

# The Effect of Sales Growth, Profitability, and Company Size on Leverage

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## ABSTRACT

The research objective is to obtain empirical evidence of the positive effect of sales growth on leverage, the positive effect of profitability on leverage, and the positive effect of firm size on leverage. The decision to determine the capital structure (leverage) is a very important decision because this decision will affect the company's long-term going concern. The population used in this study was manufacturing companies that consistently listed on the Indonesia Stock Exchange from 2017 to 2019. Purposive sampling was used as a sampling technique. The data were processed using EVIEWS. The results showed that sales growth had no positive effect on leverage, profitability had a positive effect on leverage, and firm size had no positive effect on leverage.

**Keywords:** *Leverage; Sales Growth; Profitability; Firm Size*

## 1. INTRODUCTION

Increased competition in the business world encourages company management to improve strategy, production, and marketing for the survival of the company. From within the company, shareholders want the company to provide maximum welfare to them. To achieve this goal, the company needs to make the right decisions. The decision to determine the amount of the loan and how much the owner's contribution to leverage (capital structure) is a very important decision because this decision will affect the company's long-term going concern.

Leverage (capital structure) is an important instrument that supports the survival of the company, particularly companies engaged in the manufacturing sector because the nature of this industry uses more assets, especially assets for the production process where the value is quite material compared to other industries. This funding is related to many parties, such as creditors, shareholders, and management. A high degree of leverage is associated with a high level of risk. Most companies use leverage to finance operations, asset purchases, investments, and business development.

In developing its business, companies need funds where the source of funds can come from internal sources and external sources. If the need for funds is increasing due to the company's growth, and funds from internal sources have been used, the company will use funds from external sources either from debt or issue new shares to meet these needs. Companies that use more debt in their capital structure describe high financial leverage. Companies that

use more equity than debt describe low financial leverage. Company's management is required to be careful in making decisions related to leverage. Appropriate funding decisions are needed in determining the best composition between internal and external funding sources and minimizing the risk of bankruptcy.

Many factors must be considered by the company in determining the most dominant capital structure, including sales growth, profitability, and company size. With the growing sales, the company will need more funds, so the company can use internal funds. If the company's internal funds are not sufficient, it can make loans to creditors which can increase the company's leverage level. On the other hand, if the company's profitability increases, the company has excess retained earnings so that the company can finance operations only from internal funds. This resulted in the level of the company's capital structure will increase. Large companies will find it easier to obtain funds from outside the company compared to small companies so that size is also considered a determining factor for leverage.

This study replicates the research of Sekartaji [1] which examines the effect of firm size and sales growth on leverage (debt to equity ratio). This study has several differences with previous research, namely (1) This study uses manufacturing industry sector companies listed on the Indonesia Stock Exchange while the industrial sector used in Sekartaji [1] research is porcelain and glass ceramics listed on the Indonesia Stock Exchange, (2) This study uses a period of 2017-2019 while the research period of Sekartaji [1] is from 2009-2014, and (3) There is an additional variable, namely profitability from Watiningsih [2]. Based on the outline above, it is necessary to re-

analyze the effect of sales growth, profitability, and company size on leverage. The purpose of the study was to obtain empirical evidence regarding (1) the effect of sales growth on leverage, (2) the effect of profitability on leverage, and (3) the effect of firm size on leverage.

## **2. LITERATURE REVIEW**

### **2.1. Trade-off Theory**

The capital structure needs to be optimized to support the company's operational activities. A company that has a good capital structure means that the company can maintain its going concern for the long term and for expansion. According to Oktavina et al. [3] the trade-off theory is to maximize the use of debt to a certain extent to obtain tax savings due to interest payments. In applying the trade-off theory, it is necessary to consider factors such as tax rates, asset structure, sales stability, operating leverage, and management attitude.

According to Sudiyatno et al. [4] the trade-off theory has an optimal target in the capital structure, where there is a balance between the benefits of tax savings and the risk of bankruptcy. If the tax savings are still greater than the bankruptcy costs, the use of debt is allowed. This theory makes a trade-off between the benefits and drawbacks of using debt to finance company activities.

According to Acaravci [5] the trade-off theory of leverage shows that the target company's capital structure is triggered by taxes, bankruptcy costs (financial distress costs), and agency conflicts. If the company increases its debt, the company's tax debt can be reduced and there will be an increase in after-tax cash flow for investors.

In the trade-off theory, the firm defines the optimal financial structure by balancing the benefits and costs of adding debt, the benefits of leverage include a reduction in interest taxes and an increase in cash flow. The benefit of this funding source is the tax deduction that arises from interest expense when the company uses more debt in its capital structure. The use of large debt will lead to financial difficulties or bankruptcy. Therefore, the firm will borrow up to the point where the marginal value of the tax benefits from using debt is equal to the increase in the present value of the bankruptcy costs. The company tries to have an optimal capital structure by balancing the costs and benefits of using debt.

### **2.2. Pecking Order Theory**

According to Wikartika and Fitriyah [6], the pecking order theory states that companies prefer internal financing, namely funding from the company's operating results in the form of retained earnings. This theory explains that companies prefer to use the profits earned as retained earnings to pay dividends and obtain secure funding. If the company requires an external source of funds, the company will first issue bonds as the safest securities and

if there are not enough funds needed then the company will issue new shares. Based on the pecking order theory, companies in using their funds will be based on levels starting from internal funds, then from debt, and finally from own capital.

According to Sakti et al. [7] the pecking order theory of sorting financing sources is influenced by asymmetric information. The company prioritizes internal funding over equity. The pecking order theory is based on the idea of asymmetric information.

According to Chang et al. [8] when a manager decides to finance a company through external funds, investors tend to interpret this behavior as a negative action. Therefore, investors tend to sell shares, causing the value of the company to fall. Thus, the company follows the funding hierarchy to anticipate this starting from internal funding then external funding starting from debt and finally equity. The pecking order theory explains that companies that can earn high profits generally have less debt. This happens because the company has sufficient internal funds from the profits earned, so it does not need funds from external parties. Thus, the debt ratio owned by the company is low.

### **2.3. Leverage**

According to Kadim and Sunardi [9], leverage is the ratio used to regulate the extent to which a company's operational activities are financed with debt. According to Dewi and Sulasmiyati [10] capital structure/leverage is the composition of debt obtained by the company from funders and is generally used for long-term financing. Excessive use of debt can harm the company because it can cause financial difficulties (bankruptcy costs). Companies must balance the amount of debt they have, and the resources used to pay off debt. One of the ratios commonly used by companies in measuring leverage is the debt equity ratio (DER). This ratio is used to see the comparison of total debt with equity.

### **2.4. Sales Growth**

The company's growth is influenced by internal and external factors. According to Sutomo et al. [11] internal factors are factors that come from within the company that affect the company's performance and can be controlled by the company. For example: the decision to increase the company's capital, managerial structure, determine the proportion of retained earnings, increase the workforce, determine the company's strategic actions such as mergers and acquisitions. On the other hand, external factors are factors that come from outside the company and cannot be controlled by the company. For example: competitor behavior, credit interest rates, business climate, raw material prices, macroeconomic and political conditions, and market structure.

## **2.5. Profitability**

According to Fitra and Ashry [12], profitability shows the ability of a company to generate profits related to sales, total capital, and assets owned. Profitability is important to maintain the company's activities in the long term and reflects the company's prospects. Return on equity (ROE) shows the company's ability to generate net income from the return on shareholder equity. A large ROE reflects the company's efficiency in using its own capital to generate profits. Increased profitability indicates that management's performance increases in managing sources of operational funds to generate net income.

## **2.6. Company Size**

According to Setiyanti et al. [13] company size describes the size of the company as reflected in total assets or total sales. In addition, it can also be reflected in the value of the company or the value of the company's equity. The greater the assets owned, the greater the company's financial capacity.

## **2.7. Prior Research**

Research by Muslyha and Triani [14], Amarudin et al. [15], and Triyono et al. [16] shows that sales growth has a positive effect on leverage (debt to equity ratio). The results of this study contradict the research of Marfuah and Nurlaela [17], Sekartaji [1], Sudiyatno et al. [4], Tripathi [18], and Watiningsih [2] who found the results of the absence of a positive effect of sales growth on leverage. In addition, it is also inconsistent with research by Fitra and Ashry [12] also Ahmed and Sabah [19] which found that there was no negative effect of sales growth on leverage.

Marfuah and Nurlaela [17] also Fitra and Ashry [12] obtained research results where profitability (return on equity) has a positive effect on leverage but on the other hand, Watiningsih [2] actually gets different results, that is profitability has a negative effect on leverage. Other researchers, Sudiyatno et al. [4] also Ahmed and Sabah [19] found that there was no negative effect of profitability on leverage, while Arifin [20] also Dewi and Sulasmiyati [10] found that profitability had no positive effect on leverage.

Research conducted by Arifin [20], Dewi and Sulasmiyati [10], Triyono et al. [16], Fitrianingrum et al. [21], also Ahmed and Sabah [19] found a positive effect of firm size on leverage. Different results were found by Acaravci [5], Marfuah and Nurlaela [17], also Qusibah and Yusra [22], that is firm size has a negative effect on leverage. However, research conducted by Muslyha and Triani [14], Sekartaji [1], and Oktavina et al. [3] failed to find a positive effect of firm size on leverage. These results are not in line with research by Kadim and Sunardi [9], Tripathi [18], also Salim and Susilowati [23] which found that firm size had no negative effect on leverage.

## **2.8. Hypothesis Development**

### **2.8.1. The Effect of Sales Growth on Leverage**

According to Ismaida and Saputra [24] companies that experience sales growth can increase profits. Along with the ability to increase profits, the company requires larger funds. Related to this, the company prefers to obtain funds from outside the company to finance the company's operational activities. When the company has reached the desired funding target, the company will no longer borrow from outside the company.

According to Triyono et al. [16] the company's capital structure will increase along with the growth of sales. With the increase in sales, it is possible that the company does not have sufficient funds to finance its investment activities. In accordance with the pecking order theory, companies need funds from outside if funds from within the company are not sufficient to finance their investments. Companies that are developing tend to borrow from outside the company rather than issue shares. This is because with the growing level of sales, the opportunities for information asymmetry are also getting bigger. This event causes the company's costs to borrow from creditors to be lower when compared to issuing new shares.

According to Watiningsih [2], companies that have sales growth need more funds in the future. The company needs funds for its expansion. One source of funds comes from external sources, namely debt. Growing companies require large funds so that to obtain these funds the company makes loans to creditors and is most likely to obtain credit approval. Based on the explanation above, the formulation of the formed hypothesis is:

Ha1: Sales growth has a positive effect on leverage.

### **2.8.2. The Effect of Profitability on Leverage**

According to Oktavina et al. [3] companies can calculate the optimal capital structure by considering the increase in company value and the costs that will arise. A high level of profitability reflects greater debt due to low risk for lenders. The company's ability to pay interest indicates a large amount of debt. Therefore, profitability and ability to pay interest have a positive influence on leverage.

The level of creditor's trust in the company is greater when the company earns large profits, allowing for high debt offerings. This is in accordance with the trade-off theory, where the company will obtain tax savings from the financial burden paid to creditors. So, it can be concluded that the higher the profitability of the company, the greater the company's leverage. Based on the explanation above, the formulation of the formed hypothesis is:

Ha2: Profitability has a positive effect on leverage.

**2.8.3. The Effect of Firm Size on Leverage**

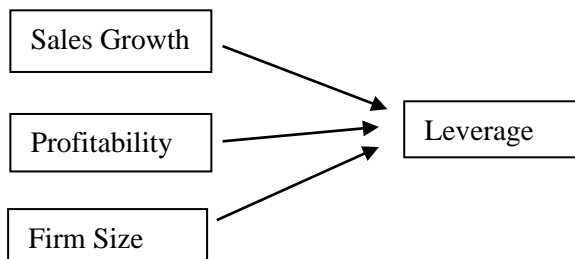
According to Triyono et al. [16] as the size of a company increases, the company's leverage also increases or is significantly larger. Large companies need large amounts of funds to finance their operations. One of the company's options to obtain funds is to use external funds or debt from creditors. For large companies, it will generally be easier to obtain sources of funds which will cause the company's debt to increase to achieve an optimal capital structure.

According to Vijayakumaran and Vijayakumaran [25], larger companies tend to be more diversified and have more tangible assets, a better reputation, and stable cash flows. Based on the trade-off theory, large companies are expected to have a higher debt capacity than smaller companies because of the lower risk of bankruptcy (bankruptcy costs).

According to Marfuah and Nurlaela [17] company size is an indicator of the possibility of a company going bankrupt. Large companies are more capable of dealing with crises in their operations so that they are less likely to go bankrupt. The size of a large company is judged by the number of assets owned. These assets can be used as collateral when the company makes loans to fund its operations. This makes it easier for companies to obtain loans/funding from creditors compared to small companies. The larger the size of the company, the greater the leverage of the company. Based on the explanation above, the formulation of the formed hypothesis is:

Ha3: Firm size has a positive effect on leverage.

The model in this study based on the explanation above is:



**Figure 1.** Research model

**3. RESEARCH METHODS**

**3.1. Population and Sample**

This study uses a population of all manufacturing companies that are consistently listed on the Indonesia Stock Exchange during 2017-2019. In selecting the sample, the technique used in this research is purposive sampling. The criteria for selecting the sample used are:

- (1) The company has positive sales growth,
  - (2) the company does not experience a loss,
  - (3) the company has positive equity, and
  - (4) the company presents financial statements using Rupiah currency.
- Based on these criteria, a sample of 35 companies was obtained and with a research period of three years, from 2017 to 2019, 105 data were obtained.

**3.2. Data Collection Technique**

The data is collected from the financial statements of each manufacturing company consistently listed on the Indonesia Stock Exchange during 2017-2019. The collected data is then processed using EViews.

**3.3. Variable Operations**

This study uses the dependent variable in the form of leverage, and the independent variables are sales growth, profitability, and company size. According to Sekartaji [1] research, leverage which is given the symbol DER is measured using the formula:

$$DER = \frac{\text{Total debt}}{\text{Total equity}}$$

According to Sekartaji [1] research, sales growth which is given the PPP symbol is measured using the formula:

$$PPP = \frac{\text{Sales current year} - \text{Sales previous year}}{\text{Sales previous year}}$$

According to Watiningsih's research [2], profitability which is given the symbol ROE is measured using the formula:

$$ROE = \frac{\text{Net income}}{\text{Total equity}}$$

According to research by Sekartaji [1], the size of the company which is given the UPR symbol is measured using the formula:

$$UPR = \text{Ln Total Assets}$$

**4. RESULTS AND DISCUSSION**

**4.1. Descriptive Statistics**

Based on the criteria described previously, a sample of 35 companies was obtained and with a three-year research period from 2017-2019, 105 data were obtained. Statistic descriptive for each variable can be seen below (Table 1)

**Table 1.** Descriptive Statistics

	Minimum	Maximum	Mean	Standard Deviation
DER	0,090590	2,909490	0,817559	0,607470
PPP	0,000550	0,540110	0,124076	0,108008
ROE	0,002144	1,399665	0,179625	0,268265
UPR	25,93549	32,20096	29,26716	1,449962

Leverage (DER) has a minimum value of 0.090590, a maximum value of 2.909490, and a mean value of 0.817559 with a standard deviation of 0.607670. The mean leverage value that exceeds the standard deviation indicates a small spread of leverage data. Sales growth (PPP) has a minimum value of 0.000550, a maximum value of 0.540110, and a mean value of 0.124076 with a standard deviation of 0.18008. Because the mean value of sales growth exceeds the standard deviation, it means that the distribution of sales growth data is small. Profitability (ROE) has a minimum value of 0.002144, a maximum

value of 1.399665, and a mean value of 0.179625 with a standard deviation of 0.268265. The value of the standard deviation of profitability is greater than the mean value, this indicates that the spread of profitability data is large. Firm size (UPR) has a minimum value of 25.93549, a maximum value of 32.20096, and a mean value of 29.26716 with a standard deviation of 1.449962. The mean value of company size is greater than the standard deviation, meaning that there is a small spread of company size data.

#### 4.2. Chow Test

The results of the Chow test can be seen below (Table 2):

**Table 2.** Result of Chow test

Effects Test	Prob.
<b>Cross-section F</b>	<b>0,8035</b>

The results of the Chow test show that the probability value of F is 0.8035 or greater than 0.05 so that the model chosen is the common effect model.

#### 4.3. Lagrange Multiplier Test

The results of the Lagrange Multiplier test can be seen below (Table 3):

**Table 3.** Result of Lagrange Multiplier test

	Test Hypothesis		
	Cross-section	Time	Both
<i>Breusch-Pagan</i>	0,951700 (0,3293)	1,409240 (0,2352)	2,360940 (0,1244)

The probability value (Prob.) of Breusch-Pagan from the results of the Lagrange Multiplier test is greater than 0.05 so that the model chosen is the common effect model.

#### 4.4. Common Effect Model

The results of the common effect model test can be seen below (Table 4):

**Table 4.** Common Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1,186505	1,149827	-1,031899	0,3046
PPP	0,812751	0,528907	1,536662	0,1275
ROE	0,925625	0,208743	4,434279	0,0000
UPR	0,059348	0,038772	1,530711	0,1290

### 4.5. Adjusted R squared

The results of the Adjusted R-squared test can be seen below (Table 5):

**Table 5.** Result of Adjusted R-squared

Variable	Adjusted R-squared
DER	0,163384

The value shown from the results of the Adjusted R-squared test is 0.163384 so it can be concluded that 16.3384% of the leverage variation can be explained by

company growth, profitability, and company size, while the remaining 83.6616% is influenced by other factors not included in this research model.

### 4.6. Hypothesis Test Result

The results of hypothesis testing can be seen below (Table 6):

**Table 6.** Result of Hypothesis Test

	Coefficient	p-value	Description
PPP → DER	0,812751	0,1275	Ha <sub>1</sub> not accepted
ROE → DER	0,925625	0,0000	Ha <sub>2</sub> accepted
UPR → DER	0,059348	0,1290	Ha <sub>3</sub> not accepted

The regression coefficient of sales growth (PPP) on leverage (DER) is positive at 0.812751. When viewed from the p-value, the p-value is 0.1275 where this value is more than 0.05. This shows that sales growth does not have a positive effect on leverage. Thus, Ha<sub>1</sub> is not accepted.

The regression coefficient of profitability (ROE) on leverage (DER) is positive at 0.925625. When viewed from the p-value, the p-value is 0.0000 where this value is less than 0.05. This means that sales growth has a positive effect on leverage. Thus, Ha<sub>2</sub> is accepted.

The regression coefficient of firm size (UPR) on leverage (DER) is positive at 0.059348. When viewed from the p-value, the p-value is 0.1290 where this value exceeds 0.05. This means that sales growth has no positive effect on leverage. Thus, Ha<sub>3</sub> is not accepted.

### 4.7. Discussion

#### 4.7.1. The Effect of Sales Growth on Leverage

Sales growth has no positive effect on leverage. The results of this study are consistent with the research of Marfuah and Nurlaela [17], Sekartaji [1], Sudiyatno et al. [4], Tripathi [18], and Watiningsih [2], but not consistent with the research of Muslyha and Triani [14], Amarudin et al. [15], and Triyono et al. [16] which resulted in sales growth having a positive effect on leverage. The results of this study are also inconsistent with research by Fitra and Ashry [12] also Ahmed and Sabah [19] which state that sales growth does not have a negative effect on leverage. Companies that experience sales growth can increase profits. Growing companies need funds for their

investment activities and expansion. To obtain funds, the company uses an external source of funds, namely debt. Growing companies find it easier to get loans and are more likely to get credit approvals because it is assumed the company can increase profits. The benefit of this funding source is the tax deduction that arises from interest expense when the company uses more debt in its capital structure. The firm will use these external costs or debts to the point where the marginal value of the tax benefits of the debt is equal to the increase in the present value of the bankruptcy costs.

The results of this study indicate that sales growth does not have a positive effect on leverage. Manufacturing companies that experience sales growth tend to earn high profits which are used to fund the company's operating activities. Companies are more likely to fund their operations from internal sources. High leverage can lead to negative views from investors which can cause concerns regarding dividend distribution. Generally, companies prioritize debt payments over dividend distribution. This can cause a decrease in the value of the company. High and low sales growth does not affect leverage. Therefore, sales growth has no effect on leverage.

#### 4.7.2. The Effect of Profitability on Leverage

Profitability has a positive effect on leverage. The results of this study are consistent with the research of Marfuah and Nurlaela [17] also Fitra and Ashry [12], but not consistent with the research of Arifin [20] also Dewi and Sulasmiyati [10] which states that profitability does not have a positive effect on leverage. The results of this study are also inconsistent with the research of Watiningsih [2] which found a negative effect of profitability on leverage.

Also inconsistent with the research of Sudiyatno et al. [4] and Ahmed and Sabah [19] which state that profitability does not have a negative effect on leverage. Profitability shows the ability of a company to generate profits related to sales, total capital, and assets owned. Profitability is important to maintain the company's activities in the long term and reflects the company's prospects.

The company's ability to earn a profit reflects the small possibility of the company going bankrupt. Companies that have low profitability may suffer losses due to profits approaching the break-even point. High profits indicate the company's ability to pay interest from its operating activities. This makes it easier for companies to obtain loans to fund their operations because creditors trust the company's ability to repay loans. For lenders, companies that can generate high profits have low risk, so the loan application is likely to be approved. In addition, it is possible for creditors to provide high debt offers due to the greater level of creditor confidence in the company. The results of this study illustrate that the higher the company's profitability will increase the company's leverage and is in accordance with the trade-off theory.

#### **4.7.3. The Effect of Firm Size on Leverage**

Firm size does not have a positive effect on leverage. The results of this study are consistent with the research of Muslyha and Triani [14], Sekartaji [1] and Oktavina et al. [3], but not consistent with research by Arifin [20], Dewi and Sulasmiyati [10], Triyono et al. [16], Fitrianingrum et al. [21], also Ahmed and Sabah [19] who stated that firm size had a positive effect on leverage. This research is also inconsistent with the research of Acaravci [5], Marfuah and Nurlaela [17], and Qusibah and Yusra [22] which states that company size has a negative effect on leverage. The results of this study are also contrary to Kadim and Sunardi [9], Tripathi [18], and Salim and Susilowati [23] who found that firm size did not have a negative effect on leverage.

The larger the size of a company, the greater the funds needed by the company to finance its operational activities. One option that companies can use to obtain funds is to use external funds or debt from creditors. Company size is an indicator of the possibility of a company going bankrupt. Large companies are more capable of dealing with crises in their operations so that they are less likely to go bankrupt. Large companies are judged by the number of assets owned. A large amount of assets can be used as collateral when companies make loans, making it easier for companies to obtain loans/funding from creditors compared to small companies.

The results of this study indicate that firm size does not have a positive effect on leverage. Large companies already have assets for their operations so that companies do not have the need for funds to purchase assets. Large companies are more likely to use internal funds. Therefore, large companies do not require leverage for operating activities even though large companies have the

convenience of obtaining loans. The size of the company does not determine leverage.

## **5. CONCLUSION**

### **5.1. Conclusion**

The purpose of this study was to obtain empirical evidence regarding the positive effect of sales growth on leverage, the positive effect of profitability on leverage, and the positive effect of firm size on leverage. The results of this study indicate that sales growth does not have a positive effect on leverage, profitability has a positive effect on leverage, and firm size does not have a positive effect on leverage.

### **5.2. Limitation**

The limitation of this study is that it uses manufacturing companies as a sample which causes the results of this study to not be generalized to all companies. In addition, the research data covers only three years. The number of independent variables is only three variables. For further research, it is better to expand the industrial sector as a population, extend the research period, and add other independent variables such as non-debt tax shield, tangibility, liquidity, and business risk.

### **5.3. Implication**

The implication of this research is to help company management to make decisions in order to achieve an optimal capital structure. For creditors, it can consider the company's ability to generate profits in providing loans to the company.

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