts a positive relationship between capital structure and firm value (Ross et l., 2010). This is different with pecking order theory that said higher use of debt will reduce the firm value.

The results of this study are in accordance with previous research conducted by Salim and Evilin (2019) that stated DER has positif and insignificant toward PBV. In contrast to the research by Hermuningsih (2013), Priya et al. (2015) and Purwohandoko (2017) who stated that the capital strucure has significant effect on firm value.

- 6) Profitability (ROA) has positive and significant. This is shows that the higher of profitability, the higher of firm value. The high value of profitability reflects the company's ability to make a profit. Companies have large profitability each year tend to be attractive to many investors. This is in accordance with the theory of Brigham and Houstan (2001) which state high profitability (ROA) reflects a good company position, so the value given by market to the company will also be good. This is in line with research by Hidayati (2010), Salim and Evilin (2019), Hermuningsih (2013), Chen (2011) there is a postive relationship between profitability (ROA) and firm value (PBV).
- 7) Liquidity (CR) has a negative and significant effect on firm value. The higher current ratio value, the greater of company's ability to fulfill short-term financial obligations (Sartono, 2010). Companies that have high liquidity will allocate funds for repayment of short-term debt, thus it can reduce devidend payment to shareholders. This condition will be responded negatively by investors, to that it can reduce the firm value. This research in line with research Nugroho (2006), Pahuja and Sahi (2012) argued that liquidity has a positive and significant effect on firm value.
- 8) Assets Growth (AG) has a negative and significant effect on firm value. This is shows that assets growth can reduce the firm value. Decerasing growth rates affect the firm value among investors. Every decrease in total assets of the research period affects the price per share of equity per share. The investment decision of a company's assets will determine the company's profit and performance in the future. Paminto et al. (2016) states that the growth has a negative relationship to firm value.
- 9) Firm size has negative and insignificant on the firm value. This means that the larger firm size, can reduce the firm value. In this study said that the firm size is not very influential on the company seen from the results of research that is not significant. This is because investors not only see firm size for buying a stock but also from a financial and other perspective. The results of this study are supported by research conducted by Zuhro (2019) stated that firm size has negative and not significant affect on the firm value. In contract

research by Manoppo and Arie (2016) stated that firm size has a positive effect on firm value.

10) Effect of Profitability, Liquidity, Assets Growth and Firm Size on Firm Value

Based on the results of the study it can be seen that profitability, liquidity, growth assets and firm size simultaneously have a positive and significant effect on firm value. The results of this study are consistent with the research conducted by Umaiya and Salim (2018) which states that there is a positive and significant influence between the variables of profitability, liquidity, and firm size on firm value.

11) Effect of Profitability, Liquidity, Assets Growth and Firm Size on Capital Structure

Based on the results of the study it can be seen that profitability, liquidity, assets growth and firm size simultaneously have a positive and significant effect on capital structure. The results of this study are in accordance with the research conducted by Umaiya and Salim (2018) which states that simultaneously, the variables of liquidity, profitability, company size, and sales growth affect on the capital structure.

12) The effect of Profitability, Liquidity, Assets growth and Firm size on Firm value by mediating Capital Structure

To find direct or indirect effects of each variables, researcher perform several stage of testing by comparing the coefficient determinant between regression or R<sup>2</sup> value (adjusted R-squared). The effect of DER as intervening variable is significant when compared to DER as an independent variable. The independent variabel (ROA, CR, assets growth and firm size) with dependent variabel (DER) yields a value of R<sup>2</sup> 15,32%, this value is smaller than DER as an intervening variable.

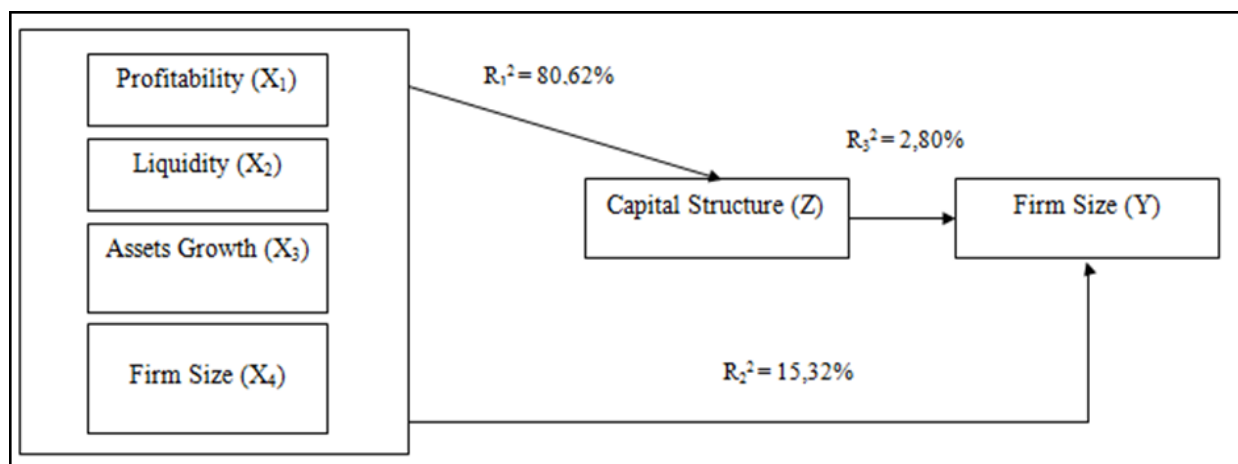


Figure 2: Direct and Indirect Effect

If value of  $R_{22} < (R_{12} + R_{32})$  is  $15,32\% < (80,61\% + 2,80\%)$ . This results value indicates that DER as an intervening variable is significant on influence to ROA, CR, assets growth, and firm size on firm value. While researcher compared to the value of R<sup>2</sup> through intervening DER and without intervening variables, the value of R<sup>2</sup> which indicates the ability of independent variables to explain the higher dependent variable is achieved through the DER variable as an intervening variable.

#### 4. Conclusions and Recommendations

The following conclusions are drawn from this study:

- 1) Profitability (ROA) has a negative but not significant effect on capital structure (DER).
- 2) Liquidity (CR) has a negative and significant effect on capital structure (DER).
- 3) Asset growth has a negative and significant effect on capital structure (DER).
- 4) Firm size has a negative but not significant effect on capital structure (DER).
- 5) Capital structure (DER) has a positive and not significant effect on firm value (PBV).
- 6) Profitability (ROA) has a positive and significant effect on firm value (PBV).
- 7) Company liquidity (CR) has a negative and significant effect on firm value (PBV).
- 8) The growth of assets (AG) companies have a negative and significant effect on company value (PBV).
- 9) Firm size has a negative but not significant effect on firm value (PBV).
- 10) Effect of variable profitability (ROA), Liquidity (CR), Asset Growth, and size there is a better tendency to explain capital structure (DER) than in explaining the direct influence on firm value (PBV). This can be interpreted that the food and beverages industry needs to pay attention to the capital structure in increasing the value of the company.

Suggestions that writers can provide are based on research results as follows:

- 1) The food and beverage sub-sector companies in Indonesia are expected to use this research in making investment decisions in companies. From the results of the research conducted, management should pay attention to these variables that will affect the value of the company. Companies with company values that are low negative from investors and cause investors not to invest. The high value of the company will attract investors to invest in the eyes of corporate investors who can manage their resources well.
- 2) For further research, it should be developed using a larger sample of companies with a longer period of time, which is more than 5 years and pay attention to external factors that might affect the value of the company.

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