Determinants of Tax Avoidance in the Infrastructure Sector of State-Owned Enterprises

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ABSTRACT

Research Aims: This research aims to determine the influence of capital intensity, profitability, firm size, and liquidity on tax avoidance practices.

Design/methodology/approach: The data are taken from the financial reporting of the infrastructure sector of state-owned enterprises listed in IDX from 2016 to 2023.

Research Findings: This research indicates that capital intensity does not significantly affect tax avoidance. Meanwhile, profitability, firm size, and liquidity have a significant effect.

Theoretical Contribution/Originality: Profitability, firm size, and liquidity can reduce tax avoidance efforts while fulfilling stakeholder (principal) expectations regarding increasing net income. This research contributes to expanding understanding regarding the determinants of tax avoidance and agency theory.

Keywords: capital intensity, firm size, liquidity, profitability, tax avoidance

Introduction

Taxes are a primary income source for countries, including Indonesia. As defined in Law No. 28 of 2007, taxes are mandatory payments to the government that are coercive under the law and used for national needs and the welfare of society. The 2018 state budget (Anggaran Pendapatan Belanja Negara) target for tax revenue was IDR 1.6181 trillion out of the total state budget of IDR 1.8947 trillion (www.kemenkeu.go.id/apbn2018).

The government has strived to maximize tax revenue to meet the targets set according to the state budget. In reality, many companies attempt to reduce their tax burden through various means, one of which is by taking advantage of gap in tax regulations. This gap occurs because paying taxes reduces company profits, prompting companies to do anything, legal or illegal, to lower their tax obligations and become less transparent in financial reporting [1]. Tax is a significant concern because it reduces net profits, and it is common knowledge that companies aim to pay as little
Companies that conduct tax avoidance are considered not responsible to the state [3].

Tax avoidance practices in Indonesia are prevalent and can be observed from the losses incurred by the state. Indonesia is one of the developing countries suffering the most significant losses due to tax avoidance [4]. In 2020, the Tax Justice Network reported that Indonesia was estimated to lose up to USD 486 billion annually due to tax evasion (Newssetup.kontan.co.id).

Some companies in Indonesia engaged in tax avoidance include PT Adaro Energy Tbk and PT PPI. PT Adaro Energy Tbk conducted tax avoidance through transfer pricing, shifting income earned in Indonesia to countries with lower tax rates, thus reducing their tax burden. According to Global Witness, Indonesia could have earned up to USD 125 million or nearly USD 14 million annually [5]. Additionally, PT PPI, a state-owned enterprise importing alcoholic beverages, committed tax fraud of IDR 39.113 billion. According to the Audit Board of Indonesia (Badan Pemeriksa Keuangan), the company allegedly lowered transaction evidence prices, resulting in lower taxes than required (AntiKorupsi.org). Large companies often engage in tax avoidance due to their ability to systematically manage their taxes, making the process complex. Consequently, many large companies pay less tax than they should.

State-owned enterprises (SOEs/Badan Usaha Milik Nasional) in the infrastructure sector are particularly important to study regarding tax avoidance practices. As government-owned entities, SOEs are responsible for maintaining financial transparency and compliance with regulations. The infrastructure sector is notable for its large-scale investments and funding. It is crucial to investigate how effectively these companies can finance their activities. However, SOEs are funded by the taxpayer, making it essential to assess their adherence to tax obligations and their involvement in tax avoidance practices. This research aims to determine how these companies comply with tax regulations and avoid engaging in tax avoidance activities.

This study uses determinant variables such as capital intensity, profitability, company size, and liquidity concerning tax avoidance. Capital intensity describes a company’s ability to manage its fixed assets, which will incur depreciation expenses, thus reducing corporate profits. Return on assets reflects the company’s financial performance through the profits gained. The higher the company’s profits, the higher the return on assets [6]. Another influencing factor is company size, measured by the number of assets owned. The larger the company, the better it can manage taxes through tax-saving methods by exploiting existing loopholes for tax avoidance [5]. Last, the current ratio describes a company’s ability to repay or settle its short-term obligations as they come due.

Previous researchers have conducted similar studies on determinants of tax avoidance. Mailia and Apollo [7] found that profitability did not affect tax avoidance, while company size and capital intensity did. Another study by Rahmadani et al. [8]
concluded that profitability and capital intensity did not affect tax avoidance, while Gumono [9] found that ROA and capital intensity positively influenced tax avoidance. Prastiyanti and Mahardhika [10] also found that company size significantly impacted tax avoidance. Meanwhile, Kusmadani and Rahayuningsih [11] found that firm size did not affect tax avoidance. Research by Aya et al. [12], found that current ratio has significant effect on tax avoidance. However, Sutomo and Djaddang [13] found that current ratio has no significant effect on tax avoidance.

This research is expected to provide both theoretical and practical contributions. Theoretically, it can expand the understanding and development of theories about factors influencing tax avoidance practices in state-owned infrastructure companies. Additionally, it can serve as a reference for future researchers interested in exploring tax avoidance issues and its influencing factors such as capital intensity, profitability, firm size, and liquidity. Practically, this research can offer valuable insights to the government regarding the strategies companies use to engage in tax avoidance. This understanding can help the government develop more effective measures or strategies to counteract these practices. To make taxpayers care and comply with the tax payments, the government should ensure that they understand and learn about the tax obligations [14]. This policy may include strengthening tax regulations and optimizing financial and tax reporting transparency. Consequently, the government can enhance tax revenue to support national development. Given the inconsistent results from previous studies (research gaps) on the influence of these variables on tax avoidance, this paper aims to examine similar issues by focusing on state-owned enterprises listed on the IDX from 2016-2022, particularly in the infrastructure sector.

Literature Review

Agency Theory

Agency theory, proposed by Jensen and Meckling (1976), describes a contract delegating some obligations for decision-making. This theory highlights the correlation between the principal (the party granting authority) and the agent (the party receiving authority) [4]. Agents are responsible for providing information as a form of accountability to principals. However, agents sometimes need to report company information accurately to principals. In this context, tax authorities act as principals, and company management as agents who comply with applicable tax regulations [5].

The existence of agency theory can lead to agency conflicts. The difference in interests between company management and tax authorities lies in the company’s tax payments. Agency conflict arises from the differing interests between principals and agents [11]. This condition makes managers seek the potential to reduce the tax burden and implement aggressive tax planning [15]. Tax authorities seek optimal tax revenue, while companies aim to minimize tax payments to increase profits. Tax avoidance
practices are permitted but not desired by tax authorities so that both parties will have different goals [16]. Indonesia's self-assessment tax system facilitates taxpayers in manipulating the amount of tax due to the government.

Tax avoidance is an effort to reduce the tax burden payable to the government by taking the opportunity of the existing loopholes without violating tax regulations. The techniques and methods used often involve grey areas within the tax regulations themselves [17]. To reduce their tax burden, companies engage in tax planning that is lawful and compliant with laws and regulations. Even though it is done legally by the company, the tax authorities still do not approve this treatment because it can reduce the income source of the state [18]. Tax planning aims to maintain a minimal tax payable to the government by reducing profits, employing tax experts, and utilizing depreciation costs on fixed assets [7].

Capital intensity describes a company's asset management through investments in fixed assets and inventory. The capital intensity ratio indicates the efficiency of a company in managing fixed assets to generate revenue. Capital intensity is the ratio of fixed assets to total assets, reflecting the extent to which a company's assets are invested in fixed assets [8]. Investments in fixed assets incur depreciation expenses, which affect company profits.

Capital intensity shows a company's ability to invest in fixed assets, generating depreciation expenses. Depreciation expenses impact the reduction of tax burdens [9]. This is because depreciation expenses decrease the amount of taxable income, leading companies to engage in tax avoidance. This align with the agency theory, managers may be inclined to engage in tax avoidance strategies. Managers can reduce the depreciation expense by reporting a higher net income than is accurate. Entities with substantial fixed assets tend to engage in tax avoidance by minimizing their tax burdens, resulting in a lower Effective Tax Rate (ETR) [4]. Similar research conducted by Fitriani and Indrati [19], shows that capital intensity as a determinant variable has a positive influence on tax avoidance.

H1: Capital intensity has a positive effect on tax avoidance

Return on Assets (ROA) is a ratio that shows the entity’s ability to generate return on the total assets managed and utilized by the entity. Profitability reflects a company’s ability to efficiently use its assets to generate profits, known as ROA [20]. ROA is an indicator of profitability that determines the effectiveness of a company in generating profits from its assets. Higher entity’s ROA means higher company’s profits, the higher the ROA, and vice versa.

Profit is one of the indicators used as a basis for tax assessment; therefore, to observe the impact of tax avoidance, ROA calculations can be used. In agency theory, managers will try to pursue targets in the form of high incentives or compensation by showing high net profits and increasing the ROA ratio. The higher an entity’s profit, the higher the tax burden it has to pay. Consequently, profitability becomes a factor in
tax avoidance because it relates to the company's ability to generate profit [20]. Previous research conducted by Gumono [9], Kusumadani and Rahayuningsih [11], Fitriani and Indrati [19], Susanto et al [21] and Novriyanti and Dalam [22], showed that the ROA variable as a determinant variable positively affects tax avoidance.

H2: Profitability has a positive effect on tax avoidance

Firm size indicates a entity’s ability to manage its economic activities. Generally, company size is measured by the scale of employees, total assets, and the number of company branches. The measure most often used in measuring the size of a company is through its assets because it is considered relatively more stable [23]. Firm size classifies a company based on the total assets owned [5]. Larger companies tend to use their assets than using debt financing. In state-owned enterprises (SOEs), firm size reflects the resources available, the greater the resources owned, the more complex the business processes within it will be [24]. The larger the company, the more substantial the tax it manages due to increased resources.

Firm size is another factor related to tax avoidance. Large-scale companies tend to engage in tax avoidance to optimize their profits so the managers can use it to fulfill their obligations to the stakeholders [25]. In agency theory, managers have access to greater resources to implement tax avoidance strategies. The complex organizational structure encourages managers to engage in tax avoidance practices in various ways. One such way is by collaborating with financial advisors to devise strategies for increasing net income. Substantial and stable profits tend to encourage companies to practice tax avoidance because large profits lead to higher tax burdens [5]. Therefore, company size becomes one of the indicators determining the occurrence of tax avoidance practices. Previous research by Suripto and Novitaria [26], Suryatna et al [27], Sodikin et al [28] shows that company size has a positive and significant effect on tax avoidance.

H3: Firm size has a positive effect on tax avoidance

The current ratio represents a company's ability to settle its short-term debts with the current assets it possesses. It depicts the company's capacity to pay its obligations with current assets easily convertible into cash. The current ratio can be seen as a measure of the level of safety (margin of safety) of a company. A higher current ratio indicates a good liquidity indicator, but conversely, if the ratio is too low, it indicates liquidity issues.

The liquidity success indicator is measured by how well a company utilizes its current assets available to cover its short-term debts that will soon mature. In agency theory, management strives to generate maximum profit reflected in its financial statements. According to Dina, as liquidity ratios increase, managers will increasingly seek to allocate current period profits to subsequent periods due to the high tax payment rates when the company is doing well. Previous research by Aya et al. has shown that the current ratio has a positive impact on tax avoidance.
H4: Liquidity has a positive effect on tax avoidance

Method

This study used a quantitative approach, measuring data using numerical scales. This research used a purposive sampling method to choose samples following the research objective. The sample criteria comprised state-owned enterprises (SOEs) in the infrastructure sector listed on the Indonesia Stock Exchange from 2016-2023. The requirements of the companies studied are as follows; state-owned enterprises companies that are listed on the IDX, state-owned enterprises companies categorized in the infrastructure sector, companies that publish annual reports from 2016-2023, and companies that have complete financial data for variable analysis.

Seven state-owned enterprises (SOEs) were selected as the research subjects based on the criteria adjustment, and 56 data were collected. The financial data used were obtained from the companies' official and IDX websites. This study comprises both dependent and independent variables. The independent or determinant variables are capital intensity (CI), return on assets (ROA), firm size (FS), and liquidity (CR). The dependent variable in this study is tax avoidance (ETR). This research was analyzed and tested using EViews 12 by selecting the best model between the Common Effect Model, Fixed Effect Model, and Random Effect Model.

Operational Measurement of Variables

**Tax Avoidance.** In this study, tax avoidance is the dependent variable, representing the company's efforts to reduce the total tax burden to be paid. Consistent with previous research by Sodikin et al. [28] and Mu’minah et al. [29], the effective tax rate (ETR) is used as an indicator of tax avoidance. A lower ETR indicates greater tax avoidance by the company, whereas a higher ETR suggests less tax avoidance [8]. The following measurement is used to calculate ETR.

\[
ETR = \frac{\text{Tax Expense}}{\text{Income Before Tax}}
\]

**Capital Intensity.** This variable in the research is the dependent variable, which shows how much the company invests in fixed assets to generate income. Large investments in fixed assets will result in large depreciation charges for fixed assets. The measurement of capital intensity can be formulated as follows.

\[
CI = \frac{\text{Total Fixed Assets}}{\text{Total Assets}}
\]

**Return on Assets (ROA)** is the dependent variable in the research, which shows the company's ability to generate profits from the total assets owned. The ratio of net profit to total assets measures the return after interest and taxes [6]. Companies that
have large profits indicate high ROA. The following are the measurements used in ROA.

\[ \text{ROA} = \frac{\text{Income after tax}}{\text{Total Assets}} \]

**Firm Size.** This variable in the research is the dependent variable which shows the company's measurement scale through the total assets owned. The larger the company size, the greater and more stable the possibility of generating profits. Firm size (FS) is calculated or measured using the logarithmic value or natural logarithmic of total assets [29]. The formula for carrying out these measurements is as follows.

\[ \text{Firm Size} = \log(\text{Total Assets}) \]

**Current Ratio.** This variable is the dependent variable in the research, and it shows the company's ability to settle its short-term obligations through current assets. The higher the ratio, the better its liquidation. The following are the measurements used in the current ratio.

\[ \text{CR} = \frac{\text{Total Current Assets}}{\text{Total Current Liabilities}} \]

**Result and Discussion**

Based on the Eviews analysis, Table 1 shows that the Common Effect Model (CEM) is the best model for this research. If the Chow Test results in CEM, it means that CEM compared to FEM is the best model. Next, it continues with the Hausman Test resulting in REM, which means that REM, compared to FEM, is the best model. Last, the Lagrange Multiplier Test was conducted to test between the CEM and REM based on the Breusch-Pagan value; CEM is used because the Prob. Value bigger than 0.05. Table 2 shows the multicollinearity test results. The correlation values between variables are less than 0.85. Thus, the data of this research are free from multicollinearity.

<table>
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<tr>
<th>Test of Type</th>
<th>Prob.</th>
<th>The Right Model</th>
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<tbody>
<tr>
<td>Chow Test (Cross-section F)</td>
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<td>Common Effect Model</td>
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<tr>
<td>Chow Test (Cross-section Chi-square)</td>
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<tr>
<td>Hausman Test (Cross-section random)</td>
<td>0.2719</td>
<td>Random Effect Model</td>
</tr>
<tr>
<td>Lagrange Multiplier (Breusch-Pagan)</td>
<td>0.7819</td>
<td>Common Effect Model</td>
</tr>
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</table>

Source: Processed data from Eviews

<table>
<thead>
<tr>
<th>CI</th>
<th>ROA</th>
<th>FS</th>
<th>CR</th>
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Table 1. Chow Test, Hausman Test, and Lagrange Multiplier Test Table

Table 2. Multicollinearity Test Table

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From Table 3 above, this research's multiple regression equation model is as follows.

$$ETR = 5.963797 + 0.164964CI + 1.810936ROA - 0.172386FS - 0.400387CR$$

Based on the equation model, the constant value is 5.963797, meaning that if variables CI, ROA, FS, and CR are constant, there will be an increase in the value of variable ETR by 5.963797. In this case, the value of variable CI is capital intensity of 0.164964, meaning that if variable CI increases by one unit, then variable ETR will experience an increase of 0.164964. The value of variable ROA is the return on assets of 1.810936, meaning that if variable ROA increases by one unit, then variable ETR will experience an increase of 1.810936. The value of variable FS is a company size of -0.172386, meaning that if variable FS increases by one unit, then variable ETR will experience a decrease of 0.172386. The value of variable CR is a current ratio of -0.400387, meaning that if variable CR increases by one unit, then variable ETR will experience a decrease of 0.400387.
Based on Table 3, the adjusted R-squared shows a value of 0.211929, which indicates there is a simultaneous effect of as much as 21.2% by the variable of capital intensity, ROA, firm size, and current assets. The remaining 78.8% is explained by another variable outside the equation model. The partial test shows that the Prob. Value of Capital Intensity is greater than 0.05. This result indicates that there is no partial effect on tax avoidance—however, the Prob. Value of ROA, Firm Size, and Current Ratio is less than 0.05, which indicates there is the partial effect on tax avoidance.

*The Influence of Capital Intensity on Tax Avoidance*

The research results indicate a Prob. Value of 0.3958>0.05. Capital intensity has no significant effect on tax avoidance. This result means that the hypothesis stating that capital intensity positively affects tax avoidance is rejected. These results show that higher capital intensity does not affect tax avoidance practices. Despite having high capital intensity, the company will still engage in tax avoidance. This result is inconsistent with previous research conducted by Rahmadani et al. [8], Mailia and Apollo [7], which stated that there is a positive relationship between capital intensity and tax avoidance. However, this study aligns with the research of Putri & Noviardy [15], Zoebar et al. [4], which stated that capital intensity has no effect on tax avoidance. The results of this study show the irrelevance of agency theory towards tax avoidance practices, which implies that the higher the capital intensity, the higher the level of tax avoidance. Therefore, this conclusion is based on the results, which concluded that another factor has more impact on tax avoidance. The amount of fixed assets is used to determine the size of a company's tax obligations. The depreciation amount of fixed assets is used to reduce the tax burden. Principals must remain vigilant in monitoring so managers do not become aggressive towards taxation.

*The Influence of Profitability on Tax Avoidance*

The research results indicate a Prob. Value of 0.0131<0.05. Profitability has a significant effect on tax avoidance. This result means that the hypothesis stating that ROA positively affects tax avoidance is accepted. The company's income will affect the tax to be paid. The higher the ROA ratio, the better the company's asset management. Profitability describes a company's operational success, reflecting the culmination of various policies and decisions made by the company's management. This outcome supports agency theory by indicating managers seeking to minimize their tax burdens through effective tax planning and avoidance. An increase in ROA will affect managers' decision to engage in tax avoidance because it is believed that they can have high incentives by increasing company profits. This result is inconsistent with previous research conducted by Mailia and Apollo [7] and Umar [3], which is stated that ROA has no significant effect on tax avoidance. However, this study consistent with Tebiono and Sukdana [30], Novriyanti and Dalam [18], who state that ROA significantly affects tax avoidance.
The Influence of Firm Size on Tax Avoidance

The research results indicate a Prob. Value of 0.0123<0,05. Firm size has a significant effect on tax avoidance. These results follow research conducted by Prastiyanti & Mahardhika[10], Mailia and Apollo [7], Suryatna et al. [27], who stated that firm size has significant effect on tax avoidance. While, other research by Wisdanringrum[16], Rahmawati and Nani [5], stated that firm size does not effect on tax avoidance [16]. The larger the size of the company, the more activities it undertakes. This result outcome is supported by agency theory, which states that companies tend to engage in tax avoidance to optimize their profits, which managers can use to fulfill their obligations to stakeholders. Managers have access to greater resources to implement tax avoidance strategies. Larger companies have more complex resources than small companies; this condition opens up opportunities for managers to engage in tax avoidance practices.

The Influence of Liquidity on Tax Avoidance

The research results indicate a Prob. Value of 0.0018<0,05. The current ratio has a significant effect on tax avoidance. This results is consistent with research conducted by Aya et al.[12], show that the current ratio has a significant effect on tax avoidance. Managers can leverage the current ratio to influence the utilization of current assets and generate substantial profits. This result outcome is supported by agency theory, where the current ratio indicator can influence managers to leverage assets and engage in transactions or activities that can reduce the tax burden. A low current ratio indicates the company is experiencing liquidity issues, which may trigger managers to engage in tax avoidance practices. Conversely, a high current ratio indicates the company's ability to settle its short-term debts and, thus, less likely to engage in tax avoidance practices.

Conclusion

research examines and demonstrates the influence of capital intensity, profitability, firm size, and liquidity on tax avoidance in state-owned enterprises (SOEs) in the infrastructure sector listed on the Indonesia Stock Exchange (IDX) from 2016-2023. From the result of research, profitability, firm size, and liquidity significantly affect tax avoidance, while capital intensity has no significant effect on tax avoidance. High capital intensity shows that the managers have a good ability to generate profits. Large profits allow managers to pay taxes fully without reducing expenses due to their ability to manage company assets. ROA reflects a company's capacity to generate profits. As profits increase, managers are more inclined to participate in tax avoidance practices. The firm's size indicates its magnitude, often assessed through various aspects, including its assets. Larger companies offer managers opportunities to engage in tax avoidance, given their numerous activities, which may have loopholes. The current ratio illustrates a company's capability to meet
its obligations. A lower current ratio signifies that the company may still need to settle its obligations fully.

Simultaneously, capital intensity, profitability, firm size, and liquidity have a simultaneous or joint effect on tax avoidance. The research result shows that the contribution of the independent variables to the dependent variables is 21.2%, which is the effect that capital intensity, profitability, firm size, and liquidity have on the dependent variable, which is tax avoidance.

This research implies that by implementing effective financial management, companies can maximize profits without having to practice tax avoidance. However, other variables affect tax avoidance. The government and regulators must continue to carry out optimal supervision because other factors that have not been studied influence tax avoidance.

In this conducted research, there are still several limitations that need to be considered by future researchers. These limitations include the research subjects, which only include state-owned enterprises in the infrastructure sector from 2016-2023, resulting in a small sample size. In addition, future researchers can further develop the study by adding variables to be examined. Given the limitations outlined above, the suggestions for future researchers are to expand the research data and the number of variables. Future researchers are expected to expand the research data by examining all sectors of state-owned enterprises listed on the IDX and adding other variables such as other profitability ratios like Return on Equity (ROE), Return on Investment (ROI), Net Profit Margin (NPM), and many more.

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