

Determinants of Tax Aggressiveness in Non-Service Companies Listed On IDX From 2021 to 2023

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ABSTRACT: Tax aggressiveness is a tax planning action that can be legal with tax avoidance or illegal with tax evasion. The aggressive action against taxes appears due to different interests between the government and the taxpayer. This study aims to analyze the effect of fixed assets intensity, inventory intensity and firm size on tax aggressiveness with control variables profitability and sales growth. This study uses agency theory as the grand theory and positive accounting theory as a supporting theory. The object of this research is non-service companies listed at the Indonesia Stock Exchange for the period 2021-2023 with a total of 1,096 observations. The sampling method uses purposive sampling and data analysis using multiple linear regression analysis with software STATA 17. The results of this study indicate that the fixed assets intensity variable has no effect on tax aggressiveness. inventory intensity variable has a positive effect on tax aggressiveness, and the firm size variable has a negative effect on tax aggressiveness.

KEYWORDS: Fixed assets intensity, Inventory intensity, Firm size, Tax aggressiveness.

I. INTRODUCTION (SIZE 10 & BOLD)

OECD reports that Indonesia's tax ratio is still low and slightly behind other countries. In 2022 tax ratio of Indonesia is 12.1% and still below the average of countries in Asia Pacific and 34% lower than the OECD average. The tax ratio is still fluctuating in the last 4 years. In 2020 Indonesia's tax ratio was at 8.33%, then in 2021 it increased to 9.11%, the increase continued in 2022 to 10.39%. Meanwhile, in 2023 Indonesia's tax ratio decreased to 10.21%. The World Development Index also notes that Indonesia's Tax to Gross Domestic Product (GDP) rate in the last two decades is still around 8.3%-13.3%. But the ratio is still below the World Bank recommendation of 15%. Tax Justice Network as of November 2021 reported that Indonesia suffered annual tax losses of USD2,275,000,000 or around IDR31,850 trillion due to corporate tax avoidance. In 2023 the Tax Justice Network also reported that Indonesia experienced annual tax losses due to corporate tax abuse of USD2,736,500,000 or around IDR41,047.5 trillion. According to Falbo & Firmansyah (2018), one of the factors causing the low tax ratio and increasing state tax is the practice of tax aggressiveness by taxpayers. Finance Minister Sri Mulyani also stated that corporate taxpayers still use tax avoidance schemes, claiming to have losses and not paying taxes (Wildan, 2021)

The case of a company that is indicated to have committed acts of tax aggressiveness has been revealed again and has become a hot topic since 2021. In 2021, PT Antam was caught in an alleged case of tax evasion that cost the state IDR 2.9 trillion. PT Antam is suspected of committing tax evasion on gold import transactions worth IDR 47.1 trillion. This transaction should have been subject to import duty of 5% and import income tax of 2.5%. PT Antam took a tax-aggressive action by changing the import code for gold products from Singapore, so that it was free from import duties and import income tax. PT Perusahaan Gas Negara Tbk (PGN) was also caught in a tax avoidance case again in 2021. Since 2012, PT Perusahaan Gas Negara Tbk (PGN) has been involved in a tax dispute with the DGT worth IDR 6.88 trillion. The tax dispute between PT PGN and the DGT is caused by differences in interpretation of the provisions of PMK-252/PMK.011/2012 regarding the obligation to collect VAT on the delivery of natural gas and its collection mechanism. Transparency International Indonesia (TII) reported that potential losses due to Indonesia's tax evasion reached IDR 22.83 trillion in the palm oil sector. The palm oil sector is the prima donna of Indonesia's export commodities and has been indicated to have committed tax aggressiveness due to the manipulation of plantation land reporting. This phenomenon of tax aggressiveness became one of the world's highlights so that it was discussed at the G20 Summit in Gujarat India in 2023. The issue discussed was to create a Base Erosion and Profit Shifting (BEPS) framework as an effort to maintain the tax base of member countries.

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Tax aggressiveness is an act of avoiding taxes with tax planning actions (tax planning) either in the form of legal tax avoidance (tax avoidance) or illegal tax evasion (tax evasion) (Suryowati, 2022: 83). According to Mappadang (2021: 16), the causes of tax aggressiveness are tax loopholes and grey areas in tax regulations. Loopholes or gaps in tax regulations become grey areas that become a vehicle for opportunistic actions for taxpayers. The difference in interests between the tax authorities (government) and taxpayers is a major factor in the practice of tax aggressiveness. The self-assessment system in the tax system also provides opportunities for taxpayers to take opportunistic actions by being aggressive towards taxes. The difference in interests between the tax authorities (government) who want tax revenue to increase as opposed to taxpayers who want their tax burden to be low. Companies as corporate taxpayers will have a different orientation towards taxes. The company management definitely tends to take action to reduce the taxes that need to be paid. So there are several factors that can be a strategy for taking tax aggressiveness.

According to Wulandari (2022), one of the strategies for taking tax aggressiveness is through the selection of accounting policies that are able to generate costs that will reduce the tax burden (deductible expenses). The costs that are deductible expenses are costs related to operational activities, such as depreciation costs, storage costs, labor costs, and others. Depreciation costs arise due to assets, so the higher the number of assets, the higher the depreciation costs charged. In addition, the quantity of inventory procurement such as storage costs, maintenance costs, labor costs, transportation costs, and production costs may also increase. Companies can choose alternative accounting procedures to increase or decrease these costs as a strategy to reduce corporate taxable income.

II. LITERATURE REVIEW

A. Agency Theory

Agency theory, proposed by Jensen and Meckling (1976), defines the agency relationship as a contractual agreement between the principal and the agent. Agency theory describes the principal and agent as two entities focused on maximizing utility. If these two parties have the same goal, then both parties will support each other. Conversely, if the goals are different, then agency conflict occurs due to the desire to achieve each other's goals. In the context of taxation, the principal is the government, while the agent is the taxpayer. According to Krisnugraha et al. (2022) the principal wants tax revenue to be maximized, while the taxpayer tries to keep the tax paid low. According to Eisenhardt (1989), there are 3 assumptions used to explain agency theory, namely human nature assumptions, organizational assumptions, and information assumptions. Tax aggressiveness occurs due to information assumptions due to information asymmetry between the principal and the agent. Scott (2000) explains that information asymmetry is divided into 2, namely adverse selection (company management has complete company condition information compared to the government) and moral hazard (company management can fully supervise company operations compared to the government). This information asymmetry creates agency problems between the government and taxpayers. Grey area in tax regulations can be used by companies to take opportunistic actions in the form of tax aggressiveness (Alkausar et al., 2023).

B. Positive Accounting Theory

Positive accounting theory purposed by Watts & Zimmerman in 1986, explains a method to overcome future circumstances by choosing alternative accounting procedures to achieve certain goals. Watts & Zimmerman (1990) established the existence of 3 positive accounting theory hypotheses. namely the bonus plan hypothesis, the debt contract hypothesis and the political cost hypothesis. The act of tax aggressiveness in the view of theory is explained in the political cost hypothesis. The relationship between the government and the company (taxpayer) raises tax costs as political costs. The company will try to minimize the tax costs that must be paid to the government by taking tax aggressiveness actions. Positive accounting theory provides management freedom in choosing alternative accounting procedures to minimize the tax costs borne by the company (Purba & Kuncahyo, 2021). The deductible expenses aspect is a way to apply accounting procedures so that costs can be recognized in the desired period. Deductible expenses can automatically reduce taxable income (PKP) so that the tax burden decreases as the costs increase (Sari & Indrawan, 2022)

C. Tax Aggressiveness

Tax aggressiveness is an act of avoiding taxes with tax planning actions either in the form of legal tax avoidance or illegal tax evasion (Suryowati, 2022: 83). The act of tax aggressiveness is carried out to reduce taxable income (PKP) through illegal or legal actions so that the tax burden paid is lower than it should be. The company considers the tax burden to be an additional burden that can reduce company profits.

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D. Fixed Assets Intensity

Fixed assets intensity or corporate asset intensity is the investment action of a company in the form of fixed assets (Efrinal & Chandra, 2020). Fixed assets intensity ratio reflects the level of efficiency of the company in using its assets to generate sales (profit) (Nur & Djaddang, 2021). Companies with high fixed asset ownership can generate high depreciation expenses on assets, which can reduce company profits (Wulandari, 2022).

E. Inventory Intensity

Inventory Intensity or inventory intensity shows the level or amount of investment of a company's wealth in its inventory (Ningsih & Noviani, 2022). Inventory can cause company expenses related to inventory procurement, so the higher the inventory, the more deductible expenses there will be (Nur & Djaddang, 2021). Inventory costs include production costs, storage and maintenance costs, labor costs, and others that can be a deduction from taxable income (PKP).

F. Firm Size

Firm size is a scale that classifies company size by looking at total assets, total sales or stock market value (Siswanto et al., 2021). According to Saifudin & Yunanda (2016) in research Siswanto et al. (2021) company size can be divided into 3, namely large companies, medium companies and small companies. The larger or smaller the company can affect its view of taxes. Company size also brings stakeholder attention to the company so that in taxes the company can be compliant or aggressive (Pranata et al., 2021).

G. Effect of Fixed Assets Intensity on Tax Aggressiveness

Company management always tries to increase company profits to maximize company value but does not want a high tax burden. This causes company management to take risks by implementing aggressive tax strategies (Masa et al., 2024). Company management will make large investments in fixed assets to incur costs that will reduce taxable income. This is supported by positive accounting theory, which states that Fixed assets intensity is a management strategy to increase fixed asset investment, thereby reducing the tax burden through depreciation (Tanjaya & Jati, 2023). Company investment in fixed assets can generate depreciation expense, the amount of which varies according to the classification of assets based on tax regulations (Wulandari, 2022). Research conducted by Efrinal & Chandra (2020), Sugeng et al. (2020), Afiana & Mukti (2020), Siswanto et al. (2021), Wulandari (2022), Marlina et al. (2022), Yusuf et al. (2022), Sulistyoningsih (2023) prove that Fixed assets intensity has a positive effect on tax aggressiveness. The higher the fixed assets intensity owned by the company, the higher the depreciation expense used as a deduction for taxable income (PKP). This will cause the tax burden borne by the company to be lower.

H1: Fixed assets intensity has a positive effect on tax aggressiveness

H. Effect of Inventory Intensity on Tax Aggressiveness

Management will seek to maximize additional costs by charging additional costs from inventory to reduce taxable income (Maulana et al., 2022). Investing in inventory is also an application of positive accounting theory. PSAK 202 concerning Inventory, states that additional costs are recognized as expenses in the period in which they are incurred, so the company will pay lower taxes when its profits fall. High Inventory Intensity which can minimize tax burdens and higher profits in future periods due to inventory stock allocation (Wulandari, 2022). Research conducted by Suhendar et al. (2022), Marlina et al. (2022), Saputra et al. (2023), dan Ningrum & Oktavianna (2024) found that inventory intensity has a positive effect on tax aggressiveness. The higher the inventory intensity owned by the company, the higher the inventory procurement burden. This becomes deductible expenses that reduce the company's taxable income in that period.

H2: Inventory Intensity has a positive effect on tax aggressiveness

I. Effect of Firm Size on Tax Aggressiveness

Agency theory views that a company that has a large size in terms of a large number of assets will attract more attention from stakeholders, especially the government, to monitor the company, so that two possibilities arise, namely compliances or tax avoidance (Siswanto et al., 2021). Company size is related to tax aggressiveness in the view of positive accounting theory explained when companies want to convince the government that their profits are not too large by adopting alternative income-decreasing accounting policies (Wulandari, 2022). The company's reputation will also be good in the eyes of the public when it complies with tax regulations. Taking tax aggressiveness actions can lead to cases that reduce public trust in the company. Research conducted by Krisnugraha et al. (2022), Prihanto et al. (2022), Sumiati et al. (2023), Maulida et al. (2023), Khan & Nuryanah (2023) Rombe & Susanti (2023), found that company size has a negative effect on tax aggressiveness.

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Company size is inversely related to tax aggressiveness, because the larger the size of the company, it will be in the public spotlight so that the published reports will be more accurate.

H3: Company size has a negative effect on tax aggressiveness

III. METHODOLOGY

A. Object of Research

The objects to be studied in this study are all non-service companies listed on the Indonesia Stock Exchange (IDX) for the 2021-2023 period. The data collection technique used for this research is non-participant observation, where researchers collect financial report data on the IDX official website www.idx.co.id and the official websites of related companies. The sampling method used is purposive sampling method, which is a sampling method using certain criteria. The samples of this study are as follows.

Table 1 Sampling Criteria

Description	Total		
	2021	2022	2023
Population:			
Companies listed on IDX period 2021-2023	766	823	902
Kriteria:			
1. The service sector companies that are listed on the Indonesia Stock Exchange (IDX) for the period 2021-2023,			
a. Energi Sector	(8)	(8)	(8)
b. Basic Materials Sector	(1)	(1)	(1)
c. Industry Sector	(16)	(17)	(20)
d. Consumer Non-Cyclicals Sector	(0)	(2)	(2)
e. Consumer Cyclicals Sector	(64)	(65)	(70)
f. Health Sector	(12)	(17)	(20)
g. Finansial Sector	(103)	(104)	(104)
h. Property & Real Estate Sector	(6)	(6)	(6)
i. Technology Sector	(23)	(27)	(33)
j. Infrastructure Sector	(57)	(61)	(66)
k. Transportation and Logistic Sector	(29)	(32)	(37)
2. Companies with fiscal losses during the observation period, namely 2021-2023,	(121)	(124)	(132)
3. Companies that suspension and delisting during the observation period.	(24)	(24)	(24)
Total sample in 3 years of observation	1.156		
Outlier Data	60		
Total research sample	1.096		

Source: data processed 2025

B. Research Variables

Table 2 Research Variables and Operational Descriptions

Operational Definition of Variables	Variable Proxy
Tax Aggressiveness (Y) Tactic that taken by companies to decrease or reduce the amount of tax that should be paid.	$NPM\ Index = \frac{Company\ NPM}{Industry\ NPM} \times 100\%$
Fixed assets intensity (X₁) The level of investment in fixed assets.	$CAPINT = \frac{Total\ Fixed\ Assets}{Total\ Assets}$
Inventory Intensity (X₂) The proportion of investment in inventory.	$INVIN = \frac{Total\ Inventory}{Total\ Assets}$
Firm Size (X₃)	$LnTA = Ln\ Total\ Assets$

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Firm size is a scale to classify the size of companies.	
Control Variable: 1. Profitability The ability of companies to generate profits from their operational activities. 2. Sales Growth The percentage increase or decrease in sales revenue of companies.	$ROA = \frac{\text{Net Profit}}{\text{Total Asset}}$ $\text{Sales Growth} = \frac{\text{Sales}(t) - \text{Sales}(t-1)}{\text{Sales}(t-1)}$

C. Data Analysis Technique

Multiple linear regression analysis used STATA 17 program for analysis. The analysis includes classical assumption testing, panel data regression model selection, and descriptive statistical analysis are all included in this study's analysis.

$$\text{NPM Index} = \alpha + \beta_1 \text{CAPINT} + \beta_2 \text{INVIN} + \beta_3 \text{LnTA} + \text{ROA} + \text{Sales Growth} + \epsilon$$

IV. RESULT AND DISCUSSION

The descriptive statistics analysis information contained is the average value, standard deviation, maximum and minimum values. The following are the results of descriptive statistical analysis of this study.

Table 3 Descriptive Statistics Analysis

Variable	Observation	Mean	Standard Deviasi	Minimum	Maximum
Tax Aggressiveness	1.096	0,840622	0,7417689	0,00131	4,625895
Fixed Assets Intensity	1.096	0,300622	0,2112709	0,0010435	0,798851
Inventory Intensity	1.096	0,1945375	0,1521449	0,0004945	0,8355348
Firm Size	1.096	28.42283	1,948693	23,30717	33,73062
Profitability	1.096	0,0710611	0,0622771	0,0030968	0,2294913
Sales Growth	1.096	0,2616197	0,3993707	-0,2175796	1,391115

Sources: Data processed, 2025

The normality test in this study uses the *Skewness / Kurtosis* statistical test with the results of a probability value of 0.000 < 0.05. Which means that the data is not normally distributed. However, that can be ignored with the *Central Limit Theorem* (CLT) assumption. According to Pek et al. (2018) a large sample size (N>30) can be assumed that the sample mean distribution will be close to normal distribution. So that the normality test on a large sample does not really affect the research results. The multicollinearity test is uses VIF. The results show that the average VIF value of this study is 3.82<10.0, so there are no symptoms of multicollinearity or pass the multicollinearity test. The Autocorrelation test in this study uses the *Wooldridge Test* which produces a probability value of 0.0000 < 0.05 which indicates a correlation between variables. According to Hoechle (2007) if there are symptoms of autocorrelation in research, it can be overcome by doing *robust standard errors*. So that *robust standard errors* are carried out on the regression model and autocorrelation symptoms can be overcome. The heteroscedasticity test in this study uses the *Wald Test* which produces a probability value of 0.0000 < 0.05 which indicates the presence of heteroscedasticity symptoms. The presence of autocorrelation and heteroscedasticity symptoms simultaneously in the panel data regression model means that the regression model is not BLUE. To overcome this is to perform *robust standard errors* (Kiefer & Vogelsang, 2002). *Robust standard error* is a statistical method that aims to correct the calculation of standard errors without changing the estimated regression coefficients (Mansournia et al., 2021).

Table 4 Multiple Linear Regression Analysis Results

Variable	Coefisien	Robust Standar Error	t	P>[t]
Fixed Assets Intensity	0,2225207	0,3285606	0,68	0,499
Inventory Intensity	-0,5954515	0,2795264	-2,13	0,034
Firm Size	0,1834932	0,065806	2,79	0,006
Profitability	9,498157	0,7362348	12,90	0,000

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Sales Growth	-0,1172158	0,0457636	-2,56	0,011
Constanta	-4,970114	1,950631	-2,55	0,011
Prob. > F	0,0000			
R-squared	0,4961			

Sources: Data processed, 2025

Effect of Fixed Assets Intensity on Tax Aggressiveness

The t-test result of fixed asset intensity is 0.499 that greater than the actual level of research, which is 0.05 (5%), as indicated by the results of the multiple linear regression analysis. The fixed assets intensity coefficient value is 0.2225207. This shows that the level of fixed assets intensity of companies sample has no effect on the NPM Index as a proxy for tax aggressiveness. These results cannot prove the first hypothesis (H1), so H1 is rejected. The findings of this study align with investigations carried out by Aini & Kartika (2020), Putri & Andriyani (2020), Sumiati & Ainniyya (2021), Pravitasari et al. (2022), Fransiska et al. (2024), Setiawati & Sunarmi (2024), and Setiawati & Lucia (2025) which state that fixed assets intensity has no effect on tax aggressiveness. High fixed assets intensity is used by companies for operational purposes. The company's fixed assets are used to support and improve company operations which will increase company profits. Companies invest in fixed assets as a strategy to optimize operational activities to increase production capacity and quality (Aini & Kartika, 2020). Fixed assets that are high in tax also have a useful life, so that when the useful life of fixed assets expires, the depreciation expense cannot be a tax deduction. Companies focus more on prioritizing long-term stability and sustainability by focusing on managing fixed assets for operational purposes. Tax aggressiveness can risk the sustainability and image of the company (Setiawati & Lucia, 2025). Investment in fixed assets can be in the form of additional land, buildings, machinery, and other equipment so that operational activities are growing (Firmansyah & Bahri, 2023).

Effect of Inventory Intensity on Tax Aggressiveness

The t-test result value of inventory intensity is 0.034 that lower than the actual level of research, which is 0.05 (5%). The inventory intensity coefficient value is -0,5954515. This can prove the second hypothesis (H2), inventory intensity has a positive effect on tax aggressiveness. Although the regression results have a negative coefficient, the research hypothesis stating a positive relationship between inventory intensity and tax aggressiveness is accepted. This occurs due to the non-linear relationship between the NPM Index and tax aggressiveness. So that the negative coefficient shows that the higher the inventory intensity of a firm, the lower the firm's NPM Index. A lower NPM Index indicates that the company is more aggressive (Adnyani & Astika, 2019). These results support agency theory and positive accounting theory which state that managers will always take opportunistic actions to reduce the tax burden due to differences in interests with the government. In addition, positive accounting theory is also proven in this study, namely the political cost hypothesis. Positive accounting theory views that management will manage the costs arising from high inventories, such as higher maintenance and storage costs. PSAK 202 concerning Inventories, states that additional costs are recognized as expenses in the period in which they are incurred, so the company will pay lower taxes when its profits fall. This is in line with the company's goal of choosing to invest in inventory so that inventory intensity is high which can minimize tax burdens and higher profits in future periods due to the allocation of inventory stock (Wulandari, 2022). High inventory intensity in a company will also cause high inventory costs (Maulana et al., 2022). High inventory also creates costs that must be borne by the company. These deductible expenses include material costs, labor costs, storage costs, production costs, sales costs, administrative and general costs, and transportation costs (Saputra et al., 2023). The higher the inventory intensity, the higher these costs will increase, which indirectly also reduces company profits. The results of this study are also in line with research conducted by Suhendar et al. (2022), Marlina et al. (2022), Putri & Nuswandari (2023), Saputra et al. (2023), and Ningrum & Oktavianna (2024) who found inventory intensity has a positive effect on tax aggressiveness. The more inventory increases, the greater the company's expenses will be, thereby reducing taxable income.

Effect of Firm Size on Tax Aggressiveness

The t-test result value of firm size is 0.000 that lower than the actual level of research, which is 0.05 (5%). The firm size coefficient value is 0,1834932. This can prove the third hypothesis (H3) firm size has a negative effect on tax aggressiveness. The positive coefficient on the research results shows that the larger the size of a company, the more the firm's NPM Index will increase. The higher NPM Index indicates that the company is less aggressive towards taxes, which is in line with the research hypothesis. The agency theory views that companies that with large size in terms of large assets will attract more attention from stakeholders, especially the government, to oversee the company, so that two possibilities arise, namely compliances or tax avoidance (Siswanto et al., 2021). Large companies consider more long-term effects. Compliance with paying taxes is a

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momentum for companies to build public image and trust because companies contribute indirectly to increasing national income (Kuncoro, 2021). Large companies have complex operational activities so that they have sufficient resources to fulfill their tax obligations. Company performance is also the center of public attention so that it is more careful in reporting its financial condition and tends to increase the principle of transparency (Khomsiyah et al., 2021). This is also in line with research conducted by Krisnugraha et al. (2022), Prihanto et al. (2022), Sumiati et al. (2023), Maulida et al. (2023), Khan & Nuryanah (2023), and Rombe & Susanti (2023) who found that company size has a negative effect on tax aggressiveness. The bigger the company, the more careful the company will be in taking risky actions such as tax aggressiveness.

CONCLUSION

This research examines how fixed assets intensity, inventory intensity, and company size influence tax aggressiveness. The NPM Index serves as a substitute for assessing corporate tax aggressiveness. This study utilizes 1,096 samples from firms listed on the IDX during 2021-2023. The initial hypothesis test reveals that fixed asset intensity does not influence tax aggressiveness. Companies utilize a high intensity of fixed assets to enhance their operational activities and increase profitability. The second hypothesis test indicates that inventory intensity positively influences tax aggressiveness. Elevated inventory levels lead to deductible costs, which in turn lowers taxable income. The third hypothesis test indicates that the size of a company negatively impacts tax aggressiveness. The greater the company size, the more the company adheres to regulations because of rigorous stakeholder supervision. Businesses strive to create a favorable reputation among the public. Based on the research findings, the author offers several recommendations. Future researchers are encouraged to further examine the influence of fixed assets intensity, inventory intensity, and company size on tax aggressiveness using different analytical approaches or more specific focuses. A deeper understanding of the relationships between variables can provide a more comprehensive understanding of how asset structure characteristics and business scale influence corporate tax strategies.

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