The Influence of Liquidity, Leverage, and Firm Size on Tax Aggressiveness (Case Study on Mining Companies Listed on the Indonesia Stock Exchange)

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ABSTRACT: This study aims to test and provide empirical evidence regarding the effect of liquidity, leverage, and company size on tax aggressiveness. The population in this study consisted of mining companies listed on the Indonesia Stock Exchange from 2020 to 2022. The sampling method used in this study was purposive sampling. The methodological approach used is quantitative using Structural Equation Modeling (SEM). The results of this study indicate that liquidity has no effect on tax aggressiveness, leverage has no effect on tax aggressiveness, and company size has a negative and significant effect on tax aggressiveness.

Keywords: Liquidity, Leverage, Firm Size, Tax Aggressiveness

INTRODUCTION

Indonesia is one of the largest countries in the world with the fourth-largest population. The country is rich in natural resources and strategically located as a hub for international trade, which attracts entrepreneurs to establish companies here. Besides its abundant natural resources and strategic trade location, Indonesia’s large population is an advantage for increasing revenue through taxation.

Taxation has always been a significant issue for companies, leading them to seek ways to minimize their tax payments. Over the past six years (2018-2023), Indonesia’s tax ratio has never reached 15%. The mining sector significantly contributes to tax revenue, both through income tax and value-added tax from domestic and import transactions. The sector is a major contributor, providing the fourth-largest tax revenue at 94% compared to other sectors (databoks, 2024). Despite this, the mining sector's contribution remains low relative to Indonesia's abundant natural resources, indicating the need for the government to optimize this sector's tax contributions.

Tax avoidance in Indonesia has become a concerning phenomenon, causing substantial tax revenue losses estimated at US$ 46 billion annually (Pajakku, 2020). This practice also harms countries globally, with potential tax losses of up to US$ 5 trillion over the next decade (Tax Justice Network, 2023). The mining sector is particularly notorious for tax avoidance. In 2023, there were 2,741 illegal mining sites (PETI) in Indonesia, which fuel black market trade of mining products, exacerbating tax violations (Ministry of Energy and Mineral Resources, 2023). Additionally, 50% of licensed
mining companies in Indonesia (with IUP) do not have Taxpayer Identification Numbers (NPWP) (liputan6.com, 2022). This indicates that tax avoidance is not only conducted by illegal miners but also by large companies that should comply with tax regulations (Rusdi Hidayat, 2019; Silalahi, 2023).

An example of aggressive tax behavior is PT Toba Pulp Lestari Tbk (INRU), which was involved in a tax aggression case amounting to Rp 19 trillion. The company was found manipulating export documents to conceal export values and avoid taxes, reporting Rp 16.7 trillion in false export transactions but only declaring Rp 13 trillion to evade export duties (Tribunnews.com, 2020).

The Positive Accounting Theory serves as the grand theory for this research, explaining that companies choose accounting policies to maximize firm value and minimize contract costs (Mansor & Abdullahi, 2015; Rahmawati & Kassim, 2020; Scott, 2015). According to Watts & Zimmerman (1983), three main hypotheses underlie this theory: Bonus Plan Hypothesis, Debt/Equity Hypothesis, and Political Cost Hypothesis. The Bonus Plan Hypothesis suggests that managers with bonus plans are motivated to choose accounting methods that increase current earnings to boost their bonuses. The Debt/Equity Hypothesis posits that companies with high debt are more likely to select accounting methods that increase earnings to avoid breaching debt covenants. The Political Cost Hypothesis suggests that large companies might choose accounting methods that reduce earnings to mitigate public and regulatory pressure (Devos & Rahman, 2023; Hajawiyah et al., 2022).

Tax aggressiveness can be influenced by a company's liquidity. Liquidity reflects a company's performance in terms of its ability to pay current liabilities with its current assets. Liquidity can be measured using several ratios, one of which is the Current Ratio (CR), indicating a company's ability to pay short-term obligations with its current assets (Kasmir and Lainnya, 2019; Putri and Hanif, 2020).

Leverage, the company's ability to pay long-term debt, also affects tax aggressiveness. Leverage can be measured using the Debt to Asset Ratio (DAR). Higher leverage increases interest expenses, reducing taxable income and potentially lowering tax payments (Hidayat and Muliasari, 2020). Abdullah (2020) found a significant relationship between leverage and tax aggressiveness in chemical sector companies, while (Febrilyantri, 2022, Kusumawati and Kartika, 2023) found no such effect in mining companies. These results are supported by studies conducted (Pattiasina, 2019, Sstawati, 2020, Rambe and Utami, 2021, Febrilyantri, 2022, Kusumawati and Kartika, 2023, Meldisthy, Espa et al., 2024, Tanvanno, Tanevia et al., 2024).

Firm size, indicating the scale of a company's operations, can influence tax aggressiveness. Larger firms tend to manage their finances better and optimize their tax management to maximize stakeholder benefits (Roslita and Safitri, 2022). Previous studies have shown mixed results on the impact of firm size on tax aggressiveness (Allo, Alexander et al., 2021) but the results of this study contradict the results of the study (Ramadani and Hartiyah, 2020, Malau, 2021, Utomo and Fitria, 2021, Febrilyantri, 2022, Hayani and Darmawati, 2023).

The novelty and differences presented by this research provide significant contributions to understanding tax aggressiveness in Indonesia's mining sector. With its advanced methodological approach, focus on the latest data, and in-depth analysis, this study offers new insights that can be utilized by policymakers, academics, and practitioners to develop more effective strategies in
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managing and overseeing tax aggressiveness practices within the mining industry (Ardhi & Lubis, 2023; Mashuri & Ermaya, 2019).

METHOD

The data analysis method used in this research is to use the SmartPLS (Cheah, Thurasamy et al. 2020) approach where testing is carried out in several stages, namely: descriptive statistical test, outer moder test, inner model test, and research hypothesis testing. The population consists of all mining companies listed on the Indonesia Stock Exchange (IDX) from 2020 to 2022. The sample is selected using purposive sampling based on specific criteria relevant to the research objectives.

Sample Criteria:
1. Mining companies listed on the IDX during 2020-2022.
2. Companies that publish financial statements in Indonesian Rupiah.
3. Mining companies that incurred losses.
4. Companies with complete information required for the study.

Variable Measurement:

Variables in this study are measured using ratios as outlined in Table:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Scale</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Ratio (CR)</td>
<td>Ratio</td>
<td>Current Assets / Current Liabilities</td>
</tr>
<tr>
<td>Debt to Asset Ratio (DAR)</td>
<td>Ratio</td>
<td>Total Debt / Total Assets</td>
</tr>
<tr>
<td>Firm Size (LN)</td>
<td>Ratio</td>
<td>Ln (Assets)</td>
</tr>
<tr>
<td>Effective Tax Rate (ETR)</td>
<td>Ratio</td>
<td>Income Tax Expense / Pre-Tax Profit</td>
</tr>
</tbody>
</table>

Data analysis uses SmartPLS software to perform Structural Equation Modeling (SEM), including tests for descriptive statistics, outer model, inner model, and hypothesis testing.

RESULT AND DISCUSSION

Descriptive Statistics
Table presents descriptive statistics for the variables analyzed, including minimum, maximum, mean, and standard deviation values for liquidity, leverage, firm size, and tax aggressiveness.

<table>
<thead>
<tr>
<th>Name</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>1.009</td>
<td>9.283</td>
<td>2.176</td>
<td>1.733</td>
</tr>
<tr>
<td>DAR</td>
<td>0.081</td>
<td>0.700</td>
<td>0.400</td>
<td>0.179</td>
</tr>
<tr>
<td>LN</td>
<td>25.659</td>
<td>31.446</td>
<td>29.016</td>
<td>1.567</td>
</tr>
<tr>
<td>ETR</td>
<td>0.108</td>
<td>0.775</td>
<td>0.320</td>
<td>0.166</td>
</tr>
</tbody>
</table>

Source: SmartPLS Output, 2024
Table above shows the average liquidity value of 2.176 with a standard deviation of 1.733, the highest liquidity value of 9.283, and the lowest liquidity value of 1.009. The average leverage value is 0.400 with a standard deviation of 0.179, the minimum value is 0.081, and the maximum value is 0.700. The average firm size is 29.016 with a standard deviation of 1.567, the minimum value is 25.659, and the maximum value is 31.446. The average tax aggressiveness is 0.320 with a standard deviation of 0.166, the minimum value is 0.108, and the maximum value is 0.775.

**Outer Model Test**

Table shows that all indicators for the latent variables in this study have loading factor values above 0.5, indicating that they are valid and reliable indicators for the respective variables.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Likuiditas</th>
<th>Leverage</th>
<th>Firm Size</th>
<th>Tax Aggressiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DAR</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LN</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ETR</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: SmartPLS output, 2024

Based on Table above, it shows that all indicators of latent variables in this study have a factor loading value above 0.5. Thus, these indicators are valid and reliable indicators as indicators that reflect the variables of this study.

Based on Table above, it shows that all VIF values are <5 so it can be concluded that the data does not have high collinearity. This shows that the variables used will not cause errors in the assessment of significance.

R-Square value shows that liquidity, leverage, and firm size explain 32.4% of the variance in tax aggressiveness.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>R-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tax Aggressiveness</td>
<td>0.324</td>
</tr>
</tbody>
</table>

Source: SmartPLS output, 2024

Based on Table above shows that tax aggressiveness can be explained by 32.4% by liquidity, leverage and company size and the rest can be explained by variables not examined in this study.
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Inner Model Test
Collinearity test results indicate that all VIF values are below 5, suggesting no high collinearity among the variables.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>CR</td>
<td>1.000</td>
</tr>
<tr>
<td>DAR</td>
<td>1.000</td>
</tr>
<tr>
<td>LN</td>
<td>1.000</td>
</tr>
<tr>
<td>ETR</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Source: SmartPLS output, 2024

F-Square values suggest a small effect of liquidity and leverage, while firm size has a moderate effect on tax aggressiveness.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>F-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidity</td>
<td>0.072</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.011</td>
</tr>
<tr>
<td>Firm Size</td>
<td>0.191</td>
</tr>
</tbody>
</table>

Source: SmartPLS output, 2024

Based on Table above, it shows that the liquidity variable has a small effect, the leverage variable has a small effect as well and the company size has a moderate effect.

Model Fit
Model fit is used to assess the suitability of a model. The SRMR (Standardized Root Mean Square Residual) value is utilized to evaluate the appropriateness of the relationships between variables in the model. A model is considered fit to explain the relationships between variables if the SRMR value is less than 0.10 (Ghozali, 2014).

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Saturated Mode</th>
<th>Estimated Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRMR</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>d_ULS</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>d_G</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Chi-square</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>NFI</td>
<td>1.000</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Source: SmartPLS Output, 2024

Based on Table above, it can be concluded that the SRMR value is 0.000 where the value meets the criteria because it is <0.10, so the PLS model in this study is declared fit and suitable for use in testing the research hypothesis.
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Hypothesis Testing
Hypothesis testing in this study is conducted using Bootstrapping. The hypothesis test is carried out with the t-test, where a p-value < 0.05 indicates significance, and vice versa. H1 is accepted if the p-value < 0.05 (Ghozali, 2014).

<table>
<thead>
<tr>
<th>Effect</th>
<th>Original Sample (O)</th>
<th>Sample Mean (M)</th>
<th>Standard Deviation (STDEV)</th>
<th>T Statistic</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquidity -&gt; Tax Aggressiveness</td>
<td>-0.319</td>
<td>-0.339</td>
<td>0.174</td>
<td>1.834</td>
<td>0.067</td>
</tr>
<tr>
<td>Leverage -&gt; Tax Aggressiveness</td>
<td>0.126</td>
<td>0.109</td>
<td>0.234</td>
<td>0.537</td>
<td>0.591</td>
</tr>
<tr>
<td>Firm Size -&gt; Tax Aggressiveness</td>
<td>-0.402</td>
<td>-0.391</td>
<td>0.169</td>
<td>2.381</td>
<td>0.017</td>
</tr>
</tbody>
</table>

Source: SmartPLS Output, 2024

The Effect of Liquidity on Tax Aggressiveness
Based on Table, it can be concluded that liquidity does not have a positive effect on tax aggressiveness, as evidenced by a path coefficient of -0.319, a t-statistic of 1.834, and a p-value of 0.067. The t-statistic is less than 1.96, and the p-value is greater than 0.05.

This study shows that liquidity does not directly affect a company's tax aggressiveness. This means that the level of a company's liquidity, whether high or low, does not influence how aggressive the company is in avoiding or minimizing its tax obligations. Positive accounting theory's Debt/Equity Hypothesis suggests that companies with high liquidity tend to maintain profits to keep good relationships with creditors, implying that highly liquid companies may not need to be aggressive in tax matters due to their financial stability.

These findings align with the study by (Hidayat and Muliasari 2020, Allo, Alexander et al. 2021, Malo, Harjito et al. 2024), which found that liquidity does not affect tax aggressiveness. However, they contradict the study by (Ramadani and Harriyah 2020, Febrilyantri 2022), which stated that liquidity positively affects tax aggressiveness.

The Effect of Leverage on Tax Aggressiveness
Based on Table, it can be concluded that leverage has a positive but not significant effect on tax aggressiveness, as evidenced by a path coefficient of 0.126, a t-statistic of 0.537, and a p-value of 0.591. The t-statistic is less than 1.96, and the p-value is greater than 0.05.

This study shows an insignificant relationship between leverage and tax aggressiveness in mining companies. However, there is a tendency for tax burdens to increase with rising interest expenses, as interest expenses can reduce taxable income. Positive accounting theory explains that companies with high leverage tend to maintain profits for stability, considering interest expenses to lower tax
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burdens. However, the characteristics of debt in mining companies, such as shareholder loans and operational funding, can minimize interest expenses and their impact on profit.

These findings align with the study by (Febrilyantri 2022, Kusumawati and Kartika 2023), which found that leverage does not affect tax aggressiveness. However, they contradict the studies by (Abdullah 2020, Hidayat and Muliasari 2020), which stated that leverage positively affects tax aggressiveness.

The Effect of Firm Size on Tax Aggressiveness

Based on Table, it can be concluded that firm size has a negative and significant effect on tax aggressiveness, as evidenced by a path coefficient of -0.402, a t-statistic of 2.381, and a p-value of 0.017. This study shows that larger firms tend to have lower tax aggressiveness compared to smaller firms. Larger firms often have more assets, leading to higher depreciation and lower taxable income. They are also more closely monitored by tax authorities, encouraging compliance and reducing tax aggressiveness. The complex structure and decision-making processes in larger firms make aggressive tax strategies difficult and increase compliance costs.

These findings align with the studies by (Utomo and Fitria 2021, Hayani and Darmawati 2023), which found that firm size negatively affects tax aggressiveness. However, they contradict the study by (Hayani and Darmawati 2023, Richard 2023, Malo, Harjito et al. 2024), which stated that firm size does not affect tax aggressiveness, and the study by Malau (2021).

CONCLUSION

Based on the analysis of data on the influence of liquidity, leverage, and firm size on tax aggressiveness in mining companies from 2020 to 2022, the following conclusions can be drawn:
1. Liquidity, proxied by the Current Ratio (CR), does not affect tax aggressiveness, proxied by the Effective Tax Rate (ETR). This indicates that liquidity does not influence the level of tax aggressiveness.
2. Leverage, proxied by the Debt to Assets Ratio (DAR), does not affect tax aggressiveness, proxied by the Effective Tax Rate (ETR). This indicates that leverage does not influence the level of tax aggressiveness despite having a positive effect.
3. Firm Size, proxied by the Natural Logarithm of Assets (LN), has a negative effect on tax aggressiveness, proxied by the Effective Tax Rate (ETR). This indicates that firm size influences tax aggressiveness.

The practical, theoretical, and policy implications of this research highlight the importance of firm size in determining tax aggressiveness and challenge some traditional views on the roles of liquidity and leverage. By leveraging these insights, stakeholders can develop more effective strategies for managing and overseeing corporate tax behaviors, ultimately contributing to a more transparent and compliant business environment.

While this study provides valuable insights into the impact of liquidity, leverage, and firm size on tax aggressiveness in the mining sector, these limitations must be considered when interpreting the
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results. Future research that expands the data scope, considers additional variables, and employs different analytical methods can help address these limitations and offer a more comprehensive.

Suggestions

1. Future research can include other factors that may influence tax aggressiveness.
2. Future research can add more indicators to reflect each variable, such as Quick Ratio and Cash Ratio for liquidity, Debt to Equity Ratio and Long-Term Debt to Equity Ratio for leverage, and equity value and sales value for firm size. Additional indicators for tax aggressiveness may include CETR, GAAP ETR, and DTAX.
3. Future research can extend the study period beyond three years.

REFERENCE


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