



EFFECT OF PROFITABILITY, LIQUIDITY AND ASSET STRUCTURE ON CAPITAL STRUCTURE AT PTPN IV PERSERO MEDAN

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ABSTRACT

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Purpose: This study examines how the capital structure of PTPN IV Persero Medan is influenced by profitability, liquidity, and asset structure. **Methodology:** The study uses quantitative research methods. Data analysis techniques include Classical Assumptions Test, Multiple Linear Regression Analysis, and Hypothesis Testing using SPSS 26 software. The data used is secondary, specifically the financial statements of PTPN IV Persero Medan from 2008–2020 obtained from the company's website. **Results:** The findings indicate that profitability (Return on Assets) has minimal and insignificant impact on capital structure (Debt Equity Ratio). Liquidity (current ratio) has a significant negative effect on capital structure. Asset structure also significantly and negatively influences capital structure. **Findings:** Profitability, liquidity, and asset structure together do not significantly impact capital structure. The coefficient of determination (R²) test results show that profitability, liquidity, and asset structure account for 30.8% of the variation in capital structure, with the remaining influenced by other factors not examined in this study. **Novelty:** This research provides insights into the specific factors influencing the capital structure of PTPN IV Persero Medan. **Originality:** The study offers a detailed analysis of the interplay between profitability, liquidity, asset structure, and capital structure in a specific corporate context. **Conclusions:** Profitability, liquidity, and asset structure collectively have a modest influence on capital structure, highlighting the role of other external factors. **Type of Paper:** Empirical Research Article

INTRODUCTION

According to James C. Van Horne, a financial ratio is the relationship between two accounting figures, calculated by dividing one by the other (Home & M. Wachowicz, 2013). Financial ratios are essential for assessing a company's managerial effectiveness and financial stability. They offer insights into the company's overall health.

Several factors influence a company's capital structure, including profitability, liquidity, asset structure (tangibility), growth rate, internal conditions, sales stability, financial flexibility, taxes, supervision, creditor attitudes, management style, and operating leverage.

Puspita Dewi (2020) explains that the liquidity ratio compares a company's total assets to its total debt, aiming to determine the extent to which assets can cover liabilities. High liquidity often attracts investors, thereby increasing the company's value.

Lukman (2011) notes that the ratio of different asset components, whether current or fixed, is determined by the asset structure. Fixed assets can serve as collateral for funding, and a company with substantial tangible assets has a higher potential for securing loans. Manangkalangi (2005) states that businesses aim to achieve profit. Sufficient funding is crucial for operational success, making capital structure awareness essential for corporations.

Ratio analysis is a valuable comparative tool, primarily using historical accounting data, which provides a static view of past financial situations. The capital structure compares internal capital to external capital, balancing

short-term and long-term debt needs with equity, which includes retained earnings and share ownership. Capital structure management involves aggregating and calculating the sources of funding used by companies to finance their activities (Kasmir, 2014).

Research findings indicate that an increase in profitability, liquidity, and asset structure generally leads to a decrease in the capital structure's value. However, this effect can vary by year. Studies by Henry Pratama and Merry Susanti (2019) and by Joshua Anggun Febrianto et al. (2020) found that profitability positively influences capital structure, alongside the effects of liquidity and asset structure.

Profitability measures a company's ability to generate income from its sales, capital, and assets, which is critical for business owners to determine income distribution, reinvestment, and investment levels (Rahayu, 2018). Liquidity, the ability to meet short-term obligations, is linked to shareholder dividends. The Return on Assets (ROA) ratio evaluates management effectiveness in generating profits, with higher ROA indicating better profitability (Tanor et al., 2015).

$$ROA = \frac{\text{Laba Setelah Pajak}}{\text{Total Aset}}$$

(Dewi & Abundanti, 2019) The ratio called the current ratio describes how well current assets can cover current liabilities. As the ratio of current assets to current liabilities increases, so does a company's liquidity and its capacity to meet its short-term commitments. Cash, investments, notes receivable, accounts receivable, inventories and advances are examples of current assets, while trade payables, notes payable, dividends payable and bonuses payable are examples of current liabilities. This ratio can be calculated in the following way:

$$\text{Current Ratio} = \frac{\text{Aset Lancar}}{\text{Kewajiban Lancar}}$$

The structure of corporate assets is one of the most important aspects because, if you have difficulty paying your obligations, your tangible assets or fixed assets can be used as collateral for a loan from a third party represented by FAR. (Fixed Assets Ratio). A ratio known as "asset structure," which assesses the relationship between fixed assets and all of a company's assets, can be used to determine how much money should be allocated to each component of assets. This ratio determines the portion of a company's fixed assets that can be used as loan collateral. With the following formula, the asset structure can be calculated:

$$FAR = \frac{\text{Total Aktiva Tetap}}{\text{Total Aktiva}}$$

(Nurlela & Dimiyati, 2021) Capital structure refers to the mix of equity, short and long term debt, and other sources of financing that a business uses to carry out its day-to-day operations. (I, 2011) According to Sudana, the relationship between a company's capital structure and its long-term expenditure can be seen from its long-term debt to equity ratio. Debt to Equity Ratio is the ratio used to compare total debt to total equity to determine how much collateral is available to creditors. This ratio can be determined using the formula:

$$\text{Debt to Equity Ratio} = \frac{\text{Total Hutang}}{\text{Total Equity}}$$

Profitability, liquidity, and asset structure together do not significantly impact capital structure. The coefficient of determination (R²) test results show that profitability, liquidity, and asset structure account for 30.8% of the variation in capital structure, with the remaining influenced by other factors not examined in this study. In this article, the author's goal of conducting this research is to determine the effect of Profitability (Return On Assets) on Capital Structure (Debt Equity Ratio); to determine the effect of Liquidity (Current Ratio) on Capital Structure (Debt Equity Ratio); to determine the effect of Asset Structure on Capital Structure (Debt Equity Ratio); and to determine the effect of Profitability (ROA), Liquidity (CR) and Asset Structure on Capital Structure.

METHOD

In this study, statistical analysis, examination of specific populations and samples, and testing of specific hypotheses were all carried out using quantitative research methodologies. (Sugiyono, 2019). Samples were taken randomly from the population without regard to pre-existing stratification using the Simple Random Sampling approach. PTPN IV Persero Medan is the research population. Secondary data is a source of data. Therefore, this research data only utilizes data from the company's financial data PTPN IV Persero Medan. The company's annual reports from 2008 to 2020 can be easily accessed by researchers via <https://www.ptpn4.co.id> as part of the data

collection strategy used in this research. Debt Equity Ratio is a variable Y which is the dependent variable in this study. In this study the dependent variable (dependent variable) is the Y variable, namely the Debt Equity Ratio. Which is how to calculate DER as follows:

$$DER = \frac{\text{Total Utang (Debt)}}{\text{Total Ekuitas (Equity)}}$$

In this study, variable X which stands for profitability (return on assets), liquidity (current ratio), and asset structure function as independent and independent variables. This variable can be calculated in the following way:

$$ROA = \frac{\text{Laba Setelah Pajak}}{\text{Total Assets}}$$

$$CR = \frac{\text{Aktiva Lancar (Current Assets)}}{\text{Utang Lancar (Current Liabilities)}}$$

$$\text{Struktur Aktiva} = \frac{\text{Total Aktiva Tetap}}{\text{Total Aktiva}}$$

The data analysis method used is the traditional assumption test, which includes normality, multicollinearity, heteroscedasticity, and autocorrelation tests; hypothesis testing, which includes testing the coefficient of determination (Adjusted R2), partial testing (t-test), simultaneous testing (f-test), and multiple linear regression analysis. The following equation is used in the multiple linear regression analysis of this study:

$$Y = a + b1.X1 + b2.X2 + b3.X3 + e$$

Information :

- Y = Struktur Modal
- a = Konstanta
- b = Koefisien Regresi
- X1 = Profitabilitas
- X2 = Likuiditas
- X3 = Struktur Aktiva
- e = Error

RESULTS AND DISCUSSION

The research results obtained in this study are as follows: the normality test used in the normality test is using the Kolmogorov Smirnov test. Where the results of the test are:

Table 1 Kolmogorov Smirnov Data Normality Test Results

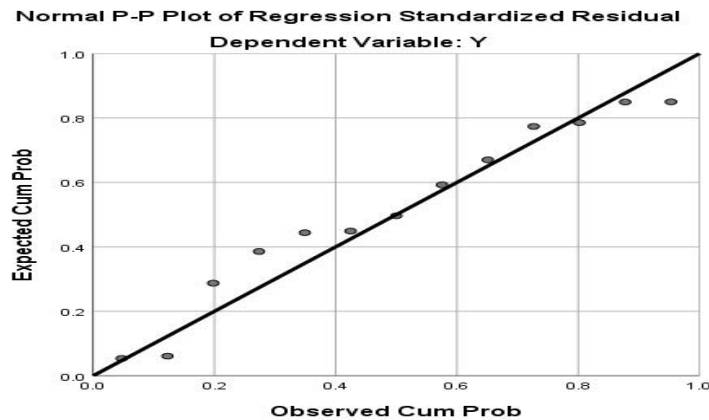
| One-Sample Kolmogorov-Smirnov Test | | |
|------------------------------------|----------------|---------------------|
| Unstandardized Residual | | |
| N | | 13 |
| Normal Parameters ^{a,b} | Mean | .0000000 |
| | Std. Deviation | .15203829 |
| Most Extreme Differences | Absolute | .138 |
| | Positive | .117 |
| | Negative | -.138 |
| Test Statistic | | .138 |
| Asymp. Sig. (2-tailed) | | .200 ^{c,d} |

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.

Source: SPSS Processing Results 26

If the data has an Asymp value, it can be said to be normal. Signature. (2-tailed) > 5% (>5%) present. The findings of the normality test in this study have a Sig value of 0.200 or 20%, as can be seen from the table above.

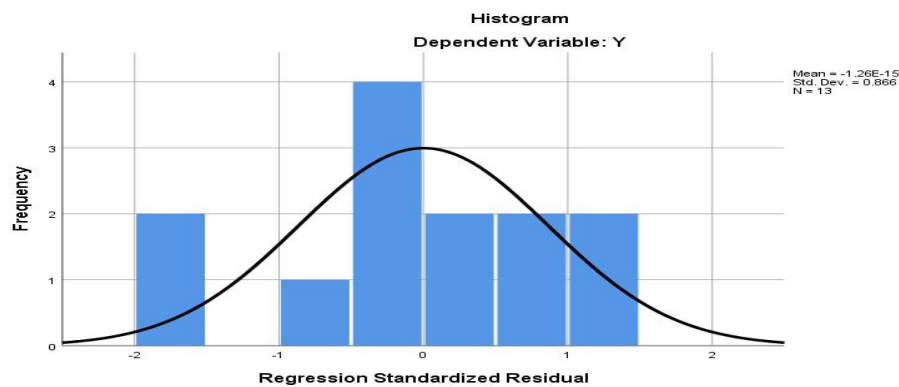
The data is generally scattered when the sig value is 20% > 5%. Similarly, the histogram and plot graph below show the results of the normality test:



Source: SPSS Processing Results 26

Figure 1. Graph of Normality Plot

Because the points in the normal plot graph above are scattered around the diagonal line and their distribution is somewhat close to the diagonal line, it can be concluded that the data in this study are normally distributed.



Source: SPSS Processing Results 26

Figure 2. Graph Normality Histogram

It can be concluded that the data in the histogram above has a pattern that is distributed consistently because the pattern of the curves in the histogram above is neither sloping to the left nor to the right. Multicollinearity does not occur in this study if the variance inflation factor (VIF) is less than 10 and the tolerance value is greater than 0.10, or if the values are different. The following table displays the findings of the research multicollinearity test:

Table 2. Multicollinearity Test Results

| | | Coefficients ^a | | | | | Collinearity Statistics | |
|-------|------------|-----------------------------|------------|---------------------------|--------|------|-------------------------|-------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | Tolerance | VIF |
| | | B | Std. Error | Beta | | | | |
| 1 | (Constant) | 3.457 | 1.935 | | 1.787 | .108 | | |
| | X1 | .619 | .302 | .662 | 2.052 | .070 | .554 | 1.805 |
| | X2 | -1.132 | .522 | -1.091 | -2.166 | .048 | .227 | 4.397 |
| | X3 | -1.396 | 1.779 | -.416 | -.784 | .453 | .205 | 4.881 |

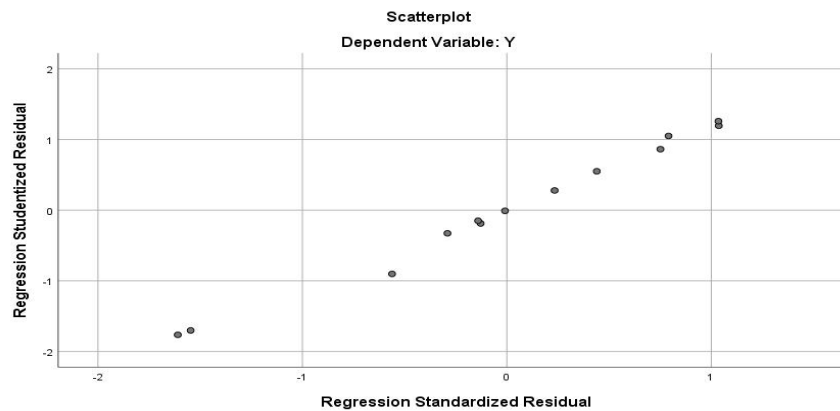
a. Dependent Variable: Y

Source: SPSS Processing Results 26

Table 2. explains how we arrived at values of 1.805 for variable X1 (ROA), 4.397 for X2 (CR), and 4.881 for X3 in the Variance Inflation Factor (VIF) column. (Asset Structure). Multicollinearity does not appear in this

study when VIF is less than 10. In addition, the tolerance levels for ROA (X1), CR (X2), and Asset Structure (X3) values are all higher than 0.10.

To examine whether the data shows a trend towards grouping together is one technique for identifying heteroscedasticity; the absence of heteroscedasticity will be indicated by a uniform distribution of values above and below 0 on the Y axis. The following is a scatterplot graph showing some of the data:



Source: SPSS Processing Results 26

Figure 3. Heteroscedasticity Test Results

The Y axis in the scatter above may be above or below zero, and the points are scattered all over the place; they are not grouped together in any particular way. This shows that the regression model used in this study does not show heteroscedasticity.

Table 3 Autocorrelation Test Results

| Model Summary ^b | | | | | |
|----------------------------|-------------------|----------|-------------------|----------------------------|---------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
| 1 | .693 ^a | .481 | .308 | .1755 | 1.817 |

a. Predictors: (Constant), X3, X1, X2

b. Dependent Variable: Y

Source: SPSS Processing Results 26

We can see in the Durbin Watson table above that it has shown that the DW value is 1.817 with a significant table value of 5%, $n = 13$; $k = 3$. From the results of these data, we can see that the DW value is greater than the dU value or $DW > dU$ of $1.817 > 1.8159$, which means that there is no positive autocorrelation, and the $4 - dU$ value is greater than the dU or $4 - dU > dU$ of $2.1841 > 1.8159$, which means that there is no negative autocorrelation. Consequently, it is possible to conclude from the test findings that there is no autocorrelation.

Looking for the influence between the independent factors, namely the variables X1, X2, and X3, and the dependent variable, especially the Y variable, is carried out in processing the data using multiple linear regression.

Table 4 Results of Multiple Linear Regression Analysis

| Coefficients ^a | | | | | | |
|---------------------------|------------|-----------------------------|------------|---------------------------|--------|------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 3.457 | 1.935 | | 1.787 | .108 |
| | X1 | .619 | .302 | .662 | 2.052 | .070 |
| | X2 | -1.132 | .522 | -1.091 | -2.166 | .048 |
| | X3 | -1.396 | 1.779 | -.416 | -.784 | .453 |

a. Dependent Variable: Y

Source: SPSS Processing Results 26

In this study, to find the independent variable in this regression is Capital Structure (Y), while the dependent variable is Return On Assets (X1), Current Ratio (X2), Asset Structure (X3). Based on the results of the multiple linear regression analysis test above are:

$$Y = 3,457 + 0,619X_1 - 1,132X_2 - 1,396X_3 + e$$

From the multiple linear regression equation above it can be explained that:

- a. For any given value of the independent variables "Profitability," "Liquidity," and "Asset Structure," the constant value is 3.457, indicating that "Capital Structure" will have a value of "3.457" if the dependent variable is set to 0.
- b. ROA (b1) of 0.619 is a multiple linear regression coefficient. This shows that the ROA and Capital Structure variables have a positive relationship. This finding indicates that, if other factors are held constant, both variables increase if the variable ROA increases relative to capital structure. The impact of the capital structure will then grow by 0.619 at PTPN IV Persero Medan.
- c. It turns out that the coefficient of multiple linear regression, CR(b2), is -1.132. This shows a negative relationship between the CR variable and capital structure. This conclusion, assuming all other factors are held constant, predicts a decrease in the amount of corresponding capital structure and its effect on the economy. Consequently, the Impact of Capital Structure in PT. Perkebunan Nusantara IV Persero Medan will experience a decrease of 1,132 or 113.2%.
- d. The multiple linear regression coefficient for Asset Structure (b3) is -1.396. This shows that the variables describing asset structure and capital structure have an inverse relationship. These results indicate that an increase in asset structure will result in a decrease in capital structure because it approaches the optimal level if other parameters remain constant. Consequently, the Impact of Capital Structure in PT. Perkebunan Nusantara IV Persero Medan will experience a decrease of 1,396 or 139.6%.

Table 5 Test Results for the Coefficient of Determination (R²)

| Model Summary ^b | | | | |
|----------------------------|-------------------|----------|-------------------|----------------------------|
| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
| 1 | .693 ^a | .481 | .308 | .1755 |

a. Predictors: (Constant), X3, X1, X2

b. Dependent Variable: Y

Source: SPSS Processing Results 26

The coefficient of determination (Adjusted R²), which is shown in Table 4.8, is 0.308, which is quite close to 1. This indicates that the other variables except the variable capital structure (DER), which explains 30.8% of the variance in return on assets ratio, current ratio, and asset structure, explain 69.2% of the variance in this study.

Table 6 Partial Test Results (t test)

| Coefficients ^a | | | | | | |
|---------------------------|------------|-----------------------------|------------|---------------------------|--------|------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 3.457 | 1.935 | | 1.787 | .108 |
| | X1 | .619 | .302 | .662 | 2.052 | .070 |
| | X2 | -1.132 | .522 | -1.091 | -2.166 | .048 |
| | X3 | -1.396 | 1.779 | -.416 | -.784 | .453 |

a. Dependent Variable: Y

Source: SPSS Processing Results 26

In table 4.6 above with a value of n = 13; k = 4 and t_{table} = 2.26216 it has been explained that the significant value of the t test on the independent variables of this study is as follows:

- a. The t calculated ROA value of 2.052 from the partial test of ROA vs the DER ratio explains why t count > t table with a significance value of 0.070 > 0.05. Because H1 is true and H01 is wrong, ROA has no significant impact on the DER ratio.

- b. The t-count value of CR is -2.166 according to the results of the partial test of CR on DER which explains the value of $t_{count} < t_{table}$ with a significance value of $0.048 < 0.05$. H02 rejected; H2 is accepted, resulting in the conclusion that the current ratio only slightly affects the debt to equity ratio.
- c. The calculated t value for Asset Structure is -0.784 in accordance with the results of partial testing for Asset Structure against DER, which explains why the t value calculated for t table with a significance value of $0.453 > 0.05$. Thus it can be said that the Asset Structure does not have a large and partial effect on DER.

Table 7 Simultaneous Test Results (Test F)

ANOVA^a

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|-------|-------------------|
| 1 | Regression | .257 | 3 | .086 | 2.777 | .103 ^b |
| | Residual | .277 | 9 | .031 | | |
| | Total | .534 | 12 | | | |

a. Dependent Variable: Y

b. Predictors: (Constant), X3, X1, X2

Source: SPSS Processing Results 26

F table = 3.86 using data in table 4.7 with $df_1 = 3$ and $df_2 = 9$. Assuming the data is correct, we can conclude that the significance level of the comparison between F (count) and F table is $0.103 > 0.05$, with value 2.777 < 3.86. ROA, CR, and FAR to DER were examined to see if they correlated with each other at PTPN IV Persero Medan, but we did not find such a correlation.

Effect of Profitability on Capital Structure

Using a partial test (t test) with a value of $t_{count} > t_{table}$, or $2.052 < 2.26216$ and $sig. 0.070 > 0.05$ then a statistical test was carried out on the variable Profitability (Return On Assets) and Capital Structure (Debt Equity Ratio). This explains why profitability (Return on Assets) has no effect on capital structure and is not important. (Debt Equity Ratio). That way it can be interpreted that the profit value of the company has increased, the value of debt to the company has continued to increase. What should be with the increase in profits the company can pay off the existing debt, not increase the debt to the company.

The Effect of Liquidity on Capital Structure

Based on the findings of statistical tests, the liquidity variable (current ratio) is compared with the capital structure (debt-equity ratio), using a partial test (t test) with a value of $t_{count} < t_{table}$, or $-2.166 < 2.26216$, and a significance level of $0.048 < 0.05$. This explains why the current liquidity ratio has a negative and quite large influence on capital structure. (Debt Equity Ratio). This means that if the company's liquidity value increases and the capital structure decreases, then the company in this case can cover or pay off the existing debt to PTPN IV Persero Medan.

Effect of Asset Structure on Capital Structure

Based on the findings of the statistical test, from the test results on the variable Asset Structure to Capital Structure (Debt Equity Ratio), we can extrapolate using a partial test (t test) with a $t_{count} < t_{table}$ of $-0.784 < 2.26216$ and a sig value of $0.453 > 0.05$. This explains why the impact on Capital Structure is negative and small. (Debt Equity Ratio). This can be interpreted that the company's capital structure will be smaller with a better asset structure. Means in this case with the existence of good company assets, the company can cover or pay off the total debt to the company.

Effect of Profitability, Liquidity and Asset Structure on Capital Structure

The test findings for Return on Assets, Current Ratio, and Asset Structure simultaneously have no effect and are not statistically significant for the dependent variable, Capital Structure. Because the significant result of the F test is $0.103 > 0.05$ in this case. Thus it can be stated that the independent variables Return on Assets, Current Ratio, and Structure of Assets to Debt Equity Ratio at PTPN IV Persero Medan do not influence each other and are not statistically significant.

The return on assets ratio, current ratio, and asset structure have a very strong relationship with the capital structure variable (DER), which is 30.8%, and 69.2% is explained by other factors not included in this study, according to the Coefficient of Determinant Value (Adjusted R²) of 0.308.

CONCLUSION

The research findings lead to the following conclusions: Profitability (Return on Assets) does not significantly affect the capital structure (Debt Equity Ratio) at PTPN IV Persero Medan. Liquidity (Current Ratio) negatively and significantly affects the capital structure, while asset structure has a negative but insignificant effect. Collectively, profitability, liquidity, and asset structure do not significantly impact the capital structure. Management must carefully evaluate financing decisions, balancing capital and debt to achieve an ideal capital structure. The study's limitations include a small sample size and reliance on secondary data. Future research should expand sample sizes, use more detailed data collection, and consider additional variables to enhance the findings.

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