



The Impact of Earnings Management and Distress on Tax Aggressiveness: The Role of Company Size

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General Background: Taxes are a critical source of national revenue and play a central role in maintaining economic stability, particularly in emerging economies such as Southeast Asia. The growing intensity of corporate tax planning practices has created challenges in ensuring effective tax collection.

Specific Background: In Indonesia, corporations often perceive taxes as a financial burden, leading to strategic behaviors aimed at minimizing tax obligations. Such practices hinder the government's ability to achieve its fiscal targets.

Knowledge Gap: Although prior studies have examined various determinants of tax aggressiveness, limited research has integrated earnings management, financial distress, and thin capitalisation into a single analytical framework, particularly considering the moderating role of firm size.

Objective: This study investigates the influence of earnings management, financial distress, and thin capitalisation on corporate tax aggressiveness, while also exploring whether firm size moderates these relationships.

Methods: The study employs panel data from 19 raw material companies in Indonesia over the 2018–2022 period (145 firm-year observations), using multiple regression analysis with EViews 12.

Results: Earnings management and financial distress have a significant positive effect on tax aggressiveness, whereas thin capitalisation does not. Firm size moderates the effects of earnings management and financial distress, but not thin capitalisation.

Novelty: This research offers an integrated model that combines multiple financial dimensions to explain tax aggressiveness behavior. **Implications:** The findings provide strategic insights for policymakers and tax authorities to improve regulatory frameworks and strengthen oversight, especially in capital-intensive industries.

Keywords: Tax Aggressiveness, Earnings Management, Financial Distress, Thin Capitalization, Firm Size

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INTRODUCTION

The government consistently carries out national development which aims to improve the welfare of the community by building and improving various facilities and infrastructure. To achieve this goal, the development financing factor is very important. [Ilanoputri \(2020\)](#) argues that taxes have two main functions, namely the budget function and the income redistribution function which directly contributes to development. Tax is a fiscal mechanism that contributes to funding government expenditure, including ordinary administrative functions and development initiatives. In addition, the income redistribution function implies that taxes have a role in funding public goods and services, such as development initiatives, and have the potential to improve employment prospects and people's income. The Ministry of Finance targets tax revenue of IDR 2,016.9 trillion in the 2023 State Budget, or 82.53% of the overall state revenue target of IDR 2,443.6 trillion. This illustrates the large influence of taxes on the funding of development projects and overall state spending.

While the government aims to maximise tax revenue, firms see taxes as a burden that can reduce their overall income. These opposing interests lead to corporate non-compliance, which in turn affects the company's efforts to reduce its tax liability. Tax aggressiveness is a method used by companies to minimise their tax liabilities regardless of financial accounting objectives ([Karjalainen et al., 2023](#) and [Magfira & Murtanto, 2021](#)). In addition, recent bibliometric studies highlight the increasing academic focus on earnings management and tax avoidance, reflecting their important role in shaping corporate and regulatory practices ([Owusu et al., 2023](#)).

According to [Edwards et al. \(2016\)](#), tax aggressiveness refers to strategies used to minimise tax liabilities by exploiting loopholes in a country's tax regulations. This approach is considered legitimate by tax professionals because it does not violate tax regulations. This action has attracted public attention due to its inconsistency with public expectations and its potential to harm the state. The company's aim to reduce tax payments is in line with ethical standards, public concerns, and corporate goals. Despite the tax savings that benefit the company and its shareholders, tax aggressiveness can incur significant non-tax costs, especially in relation to the ownership and control structure of the company ([Annuar et al., 2014](#)).

According to the Tax Justice Network (2020), tax avoidance practices in Indonesia result in a loss of tax revenue of US\$4.86 billion or IDR69.1 trillion per year. According to Tax Justice Network's State of Tax Justice 2020 report, this figure represents 4.39% of Indonesia's overall tax revenue and 42.29% of total expenditure on health services. Several cases of tax evasion have come to light in Indonesia, including PT Toba Pulp Lestari (INRU). Investigators have found suspicions that the company was involved in manipulating export code data to transfer revenue between 2007 and 2016. As a result, the state suffered tax losses of IDR 1.9 trillion. Asia Pacific Resources International Holdings Ltd. (APRIL), in addition to PT Toba Pulp Lestari, which is Indonesia's second largest producer, is also suspected of similar behaviour. Based on our calculations, Indonesia is expected to receive IDR 838 billion (US\$ 60 million) in taxes from APRIL.

aggression, indicating that companies actively seek to avoid paying taxes. Earnings management, as defined by [Schipper \(1989\)](#) and [Susanto et al. \(2019\)](#), involves the deliberate adjustment of financial reporting to achieve certain personal benefits. According to [Putra & Suryani \(2018\)](#), the desire to minimise taxes can be a driving factor for company management to carry out earnings management activities. The company must maintain its profit level, because taxation is determined by the taxable profit reflected in the financial statements.

Previous research highlights that earnings management and financial distress are significant predictors of tax aggressiveness, but the findings are mixed. Some studies (e.g., [Feryansyah et al., 2020](#); [Oktaviani et al., 2021](#); [Okta & Kartika, 2022](#)) show that companies actively manipulate earnings as a strategy to reduce taxable profit, thus intensifying tax avoidance efforts. This is in line with the agency motive to minimise tax burden while presenting profitable performance. However, other studies (e.g., [Andriani et al., 2022](#); [Diatmika & Sukartha, 2019](#)) found no significant impact, arguing that such strategies may jeopardise firm value due to public scrutiny and reputational risk.

Similarly, financial distress is often associated with increased tax aggressiveness, as firms experiencing financial distress may seek to preserve cash flow by reducing tax payments. This positive relationship is supported by studies such as [Siburian & Siagian \(2021\)](#), [Alafiah et al. \(2022\)](#), and [Ayem et al. \(2021\)](#), which suggest that firms experiencing financial distress are more likely to exploit tax planning opportunities to maintain operational stability. Nonetheless, the strength and direction of these effects may vary by context, indicating the need for further investigation using an integrated model.

In this situation, firm management may take steps to reduce costs incurred. Companies experiencing financial difficulties face difficulties in obtaining external capital due to investors' concerns about the risk of bankruptcy. However, research conducted by [Indradi & Sumantri \(2020\)](#) and [Supandi et al. \(2022\)](#) shows that the financial crisis has no effect on tax aggression. Companies that experience financial difficulties and incur losses will be exempted from income tax obligations and are entitled to future loss compensation allowances.

Thin capitalisation, along with earnings manipulation and financial distress, may affect the level of tax aggression. [Anindita et al. \(2022\)](#) and [Lucky & Murtanto \(2022\)](#) define thin capitalisation as the creation of a debt structure that significantly exceeds the firm's capital. Companies use debt as a strategy to optimise tax planning by reducing tax liabilities through the recognition of interest payments as financial expenses. Research by [Nadhifah & Arif \(2020\)](#) and [Setiawan & Agustina \(2018\)](#) shows that thin capitalisation has a positive effect on tax avoidance. When the thin capitalisation value increases, companies are more likely to rely on debt as the main source of financing. In this situation, the tax reduction incentive comes from the interest expense paid as a result of debt. However, the results of research by [Fathurrahman et al. \(2021\)](#) and [Nirmalasari & Susilowati \(2021\)](#) show that thin capitalisation does not significantly affect tax avoidance. This is because companies use debt financing more to meet their operational needs than as a means to reduce their tax obligations.

This study uses firm size as a moderating variable to evaluate its impact on organisational tax-aggressive activities. [Malik et al. \(2022\)](#) and [Biduri et al. \(2023\)](#) proposed that firm size can be measured using a scale that considers many aspects, including total assets, sales level, market value, and others. [Allo et al. \(2021\)](#) and [Rochmah & Oktaviani \(2021\)](#) found a favourable relationship between firm size and tax aggressiveness. Large companies demonstrate superior asset management performance to increase company profitability and attract potential investors. As the size of the company increases, its approach to tax payments becomes more assertive. Contrary to the findings of [Nurlis et al. \(2021\)](#) and [Prasetyo & Wulandari \(2021\)](#) which show that company size does not affect tax aggressiveness, large companies have the resources to design effective tax strategies.

Several previous studies have investigated the effect of earnings management (e.g., [Feryansyah et al. \(2020\)](#)), financial distress (e.g., [Ayem et al. \(2021\)](#)), or thin capitalisation (e.g. [Nadhifah & Arif \(2020\)](#)) separately on tax aggressiveness. However, there is still a lack of integrated research that simultaneously considers all three variables in one empirical model. In addition, research that includes company size as a moderating variable, especially in the basic materials sector, is still under-researched. This study addresses these gaps by offering a comprehensive model that is contextually relevant to the analysis of firm-level tax strategies in Indonesia.

The discrepancy in the findings of this study encourages scholars to re-evaluate the variables involved. The aim is to ensure uniformity of findings from previous studies. The researchers chose manufacturing companies in the basic materials sector as research subjects due to the persistence of tax fraud issues in this sector. Therefore, this study aims to explain and understand the taxation issues related to this sector, as well as assist in efforts to improve tax compliance in the basic materials industry.

Agency Theory

Agency theory is 'an agency relationship as a contract in which one or more people (principals) engage another person (agent) to perform a service on their behalf that involves delegating some decision-making authority to the agent' ([Jensen & Meckling, 1976](#)). This agency relationship gives birth to agency problems, namely when the agent tries to optimise personal interests at the expense of the interests of the principal, even though the main purpose of the company is to improve the welfare of the owners of capital. Therefore, a regulatory mechanism is needed to regulate agent behaviour.

Agency theory is related to each research variable in this study. In the variables of tax aggressiveness and earnings management, agency theory has a relationship where there is a difference or conflict of interest between the agent and the principal, each of which is concerned with its own interests and prosperity. [Lenz \(2020\)](#) further suggests that aggressive tax avoidance strategies not only exploit regulatory loopholes but also raise ethical questions about corporate responsibility, challenging managers to balance financial goals with moral considerations. The tax avoidance method arises from the desire of shareholders to maximise corporate profits, while companies want to minimise tax liabilities, because increased profits result in higher tax liabilities. This causes companies to practice tax avoidance by utilising loopholes in tax regulations.

Based on agency theory, financial distress conditions will make it easier for taxpayers (company management) to decide to carry out burden reduction strategies that lead to tax avoidance practices. When companies feel an increase in financial distress, the practice of tax aggression will also increase.

In the context of agency theory, thin capitalisation serves as a mechanism for management to meet shareholder objectives by optimising profits and improving company performance through reduced tax liabilities. Companies choose this approach because interest expenses from debt can reduce taxable income, in contrast to funding through shares whose dividend payments cannot be deducted from the company's fiscal income. Therefore, companies prefer a debt strategy to reduce their tax liabilities.

The Impact of Earnings Management on Tax Aggressiveness

According to [Darmawan & Umaimah \(2025\)](#) and [Hasan & Lestari \(2024\)](#), the goal of every business entity is to realise maximum profits and increase profits. This goal can be achieved by increasing revenue or by reducing costs. One of the expense areas that companies want to minimise is corporate income tax, as this has a direct impact on the company's net profit ([Dang & Tran, 2021](#)).

Tax motivation is one of the factors that can encourage company management to carry out earnings management activities. This is because taxation is in accordance with the taxable profit shown in the financial statements, so the company needs to maintain its profit level.

Agency theory states that company management and the government have different views on taxation. The government wants maximum tax revenue, while companies want to pay lower taxes because taxes are considered as something that can reduce company profits. Companies practice earnings management to reduce their tax liabilities below the level they should.

This is in line with the conclusions of [Feryansyah et al. \(2020\)](#), [Oktaviani et al. \(2021\)](#), and [Okta & Kartika \(2022\)](#) which state that earnings management has a positive effect on tax aggressiveness. In the context of financial reporting, managers carry out earnings management to align with corporate goals, specifically to minimise the organisation's tax burden. Companies that are motivated to reduce tax burdens will use various ways to reduce corporate profits, so that the more companies carry out earnings management with certain methods, the more aggressive the company will be in terms of taxes. However, few studies have simultaneously tested earnings management, financial distress, and thin capitalisation in one model, particularly with firm size as a moderating variable. This is especially less explored in the basic materials sector in Indonesia, which has different tax risk characteristics and policy relevance. Based on the findings of several previous studies, the initial hypothesis of this study is articulated as follows.

H1: Earnings management has a positive effect on tax aggressiveness.

Impact of Financial Distress on Tax Aggressiveness

[Siburian & Siagian \(2021\)](#) state that financial distress can arise from inadequate capital resulting from improper utilisation of

capital resources, insufficient savings, and ineffective management of operations. Financial health analysis allows company managers to make decisions that can affect the future direction of the company. One such decision is the direction and trend of the company that can be affected by increased tax aggressiveness. This can be done in order to maintain business stability, attract investors and increase company competitiveness ([Valaskova et al., 2021](#)).

Based on agency theory, this financial distress condition will make it easier for company management to decide on a burden reduction strategy, resulting in tax avoidance practices. When companies feel an increase in financial difficulties, their tax aggressiveness will also increase.

Studies by [Ayem et al. \(2021\)](#) and [Alafiah et al. \(2022\)](#) show that the financial crisis has a positive effect on tax aggression. Financial difficulties disrupt operational activities; companies need working cash to maintain their operations. Management will seek to obtain additional money through debt acquisition. As a result, the company will try to manipulate income to minimise tax liabilities; if this practice is sustainable, the company will be said to commit tax aggression. Based on the findings of several previous studies, the second hypothesis of this study is as follows.

H2: Financial distress has a positive effect on tax aggressiveness.

The Impact of Thin Capitalisation on Tax Aggressiveness

[Utami & Irawan \(2022\)](#) define thin capitalisation as a situation where the company is financed mostly by debt relative to its equity, which indicates a high leverage ratio. A greater level of corporate debt results in increased interest expense, thereby reducing fiscal profit.

In the context of agency theory, thin capitalisation serves as a method for management to meet shareholders' objectives to maximise profits and improve corporate performance through reduced tax payments. Companies choose this approach because interest expenses from debt can reduce taxable income, in contrast to funding through shares whose dividend payments cannot be deducted from the company's fiscal profit. Although agency theory offers the core explanation, the moderating role of firm size may also relate to the political visibility and resources of the firm, which influence managerial discretion in tax planning decisions.

Studies by [Nadhifah & Arif \(2020\)](#) and [Setiawan & Agustina \(2018\)](#) show that thin capitalisation has a positive effect on tax aggression. A higher thin capitalisation value correlates with an increase in the company's tendency to use debt as the main source of financing. In this case, debt will provide tax reduction benefits through the interest expense incurred. The third hypothesis of this study is derived from the findings of various previous studies.

H3: Thin capitalisation has a positive effect on tax aggressiveness

Company Size as a Moderator of the Effect of Earnings Management on Tax Aggressiveness

Compared to smaller companies, companies belonging to the large company group are more likely to generate profits and remain stable ([Handini & Susilo, 2025](#)). Companies that

generate large profits will usually pay higher taxes, thus encouraging them to carry out tax avoidance strategies ([Sabaruddin et al., 2024](#)).

Agency theory states that large companies show greater transparency than small companies. Large companies are considered more valuable by the public, so they often incur political costs associated with their operations. As a result, large companies often employ more sophisticated strategies to reduce the political costs associated with their operations ([Prasetyono, 2021](#)).

Research by [Allo et al. \(2021\)](#) and [Rochmah & Oktaviani \(2021\)](#) indicates that firm size can weaken the favourable relationship between earnings management and tax aggression. Large companies will show better asset management performance, which leads to increased profits and attracts investors. When company size increases, its tax payment aggressiveness will also increase. The fourth hypothesis in this study is derived from the findings of various previous studies.

H4: Company size can moderate the relationship between earnings management and tax aggressiveness.

The Effect of Company Size in Moderating the Impact of Financial Distress on Tax Aggressiveness

Company size can be an indicator of the likelihood of bankruptcy. A large asset base suggests that the company will find it easier to fulfil its future obligations. Large companies are considered more adept at managing financial challenges. Creditors will prioritise loans to large firms as they are considered more trustworthy and less risky than small firms. This simultaneously incentivises firms to engage in tax optimisation strategies to increase their profitability.

This is in line with the findings of [Permana & Maidah \(2020\)](#) that company size can affect the relationship between financial crisis and tax avoidance. Financial distress refers to a condition in which a company faces challenges in managing its operational costs. This financial difficulty forces the company to get a lot of loans from creditors. Creditors, when providing loans to companies, will evaluate various factors, including company size, by assessing its total assets. Based on the findings of several previous studies, the fifth hypothesis in this study is as follows.

H5: Company size can moderate the relationship between financial distress and tax aggression.

Company Size as a Moderator of the Effect of Thin Capitalisation on Tax Aggressiveness

All types of companies, both large and small companies, need appropriate and efficient financing strategies to ensure the continuity of their operations. One strategy that can be used is thin capitalisation, which is the company's practice of using debt as a source of funding. The use of debt incurs interest costs that must be paid by the company. The choice of funding, both from internal and external sources, can reflect the company's strategy in avoiding tax obligations.

Research by [Nugroho & Suryarini \(2018\)](#) and [Suntari & Mulyani \(2020\)](#) shows that by using company size as a control variable in the regression model, there is a strong positive influence between company size and thin company capitalisation. Large companies exhibit a high debt-equity

ratio, thus increasing the likelihood of engaging in thin capitalisation and tax avoidance strategies. The sixth hypothesis in this study is derived from the findings of various previous studies.

H6: Firm size can influence the effect of thin capitalisation on tax aggression.

METHODS

This study uses a causal quantitative research design. This research highlights the examination of quantitative data obtained through a statistical approach. This research is conducted in an inferential study or within a hypothesis testing framework to establish a correlation between research variables. This study uses secondary data consisting of financial statements and annual reports of basic material sector companies listed on the IDX, covering the research period from 2018 to 2022. Data was obtained from publicly available sources, including the official IDX website and each company's website through the investor relations section. The basic materials sector was selected due to its high capital intensity, historical involvement in tax-related controversies, and its strategic role in industrial development. These characteristics make it more susceptible to aggressive tax practices and therefore suitable for empirical research.

The sample was identified through purposive sampling, where the population selected for the study had to fulfil certain criteria. As this study utilises secondary archival data from company financial statements, no human respondents are directly involved. Therefore, no additional respondent recruitment or selection procedures are required. This study uses four criteria to exclude companies from the sample. In November 2023, a sample of 29 companies was selected from 103 manufacturing companies listed on the IDX. The overall observation data for the five-year research period is 145 entries. The sample selection results are shown in the following [table 1](#)

[\[Table 1 Sample Selection Based on Criteria\]](#)

This study includes three variables: independent variable, dependent variable, and moderating variable. In this study, the dependent variable is tax aggression (Y); the independent variables are earnings management (X1), financial distress (X2), and thin capitalisation (X3); and the moderating variable is firm size (Z). The following are the measurement proxies for each variable:

Tax Aggressiveness

This study uses Book Tax Difference (BTD) as a proxy to assess tax aggressiveness. Book Tax Difference (BTD) is the gap or difference between commercial profit reported in profit or loss according to accounting regulations and fiscal profit or profit reported in the income statement for tax purposes prepared based on the tax regulations of the country concerned. [Aronmwan & Okafor \(2019\)](#) and [Kałdoński & Jewartowski \(2020\)](#) state that BTD is intrinsically linked to corporate earnings management, and this proxy can be used to manipulate future earnings, potentially resulting in aggressive tax behaviour. The Book Tax Difference (BTD) equation is as follows:

$$BTD = \text{Accounting Profit} - \frac{\text{Current Income Tax Burden}}{\text{Income Tax Rates}}$$

Earnings Management

This study uses discretionary accruals, originally formulated by Jones (1991) and later refined by [Dechow et al. \(1995\)](#), as a proxy to assess earnings management. The equation for discretionary accruals is as follows:

Total Accruals (TAC)

$$TAC_{it} = NI_{it} - CFO_{it}$$

Where

TAC_{it} = Total accruals

NI_{it} = Net income of company i in year t

CFO_{it} = Operating cash flow of company i in year t

Total accruals (TAC) are estimated with Ordinary Least Squares.

$$\frac{TAC_{it}}{A_{it-1}} = \beta_1 \frac{1}{A_{it-1}} + \beta \left(\frac{\Delta REV_{it}}{A_{it-1}} \right) + \beta_3 \left(\frac{PPE_{it}}{A_{it-1}} \right) + \varepsilon$$

Where

β₁, β₂, β₃ = Regression coefficient

A_{it-1} = Total assets of company i in the year t-1 period

ΔREV_{it} = Difference in sales of company i in the period t-1 to t

PPE_{it} = Gross fixed assets of company i in period t-1 to t

Non-discretionary accruals (NDA)

$$NDA_{it} = \beta \left(\frac{1}{A_{it-1}} \right) + \beta \left(\frac{\Delta REV_{it}}{A_{it-1}} - \frac{\Delta REC_{it}}{A_{it-1}} \right) + \beta_3 \left(\frac{PPE_{it}}{A_{it-1}} \right)$$

Where:

ΔREV_{it} = Difference in sales of company i in period t-1 to t

ΔREC_{it} = Difference in trade receivables of company i in period t-1 to t

Discretionary accruals (DA)

$$DAC_{it} = \frac{TAC_{it}}{A_{it-1}} - NDA_{it}$$

Where

DA_{it} = Discretionary accruals of company i in year t

TAC_{it} = Total accruals of company i in year t

A_{it-1} = Total assets of company i in the year t-1 period

NDA_{it} = Non-discretionary accruals of company i in the period of year t

Description

DAC > 0: earnings increase, DAC < 0: earnings decrease,

DAC = 0: no earnings management

Financial Distress

The proxy for measuring financial distress used in this study is the original Altman Z-Score as in Altman's research (2018). This model is suitable for use in developing countries and can be used in manufacturing and non-manufacturing industries because it provides a high level of accuracy and reliability ([Altman, 2018](#)). The initial Altman Z-Score formula is as

follows:

$$Z\text{-Score} = 1.2 (X1) + 1.4 (X2) + 3.3 (X3) + 0.6 (X4) + 1.0 (X5)$$

Where:

Z-Score = Financial distress score

X1 = Working capital divided by total assets

X2 = Retained earnings divided by total assets

X3 = Profit before tax and interest divided by total assets

X4 = Book value of equity divided by total liabilities

X5 = Sales divided by total assets

A higher Z-Score value indicates a lower level of corporate financial distress and vice versa. In accordance with [Altman's \(2018\)](#) categorisation of financial distress, the measurement results are as follows:

Red zone = Z-Score > 2.99

Grey zone = 1.81 < Z-Score < 2.99

Stress zone = Z-score < 1.81

Thin Capitalisation

This study uses the Maximum Allowable Debt (MAD) measurement to assess the level of thin capitalisation in accordance with the methodology proposed by [Nadhifah & Arif \(2020\)](#). The following is the formula for Maximum Allowable Debt (MAD):

$$MAD = \frac{\text{Average Debt}}{(\text{Average Total Assets} - \text{Non IBL}) \times 80\%}$$

Where

MAD = Maximum Allowable Debt

Non-IBL (Interest Bearing Liabilities) = Company debt that has nothing to do with interest

*80% modified in accordance with Minister of Finance Regulation No. 169/PMK.010/2015, which regulates the ratio between corporate debt and capital for income tax calculation, where the maximum debt to capital ratio in Indonesia is 4:1.

If the MAD value is close to 1 or even exceeds it, this identifies high capitalisation as the average debt level exceeds the SHDA (Safe Harbor Debt Amount), which is the maximum amount of debt allowed.

Company Size

Company size can be measured by the natural logarithm of total assets. This study uses the natural logarithm to reduce data variability while maintaining the proportion of the original value. Company size can be measured using the following formula:

$$\text{Size} = \ln (\text{Total Assets})$$

([Ikhwan & Asalam, 2021](#))

The dependent variable is tested against the independent variables using panel data regression. The Fixed Effect Model (FEM) is chosen as the most appropriate estimation technique based on the results of the Chow and Hausman tests which indicate the existence of individual heterogeneity between companies that must be controlled for. Regression model selection will be conducted to obtain an appropriate regression model. Traditional assumptions and hypothesis testing will be evaluated using the regression model that has been determined through regression analysis.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

The final dataset consists of 145 firm-year observations from 29 basic materials companies listed on the IDX during 2018-2022. These companies were selected based on consistent listing status, use of rupiah currency, and profitability during the study period. Descriptive characteristics of the data, including the mean, standard deviation, and range for each variable, are presented below to provide an overview of the sample variation.

[\[Table 2. Descriptive Statistical Analysis\]](#)

Based on [Table 2](#), the descriptive statistical analysis shows that from 2018 to 2022, with 145 samples of data, the standard deviation for the tax aggressiveness and earnings management variables exceeds the mean value, indicating a much larger spread in the data. For financial distress, thin capitalisation, and firm size variables, the standard deviation is smaller than the mean value, indicating a lack of data variance.

Based on [Table 2](#), the standard deviations of BTD and DAC exceed their mean values, indicating considerable variability between firms in terms of tax aggressiveness and earnings management. In contrast, the relatively lower variation in Z-score, MAD, and SIZE suggests that the financial structure and scale of firms are more stable across the sample. This highlights the behavioural heterogeneity in the way firms make tax-related decisions.

Panel Data Regression Analysis

Chow Test

[\[Table 3. Chow Test\]](#)

Based on the Chow Test results in [Table 3](#), the p-value of the Cross-section Chi-square is 0.00000, which is less than 0.05. This finding indicates that the optimal model to use is the Fixed Effect Model (FEM).

Hausman Test

[\[Table 4. Hausman Test\]](#)

The Hausman Test results in [Table 4](#) show a probability value of 0.0276, which is less than 0.05. This finding indicates that the optimal model used is the Fixed Effect Model (FEM).

Lagrange Multiplier Test

This study did not conduct the Lagrange Multiplier Test,

because the Chow Test and Hausman Test indicated that the method chosen was the Fixed Effect Model (FEM).

The Chow test produces a p-value of 0.0000, which indicates that the fixed effect model (FEM) is better than the common effect model. These results indicate the presence of individual heterogeneity across firms.

The Hausman test further confirmed the selection of FEM, with a probability value of 0.0276 (<0.05), implying that the individual effects are correlated with the regressors, and the random effects model is not suitable.

Therefore, the Lagrange Multiplier (LM) test was not conducted, as the Chow and Hausman tests had already established fixed effects as the appropriate model, making further model selection redundant.

Model Fit Test

Model Fit Test (F-test)

[\[Table 5 Fixed Effect Model\]](#)

The results of the Fixed Effect Model (FEM) test in [Table 5](#) show that the Prob (F-statistic) value is 0.000000, smaller than 0.05 ($0.000000 < 0.05$). It can be concluded that earnings management, financial distress, thin capitalization, and company size simultaneously affect tax aggressiveness in basic material sector companies listed on the IDX from 2018 to 2022, and the estimated regression model successfully passes the model feasibility test.

Test Coefficient of Determination (R2 Test)

Based on the test results in [Table 5](#), the R-squared value is 0.815010, indicating that the independent variable accounts for 81.50% of the variance in the dependent variable, while the remaining 18.50% is caused by other factors that are not explained.

Hypothesis Test

[\[Table 6. Hypothesis Test\]](#)

Moderation Hypothesis Test

[\[Table 7. Hypothesis Test\]](#)

Earnings Management Has a Positive Effect on Tax Aggressiveness

Based on [Table 6](#), the earnings management variable shows a probability value of 0.0007 which is smaller than 0.05, so it can be stated that earnings management has a significant effect on tax aggressiveness. The coefficient of 13.86207 shows a positive effect, indicating that earnings management has a positive effect on tax aggressiveness, thus hypothesis 1 is accepted. An increase in earnings management correlates with an increase in tax aggressiveness, and vice versa. The results of this study provide evidence relating to agency theory, which states that there are conditions where different stakeholders associated with the organisation have different interests.

Managers consistently want to increase profits to show good company performance to owners, thus potentially increasing their salaries. On the other hand, this activity can increase the tax burden because the value of accrued profit tends to increase, so to meet the owner's expectations of obtaining high net revenue, managers also practice tax aggressiveness.

The findings of this investigation corroborate previous research. [Feryansyah et al. \(2020\)](#), [Oktaviani et al. \(2021\)](#), and [Okta & Kartika \(2022\)](#) state that earnings management has a positive effect on tax aggressiveness. At the time of financial reporting, managers carry out earnings management in line with company objectives, specifically minimising tax liabilities. Companies that have a motivation to reduce the tax burden will use various ways to reduce company profits, so that the more profit they manage with certain methods, the higher the company's tax aggressiveness. This finding provides a direct answer to the research objectives regarding financial behaviour factors that encourage tax aggressiveness in companies in Indonesia.

Financial Distress Has a Positive Effect on Tax Aggressiveness

Based on [Table 6](#), the financial distress variable shows a probability value of 0.0100 which is smaller than 0.05, so it can be concluded that financial distress has a significant effect on tax aggressiveness. The coefficient value of 0.005413 shows a positive direction of influence, which indicates that financial distress has a positive effect on tax aggressiveness, so hypothesis 2 is accepted. A higher Z-Score value indicates a greater level of tax aggressiveness. This high Z-Score indicates that the company's financial stability is in a safe zone. Therefore, it can be concluded that the stronger the condition of the company, the higher the level of tax aggressiveness. A healthy company can be seen from the greater profits earned and good company value.

Increasing corporate tax liabilities will have an impact on reducing company profits. Therefore, companies must carry out tax management in order to obtain large profits. One way to reduce the tax burden is to carry out aggressive tax planning, because effective tax planning can increase after-tax profits and affect firm value. Good company value can reflect the prosperity of shareholders and improve stock performance which is part of the company's performance.

The findings of this study are in line with agency theory which states that the interests of company management, owners, and investors are congruent. Management consistently strives to uphold a positive image by delivering strong performance, regardless of the company's existing conditions. This is done to ensure the survival of the company under any conditions. Management will implement various strategies to maintain the company's value and ensure a favourable perception among the public and investors. In this context, one of the strategies that may be carried out by company managers is to reduce the tax burden through effective tax planning.

The findings of this study support previous research. [Indradi & Sumantri \(2020\)](#), [Permata et al. \(2021\)](#) and [Pratiwi et al. \(2021\)](#) state that companies with low Z-Score levels tend to report high tax liabilities or be compliant in fulfilling tax obligations. Companies facing financial challenges encourage management to identify additional costs to offset operational costs; one approach is to ensure the retention of the company's investors. Firms will prioritise identifying additional costs for tax obligations to the state over formulating tax planning strategies, unlike firms with a high Z-Score, which will adopt a more assertive approach to tax planning. This confirms that financial soundness plays a central role in explaining firm-level variation in tax aggressiveness, in line with the objectives of this study.

Thin Capitalisation Does Not Affect Tax Aggressiveness.

Based on [Table 6](#), the thin capitalisation variable shows a probability value of 0.4634 which is greater than 0.05 and a coefficient value of 0.014089. Therefore, it can be concluded that thin capitalisation does not significantly affect tax aggressiveness, so hypothesis 3 is rejected. The argument that can explain this condition is that companies in Indonesia, especially in the raw material sector, still rely on equity to finance their company's operations, as seen from the statistical data in this study which shows that the average debt-to-capital interest ratio is still below 1. Therefore, it can be concluded that the use of debt in companies in the raw material sector does not encourage the application of thin capitalization which aims to increase tax aggressiveness.

This is contrary to agency theory, where thin capitalisation serves as a mechanism for management to align the interests of shareholders, optimise profits, and improve company performance by reducing tax liabilities. Companies choose this approach because interest expense from debt can reduce taxable income, in contrast to funding through shares whose dividend payments cannot be deducted from the company's fiscal profit.

Differences with previous studies such as [Fathurrahman et al. \(2021\)](#), which found a significant relationship between thin capitalisation and tax avoidance, may be due to sectoral differences. This study focuses on basic materials companies, which tend to rely more on equity financing, thus reducing the incentive of tax protection from debt. In addition, sample period variation and proxy differences may also explain this inconsistency.

The findings of this study support previous research. [Nainggolan & Sari \(2019\)](#), [Fathurrahman et al. \(2021\)](#), and [Nirmalasari & Susilowati \(2021\)](#) state that thin capitalisation policy assesses the extent to which companies use more interest-bearing debt compared to other financing options. This policy has a risk of default or even bankruptcy, so companies must carefully consider the benefits of tax aggressiveness practices compared to the risks of interest-bearing debt. The findings of this study show that the benefits of thin capitalisation do not match the risks associated with interest-bearing debt, thus encouraging companies to practice tax aggressiveness through alternative methods that have less risk. These results suggest that thin capitalisation is not the dominant factor in this sector, and may not be a reliable indicator for regulatory targeting.

Firm Size Strengthens the Positive Effect of Earnings Management on Tax Aggressiveness

Based on [Table 7](#), the probability value of 0.0061 which is smaller than 0.05 indicates that earnings management governed by firm size significantly affects tax aggressiveness, so hypothesis 4 is accepted. The coefficient value of 0.396764 shows a positive effect, which indicates that earnings management, controlled by firm size, positively affects tax aggressiveness. Compared with small companies, companies affiliated with large corporate conglomerates are more likely to achieve profitability and maintain stability. Companies with large revenues usually have higher tax liabilities, thus motivating them to undertake tax avoidance strategies.

This is in line with agency theory, which states that large companies are generally more transparent than small

companies. Large companies are more valuable in the eyes of the public, so their operations often incur political costs. Therefore, large companies usually implement special strategies to minimise political costs, one of which is tax costs. Large companies will consider how to use the right policy to manage their tax burden. Company management will try to use appropriate accounting policies to reduce the amount of reported profit in order to minimise the tax burden.

The findings of this investigation support previous research. [Allo et al. \(2021\)](#) and [Rochmah & Oktaviani \(2021\)](#) state that firm size can limit the beneficial effects of earnings management on tax aggression. Large companies will show better asset management performance, resulting in increased profits and the ability to attract investors. When company size increases, the aggressiveness of tax payments also increases. This supports the hypothesis that firm size strengthens the effect of behavioural manipulation on tax behaviour, which answers the second part of this research objective.

Company Size Strengthens the Positive Effect of Financial Distress on Tax Aggressiveness

Based on [Table 7](#), the probability value of 0.0294 which is smaller than 0.05 indicates that financial distress moderated by firm size has a significant effect on tax aggressiveness, so hypothesis 5 is accepted. The coefficient value of 0.000162 shows a positive effect, which indicates that financial distress moderated by company size has a positive effect on tax aggression. Large companies are considered more adept at managing financial challenges. Lenders will focus more on providing loans to large companies because they see large companies as having a high level of credibility and lower risk when compared to small companies. This simultaneously encourages companies to take aggressive tax actions to minimise costs so that the profits obtained are greater.

The findings of this study are in line with the research of [Permana & Maidah \(2020\)](#) which indicates that company size can minimise the impact of financial difficulties on tax avoidance. Large companies usually demonstrate strong corporate principles accompanied by good financial health. Companies in this category will try to maintain an image by providing good performance in front of company owners and investors in order to survive. In allocating resources to assets, investors will evaluate several factors, including the valuation and scale of the company, by examining the total assets owned by the company. The results of this study confirm that larger firms are more likely to operationalise aggressive tax strategies even under financial pressure.

Company Size Cannot Moderate the Effect of Thin Capitalisation on Tax Aggressiveness.

Based on [Table 7](#), the probability value of 0.2126 which exceeds 0.05 indicates that thin capitalisation moderated by firm size does not significantly affect tax aggressiveness, so hypothesis 6 is rejected. Company size reflects the stability and capacity of the company in carrying out economic activities. As the size of the company increases, the company's business activities and financial transactions also increase, which creates several options for tax avoidance.

All companies, regardless of size, require effective and appropriate funding mechanisms to ensure the continuity of their operational activities. One approach that can be used is

thin capitalisation. The findings of this study indicate that the level of thin capitalisation cannot be used as a criterion for companies to commit tax aggression.

The findings of this study support previous research, [Sarif & Surachman \(2022\)](#) and [Yandra et al. \(2023\)](#) which indicate that thin capitalisation, which is influenced by company size, does not have a major impact on tax aggression. The main purpose of a firm using debt from both internal and external sources is to finance its activities rather than to manipulate tax liabilities. The results of this study confirm that larger firms are more likely to operationalise aggressive tax strategies even under financial stress.

CONCLUSIONS

This study extends agency theory by integrating behavioural and structural dimensions-specifically earnings management, financial distress, and firm size-in explaining corporate tax aggressiveness. This research shows that managerial discretion, influenced by earnings manipulation and financial distress, is amplified in larger firms. This suggests that tax-aggressive behaviour is not solely a response to internal financial pressures, but is also shaped by organisational scale, especially in capital-intensive sectors such as basic materials. These findings advance theoretical understanding by highlighting the conditional role of firm size in agency-driven tax planning.

From an academic standpoint, this study addresses an important gap by simultaneously testing earnings management, financial distress, and thin capitalisation in a single model moderated by firm size - an approach rarely used in previous research, especially in the Indonesian context. Practically, these findings provide actionable insights for policymakers and tax authorities. Tax audit strategies can be refined by not only identifying financial red flags, but also monitoring firm-specific structural traits, such as size and complexity. The compliance framework may benefit from closer scrutiny of firms that show signs of earnings manipulation or financial distress, especially those with large assets and operational scope.

This analysis confirms that firm size strengthens the positive relationship between earnings management and financial distress with tax aggressiveness. Larger firms, which are often characterised by structural complexity and greater access to resources, have the means and sophistication to implement aggressive tax strategies. Instead of limiting opportunism, firm size seems to facilitate it - especially in sectors with high tax liabilities and growing regulatory scrutiny.

Theoretically, this research strengthens agency theory by illustrating how managerial agents respond to performance expectations and financial constraints through tax-motivated decisions that may differ from the interests of shareholders or society. The moderating role of firm size - often overlooked in previous Indonesian research - emerges as a key factor enabling such discretion. This makes a distinct contribution, especially in large-capitalised sectors such as raw materials, where fiscal behaviour has wider policy relevance.

In summary, these findings illustrate how internal financial conditions and organisational scale together influence opportunistic tax behaviour. These findings are particularly relevant in the Indonesian context, where tax planning

incentives are considerable and institutional oversight is still immature. Policymakers are advised to incorporate behavioural cues and structural firm characteristics into compliance design. Future studies can enrich this perspective by expanding to other sectors, introducing additional moderators, or applying more detailed proxies to further refine our understanding of tax strategies at the firm level.

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Table 1 / Sample Selection Based on Criteria

No	Sample Criteria	Number
1	Basic material sector companies listed on the Indonesia Stock Exchange (IDX) consecutively in the period 2018 - 2022	75
2	Basic materials sector companies whose shares were suspended by the Indonesia Stock Exchange (IDX) in the period 2018 - 2022	(2)
3	Basic material sector companies that experienced losses in the research year	(36)
4	Basic material sector companies that do not use rupiah currency in the research year	(8)
Number of companies selected as samples		29
Research year		5
Total research sample data		145

Source: Processed data (2024)

Table 2 / Descriptive Statistical Analysis

	BTD	DAC	ZSCORE	MAD	SIZE
Average	0.006467	0.000033	3.309620	0.511378	28.66127
Median	0.003888	0.000019	2.900289	0.506036	28.47089
Maximum	0.090935	0.000971	8.304739	1.162139	32.05224
Minimum	-0.059360	-0.000392	1.090690	0.106923	26.10483
Std. Dev	0.021375	0.000184	1.718871	0.239312	1.41998

Source: Processed Data (2024)

Table 3 / Chow Test

Effect Test	Statistics	df	Prob.
Cross-section F	0.006467	0.000033	3.309620

Source: Processed Data (2024)

Table 4 / Hausman Test

Test Summary	Statistic Chi-Sq.	Chi-Sq. d.f.	Prob.
Cross-section F	10.909386	4	0.0276

Source: Processed data (2024)

Table 5 / Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.716342	0.180951	-3.958768	0.0001
DAC	13.86207	3.965627	3.495557	0.0007
ZSCORE	0.005413	0.002060	2.627461	0.0100
MAD	0.014089	0.019139	0.736126	0.4634
SIZE	0.024327	0.006366	3.821603	0.0002
Effect specification				
Fixed cross-section (dummy variable)				
Weighted Statistics				
R-squared	0.815010	Average dependent variable	0.011329	
Adjusted R-squared	0.761055	S.D. of dependent var	0.033288	
S.E. of regression	0.016505	Sum of squares of resid	0.026153	
F-statistic	15.10525	Durbin-Watson stat	2.275074	
Prob (F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.504345	Average dependent var	0.006467	
Sum of squares of resid	0.028082	Durbin-Watson statistic	2.058652	

Source: Processed Data (2024)

Table 6 / Hypothesis Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.716342	0.180951	-3.958768	0.0001
DAC	13.86207	3.965627	3.495557	0.0007
ZSCORE	0.005413	0.002060	2.627461	0.0100
MAD	0.014089	0.019139	0.736126	0.4634
SIZE	0.024327	0.006366	3.821603	0.0002

Source: Processed data (2024)

Table 7 / Hypothesis Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.020564	0.014843	-1.385472	0.1691
DAC * SIZE	0.396764	0.141634	2.801329	0.0061
ZSCORE * SIZE	0.000162	7.34E-05	2.211151	0.0294
MAD*SIZE	0.000775	0.000618	1.254699	0.2126

Source: Processed Data (2024)