The effect of profitability and capital intensity on tax avoidance

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Abstract. This study aims to determine the effect of profitability and capital intensity on tax avoidance in coal mining sub-sector companies listed on the Indonesia Stock Exchange for the period 2019 to 2021. The population of this study totaled 24 companies and the sample used totaled 11 companies. The method used in this study is a quantitative research method with a descriptive research approach and panel data. Based on the test results show that profitability has a negative effect on tax avoidance. Meanwhile, capital intensity has no effect on tax avoidance. Simultaneously, profitability and capital intensity affect tax avoidance with a contribution of 63%, while the remaining 37% is influenced by other variables outside the study.

Keywords. Profitability, Capital Intensity, Tax Avoidance

1. Introduction

Tax is a form of national contribution to the state that is mandatory and is generally used for the benefit of the government for the welfare of the people. Based on the general provisions of taxation in Indonesia, it is stated that taxes are mandatory contributions to the state owed by individuals or entities that are coercive under the law by not receiving compensation directly and used for the needs of the state for the greatest possible prosperity of the people.

In calculating its tax obligations, the Company uses the basis of taxable income at the applicable rates in accordance with the law. Taxable income is determined based on gross income after deducting expenses for obtaining and collecting income. In general, tax rates are expressed in form of percentage (Bornman & Ramutumbu, 2019).

Tax avoidance is an effort to avoid taxes that are carried out legally and safely for taxpayers because they are carried out in ways that do not violate and do not conflict with tax provisions, where the methods and techniques used tend to take advantage of the weaknesses contained in the provisions (Pohan, 2016). Even though tax evasion is legal, the government does not want it. Because more and more large companies are doing tax avoidance, state revenues in the tax sector will decrease. Tax avoidance is a management effort to reduce the tax burden on a company.

The tax avoidance variable is used to measure the value of the company if the company's tax burden is reduced. Jeong Ho Kim (2017) found that tax avoidance reduces firm
value, but the effect can be minimized in companies that have little transparency. If the company can minimize tax costs, it means that it will reduce the company's burden. Expenses are a deduction in obtaining company profits. The less burden the company has, the greater the profit the company gets. In the end, investor interest will be higher in the shares of companies that have high profits.

Due to the limited number of shares issued, the higher the interest of investors in shares, and consequently the higher the share price. Companies as taxpayers will try to minimize the tax burden on profits earned and try to improve the quality of profits, while the government will try to optimize the taxes that can be collected from taxpayers. Maximizing profits earned by taxpayers can help achieve company goals both in the short and long term (Sholihah et al., 2019).

In Indonesia itself, problems regarding the practice of tax avoidance are very common. For example, in mining companies in the mineral and coal sector, the contribution of tax revenues shows a declining trend from 2012 to 2016. Revenues in 2012 were 5% down to 2% in 2016. From Rp. 28 trillion in 2012 to only Rp. 16 trillion in 2016. The tax ratio in the mining sector also showed a downward trend from 2011 to 2016, from 12% to 3.88% (www.cnnindonesia.com, 2016).

Profitability is a barometer of management performance in managing company assets based on and company profit oriented. The basis for imposition of corporate tax is corporate profits. When the net profit earned increases, it will have an impact on the amount of income tax that must be paid will also increase. Companies that get profits that continue to increase are considered not to make efforts to avoid taxes because they can manage their income and tax payments (Jeong Ho Kim, 2017).

The capital intensity ratio, also known as the capital intensity ratio, is a company's ability to invest in fixed assets (Siregar & Widyawati, 2016). The company's assets will experience depreciation every period and of course each depreciation will be recorded in the company's annual financial statements as depreciation expense, meanwhile there are weaknesses in recording depreciation expense so that recorded expenses can be deducted from income in calculating to determine company tax. This means that the higher or the increase in depreciation costs will have an impact on the lower the level of tax payments that must be paid by the company.

2. Literature Review

2.1. Agency Theory

Agency theory states that there is a relationship between the party giving the authority and the party receiving the authority (Jensen & Meckling, 1976). Agency theory describes a contractual relationship between one or more persons (principals) who employ another person (agent) to provide a service and delegate decision-making authority to the agent. Agency theory assumes that each part is motivated by its own interests so that it can cause conflict between principals and agents. In this case the tax authorities act as principal and corporate taxpayers as agents who comply with applicable tax regulations. The linkage of agency theory to tax avoidance is influenced by agency problems that occur as a result of differences in interests between management and shareholders.

The company's decision to avoid taxes is of course the result of the policies taken by the company's leaders. Furthermore, problems will arise related to conflicts over the interests of company profits between tax collectors (tax authority) and taxpayers (company management). Tax collectors hope that there will be as much income as possible from tax
collection, while management is of the view that the company must generate significant profits with a low tax burden. These two different perspectives cause conflict between the tax authorities as tax collectors and company management as taxpayers.

2.2. Tax Avoidance

According to Kurnia (2016), tax avoidance is related to the arrangement of an event in such a way as to minimize or eliminate the tax burden by paying attention to whether or not there are tax consequences it generates. Tax avoidance is not a violation of tax laws. Ethically, tax avoidance is not considered wrong in the context of the taxpayer's efforts to reduce, avoid, and minimize or alleviate the tax burden in a way that is allowed by tax law.

Many companies do tax avoidance because tax avoidance is a tax reduction effort, but still comply with the provisions of tax regulations such as taking advantage of exemptions and permitted deductions or delaying taxes that have not been regulated in applicable tax regulations and usually through policies taken by company leaders.

Based on Article 17 paragraph (1) part b of Law no. 36 of 2008 concerning Income Tax, the tax rate imposed on entities is 25%. According to Mayangsari (2015) if the Cash Effective Tax Rate (CETR) is lower than the statutory tax rate of 25%, the company is considered more aggressive in its tax planning activities.

Tax payments are the amount of tax cash paid by the company based on the company's cash flow statement. Judi Budiman & Setiyono (2012) stated that the relationship CETR with tax avoidance is that the higher the CETR, it indicates the lower the level of corporate tax avoidance. In this study the authors use CETR to calculate the level of tax avoidance in companies.

2.3. Profitability

Hery (2016) states that the profitability ratio is the ratio used to measure a company's ability to achieve profits during a certain period and from operational activities. Profitability is a measure of an organization's profit relative to its expenses. Organizations that are more efficient will realize more profit as a percentage of its expenses than a less-efficient organization, which must spend more to generate the same profit.

According to Hanafi & Halim (2016) there are three types of ratios that are commonly used to measure the profitability or profit-generating ability of a company, namely profit margin, return on assets, and return on equity. Profit margin calculates the extent of the company's ability generate net profit at a certain level of sales. A high profit margin indicates the company's ability to generate high profits at a certain level of sales. According to Kasmir (2016), net profit margin is a measure of profit by comparing profit after interest and taxes compared to sales. This ratio shows the company's net income from sales.

Return on assets (ROA) is a financial ratio that measures the profitability of a business in relation to its total assets (Sujarwani, 2017). It is calculated by taking a company's annual net income divided by its total assets. ROA is a very important indicator for a corporation, as it shows investors how the company is actually behaving in converting assets into net capital. As a result, it can be inferred that the higher the metric (given in percentage), the better it is for the business's management.

Return on equity (ROE) is a measure of a company's financial performance that shows the relationship between a company's profit and the investor's return. This ratio is used to measure how much net profit will be generated from every rupiah of funds embedded in total equity (Hery, 2016). ROE is calculated by dividing net profit by net worth. If the company's
ROE turns out to be low, it indicates that the company did not use the capital efficiently invested by the shareholders. Generally, if a company has ROE above 20%, it is considered a good investment.

2.4. Capital Intensity

Capital intensity is how much the company invests its assets in the form of fixed assets and inventories. Actions taken by companies to reduce the tax burden that must be paid to the government can be done in various ways, one of which is through ownership of fixed assets in the company (Novianti et al., 2018). The company’s fixed assets allow the company to reduce its taxes due to the depreciation that arises from fixed assets each year. This is because the depreciation expense of these fixed assets will directly reduce the company's profit which is the basis for calculating company taxes.

Indicators of company prospects in the future can be seen in terms of capital intensity. The greater the capital intensity ratio (CIR), means the higher the assets needed to generate sales. Companies with relatively high CIR require large number of assets to generate additional sales and thus will require greater external financing (Eugene & Michael, 2016). CIR is also an important piece of information for investors because it can show the level of efficiency in using the invested capital (Siregar & Widyawati, 2016).

2.5. Hypothesis

Setiawan & Agustina (2018) show that profitability has a negative effect on tax avoidance. These results indicate that the higher the profitability, the lower the tax avoidance of the company, because companies that have a high level of profitability are considered successful in managing their management and in accordance with what is expected by the owner of the company. The companies will always comply with tax payments, while companies that have a low level of profitability will disobey tax payments in order to maintain company assets rather than having to pay taxes.

Furthermore, the results of research conducted by Setiawan & Agustina (2018) and Sherly & Fitria (2019) also found that profitability has a negative effect on tax avoidance. However, the results of this study differ from the results of research conducted by Olivia & Dwimulyani (2019) and Dwiyanti & Jati (2019), which state that profitability has a positive effect on tax evasion. Therefore, the hypothesis proposed in this study are as follows:

**H1: Profitability has a negative effect on tax avoidance**

Zoedar & Miftah (2020) show that capital intensity has no effect on tax evasion. Companies that have high fixed assets do use these fixed assets for operational and investment purposes, not for tax avoidance. The company does not deliberately keep a large proportion of assets to avoid taxes, but the company does use these fixed assets for the company's operational purposes. So that a high proportion of fixed assets will not affect the level of tax avoidance that will be carried out by the company.

Furthermore, Larasati (2018) found that capital intensity has no effect on tax evasion. On the other hand, the results of a study conducted by Anindyka & Kurnia (2018) and Andhari & Sukartha (2017) found that capital intensity has a positive effect on tax evasion. Therefore, the hypothesis proposed is as follows:

**H2: Capital intensity has a negative effect on tax avoidance**
3. Methods
3.1. Sample
The sample used in this research is coal mining sub-sector companies that have gone public and their stocks have been listed on the Indonesia Stock Exchange (IDX) from 2019 to 2021. Sampling in this study was carried out by purposive sampling method, namely the sampling technique with certain criteria.

3.2. Operational Definition and Variable Measurement
3.2.1. Tax Avoidance
Tax avoidance in this case relates to the arrangement of an event in such a way as to minimize or eliminate the tax burden by paying attention to whether or not the tax consequences arise (Kurnia, 2016). The indicators used to measure this variable are the indicators used according to Dyreng et al. (2015). The formula for calculating CETR (Cash Effective Tax Rate) is as follows:

\[
\text{CETR} = \frac{\text{Tax Payment}}{\text{Profit Before Tax}} \times 100\%
\]  

(3.1)

3.2.2. Profitability
In this study, what is meant by profitability is the ratio to assess a company's ability to generate profits (Kasmir, 2018). The indicators used by the author to measure profitability in this study are the indicators used by Hanafi & Halim (2016). Profitability in this study is calculated using Return on Assets (ROA) as follows:

\[
\text{ROA} = \frac{\text{Earning After Interest and Tax}}{\text{Total Assets}}
\]  

(3.2)

3.2.3. Capital Intensity
In this study, what is meant by capital intensity is a ratio that measures the amount of fixed assets needed to produce one rupiah (or one dollar) of sales (Ehrhardt & Brigham, 2016). The formula for calculating capital intensity ratio (CIR) is as follows:

\[
\text{CIR} = \frac{\text{Total Assets}}{\text{Sales}}
\]  

(3.3)

3.3. Research Model
To measure the extent to which tax avoidance is affected by profitability and capital intensity, for each time the following models are used:

\[
\text{CETR} = \beta_0 + \beta_1 \text{ROA} + \beta_2 \text{CIR} + \varepsilon
\]  

(3.4)

Where:
CETR = cash effective tax rate
ROA = return on assets
CIR = capital intensity ratio
\(\beta\) = regression coefficient
\(\varepsilon\) = error term
4. Results and Discussion

4.1. Normality, Multicollinearity and Heteroscedasticity

The normality test in the regression model aims to test whether the residual values are normally distributed or not. In this case what is tested is not each independent and dependent variable but the residual value resulting from the regression model. In this study, normality was detected by the Jarque-Bera Test. Based on the Jarque-Bera prob value on coal mining company data, it is 0.930. This figure is greater than > 0.05, so it can be concluded that the residual data is normally distributed.

The multicollinearity test aims to assess whether there is a correlation or intercorrelation between the independent variables in the regression model. In this study, the multicollinearity test used Variance Inflation Factor (VIF). Based on the multicollinearity test, it shows that there is no multicollinearity problem in the model. This can be seen from all the independent variables where the VIF value are less than < 10.

Heteroscedasticity is the variance inequality of the residuals for all observations in the regression model. The purpose of the heteroscedasticity test is to detect any deviations during the linear regression test. In this study, the heteroscedasticity test used Breusch-Pagan. The results of the Breusch-Pagan test show that the value of the probability of F-Statistics (F-Count) is greater than Alpha (0.05), namely 0.1181. It can be concluded that there is no heteroscedasticity problem in this data.

Autocorrelation test using Durbin Watson. The Durbin Watson test will produce a Durbin Watson (DW) value which will later be compared with two (2) Durbin Watson Table values, namely Durbin Upper (DU) and Durbin Lower (DL). Autocorrelation is said not to occur if the value of DW > DU and (4 - DW) > DU or it can also be denoted by (4 - DW) > DU < DW. Based on the Durbin Watson test, it can be concluded that there is no autocorrelation problem.

4.2. Statistic Descriptive

From table 4.1 it shows that the average tax avoidance of all companies in 2019 to 2021 which is symbolized by the cash effective tax rate (CETR) reached 0.302893 or 30.29%. This indicates that on average the companies used as samples in this study do not practice tax avoidance because the CETR is higher than the applicable tax rate. The highest cash effective tax rate was obtained by PT Indo Tambang Raya Mega Tbk, namely 1.021722 or 102.17%, while the lowest was found at PT. Harum Energy Tbk, which was 0.059197 or 5.92%.

Based on table 4.1, it shows that the average profitability which is symbolized by the return on assets (ROA) of all companies from 2019 to 2021 reached 0.158568 or 15.86%. This shows that on average the company's ability to generate profits is 15.86%. Furthermore, the highest profitability was obtained by PT. Bayan Resources Tbk with a return on assets of 0.520175 or 52.02%, while PT. Adaro Energy Tbk with a return on assets of only 0.024838 or 2.48%.

Based on table 4.1, it shows that the average capital intensity (CI) for all companies in 2019 to 2021 reaches 0.240945 or 24.09%. The greater the capital intensity ratio (CIR), means the higher the assets needed to generate sales. Companies with relatively high CIR require large number of assets to generate additional sales and thus will require greater external financing. The highest capital intensity is PT. Petrosea Tbk of 0.679214 or 67.92%, while PT. Golden Energy Mines Tbk has the smallest capital intensity which only reaches 0.053505 or 5.35%. 

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Table 4.1 Statistic Descriptive

<table>
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<th>CETR</th>
<th>ROA</th>
<th>CIR</th>
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</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.302893</td>
<td>0.158568</td>
<td>0.240945</td>
</tr>
<tr>
<td>Median</td>
<td>0.212593</td>
<td>0.120898</td>
<td>0.168538</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.021722</td>
<td>0.520175</td>
<td>0.679214</td>
</tr>
<tr>
<td>Minimum</td>
<td>0.059197</td>
<td>0.024838</td>
<td>0.053505</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.246412</td>
<td>0.126512</td>
<td>0.186166</td>
</tr>
<tr>
<td>Observations</td>
<td>33</td>
<td>33</td>
<td>33</td>
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</tbody>
</table>

4.3. Hypothesis Testing
4.3.1. Effect of Probability on Tax Avoidance

Based on the results of statistical tests in Table 4.2, it shows that the profitability (ROA) coefficient is -1.146264. The beta sign or test result coefficient is in accordance with the hypothesis proposed in this study where profitability has a negative effect on tax avoidance, so the significance test is continued. The test results show the probability 0.0068 < 0.05 (alpha 5%), so H1 is accepted. Thus, it is concluded statistically that at the 95% confidence level, profitability has a negative effect on tax avoidance.

The results showed that profitability has a negative effect on tax avoidance. This is because companies with high profits will be able to pay their tax obligations, even with high profits companies can easily make profit arrangements. Empirically the results of this study are consistent with the results of previous research conducted by Wastam Wahyu Hidayat (2018) which shows that profitability has a negative effect on tax avoidance.

Table 4.2 Linear Regression

Dependent Variable: TA
Method: Panel Least Squares
Date: 07/22/22   Time: 08:23
Sample: 2019 2021
Periods included: 3
Cross-sections included: 11
Total panel (balanced) observations: 33

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
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<tr>
<td>C</td>
<td>0.283931</td>
<td>0.195210</td>
<td>-3.017108</td>
<td>0.1613</td>
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<tr>
<td>ROA</td>
<td>-1.146264</td>
<td>0.379923</td>
<td>-3.017098</td>
<td>0.0068</td>
</tr>
<tr>
<td>CI</td>
<td>0.833066</td>
<td>0.650754</td>
<td>1.280155</td>
<td>0.2151</td>
</tr>
</tbody>
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Effects Specification

<table>
<thead>
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<th></th>
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<th>Mean dependent var</th>
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<tr>
<td>Adjusted R-squared</td>
<td>0.423672</td>
<td>S.D. dependent var</td>
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<td>S.E. of regression</td>
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<td>Akaike info criterion</td>
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<tr>
<td>Sum squared resid</td>
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<td>Schwarz criterion</td>
<td>0.361931</td>
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<td>Log likelihood</td>
<td>16.75544</td>
<td>Hannan-Quinn criter.</td>
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<td>F-statistic</td>
<td>2.960331</td>
<td>Durbin-Watson stat</td>
<td>3.656267</td>
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<tr>
<td>Prob(F-statistic)</td>
<td>0.015515</td>
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</tbody>
</table>
4.3.2. Effect of Capital Intensity on Tax Avoidance

Based on the results of statistical tests in Table 4.2, it shows that the capital intensity (CIR) coefficient is 0.833066. The beta sign or test result coefficient is not accordance with the hypothesis proposed in this study where capital intensity has a negative effect on tax avoidance. The test results show the probability 0.2151 > 0.05 (alpha 5%), so H2 is rejected. Thus, it is concluded statistically that at the 95% confidence level, capital intensity has no effect on tax avoidance.

The results of the research show that capital intensity has no effect on tax avoidance. This is because the company's management is unable to take advantage of the fixed asset depreciation expense to reduce the company's net profit. Several other factors, namely because the company depreciates fixed assets in accordance with the estimated useful lives of the company's policies. In addition, the company's goal of investing in fixed assets is to support the company's operational activities.

The company invests in fixed assets by adding buildings, land, equipment, buildings, machinery and so on with the aim of supporting the company's operations. In addition, fixed assets are used by companies as an effort to encourage increased company profits. Companies can maximize profits by having high fixed assets. Empirically the results of this study are consistent with the results of previous research conducted by Setiawan & Agustina (2018) which found that capital intensity has no effect on tax avoidance.

5. Conclusion

Based on the test results, this study found that profitability has a negative effect on tax avoidance. The results of this study support the argument that companies with high profitability will be able to pay their tax obligations. Companies with high profitability tend to have bigger profits. This means they will pay more income taxes to the tax authorities. In this case, the practice of tax avoidance may become less attractive to companies because they already have significant tax obligations. Attempts to evade taxes can run greater risks from tax audits or lawsuits which can reduce already high profits.

Highly profitable companies often have a higher profile and are under greater public scrutiny. They also often have more stakeholders, including investors, customers, employees and the general public. In this situation, aggressive tax avoidance practices can tarnish the company's reputation. These actions can have a negative impact on the company's image and affect relations with stakeholders. As a result, highly profitable companies are often more likely to avoid the reputational risks associated with tax avoidance practices.

Capital intensity has no effect on tax avoidance. Although fixed assets may have significant value, they are not always easily manipulated for tax avoidance purposes. Fixed asset values are usually based on objective market prices or recognized accounting rules. In many taxation jurisdictions, the valuation of fixed assets is based on historical cost or fees authorized by the taxing authorities. Therefore, manipulating the value of fixed assets for the purpose of tax avoidance is difficult.

Tax avoidance decisions often have more to do with company structure than with the level of capital intensity. Companies wishing to avoid tax tend to focus on financial arrangements and corporate structure, such as the use of a controlling company, transfer pricing, or the location of a subsidiary in a lower-tax jurisdiction. These factors affect the potential for tax avoidance more than the level of capital intensity.

The results of this study cannot be generalized to all types of industries and countries. The results of this study only apply to coal mining industry listed on the Indonesia Stock
Exchange during the observation period. This study uses secondary data from the company’s annual report, so there is a possibility that the information obtained does not reflect the actual conditions.

Suggestions for further research are to increase the number of company samples for all industry categories other than the industries sampled in this study. Further research is also expected to broaden the research time horizon by using more comprehensive data in order to obtain better results.

References


