The Effect of Fixed Asset Intensity, Transfer Pricing, and Institutional Ownership on Tax Aggressiveness

Nining Yuniati
Sekolah Tinggi Pariwisata Ambarrukmo (STIPRAM) Yogyakarta
E-mail : niningyuniati@stipram.ac.id

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Abstract: *This study aims to inform the government, companies as taxpayers, and academics about the risks and factors that influence tax aggressiveness. This study is a descriptive quantitative study with secondary data from financial statements of basic materials sector companies listed on the Indonesia Stock Exchange for the period 2021-2024. With the E-views 12 tool, panel data is estimated to obtain a Random Effect Model. Hypothesis testing indicates that fixed asset intensity has a significant and positive effect on tax aggressiveness. The transfer pricing and institutional ownership variables in this study do not affect tax aggressiveness.*

INTRODUCTION

Indonesia is a vast country stretching from the west of Sabang to the east of Merauke, with a population growth of 281 million people according to BPS data (2024), making this country experience various challenges in achieving social welfare. Therefore, the government is trying to realize social welfare by involving the community to participate. According to Indonesian law, the government has the right to collect contributions from residents called taxes.

Taxes are used as a source of state financing which can be seen in the data not only for finance, but also to control economic and social activities, maintain economic balance, and create equal distribution of income and wealth (Sihombing & Sibagariang, 2020). According to BPS data, 80% of the State Expenditure and Spending Budget comes from taxation. So with this data, tax revenue is very important for Indonesia's sustainable development and economy.

However, it is not easy to achieve maximum tax revenue, this is indicated by the performance of state tax revenue, namely the tax ratio, which functions to estimate the amount of tax in the economy (Wulandari, 2022). The higher the tax ratio, the more money the state budget (APBN) can allocate for various state needs, such as facilities or development. Based on Indonesia's tax ratio, it is still relatively low at 10.31% and 10.07% in 2023 and 2024 (IKPI, 2025). This figure is below the minimum figure of 15% according to PERTAPSI in the APBN Overview (2023), one of which is caused by aggressive tax actions that are detrimental and reduce state revenues (Kusuma & Maryono, 2022). Based on Indonesia's self-assessment system, taxpayers are responsible for calculating and reporting their tax obligations, while the government provides taxpayers with the knowledge and tools they need to meet their tax obligations, as well as strict rules and regulations. The government is also tasked with monitoring and enforcing regulations related to taxpayer compliance. However, from the taxpayer's perspective according to Sutedi (2016), taxes reduce their ability to manage capital for the purpose of consuming goods and services, so taxpayers aim to pay the lowest possible taxes, whether in accordance with tax regulations or not.

According to Putra (2019), corporate taxpayers pay income tax as part of their operational expenses. Taxes, as a large burden, have an impact on the company's net profit given to shareholders. Thus, taxes reduce the profit that the company can allocate for dividends or reinvestment. Thus, economically, taxes act as a factor in reducing profits that can be allocated for dividends or reinvestment by the company. Therefore, companies plan strategies to reduce their tax burden (Rahayu & Kartika, 2021). Tax aggressiveness is considered as steps to minimize or avoid tax payments motivated by different interests between taxpayers and the government (Wulandari, 2022). All of these actions are the result of regulatory weaknesses that allow for different interpretations of the rules (Septiawan et al., 2021). One indication of a tax burden reduction device is depreciation. As per accounting provisions, depreciation is an operational cost that can reduce gross income. Khairunnisa et al. (2023) argue that the more depreciation is recorded, the less tax costs are borne. Research conducted by Mariana et al. (2021) concluded that fixed asset intensity has a positive effect on tax aggressiveness planning. However, a study by Putri et al. (2024) found that fixed asset intensity has a negative effect on tax aggressiveness. Meanwhile, research by Kamil & Masripah (2022) found that fixed asset intensity does not affect tax aggressiveness. Transfer pricing is currently a major topic in tax audits, both in Indonesia and globally. Taxpayers avoid taxes through transfer pricing practices that are contrary to the principles of fairness and business customs (DDTCNews, 2024). In determining transaction prices with related parties, companies are permitted to apply transfer pricing with the principles of fairness and business customs (PMK No.172/2023). The company's corporate income tax obligations are lower due to unfair transaction pricing and reduce taxable income, which then increases the company's tax aggressiveness value, this action is illegal and violates the law (Siahaya & Salsalina, 2024). A study conducted by Mayangsari et al. (2024) proved that tax aggressiveness is influenced in one direction (positively) by transfer pricing. However, the study by Nuryatun & Mulyani (2021) produced contradictory findings, namely that transaction pricing (transfer pricing) has no relationship to tax aggressiveness. Another factor indicated to influence tax aggressiveness is institutional shareholders. Institutional ownership can make agreements with managers to achieve short-term profit targets, including through tax aggressiveness. Companies with high institutional ownership may take advantage of this to identify legal loopholes and minimize tax liabilities (Khan & Nuryanah, 2023). In a study conducted by Migang & Dina (2020), institutional ownership has a positive effect on tax aggressiveness. However, according to Alkausar et al. (2021), institutional ownership has no effect on tax aggressiveness.

The substantial impact of the phenomenon of tax aggressiveness on state revenues and the fairness of the tax system makes it a serious concern for a number of stakeholders, including the government, taxpayers, and academics (Siahaya & Salsalina, 2024). In order to create effective regulations that maximize tax collection while thwarting detrimental tax avoidance activities, the government must have a comprehensive understanding of tax aggressiveness. However, in order to handle tax responsibilities as efficiently as possible and in accordance with applicable laws, taxpayers must also be aware of the nature and dangers of tax aggressiveness. The scientific basis for creating an efficient tax management plan must also be provided by comprehensive academic research on tax aggressiveness. With the various benefits that will emerge, this research was carried out. The study focuses on companies in the basic materials sector, companies that sell products and services that are used as raw materials by other industries. Companies in this sector often experience fluctuations due to various factors, both internal and external, such as global demand, trade policies, and geopolitical tensions. So that it can trigger tax aggressive actions to minimize the company's tax burden and reduce company costs. Based on the description mentioned previously, especially regarding the phenomena and research related to factors that influence tax aggressiveness, in fact, it still shows inconsistency or research gaps, which then encourages researchers to conduct further research.

Hypothesis:
H1: Fixed asset intensity has a positive effect on tax aggressiveness.
H2: There is a positive influence of transfer pricing on tax aggressiveness.
H3: There is a positive influence of institutional ownership on tax aggressiveness.

METHOD

In this study, the research method is quantitative descriptive with panel data regression to determine the relationship between variables using the E-views 12 tool. The dependent variables of this study are fixed asset intensity, transfer pricing, and institutional ownership, and tax aggressiveness as independent variables. Financial statements (LK) of companies operating in the basic materials industry listed on the IDX for the period 2021 to 2024 are used as secondary data. In the sample selection process, purposive sampling was used which resulted in 19 selected companies, the criteria are as follows.

1. Companies in the basic materials sector that released their complete financial reports between 2021 and 2024.
2. Companies in the basic materials sector that experienced profits between 2021 and 2024.
3. Companies in the basic materials sector that present data on the needs of research variables.

Descriptive statistical tests were carried out at the beginning of the analysis process to provide an overview of the basic nature of the variables used in the study. Furthermore, the parameters of the regression model will be estimated using the Chow test, the Hausman test and the LM test. To determine the best model such as Common Effect Model or CEM, Fixed Effect Model or FEM and Random Effect Model or REM. Then test the classical assumption to confirm the data is normally distributed and meets the criteria of good research data. Partial hypothesis test to evaluate the effect of each independent variable on the dependent variable separately.

RESULT AND DISCUSSION

Descriptive Statistics Results

The descriptive test results are shown in the table below:

Table 1. Descriptive Statistics

	ETR	AT	TP	KINS
Mean	0.213217	0.399010	0.305625	0.507653
Median	0.220094	0.357276	0.086760	0.557914
Maximum	0.399924	0.814416	1.000000	0.923162
Minimum	0.014682	0.049565	0.001074	0.074282
Std. Dev.	0.074336	0.237919	0.377913	0.249215
Skewness	-0.399846	0.103859	0.859741	-0.359342
Kurtosis	4.330055	1.675826	2.032315	2.204352
Jarque-Bera	7.627085	5.689184	12.32794	3.640277
Probability	0.022070	0.058158	0.002104	0.162003
Sum	16.20451	30.32477	23.22748	38.58162
Sum Sq. Dev.	0.414437	4.245417	10.71135	4.658110
Observations	76	76	76	76

Tax aggressiveness (ETR) is considered to have low variability and fluctuation because its average value (mean) is 0.213> 0.074 standard deviation, the minimum value is 0.0147 by PT Pabrik Kertas Tjiwi Kimia Tbk (TKIM) in 2022, and the maximum value is 0.399 owned by PT Semen Indonesia Tbk (SMGR) in 2021. Then the skewness and kurtosis values are -0.399 and 4.33, respectively. The fixed asset intensity has an average of 0.399> 0.24 standard deviation is 0.238, the minimum data value of 0.05 is found in PT Tembaga Mulia Semanan Tbk (TBMS) in 2024 and the maximum in 2023 by PT Semen Baturaja Tbk 0.814. This shows that the fixed asset intensity has very low variation and fluctuation. 0.104 is the skewness value and 1.676 is the kurtosis value.

Transfer pricing shows high variability and fluctuation with a mean value of 0.306 <0.378 standard deviation. 0.001 as the minimum value is owned by PT Indo Acidatama Tbk (SRSN) in 2022. A value of 1.00 owned by PT Vale Indonesia Tbk (INCO) makes it the maximum value. The skewness value is 0.86 and kurtosis is 2.03.

The average (mean) value of institutional ownership is 0.508> 0.249 standard deviation, indicating that institutional ownership has very small variations and fluctuations. The minimum data value of 0.074 is found in PT Semen Batubara Tbk (SMBR), while the maximum value reaches 0.923 by PT Cita Mineral Investindo Tbk (CITA). Skewness and kurtosis are -0.359 and 2.204.

Model Selection Results

1. Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	5.776863	(18,54)	0.0000
Cross-section Chi-square	81.586514	18	0.0000

Figure 1. Chow Test

The resulting cross-section Chi-square probability value is smaller than alpha 0.05 is 0.000 according to the Chow test results. Thus, the FEM model has been selected.

2. Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	6.887607	3	0.0756

Figure 2. Hausman Test

The cross-section probability value, which is 0.0756 according to the Hausman test results, shows that the prob. value is higher than alpha (0.0756>0.05). This indicates that the REM model is selected.

3. Lagrange Multiplier Test

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	22.56380 (0.0000)	1.025984 (0.3111)	23.58979 (0.0000)

Figure 3. LM Test

The Breusch-Pagan cross-section probability value is (0.00<0.05). Thus, the Random Effect Model (REM) was chosen as the most effective estimation model to explain this study.

Results and Discussion of Hypothesis Testing

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.100776	0.029094	3.463744	0.0009
AT	0.236119	0.038129	6.192633	0.0000
TP	0.004392	0.023053	0.190494	0.8495
KINS	0.033262	0.033549	0.991440	0.3248

Figure 5. Random Effect Model

Discussion H1

Statistical processing for the AT variable, the probability value is 0.00, it is concluded that H1 is accepted (probability <0.05). The fixed asset intensity coefficient has a value of 0.236. This coefficient indicates that for every one unit increase in fixed asset intensity, ETR is predicted to increase by 0.147 assuming other independent variables (transfer pricing and institutional ownership) are constant. Fixed asset intensity shows a positive and significant effect on tax aggressiveness. Consistent with the tests carried out by Migang & Dina (2020), Nuryatun & Mulyani (2021). Fixed asset intensity data shows low variation, the value is close to the mean of 0.399, which can be concluded that basic materials companies have fixed assets that tend to be high. These fixed assets, such as machinery, buildings, and equipment, not only increase production capacity but also generate large tax savings through the depreciation method. Depreciation is a method of allocating the cost of fixed assets over their useful life, which can be used to lower taxable income. Businesses can successfully lower tax liabilities by using depreciation expense. Because they can maximize capital expenditures to obtain tax benefits. In this case, depreciation is a loophole in the law that is utilized for tax planning to increase the company's tax efficiency in addition to being an accounting calculation. Although an aggressive strategy by utilizing depreciation can reduce taxes, there are risks associated with tax audits and potential sanctions.

Discussion H2

This statistical test decided that H2 was rejected, with a probability result of 0.8495 which is higher than alpha 0.05 and a regression coefficient value of 0.0044, this coefficient indicates that for every one unit increase in transfer pricing, ETR is predicted to increase by 0.0044 assuming other independent variables (fixed asset intensity and institutional ownership) are constant. With these results, it shows that low and high transfer pricing values do not affect tax aggressiveness. Management and principals agree to prioritize the company's long-term reputation through a transfer pricing policy that focuses more on persistence and legal compliance than on tax aggressiveness.

Companies that adopt a more compliance-oriented approach can reduce the legal risks and reputational consequences of tax aggressiveness. This has the ability to strengthen shareholder and stakeholder trust in the company's leadership. For companies, this shows that determining transfer pricing in accordance with legal regulations can help avoid the risk of tax aggressiveness. For policy makers, these results can be a consideration in formulating better tax regulations, by paying attention to transparent and fair transfer pricing practices. The results of this test do not support the findings of Nur et al. (2021) and Putri et al. (2024), who concluded that tax aggressiveness is influenced by transfer pricing factors.

Discussion H3

The coefficient of institutional ownership (KINS) has a value of 0.033. This coefficient indicates that for every one unit increase in institutional ownership, ETR is predicted to increase by 0.033 assuming other independent variables (fixed asset intensity and transfer pricing) are constant. With the results of the partial probability t-statistic test being ($0.3248 > 0.05$), indicating that institutional ownership has no effect on tax aggressiveness, inconsistent with research by Mayangsari et al. (2024) who tested similar variables of institutional ownership on tax aggressiveness, but concluded that it had a positive effect.

Thus, this study provides an understanding that basic materials companies that have institutional shareholders, both low and high, have become supervisors of actions that can pose legal and reputational risks to the company. Institutional investors tend to focus more on the company's long-term performance and may not encourage aggressive practices that can harm the company's reputation. This finding can have important implications for companies and policy makers.

For companies, this suggests that having institutional shareholders can encourage more ethical and transparent tax practices. For policy makers, these results can be a consideration in formulating better tax regulations, by considering the role of institutional ownership in tax management. This study supports the same conclusion as the study (Alkausar et al., 2021).

CONCLUSION

This study shows that there is a significant positive correlation between fixed asset intensity and tax aggressiveness. This suggests that businesses that have a small or large proportion of fixed assets tend to be more aggressive in planning their tax liabilities and utilizing fixed assets as part of a tax planning strategy to take advantage of various available tax incentives. This study found that transfer pricing has no impact on tax aggressiveness. This may be because companies comply with applicable tax regulations in their transfer pricing practices. Then institutional investors choose to be supervisors of management policies so that companies implement ethical and transparent tax practices, not encouraging tax aggressiveness. Therefore, institutional ownership does not have a significant effect on tax aggressiveness. Given its positive effect on tax aggressiveness, companies should consider managing their fixed assets wisely. However, to avoid legal and reputational risks, companies must also continue to comply with applicable tax regulations. Businesses still need to implement transfer pricing practices transparently and in accordance with the guidelines set by the tax authorities, even though transfer pricing does not show an effect on tax aggressiveness. To ensure compliance and reduce the potential for tax avoidance, laws regarding transfer pricing must continue to be updated and adjusted to developments in business practices. The government is expected to be able to reform tax laws more efficiently in order to increase Indonesia's tax ratio.

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