The Effect of Production Costs and Long-Term Debt on Profitability in Manufacturing Companies in the Consumer Goods Industry Sub-Sector Listed on the Indonesia Stock Exchange

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Abstract

The purpose of this research was to examine the influence of production costs and long-term debt on profitability partially and simultaneously. The population of this research was 48 in manufacturing companies in the consumer goods industry sub-sector listed in the Indonesia Stock Exchange in the period of 2015-2019 and samples of 10 companies by using purposive sampling technique. The data were processed by using multiple linear regression analysis. The result of the research showed that first, production cost had influence positive and significant on profitability. Secondly showed that long-term debt had influence negative and significant on profitability. Thirdly showed that production costs and long-term debt influence significant on profitability simultaneously.

Keywords: Production Costs, Long-Term Debt, Profitability
1. INTRODUCTION

Companies in Indonesia such as manufacturing companies that produce quality products can compete with each other so that the business world is growing. Manufacturing companies are companies whose activities are processing raw materials into finished goods that are ready to be distributed to consumers. The main function of manufacturing companies is as a bridge between companies that produce raw materials and consumers who need goods that have a higher added value than these raw materials (Harmain et al., 2019). Products that have been sold to consumers will increase the company’s probability. The higher probability generated by the company, it indicates that the company has good prospects in the future and business continuity is maintained. High profitability means the rate of return to investors will be even greater, this is good news. (Jannah et al., 2021).

Companies that have gone public, there is a separation of company ownership. Shareholders are referred to as the principal and the person who manages the company, namely the management is called the agent. With this separation, a gap or conflict of interest will arise. This happens when the manager takes actions for his own interests that are not in accordance with the interests of shareholders. This agency conflict can be resolved if the shareholders can bear the agency costs. These costs include costs that must be incurred by shareholders to force managers to take action in accordance with the interests of shareholders (Lubis, A.F & Putra, 2012).

Profitability is a ratio that shows the company’s ability to generate profits in a certain period. The efficiency and effectiveness of the management in managing the company can be seen from the profits earned by the company. A company must always be in a profitable position (Selviani & Aminah, 2019). Profitability has an important role in maintaining the viability of the company. The higher the value of the probability ratio, the better the condition of the company. Many factors can affect the value of probability in addition to income and expense, working capital, asset utilization, both current assets and fixed assets, equity ownership, and other (Hani, 2015). These are several factors that can affect profitability, namely production costs and long-term debt. Based on the findings of previous researchers, namely production costs and long-term debt have a significant effect on profitability (Evadine, 2019; Jati & Sudaryanto, 2016; Maulana & Safa, 2017; Ramadita & Suzan, 2019; Yani, 2016).

Production costs are costs used in processing raw materials into products that are ready to be sold to consumers. Production costs form the cost of production which is used to calculate finished products and products that are still in process. (Khaddafi et al., 2018). With the aim of setting a selling price that will be used in external reporting. The level of profitability is influenced by the amount of costs used in the production process. The high cost of production will have an impact on the company’s sales which will ultimately affect the profitability of the company.
In addition to production costs, debt affects the company’s profitability. Debt consists of short-term debt and long-term debt. Short-term debt. Known as current liabilities, comes from operating activities consisting of trade payables, taxes payable, unearned income, and others. Long-term debt also known as long-term liability, is an obligation that is reasonably expected to be liquidated or repaid within a period of more than one year. (Elizar et al., 2016). This payable consists of bonds payable, leases, loans with maturities of more than one year and others. The level of profitability is influenced by the amount of company debt. The higher the long-term debt owned by the company, it will have an impact on the company’s profitability.

Based on the financial reports of manufacturing companies in the consumer goods industry sector for the 2015-2019 period, the company’s profitability has decreased over the last five years. The decrease in profit indicates that management must be able to overcome these problems so that investors stay in the company so they do not switch to other companies. Therefore, it is necessary to re-examine the company’s profitability. This study aims to determine the effect of production costs and long-term debt on profitability partially and simultaneously. This research is expected to contribute to the development of the study of accounting science, especially regarding the effect of production costs and long-term debt on profitability partially and simultaneously.

2. LITERATURE REVIEW [Times New Roman 12 bold]

Profitability

Profitability plays an important role in maintaining the viability of the company. With this ratio, it can be seen that the company has good prospect or not in the future. Several types of ratios that are often used to review the company’s ability to generate profits are used in this type of financial accounting, among others (Rahmani & Lubis, 2019):

1. Gross Profit Margin (Gross Profit Margin) is a profitability ratio to assess the percentage of gross profit to revenue generated from sales. The formula for calculating gross profit margin is as follows:
   \[ \text{Gross Profit Margin} = \frac{\text{Sales} - \text{Cost of Sales}}{\text{Sales}} \]
2. Net Profit Margin (Net Profit Margin) is a profitability ratio to assess the percentage of net profit earned after deducting taxes to income earned from sales. The formula for calculating net profit margin is as follows:
   \[ \text{Net Profit Margin} = \frac{\text{Net Profit After Tax}}{\text{Sales}} \]
3. The Return on Assets Ratio is a profitability ratio to assess the percentage of profit (profit) obtained by the company related to resources or total assets so that the efficiency of a company in managing its assets can be seen from the percentage of this ratio. The formula for calculating the return on assets ratio is as follows:
ROA = Net Profit/Total Assets
4. Return on Equity Ratio is a profitability ratio to assets the company's ability to generate profits from the investment of the company's shareholders expressed as a percentage. The return on equity formula is as follows:
   ROE = Net Profit After Tax/Shareholders' Equity
5. Return on Sales Ratio is a profitability ratio that displays the company's profit level after payment of production variable costs such as worker wages, raw materials and others before deducting taxes and interest. The formula for calculating the sales return ratio is as follows:
   ROS = Profit Before Tax and Interest/Sales
6. Return on Capital Employed is a profitability ratio that measures the company's profit from the capital used in the form of a percentage (%). The formula for calculating the return on capital ratio used is as follows:
   ROCE = Profit Before Tax and Interest/Working Capital

The types of profitability ratios are as follows:
1. Profit margin on sales is one of the ratios used to measure the profit margin on sales.
2. Return on investment atau return on assets is ratio that shows the results (return) on the number of assets used in the company.
3. Return on equity or profitability of own capital is a ratio to measure net profit after tax with own capital.
4. Earning per share of common stock or also called the book value ratio is a ratio to measure the success of management in achieving profits for shareholders (Kasmir, 2015).

The purpose of using the profitability ratio for the company as well as for outsiders is (Kasmir, 2015):
1. to measure or calculate the profit earned by the company in a certain period;
2. to assess the company's profit position in the previous year with the current year;
3. to assess the amount of net profit after tax with own capital;
4. to measure the productivity of all company funds used, both loan capital and own capital;
5. to measure the productivity of all of the company's funds which are used both for own capital;
6. and other purposes.

The benefits obtained are (Kasmir, 2015):
1. to determine the level of profit earned by the company in one period;
2. to find out the company's profit position in the previous year with the current year;
3. to know the progress of profit from time to time;
4. to find out the amount of net profit after tax with own capital;
5. to determine the productivity of all company funds used for both loan capital and own capital;
6. Other benefits.
Profitability ratio is measured by return on equity (ROA) which is measured by net profit divided by total assets.

**Production Cost**

Production costs are costs used in the production process including raw material costs, direct long-term debt costs and factory overhead costs which are larger than other types of costs (Siregar, 2013). Companies that are looking for profit or those that are not looking for profit process inputs in the form of economic sources to produce outputs in the form of other economic sources whose value must be higher than the value of the input (Mulyadi, 2014). This means that if the company has high profits, the production costs incurred are low. Production costs are measured by the sum of fixed costs and variable costs.

**Long Term-Debt**

Debt is all the company's financial obligations to other parties originating from creditors (Munawir, 2017). Liabilities are present company debts that arise from past events, the settlement of which is expected to result in an outflow of company resources containing economic benefits (Martani et al., 2015). Long-term debt is used for the company's long-term needs such as factory construction, purchase of land, buildings and others. Included in this group include:

1. Bonds payable
   Bonds are proof of company debt to holders with interest payments that are paid off in more than one year.

2. Mortgage notes payable, namely long-term debt accompanied by fixed asset guarantees (Elizar et al., 2016).

Financing with debt has an influence on the company because debt has a fixed burden. As a result, if the company fails to pay interest on the debt, it will cause difficulties that end in bankruptcy (Yani, 2016). If the company has high long-term debt, it will affect the company's profitability. The higher the company's debt, the more interest the company pays to creditors, thus affecting profitability.

**The Effect of Production Costs on Profitability**

Research conducted by Ramadita and Suzan (2019) regarding the Effect of Production Costs, Debt to Equity, and Inventory Turnover on Profitability. Ramadita and Suzan (2019) stated that production costs have a significant effect on profitability. This can be seen from the significance value of 0.0121 < 0.05. Based on the literature review that has been explained and the results of previous research, this study formulates the following hypothesis:
H1: Production costs (X1) have a significant effect on profitability in manufacturing companies in the consumer goods industry sub-sector listed in the Indonesia Stock Exchange.

![Figure 1. The Effect of Production Costs on Profitability](image1)

The Effect Long-Term Debt on Profitability

Research conducted by Evadine (2019) regarding the Effect of Long-Term Debt, Short-Term Debt, and Working Capital on Profitability at PT. Delta Atlantic Beautiful Medan. Evadine (2019) states that long-term debt has a significant effect on profitability. This can be seen from the significance value of 0.001 < 0.05. This study is in line with research conducted by Maulana and Safa (2017) regarding the Effect of Short-Term Debt and Long-Term Debt on Profitability at PT. Bank Mandiri Tbk. Maulana and Safa (2017) state that long-term debt has a significant effect on profitability. This can be seen from the significance value of 0.019 < 0.05. This research is the same as the research conducted by Yani (2016) regarding Long-Term Debt and Profitability in Islamic Banks: A Study at PT Bank Muamalat Indonesia. Yani (2016) states that long-term debt has a significant effect on profitability. This can be seen from the significance value of 0.006 < 0.05.

Based on the literature review that has been explained and the results of previous research, this study formulates the following hypothesis:

H2: Long-term debt (X2) has a significant effect on profitability in manufacturing companies in the consumer goods industry sub-sector listed in the Indonesia Stock Exchange.

![Figure 2. The Effect Long-Term Debt on Profitability](image2)

The Effect of Production Costs and Long-Term Debt on Profitability

Based on the theoretical studies that have been explained and the results of previous studies, this study formulates the following hypotheses:
H3: Production costs and long-term debt (X3) have a significant effect on profitability in manufacturing companies in the consumer goods industry sub-sector listed in the Indonesia Stock Exchange.

The conceptual framework in this research is as follows:

![Conceptual Framework Diagram]

**Figure 3. The Conceptual Framework**

3. **METHOD**

The type of research used in this research is quantitative research using an associative approach. The data analysis method used in this research is multiple linear regression model, classical assumption test, and hypothesis testing. Classical assumption test using normality test: kolmogorov-smirnov test, multicollinearity test: tolerance value and VIF value, heteroscedasticity test and autocorrelation test (Ghozali, 2018). The data analysis technique used the IBM SPSS program. Hypothesis testing consisting of t test and F test. The method of data collection uses documentation techniques sourced from secondary data, namely the financial statements of companies in the consumer goods industry sector listed on the Indonesia Stock Exchange. The population in this study were 48 in manufacturing companies in the consumer goods industry sub-sector listed in the Indonesia Stock Exchange for the 2015-2019 period and the sample consisted of 10 companies using purposive sampling technique through certain criteria so that the observation data was 50 data.

4. **RESULTS AND DISCUSSION**

**RESULTS**

Based on the results of research and testing, the following results were obtained:

**Normality Test**

Based on table 1, the results of the normality test with the one sample Kolmogorov-Smirnov test show the asymp sig value of 0.146 > 0.005. This means that the data is normally distributed so that the research data can be tested with a regression model.
Table 1. Normality Test
One-Sample Kolmogorov-Smirnov Test

<table>
<thead>
<tr>
<th>Normal Parameters</th>
<th>Unstandardized Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>50</td>
</tr>
<tr>
<td>Normal Parameters</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>0E-7</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>.08873057</td>
</tr>
<tr>
<td>Absolute</td>
<td>.162</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
<td></td>
</tr>
<tr>
<td>Positive</td>
<td>.162</td>
</tr>
<tr>
<td>Negative</td>
<td>-.081</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
<td>1.144</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.146</td>
</tr>
</tbody>
</table>

a. Test distribution is Normal.
b. Calculated from data.

Source: Processed data, 2022

Multicollinearity Test
Based on table 2, the results of the multicollinearity test show that the tolerance value is > 0.10 and the VIF value is < 10. This means that there is no multicollinearity so that the research data can be tested using a regression model.

Table 2. Multicollinearity Test

<table>
<thead>
<tr>
<th>Model</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>(Constant)</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Biaya Produksi</td>
</tr>
</tbody>
</table>
Hutang Jangka Panjang | .244 | 4.099

a. Dependent Variable: Profitabilitas
Source: Processed data, 2022

Heteroscedasticity Test

Based on Figure 4, the results of the heteroscedasticity test show that the points spread randomly both above and below the number 0 on the Y axis. This means that there is no heteroscedasticity so that the research data can be tested using a regression model.

![Figure 4. Heteroscedasticity Test](source: Processed data, 2022)

Autocorrelation Test

Based on table 3, the results of the autocorrelation test show that the Durbin Watson value is 0.347. This means that there is no autocorrelation so that the research data can be tested using a regression model.

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.483</td>
<td>.234</td>
<td>.201</td>
<td>.090599</td>
<td>.347</td>
</tr>
</tbody>
</table>

Source: Processed data, 2022

Hypothesis Test

Multiple Linear Regression Results

Hypothesis testing can be done after the classical assumption test conditions are met by the regression model so that the data can be analyzed.
Tabel 4. Results of Multiple Linear Regression

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
<td>.121</td>
<td>.018</td>
<td></td>
<td>6.700</td>
</tr>
<tr>
<td>1 Biaya Produksi</td>
<td>6.016E-009</td>
<td>.000</td>
<td>.837</td>
<td>3.236</td>
</tr>
<tr>
<td>Hutang Jangka Panjang</td>
<td>-2.782E-008</td>
<td>.000</td>
<td>-.978</td>
<td>-3.784</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Profitabilitas

Source: Processed data, 2022

Based on table 4, the multiple regression equation between the independent variable (X) and the dependent variable (Y) is as follows:

Profitability = .121 + 6.016 Production Costs - 2.782 Long Term Debt + ε

The regression equation above can be explained as follows:

a. The constant of .121 indicates that if all the independent variables of production costs and long-term debt are assumed to be zero, the value of profitability is -.121

b. The coefficient b1 of 6.016 indicates that if the variable cost of production increases by one unit, it will increase profitability by 6.016 units assuming all other independent variables are zero.

c. The coefficient b2 of -2.782 indicates that if the long-term debt variable increases by one unit, it will decrease profitability by -2.782 units assuming all other independent variables are zero.

Coefficient of Determination Test
Based on the results of the autocorrelation test in table 5, it shows that the R Square value is 0.234, which means that the percentage of the effect of production costs and long-term debt on profitability is 23.4% while the remaining 76.6% is influenced or explained by other variables not included in this research model.

### Table 5. Coefficient of Determination Test

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.483</td>
<td>.234</td>
<td>.201</td>
<td>.090599</td>
<td>.347</td>
</tr>
</tbody>
</table>

Source: Processed data, 2022

**t-Test**

The results of the t-test are as follows:

### Tabel 6. t-Test Regression Results

**Coefficients**

<table>
<thead>
<tr>
<th>Coefficientsa</th>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Constant)</td>
<td>.121</td>
<td>.018</td>
<td>6.700</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Biaya Produksi</td>
<td>6.016E-009</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.000</td>
<td>.837</td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Hutang Jangka Panjang</td>
<td>-2.782E-008</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>.000</td>
<td>-.978</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Profitabilitas

Source: Processed data, 2022

Based on the results of the t-test in table 6 as follows:
a. Production costs have a significant effect on profitability in consumer goods industrial sector companies listed on the Indonesia Stock Exchange. This can be seen from the significant value of 0.002 < 0.000 which means that the first hypothesis is accepted.
b. Long-term debt has a significant effect on the profitability of companies in the consumer goods industry sector listed on the Indonesia Stock Exchange. This can be seen from the significant value of 0.000 > 0.05 which means that the second hypothesis is accepted.

F-Test

The results of the F-test are as follows:

Tabel 7. F-Test Regression Results

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>.118</td>
<td>2</td>
<td>.059</td>
<td>7.164</td>
<td>.002*</td>
</tr>
<tr>
<td>Residual</td>
<td>.386</td>
<td>47</td>
<td>.008</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.503</td>
<td>49</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Profitabilitas
b. Predictors: (Constant), Hutang Jangka Panjang, Biaya Produksi

Source: Processed data, 2022

Based on the results of the t-test in table 7, profitability and liquidity have a significant effect on working capital in hotel, restaurant, and tourism companies listed on the Indonesia Stock Exchange simultaneously. This can be seen from the significant value of 0.002 < 0.05 and means that the third hypothesis is accepted.

DISCUSSION

The Effect of Production Costs on Profitability

The results of testing the first hypothesis prove that production costs have a positive and significant effect on profitability. This means that the size of the production costs
greatly affect profitability. The existence of various products produced by companies in the consumption industry sector for the production process can be used as an alternative for companies in obtaining high profits so that even though production costs are high, companies can generate high profitability. In addition, the company has calculated the cost of production and set the selling price of the product appropriately to protect the company from losses. The results of this study support research conducted by Ramadita and Suzan (2019) which states that production costs have a significant effect on profitability. The results of this study do not support the research conducted by Jannah et al (2020) which states that production costs have no significant effect on profitability.

The Effect of Long-Term Debt on Profitability

The results of testing the second hypothesis prove that long-term debt has a negative and significant effect on profitability. This means that the size of long-term debt greatly affects profitability. In other words, companies that have high long-term debt will reduce profitability. This is because the company incurs more costs in paying off its loans, namely loan installments and interest. Although it can reduce taxes, debt will still cause interest to be paid outside the principal debt which if not managed properly, the value of the debt can be even greater without the company's ability to finance the debt (Pancawati, 2020). The results of this study support research conducted by Evadine (2019), Maulana and Safa (2017), Jati and Sudayanto (2016), Yani (2016) which states that long-term debt has a significant effect on profitability. The results of this study do not support the research conducted by Pancawati (2020), Selviani and Aminah (2019), Sunaryo (2018), Rosita & Gantino, 2017, Oxtaviana & Khusbandiayah, 2016 which states that long-term debt has no effect on significant to profitability.

The Effect of Production Costs and Long-Term Debt on Profitability

The results of testing the third hypothesis prove that production costs and long-term debt have a significant effect on profitability. This means that production costs and long-term debt have a significant effect on profitability simultaneously.

5. CONCLUSION

Based on the results of analysis and hypothesis testing, it can be concluded as follows:

1. Production costs have a positive and significant effect on profitability in manufacturing companies in the consumer goods industry sub-sector listed in the Indonesia Stock Exchange.
2. Long-term debt has a negative and significant effect on profitability in manufacturing companies in the consumer goods industry sub-sector listed in the Indonesia Stock Exchange.
3. Production costs and long-term has significant effect on in manufacturing companies in the consumer goods industry sub-sector listed in the Indonesia Stock Exchange.
The suggestions in this study are as follows:
1. The management in managing debt and can calculate production costs and determine the selling price of the product appropriately so as to increase profitability.
2. Further research is recommended to use other companies and increase the research period as well as other independent variables such as working capital and short-term debt so that they can find new research results that can affect profitability.

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