Analysis of Variables Affecting the Capital Structure of Manufacturing Companies in Indonesia

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Abstract. The purpose of this research is to examine the impact of company scale, tangibility, liquidity, profitability, business risk, dividend policy and marketing developments on capital structure. The research population includes consumer manufacturing companies listed on the Indonesia Stock Exchange for the 2016–2020 period. The criteria for the purposive sampling method resulted in 21 companies from a total population of 71 companies being the samples of the research conducted. This research was studied using multiple linear regression analysis techniques with the help of the SPSS application. The results of data processing prove that the variables of company scale, tangibility, liquidity, profitability, business risk, dividend policy, and marketing developments simultaneously affect the capital structure. While the partial test proves that business risk, company scale, dividend policy, and marketing developments have no effect on capital structure. Tangibility and profitability have a positive impact on capital structure, while liquidity has an impact on capital structure.

Keywords: Company scale · Tangibility · Liquidity · Profitability · Business Risk · Dividend Policy · Marketing Growth · Capital Structure

1 Introduction

In a contemporary economy where corporate tax is imposed, based on Modigliani Miller’s (MM) theory, capital structure policy becomes important in increasing the quality and the welfare of the owners. Thus, capital structure becomes an important factor in the finances of public companies. The next challenge for the company is how to determine the optimal capital structure to bring prosperity to shareholders. The capital structure is considered ideal if it can maximize the value of the company with minimal funds [1].

Every business entity has various kinds of problems it faces and it is interesting to examine how industrial policy determines the composition of its funding sources. Long-term liabilities and capital structure are a reflection of the composition of the capital structure [2]. The capital structure can increase or decrease due to various factors, one of which is the stock market. Because the stock market can be a means for every company to be able to increase its funding sources.

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Investors tend to invest in companies that have a healthy capital structure and have an impact on increasing the quality with their investment. Investors consider that the value of the company is important because it is an indicator of the overall market assessment of the company. If the value of the company is high, it can be ascertained that its performance is good.

There are several formulas for determining the ratio of a company’s asset arrangement, for example, the Debt to Equity Ratio by comparing total liabilities and capital. The use of this DER ratio can facilitate the measurement of capital structure ratios because basically capital structure is difficult to measure directly. The size of the DER ratio shows the high use of debt as a source of company capital. If the DER ratio is high, then the risks that can arise are also high. A company is considered good if it can decide on funding with a small percentage of interest and a flexible term, so that debt can provide a profit for the company [3]. The capital structure consists of external sources such as liabilities and internal sources such as share capital. The condition for allocating funds is that the source of the funds must come from a safe source (safety position) and if the funds are used it can strengthen the company’s financial capital structure [4].

Companies can maximize financial performance and improve shareholder welfare, companies must implement a capital structure mechanism with an approach used to increase sources of financing. The company makes a preference in the form of risk sources of financing by considering the composition of the use of debt compared to equity.

Several studies have been done before to analyze the variables that affect capital structure. However, the results of these studies still show varying results. The purpose of this study is to review several variables that can have an impact on capital structure.

Research that examines the relationship between asset arrangement, company scale, profitability, liquidity, and marketing growth on capital structure includes Guna and Sampurno (2018), Astakoni and Utami (2019), and Ismoyo and Aprinanto (2020). The research results prove that the asset arrangement, company scale, profitability, liquidity, and marketing growth affect the capital structure. However, Septiani and Suaryana (2018), Rohman (2019), and Rodiyah and Wahidahwati (2020) failed to prove that company scale, profitability, liquidity and marketing growth affect capital structure.

From the previous research described above, the authors conducted a review with several updates including the year of the study period, and population growth from the sub-sector to the consumption sector. The author also adds a new variable, namely dividend policy, so that in this study the independent variables consist of company scale, tangibility, liquidity, profitability, business risk, dividend policy, and marketing growth.

2 Literature Review

Capital structure format comes from the company’s long-term funding sources (Brigham & Houston, 2014). Funds come from long-term debt and stocks or bonds. The comparison of total liability to equity is the basis for measuring capital structure in this study. Optimal use of debt as a source of funds to carry out operational activities can support the development of the company so that the company can obtain returns as expected. Maximizing value is the main goal of every company. Owner prosperity
can be achieved if the value and quality of the company are high. This is an important foundation for companies to run their business and can bring optimal profits for the company because the owner’s prosperity can increase if the company has a high value [5].

Exchange Theory is a theory of capital structure in which this theory explains how companies gain by paying off their debts under the threat of bankruptcy. Based on the trade-off theory, the level of the capital structure determines the level expected to be achieved by the company in each period. Trade-Off Theory discusses how the costs incurred due to debt can be balanced with the benefits obtained [6]. The balance between benefits and costs incurred can be the basis for determining debt levels [7].

The Pecking Order theory explains statements regarding funding decisions that prioritize internal funding over external funding for company activities [7]. If external funding is needed, bonds will be issued which are the safest securities. If the funds are insufficient, new shares will be issued by the company [8].

Large companies usually have more diversified sources of capital, so they tend to have larger debt than small companies. Based on the trade-off theory, large profit companies will consider all risks to continue to use debt as a source of capital to finance their operational activities. The results of previous studies stated that the size of the company has a positive impact on capital construction [9–11]. So the research hypothesis. H1: Firm size has a positive impact on capital structure.

Tangible or asset arrangement describes the two components of assets in general in their composition, namely current assets and fixed assets. The use of debt is more widely used in companies with larger fixed assets because fixed assets can be used as down payment. The trade-off theory also states that asset management has a positive impact on capital construction. Previous studies have proven that asset management has a positive and insignificant effect on capital composition [9, 10, 12]. So the hypothesis that can be concluded is H2: Tangibility has a positive impact on capital structure.

Companies with a high level of liquidity usually do not use debt financing because they have large internal funds according to the pecking order theory. The company will use its internal funds to finance its activities [4, 13, 14]. [15] Based on the results of research that has been done, the authors formulate the following hypothesis. H3: Liquidity hurts capital structure.

Meanwhile, companies with high profitability have low debt levels because they have high profits (Pecking Order Theory). Companies with high internal funds can be used for the company’s operational activities so that the debt is low. Relevant previous research states that profitability hurts capital structure [8, 15, 16]. H4: Profitability hurts capital structure.

The use of high debt can increase the company’s risk (trade-off theory). Thus, companies with a high level of risk will use lower debt compared to companies with a low level of business risk. The use of lower debt is intended to avoid the company’s inability to pay off its debts. Past research has suggested that business risk is detrimental to capital construction [8, 15, 17] H5: Business risk hurts capital structure.

According to the pecking order theory, dividend policy can affect the use of retained earnings. If dividend payments in the past were large, then managers and shareholders will expect larger dividends in the future. This can increase the need for cash which can
encourage increased loans. Previous studies show that dividend policy has a positive impact on capital construction [18–20]. H6: Dividend policy has a positive impact on capital structure.

External funding sources in the form of debt are used by companies with high marketing and profit growth rates. This is because the company’s internal funding sources are not sufficient to support marketing growth. Previous studies show that increased marketing have a positive effect on capital construction [10–12]. H7: Marketing growth has a positive effect on capital structure.

3 Research Method

A quantitative approach was applied in this research because it is research whose specifications are structured and systematic (Surjadi & Viviana, 2019: 134). The method in this study is an associative type involving independent and dependent variables.

The number of samples obtained was 21 companies from a total population of 71 companies. The purposive sampling technique is the basis for determining the sample accompanied by several criteria [21]. The criteria are companies that publish their overall financial reports in the 2016–2020 research period, and these companies distribute dividends during 2016–2020.

All research data were collected and then processed with the help of Microsoft Excel and processed using multiple linear regression techniques using the Statistica Program for Special Science (SPSS) version 21 application. The use of regression techniques aims to see the relationship of several independent variables which include company scale, tangibility, liquidity, profitability, business risk, and marketing growth on the dependent variable capital structure in consumer sector manufacturing companies recorded on the Indonesia Stock Exchange.

Capital construction is proxied by the Debt to Equity Ratio, company scale is proxied by the natural logarithm of total assets, tangibility is proxied by the calculation of asset management, liquidity is proxied by the current ratio formula, profitability is proxied by the calculation of return on assets, business risk is proxied by the level of operating leverage, dividend policy calculated by the dividend payout ratio formula, marketing growth is calculated by the marketing growth formula.

Trend analysis in this study was determined by taking into account the average value of each variable each year which was obtained from financial reports that had been processed with Microsoft Excel. The average value that has been obtained is presented in the form of a diagram and is accompanied by a trend line to determine whether the variable tends to increase or decrease.

The classical assumption test that underlies the regression analysis was carried out before the multiple linear regression test was carried out. To provide certainty that the resulting model meets the main assumptions of the regression analysis, a classical assumption test is performed.
4 Result

4.1 Description of Research Variables Capital Structure

Measurement of capital construction by comparing the value of long-term liabilities with capital is a way of measuring it with the DER ratio (Fig. 1). Based on the diagram above, the DER ratio has the highest value in 2020 at 83.80 while the lowest ratio was in 2017 at 65.06. The trend line shows that the DER ratio of manufacturing companies in the consumption sector continues to increase from year to year. An increase in the DER ratio indicates optimal use of debt as a source of capital.

The natural logarithm of total assets is a reflection of the size of the company in this study (Fig. 2). In the diagram above, the minimum company scale in 2016 is 15.25, and the maximum company scale in 2020 is 15.8. The trend line identifies that the size of the company is increasing every year.

Comparing the value of fixed assets with the value of total assets is a tangible measure in this study (Fig. 3).

Based on the diagram above, the minimum tangibility value in 2017 was 41.13 and the maximum value was 43.99 in 2019, the trend line shows that tangibility tends to increase. The increase in the tangibility ratio shows that the company’s fixed assets are

Fig. 1. DER Ratio per Year. Source: Processed data (2022)

Fig. 2. Company scale Ratio. Source: Processed data (2022)
also increasing. Comparison is the basis for measuring liquidity by comparing current assets with current liabilities (Fig. 4).

As seen from the diagram above, the minimum value of liquidity was 286.53 in 2020 and the maximum value was 338.44 in 2017. The trend line in the diagram above illustrates that liquidity tends to decrease.

Return on Assets is the basis for measuring profitability ratios (Fig. 5).

The minimum value of profitability is 8.65 in 2020 and the maximum value in 2016 is 11.97. Referring to the diagram above, the trend line of profitability tends to decrease, which means that the profitability of manufacturing companies in the consumer sector is decreasing every year.

In this study, business risk is proxied by DOL by comparing the percentage of EBIT turnover with the percentage of marketing turnover (Fig. 6).

The graph above shows a minimum business risk value of -8.67 in 2020 and a maximum value of 11.36 in 2017. Judging from the trend line, business risk tends to decrease.

The DPR ratio is the basis for measuring dividend policy variables by comparing the dividend per share and earnings per share each year (Fig. 7).
Diagram 7 shows that the minimum dividend policy value was 62.96 in 2017, the maximum value was 205.56 in 2018, and the trend shows that dividend policy tends to increase over the five-year study period.

The marketing growth ratio is determined by calculating the total marketing in year n minus the marketing in year n-1 divided by the marketing in year n-1 (Fig. 8).
The minimum value of marketing growth is -11.9 in 2020 and the maximum value is 6.91 in 2018. The trend line shows that the marketing growth variable tends to decrease in the five-year research period. Drastic drop from 2019 to 2020.

Before analyzing multiple linear regression, the data must be processed using the classical assumption test which includes normality, multicollinearity, heteroscedasticity, and autocorrelation tests. The classic assumption test manifests normally distributed data with Asymp Sig values. (2-fish) 0.260. The data is free from symptoms of multicollinearity with VIF tolerance values and firm size (0.826 and 1.211), tangibility (0.665 and 1.503), liquidity (0.542 and 1.844), profitability (0.839 and 1.193), business risk (0.885 and 1.130) dividend policy (0.926 and 1.080), as well as marketing growth (0.825 and 1.211). The data is free from symptoms of heteroscedasticity with a firm size significance value of 0.060; tangible 0.090; liquidity 0.221; profitability 0.069; business risk 0.559; dividend policy 0.917; and marketing growth 0.059. The data is free from autocorrelation symptoms with the Asymp Sig value. (2-tailed) 0.142.

4.2 Hypothesis Testing

F test to determine the magnitude of the impact of the independent variables on the dependent variable (Table 1).

By paying attention to the table, the results of testing the $f$ value show 11.826 and have a significance of $0.000 < 0.05$; variable firm size, tangibility, liquidity, profitability, business risk, dividend policy, and marketing growth simultaneously affect the capital structure.

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>7</td>
<td>11,826</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>97</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>104</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Processed data (2022)
Table 2. The Result of t-test

<table>
<thead>
<tr>
<th>Variable</th>
<th>t</th>
<th>Sig</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm Size</td>
<td>0.466</td>
<td>0.642</td>
<td>H₀ accepted</td>
</tr>
<tr>
<td>Tangibility</td>
<td>2.340</td>
<td>0.021</td>
<td>H₀ rejected</td>
</tr>
<tr>
<td>Current Ratio</td>
<td>-5.375</td>
<td>0.000</td>
<td>H₀ rejected</td>
</tr>
<tr>
<td>ROA</td>
<td>3.667</td>
<td>0.000</td>
<td>H₀ accepted</td>
</tr>
<tr>
<td>DOL</td>
<td>0.527</td>
<td>0.600</td>
<td>H₀ accepted</td>
</tr>
<tr>
<td>DPR</td>
<td>1.124</td>
<td>0.264</td>
<td>H₀ accepted</td>
</tr>
<tr>
<td>Marketing Growth</td>
<td>-1.343</td>
<td>0.183</td>
<td>H₀ accepted</td>
</tr>
</tbody>
</table>

Source: Processed data (2022)

T-test to determine the impact of each independent variable on the dependent variable (Ghozali, 2018).

Table 2 shows the results of the regression test proving that firm size, business risk, dividend policy, and marketing growth have no impact on capital construction with a prob value. Owned sequentially worth 0.642; 0.600; 0.264 and 0.183 (more than 0.05), so H₁, H₅, H₆ and H₇ are rejected because the research results are different from the hypothesis. Meanwhile, the tangibility and profitability variables have a positive impact on the capital structure with a prob value. 0.021 and 0.000 (<0.05), then H₂ is accepted, but H₄ is rejected. While H₃ is accepted with a prob value. 0.000 (<0.05) hurts liquidity in the capital structure.

5 Discussion

5.1 Description of Research Variables

The capital formation of manufacturing companies in the consumption sector tends to increase. The increase in corporate debt was the cause of the increase in the DER ratio. From the five years 2016–2019, each year has a percentage of less than 100%, which means that the use of own capital is still greater than the use of external funding sources, namely debt. Companies with a DER ratio below 100% are included in the healthy category because if the company defaults, equity can still be used to pay debts. [22].

Firm size values are in [23] folds annually. The increase in company scale was caused by an increase in the company’s total assets. Judging from the financial statements, manufacturing companies in the consumption sector experience increased debt and increased profits every year. The increase in debt and profits can be one of the reasons for the increasing size of manufacturing companies in the consumption sector.

Referring to the results of the analysis, the trend of tangibility is increasing. This increase in asset arrangement was due to an increase in total fixed assets. Increased tangibility can also be one of the triggers for an increase in capital construction. Analysis of the trend of firm size shows that the size of manufacturing companies in the consumption sector...
sector has increased. If the size of the company grows, the company will add tangible fixed assets to better support its operations.

The results of the analysis prove the tendency of liquidity in the consumer sector manufacturing companies to decline. The decrease in the liquidity ratio occurred because the increase in current liabilities was greater than the increase in current assets. There is no absolute provision for how much a good liquidity ratio is. This depends on the type of business of each company, but in general, a current ratio of 200% is considered good [23].

Based on the results of the analysis, the trend of the profitability variable tends to decrease. The decline in profitability indicates that marketing profits are not stable which can occur because marketing have also decreased. The rate of return on assets is used to assess the percentage of profits earned by the company to total assets [24]. The ROA ratio can be an indication of whether a business has high profits or good efficiency and can be used as a basis for investors who want to invest.

The tendency of analysis on business risk variables proxied by DOL tends to decrease. A low DOL ratio indicates that operational costs are variable costs that arise when a sale occurs [25]. That is, if marketing decrease, the DOL ratio will decrease.

The results of the trend analysis test show that dividends in manufacturing companies in the consumption sector have increased. An increase or decrease in the Dividend Payout Ratio depends on the number of dividends distributed. A DPR ratio that exceeds 100% means the company pays out more dividends to shareholders than its net income. A high DPR ratio is not always good for the company. This can make investors perceive it as unattractive since a high DPR ratio can be a sign that a company is trying to hide its plight by offering high dividends [26].

The marketing growth rate reflects how productive a company is and the expectations of interested parties [14]. The test results of trend analysis of marketing growth tend to decrease. In 2020, marketing growth decreased significantly. The existence of the Covid-19 pandemic could be one of the reasons for the decline in marketing because at that time factory operations were stopped due to large-scale social restrictions [27].

5.2 Impact of Company scale on Capital Structure

On the results of testing the hypothesis, one firm size does not affect capital structure. This happens because the company uses internal funding sources which are considered safer than external funding sources. In addition, the company already has several internal fund allocations that are sufficient to finance the company’s activities. In the pecking order theory, large companies prioritize the allocation of internal funds for investment and company development to avoid risks arising from the debt. The results of this test are contrary to previous research, namely company scale has a positive impact on capital structure [9–11]. The test results support previous research, not having an impact on company scale on capital structure [4, 28].

5.3 Impact of Tangibility on Capital Structure

The results of this test show that there is a positive effect of tangibility on the company’s capital structure. That is, if the company’s tangibility is high, the capital structure will
also be high. These results support the trade-off theory if a company has a large fixed asset ratio, it will use more debt. There is an inconsistency with previous research which proves that asset arrangement is detrimental to capital structure [13, 28]. This research is in accordance with the results of previous studies where there is a positive effect of asset arrangement on capital structure [9, 10, 12].

5.4 Impact of Liquidity on Capital Structure

The third test result, liquidity is detrimental to the capital construction. If the company’s liquidity is high, then the capital construction is low. In the pecking order theory, the company’s liquidity value is quite high, so that the use of external funding sources will be skipped because the internal funds are large, so the company will prioritize the use of internal funds. This study is not in line with previous studies, namely liquidity has a positive effect on capital construction [4, 13, 29]. This finding reinforces the results of previous research that liquidity is detrimental to capital construction [14].

5.5 Impact of Profitability on Capital Structure

The fourth analysis test concludes that profitability has a positive impact on capital structure. The results of this test are an indication that the company’s capital construction is high if the level of profitability is high. This can happen because the company is expanding which of course will need a lot of funds to increase profits. Companies with low levels of profitability are reluctant to use debt to finance their operations, on the contrary, at high levels of profitability, companies will increase the use of debt because, with high profitability, companies will have high ability in terms of interest. so that it can attract investors to increase their investment funds to develop the company. These results strengthen the trade-off theory, the use of debt by companies with the aim that the benefits of tax protection are greater. by declining companies. There are previous studies that are not in line with this research, namely, profitability hurts capital construction [8, 15, 16]. However, the research results are in line with previous studies where profitability has a positive impact on capital construction [10, 11, 19].

5.6 Effect of Business Risk on Capital Structure

The fifth test results prove that if the fifth hypothesis is rejected, business risk has neither a positive nor negative effect on capital structure. The high or low DOL ratio will not have an impact on the company’s capital structure. There is no business risk impact because there are some investors who are risk takers so they don’t pay too much attention to risk. There are even some who feel that they have no problem with high risk because they have the opportunity to get a higher rate of return on the company. This finding is inconsistent with previous research that business risk has a positive impact on capital structure [8, 15, 17]. Several previous studies show results that are following this research that there is no positive or negative impact of business risk on capital structure [13].
5.7 Effect of Business Risk on Capital Structure

The results of the fifth test conclude that if the fifth hypothesis is rejected, business risk has no positive or negative impact on capital structure. The high or low DOL ratio will not have an impact on the company’s capital structure. The absence of the influence of business risk can be caused because there are some investors with risk takers so they do not pay too much attention to risk. There are even some who feel no problem with high risk, because they have the opportunity to get a higher rate of return on the company. These findings do not match with previous research that business risk has a positive impact on capital construction [8, 15, 17]. Several previous studies show results in accordance with this study that there is no positive or negative effect of business risk on capital structure [13].

5.8 Effect of Dividend Policy on Capital Structure

From the results of the sixth statistical test, it was found that the dividend policy has neither a positive nor a negative impact on the capital structure because an increase in dividends does not mean an increase in corporate debt [28]. The number of dividends to be distributed does not affect increasing the company’s debt. There are several other factors, namely if the company’s profitability is high or the return earned by the company on its investment is high, then the company can distribute dividends with a high value without using debt. The results of this test are in contrast to previous tests, where dividend policy has a positive effect on capital construction [18–20]. Previous research is in line with this study, namely dividend policy does not affect capital structure [28, 30].

5.9 Effect of Marketing Growth on Capital Structure

The seventh statistical test showed that there was no impact caused by a growth in capital structure. This means that whether marketing increase or decrease will not have an impact on a decrease or increase in capital structure. If the company’s profitability is high, then the company does not need to increase debt to cover production costs because trade increases. This finding is inconsistent with previous research, namely trade growth has a positive effect on capital construction [10–12]. However, this study supports previous research, namely trade growth does not affect capital structure [4].

6 Conclusions and Suggestions

The results of the analysis prove that company scale, tangibility, liquidity, profitability, business risk, dividend policy, and marketing growth simultaneously affect capital structure. Partially, company scale, business risk, dividend policy, and marketing growth have no impact on capital structure. Meanwhile, tangibility and profitability have a positive impact on capital structure, while liquidity hurts capital structure.

It is hoped that this research can serve as a guide for determining the right composition of sources of funds for manufacturing companies in the consumer sector to achieve their goals and develop their business so that they can compete and continue to exist, especially
for companies that during the study period had a DER ratio of more than 200%. Company management is expected to pay attention to several variables that have an impact on capital structure in determining policies regarding company financial resources. Related to the conclusion of this study, it is hoped that the company’s management will pay more attention to the variables of tangibility, liquidity, and profitability in determining its capital structure. Companies must pay attention to the proportion of the use of debt so that it can be beneficial for the company.

This research is limited to five years for the 2016–2020 period, so there may be a discrepancy between the results of this study and the results of existing research. Therefore, future researchers should increase the observation period so that the results obtained are more convincing.

References


