
The Effect of Capital Structure and Investment Policy on Firm Value (Case Study of a Company in the Concrete Printing Field)

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ABSTRACT

The researcher conducted this study to determine the influence of capital structure and investment policy on firm value in a concrete printing company. The study analyzes the most dominant factors influencing a concrete printing company's capital structure and corporate policy. The population in this study consists of five years of financial reports from the first to fourth quarters, totaling 20 financial reports from 2015 to 2019.

The results of this study prove that capital structure has a significant negative influence on firm value, while investment policy has a significant favorable influence on firm value. The capital structure (DER) and investment policy (PER) have an influence of 89.4% on firm value (PBV), while other unexamined variables influence the remaining 10.6%.

To enhance the influence of the capital structure on firm value, companies need to pay attention to their debt level. If the amount of debt exceeds the company's equity, it will increase the capital structure. However, it is essential to note that a high capital structure exerts a negative influence, indicating that an increase in the capital structure (DER) will lead to a decrease in firm value.

On the other hand, we expect companies to increase the available investment funds to enhance the influence of investment policy on firm value. This condition is because investment policy has a positive influence on firm value. By increasing investment policy, the firm value will indirectly increase as well.

In order to improve the influence of the capital structure and investment policy on firm value, companies should consider the amount of debt and the associated risks. Additionally, companies must allocate funds for corporate investment to maximize profits or returns, which will attract investors to invest in the company. When the capital structure approaches its optimal value, the investment policy should increase firm value simultaneously.

Keywords: Capital Structure, Investment Policy, Firm Value

INTRODUCTION

Investors often choose stocks as an investment option in the capital market due to their higher

profit potential and relatively lower investment costs than bonds. The company's goal in investing in stocks is generally to enhance the

well-being of the company's owners by maximizing the stock price, which, in turn, will increase the firm's value (Alam et al., 2020). The company's strategies can be evaluated by considering their impact on capital structure (Ferriswara et al., 2022) and investment decisions (Huang & Huang, 2019), and ultimately on firm value.

Understanding the factors influencing stock price changes and associated risks is crucial for investors seeking to make intelligent and wise investment decisions before investing in the company's capital market. One standard analysis method used to evaluate and forecast stock investments is fundamental analysis, which involves assessing stocks based on the company's financial statement data (Anggraini & Mulya, 2017; Ullah et al., 2020).

One of the concrete printing companies has become a leading producer and market leader in precast concrete products in Indonesia. Business activities in this era of globalization are increasingly diverse and highly competitive, where each company has a mission to increase firm value to attract investors to invest their capital. (Chen & Ma, 2021) Moreover, (Huang & Huang, 2019) associate firm value with investor perceptions, stating that a high stock price also contributes to a high firm value.

The market will trust a company if its firm value is high, not only based on its current performance but also considering its future

prospects (Özbuğday et al., 2020). Firm value is necessary as it reflects the company's performance and can influence investor perceptions (Pollock et al., 2023).

Evaluation of firm value aims to assess the company's current condition and reflect expectations and prospects for the company's future capabilities. One method used to determine firm value is the Price Book Value (PBV) ratio, which compares the market price per share with the book value per share (Rashid, 2020).

The movement curve of Average Firm Value, represented by PBV (Price Book Value), from 2015 to 2019 in one of the concrete printing companies. The average PBV of the company in the concrete printing industry over five years is 205.29. The PBV of the company is fluctuating and relatively decreasing. In the fourth quarter of 2018, the PBV of the company reached its lowest value of 107. However, the company experienced a rapid increase in early 2015, with the highest PBV recorded in the first quarter of 2015 at 510. Subsequently, the PBV dropped again to 107 in the fourth quarter of 2018, indirectly causing investors to perceive this sector negatively. Although other factors contribute to the decline in firm value, this decline may negatively impact investor perception. However, the PBV started to increase again shortly after.

Several factors can influence firm value, including company size, profitability, growth, liquidity, exchange rate, institutional ownership,

investment policies, and capital structure (Li et al., 2019). Capital structure is the ratio or balance between long-term funding and equity (Dao & Ta, 2020). According to Ngatno et al. (2021), "Capital structure is the combination or mix of long-term financing sources." Capital structure has significant significance for companies as it affects the level of risk borne by shareholders and the expected return rate. The research by Abdullah & Tursoy (2021) shows that capital structure (DER) has a positive relationship with firm value (PBV). However, the study by Ferriswara et al. (2022) found a negative relationship between capital structure (DER) and firm value (PBV).

The Capital Structure theory explains the company's financing policy of using debt and equity to maximize firm value (Pathak & Chandani, 2023). The company's sources of funds are reflected in foreign capital and equity, measured by the debt-to-equity ratio (DER), as described by Ramli et al. (2019) as the "comparison between total debt and total equity." An increase in DER can enhance firm value if it has not reached its optimal point. According to the Trade-off theory, increasing DER can improve profitability if the debt uses correctly. Debt policy also has a positive and significant relationship with firm value (Mishra et al., 2020). Research by Ngatno et al. (2021) and Purana & I Sidharta (2018) state that using debt can increase firm value, especially considering corporate income tax. Therefore, the appropriate capital structure is

expected to enhance firm value, measured using the debt-to-equity ratio (DER) (Ullah et al., 2020).

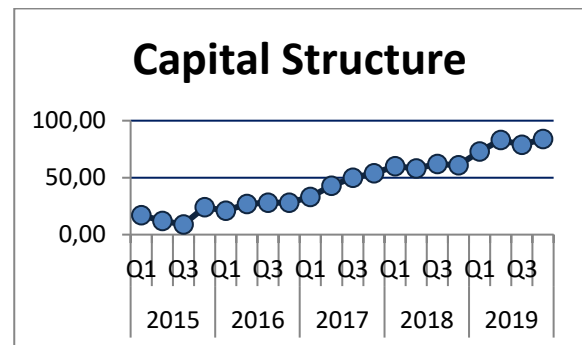


Figure 1. Capital Structure (DER)

Based on the Average Capital Structure (DER) chart in one of the concrete printing companies. Over five years, this company had an average capital structure value of 37.75. The company has a fluctuating and relatively increasing capital structure (DER). The lowest DER value occurred in the third quarter of 2015 at 9.00. Subsequently, DER experienced fluctuating adjustments, but the company could still control them. Observers can see this in the table for the year 2015, where the curve shows the fluctuating movement of DER, but in the following year, DER continued to rise, reaching its highest value in the fourth quarter of 2019 at 84.00.

According to Alam et al. (2020) and Sidharta & A Affandi (2016), achieving optimal firm value is a company's goal that can be accomplished by implementing financial management functions. Every financial decision has consequences for other financial decisions and can affect firm value.

The investment policy is one of the decisions related to firm value. According to research conducted by Siedschlag & Yan (2023),

investment decisions are difficult for company management as they have the potential to influence firm value. The goal of investment decisions is to achieve high profits with manageable risks, hoping to optimize firm value. The findings of the research conducted by Chen & Ma (2021) state that investment decisions significantly influence firm value. Companies make investments to gain future profits. Investment decisions have a long-term time horizon, so they must be carefully considered as they have the potential for long-term risks. Mistakes in investment planning can result in losses for the company.

The investment policy is a decision regarding long-term capital investment related to the expectations of future profits for the company (Özbuğday et al., 2020). Careful consideration is necessary for investment decisions due to their long-term risks. According to the Signaling theory, investment expenditures provide positive signals about the company's future growth, increasing stock prices as an indicator of firm value (Likitwongkajon & Vithessonthi, 2020). The investment policy is approximated in this study using the Price Earnings Ratio (PER).

The use of PER in this study reflects the market's assessment of a company's ability to generate profits. Generally, companies that grow faster or have higher earnings growth potential will have a higher PER than companies with slower growth or higher risks.

Table 1. Average Investment Decision at a company in the field of concrete printing for the 2015-2019 period

| NO | TAHUN | KUARTAL | PER |
|----------------|-------|---------|--------------|
| 1 | 2015 | 1 | 648,72 |
| | | 2 | 238,66 |
| | | 3 | 198,47 |
| | | 4 | 83,50 |
| 2 | 2016 | 1 | 173,61 |
| | | 2 | 142,33 |
| | | 3 | 140,03 |
| | | 4 | 66,59 |
| 3 | 2017 | 1 | 134,19 |
| | | 2 | 62,88 |
| | | 3 | 55,85 |
| | | 4 | 37,37 |
| 4 | 2018 | 1 | 77,91 |
| | | 2 | 34,55 |
| | | 3 | 26,59 |
| | | 4 | 15,87 |
| 5 | 2019 | 1 | 76,35 |
| | | 2 | 53,64 |
| | | 3 | 30,25 |
| | | 4 | 18,76 |
| Average | | | 96,51 |

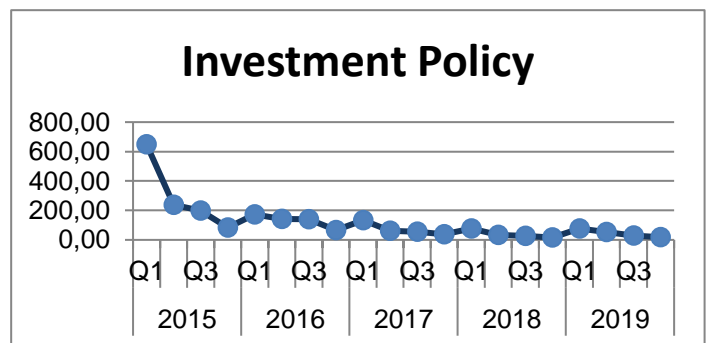


Figure 2. Investment Policy (PER) At One Company in the Field of Printing Concrete

Figure 2 shows the Average Investment Decisions (PER) graph in one of the concrete printing companies. Its average PER is 96.51.

The company has had a fluctuating and relatively declining investment policy over the past five years. The highest PER was in the first quarter of 2015 at 648.72; then, it experienced a drastic decrease to 238.66 in the next quarter. The investment policy was at 15.87 in the third quarter of 2018.

Based on the background of the problem, the research problem formulation is to determine the influence of capital structure and investment policy on firm value. The research objective is to determine the extent of the influence of capital structure and investment policy on firm value.

METHOD

This study has a descriptive and verificative purpose. The descriptive research aims to provide an overview or description of the characteristics of the variables under study, namely Capital Structure, Investment Policy, and Firm Value.

Meanwhile, verificative research aims to test the truth of a hypothesis through data collection in the field. In the context of this research, we will conduct testing to examine the influence of Capital Structure and Investment Policy on Firm Value, both separately and collectively.

The researcher will use securities as a place to conduct research. We selected the research location because the place provides relevant data sources, namely financial reports of public companies that cover the required period.

This study's independent variables (X1) are Capital Structure and Investment Policy. Capital Structure aims to combine permanent funding sources that the company will use to maximize firm value. The company's capital structure directly impacts its financial condition and influences its performance to achieve maximum firm value or stock price; companies should use the optimal capital structure. Thus, we can formulate the company's capital structure as follows:

$$DER (X_1) = \frac{Debt\ Total}{Equity\ Total} \times 100\%$$

Meanwhile, we can assess investment policy using the Price Earnings Ratio (PER), which represents the ratio between the company's stock price and the profits earned by shareholders. We can express the PER formula as follows:

$$PER (X_2) = \frac{Harga\ Saham}{Earning\ per\ Share} \times 100\%$$

In this research, the dependent variable used is Firm Value. Firm value can be measured using

PBV (Price to Book Value), a market ratio used to evaluate the stock market performance relative to the company's book value. This ratio indicates the extent to which a company can create value relative to the amount of capital invested. The higher the PBV ratio, the greater the company's ability to create value for its owners, in this case, the shareholders. PBV can be calculated using the following formula:

$$PBV (Y) = \frac{\text{Market Price per Share}}{\text{Book Value per Share}} \times 100\%$$

An autocorrelation examination is conducted to test whether there is a correlation between disturbance errors in period t and the previous period ($t-1$) in a linear regression model. If such a correlation exists, an autocorrelation problem will arise. In an excellent linear regression, there should be no autocorrelation issue. (Singgih Santoso, 2012:241). One of the methods that can use to detect autocorrelation is by using the Durbin-Watson statistic. To test the presence of autocorrelation, the statistic value is calculated from the residual data first.

Durbin-Watson (D-W):

$$D - W = \frac{\sum e_t - e_{t-1}}{\sum e_t^2}$$

A multicollinearity test is conducted to examine whether there is a correlation relationship between independent variables in a regression model. A good regression model should not experience multicollinearity issues, which means there is no significant correlation

among the independent variables. Two standard methods are used to detect multicollinearity in a regression model, namely through (1) Two measures are used in assessing multicollinearity: tolerance and Variance Inflation Factor (VIF).

These measures indicate the extent to which other independent variables influence each independent variable. Tolerance measures the variation of an independent variable that is not explained by other independent variables. A low tolerance value will correspond to a high VIF value (since $VIF=1/Tolerance$). Generally, a tolerance value ≤ 0.10 or $VIF \geq 10$ is used as a threshold to detect the presence of multicollinearity. In a good regression model, there will be no multicollinearity issue or significant correlation among independent variables (Singgih Santoso, 2012, p. 250).

This research uses multiple linear regression analysis using SPSS software. Multiple linear regression is used to quantitatively measure the influence of changes in one variable (X) on another variable (Y).

The multiple regression analysis in this research investigates the effect of Capital Structure and Investment Policy on Firm Value in a company in the concrete printing field.

The formulation of the multiple linear regression equation is as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \epsilon$$

Where:

Y = The value of the company

- α = Constant or Interception
- β = Regression Coefficient
- X1 = Capital Structure
- X2 = Investment policy
- ε = Error Term

The coefficient of determination (R^2) uses to assess the extent of influence of independent variables on the dependent variable. R^2 indicates the percentage of variation in the dependent variable that the independent variables in the regression model can explain. In contrast, other factors outside the model explain the remaining variation.

The value of R^2 ranges from 0 to 1 ($0 \leq R^2 \leq 1$). The higher the value of R^2 (approaching 1), the better the regression model explains its dependent variable. Conversely, if the value of R^2 approaches zero, it indicates that the independent variables cannot explain significant variation in the dependent variable.

$$Kd = R^2 \times 100\%$$

The value of R^2 is between zero and one ($0 \leq R^2 \leq 1$). If the value of R^2 approaches one, it indicates a good model with a solid or close relationship between the independent variable (X) and its related dependent variable (Y).

RESULT AND DISCUSSION

The Normality Test tests the data of the independent variable (X) and the dependent variable (Y) in the regression equation. It is

necessary to determine whether the data follows a normal distribution. The normality test evaluates whether the independent and dependent variables in the regression equation follow a distribution that approximates normality or is normally distributed overall. In this study, we used graphical methods such as Histograms and Normal Probability plots and statistical tests, including the Non-Parametric Test One Sample Kolmogorov-Smirnov (K-S) test to assess normality. Here are the results of the data testing:

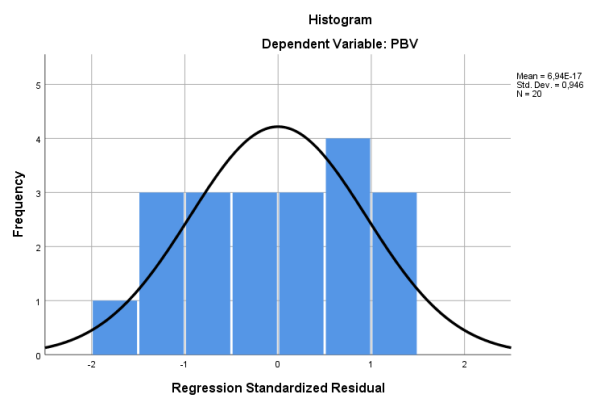


Figure 3. Company Value Histogram

Figure 3 shows that the histogram plot exhibits a right-skewed distribution pattern, with the majority of histogram bars positioned below the curve. This result indicates a tendency towards a normal distribution of firm values.

The researchers conducted an autocorrelation test to investigate the correlation among the sample members in the time-ordered linear regression model. This deviation from the assumption commonly occurs in observations that employ time series data. The researchers utilized the Durbin-Watson method to detect

autocorrelation in this study. A Durbin-Watson (DW) value below -2 indicates positive autocorrelation, while a value between -2 and +2 signifies the absence of autocorrelation. If the DW value exceeds +2, it indicates negative autocorrelation within the research model. The following are the results of the autocorrelation test conducted in this study:

Table 2. Auto Correlation

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1 | ,945 ^a | ,894 | ,881 | 41,16305 | 1,135 |

a. Predictors: (Constant), PER, DER
 b. Dependent Variable: PBV

From Table 2, The observed DW (Durbin-Watson) value is 1.135, indicating no autocorrelation, as it falls within the predefined criteria of $-2 \leq DW \leq 2$. Thus, we can conclude that the autocorrelation test is satisfactory.

The multicollinearity test aims to identify the correlation between independent variables in the regression model. We can examine the results of the tolerance and variance inflation factor (VIF) tests to conduct the multicollinearity test. If the tolerance value exceeds 0.10 and the VIF value is less than 10, we can conclude that the data does not exhibit multicollinearity. Conversely, if the tolerance value is less than 0.10 and the VIF value is greater than 10, the data indicates the presence of multicollinearity. The following are the results of the multicollinearity test in the table below:

Table 3. Multicollinearity Test

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Collinearity Statistics | |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|-------------------------|-------|
| | | B | Std. Error | | | | Tolerance | VIF |
| 1 | (Constant) | 338,415 | 30,309 | | 11,165 | ,000 | | |
| | DER | -2,998 | ,486 | -,610 | -6,172 | ,000 | ,642 | 1,557 |
| | PER | ,378 | ,084 | ,445 | 4,503 | ,000 | ,642 | 1,557 |

a. Dependent Variable: PBV

Based on the above data output, we can conclude that this study is free from multicollinearity symptoms, as the variables DER and PER have Tolerance values of 0.642 and 1.557 for VIF, respectively. These values satisfy the requirement of Tolerance > 0.10 and all VIF values < 10 . Thus, we can infer that the multicollinearity test is satisfied.

Based on the descriptive statistics analysis, the sample data used in this study has several characteristics, including sample size (N), mean values, maximum values, minimum values, and standard deviations for each variable. This information will be presented in Table 4 as follows:

Table 4. Results of Descriptive Statistical Analysis

| | N | Minimum | Maximum | Mean | Std. Deviation |
|--------------------|----|---------|---------|----------|----------------|
| DER | 20 | 9,00 | 84,00 | 45,3000 | 24,26195 |
| PER | 20 | 15,87 | 648,72 | 115,8060 | 140,49758 |
| PBV | 20 | 107,00 | 510,00 | 248,3500 | 119,31527 |
| Valid N (listwise) | 20 | | | | |

Table 4 shows the number of data observations for a concrete company from the first quarter to the fourth quarter of 2014 to 2019. Thus, in this study, a total of 20 data points were used.

Table 4 shows that the Debt to Equity Ratio (DER) had its highest value in the fourth quarter of 2019, reaching 84%. The company recorded a total liability of IDR 6.829 trillion on December 31, 2019, which increased by 18.8% compared to IDR 5.744 trillion in 2018. This increase was due to the rise in short-term loans of IDR 580 billion on December 31, 2019, which was a 139% increase compared to the same period in 2018, as well as an increase in Tax Payable by IDR 17.669 billion or a 17.8% increase, an increase in Accrual Expenses of IDR 371 billion, or a 21.9% increase, the addition of a Bank Loan of IDR 250 billion, and an increase in Lease Liabilities of IDR 42.6 billion or a 120% increase. Additionally, long-term liabilities increased with Bank Loans amounting to IDR 150 billion, a 42.8% increase compared to the same period in 2018. On the other hand, the lowest DER occurred in the third quarter of 2015, amounting to 9%. A reduction in short-term loans by IDR 67.4 billion or 33.8% compared to the same period in 2018 contributed to this decrease.

Furthermore, there was an increase in capital by IDR 61 billion, 2.7% higher than in 2014. The mean or average Debt to Equity Ratio was 45.3%, with a standard deviation of 24.26%. The standard deviation of DER is smaller than its mean, indicating relatively good data quality.

From Table 4, the highest Price Earning Ratio (PER) occurred in the first quarter of 2015, reaching 648.72%. The minimum value was 15.87%, with an average of 115.8060% and a

standard deviation of 140.49758%. The mean PER is lower than the standard deviation, indicating poor data quality.

Based on Table 4, the highest Price to Book Value (PBV) occurred in the first quarter of 2015, reaching 510% or 5.1 times, when the company's stock price was IDR 950 per unit. The lowest PBV occurred in the fourth quarter of 2018, amounting to 107% or 1.07 times when the stock price decreased by 3.6% compared to the previous period. The mean PBV was 246.35%, with a standard deviation of 119.31527%. The mean PBV is higher than the standard deviation, indicating relatively good data quality.

The standard deviation represents the extent to which the generated values will likely deviate from the expected values. The larger the standard deviation, the greater the likelihood that the actual values will deviate from the expected values.

Table 5. Multiple Linear Regression Analysis

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 338,415 | 30,309 | | 11,165 | ,000 |
| | DER | -2,998 | ,486 | -,610 | -6,172 | ,000 |
| | PER | ,378 | ,084 | ,445 | 4,503 | ,000 |

a. Dependent Variable: PBV

Based on the table above, the linear regression equation can be formulated as follows:

$$\text{Company Value (PBV)} = 338.415 - 2.998 \text{ DER} + 0.378 \text{ PER} + \epsilon$$

The formulation of the multiple linear regression analysis results can be explained as

follows: The constant value in the multiple linear regression equation is 338.415, indicating the mathematical value of the Company Value (PBV) when the Capital Structure (DER) and Investment Policy (PER) have a value of zero. The regression coefficient for Capital Structure (DER) is -2.998, which means that a 1% increase in Capital Structure (DER) will result in a 2.998% decrease in Company Value (PBV), assuming that other variables are held constant (*ceteris paribus*). The regression coefficient for Investment Policy (PER) is 0.378, indicating that a 1% increase in Investment Policy (PER) will lead to a 0.378% increase in Company Value (PBV), assuming that other variables are held constant (*ceteris paribus*).

Table 6. Coefficient of Determination (R² Test)

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1 | .945 ^a | .894 | .881 | 41,16305 | 1,135 |

a. Predictors: (Constant), PER, DER

b. Dependent Variable: PBV

$$Kd = 0,894 \times 100$$

Based on Table 6 above, it can be observed that the coefficient of determination (R²) test results indicate an R-Square value of 0.894 or 89.4%. This result means that Capital Structure (DER) and Investment Policy (PER) have an influence of 89.4% on Company Value (PBV), while the remaining 36.2% is influenced by other variables not included in this study.

The Trade-off Theory explains that if a company's Capital Structure is below the optimal point, increasing debt will positively impact the company's value. However, if the company's Capital Structure is above the optimal point, any increase in debt will hurt the company's value (Alam et al., 2020). Ferriswara et al. (2022) state that Capital Structure positively and significantly affects firm value. According to Pathak & Chandani (2023), Capital Structure positively influences firm value. Similarly, a study conducted by Ramli et al. (2019) shows that Capital Structure positively affects firm value.

Investment decisions involve allocating funds to various investment opportunities that will yield future profits. These decisions must be carefully considered as they have a long time dimension and associated risks.

The purpose of making investment decisions is to achieve high returns while managing existing risks, hoping to optimize firm value (Likitwongkajon & Vithessonthi, 2020). This study represents investment policy by Price Earnings Ratio (PER). A high PER indicates good investment and favorable growth prospects, attracting investor interest. High demand for stocks will cause investors to value them at higher prices than their book values. As a result, the company's Price to Book Value (PBV) will increase, and the firm value will also increase. The efficient use of funds directly determines the level of profitability generated from such

investments (Alam et al., 2020). Therefore, investment policy has a positive impact on firm value.

A company's management performance can be described by an optimal Capital Structure, which maximizes the firm's value and minimizes its costs. The company must maintain a balance so that increasing debt can enhance the firm's value.

In addition to Capital Structure, investment policy also impacts firm value. This result is because investment expenditures provide a positive indication of the company's future growth, which subsequently increases stock prices as an indicator of firm value.

With the influence of Capital Structure and investment policy on firm value, both factors simultaneously impact firm value. This finding aligns with previous research conducted by Ngatno et al. (2021), which shows that Capital Structure and investment policy have a close relationship in a company's effort to optimize firm value. Capital expenditure activities in investment policies significantly impact increasing firm value.

CONCLUSION

Capital Structure and Investment Policy (PER) simultaneously significantly impact the Company Value (PBV) of a Company in the Concrete Printing Field for the period 2014-2019, with a value of 89.4 and a significant value below 0.05,

which is 0.00. This research indicates that when the level of Capital Structure decreases, and Investment Policy increases, the Company Value also increases.

The company is expected to pay attention to the amount of debt and the risks it entails to enhance the influence of Capital Structure and Investment Policy on Company Value. Additionally, the company must allocate funds for investment purposes to maximize profits or returns, which will attract investors to invest in the company's shares. When the Capital Structure approaches its optimal value, the investment policy should also increase simultaneously, increasing Company Value.

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