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# The Effect of DER, Firm Size, and CR on PBV with ROE as an Intervening Variable

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## Abstract

**Research aim:** The study is intended to analyze the influence of debt-to-equity ratios, firm size, and current ratio on price-to-book value using the return on equity as an intervening variable.

**Design/Methodology/Approach:** The population in this research was basic materials sector companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2020. Meanwhile, the number of samples in this study was 70, collected by purposive sampling.

**Research findings:** This study confirmed that DER had a good and strong effect on ROE. Firm size and CR had no considerable influence on ROE. ROE had a significant positive effect on PBV, while DER, firm size, and CR had no significant impact on PBV. In addition, ROE was susceptible to being an intervening variable of a DER but was not susceptible to being an intervention variable of firm size and CR variables.

**Theoretical contribution/Originality:** The return on equity (ROE) variable served as the intervening variable in the study, while in previous studies, DER, firm size, and CR variables were not intervened by ROE.

**Practitioner/Policy implication:** Researchers suggest that investors can use other variables to make investment decisions. Researchers can also further develop broader objects, such as using other sectors and adding or replacing other variables to determine the feasibility of investing.

**Research limitation:** The scope of this study was relative, and there were many insignificances due to the limited variables and sectors used. Hence, increasing the number of variables and a wider sector will be able to strengthen this research's outcomes. Further research must be able to produce significant values and affect the variables in question.

**Keywords:** Debt to Equity Ratio (DER); Firm size; Current Ratio (CR); Return on Equity (ROE); Price to Book Value (PBV)

## Introduction

Companies from various sectors have a crucial role in improving the Indonesian economy. It is supported by the company's function of opening jobs, increasing state revenues, and meeting the community's needs. In its operations, the company needs financing. In addition to internal funds, companies ultimately need external funds. One form of external funds aside from lending is investment funds from investors. To be able to trust and want to invest, investors will usually tend to assess the company from various valuations.

In this study, researchers chose basic materials sector companies since basic material sector companies have continuous production. It can be understood given the vast wealth of Indonesia's abundant natural resources, which has many advantages to becoming a high-value output further. It brings optimal returns and allows external parties (investors) to be interested and invest capital in the company.

The phenomenon reported by Bisnis Indonesia (2021) on <https://bisnisindonesia.id>, September 10, 2021, showed that the raw goods sector index progressed quite rapidly, up to 1.82%. Other phenomena reported by Kontan (2021), on <https://investasi.kontan.co.id>, on February 28, 2021, revealed that since the beginning of 2021, the Composite Stock Price Index (JCI) strengthened by 4.39%. However, some stock sectors experienced a higher increase than JCI, one of which was the IDX basic materials sector, which gained 9.06%.

In the end, one of the company's main problems is how to produce the expected performance so that it can present good financial statements. Therefore, company managers must have the ability to manage strategies well to achieve the optimization of the firm value. When the company value is high, it will be a good signal (good news) for investors and will look well and be interested in investing in the company.

Investors judge the health of a company based on its firm value. Usually, when investors want to invest in the capital market, they desperately need essential information about a company's stock price to see which ones grow and which are cheaper. In this case, PBV (price-to-book value) can be used to determine a firm value based on its shares.

PBV ratio is employed to quantify how market prices move relative to book value. PBV also describes a company's ability or absence to produce superior firm value with invested capital. When the firm's worth is great, the company's performance is also good. In addition, when the firm value (PBV) is high, the company's prospects in the future will also be good, and shareholders will invest in the company.

Meanwhile, debt equity ratio (DER) is used to assess a company's liabilities to equity or to compare all the company's liabilities, be it current or non-current debt, with all capital owned by the company (Kasmir 2018). DER also explains how capital can meet all obligations owed by the company (Hantono, 2018). The results from this ratio calculation indicate that if the DER value is high, it will be greater than the total money of others (debt), so the amount of profit will rise. It also may influence the firm value, including its share price (PBV). Several studies have also been conducted relating to the influence of DER on PBV with inconsistent results. In their research, Yanti and Darmayanti (2019), Khairunnisa et al. (2019), and Mardiyati et al. (2012) proved that DER exerted a significant positive influence on PBV. Meanwhile, Oktrima (2017), Pamungkas and Puspaningsih (2013), and Rini et al. (2018), in previous studies, verified that DER did not even have a significant effect on PBV.

Moreover, the number of assets the company has can indicate the small or large scale. If the number of assets is large, the company's scale is also large (Sujarweni, 2015). In this

respect, entities with giant-scale assets and the ability to manage them can provide an excellent opportunity to maximize profits. Thus, it will greatly affect the worth of the corporate, especially the entity's stock price, making shareholders want to invest in the entity. In previous research, Aggarwal and Padhan (2017) and Reschiwati et al. (2020) proved that the firm size had a favorable and significant impact on PBV. Meanwhile, in previous research, Pamungkas and Puspaningsih (2013) and Mindra and Erawati (2014) confirmed that firm size did not significantly influence PBV.

Further, to figure out a firm's liquidity, the company's current ratio (CR) may be checked. If a firm's ratio is indeed low, it implies that the company's liquidity is bad. Conversely, when the company's liquidity is strong, its capacity to satisfy its commitments will also be higher; therefore, the firm value will also be excellent. In the previously performed study, Khairunnisa et al. (2019) and Rini et al. (2018) revealed that CR had a substantial impact on PBV. Meanwhile, in earlier investigations, Wulandari (2013) and Oktrima (2017) established that CR did not significantly alter PBV. Those studies above denote the inconsistency of the results of previous studies.

For that reason, this research investigates the influence of debt-to-equity ratio, firm size, and current ratio on price-to-book value with return on equity as an intervening variable on basic materials sector entities listed on the Indonesia Stock Exchange (IDX) from 2018 to 2020.

This research further has the benefit for investors to consider in making investment decisions. Hence, the researchers want to examine further the relationship between DER, firm size, and CR in the basic materials sector to its price-to-book value (PBV).

## **Literature Review and Hypotheses Development**

### **Signaling Theory**

A choice taken by the firm concerning its thoughts of its future and utilized as a guide for possible investors is the signal theory concept (Brigham & Houston, 2018). This signal might be information that the firm has done throughout the company's creation. This information also demonstrates the firm status in the past, present, and future. It is particularly essential since it might impact external parties, especially prospective investors, in weighing their choice to invest and, of course, very crucial for the future sustainability and effects of the firm. In this regard, the information produced by the firm might be a positive sign (great news) or a negative sign (disappointing news) for outsiders of the company. If the indicator shows that the firm has strong future potential, the investors can be migrated to invest in the firm. Otherwise, some firms with weak prospects are likely to sell their shares (Przepiorka & Berger, 2017). In other words, a corporation's declaration of stock issue is a sign or signal that might be perceived as dismal by external parties. In this case, financial statements can be meaningful information that the firm might release. The inducement to submit or give information connected to

financial statements for external parties is based on the presence of asymmetric information between the firm and external parties (Bergh et al., 2014).

### **Debt-to-Equity Ratio (DER)**

DER is a helpful ratio to compare the liabilities held with the firm's entire capital and demonstrates how the company can satisfy all its short-term and long-term loans with its capital (Sujarweni, 2015). DER is also applied to assess the firm's financial accounts to indicate the total guarantees that the company may issue to creditors. The findings produced from the computation of this ratio suggest that if the DER value is high, it will be more than the total money of others (debt) to boost profits. This DER is particularly significant to the business's finances and is determined by many elements, including its sales level, asset structure, sales growth rate, profit-generating capacity in the preceding period, and the firm size (Purba & Sjahrial, 2013).

The high or low value of DER will affect the ROE level reached by the firm. This ROE value will grow along with the low DER value. The greater the ROE score, the more efficient the firm is in managing investments that can boost the company's profit. Besides, a firm with a high DER value signifies that it has a considerable quantity of debt used by the company as the company's working capital, which will boost its profit. This rise in earnings will improve the firm value. Umam (2019), Novita and Sofie (2015), and Jufrizen and Sari (2019) have researched and proved that DER could have a considerable beneficial effect on ROE. The inducement to submit or give information connected to financial statements for external parties is based on information asymmetry between the firm and external parties (Bergh et al., 2014). Moreover, studies by Yanti and Darmayanti (2019), Oktrima (2017), and Mardiyati et al. (2012) demonstrated that DER had a considerable favorable effect on PBV. The hypotheses of this investigation are:

*H<sub>1</sub>: DER has a favorable and substantial impact on ROE.*

*H<sub>2</sub>: DER has a favorable and substantial impact on PBV.*

### **Firm Size**

A large number of assets in a company can illustrate that the company's scale is large. Large corporate assets can be utilized by the company's management more freely for operational needs. In increasing firm value, firm size can be used as an illustration. Companies with large-scale assets that can manage them can provide an excellent opportunity for the company to reap the maximum profit. Thus, it will satisfy parties related to the company, especially making shareholders want to put their capital into the company.

The scale of companies is split into three groups: large-scale, medium-scale, and small-scale companies. Companies with many assets will increase production capacity, potentially increasing profits. The larger the firm size, the more investors will own their

shares, increasing the stock price. This increase in the stock price will increase the value of PBS. Kartikaningsih (2013) and Meriam (2019) have conducted previous research and proven that firm size could positively and significantly affect ROE. Aggarwal and Padhan (2017) and Reschiwati et al. (2020) have also previously researched and confirmed that firm size could positively and significantly affect PBV. The hypotheses of this study are:

*H<sub>3</sub>: Firm size seems to have a favorable and considerable influence on ROE.*

*H<sub>4</sub>: Firm size seems to have a favorable and considerable influence on PBV.*

### **Current Ratio (CR)**

CR is computed by dividing current assets by current liabilities owned by the firm (Kasmir, 2018). CR can also be understood as how corporations make payments of their slightly longer debt by utilizing liquid assets (Hery, 2018). Besides, several causes render the corporation unable to pay its short-term debt, among others: 1) the firm has no expenses at all, and 2) the company has costs but not enough at maturity, takes time, and makes attempts to disburse other assets, such as selling securities, receivables, or other assets (Kasmir, 2018). If the firm ratio is indeed low, it implies that the company's liquidity is bad and vice versa. When the firm's liquidity level is good, the company can boost the company's profit. The increased earnings make the firm able to finance operational activities and develop. As such, buyers may examine and analyze the company's performance that continues to grow. It will raise the firm value, including the growth in the firm value's share price. Before, Rahayu and Hari (2016) and Alpi (2018) have already undertaken comparative research indicating that the CR had a considerable favorable effect on ROE. It is also established by Rini et al. (2018), Khairunnisa et al. (2019), and Wulandari (2013) that CR had a considerable favorable influence on PBV. The hypotheses of this investigation are:

*H<sub>5</sub>: CR has a positive and significant effect on ROE.*

*H<sub>6</sub>: CR has a positive and significant effect on PBV.*

### **Return on Equity (ROE)**

Return on equity (ROE) is a ratio with the potential to measure the value of the comparison between net profit after tax with equity (Kasmir, 2015). Company owners will gain more vital when this ROE ratio is high. This ratio is beneficial for examining a firm's financial performance and measuring whether a company can create returns for investors from its capital (Sujarweni, 2017). ROE also evaluates the amount of equity to achieve net income (Hery, 2018). In addition, ROE is controlled by numerous aspects (Hani, 2015), such as 1) capital structure, 2) debt structure, and 3) sales volume. The number of earnings owned by the corporation will raise the company's worth. Mardiyati et al. (2012)

have done relevant research and verified that ROE had a considerable and favorable effect on the company's worth (PBV). The hypothesis of this investigation is:

*H<sub>7</sub>: ROE is strong and significant to PBV.*

#### **The impact of DER on PBV using ROE as an intervening variable**

High profit is defined as success for shareholders or investors in returning the capital invested in a company. Thus, the number of shares requested by prospective shareholders that continues to increase will influence the stock price and raise the firm's worth. Hamidy et al. (2015) have undertaken a similar study, showing that DER could influence PBV with ROE as an intervening variable. The hypothesis is:

*H<sub>8</sub>: ROE can interfere with DER against PBV.*

#### **The impact of firm size on PBV using ROE as an intervening variable**

The size of a large company is generally able to show success in developing its business. This success is characterized by an increase in the profit earned by the company. With the prospects, shareholders will be interested and want to invest in the company, thus increasing the firm value, and the stock price also rises. Istamarwati and Suseno (2017) have conducted similar research and proven that firm size could influence PBV with ROE as an intervening variable. The hypothesis is:

*H<sub>9</sub>: ROE can intervene in firm size against PBV.*

#### **The impact of CR on PBV using ROE as an intervening variable**

The highly liquid value in the firm signifies that a firm is in attractive shape, and the danger of collapse may be avoided. It is because the short-term debt owned by the company can be paid. It then allows the company to control all its operational activities well, so its profit can continue to increase. Then, the ever-increasing earnings make a good signal for shareholders, and the demand for shares will also increase. High demand results in high stock prices and increases the firm value. Safitri (2013) conducted a similar study and proved that the current ratio could influence PBV with ROE as an intervening variable. The hypothesis is:

*H<sub>10</sub>: ROE can intervene CR against PBV.*

#### **Price-to-Book Value (PBV)**

PBV is a ratio that may be evaluated by distributing the price of the stock with the valuation of a company's shares to analyze the price of a stock (Sorongan & Yatna, 2018).

(Sorongan & Yatna, 2018). The higher the firm's PBV, the more company outsiders think of the company's prospects in the future (Sugiono & Untung, 2016). By looking at the PBV value of a firm, investors will then determine if the company's shares are worth buying or not.

### Research Model

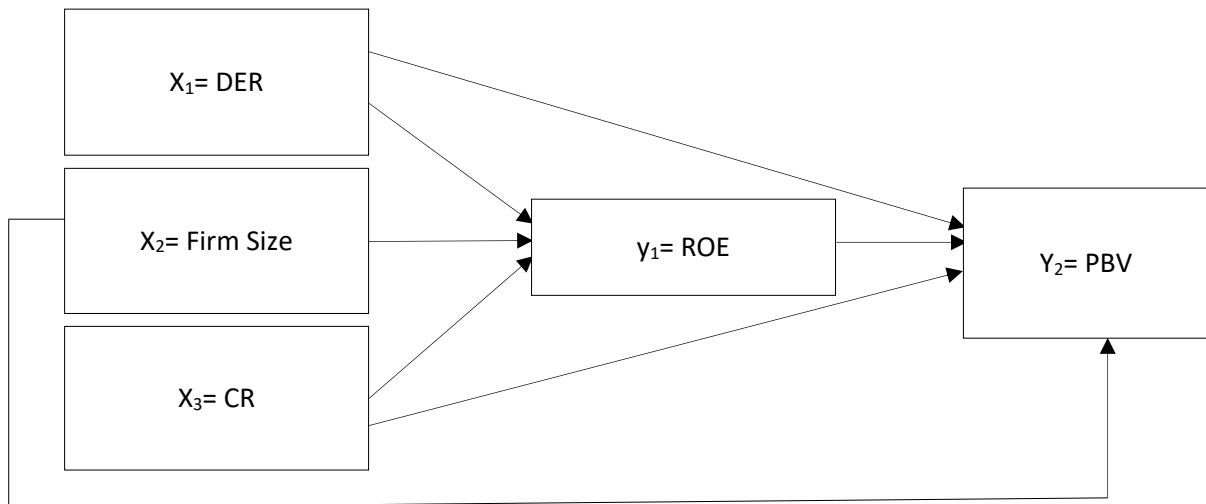


Figure 1 Research Model

## Research Methods

### Research Method

This research population was basic materials sector companies listed on the Indonesia Stock Exchange (IDX) from 2018 to 2020. Meanwhile, the number of samples in this study was 70, taken using purposive sampling techniques. The criteria included basic materials sector companies that published annual financial statements. In addition, documentation was used to collect research data, the source of which was the official website of the Indonesia Stock Exchange (IDX) [www.idx.co.id](http://www.idx.co.id).

The variables used in this study are:

### Dependent Variables

Debt to Equity Ratio (DER)

DER is used to seeing the company's ability to use its resources to provide an advantage on the equity held (Fahmi, 2016).

$$DER = \frac{\text{Total Debt}}{\text{Total Equity}} \times 100\%$$

#### Firm Size

The total amount of assets in the company can illustrate that the company's scale is large (Hartono, 2013).

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

#### Current Ratio (CR)

A statistic used to analyze a company's capacity to sustain liquidity is the current ratio (CR). By dividing the company's current assets by its current liabilities, this ratio is computed (Kasmir, 2018).

$$CR = \frac{Current\ Asset}{Current\ Liabilities}$$

#### Independent Variable

##### Price-to-Book Value (PBV)

PBV is a useful ratio for comparing the market value with the book value of a company's shares to assess the price of a stock (Sorongan & Yatna, 2018).

$$PBV = \frac{Market\ Value\ per\ Share}{Book\ Value\ per\ Share}$$

#### Intervening Variable

##### Return on Equity (ROE)

ROE ratio is computed by dividing net profit after tax by the entire amount of corporate equity (Kasmir, 2015). The position of the firm owner will be vital when the ROE ratio is high. This ratio may examine the financial performance of the firm.

$$ROE = \frac{Net\ Profit\ After\ Tax}{Total\ Equity} \times 100\%$$

#### Analysis Method

The hypotheses were tested to examine the effect of the debt-to-equity ratio, firm size, and current ratio on price-to-book value with return on equity as an intervening variable. Data analysis techniques in research used classical assumption tests and statistical trials. In the classical assumption evaluation, the normality, multicollinearity, auto-correlation, heteroskedasticity, and linearity tests were conducted. Then, statistical tests employed path analysis, multiple correlation analysis, coefficients of determination, simultaneous tests (statistical F-test), and partial tests (statistical t-test).



The purpose of testing these hypotheses was to determine the effect of independent variables on dependent variables both partially and simultaneously and determine the magnitude of the capacity of independent variables to describe changes in the dependent variable. The data were processed utilizing SPSS 25 software. The structural models of path analysis are as follows:

Model 1 (Direct Influence):

$$Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Model 2 (Indirect Influence):

$$Y_2 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_1 \beta_2 \beta_3 Y_1 + e$$

Information:

$Y_1 = ROE$ ;  $Y_2 = PBV$ ;  $\alpha = \text{Constant}$ ;  $\beta_1 = \text{Correlation value of DER}$ ;  $\beta_2 = \text{Correlation value of firm size}$ ;  $\beta_3 = \text{Correlation value t of CR}$ ;  $X_1 = \text{DER}$ ;  $X_2 = \text{Firm size}$ ;  $X_3 = \text{CR}$ ;  $e = \text{Error term/confounding variable}$ .

## Results and Discussion

### Classic Assumption Tests

The test results revealed that not all data met the test assumption requirements. Thus, the data must be transformed to be distributed normally, and all assumptions in the classical assumption test can be met (Ghozali, 2018). In this study, the data on the independent and dependent variables were transformed into the natural logarithm (ln). After transforming data into the form of a natural logarithm (ln), the data fulfilled the classical assumption tests, notably normality, multicollinearity, autocorrelation, heteroskedasticity, and linearity tests.

### Hypothesis Test

**Table 1** Path Test Results and T-Test of Model 1

Model		Coefficients <sup>a</sup>			t	Sig.
		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	-6.112	5.032		-1.215	.226
	LN_DER	.259	.080	.342	3.235	.001
	LN_FIRMSIZE	1.483	1.462	.088	1.014	.312
	LN_CR	.125	.126	.117	.993	.322

a. Dependent Variable: LN\_ROE

Based on Table 1, the following regression model 1 can be developed:

$$Y_1 = - 6.112 + 0.259 X_1 + 1.483 X_2 + 0.125 X_3$$

Information:

X1 = Deb to equity ratio (DER); X2 = Firm size; X3= Current ratio (CR); Y1= Return on equity (ROE)

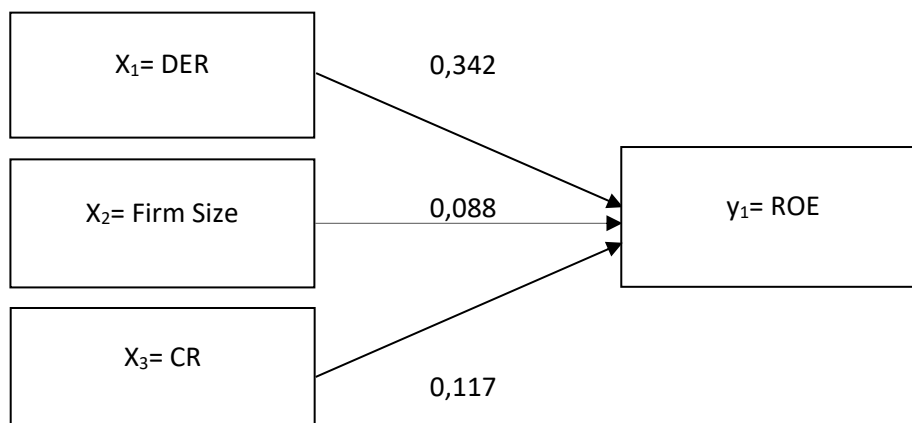


Figure 2 Diagram of Structural Model Path 1

Table 2 Path Test Results and Test t-Model 2

		Coefficients <sup>a</sup>			T	Sig.
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta		
1	(Constant)	.095	7.172		.013	.989
	LN_DER	.068	.132	.063	.512	.609
	LN_FIRMSIZE	.361	2.077	.017	.174	.862
	LN_CR	.163	.190	.116	.858	.392
	LN_ROE	.270	.107	.220	2.525	.013

a. Dependent Variable: LN\_PBV

Based on Table 2, regression model 2 can be formulated as follows:

$$Y_2 = 0.095 + 0.068 X_1 + 0.361 X_2 + 0.163 X_3 + 0.270 Y_1$$

Information:

X1 = Deb to equity ratio (DER); X2 = Firm size; X3= Current ratio (CR); Y1= Return on equity (ROE); Y2= Price to Book Value (PBV)

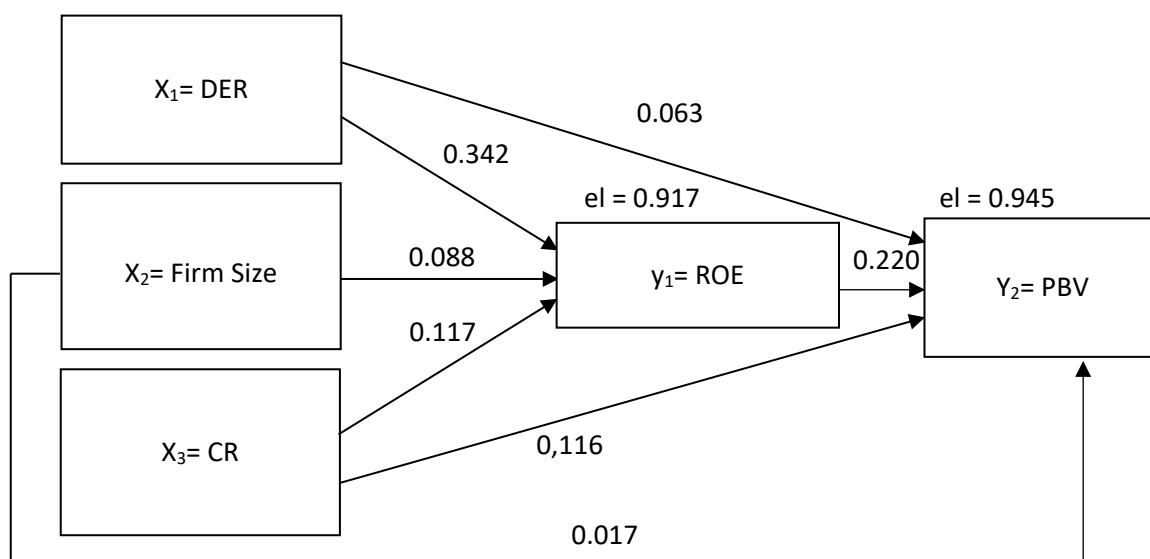


Figure 3 Diagram of Structural Model Path 2

**Hypothesis One: The Effect of DER on ROE**

In Table 1, the hypothesis testing results revealed the DER regression coefficient value of 0.259 and the significance level of  $0.001 < 0.05$ , so hypothesis one was accepted, stating that DER had a substantial positive impact on ROE. In this case, the measurement used to examine a financial statement to indicate the level of assurance offered to creditors is DER (Fahmi, 2016). This DER is also the ratio used to illustrate how capital can cover its debts to external parties. The quantity of DER value will display the more significant the cash lent by external parties. If the firm's debt grows, the company's duty to pay its obligations will also be more remarkable, lowering its profit. It agrees with the signal theory and accords with the research results by Jufrizen and Sari (2019), Mirza (2013), and Novita and Sofie (2015), which uncovered that DER had a positive and substantial effect on ROE.

**Hypothesis Two: The Effect of DER on PBV**

Based on Table 2, the hypothesis testing results indicated the DER regression coefficient value of 0.068 and its significance level of  $0.609 > 0.05$ . Therefore, this study rejected hypothesis two, implying that DER did not significantly influence PBV. It signifies that as the DER value grows, the interest expense borne will likewise increase. Consequently, the firm value will decline, delivering a negative signal to outside parties and diminishing investors' trust. Previous studies by Oktrima (2017), Pamungkas and Puspaningsih (2013), and Purnama (2016), which supported this study, revealed that DER did not have a substantial effect on PBV.

### **Hypothesis Three: The Effect of Firm Size on ROE**

In Table 1, the hypothesis testing results showed the regression coefficient firm size of 1.483 and its significance level of  $0.312 > 0.05$ , rejecting hypothesis three in this study. It suggests that the firm size did not significantly influence ROE. In this case, the number of assets the firm possesses might show the tiny size of the company. However, its vast assets cannot always affect the corporation in producing a profit. Hence, firm size did not have a substantial impact on ROE. It might happen if measured by the company's performance and productivity, which has decreased, affecting the company's profit. Also, the assets possessed by the corporation do not utilize excessive expenses so that it does not affect earnings. Research done by Isbanah (2015), who agrees with this study, stated that firm size did not significantly affect ROE.

### **Hypothesis Four: The Effect of Firm Size on PBV**

Based on Table 2, the hypothesis testing results exposed the regression coefficient value of the firm size of 0.361 and its significance level of  $0.862 > 0.05$  so that the firm size did not have a significant effect on (PBV). Here, a company is responsible for managing its assets well to create good firm value. However, good management does not always influence firm value (PBV). It is because usually, the company will be careful in using its assets and make optimal cost savings. Hence, the larger the firm size did not affect the increase in PBV value. Research conducted by Pamungkas and Puspaningsih (2013) and Mindra and Erawati (2014) agreed with this study and proved that the firm size did not significantly influence PBV.

### **Hypothesis Five: The Effect of CR on ROE**

Based on Table 1, the hypothesis testing results disclosed the CR regression coefficient value of 0.125 and its significance level of  $0.322 > 0.05$ , rejecting hypothesis five in this study. In other words, CR did not have a significant effect on ROE. It is because the company must maintain and manage its liquidity level. If liquidity from the company is good, the company's profits will also continue to increase. Studies carried out by Argananta and Hidayat (2017), Novita and Sofie (2015), and Kartikaningsih (2013) approved this study, which showed that CR had no significant and influential influence on ROE.

### **Hypothesis Six: The Effect of CR on PBV**

In Table 2, the assumption test results indicated the CR regression coefficient value of 0.163 and the significance level of  $0.392 > 0.05$ . Thus, hypothesis six in the study was denied, suggesting that CR did not have a substantial influence on PBV. In this respect, a high current ratio is an indication that there is idle money, denoting a drop in profitability. It might happen since the assets gained are more extensively used as short-term payments. Oktrima (2017) and Wulandari (2013) concur with this study, stating that CR did not alter PBV.

**Hypothesis Seven: The Impact of ROE on PBV**

Based on Table 2, the hypothesis testing results revealed the ROE regression coefficient value of 0.270 and the significance level of  $0.013 < 0.05$ , accepting hypothesis seven. It implies that ROE had a favorable and noteworthy influence on PBV. Generally, ROE is used to calculate net profit after tax using firm equity (Kasmir, 2015). This ratio is also employed as an overview for investors and other external parties to examine how the company's prospects in the future. It means that when earnings increase, the stock price will likewise grow and improve the organization's worth. Besides, if the value of the firm's ROE rises, the firm value will also improve and show that the company has an impressive performance. It complies with signal theory and research by Mardiyati et al. (2012), agreeing with this study that ROE had a substantial favorable influence on PBV.

**The effect of the dependent variable on the independent variable with return on equity (ROE) as the intervening variable**

**Table 3** Influence Between Variables Directly and Indirectly

Influence Between Variables	Direct Influence	Indirect Influence through ROE	Total Influence
DER - ROE	0.342	-	0.342
FIRM SIZE - ROE	0.088	-	0.088
CR - ROE	0.117	-	0.117
DER - PBV	0.063	$0.342 \times 0.220 = 0.07524$	0.07524
FIRM SIZE - PBV	0.017	$0.088 \times 0.220 = 0.01936$	0.01936
CR - PBV	0.116	$0.117 \times 0.220 = 0.02574$	0.02574
ROE - PBV	0.220	-	0.220

**Hypothesis Eight: The Effect of DER on PBV through ROE**

Based on Table 3, the coefficient value of the direct influence path of DER on PBV was 0.063, and the coefficient value of the indirect effect path of DER through ROE on PBV was 0.07524. The direct influence was smaller than the indirect influence ( $0.063 < 0.07524$ ), or ROE might interact with DER against PBV. It indicates that the firm's small ROE value will impact the DER value, or the company's profit will increase the link between DER and ROE. Thus, the more the firm manages its investment as a profit optimization, the more the company's ROE value will likewise improve.

**Hypothesis Nine: The Effect of Firm Size on PBV through ROE**

Based on Table 3, the coefficient value of the direct effect path of the firm size on PBV was 0.017, and the coefficient value of the indirect influence path of the firm size through ROE against the PBV was 0.01936. In hypothesis three, firm size had no meaningful influence on ROE. However, hypothesis four suggests that ROE had a considerable beneficial impact on PBV. Since the ROE variable could not interfere between firm size and PBV, this result demonstrates that the firm size did not affect the company's profit,

and the rising profit also did not affect the firm value. In this case, the firm profit and value may be impacted by various variables, such as the size of the company's leverage.

#### **Hypothesis Ten: The Effect of CR on PBV through ROE**

Based on Table 3, the CR direct path coefficient value on PBV was 0.116, and the CR indirect path coefficient value from ROE to PBV was 0.02574. It implies that direct influence was higher than indirect effect ( $0.116 > 0.02574$ ), so ROE did not interfere with CR against PBV. These results suggest that when a corporation can pay its short-term debts, it will not influence the PBV, either utilizing variable intervention (ROE) or not.

### **Conclusion**

The outcomes of this study are: (1) hypothesis one was accepted, stating that DER had a substantial positive impact on ROE; the size of the DER value will indicate the more prominent the money given by external parties. If the firm's debt grows, the company's duty to pay its obligations will also be more significant, lowering its profit. (2) Hypothesis two in this study was rejected, so DER did not have a substantial influence on PBV. In this case, the corporation also faces a significant interest rate when DER grows. Thus, if the firm's earnings decline, it will influence the company's stock price and might affect the degree of confidence of investors in the company. (3) Hypothesis three was rejected, so firm size had no meaningful influence on ROE. It might happen quantified by the lower performance and productivity of the firm, which also decreases the profit. In addition, it does not need significant expenditures to manage the assets owned by the firm so that it does not damage the company's profit.

4) Hypothesis four was also rejected, implying that the firm size did not substantially influence the PBV. Here, asset management does not always impact the firm value (PBV). It is because, typically, the corporation will be diligent in utilizing its assets and creating optimal cost reductions. Also, (5) hypothesis five was refuted, so CR had no significant effect on ROE. It might be because the corporation must sustain its liquidity level. It is because if liquidity from the firm is excellent, the company's earnings will likewise continue to improve. Besides, (6) hypothesis six was rejected, demonstrating that CR had no meaningful impact on PBV. In this respect, a high current ratio indicates idle cash, causing a drop in earnings. It arises since the property gained is more extensively used as short-term payments.

Meanwhile, (7) hypothesis seven was accepted, so ROE exerted a powerful beneficial impact on PBV. Here, the firm's worth will improve as the ROE value increases, showing the company's solid performance. At last, (8) ROE could become an intervening variable of DER. In other words, the more optimally the firm manages investments to create corporate profits, the company's ROE value will likewise grow. However, ROE could not intervene in the indirect result between firm size and CR variables; the firm size did not affect the firm value. Further, it had no impact on PBVs when the firm could repay its short-term liabilities.

Based on the analysis results, it is recommended for researchers to further do several things, including (1) increasing the number of samples (not only in basic materials); (2) adding variables or replacing other variables that may affect PBV; (3) replacing or adding more than one intervening variable so that it can be an investor's overview and consider investment decisions more optimally.

Nevertheless, limitations in this study include (1) samples utilized solely by issuers in the basic materials sector listed on the Indonesia Stock Exchange. (2) The variables employed in this study were only debt to equity ratio, firm size, current ratio as free variables, price to book value as dependent variables, and return on equity used as an intervening variable. Also, (3) the timeframe selected was from 2018 to 2020.

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