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Corporate Social Responsibility, Good Corporate Governance, Capital Intensity, and Tax Aggressiveness in Indonesian Food and Beverage Companies

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Abstract: Corporate tax aggressiveness remains a concern because corporate tax planning may reduce government revenue and create governance risks. Previous studies have reported inconsistent relationships between corporate social responsibility, corporate governance, capital intensity, and tax aggressiveness, warranting further sector-specific investigation. **Objective:** This study aimed to examine the relationships of corporate social responsibility (CSR), good corporate governance (GCG), and capital intensity with tax aggressiveness among food and beverage companies listed on the Indonesia Stock Exchange during 2021–2025. **Method:** A quantitative panel-data design was employed using purposive sampling of 32 companies from a population of 102, yielding 160 firm-year observations. Secondary data from annual reports and financial statements were analyzed using fixed-effects panel regression in EViews 13. Tax aggressiveness was proxied by the effective tax rate (ETR). **Findings:** CSR ($\beta = 0.063100$; $p = 0.6275$) and capital intensity ($\beta = -0.053560$; $p = 0.0559$) were not statistically significant. GCG, measured by independent commissioner proportion, was negatively associated with ETR ($\beta = -0.364131$; $p = 0.0017$), indicating higher tax aggressiveness under the study's proxy. **Implications:** Governance assessments should consider tax outcomes alongside board composition. **Originality:** The study examines these three corporate characteristics jointly within the Indonesian food and beverage sector over 2021–2025.

Keywords: corporate social responsibility; good corporate governance; capital intensity; tax aggressiveness; effective tax rate.

INTRODUCTION

Corporate tax aggressiveness remains an important issue in corporate financial management because taxation represents a mandatory contribution to public revenue, while companies may seek to minimize tax expenses to improve financial performance. Differences between corporate tax planning objectives and public revenue interests create concerns regarding transparency, accountability, and the effectiveness of corporate governance. Within the agency theory framework, conflicts of interest and information asymmetry may influence managerial decisions, including decisions concerning taxation (Jensen & Meckling, 1976). Tax aggressiveness is frequently examined using the effective tax rate (ETR), although its interpretation requires consideration of accounting characteristics and the distinction between legitimate tax planning and aggressive tax behavior. Corporate social responsibility (CSR), good corporate governance (GCG), and capital intensity are relevant characteristics because they represent different dimensions of corporate accountability, managerial oversight, and investment structure. Studies by Budiantara, Utomo, and Manalu (2020), Sihombing, Pahala, and Armeliza (2021), and Ichwan, Haliah, and Haerial (2023) demonstrate the continuing relevance of these characteristics in Indonesian tax aggressiveness research. More recent investigations by Widianti and Prasetyo (2023), Marques, Montenegro, and Brás (2024), and Silvani and Kawedar (2025) further indicate that the relationship between corporate responsibility, organizational characteristics, and tax behavior remains an important empirical question. In the food and beverage industry, this issue warrants particular attention because differences in fixed-asset investment, corporate disclosure, and governance structures may be associated with variations in corporate effective tax rates.

Previous studies have investigated the relationships between CSR, corporate governance, capital intensity, and tax aggressiveness using different theoretical perspectives, empirical settings, and variable measurements. From an agency theory perspective, corporate governance mechanisms are expected to

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influence managerial discretion through monitoring and accountability, while CSR disclosure may reflect corporate responsibility toward stakeholders. However, the empirical evidence is not uniform. Budiantara et al. (2020), Ichwan et al. (2023), and Dewi and Nustini (2024) examined the relationships between corporate responsibility, governance, and tax aggressiveness in Indonesian companies. Neno and Irawati (2022) and Sasana, Masyuri, Indrawan, and Carito (2022) further considered capital intensity alongside CSR, while Madyastuti (2022) investigated the moderating role of firm size. Regarding governance, Shelvi, Senjaya, Gunawan, and Sadeli (2022) and Salsabela and Andriani (2023) analyzed corporate governance mechanisms in relation to aggressive tax behavior. Widianti and Prasetyo (2023) reported that CSR disclosure was associated with increased tax avoidance, whereas their governance disclosure measure did not demonstrate a significant relationship. In contrast, Ariyati and Ferdiansyah (2023) found that capital intensity was associated with tax aggressiveness, while CSR and independent commissioners were not significant in their sample. Marques et al. (2024), through a meta-analysis, identified substantial heterogeneity in the CSR–tax avoidance literature, particularly in relation to variable proxies, sample characteristics, and econometric specifications. More recent studies by Laurencia and Indarto (2025), Rachmawati and Trisnawati (2025), Erawati and Julina (2025), and Angraeni, Suhendar, and Etika (2025) continued to examine these relationships across different corporate settings. Collectively, these findings suggest that the direction and statistical significance of the relationships may depend on the research context, operational definitions, and model specification rather than following a uniform pattern across companies.

Despite the extensive literature, several research limitations remain relevant to the present study. First, previous investigations have covered different industrial sectors and observation periods, making their findings not necessarily directly transferable to food and beverage companies during 2021–2025. Second, CSR and GCG have been measured using different disclosure indices and governance indicators, while capital intensity has been examined both as an independent variable and as a moderating characteristic (Sasana et al., 2022; Widianti & Prasetyo, 2023; Dewi & Nustini, 2024). Third, the meta-analytical evidence presented by Marques et al. (2024) emphasizes that measurement and research design contribute to inconsistencies in reported relationships. Fourth, existing studies have not established a consistent direction of association between independent commissioners and tax aggressiveness, as reflected in the different empirical findings of Shelvi et al. (2022), Ariyati and Ferdiansyah (2023), and Rachmawati and Trisnawati (2025). The research gap addressed in this study is therefore contextual and measurement-specific: the need to reassess the associations of CSR disclosure, independent commissioner proportion, and capital intensity with ETR within a defined group of Indonesian food and beverage companies over the 2021–2025 period. The study's originality lies in this particular combination of variables, sectoral focus, observation period, and fixed-effects panel estimation. This contribution is intended to provide a more specific assessment of existing relationships rather than to claim the development of a new theoretical framework or an entirely unexplored combination of variables.

Accordingly, this study aims to examine the relationships of corporate social responsibility, good corporate governance, and capital intensity with tax aggressiveness among food and beverage companies listed on the Indonesia Stock Exchange during 2021–2025. Specifically, the study evaluates the individual associations of CSR disclosure, the proportion of independent commissioners as a proxy for GCG, and capital intensity with the effective tax rate as an operational indicator of tax aggressiveness. The research employs a quantitative approach using secondary data from annual reports and financial statements, covering 32 companies selected through purposive sampling from a population of 102 companies, resulting in 160 firm-year observations. Fixed-effects panel regression is applied to account for time-invariant differences across companies. The study is expected to contribute to the empirical literature by clarifying how the selected corporate characteristics relate to ETR within a specific industrial and temporal context. Practically, its findings may assist corporate stakeholders, investors, and researchers in evaluating tax-related outcomes alongside corporate disclosure, governance structure, and fixed-asset investment characteristics, while recognizing that statistical associations from an observational design do not establish causal relationships.

RESEARCH METHOD

This study employed a quantitative approach with an associative research design to examine the relationships between corporate social responsibility (CSR), good corporate governance (GCG), capital intensity, and tax aggressiveness. A panel-data design was adopted by combining cross-sectional observations across companies with time-series observations covering the 2021–2025 period. This approach enabled the estimation of statistical relationships between the independent variables and the dependent variable while accounting for differences in company characteristics over time. The study was observational and non-experimental because it relied on historical corporate information without introducing interventions or

manipulating the research variables. Panel regression analysis was employed to estimate the relationships between the selected corporate characteristics and tax aggressiveness.

The research population consisted of 102 food and beverage companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2025 period. The sample was selected using purposive sampling based on the criteria reported in the original study, including company registration during the observation period, availability of complete annual reports and financial statements, presentation of financial statements in Indonesian rupiah, and availability of the information required to measure the research variables. Based on these criteria, 32 companies were selected, resulting in 160 firm-year observations over five years. The unit of analysis was the company-year observation. The sampling procedure was intended to ensure that the selected companies provided the financial and non-financial information necessary for consistent variable measurement throughout the research period.

The study incorporated one dependent variable and three independent variables. Tax aggressiveness, the dependent variable, was proxied by the effective tax rate (ETR), calculated as income tax expense divided by profit before tax. Under this operational definition, a lower ETR indicates a higher level of tax aggressiveness. The first independent variable, CSR, represented the extent of corporate social responsibility disclosure in company reports. The second independent variable, GCG, was proxied by the proportion of independent commissioners on the board of commissioners. The third independent variable, capital intensity (CI), represented the proportion of corporate investment in fixed assets relative to total assets. All variables were measured using secondary data obtained from published annual reports and financial statements. The measurement of CSR followed the disclosure information available in the company reports, while GCG and CI were determined using the corresponding corporate governance and financial information. Statistical processing was performed using EViews version 13.

Data were collected through documentary analysis of annual reports and financial statements published by the sampled companies for the 2021–2025 period. The research procedure involved identifying companies that satisfied the sampling criteria, obtaining the relevant financial and non-financial information, measuring each research variable, and organizing the observations into a panel dataset based on company identity and reporting year. The collected data were subsequently processed to generate descriptive statistics, including the mean, median, minimum, maximum, standard deviation, skewness, and kurtosis. These statistics were used to describe the distributions and variations of ETR, CSR, GCG, and CI across the sampled companies. The resulting panel dataset was then used for regression estimation and hypothesis testing.

Data analysis was conducted using panel regression in EViews 13. Three estimation approaches were considered: the common effect model (CEM), fixed effect model (FEM), and random effect model (REM). The Chow test was applied to compare CEM and FEM, while the Hausman test was used to compare FEM and REM. Based on the reported model-selection results, FEM was selected as the final estimation approach. The diagnostic procedures reported in the study included the Jarque–Bera normality test, examination of correlations among independent variables for multicollinearity, the Glejser heteroskedasticity test, and examination of the Durbin–Watson statistic for autocorrelation. Hypothesis testing was conducted at a 5% significance level ($\alpha = 0.05$) using t-tests to assess individual regression coefficients and the reported F-statistic to evaluate overall model significance. The coefficient of determination (R^2) and adjusted R^2 were used to assess model explanatory power. The general panel regression specification is presented in Equation (1).

$$ETR_{it} = \alpha + \beta_1 CSR_{it} + \beta_2 GCG_{it} + \beta_3 CI_{it} + \varepsilon_{it} \quad (1)$$

where ETR_{it} denotes the effective tax rate of company i in year t; CSR_{it} represents corporate social responsibility disclosure; GCG_{it} represents the proportion of independent commissioners; CI_{it} denotes capital intensity; α is the intercept; β_1, β_2, and β_3 are the regression coefficients; and ε_{it} is the error term. The subscripts i and t represent the company and observation year, respectively. In the selected fixed-effects specification, company-specific intercepts account for unobserved time-invariant differences among companies.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

Descriptive statistical analysis was conducted to describe the characteristics and distribution of the research variables across 160 firm-year observations from 32 food and beverage companies listed on the Indonesia Stock Exchange during 2021–2025. The analysis included the effective tax rate (ETR), corporate social

responsibility (CSR), the proportion of independent commissioners (DKI) as a proxy for good corporate governance, and capital intensity (CI). The results are presented in Table 1.

Table 1. Descriptive Statistical Results

Statistic	ETR	CSR	DKI	CI
Mean	0.240048	0.408791	0.421116	0.370856
Median	0.221107	0.368132	0.400000	0.325833
Maximum	0.846350	0.549451	0.666667	3.051368
Minimum	0.017439	0.296703	0.200000	0.100003
Std. Dev.	0.091629	0.077683	0.096457	0.262776
Skewness	3.388154	0.415937	0.828193	6.759409
Kurtosis	20.67067	1.660509	3.069658	68.86639
Jarque–Bera	2387.807	16.57499	18.32310	30140.93
Probability	0.000000	0.000252	0.000105	0.000000
Sum	38.40763	65.40659	67.37857	59.33689
Sum Sq. Dev.	1.334937	0.959498	1.479335	10.97917
Observations	160	160	160	160

Source: Secondary data processed using EViews 13.

As shown in Table 1, the average ETR was 0.240048, with a minimum value of 0.017439 and a maximum of 0.846350. The standard deviation of 0.091629 indicates variation in corporate effective tax rates across the observed companies. Since ETR is used as an inverse proxy for tax aggressiveness, companies with lower ETR values are interpreted as exhibiting relatively higher tax aggressiveness under the study's operational definition. However, differences in ETR should not automatically be regarded as evidence of unlawful tax behavior.

CSR had an average value of 0.408791, ranging from 0.296703 to 0.549451, with a standard deviation of 0.077683. These findings indicate differences in the level of CSR disclosure among the sampled companies. The independent commissioner proportion had a mean of 0.421116, indicating that independent commissioners accounted for approximately 42.11% of board membership on average. Capital intensity had a mean of 0.370856 and a standard deviation of 0.262776. Its maximum value of 3.051368 is unusually high for a conventional fixed-assets-to-total-assets ratio and requires verification against the underlying financial statements and calculation formula. The relatively high skewness and kurtosis of ETR and CI also suggest asymmetric distributions and potentially influential observations, which should be considered when interpreting the regression results.

Panel Regression Model Selection

Panel regression model selection was conducted using the Chow and Hausman tests. The Chow test was used to determine whether the common effect model or fixed effect model was more appropriate, while the Hausman test was employed to compare the fixed effect and random effect models.

Table 2. Chow Test Results

Effects Test	Statistic	d.f.	Probability
Cross-section F	5.491098	(31, 125)	0.0000
Cross-section Chi-square	137.507324	31	0.0000

Source: Secondary data processed using EViews 13.

Table 2 shows that the probability of the cross-section F-statistic was 0.0000, which is below the significance threshold of 0.05. Therefore, the null hypothesis that the common effect model is sufficient was rejected. This finding supports the inclusion of company-specific fixed effects and indicates that the fixed effect model provides a more appropriate specification than the common effect model for the observed panel data. However, the Chow test only addresses the comparison between the common effect and fixed effect specifications; it does not complete the comparison with the random effect alternative. Therefore, the model-selection procedure proceeded to the Hausman test to assess the choice between the fixed effect and random effect models. This additional step links the initial evidence supporting company-specific effects to the

selection of the final estimation approach. The Hausman test results, including the chi-square statistic, degrees of freedom, and probability, are summarized in Table 3.

Table 3. Hausman Test Results

Test Summary	Chi-square Statistic	Chi-square d.f.	Probability
Cross-section random	8.018989	3	0.0456

Source: Secondary data processed using EViews 13.

As presented in Table 3, the Hausman test produced a chi-square statistic of 8.018989 with a probability of 0.0456. Since the probability was below 0.05, the null hypothesis supporting the random effect specification was rejected. Accordingly, the fixed effect model was selected as the preferred estimation model. This model allows the regression to account for unobserved company-specific characteristics that remain constant over the observation period, although it does not automatically eliminate time-varying omitted-variable bias.

Diagnostic Test Results

Residual Normality Test

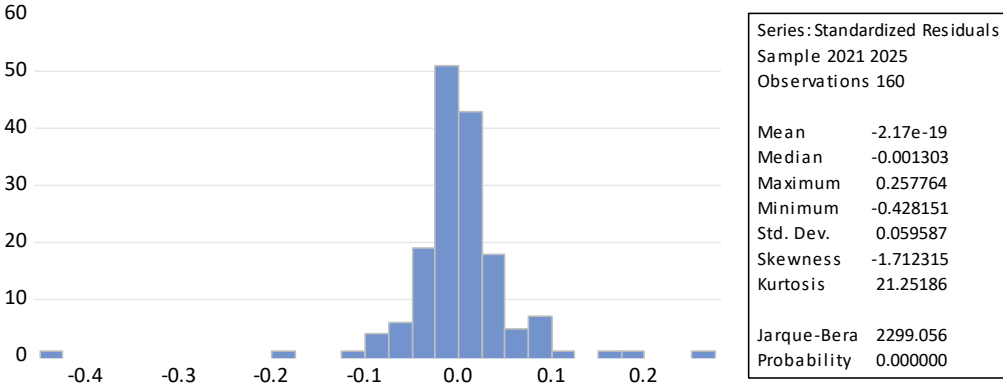


Figure 1. Residual Normality Test

Source: Secondary data processed using EViews 13.

Figure 1 presents the distribution of standardized regression residuals. The original output reported a Jarque–Bera statistic of 2299.056, a probability of 0.000000, skewness of −1.712315, and kurtosis of 21.25186. Since the probability was below 0.05, the null hypothesis of normally distributed residuals was rejected. The negative skewness and high kurtosis indicate a left-skewed distribution with substantial departures from normality.

Although residual normality is not a necessary condition for the consistency of fixed-effects coefficient estimates under appropriate assumptions, the pronounced non-normality warrants attention, particularly for finite-sample statistical inference. The results should therefore be interpreted cautiously, and additional investigation of influential observations and the suitability of the reported standard errors would strengthen the reliability of the findings.

Multicollinearity Test

Table 4. Correlation Matrix of Independent Variables

Variable	CSR_X1	DKI_X2	CI_X3
CSR_X1	1.000000	0.014005	−0.061014
DKI_X2	0.014005	1.000000	−0.229774
CI_X3	−0.061014	−0.229774	1.000000

Source: Secondary data processed using EViews 13.

Table 4 shows that the correlation between CSR and DKI was 0.014005, while the correlation between CSR and CI was −0.061014. The correlation between DKI and CI was −0.229774. All pairwise correlations were relatively low in absolute magnitude, indicating no evidence of strong pairwise linear relationships among the independent variables. These findings do not suggest severe multicollinearity based on the correlation matrix. Nevertheless, pairwise correlations alone cannot conclusively exclude multicollinearity involving combinations of several predictors.

Heteroskedasticity Test

Table 5. Glejser Heteroskedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	−0.037295	0.035066	−1.063551	0.2896
CSR_X1	−0.021986	0.065280	−0.336801	0.7368
DKI_X2	0.192832	0.057255	1.679788	0.1007
CI_X3	−0.003027	0.013970	−0.216697	0.8288

Source: Secondary data processed using EViews 13.

According to the reported probabilities in Table 5, CSR, DKI, and CI each had significance values above 0.05. Based solely on these reported probability values, the Glejser test did not identify statistically significant associations between the independent variables and the dependent variable used in the auxiliary heteroskedasticity regression.

However, the DKI result requires verification because its reported coefficient divided by its standard error does not reproduce the displayed t-statistic. Therefore, the original EViews output should be checked before concluding that the regression is free from heteroskedasticity. In addition, the absence of a significant Glejser test result does not establish that all forms of heteroskedasticity are absent.

Autocorrelation Assessment

The original regression output reported Durbin–Watson statistics of 2.043288 and 2.643288 in different tables. These values are inconsistent and must be reconciled using the original EViews estimation results. Furthermore, the conventional interpretation of the Durbin–Watson statistic requires caution in fixed-effects panel models. Accordingly, the available evidence is insufficient to establish the absence of serial correlation. A panel-appropriate serial correlation diagnostic would provide stronger support for the reliability of statistical inference.

Fixed Effect Model Estimation

The fixed effect model was selected based on the Chow and Hausman tests. The estimation results were used to evaluate the relationships between CSR, independent commissioner proportion, capital intensity, and ETR after accounting for company-specific fixed effects.

Table 6. Fixed Effect Model Summary Statistics

Statistic	Value
R-squared	0.577093
Adjusted R-squared	0.462062
S.E. of regression	0.067204
Sum squared residual	0.564554
Log likelihood	224.7212
F-statistic	5.016859
Prob(F-statistic)	0.000000
Akaike information criterion	−2.371515
Schwarz criterion	−1.698821
Hannan–Quinn criterion	−2.098357
Durbin–Watson statistic	2.043288

Source: Secondary data processed using EViews 13.

Table 6 shows an R-squared value of 0.577093, indicating that the estimated fixed-effects specification accounted for approximately 57.71% of the observed variation in ETR. The adjusted R-squared value of 0.462062 indicates that the model retained approximately 46.21% explanatory power after adjustment for the number of estimated parameters and sample size. These measures describe the explanatory performance of the overall fixed-effects model, including company-specific effects, and should not be attributed exclusively to CSR, DKI, and CI.

The model F-statistic was 5.016859, with a reported probability of 0.000000, indicating overall statistical significance under the software's reported test specification. However, in a fixed-effects regression, the overall F-test may jointly involve company-specific effects and the explanatory variables. Therefore, this result alone does not demonstrate that CSR, DKI, and CI are jointly significant. A separate joint restriction or Wald test on the three slope coefficients is required to establish their simultaneous statistical significance.

Table 7. Fixed Effect Panel Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	0.387457	0.069677	5.560796	0.0000
CSR_X1	0.063100	0.129711	0.486469	0.6275
DKI_X2	−0.364131	0.113764	−3.200751	0.0017
CI_X3	−0.053560	0.027757	−1.929576	0.0559

Source: Secondary data processed using EViews 13.

The estimated regression equation, including the company-specific fixed-effect term, is expressed as follows:

$$ETR_{it} = 0.387457 + 0.063100CSR_{it} - 0.364131DKI_{it} - 0.053560CI_{it} + \hat{\mu}_i \quad (2)$$

where $\hat{\mu}_i$ represents the estimated company-specific fixed effect.

As presented in Table 7, CSR had a positive coefficient of 0.063100, DKI had a negative coefficient of −0.364131, and CI had a negative coefficient of −0.053560. However, statistical significance was established only for DKI at the 5% level. CSR and CI did not demonstrate statistically significant relationships with ETR at the specified threshold. Because lower ETR values indicate higher tax aggressiveness under the research definition, the negative and statistically significant DKI coefficient implies an association between a higher independent commissioner proportion and greater inferred tax aggressiveness. This interpretation concerns the direction of the estimated statistical association and does not establish causality.

Discussion of Research Findings

Corporate Social Responsibility and Tax Aggressiveness

The regression results showed that CSR had a coefficient of 0.063100 and a probability of 0.6275. Since the probability exceeded 0.05, CSR was not statistically significantly associated with ETR. The positive coefficient indicates the estimated direction of association with ETR, but the available evidence does not support a reliable relationship between CSR disclosure and tax aggressiveness in the sampled companies.

This finding suggests that differences in the extent of CSR disclosure did not correspond to statistically distinguishable differences in ETR after accounting for the other included explanatory variables and company-specific fixed effects. CSR disclosure may reflect a company's communication of social and environmental responsibility without necessarily capturing the motivations or mechanisms underlying its tax decisions. The finding should not be interpreted as evidence that CSR is irrelevant to tax behavior in all settings. Rather, it indicates that the present sample and model did not identify a statistically significant relationship during the observation period.

Previous studies have reported heterogeneous findings concerning CSR and corporate tax behavior. Budiantara et al. (2020), Neno and Irawati (2022), and Dewi and Nustini (2024) examined CSR in relation to tax aggressiveness or tax avoidance under different empirical specifications. Widianti and Prasetyo (2023) also identified a relationship between CSR disclosure and tax avoidance, while Marques et al. (2024) highlighted heterogeneity in the broader CSR–tax avoidance literature. The present result contributes to this discussion by indicating that CSR disclosure was not a statistically significant predictor of ETR within the selected food and beverage companies over 2021–2025.

Good Corporate Governance and Tax Aggressiveness

The GCG variable, measured using the proportion of independent commissioners, had a regression coefficient of −0.364131 and a probability of 0.0017. Since the probability was below 0.05, the relationship between independent commissioner proportion and ETR was statistically significant. The negative coefficient indicates that a higher proportion of independent commissioners was associated with a lower ETR, holding the other included variables and company-specific fixed effects constant.

Under the study's operational definition, a lower ETR indicates greater inferred tax aggressiveness. Consequently, the estimated negative coefficient suggests that companies with higher independent commissioner proportions tended to exhibit higher tax aggressiveness as measured by ETR. This finding differs from the expectation that a greater proportion of independent commissioners necessarily corresponds to less aggressive tax behavior.

One possible interpretation is that the formal composition of a board does not fully capture the effectiveness of corporate oversight. Independent commissioners may monitor managerial performance and financial outcomes without necessarily prioritizing a higher effective tax rate. Nevertheless, this interpretation remains a theoretical possibility rather than a mechanism directly tested by the present study. The analysis does not include measures of commissioner expertise, independence in practice, board activity, or specific tax governance policies.

The result should be considered alongside earlier studies examining governance and tax behavior, including Sihombing et al. (2021), Shelvi et al. (2022), Ichwan et al. (2023), Salsabela and Andriani (2023), and Rachmawati and Trisnawati (2025). Differences across studies may reflect variations in governance proxies, industrial characteristics, observation periods, and estimation methods. The present finding specifically concerns the independent commissioner proportion and should not be generalized to all dimensions of good corporate governance.

Capital Intensity and Tax Aggressiveness

Capital intensity had a coefficient of −0.053560 and a probability of 0.0559. Although the coefficient was negative, its probability exceeded the 0.05 significance threshold. Therefore, capital intensity was not statistically significantly associated with ETR at the 5% level.

The negative coefficient suggests an estimated tendency for companies with higher capital intensity to have lower ETR values. However, the statistical evidence was insufficient to conclude that this relationship was distinguishable from zero at the prespecified significance level. Accordingly, the findings do not establish that fixed-asset investment was associated with higher tax aggressiveness in the sampled companies.

From an accounting perspective, fixed assets may affect taxable income through depreciation and other tax-related provisions. Nevertheless, the extent of this relationship depends on asset composition, accounting treatment, applicable tax rules, and corporate financial circumstances. The present regression does not directly measure these mechanisms.

Previous investigations by Annisa and Isthika (2021), Neno and Irawati (2022), Sasana et al. (2022), Madyastuti (2022), Dewi and Nustini (2024), and Laurencia and Indarto (2025) provide relevant contexts for interpreting capital intensity in corporate tax research. The current result indicates that the relationship was not statistically significant at the 5% level in the specified model. Moreover, the unusually high maximum CI value reported in Table 1 warrants verification before drawing stronger substantive conclusions about the role of capital intensity.

Overall Model Interpretation

Taken together, the regression results indicate that only the independent commissioner proportion was statistically significantly associated with ETR at the 5% level. CSR and capital intensity were not statistically significant under the reported specification. The selected fixed-effects model accounted for company-specific time-invariant heterogeneity and produced an adjusted R-squared of 0.462062. Nevertheless, the results should be understood as conditional statistical associations rather than causal effects.

The study contributes sector-specific evidence to the literature on corporate tax behavior by examining CSR disclosure, independent commissioner proportion, and capital intensity within Indonesian food and beverage companies over 2021–2025. The findings emphasize the importance of distinguishing the direction of an ETR coefficient from its interpretation as tax aggressiveness. They also demonstrate that formal governance indicators do not necessarily exhibit the expected relationship with tax outcomes.

Several limitations should be acknowledged. First, the use of ETR as a single proxy does not capture all dimensions of corporate tax aggressiveness. Second, the independent commissioner proportion measures only one aspect of GCG. Third, the observed distributions contain potentially influential values, particularly for capital intensity. Fourth, the residual normality results and unresolved diagnostic inconsistencies limit the strength of statistical inference. Finally, the observational design and the possibility of omitted time-varying factors prevent causal conclusions. Future research could incorporate alternative tax aggressiveness proxies,

additional governance indicators, verified financial measurements, and panel-appropriate robust inference procedures to assess the stability of the reported relationships.

CONCLUSION

This study examined the relationships of corporate social responsibility (CSR), good corporate governance (GCG), and capital intensity with tax aggressiveness among food and beverage companies listed on the Indonesia Stock Exchange during 2021–2025. Based on fixed-effects panel regression using 160 firm-year observations from 32 companies, the findings indicate that CSR was not significantly associated with the effective tax rate (ETR) ($\beta = 0.063100$; $p = 0.6275$). Similarly, capital intensity showed a negative but statistically insignificant association with ETR at the 5% significance level ($\beta = -0.053560$; $p = 0.0559$). In contrast, GCG, proxied by the proportion of independent commissioners, demonstrated a statistically significant negative association with ETR ($\beta = -0.364131$; $p = 0.0017$). Since a lower ETR represents higher inferred tax aggressiveness under the study's operational definition, this result indicates that a higher proportion of independent commissioners was associated with greater tax aggressiveness in the observed companies. The fixed-effects model produced an R-squared value of 0.577093 and an adjusted R-squared value of 0.462062, reflecting the explanatory performance of the overall model, including company-specific effects.

These findings contribute to the empirical literature by demonstrating that CSR disclosure, independent commissioner representation, and fixed-asset investment do not exhibit uniform relationships with corporate tax aggressiveness. The significant association between independent commissioner proportion and ETR highlights the importance of evaluating corporate governance effectiveness beyond formal board composition. However, the findings should be interpreted cautiously because the study relied on ETR as a single proxy for tax aggressiveness, employed a purposively selected sample, and used an observational research design that does not establish causality. Future research should consider alternative tax aggressiveness measures, broader governance indicators, additional explanatory variables, and robust panel-data estimation procedures. For corporate stakeholders and policymakers, the results underscore the importance of examining tax-related outcomes alongside corporate governance practices and financial characteristics rather than assuming that formal governance structures or CSR disclosure necessarily correspond to less aggressive tax behavior.

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