SUSTAINABILITY AND TAXES IN AN EMERGING MARKET: A QUANTILE PRESPECTIVE FROM INDONESIA

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ABSTRACT

Introduction/Main Objectives: This study examines whether Corporate Social Responsibility, proxied by ESG Disclosure, is related to corporate tax behavior in emerging markets. This issue is relevant because Indonesian issuers face increasing demands for ESG reporting as well as tightening tax regulations, so consistency between sustainability narratives and fiscal practices becomes important for academics, regulators, and investors.
Background Problems: Research question: Is the increase in ESGD associated with a higher CETR, meaning lower tax aggressiveness, and does this relationship differ across various parts of the CETR distribution?
Novelty: Previous evidence is largely average-based and rarely examines distributional effects in Indonesia. This study's contribution is to provide quantile evidence of the link between ESGD and CETR, stemming from the wide dispersion of CETR and thick distribution tails, which can mask average effects.
Research Methods: This is an explanatory quantitative study of 68 issuers. After data cleaning by excluding years with pre-tax profit < 0 and negative CETR, 522 firm-years were collected. All

variables were sourced from Bloomberg. Estimation was performed using quantile regression at 0.25; 0.50; 0.75.
Findings/Results: ESGD is positively and significantly associated with CETR at the 0.25 and 0.75 quantiles, but not significant at the 0.50 quantile. Substantively, higher ESG disclosure aligns with lower tax aggressiveness, and its effect is concentrated in the tails of the distribution..
Conclusion: CSR through ESG disclosure is correlated with more prudent tax behavior but is not evenly distributed across the distribution. These findings confirm the importance of a distributional perspective and the selection of quantile regression. Potential implementation: For regulators and exchanges, the results support monitoring focused on the tails of the distribution and strengthening the assurance of ESG reporting. Companies can leverage strong ESG governance to mitigate reputational risks, while investors can incorporate ESGD as a signal of tax risk in due diligence, and teaching can use this case to illustrate distribution-based analysis.

Keywords: Corporate Social Responsibility, ESG Disclosure, Tax Avoidance, Quantil Regression

1. INTRODUCTION

Amidst the push for ESG and sustainability reporting obligations, companies are increasingly highlighting their CSR programs, yet at the same time, corporate tax aggressiveness is challenging the consistency of these commitments. It begs the question for all of us: does CSR function as a legitimizing device that emphasizes aggressive tax management, or does it become a reputational shield for optimizing tax burdens?

1.1 Problem Formulation

Originating from the fiscal context of developing countries, Indonesia's tax space is still limited. OECD (2023), the tax-to-GDP ratio in 2023 was only 12%, while corporate income tax contributed 33% of total revenue, indicating that corporate tax behavior largely determines fiscal capacity and the stability of development financing. At the same time, cross-country profit shifting continues to pressure the tax base, with domestic profits in developing countries experiencing an increase of about 5%, illustrating the relative vulnerability of emerging markets. Responding to this dynamic, Indonesia issued PMK 136/2024 concerning the implementation of a 15% minimum tax effective January 1, 2025. This policy changes the calculus of corporate after-tax cash flow and reinforces expectations of tax compliance for issuers. From the perspective of tax spending, it reached IDR 362.5 trillion in Indonesia in 2023. This figure underscores the importance of understanding the linkage between CSR and tax aggressiveness so that fiscal policy and the sustainability agenda can mutually reinforce each other.

However, the relationship between CSR and tax aggressiveness is not universal. Several studies show that CSR can also function as a reputation management tool to disguise tax avoidance practices, especially in the context of weak regulations or in companies with high reputational incentives (Col & Patel, 2019). In fact, recent meta-analyses reveal that the relationship between CSR and tax aggressiveness tends to be weak or ambiguous in aggregate, and only significant in extreme cases (Marques et al., 2024). This complexity indicates that the role of CSR in the fiscal context is highly influenced by institutional context, public pressure, and corporate strategy, thus requiring further investigation, especially in developing countries with diverse tax governance. Therefore, this study aims to investigate whether CSR functions as a means of legitimacy to curb tax aggressiveness or, conversely, as a reputational cover for tax avoidance strategies.

1.2 Theory

Based on the understanding of legitimacy theory, companies are seen as operating under a social contract and striving to minimize the legitimacy gap, which is the discrepancy between societal expectations and actual practices. CSR functions as a legitimacy strategy: as a communication mechanism through sustainability reporting, for example, the disclosure of ESG policies, targets, and performance, as well as external assurance (Del Gesso & Lodhi, 2025); and as an incentive mechanism that creates credible commitment, such as the allocation of material CSR budgets, the establishment of implementing committees, and the involvement of third parties as verifiers (Velte, 2022). Market and regulatory incentives further strengthen the legitimacy function. Companies that maintain legitimacy gain a reputational premium in the form of better access to funding, lower cost of capital, and avoidance of non-compliance costs (Monteiro et al., 2024).

From this perspective, CSR can curb tax aggressiveness if its practices are correct and integrated, as companies will avoid opportunistic behavior that could damage legitimacy. However, if CSR is carried out symbolically, such as only emphasizing communication aspects without real action, it can potentially become a reputational cover for tax avoidance strategies

(Bothello et al., 2023). This phenomenon is known as CSR decoupling or greenwashing, which occurs when companies claim ethical values but do not reflect them in internal policies and actual operations (Balluchi et al., 2020). Institutional context, ownership structure, and stakeholder pressure significantly influence whether CSR is implemented substantively or symbolically, which explains why empirical evidence regarding the relationship between CSR and tax aggressiveness often varies across industries and jurisdictions.

2. LITERATURE REVIEW

In capital market research, CSR is often operationalized as ESG Disclosure because it is available across companies and years. ESGD reflects the breadth and depth of disclosure of policies, targets, and performance relevant to governance and compliance (Hussainey et al., 2025; Itan et al., 2025). Tax aggressiveness is generally proxied by the Cash Effective Tax Rate, which is cash tax paid compared to pre-tax profit. Economically and accounting-wise, a higher CETR indicates a relatively large portion of cash tax, while a lower CETR indicates more aggressive tax optimization (Mohamad Ariff et al., 2024). Thus, a positive relationship between ESGD and CETR is consistent with the view that CSR tends to reduce tax aggressiveness.

Some literature puts forward several viewpoints. First, transparency and accountability. ESG Disclosure increases the visibility of corporate practices, which in turn encourages stricter oversight by investors, analysts, and regulators. In this situation, the reputational cost of aggressive tax strategies increases, so companies are more likely to increase CETR to avoid social and market pressure (Del Gesso & Lodhi, 2025). Second, related to credible costs. Companies that implement CSR substantively through material budget allocation, establishment of sustainability committees, and external verification will send a signal of commitment that is difficult for opportunistic actors to imitate (Mohamad Ariff et al., 2024). Third, related to governance and long-term orientation. Companies with high ESGD usually have strong oversight structures and are oriented towards long-term value creation, thus preferring fiscal compliance over short-term savings. Recent studies have found that governance mechanisms such as board diversity and the existence of sustainability committees will strengthen the relationship between ESG and prudent and ethical fiscal practices (Nicolo' & Andrades-Peña, 2024).

In the context of developing countries, institutional characteristics differ from developed countries regarding the relationship between CSR and tax aggressiveness. Several factors contributing to inconsistent results are the quality of law enforcement, which is not yet homogeneous, high information asymmetry, and the quality and scope of sustainability report assurance, which are not yet evenly distributed (Gerged et al., 2025)(Mooneeapen et al., 2022). Companies can expand ESG Disclosure to build positive perceptions of governance and social commitment while pursuing tax minimization strategies to optimize after-tax cash flows, especially when stakeholder pressure is uneven across industries or ownership types (Itan et al., 2025). The coexistence of CSR strategies and tax avoidance explains the argument that distribution-based tests such as quantile regression are more appropriate than relying solely on average estimates. This is because the relationship between CSR and CETR can vary for companies at each beginning or end of the distribution, for example, the most compliant or most aggressive in terms of tax (Gerged et al., 2025). Based on the operationalization of variables and mechanisms above, we derive the following hypothesis:

Ha: There is a significant negative relationship between CSR disclosure and tax aggressiveness.

3. METHOD

This study is a quantitative explanatory study that examines the effect of corporate social responsibility, operationalized as ESG Disclosure, on tax aggressiveness, proxied by the Cash Effective Tax Rate. The use of ESGD as a representation of disclosure-based CSR has been widely adopted in emerging market studies due to data consistency and conformity with international reporting standards (Nicolo' & Andrades-Peña, 2024). CETR is used as a general indicator of tax aggressiveness, assuming that lower values reflect more aggressive tax optimization strategies (Hussainey et al., 2025). The population includes all IDX listed companies for the 2016-2023 period based on ESG data availability on Bloomberg. The sample was purposively selected with the criteria of being listed on the IDX and having complete CETR and ESGD data for eight consecutive years, resulting in 68 companies. Data cleaning was performed by removing observations in years when profit before tax was less than or equal to 0 because it was a meaningless ratio, as well as observations with negative CETR values. Thus, the final total became 522 observations.

The empirical specification models the relationship between ESGD and CETR for each quantile, expressed as CETR = a + B1 ESGD + e. The estimation technique uses quantile regression at 0.25; 0.50; 0.75 with bootstrapped standard errors clustered at the company level, so the inference is robust to heteroskedasticity and intra-company dependence. The choice of quantile regression is based on the wide dispersion of CETR, non-normal distribution, and the potential for heterogeneous effects not captured by mean-based approaches such as OLS (Veeravel et al., 2024; Wu & Chang, 2022)

4. RESULTS AND DISCUSSION

Table 1. Discriptive

VARIABLE	MEAN	SD	MIN	MAX
ESGD	43,28	13,48	13	77
CETR	0,148	3,389	-54,433	10,386

The initial data set contained 522 observations (Table 1). The average ESGD was 43.28, indicating a wide variation in sustainability disclosure across issuers. The CETR variable had a mean of 0.148 with an SD of 3.389 and a range of -54.43 to 10.39. This very wide distribution and the presence of negative/extreme values are consistent with the characteristics of cash tax and indicate strong tail behavior. In line with the sample criteria, observations with CETR < 0 were not used in the main estimation so that the interpretation "higher CETR indicates lower tax aggressiveness" could be maintained. (Veeravel et al., 2024).

Table 2. Pre-Estimation

TEST		DECISION
Heteroskedasicity (Glejer)	p-value (0,156)	Not detected
Autocorelation (Durbin Watson)	DW=2,048 du=1.9449;4–du=2.0551; condition:du<DW<4–du holds	No Autocorrelation
Multikolonieritas	VIF < 10 for all covariant	Not a concern

Table 2 shows the pre-test results. The heteroskedasticity test (Ghozali, 2021). The regression results of AbsUt on ESGD show an ESGD coefficient of B = 0.015 with p=0.156, indicating no heteroskedasticity in the residuals of the basic linear model. Nevertheless, given the volatile and widely dispersed characteristics of CETR, inference on the main results is still complemented by robust standard errors in quantile estimation (Galvao & Yoon, 2024). The autocorrelation test shows a Durbin Watson value of 2.048, which is in the non-autocorrelation region because it meets the du<DW<4-du criterion, namely 1.9449 < 2.048 < 2.0551, so no autocorrelation was found. Thus, overall, the descriptive statistics confirm the very wide dispersion of CETR, which simultaneously underlies the choice of quantile regression. Meanwhile, the pre-tests show that the basic assumptions for inference regarding the absence of severe heteroskedasticity and autocorrelation in the basic linear model are at an acceptable level to proceed to quantile estimation (Buallay et al., 2024).

Table 3 Quantile Regression CETR on ESGD

VARIABLE	0,25	0,50	0,75
ESGD	0,001 (0,000;0,002)	0,000 (-0,001;0,001)	0,003 (0,001;0,006)

Notes: Coefficient with 95% confidence interval in brackets.

Table 3 shows the quantile regression results. Quantile estimation shows an uneven pattern along the CETR distribution. At Q25, the ESGD coefficient is 0.001 with a 95% confidence interval, indicating a positive and significant direction. Economically, every 10-point increase in ESGD correlates with a 0.01 increase in CETR, meaning tax aggressiveness decreases in the group of companies with low CETR. At Q50, the ESGD coefficient is 0.000 with a 95% confidence interval and is not significant, indicating that for average companies, the relationship between ESGD and CETR is not statistically detected. Conversely, at Q75, the ESGD coefficient is 0.003 with a 95% confidence interval and is positively significant, with the economic magnitude of high-CETR companies being relatively more compliant with broader ESG disclosures related to higher fiscal compliance.

The significant pattern at Q25 and Q75, but not at the median, confirms the heterogeneity of the positive effect of ESGD on CETR, which primarily appears at the tails of the distribution—i.e., the most aggressive and most compliant companies, not the median companies. Substantively, these results are consistent with the hypothesis that CSR is positively associated with CETR, meaning it reduces tax aggressiveness, but its effect is concentrated in specific segments within the tax behavior distribution. This finding also validates the choice of quantile regression over the OLS approach for phenomena with wide CETR dispersion (Veeravel et al., 2024; Wu & Chang, 2022).

5. CONCLUSION

This study confirms the hypothesis that there is a negative relationship between CSR and tax aggressiveness. Considering the wide dispersion and non-normal distribution of CETR, quantile regression at 0.25, 0.50, and 0.75 was used to capture the heterogeneity of effects across the distribution, not just at the mean (Wu & Chang, 2022). The main results show that ESGD is positively and significantly correlated with CETR at the 0.25 and 0.75 quantiles, meaning that higher ESG disclosure is associated with lower tax aggressiveness in companies at the tails of the distribution, both the most aggressive and the most compliant. However, it was not detected in average companies, indicating that the relationship between CSR and tax is not uniform at all levels (Gerged et al., 2025). This finding validates the choice of quantile regression in cash tax studies that have high volatility and heavy-tailed characteristics.

Theoretically, this finding aligns with legitimacy theory, which states that companies strive to maintain conformity with social expectations and reduce the legitimacy gap through CSR/ESGD disclosure. The effect of controlling tax aggressiveness will be stronger when stakeholder pressure and reputational costs are high, thus being more evident in companies at the ends of the distribution (Khlifi et al., 2025). For regulators and investors, these results suggest that ESG transparency can signal more prudent fiscal behavior, especially in companies most reputationaly exposed to risk.

6. IMPLICATIONS, LIMITATIONS, AND FUTURE RESEARCH

This study has limitations. First, ESGD only measures the level of disclosure, not actual CSR performance, which presents a potential for greenwashing or symbolic reporting. Second, CETR is sensitive to timing and one-off cash events, so it can be distorted during certain periods. Third, endogeneity issues have not been explicitly addressed; the choice of ESG strategy and tax may be interdependent, so further research is advised to adopt causal designs such as dynamic panels, IV regression, or quantile panel models.

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