# Effect of Asset Structure, Profitability, and Size of Company on Capital Structure of Mining Sector Companies Listed on Indonesia Stock Exchange for Period 2014-2018

*Alessandra* Yuricha[1], *Agus Wahyudi Salasa* Gama[1], *Ni Putu Yeni* Astiti[1]

[1]Faculty of Economics and Business, Mahasaraswati University Denpasar

**Abstract.** Funding decisions reflected through capital structures relate to the comparison of the amount of debt used by companies with equity for investment financing. Capital structure becomes the main focus for the company because good bad capital structure can affect the financial condition of the company. The study used three factors: asset structure, profitability, and size of the company as variables that affect capital expenditures. This research aims to determine the effect of the asset structure, profitability, and size of the company on the capital structure of mining sector companies listed on the Indonesia Stock Exchange for the period 2014-2018. Sample is a mining sector company registered (listing) in IDX during the period 2014-2018 taken by purposive sampling method obtained samples as many as 17 companies. The analytical tools used in this study are multiple linear regression analyses. Based on the test results can be concluded that testing on the hypothesis of asset structure and size of the company has no effect on the capital structure. Meanwhile, the profitability hypothesis has a negative and significant effect on the capital structure. Further research can develop this research using other variables that in theory have an influence on the capital structure.

## 1 Introduction

Each company desperately needs funding to meet the capital in its business ventures, both internally and externally. Internally obtained funding is money derived from withheld profits, while externally obtained funding is funding sourced from creditors and investors. A company's financial manager is specifically expected to decide on the source and amount of funds used for the company's operations so that the funds do not overload the company. The financial stability of the company will be directly affected if there is an error in the preparation of the capital structure.

According to Sartono (2014:225) the funding decision reflected through the capital structure relates to the comparison of the amount of debt used by the company with equity for investment financing.

Capital structure becomes the main focus for the company because good bad capital structure can affect the financial condition of the company. If the capital structure used comes from external funding, debt will increase the risk of default in the future. Too much debt will hinder the development of the company which will also make shareholders think twice about investing. The study used three factors: asset structure, profitability, and company size. Where these three factors are variables that affect the capital structure as the affected variables.

According to Prasetya and Asandimitra (2014) the asset structure is a balance or comparison between current assets and fixed assets or it can be said that fixed assets represent assets that can actually provide results to the company. The larger the amount of assets held by the company, the greater the guarantee that can be given to take out a large loan, because if the company experiences bankruptcy then the fixed assets can be used to pay off the debt. So the greater the amount of assets, the greater the use of debt rather than the capital itself in the company's capital structure.

Profitability is one of the ratios that is said to affect the capital structure. According to Prasetya and Asandimitra (2014) Profitability is the company's ability to make profit over a certain period which can be described using Return On Asset (ROA), which is the comparison between net profit and total assets. According to the theory of pecking order companies that have a large level of profitability have a greater source of internal funding and encourage companies to use them first to meet the needs of the company in conducting all activities and financing of the company's investment so that the level of use of its debt or external funding used is relatively small which can reduce the risk of bankruptcy as well as high debt costs.When the manager drops his choice in the fulfillment of capital using debt, it is clear that the capital costs incurred amount to the interest charges charged by the creditor. Too much debt can also hinder the development of the company which in turn can make shareholders reluctance to keep investing.

According to Prasetya and Asandimitra (2014) The size of the company represents the small size of a company shown in the total assets, the number of sales, the average sales, and the average total assets. The size of the company is one of the factors considered by the company in determining how much the policy of funding decisions (capital structure) in meeting the size or size of the company's assets (Alom, 2013). The larger the size of a company, the greater the tendency to use foreign capital. This is because large companies need large funds to support their operations and one of the fulfillment altematives is with foreign capital if the capital itself is insufficient. A number of mining issuers listed on the Indonesia Stock Exchange felt the negative impact of lower commodity prices resulting from reduced export demand.

Research by Price Waterhouse Coopers (PWC) one of the largest professional services offices said 40 global mining companies suffered the biggest losses in history during 2015. The cause of the decline in the number of exports due to global demand decreased towards Indonesia. According to the Ministry of Industry of the Republic of Indonesia (2017) Indonesia's exports in the mining sector of both oil and gas and non-oil and gas decreased. Calculated in US$, oil and gas exports in the mining sector in 2014 amounted to 26,704,036.9, in 2015 amounted to 16,785,543.5, and in 2016 amounted to 12,189,069.9 so that if accumulated the role of mining sector exports for Indonesia in 2016 by 8.44% . The decrease in oil and gas exports was in line with non-oil and gas output which showed a decrease in 2014 of 22,827,379.1, 2015 amounted to 19,400,115.5, and in 2016 amounted to 18,145,962.6, so if percentaged the export role of the mining sector for Indonesia in 2016 was 12.56%.

## 2 Literature Review

### 2.1 Trade off Theory

The theory of trade off, capital structure suggests that debt is beneficial to the company because interest can be deducted in the tax calculation, but the debt also incurs costs associated with actual and potential bankruptcy. The optimal capital structure is on the balance between the tax benefits of debt and the costs associated with bankruptcy (Binangkit and Raharjo, 2014). This theory came about because Modigliani-Miller included bankruptcy costs and agency fees that later indicated a trade-off between tax savings from debt and bankruptcy costs.

### 2.2 Pecking Order Theory

Pecking order theory suggests companies have a preference for choosing the source of funding taking into account the cheapest costs and least risk. Based on the theory pecking order, there is no optimal capital structure. This theory states that the company prefers internal funding rather than the extheamal in financing the development of its business.

### 2.3 Capital Structure

According to Halim (2015:81) the capital structure is a balance between long-term debt (foreign capital) and total own capital (equity). Husnan (2012) stated that the greater the ability of working capital to generate operating profit, the more efficient the management of working capital. Thus the management of working capital that is increasingly efficient can increase the likelihood of a company to gain the profit it targets.

### 2.4 Effect of asset structure on the company capital structure

The asset structure in this study is a comparison of fixed assets and total corporate assets that describes the amount of assets that the company can guarantee when making loans to creditors. Based on trade-off theory, the asset structure has a positive effect on the capital structure. The more assets a company has, the more collateral assets can get external sources of funds in the form of debt (Sansoethan and Suryono, 2016). The larger the asset structure, the more capital structure of the company that comes from debt will increase. According to (Prasetyo, 2015) additional debt can still be tolerated by the company as long as the benefits provided from the use of debt are still greater than the costs incurred from the debt itself, in addition additional debt can still be done as long as the assets remain as collateral, but if the debt costs are too high, the company should not add any more debt to avoid unwanted risks. This indicates the influence of asset structure on a company's capital structure. Thus the positive influence of asset structure on capital structure in accordance with the results of research conducted by Rico and Panji (2019), Dewiningrat and Mustanda (2018), Ahmad, Ripa, and Dalimunthe (2017), Munafiah, Suprijanto, and Hartono (2017), Watung, Saerang, and Tasik (2016).

**H1: The Asset Structure has a positive effect on the Capital Structure of Mining Sector companies listed on the Indonesia Stock Exchange**.

### 2.5 Effect of profitability on the company capital structure

Profitability is the company's ability to generate profit at a certain period in carrying out its operational or business activities. A company that has a high rate of return in making a profit or in other words has high profitability, generally prefers to fund its operations with profit earned in the form of retained profit, therefore the company in combining funds on the capital structure will use less debt because some of the funds needed have been fulfilled by the company's own capital. Profitability has a negative effect on debt, meaning that when the company's profit increases then the company does not increase its debt, due to the ability to generate high profits so that the company no longer needs to seek outside loans. The higher a company's profit then the proportion of equity increases or the proportion of loans decreases. This is in accordance with the pecking order theory which this theory prefers internal funding. Profitability factors have a negative influence on the capital structure in accordance with the results of research conducted by Dewiningrat and Mustanda (2018), Ahmad, Ripa, and Dalimunthe (2017), Munafiah, Suprijanto, and Hartono (2017), and Kartika (2016).

**H2: Profitability negatively affects the Capital Structure of Mining Sector companies listed on the Indonesia Stock Exchange.**

### 2.6 The effect of the size of the company on the capital structure

The size of the company is a condition that shows the small size of a company as measured based on the total assets or assets owned by the company. Well-established companies will have the ease of obtaining funds both from net sales in certain periods and capital markets so the larger the size of the company means the higher the debt held by the company. This is in accordance with the theory trade-off stipulated that the company will increase the debt to a certain degree to maximise the value of the company.

This research uses the natural logarithm of total assets owned by the company as a proxy of the size of the company. Thus the small size of the company will affect the capital structure of a company. Large companies have a large total asset as well. Companies with large total assets, make it easier for them to obtain external funds. This is because the trust of creditors and investors increases in companies with large total assets. The size factor of the company has a positive influence on the capital structure in accordance with the results of research conducted by Andika and Sedana (2019), Septiani and Suryana (2018), Ahmad, Ripa, and Dalimunthe (2017), Munafiah, Suprijanto, and Hartono (2017), and Kartika (2016).

**H3: The size of the Company has a positive effect on the Capital Structure of Mining Sector companies listed on the Indonesia Stock Exchange**.

## 3 Method

### 3.1 Asset Structure (X1)

The asset structure is used to measure how much wealth a mining sector company has, proxies using the ratio between fixed assets and the total assets held by mining sector companies at the end of a given year.

$$\text{Asset Structure} = \frac{\text{Fixed Asset}}{\text{Total assets}} \text{ x } 100\% \quad (1)$$

### 3.2 Profitability (X2)

Profitability is the company's ability to make a profit at a given period in its business operations. In this study, the profitability level of the company was measured using the ROA ratio. This ratio is used to measure the effectiveness of a company in generating profit or profit by utilizing the assets owned.

$$\text{ROA} = \frac{\text{Profit after tax}}{\text{Total Assets}} x\ 100\% \quad (2)$$

### 3.3 Company Size (X3)

The size of the company in this study is a reflection of the small total value of the company's assets at the end of the year, as measured using natural logs (Ln) of total assets.

Firm Size = Ln (total assets)……………………………….(3)

### 3.4 Capital Structure (Y)

Capital Structure is a balance or comparison between the amount of long-term debt and the equity or owned by the company. The company's capital structure is measured using a ratio scale (in the form of percentages) which is then changed in its calculations converted into decimal forms to be processed in SPSS.

$$\text{DER} = \frac{\text{Total amoun of debt}}{\text{Equity}} x\ 100\% \quad (4)$$

### 3.5 Types and data sources

This type of research is classified as causative research using a quantitative approach. This research data source uses secondary data, namely data related to the variables studied: capital structure, asset structure, profitability, and company size of the financial statements of mining companies listed in IDX during the period 2014-2018. The data collected is obtained from the company's financial statements obtained from the official website of the Indonesia Stock Exchange (www.idx.co.id).

### 3.6 The population and population samples

That were the object in this study are mining sector companies listed on the Indonesia Stock Exchange (IDX) for the period 2014-2018. The population is 41 mining companies registered with IDX. The samples used in this study were selected by purposive sampling methods. The criteria used in this study are:

1. The company that sampled was a mining sector company registered (listing) in IDX during the period 2014-2018.
2. Mining sector companies listed on IDX during the period 2014-2018 have published consecutive full annual financial statements during the observation period.
3. The Company always gets a positive profit or does not suffer a loss during the research period that is from 2014-2018

### 3.7 Data Collection Method

The data collection method used in this study is a documentation method that is done by researching, observing, recording financial statements documents such as balance sheets and profit and loss, as well as studying descriptions of books, scientific works (thesis),

articles, and access through the official website of the Indonesia Stock Exchange namely www.idx.co.id.

### 3.8 Multiple regression equation techniques.

Classic Assumption Testing Data Analysis Technique For the purposes of analysis, the operated variables must be qualified so as not to have biased results in the test. Testing is necessary because capital analysis is based on simplification assumptions. The classic assumption test used in this study is as follows:

**1. Normality Test**

According to Ghozali (2013:160) data normality test aims to test whether in regression models, dependent variables and independent variables both have a contribution or not. The normality test data in this study used the Kolmogorov-Smirnov test for each variable.

**2. Multikolinearitas Test**

According to Ghozali (2013:105) the multicolinearity test aims to test whether a regression model found a strong enough correlation between free variables. If there is a strong enough correlation it will lead to multicholinearity problems. A good regression model should not occur a strong enough correlation between independent variables.

**3. Autokorelasi Test**

According to Ghozali (2013:110) auto correlation tests are defined as the occurrence of correlations between observation data, where the appearance of a data is influenced by the previous data. If there is an auto correlation then it can be said that the correlation coefficient obtained is less accurate. Statistical identification of the absence of auto correlated symptoms can be done by calculating the durbin watson (DW) value.

**4. Heteroskedastisity Test**

According to Ghozali (2013:139) heteroskedastisity test aims to test whether in regression models occur variant inequality from residual to other observations. If the residual variant of an observation to another observation remains, then it is called homoskedastisitas whereas if different is called heteroskedastisitas. The way to predict the absence of heteroskedastisitas in a model is judging by the scatter plot image pattern of the mode

**5. Multiple Linear Regression Analysis**

Multiple linear analysis in this study is used to determine the effect of asset structure, profitability, and size of the company on the Capital Structure on mining sector companies listed on the Indonesia Stock Exchange for the period 2014-2018. To be able to perform multiple linear regression analysis, a classic assumption test is required.

**6. Test Model Fit (Test F)**

According to Ghozali (2013:98) statistical test F is used to find out if all independent variables or free variables included in the model have a co-effect on dependent variables or bound variables.

**7. Partial Test (T-test)**

According to Ghozali (2013:98) t test is performed to find out what an independent variable means in partially affecting dependent variables.

# 4 Results and Discussion

## 4.1 Description of Sample Research

The sample taken by the researchers is financial report data containing data on asset structure, profitability, and size of the company against the capital structure of mining sector companies listed on the Indonesia Stock Exchange for the period 2014-2018. The results of the Descriptive Statistical Test can be explained that the number of samples used in this study is as many as 85. Research variables consist of 3 free variables, namely: asset structure, profitability, and company size. Whereas a bound variable is a capital structure.

The variable asset structure has an average value of 27.7438 greater than the standard deviation value of 12.02253. Variable profitability with an average value of 8.2382 is smaller than the standard deviation value of 8.50606. The variable size of the company with an average value of 15.3640 is greater than the standard deviation value of 1.23726, while the capital structure with an average value of 88.0094 is greater than the standard deviation value of 64.37245. An average value greater than the standard deviation value indicates a good spread of data. Quite the opposite.

## 4.2 Multiple Linear Regression Analysis

**Table 1**. Generative Regression Results

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 3,941 | ,834 | | 4,728 | ,000 |
| Struktur_Aktiva | ,007 | ,005 | ,127 | 1,230 | ,222 |
| ROA | -,028 | ,008 | -,380 | -3,700 | ,000 |
| Firm_Size | ,025 | ,051 | ,049 | ,478 | ,634 |
| Fhitung | : 6,007 | | | | |
| SigF | : 0,001 | | | | |
| R | : 0,427 | | | | |
| Rsquare | : 0,182 | | | | |
| Adjusted R Square | : 0,152 | | | | |

Based on Table 1, it can be obtained multiple linear line equations as follows:
Y= 3,941+0.007X1-0.0 28X2+ 0.025X3

The regression equation in table 1 can be described as follows:

a. Constants worth 3,941 statistically value indicate that the capital structure will increase by 3.941 percent provided that other variables in this study are assumed to be equal to zero.
b. The variable regression coefficient $X_1$ is positive at 0.007 which means statistically indicating there is a positive influence between the asset structure on the capital structure of 0.007 which means that every increase in capital receipts by one percent, it will lead to an increase in the capital structure by 0.007 percent provided that other variables are assumed to be constant.
c. Variable $X_2$ regression coefficient of 0.028 statistically shows there is a negative influence between the amount of profitability on the capital structure of 0.028 which

means that every one percent increase in profitabilias will result in a decrease in the capital structure by 0.028 percent provided that other variables are assumed to be constant.

d. Variable $X_3$ regression coefficient of 0.025 statistically shows there is a positive influence between the size of the company on the capital structure of 0.025 which means that each increase in thempany seen from the log of total vttassets by one percent, will result in an increase in the capital structure by 0.025 percent provided that other variables are assumed to be constant.

## 4.3 Classic Assumption Test

**1. Normality Test**

Kolmogorov-Smirnov test result siginificance value of 0,200 then can be concluded that residual data is distributed normally due to the significance of asymp.sig value. (2-tailed) is greater than 0.05.

**2. Multicholinearity Test**

Based on test results, free variable tolerance values are more than 10% or 0.1 and VIF values are less than 10, sehigga can be concluded there is no multicholinearity between free variables in this study.

**3. Autocorrelation Test**

Of the variable studied has a DW value of 1,869. With the amount of data (n) = 85 and the number of free variables (k) = 3 and =5% obtained the number du= 1.7221. Since 1,869 DW is located between the upper limit (du) and (4-du), it can be inferred in this regression model there is no auto correlation.

**4. Heteroskedastisitity Test**

The results of the heteroskedastisity test can be seen the data points spread above and below or around the number 0. Data points do not collect only above or below. The spread of data points does not form a widening wavy pattern then narrows and widens again and there are no specific patterns, so it can be concluded that there are no symptoms of heteroskedastisity in the regression model.

**4.4 Hypothesis Test**

**1.Test Model Fit F**

Test results F in table 1 show that the value of F is 6,007 with a significance level of 0.001 smaller than 0.05. This means that the asset structure, profitability and size of the company have a positive and significant effect in unison on the capital structure of mining companies listed in IDX for the period 2014-2018.

**2.Coefficient Determination Test($R^2$)**

Determination test results in Table1 show the determination coefficient value is 0.182 = 18.2%. This means that the variable asset structure of profitability and the size of the company affects the capital structure by 18.2% while the remaining 81.80% is explained by other unexamined variables.

**3.Statistical Test T**

As for the explanation of the influence of each variable free on bonded variables is as follows:

**a. Effect of asset structure (X1) on the capital structure.** Table 1 shows statistical test results of t on company size variables with a significance rate of 0.222 greater than 0.05. And the calculated t value of 1,230 is smaller than the table t of 1,664. This means that the asset structure has no effect on the capital structure of mining companies listed on IDX for the period 2014-2018, so the first hypothesis stating the asset structure positively affects the capital structure is rejected.

**b. Effect of profitability (X2) on the capital structure.** Table 1 shows statistical test results of t on proftability variables with a t value of -3,700 greater than the table t value of -1,664significance levels of 0.000 smaller than 0.05. This means that profitability negatively and significantly affects the capital structure of mining companies listed in IDX for the period 2014-2018, so the second hypothesis stating profitability negatively and significantly affects the capital structure is accepted.

**c. Effect of Company Size (X3) against the capital structure**. Table 1 shows the statistical test results of t on the company size variable with a t value of 0.478 smaller than the table t value of 1,664 levels of significance of 0.643 greater than 0.05. This means that the size of the company has no positive and significant effect on the capital structure of its mining companies listed in IDX for the period 2014-2018, so a third hypothesis stating the size of the company positively affects the capital structure is rejected.

## 4.5 Discussion of the Results

### *4.5.1 The effect of asset structure (X1) on capital structure.*

Tests on the first hypothesis showed that the asset structure had no effect on the capital structure, with a t- count value of 1,230 and a significance value of 0.222. The insigniity of the effect of the asset structure on the company's capital structure is caused by sample companies likely having no guarantees to add to the debt. This can be seen in the sample company's structural data with an average value of 27.7438. The value can be interpreted that the ratio of fixed assets with the company's assets is 27.74%. This indicates the low asset structure value so that the company does not have enough fixed assets as a guarantee of debt capital. In addition, the company's fixed assets can be used for the company's operating activities in generating profit, so that the profit earned by the company can be used to increase its investment back. The use of its own capital in conducting investment activities will reduce the risk of bankruptcy faced by the company.

The effect of the asset structure on the capital structure is positive but not significant to the capital structure. This condition indicates there is a tendency to move in the same direction between the asset structure and the capital structure, although the effect of the movement is not significant. Management does not pay much attention to the asset structure in its decision to use or add to debt. But management does not completely ignore the asset structure, because the asset structure here will determine the liquidity level of the company. This is proven by a positive influence even though the influence is statistically insignificant, but it is quite illustrative that management is still paying attention to the asset structure. The results of this study are in accordance with the research of Kartika (2016), Devi, Sulindawati, and Wahyuni (2017) and Putranto (2018) that the asset structure has no significant effect on capital structure.

### *4.5.2 The effect of profitability (X2) on the capital structure.*

Statistical test results of t on variable proftability show that a t value of -3,700 levels of significance of 0.000 is smaller than 0.05. This means that profitability negatively and

significantly affects the capital structure of mining companies listed in IDX for the period 2014-2018, so the second hypothesis stating profitability negatively and significantly affects the capital structure is accepted.

Profitabilitas negatively affected by debt, meaning that when the profit earned by the company increases then the company does not participate in increasing its debt, because of the ability to generate high profits so that the company no longer needs to seek loans from outside. The higher a company's profit then the proportion of equity increases or the proportion of loans decreases. This is in accordance with the pecking order theory which this theory prefers internal funding. Profitability factors have a negative influence on the capital structure in accordance with the results of research conducted by Dewiningrat and Mustanda (2018), Ahmad, Ripa, and Dalimunthe (2017), Munafiah, Suprijanto, and Hartono (2017), and Kartika (2016).

#### *4.5.3 The effect of the size of the company (X3) on the capital structure.*

The results of the statistical test on the company's size variable show that the t value of 0.478 level of significance of 0.634 is greater than 0.05. This means that the size of the company has no significant effect on the capital structure of mining companies listed on IDX for the period 2014-2018, so a third hypothesis stating the size of the company positively affects the capital structure is rejected. These results do not fit the groundwork of the theory that a larger company's size would further guarantee it has easier access to its source of capital. The possibility that this research can occur in accordance with the Pecking Order Theory is that companies are more likely to prefer internal funding than debt, so the size of the company has no effect on the use of external sources of funds. Another possibility is that large companies that have easier access to capital markets compared to smaller companies are not necessarily able to obtain funds easily in the capital market. This is because investors will buy shares or invest not only considering the size of the company, but also pay attention to other factors, such as the company's prospects, the nature of the company's current management and so on.

Taking into account the data, the insignificance of the size of the company (SIZE) to the Capital Structure (DER) is possible because the size of the large company does not affect the company using larger debt, for example the highest size in 2014 was in ADRO company which is 18.19 with DER 0.97 but the highest DER in CTTH company is 3.56. In 2015 the highest size was still with ADRO at 18.22 with DER 0.78 but the highest DER at RUIS company 2.23. In 2016 the highest size of ADRO was 18.29 with DER 0.72 but the highest DER at ESSA company was 2.18. Based on the research data shows that there is a gap in the research data because in the frame of mind it is said that if the size of the company is getting bigger then the tendency to use foreign capital (debt) is getting bigger, but that occurs in the research data there is no influence if the company gets bigger then the use of debt is also greater. The results of this study are in accordance with tiara and rina (2014) and Siti (2016) research that the size of the company has no significant effect on the capital structure.

## 5 Conclusion

Based on the analysis of data and discussions that have been conducted, the following conclusions can be drawn:

1. The results of the study found that the asset structure had no significant effect on the capital structure of its mining companies listed in IDX for the period 2014-2018.

2. The results of the study found that profitability had a negative and significant effect on the capital structure of its mining companies listed in IDX for the period 2014-2018.
3. The results of the study found that the size of the company had no significant effect on the capital structure of its mining companies listed in IDX for the period 2014-2018.

# 6 Limitations and Suggestions

## 6.1 Limitations

Research this is inseparable from various limitations. Of these limitations, it is expected to be refined in future research. The limitations are as follows:

a. Limitations in using research variables. Researchers used only three independent variables in the study so that the strength of the variable influence of the asset structure, profitability, and size of the company on the capital structure of mining companies is seen from the value of the determination coefficient of only18.2%. Because there is a possibility of other variables that have a more significant effect on the capital structure.
b. Limitations in taking a fairly short research period of 5 years (2014-2018), so with a narrow observation period is less able to show the condition of the company in the long term.
c. The limitations in taking the type of company used as a sample of this research focus only on mining companies listed on the Indonesia Stock Exchange (IDX) only.

## 6.2 Suggestions

Based on the analysis that has been done and the conclusions that have been obtained, the following suggestions can be made:
a) The next researcher should extend the research period by adding years of observation and also increasing the number of samples for future research. b) Researchers furthermore, it is expected to add or identify other variables which have a more significant effect on the capital structure.

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