Proceeding of 5th International Conference on Research and Development (ICORAD)
Vol. 5 No. 1 (2026)
Page : 176-182
ISSN:2828-4925
DOI: 10.47841/icorad.v5i1.392

The Effect of Profitability on Tax Aggressiveness in Pharmaceutical Companies Listed on the IDX for the 2020–2024 Period

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Received: January 02, 2026 | Revised: January 10, 2026 | Accepted: January 15, 2026

Abstract. This research is motivated by indications of tax aggressiveness practices among pharmaceutical sub-sector companies listed on the Indonesia Stock Exchange (IDX). Such practices raise concerns regarding the level of tax compliance and the transparency of financial reporting. This research aims to examine the effect of profitability on tax aggressiveness. The study employs a quantitative approach using panel data regression analysis. Secondary data were obtained from the annual financial reports of pharmaceutical companies for the 2020–2024 period, downloaded from the official IDX website. The results show that profitability has a negative but not significant effect on tax aggressiveness. The coefficient of determination (R^2) value of 0.018 indicates that the profitability variable explains only 1.8% of the variation in tax aggressiveness, while the remaining variation is influenced by other factors outside the model. These findings suggest that the level of profitability is not the main factor determining tax aggressiveness among pharmaceutical companies in Indonesia.

Keywords : Profitability; Tax Aggressiveness; Pharmaceutical Companies; IDX

INTRODUCTION

Sustainable development requires substantial financial support. To meet these needs, the government strives to increase domestic revenue sources, one of which is through the optimization of tax revenue. Based on Law Number 16 of 2009 concerning the General Provisions and Tax Procedures, tax is a mandatory contribution to the state that is coercive in nature and used for the public interest. Tax has two main functions: the budgetary function, which serves as a source of state financing, and the regulatory function, which acts as an instrument of the government's socioeconomic policy (Aulia, 2022).

Over the past five years (2020–2024), Indonesia's tax revenue realization has fluctuated and in 2024 has not yet reached the target. This condition indicates that optimizing tax revenue remains a challenge, partly due to tax aggressiveness practices (Rihan & Ayu, 2021). Companies often perceive taxes as a burden that can reduce net income (Sanjaya, Pulungan & Nainggolan, 2023). Tax aggressiveness is also considered one of the factors contributing to Indonesia's low tax ratio (Wijaya & Rahyu, 2021). The level of tax aggressiveness can be measured using the Effective Tax Rate (ETR), which reflects a company's effectiveness in managing its tax obligations. The lower the ETR value, the higher the level of tax aggressiveness, as it indicates a smaller income tax expense compared to pre-tax income (Jafar & Diana, 2020).

Several factors are suspected to influence tax aggressiveness, including firm size, leverage, capital intensity, and profitability. This study focuses on the effect of profitability on tax aggressiveness. Profitability is a ratio used to measure a company's ability to generate profits (Sembiring, 2020, p. 61). Profitability is generally measured using Return on Assets (ROA). Previous studies have shown varying results: Mariana et al. (2020) and

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Ismail (2021) found that profitability has a significant negative effect on tax aggressiveness, while Annisa & Mia (2021) and Mustafa et al. (2021) found a significant positive effect.

The object of this study is pharmaceutical sub-sector companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. This sector was chosen because, despite having relatively good profitability levels (average ROA > 5.98%), pharmaceutical companies still show indications of tax aggressiveness (ETR < 25%). This condition indicates a discrepancy between theory and practice and raises questions about the actual factors influencing aggressive tax behavior in the pharmaceutical sector.

Theoretically, this phenomenon can be explained through legitimacy theory, which states that companies seek to maintain their image and public legitimacy by complying with regulations, including taxation (Hanlon & Slemrod, 2025). However, in practice, some companies with good financial performance still engage in tax aggressiveness, indicating a contradiction between theory and reality.

Based on this background, this study has the urgency to re-examine the effect of profitability on tax aggressiveness among pharmaceutical sub-sector companies listed on the IDX during the 2020–2024 period. This study aims to determine the partial effect of profitability on tax aggressiveness. The results are expected to contribute to the development of literature on the factors influencing tax aggressiveness and provide insights for companies and the government in improving tax compliance and optimizing state revenue.

METHOD

A. Research Site

The research was conducted at pharmaceutical sub-sector companies listed on the Indonesia Stock Exchange (IDX). These companies were chosen because they represent one of the industrial sectors that continue to show indications of tax aggressiveness despite maintaining relatively good profitability levels.

B. Research Time

The research duration is 2 (two) months. Starting from July 1st to August 31st, 2025.

C. Population

The population in this study includes all pharmaceutical sub-sector companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period, totaling 12 companies. These companies represent the entire population of the pharmaceutical industry listed on the IDX within the observed period.

D. Sample

The research sample was determined using the purposive sampling method, with specific criteria to ensure data accuracy and relevance, namely, (1) pharmaceutical companies listed on the IDX during the 2020–2024 period, (2) companies that published audited annual financial statements ending on December 31, (3) companies that did not experience losses during the observation period, (4) companies that had complete data related to the research variables. Based on these criteria, 10 companies met the requirements, resulting in a total of 50 observations (10 companies × 5 years).

E. Data Collection Method

This study uses secondary data, obtained from the annual financial reports published on the official IDX website (www.idx.co.id). The data include balance sheets and income statements, which were then compiled into panel data, combining cross-sectional and time-series dimensions.

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The data collection technique employed was the documentation method, by downloading, recording, and reviewing the companies' annual financial reports and other relevant publications. Supporting literature such as journals, previous studies, and official tax regulations was also used to strengthen the theoretical foundation.

F. Analysis Technique

The data were analyzed using panel data regression analysis with the assistance of EViews 12 software. This method was chosen because it combines the advantages of cross-sectional and time-series data, allowing for more accurate and efficient estimations. Prior to conducting the regression analysis, several classical assumption tests were performed to ensure data validity, including the multicollinearity test, where correlation values greater than 0.80 indicate multicollinearity, and the heteroskedasticity test, where a significance value less than 0.05 indicates heteroskedasticity (Hidayat & Muliasari, 2020).

Furthermore, model selection was carried out using the Chow Test and Hausman Test to determine the most appropriate model among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The t-test (partial) was employed to examine the effect of profitability on tax aggressiveness, while the F-test (simultaneous) was used to evaluate the overall model significance. The coefficient of determination (R^2) was utilized to measure the explanatory power of the independent variable, where a higher R^2 value indicates a stronger model in explaining the relationship between variables.

Hypothesis

The preliminary answer of this study is: based on the theoretical framework and previous empirical research, profitability is expected to have a negative and significant effect on tax aggressiveness. Companies with higher profitability are presumed to be more compliant with tax regulations and less likely to engage in aggressive tax practices to maintain their legitimacy and corporate reputation.

RESULTS AND DISCUSSION

A. Conceptual Framework

Below is the research design, which serves as the foundation for conducting this scholarly work:

Picture 1: Conceptual Framework

B. Research Variables

In this study, profitability serves as the independent variable, while tax aggressiveness is the dependent variable. Profitability measured using the Return on Assets (ROA) ratio, calculated as Net Income / Total Assets × 100%. Tax aggressiveness, measured using the Effective Tax Rate (ETR), calculated as *Income Tax* Expense / Profit Before Tax × 100%.

This relationship aims to determine whether a company's level of profitability influences its tendency to engage in tax aggressiveness practices.

C. Research Model

The research model is a simplified representation of the relationship between the variables studied. In this research, the model aims to describe the effect of profitability on

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tax aggressiveness in pharmaceutical sub-sector companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period.

Equation 1: Research Model

$$Y=a+bX+e$$

Below is the explanation of Equation 1, which represents the research model:
Y = Tax Aggressiveness
a = Constant
b = Regression coefficient
X = Profitability (measured by Return on Assets / ROA)
e = Error term or other variables not included in the model that may influence tax aggressiveness

D. Multicollinerity Test

The multicollinearity test aims to identify the presence of a high linear correlation among independent variables. A good regression model should be free from multicollinearity symptoms. Since this study involves only one independent variable, profitability (ROA), multicollinearity does not occur and therefore does not affect the validity of the regression model.

Table 1: Multicollinearity Test

Variable	ROA
Profitability	1.000000

The correlation coefficient value of the independent variable Profitability (ROA) is 1.000000, which indicates that there is no correlation among different independent variables because only one variable is included in the model.

E. Panel Data Regression Analysis

Panel data regression analysis was used to examine the effect of the independent variable on the dependent variable by considering data dimensions that involve several companies over a certain period. In panel data analysis, there are three model approaches that can be used, namely the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To determine the most appropriate model, two tests are conducted: the Chow Test, which compares CEM and FEM, and the Hausman Test, which compares FEM and REM.

Table 2: Chow Test Result

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	0.809714	(9,38)	0.6102
Cross-section Chi-square	8.772165	9	0.4586

Based on the Chow Test results, the probability values of Cross-section Chi-square (0.4586) and Cross-section F (0.6102) are both greater than 0.05. Therefore, the Common Effect Model (CEM) is the most appropriate model for this study compared to the Fixed

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Effect Model (FEM). Since the CEM was selected, further testing using the Hausman Test was unnecessary.

Table 3: Panel Data Regression Result with CEM

Dependent Variable: Y
Method: Panel Least Squares
Date: 08/18/25 Time: 18:08
Sample: 2020 2024
Periods included: 5
Cross-sections included: 10
Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	27.11243	2.479294	10.93554	0.0000
X1	-0.174500	0.172257	-1.013019	0.3162

The panel data regression equation derived from the estimation is as follows:

Equation 2: Research Model with Regression Coefficient

$$Y=27.11-0.17*X1$$

The constant (C) value of 27.1124 indicates that if profitability (ROA) is equal to zero, the level of tax aggressiveness is 27.11%. The coefficient of profitability (ROA) is -0.1745, meaning that an increase of one unit in profitability will reduce tax aggressiveness by 0.1745, assuming other factors remain constant.

F. Hypothesis Testing

There are 1 (one) types of hypothesis tests used in this research, namely the t test.

1. t Test (Individual Test)

The t-test was conducted to determine the partial effect of the independent variable, profitability (ROA), on the dependent variable, tax aggressiveness (ETR). The decision criterion is as follows: if the probability value (p-value) < 0.05, the variable has a significant effect; if the probability value > 0.05, the effect is not significant.

Table 4: The t test

Dependent Variable: Y
Method: Panel Least Squares
Date: 08/18/25 Time: 18:08
Sample: 2020 2024
Periods included: 5
Cross-sections included: 10
Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	27.11243	2.479294	10.93554	0.0000
X1	-0.174500	0.172257	-1.013019	0.3162

Profitability has a negative coefficient of -0.1745 with a probability value of 0.3162 (> 0.05). This indicates that profitability has a negative but not significant effect on tax aggressiveness in pharmaceutical sub-sector companies listed on the Indonesia Stock Exchange during 2020–2024.

Thus, the hypothesis stating that "profitability has a significant effect on tax aggressiveness" is rejected. This means that the level of profitability does not significantly

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influence the level of tax aggressiveness practiced by pharmaceutical companies in Indonesia.

G. Analysis of the Coefficient of Determination (R^2)

Reveals the extent to which a research model is able to explain how strong the influence of independent variables is on the dependent variable (Nurbakti et al., 2022).

Table 5: Coefficient of determination test

R-squared	0.021610
Adjusted R-squared	-0.020024
S.E. of regression	8.927499
Sum squared resid	3745.911
Log likelihood	-178.8569
F-statistic	0.519041
Prob(F-statistic)	0.598462

The coefficient of determination (R^2) obtained in this study is 0.0216, which indicates that the independent variable, profitability (ROA), explains approximately 2,16% of the variation in tax aggressiveness (ETR) among pharmaceutical companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period.

CONCLUSION

The regression results show that profitability (ROA) has a negative but not significant effect on tax aggressiveness (ETR). This means that although companies with higher profitability tend to have lower levels of tax aggressiveness, the relationship is statistically insignificant. In other words, profitability does not play a decisive role in influencing a company's decision to engage in aggressive tax practices.

These findings are consistent with previous research by Sahara and Oktafiani (2022) and Mustafa et al. (2021), who found that profitability does not have a significant impact on tax aggressiveness. However, the results differ from Ismail (2021) and Mariana et al. (2020), who reported a significant negative relationship between profitability and tax aggressiveness. From a theoretical perspective, this result does not fully align with Legitimacy Theory, which suggests that companies with strong financial performance should comply with tax regulations to maintain a positive corporate image and public legitimacy. In contrast, the findings support the Agency Theory, which posits that managerial decision-making is often driven by self-interest and short-term performance incentives rather than social or regulatory responsibility.

This result implies that tax aggressiveness among pharmaceutical companies in Indonesia is influenced by other internal or external factors beyond profitability—such as managerial discretion, ownership structure, corporate governance, or changes in tax enforcement. Future research is encouraged to include additional financial and non-financial variables to better explain the determinants of tax aggressiveness in this sector.

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