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# The Effect Of Der, Company Size, And Roe On The Firm Value Of Manufacturing Companies In The Automotive Sub-Sector And Its Components

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***Abstract****. The purpose of this study was to determine and analyze the effect of DER, company size, and ROE on the company value of Automotive Sub-Sector Manufacturing Companies and their Components both partially and simultaneously. The research methodology uses an associative descriptive approach that explains the influence between the independent variable and the dependent variable. The data analysis technique uses Eviews tools with a total research sample of 11 Automotive and Component Subsector Manufacturing Companies with 5 years of observation time. The results of the DER tcount value of -0.008287 with a significance value of 0.0001 <0.05 mean that DER has a negative and significant effect on PBV in automotive companies listed on the IDX. The tcount value of total assets is 4.526332 with a significance value of 0.0002 <0.05, meaning that total assets have a positive and significant effect on PBV in automotive companies listed on the IDX. The tcount value of ROE is -4.239893 with a significance value of 0.0004 <0.05, meaning that ROE has a negative and significant effect on PBV in automotive companies listed on the IDX. The F value is 0.436104 and the significance level is 15.89043. Judging from the significance value, the value is 0.000013 <0.05. This means that DER, total assets, and ROE simultaneously have a significant effect on PBV.*

***Keywords****:* DER, Firm Siza, ROE, Firm Value

## Background

The development of the automotive world is now increasingly rapid, especially in Indonesia. The products launched are also increasingly sophisticated following technological developments to meet consumer satisfaction. These companies certainly make a lot of effort to keep up with technological developments. These efforts are inseparable from the costs or capital used to develop products and their promotional costs. Automotive companies are required to improve their performance in order to compete and obtain sustainable profits. Profit

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earned is certainly one of the company's goals as a business institution. In achieving these goals, companies must be innovative and able to adjust to regional and domestic changes such as government policies and political conditions.

Capital structure is permanent funding consisting of long-term debt, preferred stock, and shareholders' capital. The book value of shareholders' capital consists of common stock, paid-in capital or surplus, capital, and retained earnings. Capital structure is part of the financial structure. The optimal capital structure is the equity mix that maximizes the firm's share price. Capital structure is the result or effect of the financing decision which essentially chooses whether to use debt or equity to fund the company's operations.

In making funding decisions in a company related to determining the capital sector, managers must be careful because this decision can affect the value of the company itself which ultimately affects the achievement of the goal of maximizing shareholder welfare. This funding decision relates to the manager's policy in determining the right proportion between the amount of debt and the amount of equity capital in the company so as to maximize firm value.

The fulfillment of the company's funding needs from its own capital sources comes from share capital, retained earnings, and reserves. If the company's funding from its own capital still experiences a shortage (deficit), it is necessary to consider company funding from outside, namely debt (debt financing). However, in fulfilling its funding needs, the company must look for efficient funding alternatives. Efficient funding will occur if the company has an optimal capital structure.

Company size is a description of the company's financial capability which can be seen from the company's total assets - large companies are less likely to go bankrupt so it is easier to attract external funding loans compared to small companies. Large companies can also provide greater debt repayment guarantees than small companies. Large companies also tend to use external funding rather than small companies. Small companies tend to use short-term debt because it is relatively cheaper than long-term debt.

Profitability or the ability to earn profit is a measure in percentage used to assess the extent to which the company is able to generate profits at an acceptable level. Profitability figures are expressed, among others, in figures for profit before or after tax, investment return, earnings per share, and sales profit. The value of profitability is the norm for measuring the health of the company.

Firm value is the investor's perception of the company's success rate which is often associated with the stock price. A high stock price makes the company's value high, and increases market confidence not only in the company's current performance but also in the

company's future prospects. Maximizing company value is very important for a company, because maximizing company value also means maximizing the company's main objectives. Increasing company value is an achievement in accordance with the wishes of the owners, because with increasing company value, the welfare of the owners will also increase.

The automotive industry sub-sector is a highly competitive industry in Indonesia. Marketing Research Institute Euro Monitor International states that the value of Indonesia's automotive industry reaches more than US$ 5 billion with an average growth of 10% per year. This data is fully supported by the Indonesian Ministry of Industry through Indonesia Finance Today which announced that Indonesia's automotive industry managed to survive the global economic crisis in 2012 which slowed down national economic growth by continuing to experience solid growth (Purnajaya and Merkusiwati, 2014).

## THEORETICAL REVIEW

### 1. Signalling Theory

The assumption of signaling theory is that company managers have more accurate information about the company that is not known by outsiders (investors). This will result in an information asymmetry between interested parties (Jogiyanto, 2013). Information asymmetry is a condition where private information is only owned by investors who only get information (Jogiyanto, 2013).

### 2. Corporate Values

Breayley, et al (2015) "book value records what a company paid for its assets, minus deductions for depreciation". This value does not include the true value of the business. Liquidity value is how much the company can net by selling its assets and paying off its debts. It does not include the value of the company as a going concern, while market value is the amount investors are willing to pay for the company's shares. This depends on the earning power of current assets as well as the expected profitability of future investments. Firm value is very important because a high firm value will be followed by high shareholder prosperity. The higher the share price, the higher the company value. High company value is the desire of company owners because with high value it shows that shareholder prosperity is also high. The wealth of shareholders and companies is represented by the market price of shares which is a reflection of investment, financing, and asset management decisions. Firm value is calculated by the value of PBV or price to book value is a ratio used to assess whether the price of a share of a company is cheap or expensive.

$$\text{PBV} = \frac{Harga\ saat\ ini}{Nilai\ Buku\ Per\ Lembar\ Saham}$$

**3. Capital Structure**

Capital structure is the proportion of the use of own capital and debt in meeting the company's funding needs. If the capital structure of a company is large, the productivity level will increase according to the capital structure of the company and will have a positive impact on its business continuity (Mulyani, 2017). Capital structure is the composition between own capital and long-term debt in permanent financing. Fulfillment of these funding needs can be provided or obtained from internal and external sources of the company. If the company meets its funding needs from internal sources, then the company conducts internal financing, namely in the form of retained earnings. The capital structure is calculated using the debt ratio value, which shows the ability of the company's own capital to fulfill all its obligations (Darminto 2010).

$$\text{DER} = \frac{\text{Total Hutang}}{\text{Total Ekuitas}}$$

**4. Firm Size**

Company size is an increase from the fact that large companies will have large market capitalization, large book value, and high profits (Dewi and Wirajaya, 2013). Meanwhile, small companies will have small market capitalization, small book valu,e and low profits. Company size has a different influence on the company value of a company. In terms of company size, it can be seen from the total assets owned by the company, which can be used for the company's operating activities. Company size is calculated using the total asset value owned by the company.

**5. Profitability**

Menurut Purwohandoko (2017) profitabilitas perusahaan adalah kemampuan untuk memperoleh laba dalam hubungan untuk penjualan, total aset serta modal sendiri. Profitabilitas menjadi salah satu faktor yang paling berpengaruh dalam struktur modal. Perusahaan ingin naik ke tingkat profitabilitas yang selalu tinggi dan stabil. Perusahaan yang memiliki profitabilitas tinggi akan mengurangi utang. Ini karena perusahaan menahan sebagian besar keuntungannya pada penghasilan dipotong untuk mengandalkan sumber daya internal dan relatif mengurangi penggunaan utang. Profitabilitas perusahaan dihitung

menggunakn nilai Return On Equity (ROE) yang merupkan Prosentase total ekuitas yang dimiliki dengan total asset perusahaan (Syamsuddin, 2009).

$$ROE=\frac{\text{Total Equity}}{\text{Total Aset}}$$

## RESEARCH METHOD

The research concept is depicted in the conceptual framework as follows:

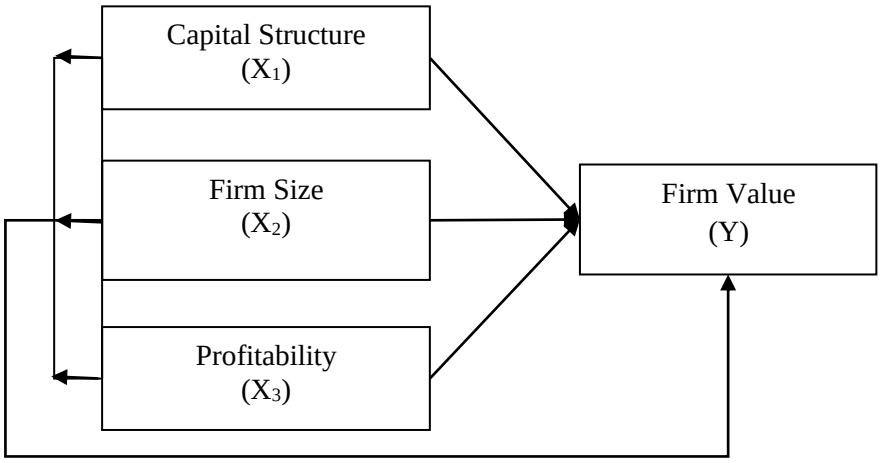


**Figure 1. Conceptual Framework**

The hypotheses in this study are described as follows:

1. DER has a significant effect on PBV in Automotive sub-sector manufacturing companies listed on the Indonesia Stock Exchange.
2. Total assets have a significant effect on PBV in Automotive sub-sector manufacturing companies listed on the Indonesia Stock Exchange.
3. ROE has a significant effect on PBV in Automotive sub-sector manufacturing companies listed on the Indonesia Stock Exchange.
4. Simultaneously DER, total assets, and ROE have a significant effect on PBV in Automotive sub-sector manufacturing companies listed on the Indonesia Stock Exchange.

The research approach uses a causal descriptive method using quantitative data collected from the Indonesia Stock Exchange (www.idx.com). The data analysis technique uses Multiple Linear Regression analysis with Eviews statistical tools. The sample withdrawal in this study used a purposive sampling technique with the following criteria:

1. Automotive companies listed on the Indonesia Stock Exchange during the 2014-2018 research period;

2. Automotive companies that publish annual reports and audited financial reports in full on the Indonesia Stock Exchange in 2014-2018;
3. The complete company data has 3 variables, namely debt to equity ratio, total assets, return on equity, and the required company value for researchers in the 2015-2017 study.

The results of the sample selection that meet the criteria, namely:

**Tabel 1. Research Sampling**

| No | Emiten | Code | Criteria | | | Sample |
|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | |
| 1 | Astra International Tbk | ASII | √ | √ | √ | 1 |
| 2 | Astra Otoparts Tbk | AUTO | √ | √ | √ | 2 |
| 3 | Garuda Metal indo Tbk | BOLT | - | - | - | - |
| 4 | Indo Kordsa Tbk | BRAM | √ | √ | √ | 3 |
| 5 | Goodyear Indonesia Tbk | GDYR | √ | √ | √ | 4 |
| 6 | Gajah Tunggal Tbk | GJTL | √ | √ | √ | 5 |
| 7 | Indomobil Sukses International Tbk | IMAS | √ | √ | √ | 6 |
| 8 | Indospring Tbk | INDS | √ | √ | √ | 7 |
| 9 | Multi Prima Sejahtera Tbk | LPIN | - | - | - | - |
| 10 | Multistrada Arah Sarana Tbk | MASA | √ | √ | √ | 8 |
| 11 | Nipress Tbk | NIPS | √ | √ | √ | 9 |
| 12 | Prima alloy steel Universal Tbk | PRAS | √ | √ | √ | 10 |
| 13 | Selamat Sempurna Tbk | SMSM | √ | √ | √ | 11 |

Source: www.idx.co.id (2018)

## RESULT AND DISCUSSION

Descriptive analysis for each variable obtained the following picture:

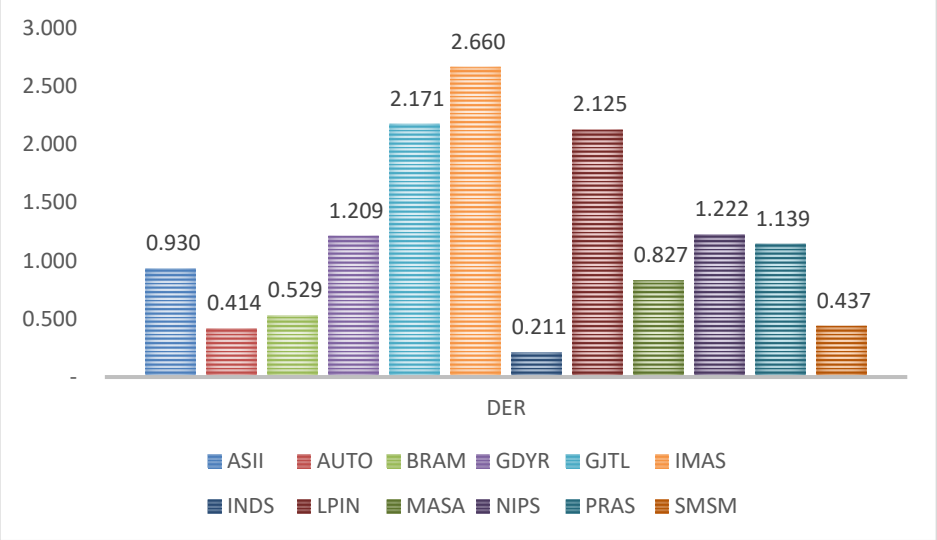


**Figure 2. Graph of Average DER of Automotive and Component Sub-Sector Manufacturing Companies in 2014-2018**

Based on Figure 2. the average DER for Automotive Sub-Sector Manufacturing companies and their componentsis shown in the graph. The highest and lowest DER values in the Automotive Sub-Sector Manufacturing companies and their components were obtained by PT. Multi Prima Sejahtera Tbk in 2016 at the highest value and 2018 for the lowest value.

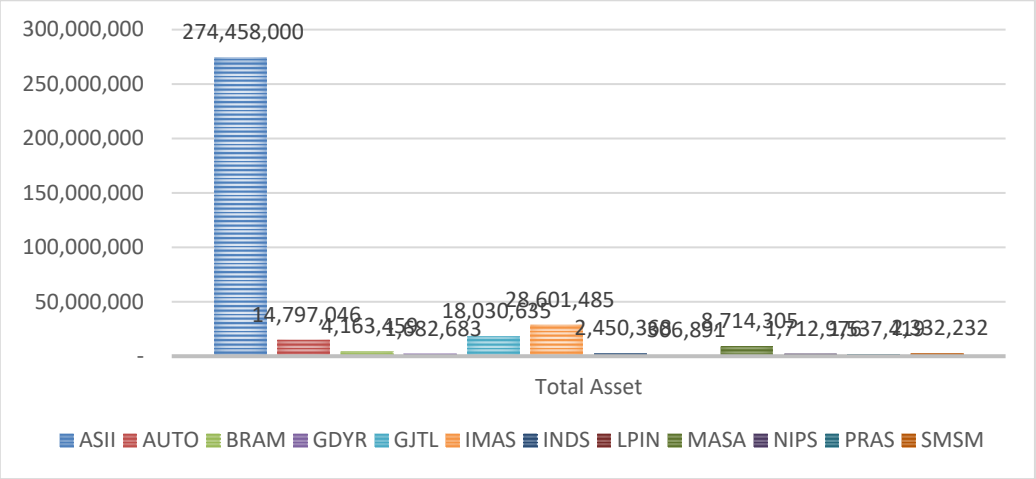


**Figure 3. Graph of Average Total Assets of Automotive and Component Sub-Sector Manufacturing Companies in 2014-2018**

The average total assets for Automotive Sub-Sector Manufacturing companies and their components are shown in the graph. The highest total asset value in the Automotive Sub-Sector Manufacturing company and its components was obtained by PT. Astra Internasional in 2018 amounting to Rp. 333,325,000,000,000, while the lowest total asset was obtained by PT. Multi Prima Sejahtera Tbk in 2014 amounting to Rp. 185,596,000,000.

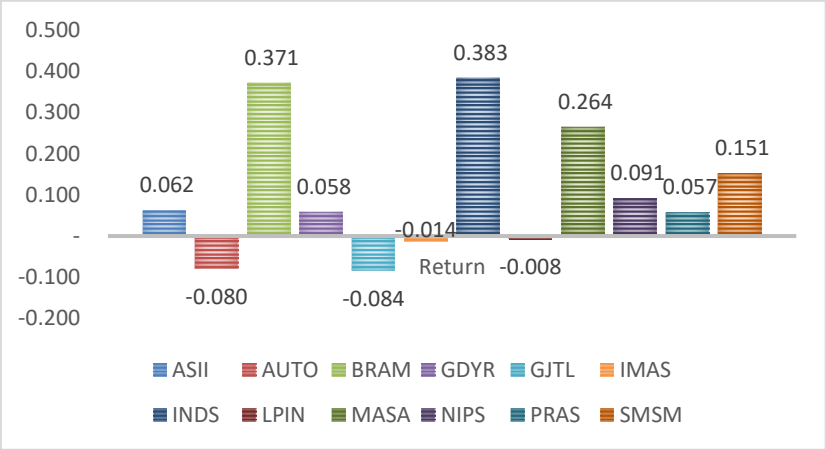


**Figure 4. Graph of Average Price Book Value (PBV) of Automotive and Component Sub-Sector Manufacturing Companies in 2014-2018**

Based on the figure above, it can be seen that the value of Price Book Value (PBV) in Automotive Sub-Sector Manufacturing companies and their components fluctuates greatly on average Price Book Value (PBV) for Automotive Sub-Sector Manufacturing companies and their components as shown by the graph, where the highest Price Book Value (PBV) value was seen at PT Gajah Tunggal in 2015, while the lowest Price Book Value (PBV) value was at PT Indo Kordsa Tbk in 2014.

To estimate model parameters with panel data, there are several techniques, namely: Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). the results of the Chow Test:

**Table 2 Chow Test Results**

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

| Effects Test | Statistic | d.f. | Prob. |
|---|---|---|---|
| Cross-section F | 1.297544 | (4,17) | 0.3103 |
| Cross-section Chi-square | 6.660909 | 4 | 0.1549 |

Based on the results of the Chow test in Table 4.2, it is known that the probability value is 0.3103. Because the probability value is 0.3103> 0.05, the estimation model used is the Common Effect Model (CEM) model. While the results of Multiple Linear Regression testing are as follows:

**Table 3 Multiple Linear Regression Testing Results**

Dependent Variable: PBV
Method: Panel Least Squares
Date: 01/23/20 Time: 11:45
Sample: 2014 2018
Periods included: 5
Cross-sections included: 5
Total panel (balanced) observations: 25

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 4.717606 | 1.843923 | 2.558462 | 0.0183 |
| DER | -2.243410 | 0.470611 | -4.767015 | 0.0001 |
| LNTOTALASET | 0.215967 | 0.047713 | 4.526332 | 0.0002 |
| ROE | -8.933260 | 2.106954 | -4.239893 | 0.0004 |

| | | | |
|---|---|---|---|
| R-squared | 0.694195 | Mean dependent var | 1.160400 |
| Adjusted R-squared | 0.650509 | S.D. dependent var | 0.693112 |
| S.E. of regression | 0.409752 | Akaike info criterion | 1.199118 |
| Sum squared resid | 3.525835 | Schwarz criterion | 1.394139 |

| | | | |
|---|---|---|---|
| Log likelihood | -10.98898 | Hannan-Quinn criter. | 1.253209 |
| F-statistic | 15.89043 | Durbin-Watson stat | 2.034799 |
| Prob(F-statistic) | 0.000013 | | |

The results of data analysis with views as in the table above, the multiple linear regression equation can be formulated as follows:

$Y = 4.717606 – 2.243410X_1 + 0.215967\ X_2 – 8.933260X_3$

While the t-test results are explained based on the following table:

**Table 4. Results of the T-test**

Dependent Variable: PBV
Method: Panel Least Squares
Date: 01/23/20 Time: 11:45
Sample: 2014 2018
Periods included: 5
Cross-sections included: 5
Total panel (balanced) observations: 25

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 4.717606 | 1.843923 | 2.558462 | 0.0183 |
| DER | -2.243410 | 0.470611 | -4.767015 | 0.0001 |
| LNTOTALASET | 0.215967 | 0.047713 | 4.526332 | 0.0002 |
| ROE | -8.933260 | 2.106954 | -4.239893 | 0.0004 |

The effect of DER, total assets, and ROE on Price Book Value (PBV) can be explained as follows:

1. DER on PBV

   The tcount value of DER is -0.008287 with a significance value of 0.0001 <0.05, meaning that DER has a negative and significant effect on PBV in automotive companies listed on the IDX.

2. Total assets on PBV

   The tcount value of total assets is 4.526332 with a significance value of 0.0002 <0.05, meaning that total assets have a positive and significant effect on PBV in automotive companies listed on the IDX.

3. ROE on PBV

   The ROE tcount of -4.239893 with a significance value of 0.0004 <0.05 means that ROE has a negative and significant effect on PBV in automotive companies listed on the IDX.

Uji F-statistik dilakukan untuk mengetahui apakah variabel independen pengaruh secara simultan terhadap variabel dependen, yaitu:

**Tabel 5. F Test Results**

| | | | |
|---|---|---|---|
| R-squared | 0.694195 | Mean dependent var | 1.160400 |
| Adjusted R-squared | 0.650509 | S.D. dependent var | 0.693112 |
| S.E. of regression | 0.409752 | Akaike info criterion | 1.199118 |
| Sum squared resid | 3.525835 | Schwarz criterion | 1.394139 |
| Log-likelihood | -10.98898 | Hannan-Quinn criter. | 1.253209 |
| F-statistic | 15.89043 | Durbin-Watson stat | 2.034799 |
| Prob(F-statistic) | 0.000013 | | |

The F value is 0.436104 and the significance level is 15.89043. Judging from the significance value, the value is 0.000013 <0.05. This means that DER, total assets, and ROE simultaneously have a significant effect on PBV.

The coefficient of determination test is used to measure how far the model's ability to explain the variation in the dependent variable. F value of 0.436104 and a significance level of 15.89043. Judging from the significance value, the value is 0.000013 <0.05. This means that DER, total assets, and ROE simultaneously have a significant effect on PBV.

The coefficient of determination test is used to measure how far the model's ability to explain variations in the dependent variable.

**Table 6. Determinant Test Results**

| | | | |
|---|---|---|---|
| R-squared | 0.694195 | Mean dependent var | 1.160400 |
| Adjusted R-squared | 0.650509 | S.D. dependent var | 0.693112 |
| S.E. of regression | 0.409752 | Akaike info criterion | 1.199118 |
| Sum squared resid | 3.525835 | Schwarz criterion | 1.394139 |
| Log-likelihood | -10.98898 | Hannan-Quinn criter. | 1.253209 |
| F-statistic | 15.89043 | Durbin-Watson stat | 2.034799 |
| Prob(F-statistic) | 0.000013 | | |

The coefficient of determination (Adjusted R2) is used to measure the goodness of the multiple linear regression equation by providing the percentage of total variation in the dependent variable explained by all independent variables. It can be said that the value of Adjusted R2 shows how much the independent variable is able to explain the dependent variable. The Adjusted R2 test results in this study obtained a value of 0.650509. This means that the independent variable affects the dependent variable by 65.05%.

## CONCLUSION

1. **The Effect of DER on Price Book Value (PBV)**

The tcount of DER is -0.008287 with a significance value of 0.0001 <0.05. This means that the debt-equity ratio has an insignificant effect on Price Book Value (PBV). Companies that are developing and growing will almost certainly need funding sources to fund company operations. The company requires a lot of operational funds that cannot possibly be fulfilled only from the company's own capital. Sources of funding for companies include debt because it has advantages including; 1) interest reduces taxes so that the cost of debt is low, 2) creditors get limited returns so that shareholders do not need to share profits when business conditions are progressing, 3) creditors do not have voting rights so that shareholders can control the company with a small investment of funds.

The results of this hypothesis contradict the results of research conducted by Sumanti (2015) which states that DER does not significantly affect Price Book Value (PBV). This may be because investors do not see how much total debt and total equity the company has, and the ability of the company's own capital to fulfill all its obligations.

These results are in accordance with research conducted by Thamrin (2012) showing that the debt equity ratio has an effect on Price Book Value (PBV). These results indicate different considerations from some investors in viewing DER. By some investors, DER is seen as the company's responsibility to third parties, namely creditors who provide loans to the company. So that the greater the DER value will increase the company's dependents. However, it seems that some investors actually view that growing companies will definitely require debt as additional funds to fulfill funding in growing companies. The company requires a lot of operational funds that cannot possibly be fulfilled only from the company's own capital.

2. **The Effect of Total Assets on Price Book Value (PBV)**

The tcount value of total assets is 4.526332 with a significance value of 0.0002 <0.05. This means that company size has a significant effect on Price Book Value (PBV). The statistical results mean that company size information proxied by total assets published in the financial statements, shows that investors consider company size information to be insufficiently informative as a measure of company performance. Large companies are more attractive to analysts and brokers, because these companies tend to be easy to publish financial reports and tend to be in a stable performance position. The large size of the company will make the company's share price in a strong position and the strengthening of the size of the company will make the relevant share price strengthen in the capital market. The more investors are interested in buying shares of companies that are large in size, the stock price will increase and the Price Book Value (PBV) will also increase.

The results of this study are in accordance with research conducted by Sumanti (2015), which states that company size has no effect on Price Book Value (PBV) and is not in accordance with research conducted by Ingga Zulfa (2013) which states that company size affects Price Book Value (PBV).

**3. The effect of ROE on Price Book Value (PBV)**

The tcount value of ROE is -4.239893 with a significance value of 0.0004 <0.05. This means that return on equity has a significant effect on Price Book Value (PBV). The Return On Equity (ROE) variable has a significant effect on Price Book Value (PBV) indicating that the company can guarantee its equity with profits. Companies that are still small in size have ROE values that tend to increase rapidly in line with the increase in net income (earnings). This causes linear regression with a sample of companies that have different growth phases to give insignificant results. The greater the ratio value, the greater the funds obtained are returned from equity into profit. This means that the greater the net profit earned from own capital. High ROE will cause the position of the company's capital owners to be stronger.

The profits earned by the company will first be used to pay debt interest, then preferred shares and then (if there is a remainder) given to ordinary shareholders. Thus, the higher the ROE ratio, the effort to maximize the level of return offered to investors will also increase. According to Hanafi and Halim (2007) ROE or often referred to as Return on Common Equity. In Indonesian, this term is often translated as Rentability of Own Shares (Rentability of Share Capital). Investors who will buy shares will be interested in this measure of profitability, or the share of total profitability that can be allocated to shareholders. The results of the analysis prove that the proposed hypothesis is proven to be accepted which states that ROE has a partially significant effect on Price Book Value (PBV). The existence of this significant influence can be said that with an increase in ROE, the Price Book Value (PBV) will automatically increase and vice versa, if there is a decrease in ROE, the Price Book Value (PBV) will automatically decrease.

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