DOES CAPITAL INTENSITY MODERATE THE EFFECT OF FINANCIAL DISTRESS AND OPERATIONAL PERFORMANCE ON TAX AVOIDANCE IN REGIONAL-OWNED ENTERPRISES IN WATER SUPPLY?

Diah Oktavia Hapsari 1) ; Puji Wibowo 2)

1) 4132220060_diah@pknstan.ac.id, Politeknik Keuangan Negara STAN
2) puji.wibowo@pknstan.ac.id, Politeknik Keuangan Negara STAN

*Corresponding author

Abstract

Tax avoidance is a legal practice by companies as an effort to reduce the tax burden distributed to the state. This is commonly done by companies, both private and government-owned. Regional-Owned Enterprises in Water Supply as a company owned by the Regional Government has a dual role, namely providing public goods and generating profits. This research aims to analyze the influence of financial difficulties, service effectiveness, and operational efficiency on tax avoidance with capital intensity as a moderating variable in Regional-Owned Enterprises in Water Supply. This research uses quantitative methods with secondary data obtained using documentation data collection methods. The sample in this study was selected based on purposive sampling and resulted in 117 companies spanning the period 2019-2022. The data analysis technique in this research uses multiple linear regression analysis using the Eviews version 12 program with a significance level of 5%. The results of this study show that financial difficulties and service effectiveness have a significant negative effect on tax avoidance, but operational efficiency has an insignificant positive effect on tax avoidance. The aggressiveness of Regional-Owned Enterprises in Water Supply towards tax avoidance is not as high as other organizations that are completely profit-oriented. This is possible because human resources do not understand taxation. In addition, direct supervision by the Regional Government makes management more alert to violations of statutory regulations. Capital intensity can weaken the influence of financial difficulties on tax avoidance and strengthen the influence of operational efficiency on tax avoidance. The greater the number of company fixed assets, the greater the depreciation expense, management can choose the depreciation method that is most profitable for the company.

Keywords: Capital Intensity, Financial Distress, Operational Efficiency, Service Effectiveness, Tax Avoidance

INTRODUCTION

Tax Avoidance is a phenomenon that is familiar to academics and government. In 2021, PT Perusahaan Gas Negara was caught in a tax avoidance case of 3.06 trillion rupiah (Idris, 2021). Through this case, it is known that tax avoidance is not a practice that is only carried out by private companies, companies that are more than 51% owned by the government also carry out similar practices. In the business world, it is considered normal for management to try to save costs, but tax avoidance is not something that is favored by the government as a tax collector.

In addition to State-Owned Enterprises (BUMNs), Indonesia also recognizes Regional-Owned Enterprises (BUMDs) with almost 100% ownership by the Regional Government. Regional-Owned Enterprises business lines vary, ranging from water treatment services to management of other regional potentials. As a profit-seeking company, Regional-Owned Enterprises is not immune to tax avoidance efforts. In 2016, there was an alleged case of corruption in the Regional-Owned Enterprises in Water Supply of Ternate City, in which funds that should have been paid as the company's contribution to the state through taxes. The Police Chief of Ternate, North Maluku, AKBP Kamal Bahtiar stated that the practice of tax evasion resulted in state financial losses of up to Rp1,900,000,000.00 (Fatah, 2016). In 2018, Regional-Owned Enterprises in Water Supply in North Sumatra (PDAM Tirtanadi) was involved in a tax dispute because it was declared an underpayment of Value Added Tax of IDR 581,660,333.00 (Pengadilan Pajak Republik Indonesia, 2020).
By utilizing gray areas in tax provisions, companies can avoid paying taxes to reduce non-operational costs that must be borne (Manihuruk & Novita, 2023). The gray areas in question are articles that have multiple interpretations and do not contain sanctions in them. Another study on industrial sector companies in Indonesia shows that tax avoidance is a short-term fiscal strategy to ensure the existence of the company (Oktaviani et al., 2022).

In 2004, the government issued a set of regulations on regional autonomy, namely Law No. 32 of 2004. With the enactment of this regulation, Regional Governments were given the authority to manage water resources with the hope of optimizing community welfare through the fulfillment of clean water needs. The Regional Government then established a Regional-Owned Enterprises in Water Supply. In carrying out these operational activities, Regional-Owned Enterprises in Water Supply is fostered by the Ministry of Public Works and Public Housing (PUPR Ministry) and directly supervised by the Regional Government as the owner. One of the efforts of the PUPR Ministry in fostering the company is realized in the performance assessment of the Regional-Owned Enterprises in Water Supply for further improvement (Kementerian PUPR, 2022). The results of the performance assessment are expected to assist in the preparation of policies and strategies for developing the Drinking Water Supply System in Indonesia.

Regional-Owned Enterprises in Water Supply as a profit-oriented company and public service makes the company stand in two places that provide trade-offs (Firdaus et al., 2022). The condition of the company is in line with the Stakeholder Theory that Edward Freeman began to introduce to the public. Freeman (1984) states that the success of a company depends on its ability to achieve economic and non-economic goals, namely by balancing the goals of the company's various stakeholders. Regional-Owned Enterprises in Water Supply has many stakeholders, namely customers, employees, government, partners, Directors, Supervisory Board, Regent/Mayor, council, and tax authorities. Like Regional-Owned Enterprises in general, Regional-Owned Enterprises in Water Supply has obligations to the government, both at the central and regional levels, through the contribution of tax payments, retribution, and profit sharing or dividends.

Public service provider companies must prioritize the interests of the community as much as possible, but not at the expense of the interests of other stakeholders (Firdaus et al., 2022). If profit is prioritized over the quality of public services, then public satisfaction with company services and the company's image in the eyes of external stakeholders will be threatened. If the quality of public services is prioritized over corporate profits, the company's profits and other internal stakeholders will be threatened. However, in realizing the profit mission, companies are vulnerable to tax management, one of which is tax avoidance. Agency Theory by Jensen et al. (1976) explains that human nature tends to be selfish, managers are required to maximize the assets and utilities owned by the company which cannot be separated from the uncertainty of the operating environment. This will encourage managers to consider tax avoidance (Arieftiara et al., 2020).

Management decisions on how to handle tax obligations can also be influenced by financial problems or financial difficulties experienced by the company. In theory, these financial difficulties are one of the causes of management tax avoidance. Companies whose economic conditions are distressed will make savings efforts by reducing payments to external parties, including corporate tax payments. Companies experiencing financial distress perform higher tax avoidance during the pandemic than before the pandemic, but the pandemic increases the negative relationship between financial distress and tax avoidance (Ariff et al., 2023).

Financial distress in companies can be described through the Altman Z-Score, Springate Model (S-Score), Zmijewski Model, and Grover Model to predict the potential continuation of company operations (Effendi, 2018; Martanti et al., 2021). As a company that has a dilemma
in carrying out operational activities and many Regional-Owned Enterprises in Water Supply are experiencing losses, they may experience financial distress which can affect compliance with their tax obligations. However, in other studies it was found that companies experiencing financial difficulties tend to be more compliant with tax regulations. This is because the company's financial difficulties reduce management opportunities for tax avoidance (Ariff et al., 2023; Pratiwi et al., 2021). In addition, as a company owned by the Regional Government, also makes management not act aggressively towards tax regulations like private companies. The government can provide additional capital participation to save the company so that it can continue to serve the community. This makes management feel safe even though it experiences continuous losses.

The results of previous research indicate that the discussion of tax risk studies still tends to be limited and many relevant research gaps can be identified. Future research is suggested to review tax avoidance with 12 (twelve) other themes, one of which is about the operating environment (Saragih & Ali, 2021). Through this research, the author took the initiative to develop a study on tax avoidance associated with the company's operating activities with the proxy of service aspects and operational aspects of Regional-Owned Enterprises in Water Supply.

Procurement of quality fixed assets supported by adequate maintenance will improve operations. Increased operational efficiency is expected to increase clean water production, resulting in increased customer satisfaction. Satisfied customers can recommend to other potential customers, so the company's profit can increase. On the other hand, the Fixed Assets account has a contra account of Accumulated Depreciation. Fixed asset depreciation expense is one of the largest deductions in firm's Income Statement, so it can reduce the Net Income received by the company and ultimately reduce the Tax Expense. The calculation of depreciation expense is a forecast calculation from management for the decline in the capability of fixed assets in producing clean water. In calculating the depreciation expense, management is authorized to choose the most appropriate depreciation method, including the straight-line depreciation method, declining balance, number of years, and activity or unit of production. The declining balance and number of years depreciation methods provide higher depreciation expense at the beginning of the year and will be lower in subsequent periods. While the straight-line depreciation method provides a constant depreciation expense throughout the useful life of the fixed asset.

Management can choose the most profitable depreciation method for the company, as long as the depreciation expense can describe the condition of the company's fixed assets. The choice of depreciation method sometimes does not heed accounting rules, but rather considers its economic impact on the company. Therefore, depreciation method is often used in earning management and tax planning. Previous research shows that capital intensity can have an effect (Aryatama & Raharja, 2021; Darsani & Sukartha, 2021; Dharma & Noviari, 2017; Siboro & Santoso, 2021; Sumantri et al., 2022) or no effect (Afrianti et al., 2022; Marsahala et al., 2020) on tax avoidance. This condition shows that there is a research gap on the effect of capital intensity on tax avoidance. This makes the author interested in examining capital intensity as a moderating variable in this study.

Other studies show that political connections can be a tool to reduce tax avoidance (Chaney et al., 2011; Hijriani et al., 2017; Jian et al., 2012; Manihuruk & Novita, 2023; Nurrahmi & Rahayu, 2020; Pranoto & Widagdo, 2016; Satiti et al., 2021). The company can benefit from government ownership, but the company must also be professional with its image as a profit-oriented company. If the company's image deteriorates due to violating laws and regulations, public trust will decrease and cause the company to suffer losses (Manihuruk & Novita, 2023).
In this study, the authors chose the topic of tax avoidance at Regional-Owned Enterprises with the locus of Water Supply throughout Indonesia in the period 2019 - 2022. Through this research, the authors want to see whether a company's financial distress proxied through the Springate Model (S-Score) can influence management to carry out tax avoidance, and whether service effectiveness and operational efficiency affect tax avoidance practices in the Regional-Owned Enterprises in Water Supply. To improve the research results, the authors also use moderating variables of capital intensity and control variables in the form of company size, solvency, and profitability.

The results of this scientific study are expected to complement previous studies so as to provide an overview of tax avoidance practices and the factors that influence them in Regional-Owned Enterprises in Water Supply. In addition, it is expected to help the Ministry of PUPR and the Regional Government in formulating policies on the issue of going concern for Regional-Owned Enterprises in Water Supply. For auditors, it is expected to provide input in preparing constructive recommendations, both to the management of the firm and the Regional Government.

LITERATURE REVIEW

Stakeholder Theory

Stakeholder theory is a capitalist perspective that explains the existence of actions and reactions between business entities and all stakeholders in the entity on decisions taken by management as managers of the entity. According to this theory, the continuity of the business entity's operations must have a positive impact on all parties with an interest in it, not just provide benefits to the owners of capital. Edward Freeman argues that executives are tasked with creating as much value as possible for stakeholders without having to sacrifice other stakeholders (Freeman, 1984). Large companies can survive because company management can align the interests of the company's stakeholders. Regional-Owned Enterprises in Water Supply as a for-profit company that is also oriented towards community service is a form of organization that is very relevant to Stakeholder Theory. The management must align the company's objectives with the goal of creating value for all stakeholders.

Agency Theory

This theory examines organizations from the perspective of transactions or negotiations between agents and principals. Most organizations are simply legal entities tasked with formally linking contractual relationships between people (Jensen et al., 1976). The term contract is interpreted to include not only written contracts, but also a series of implicit bargaining processes regarding outcomes. The goal of agency theory is to understand the form of the contract and its implications for the firm. Transactions or relationships in Agency Theory discuss the relationship between the principal as the authorizer (generally the owner of capital) and the agent or the party entitled to manage the company and must be accountable for his actions to the principal as the owner of capital (Eisenhardt, 1989). According to agency theory, everyone acts selfishly and is only motivated by their own interests. As a result, the interests of agents or company management are not in line with the interests of the owners of capital (Anggraeni & Febrianti, 2019). The difference in interests can affect the achievement of company goals, one of which can be in the form of company decision making related to taxation (Tebiono et al., 2019).

Tax Avoidance

The term Tax Avoidance means efforts to reduce the tax burden legally or not deviate from tax regulations (Moeljono, 2020). Tax avoidance is one of the many tax planning efforts that companies often use because it has a lower risk than tax evasion (Pohan, 2018). The Self Assessment policy that is predicted by tax regulators to increase public awareness of indirect
contribution obligations cannot avoid side-effects that can harm the state. Clever taxpayers will try to minimize the tax burden they are responsible for, namely through tax avoidance strategies (Tebiono et al., 2019).

Regional-Owned Enterprises in Water Supply like any other for-profit company is also obliged to pay taxes on the income it receives. The management of Regional-Owned Enterprises in Water Supply is authorized to manage the company by the Regional Government. In terms of meeting the goal of maximizing profits for management and the Regional Government, management can take advantage of loopholes in tax regulations to carry out tax avoidance.

Empirical measurement of tax avoidance can be done through many formulas, including GAAP ETR, Current GAAP ETR, ETR Differential, Cash ETR, Long-run Cash ETR, Cash tax ratio, and so on. In this scientific study, the author chose the GAAP ETR proxy because the formula is able to describe changes in the overall tax burden, both current and deferred tax burden (Hanlon & Heitzman, 2010). In addition, the formula also shows tax avoidance efforts based on temporary differences in income tax calculations. GAAP ETR is the ratio between total tax expense and profit before tax (Annida & Firmansyah, 2022).

\[
\text{GAAP ETR} = \frac{\text{Corporate Income Tax}}{\text{Profit Before Tax}}
\]

**Financial Distress**

A company is said to be experiencing financial distress when the company has difficulty meeting its financial obligations. When a company experiences financial difficulties or financial pressures, management must take strategies to save its business (Huang et al., 2017). Pratiwi et al. (2021) revealed that financial distress makes tax avoidance opportunities smaller so that management tends to reduce these risky activities. Financial distress is often proxied through the Altman Z-Score with a certain range of values to describe the going concern condition of a company (Altman, 1968). As science develops, several derivative formulas from Altman Z-Score emerge to assess the financial distress experienced by the company, one of which is the Springate Model by Gordon L.V. Springate (Springate, 1978).

The use of the Springate Model was chosen because several previous studies have proven that the S-Score is able to provide a more accurate value than other models in predicting the going concern of a business entity (Shalih & Kusumawati, 2019; Wulandari & Efendi, 2022). In addition, the financial performance measures required in the Springate Model formulation can be met from the Financial Statements and used by State Development Audit Agency in order to predict the bankruptcy of Regional-Owned Enterprises in Water Supply. S-Score is obtained with the following formula (Stefko et al., 2019).

\[
S = 1,03 A + 3,07 B + 0,66 C + 0,4 D
\]

with details:
A = Working Capital / Total Assets
B = Earnings Before Interest and Tax Payment / Total Assets
C = Net Income Before Tax / Current Liability
D = Total Sales / Total Assets

The company is considered bankruptcy-prone if the score is less than 0.862 (S < 0.86). Companies with a value greater than or equal to 0.862 are categorized as companies that are not experiencing financial distress. In this study, the authors used a dummy variable 1 for companies in the distress category and 0 for companies in the non-distress category.

**Service Effectiveness**

Effectiveness reflects the level of organizational achievement of the goals set (Bayangkara, 2015). The Big Indonesian Dictionary explains service through its basic word "layan" which is defined as an effort to fulfill the demands of other parties with the expectation that the party whose demands have been met will provide rewards in the form of money or
services (Kemdikbud, 2016). Assessment of Service Aspects is a benchmark for knowing the overall value of service excellence that customers expect with the reality they receive, as well as how service providers respond to complaints submitted by customers in order to improve service quality (Hijeriah et al., 2022). Service effectiveness reflects the achievement of company goals in meeting the needs of its customers. Service effectiveness is one of the aspects that greatly affects the health level of Regional-Owned Enterprises in Water Supply, which is 25%. The assessment consists of technical service coverage, customer growth, complaint resolution rate, customer water quality, and domestic water consumption. (Kementerian PUPR, 2022).

\[
\text{Technical Service Coverage} = \frac{\text{Total Population Served}}{\text{Total Population of Service Area}} \times 100\%
\]

\[
\text{Customer Growth} = \frac{\text{Number of Customers This Year} - \text{Number of Customers Last Year}}{\text{Number of Customers Last Year}} \times 100\%
\]

\[
\text{Complaint Resolution Rate} = \frac{\text{Number of Complaints Handled}}{\text{Number of Complaints}} \times 100\%
\]

\[
\text{Water Quality} = \frac{\text{Number of Qualified Quality Tests}}{\text{Number Tested}} \times 100\%
\]

\[
\text{Domestic Water Consumption} = \frac{\text{Total Water Sold to Domestic Customers in a Year}/12}{\text{Total Domestic Customers}}
\]

**Operational Efficiency**

Efficiency is related to the working or operational methods of a company. Efficiency is seen through the ratio between input and output in the context of input-process-output. Minimizing the costs required to achieve benefits means the company becomes more efficient (Bayangkara, 2015). According to the Big Indonesian Dictionary, operational relates to the operation or implementation of a plan that has been developed (Kemdikbud, 2016). Operational efficiency reflects the relationship between the company’s inputs and outputs in implementing its work plan. Indicators of operational aspect assessment consist of production ratio, water loss rate, service operating hours, water pressure, and water meter replacement (Kementerian PUPR, 2022).

\[
\text{Production Ratio} = \frac{\text{Real Production Volume}}{\text{Total Installed Capacity}} \times 100\%
\]

\[
\text{Non Revenue Water} = \frac{\text{Total Water Distributed} - \text{Total Water Sold}}{\text{Total Water Distributed}} \times 100\%
\]

\[
\text{Service Operation Hours} = \frac{\text{Total Service Time in a Year}}{365 \text{ Hari}}
\]

\[
\text{Water Pressure} = \frac{\text{Number of Customers Served with Pressure > 0.7 Bar}}{\text{Total Customers}} \times 100\%
\]

\[
\text{Water Meter Replacement} = \frac{\text{Number of Water Meters Replaced in a Year}}{\text{Total Customers}} \times 100\%
\]

**Capital Intensity**

Capital Intensity is a depiction of the financial decisions used by the management of business entities to increase profits (Siboro & Santoso, 2021). Capital intensity reflects the amount of capital converted into fixed assets compared to the total amount of assets (Marsahala...
et al., 2020). Business entities own or control fixed assets through purchases, construction, or grants (Hartoko, 2017). Based on PSAK 16, fixed assets are defined as tangible assets whose use rights are controlled by an organization and are used to carry out its operations for a longer period than the accounting reporting period. The amount of the company's net fixed assets can reflect the value of the depreciation expense borne by the company. Capital intensity reflects the amount of capital converted into fixed assets compared to the total assets (Marsahala et al., 2020).

\[
\text{Capital Intensity} = \frac{\text{Total Fixed Assets}}{\text{Total Assets}}
\]

In this scientific study, the author uses three control variables, namely Company Size, Solvency, and Profitability. Company size is the result of the natural logarithm of the total asset value of a business entity (Firmansyah et al., 2020).

\[
\text{Company Size} = \ln \text{Total Assets}
\]

Solvency or Leverage is measured through the Debt to Equity Ratio (DER) which shows the total value of the company's liabilities compared to the total value of its equity (Firmansyah & Lesmana, 2021).

\[
\text{DER} = \frac{\text{Total Debt}}{\text{Total Equity}}
\]

Profitability is measured through Return on Equity (ROE) which shows the company's ability to generate profits after deducting tax payments with the company's own capital (Yori et al., 2022).

\[
\text{ROE} = \frac{\text{Net Income}}{\text{Total Equity}}
\]

Frameork of Thinking

Based on the description of the problems above, the authors hope to prove empirically the existence and magnitude of the influence of the variables Financial Distress, Service Effectiveness, and Operational Efficiency on Tax Avoidance practices carried out by Regional-Owned Enterprises in Water Supply. In addition, the authors also use Capital Intensity as a moderating variable. With the moderating variable, the author hopes to find out whether the effect of the independent variable on the dependent variable becomes stronger or weaker after interacting with the moderating variable. The framework is outlined in Figure 1.

**Figure 1. Framework of Thinking**

Based on the framework in Figure 1, the hypothesis is formulated as follows.

H1: Financial distress negatively affects tax avoidance.

H2: Service effectiveness has a negative effect on tax avoidance.
H3: Operational efficiency has a positive effect on tax avoidance.
H4: Capital intensity can weaken the effect of financial distress on tax avoidance.
H5: Capital intensity can weaken the effect of service effectiveness on tax avoidance.
H6: Capital intensity can strengthen the effect of operational efficiency on tax avoidance.

METHOD

This scientific study applies quantitative methods to examine the existence of influence activities on secondary data. The object chosen by the researcher is the Regional-Owned Enterprises in Water Supply throughout Indonesia with a period of 4 years, namely 2019-2022. The research data is secondary data obtained from the Regional-Owned Enterprises in Water Supply Financial Statements for the 2019-2022 fiscal year period. The data was obtained using documentation techniques. From this population, researchers determined the research sample through a purposive sampling procedure and obtained 117 companies with a financial year period of 2019 to 2022. Thus, the total sample obtained amounted to 468, the data is described in Table 1.

### Table 1. Research Sample

<table>
<thead>
<tr>
<th>Criteria</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>The firms evaluated</td>
<td>387</td>
<td>388</td>
<td>389</td>
<td>393</td>
<td>1557</td>
</tr>
<tr>
<td>The firms with GAAP ETR &lt; 0 or GAAP ETR &gt; 1</td>
<td>-246</td>
<td>-249</td>
<td>-244</td>
<td>-246</td>
<td>985</td>
</tr>
<tr>
<td>The firms that does not meet the panel data criteria</td>
<td>-24</td>
<td>-22</td>
<td>-28</td>
<td>-30</td>
<td>104</td>
</tr>
<tr>
<td>Total samples</td>
<td>117</td>
<td>117</td>
<td>117</td>
<td>117</td>
<td>468</td>
</tr>
</tbody>
</table>

Source: Author’s Processed Results (2024)

In this panel data research, the analysis approach method will first be determined, between the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). Furthermore, the author will conduct influence tests on the research data, including the classical assumption test, the coefficient of determination test, the F significance test, and the partial t test. It is known that 2019 was the beginning of the COVID-19 pandemic in Indonesia. This phenomenon has a significant impact on the economic conditions of the community and companies, but this study ignores this influence.

RESULTS AND DISCUSSION

In this study, the authors put forward two models developed in the study, as below:

**Model 1**

\[ TA_{it} = \alpha + \beta_1 FD_{it} + \beta_2 PEL_{it} + \beta_3 OPR_{it} + \beta_4 SIZE_{it} + \beta_5 DER_{it} + \beta_6 ROE_{it} + e_{it} \]

**Model 2**

\[ TA_{it} = \alpha + \beta_1 FD_{it} + \beta_2 PEL_{it} + \beta_3 OPR_{it} + \beta_4 CI_{it} + \beta_5 FD_{it}*CI_{it} + \beta_6 PEL_{it}*CI_{it} + \beta_7 OPR_{it}*CI_{it} + \beta_8 SIZE_{it} + \beta_9 DER_{it} + \beta_{10} ROE_{it} + e_{it} \]

Description:

- \( TA \) : Tax Avoidance (- GAAP ETR)
- \( \alpha \) : The constant
- \( \beta_1 - \beta_{10} \) : Regression Coefficients
- \( FD \) : Financial Distress (S-Score)
- \( PEL \) : Service Effectiveness
- \( OPR \) : Operational Efficiency
- \( CI \) : Capital Intensity
- \( SIZE \) : Company Size (In Total Assets)
- \( DER \) : Solvency/Leverage (DER)
- \( ROE \) : Profitability (ROE)
- \( E \) : Error Term
Descriptive Statistical Analysis

Minimum, maximum, mean, median, and standard deviation values are used in descriptive statistics to provide an overview of the distribution and behavior of sample data. Table 2 illustrates the results of descriptive statistical analysis of the research data.

Table 2. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>TA</th>
<th>FD</th>
<th>PEL</th>
<th>OPR</th>
<th>CI</th>
<th>FD*CI</th>
<th>PEL*CI</th>
<th>OPR*CI</th>
<th>SIZE</th>
<th>DER</th>
<th>ROE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>-0.2581</td>
<td>0.1559</td>
<td>0.6305</td>
<td>1.2790</td>
<td>0.6483</td>
<td>0.1207</td>
<td>0.4073</td>
<td>0.8358</td>
<td>25.368</td>
<td>0.1751</td>
<td>0.0617</td>
</tr>
<tr>
<td>Med.</td>
<td>-0.2386</td>
<td>0.0000</td>
<td>0.6200</td>
<td>1.2750</td>
<td>0.6645</td>
<td>0.0000</td>
<td>0.3910</td>
<td>0.8194</td>
<td>25.159</td>
<td>0.0990</td>
<td>0.0483</td>
</tr>
<tr>
<td>Max.</td>
<td>-0.0174</td>
<td>1.0000</td>
<td>1.7500</td>
<td>1.6119</td>
<td>1.6119</td>
<td>1.0795</td>
<td>2.2738</td>
<td>28.823</td>
<td>12.054</td>
<td>0.9039</td>
<td></td>
</tr>
<tr>
<td>Min.</td>
<td>-0.9818</td>
<td>0.0000</td>
<td>0.3500</td>
<td>0.4850</td>
<td>0.0649</td>
<td>0.0000</td>
<td>0.0324</td>
<td>0.0411</td>
<td>23.070</td>
<td>0.0004</td>
<td>0.0001</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>0.0926</td>
<td>0.3632</td>
<td>0.1556</td>
<td>0.2231</td>
<td>0.1768</td>
<td>0.2905</td>
<td>0.1498</td>
<td>0.2796</td>
<td>1.0934</td>
<td>0.6086</td>
<td>0.0695</td>
</tr>
<tr>
<td>Obs.</td>
<td>468</td>
<td>468</td>
<td>468</td>
<td>468</td>
<td>468</td>
<td>468</td>
<td>468</td>
<td>468</td>
<td>468</td>
<td>468</td>
<td>468</td>
</tr>
</tbody>
</table>

Source: Author's Processed Results (2024)

Based on statistical observations, it is known that the minimum value of the Tax Avoidance variable is -0.9818 and the maximum value is -0.0174 with an average value of -0.2581 and a median of -0.2386. Financial Distress shown through S-Score has an average value of 0.1559 and a standard deviation of 0.3632. The minimum value of the Service Effectiveness variable in this study is 0.3500 and the maximum value is 1.100 with an average value of 0.6305 and a median of 0.6200. The minimum value of the Operational Efficiency variable in this study is 0.4850 and the maximum value is 1.7500 with an average value of 1.2790 and a median of 1.2750. The minimum value of the Capital Intensity variable in the study was 0.3500 and the maximum value was 1.100 with an average value of 0.6305 and a median of 0.6200.

Analysis of Panel Data Regression Results

Based on the results of the Chow Test, Hausman Test, and LM Test that have been conducted, the Random Effect Model (REM) approach was chosen as the best approach to conduct this scientific study.

Both models have gone through the data normality test and data multicollinearity test, s. Heteroscedasticity test is not conducted because data processing in both models uses the Random Effect Model (REM) approach or the Generalized Least Squared (GLS) approach. According to Widarjono (2009) if the selected panel data regression model is REM, it is assumed that the research model is free from heteroscedasticity problems because the GLS approach is used to cure heteroscedasticity problems.

The standard error value of the regression model (S.E. of Regression) Model 1 of 0.069262 and Model 2 of 0.068021 is smaller than the standard deviation value of the response variable Model 1 of 0.075933 and in Model 2 of 0.075977. According to Napitupulu et al. (2021), these conditions indicate that both regression models are valid as predictor models.

The coefficient of determination test results in Model 1 show the Adjusted R2 value of 0.167992 or rounded up to 16.80%. The coefficient of determination shows that the independent variables consisting of Financial Distress, Service Effectiveness, and Operational Efficiency are able to explain the Tax Avoidance variable by 16.80%, while the remaining 83.20% is explained by other variables outside Model 1 used in this study.

In addition, the coefficient of determination test results in Model 2 show an Adjusted R2 value of 0.198468 or rounded to 19.85%. The coefficient of determination shows that the independent variables consisting of Financial Distress, Service Effectiveness, and Operational Efficiency, as well as the moderating variable Capital Intensity are able to explain the Tax Avoidance variable by 19.85%, while the remaining 80.15% is explained by other variables outside Model 2 used in this study.

The results of the F test in Model 1 and Model 2 show the Prob F-statistic value of 0.000000 or smaller than α (0.05). This means that Financial Distress, Service Effectiveness, and Operational Efficiency together have a significant influence on Tax Avoidance.
In this study, the interaction test was also carried out through Model 2. This interaction test contains interaction elements resulting from multiplication between independent variables and moderation variables. The t-statistic test is conducted to determine empirically whether the Capital Intensity variable has the ability to strengthen the influence of the Financial Distress, Service Effectiveness, and Operational Efficiency variables on the Tax Avoidance variable or actually weaken the influence. The results of the t-statistic test can be seen in Table 3.

**Table 3. Results of t-statistic Test**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD</td>
<td>-0.072080</td>
<td>0.012272</td>
</tr>
<tr>
<td>PEL</td>
<td>-0.081451</td>
<td>0.029219</td>
</tr>
<tr>
<td>OPR</td>
<td>0.018225</td>
<td>0.022654</td>
</tr>
<tr>
<td>CI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FD*CI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PEL*CI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPR*CI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>0.001123</td>
<td>0.005370</td>
</tr>
<tr>
<td>DER</td>
<td>-0.047150</td>
<td>0.009830</td>
</tr>
<tr>
<td>ROE</td>
<td>0.515564</td>
<td>0.099816</td>
</tr>
<tr>
<td>C</td>
<td>-0.279973</td>
<td>0.128345</td>
</tr>
</tbody>
</table>

Source: Author's Processed Results (2024)

**Financial Distress has a significant negative effect on the Tax Avoidance**

From the t test estimation results, the probability value of the FD variable is 0.0000 or smaller than α (0.05), then the FD variable is significant to α (0.05) or Financial Distress has a significant effect on Tax Avoidance. The coefficient of the FD variable is -0.072080, meaning that Financial Distress has a negative effect on Tax Avoidance. The greater the scope of services and the number of customers will increase the attention of the Regional Government to company. The firm as a regionally owned company that is directly supervised by the Regional Government makes the
management more vigilant against violations of laws and regulations, one of which is tax regulations.

The concept of Bureaucratic Incentive Effect describes a situation where political connections lead to less aggressive tax measures. Political connections can increase business scrutiny. Policymakers, government, media and the public often monitor companies that build political connections. This scrutiny encourages businesses to avoid risky actions such as tax aggressiveness.

**Operational Efficiency has a positive and insignificant effect on Tax Avoidance**

The probability value of the OPR variable is 0.21075 or greater than \( \alpha \) (0.05), so the OPR variable is not significant to \( \alpha \) (0.05) or Operational Efficiency is not significant to Tax Avoidance. The coefficient of the OPR variable is 0.804514, meaning that Operational Efficiency has a positive and insignificant effect on Tax Avoidance. The assessment of the Operational Aspects includes an assessment of the production ratio, water loss rate, service operating hours, water pressure on house connections, and replacement of water meters. The operational aspect assessment indicators are not directly related to profitability and water sales so that they have no significant effect on management decisions in conducting Tax Avoidance.

**Capital Intensity weakens the negative effect of Financial Distress on Tax Avoidance**

The FD*CI variable is the interaction between the independent variable (FD) and the moderation variable (CI). Based on the results of the interaction test estimation, the probability value of the FD*CI variable is 0.00005 or smaller than \( \alpha \) (0.05), so the FD*CI variable is significant at \( \alpha \) (0.05). This means that the interaction between the independent variable Financial Distress and the moderating variable Capital Intensity has a significant effect on changes in the dependent variable Tax Avoidance. The coefficient of the FD*CI variable is 0.220656, meaning that the interaction between the Financial Distress and Capital Intensity variables has a positive effect on Tax Avoidance, it can be concluded that Capital Intensity weakens the effect of Financial Distress on Tax Avoidance.

The greater the value of the company’s fixed assets, the greater the depreciation expense. The amount of depreciation expense can reduce the company's net profit so that it can reduce the income tax that the company must pay. Management can choose the most profitable depreciation method for the company without violating generally accepted accounting policies. In the water treatment industry, fixed assets are very influential on production capacity, the greater the fixed assets of the company owned, the greater the production capacity. However, this does not fully apply to all companies, especially the firms whose fixed assets are mostly obtained from grants and assistance, so that the specifications of fixed assets received are not necessarily in accordance with natural conditions and the needs of the company in providing clean water. This results in an increase in depreciation expense not accompanied by an increase in real production results, so that an increase in sales is also not necessarily achieved.

**Capital Intensity is not able to moderate the negative effect of Service Effectiveness on Tax Avoidance**

The PEL*CI variable is the interaction between the independent variable (PEL) and the moderation variable (CI). From the results of the interaction test estimation, the probability value of the PEL*CI variable is 0.2321 or greater than \( \alpha \) (0.05), so the PEL*CI variable is not significant to \( \alpha \) (0.05). This means that the interaction between the Service Effectiveness and Capital Intensity variables has no significant effect on Tax Avoidance. The PEL*CI variable coefficient is -0.125306, meaning that the interaction between the Service Effectiveness and Capital Intensity variables has a negative effect on Tax Avoidance, it can be concluded that Capital Intensity does not moderate the effect of Service Effectiveness on Tax Avoidance. This
is because the indicators used in assessing the achievement of the service aspects are not related to the calculation of fixed assets.

Technical service coverage and customer growth are influenced by management's marketing strategy. The large number of customers also does not guarantee the large amount of fixed assets owned by the firms. Regional-Owned Enterprises in Water Supply serving district areas may have larger fixed assets than those serving city areas. However, the number of customers in district areas tends to be less than in city areas because many residents still prefer to use boreholes. In addition, the distribution of population in district areas is also wider than in city areas, so the distribution of clean water requires longer pipes. Customer complaint resolution relates to management policy in providing after-sales service to customers, this indicator is influenced by management response in handling complaints to increase customer loyalty.

**Capital Intensity strengthens the positive effect of Operational Efficiency on Tax Avoidance**

The OPR*CI variable is the interaction between the independent variable (OPR) and the moderation variable (CI). From the interaction test estimation results, the probability value of the OPR*CI variable is 0.02875 or smaller than α (0.05), so the OPR*CI variable is significant to α (0.05). This means that the interaction between the Operational Efficiency and Capital Intensity variables has a significant effect on Tax Avoidance. The coefficient of OPR*CI variable is 0.191058, meaning that the interaction between Operational Efficiency and Capital Intensity variables has a positive effect on Tax Avoidance, it can be concluded that Capital Intensity strengthens the effect of Operational Efficiency on Tax Avoidance.

Operational Efficiency partially has a positive and insignificant effect on Tax Avoidance, but after interacting with Capital Intensity as a moderator, Operational Efficiency has a significant positive effect on Tax Avoidance. This shows that Capital Intensity can strengthen the positive effect of Operational Efficiency on Tax Avoidance. The indicators used to assess the achievement of operational aspects of firm’s performance are directly related to the condition and amount of the company's fixed assets, namely an assessment of the production ratio, water loss rate, service operating hours, water pressure on house connections, and replacement of water meters. The greater the amount of fixed assets, the greater the depreciation expense. In addition, management can choose the most profitable depreciation method for the company without violating the accounting rules that apply to companies.

**CONCLUSIONS**

Financial Distress variable with Springate Score (S-Score) proxy has a significant negative effect on Tax Avoidance variable. The more distress a company is, the less opportunity management has to do Tax Avoidance. Human resources at Regional-Owned Enterprises in Water Supply are not very familiar with taxation, so they do not make many efforts to reduce tax costs by utilizing multi-interpretation articles. In addition, Regional-Owned Enterprises that may experience bankruptcy will receive additional capital participation from the local government so that they can continue to serve the community.

The Service Effectiveness variable has a significant negative effect on Tax Avoidance. The greater the scope of services and the number of customers will increase the attention of the Regional Government to the company. The Bureaucratic Incentive Effect explains the situation when political relations have an impact on lower aggressive tax actions. Political connections can increase business scrutiny. Policymakers, government, media and the public often monitor companies that build political connections. This scrutiny encourages businesses to avoid risky actions such as tax aggressiveness.
Operational Efficiency variable has a positive and insignificant effect on Tax Avoidance. Indicators of operational aspect assessment are not directly related to profitability and water sales so that they have no significant effect on management decisions in conducting Tax Avoidance.

Capital Intensity weakens the negative influence of Financial Distress on Tax Avoidance. The greater the value of the company's fixed assets, the greater the depreciation expense. The amount of depreciation expense can reduce the company's net profit so that it can reduce the income tax that the company must pay. Capital Intensity is not able to moderate the negative effect of Service Effectiveness on Tax Avoidance. This is because the indicators used in assessing the achievement of the service aspects are not related to the calculation of fixed assets. Capital Intensity strengthens the positive effect of Operational Efficiency on Tax Avoidance. The greater the amount of fixed assets, the greater the depreciation expense. In addition, management can choose the most profitable depreciation method for the company without violating the accounting rules that apply to the company.

Suggestions

For academics, it is recommended to develop variables and research objects, so that they can better describe the problem of tax avoidance in Regional-Owned Enterprises. For State Development Audit Agency, it is recommended to explore accounting reporting related to fixed assets and depreciation expenses reported by the firms because there is a gap in tax avoidance practices through fixed asset management. The Ministry of PUPR is advised to pay more attention to the specifications and conditions of fixed assets or other assistance provided to the company so that they are in accordance with the needs of the company. Fixed assets that are donated are expected not only to increase the depreciation burden but also to increase company productivity. The local government is advised to map the health level of Regional-Owned Enterprises and monitor the level of tax compliance in Regional-Owned Enterprises to further make restructuring efforts for Regional-Owned Enterprises that comply with tax regulations. In addition, the local government is advised to provide adequate supervision in relation to capital participation in the company. Regional tax authorities are advised to provide intensive technical guidance to the management so that management understands the role of Regional-Owned Enterprises in the national economy so as to minimize tax avoidance practices, especially through fixed asset management.

REFERENCES


