

# The Effect of Leverage and Tax Avoidance on Earnings Management in Cement Manufacturing Companies Listed on the Indonesia Stock Exchange in 2020–2024

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## ABSTRACT

This study aims to examine the influence of leverage and tax avoidance, both individually and jointly, on earnings management among companies listed on the Indonesia Stock Exchange. Using a quantitative descriptive analysis approach, the findings indicate that leverage has a significant and positive effect on earnings management, suggesting that companies with higher debt levels are more likely to engage in income manipulation. Similarly, tax avoidance also shows a significant and positive impact on earnings management, reflecting the tendency of firms to adjust reported income to reduce tax liabilities. The panel regression analysis further confirms that leverage and tax avoidance collectively affect earnings management, with the probability value supporting the conclusion that both variables are statistically significant determinants of earnings manipulation practices in the manufacturing sector.

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## INTRODUCTION

Taxation can be defined as a mandatory contribution imposed by the state on its citizens, enforced through law without offering direct compensation. Tax serves as a sovereign right of the government, intended to be utilized wisely to promote public welfare. According to Mardiasmo (2016), tax is a compulsory payment made by the public to the government, recorded in the national treasury, enforced by law, and implemented without reciprocal benefits to the payer.

Leverage is defined as the ratio between total liabilities and total assets. A higher leverage ratio indicates that a company carries a greater level of debt. According to the debt covenant hypothesis, companies with high leverage ratios are subject to stricter debt agreements, which may motivate managers to engage in earnings manipulation as a strategy to comply with financial covenants or avoid violations.

Tax avoidance, as described by Erly in Jasmine (2017), refers to the legal efforts made by companies to reduce tax obligations by exploiting existing tax regulations, such as exemptions and deductions, or by leveraging gaps and weaknesses in current tax laws. Unlike tax evasion, which is illegal, tax avoidance is conducted within the legal framework, often involving transactions with the primary purpose of minimizing tax liabilities without violating formal legal boundaries.

In the current competitive global market, companies, particularly in the service sector in Indonesia, are under pressure to maintain their market position. To remain competitive, companies must not only produce high-quality products but also implement sound financial management. Effective financial strategies are essential to ensure business sustainability, often reflected in the profits achieved. This pressure to report favorable financial performance can drive managers to manipulate earnings, a practice commonly known as earnings management.

Managers are often motivated by the prospect of performance-based bonuses, where higher reported earnings result in greater personal compensation. Simultaneously, earnings information is crucial for stakeholders, as it assists in estimating a firm's earnings power and assessing the risks associated with investment and credit decisions. Therefore, the integrity of reported earnings is vital, and management is held accountable for ensuring the reliability of these financial disclosures.

A study conducted by Sindi Klara Br. Ginting (2019) examined the effects of Public Accounting Firm (PAF) type, leverage, and tax avoidance on earnings management. The findings showed that the type of PAF significantly influenced earnings management, where companies audited by Big Four firms were better able to suppress earnings manipulation. However, leverage did not significantly affect earnings management, likely due to external monitoring by creditors. Similarly, tax avoidance had no significant effect, attributed to stricter government regulations and sanctions that compel companies to comply with tax laws.

Manufacturing firms are selected as the object of this study because they represent various industrial subsectors and collectively reflect broader market responses. Moreover, the manufacturing sector has the highest number of listed companies on the Indonesia Stock Exchange and is frequently involved in financial reporting issues, making it a relevant subject for research. The high occurrence of earnings management practices in this sector further supports its selection for academic investigation.

Given the issues outlined above, this study aims to examine “The Effect of Leverage and Tax Avoidance on Earnings Management in the Cosmetic and Household Goods Manufacturing Subsector Listed on the Indonesia Stock Exchange.” This research is expected to provide insights into the financial behaviors of companies within this specific industry, particularly in relation to their tax planning and earnings reporting practices.

## METHODS

The data analysis method in this study uses quantitative secondary data obtained from audited financial statements published by the Indonesia Stock Exchange (IDX) and the

Indonesia Capital Market Directory (ICMD). The data analyzed include annual financial statements of manufacturing companies in the cosmetics and household goods subsector listed on the IDX during the 2020–2024 period. The sample was selected using purposive sampling, a non-random sampling technique based on specific criteria: companies must belong to the cosmetics and household goods subsector, be listed on the IDX during 2020–2024, have complete financial reports, and report positive earnings. Based on these criteria, six companies were selected as the research sample.

This study identifies two independent variables: leverage and tax avoidance. Leverage is defined as the ratio of total liabilities to total equity, reflecting the extent to which a company utilizes debt in its capital structure. A higher leverage ratio indicates a greater reliance on debt, which may influence earnings management practices, particularly in relation to debt covenant violations. Meanwhile, tax avoidance refers to the company's legal efforts to reduce its tax burden. In this study, tax avoidance is measured using the Cash Effective Tax Rate (Cash ETR), calculated as cash tax paid divided by pre-tax income.

The dependent variable in this research is earnings management, which refers to managerial actions intended to influence reported earnings for specific purposes. Following the approach proposed by Phillips et al. (2003), earnings management is measured using income distribution, calculated as the ratio of working capital accruals to sales. Using this approach, the study aims to assess the effect of leverage and tax avoidance on earnings management practices among manufacturing firms in the cosmetics and household goods subsector in Indonesia.

## RESULTS AND DISCUSSION

### Panel Data Regression Model Testing

The model employed in this study is a panel data analysis model, which is used to examine the interpretive power of the model and the consistency of its theoretical framework. The data were processed electronically using Microsoft Excel 2010 and EViews 9. Panel regression was selected to test model specifications and to evaluate the extent to which theoretical assumptions align with empirical findings.

### Chow Test

The Chow Test is used to determine whether the appropriate estimation model is the common effect model or the fixed effect model. This test is conducted during the panel data testing phase to help determine the most suitable panel data approach. If the probability value is greater than 0.05, then the null hypothesis ( $H_0$ ) is accepted, indicating that the common effect model is appropriate. However, if the probability value is less than 0.05, then  $H_0$  is rejected and the alternative hypothesis ( $H_1$ ) is accepted, suggesting that the fixed effect model is more suitable.

**Table 1.** Chow Test

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

Effects Test	Statistic	d.f.	Prob.
Cross-section F	3.799476	(30,121)	0.0000
Cross-section Chi-square	102.214132	30	0.0000

The results of the Chow test on tax and financial management in the table above show that the cross-sectional probability value is 0.000, which is less than 0.05. Therefore, the null hypothesis ( $H_0$ ) is rejected, and the alternative hypothesis ( $H_1$ ) is accepted, indicating that the Fixed Effects Model is the appropriate method for this analysis.

### Hausman Test

The Hausman test is used to determine whether the most appropriate model is the fixed effects model or the random effects model. In this study, the Hausman test was conducted during the panel data analysis by selecting the random effects option within the panel settings. If the probability value is greater than 0.05, the null hypothesis ( $H_0$ ) is accepted, suggesting that the random effects model is suitable. However, if the probability value is less than 0.05, then  $H_0$  is rejected and the alternative hypothesis ( $H_1$ ) is accepted, indicating that the fixed effects model should be used.

**Table 2.** Hausman Test

Correlated Random Effects - Hausman Test  
 Equation: Untitled  
 Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	8.754669	2	0.0126

Based on the table above, the results of the test on tax planning and earnings management show that the average probability value is 0.001, which is less than 0.05. Therefore, the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_1$ ) is accepted, indicating that the Fixed Effects Model is the most appropriate estimation method for this study.

### Heteroscedasticity Test

The heteroscedasticity test is conducted to determine whether there is any variance inequality (heterogeneity) in the residuals of the regression model. This test evaluates one of the classical assumptions of linear regression, which requires that the variance of the residuals remains constant across all observations. A valid regression model should show no indication of heteroscedasticity.

**Table 3.** White Heteroscedasticity Test

Heteroskedasticity Test: Glejser

F-statistic	1.348698	Prob. F(2,146)	0.2628
Obs*R-squared	2.702884	Prob. Chi-Square(2)	0.2589
Scaled explained SS	2.849317	Prob. Chi-Square(2)	0.2406

Based on the table above, if the probability value of Obs\*R-squared is greater than 0.05, such as the Chi-square value of 0.26, then the null hypothesis ( $H_0$ ) is accepted and the alternative hypothesis ( $H_1$ ) is rejected. This indicates that at the 0.05 significance level, there is no evidence of heteroscedasticity in the regression model.

**Multicollinearity Test**

Multicollinearity occurs when there is a strong or perfect linear relationship among two or more independent variables in a regression model. If the correlation coefficient between the independent variables exceeds 0.8, it suggests the presence of multicollinearity. Conversely, if the correlation coefficients are less than 0.8, it indicates that the regression model is free from multicollinearity.

**Table 4.** Multicollinearity Test

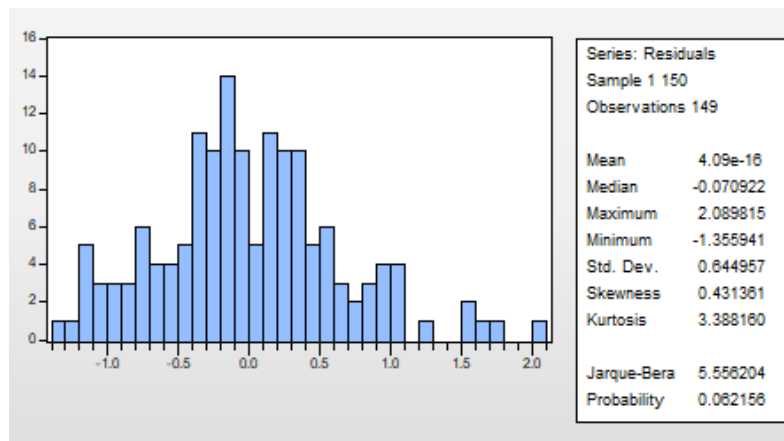
Variance Inflation Factors  
 Date: 06/05/25 Time: 17:36  
 Sample: 1 150  
 Included observations: 149

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
SER02	0.039706	1.529064	1.034594
SER03	0.008461	2.487278	1.034594
C	0.009218	3.257112	NA

The results of the multicollinearity test show that the correlation coefficients between each pair of independent variables are less than 10, indicating that there is no multicollinearity in the regression model and the variables are not excessively correlated.

**Normality Test**

According to Ghozali (2006), the normality test is an essential component of regression model validation to ensure that residuals are normally distributed. There are two general methods used to assess normality: graphical analysis and statistical testing. In this study, the Kolmogorov–Smirnov (K-S) test was selected to evaluate the normality of the residuals due to its effectiveness in identifying deviations from normal distribution. This test was conducted prior to the regression analysis. If the significance value from the Kolmogorov–Smirnov test is greater than 0.01, the residuals are considered to be normally distributed, indicating that the normality assumption is satisfied.



**Figure 1.** Normality Test Results

The table above shows a significance value of approximately 0.06, which is greater than 0.05. Based on this result, it can be concluded that the data are normally distributed.

### Autocorrelation Test

The autocorrelation test is conducted to examine whether there is correlation between residuals across observations in the regression model. Autocorrelation refers to the interaction between a particular residual and other residuals in a time series or panel dataset. The most commonly used test for detecting autocorrelation is the Durbin–Watson (DW) test.

This test is applied to assess whether the assumption of residual independence holds in the regression model. If autocorrelation exists, it indicates a violation of classical linear regression assumptions. The Durbin–Watson statistic provides a measure of the extent to which residuals are correlated with one another.

**Table 5.** Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	4.371216	Prob. F(2,164)	0.0341
Obs*R-squared	8.553030	Prob. Chi-Square(2)	0.0639

The results of the autocorrelation test above show a Chi-Square probability value of 0.064, which is greater than 0.05. This indicates that no autocorrelation is present in the model, and the residuals are considered to be independent.

### The Effect of Leverage on Earnings Management

**Table 6.** The Effect of Leverage on Earnings Management

Dependent Variable: Y				
Method: Least Squares				
Date: 06/05/25 Time: 17:38				
Sample: 1 150				
Included observations: 149				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X1	0.270920	0.195602	1.835059	0.1681
C	1.289886	0.064573	19.97565	0.0000

The results of the regression analysis in Table 6 show that the t-statistic value for Leverage is 1.835, which is greater than the t-table value of 1.654 (with a 5% significance level and degrees of freedom  $df = n - k = 169 - 3 = 166$ ). This indicates that Leverage has a significant effect on earnings management. Moreover, the probability value is 0.00, which is less than 0.05, confirming that the result is statistically significant and positive.

### The Effect of Tax Avoidance on Earnings Management

**Table 7.** The Effect of Tax Avoidance on Earnings Management

Dependent Variable: Y				
Method: Least Squares				
Date: 06/05/25 Time: 17:41				
Sample: 1 150				
Included observations: 150				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
X2	0.088692	0.090646	1.978440	0.3295
C	1.407314	0.082561	17.04577	0.0000

The results of the regression analysis in Table 7 show that the t-statistic value for Tax Avoidance is 1.835, which is greater than the t-table value of 1.654 (at a 5% significance level with degrees of freedom  $df = n - k = 169 - 3 = 166$ ). This indicates that Tax Avoidance has a significant effect on earnings management. In addition, the probability value is 0.00, which is less than 0.05, confirming that the result is statistically significant and positive.

### The Effect of Leverage and Tax Avoidance on Earnings Management

**Table 8.** The Effect of Leverage and Tax Avoidance on Earnings Management

R-squared	0.045238	Mean dependent var	1.287055
Adjusted R-squared	0.062022	S.D. dependent var	0.634279
S.E. of regression	0.627256	Akaike info criterion	1.925004
Sum squared resid	57.44368	Schwarz criterion	1.985486
Log likelihood	140.4128	Hannan-Quinn criter.	1.949577
F-statistic	2.866357	Durbin-Watson stat	1.436281
Prob(F-statistic)	0.002889		

The F-test is used to determine whether the independent variables collectively influence changes in the dependent variable or to assess whether the regression model is appropriate for explanatory or predictive purposes. If the F-calculated value is greater than the F-table value, then the null hypothesis ( $H_0$ ) is rejected, indicating that the independent variables jointly have a significant effect on the dependent variable. Conversely, if the F-calculated value is less than the F-table value, then  $H_0$  is accepted, implying that the independent variables do not have a significant collective impact on the dependent variable.

The results of the panel data regression analysis show that the F-statistic for the variables Leverage and Tax Avoidance is 2.86. At a significance level of  $\alpha = 5\%$ , with degrees of freedom  $df_1 = k - 1 = 2$  and  $df_2 = n - k = 150$ , the corresponding F-table value is 2.66 (two-tailed test). Since  $2.86 > 2.66$ , the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_1$ ) is accepted, indicating that Leverage and Tax Avoidance simultaneously have

a significant effect on earnings management. This conclusion is further supported by the probability value of 0.00, which is less than the significance level of 0.05, confirming that the result is statistically significant.

## CONCLUSION

This study finds that leverage and tax avoidance both have a positive and significant impact on earnings management in cosmetics and household goods manufacturing companies listed on the Indonesia Stock Exchange during 2020–2024. Higher leverage increases managerial incentives to manipulate earnings, while tax avoidance strategies also align with income smoothing to reduce tax burdens. These results confirm that both variables jointly influence earnings management practices. Therefore, companies should apply leverage and tax planning ethically and transparently, while regulators are encouraged to enhance oversight and enforce stricter disclosure and sanction policies. Future studies are recommended to include additional factors such as firm size, audit quality, or corporate governance to provide a broader view of earnings management behavior.

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