Linking ESG to Tax Avoidance: Do Women Directors Matter?

Dewi Paskah Sibuea[1]*, Cynthia Afriani [2]

[12] Faculty of Economics and Business, Universitas Indonesia, Jakarta, Indonesia, 10430

A B S T R A C T

This study aims to examine the effect of Environmental, Social, and Governance (ESG) performance on tax avoidance, as well as the moderating role of female board representation in this relationship. The research uses data from manufacturing firms listed in ASEAN-5 countries during the 2019–2023 period. The analysis is conducted using a dynamic panel regression method with a two-step System Generalized Method of Moments (System GMM) approach and robust standard errors to address potential endogeneity and autocorrelation. The results indicate that ESG performance does not have a statistically significant effect on tax avoidance. The interaction term between ESG and the presence of female directors, which represents the moderating effect, is also statistically insignificant, although it shows a negative direction. Additionally, control variables such as profitability, leverage, firm size, market-to-book ratio, and economic growth do not exhibit significant effects. These findings suggest that neither ESG implementation nor board gender diversity currently functions as an effective control mechanism for tax avoidance practices in the ASEAN-5 manufacturing sector. Therefore, enhancing ESG practices and empowering women in corporate governance structures remains essential for promoting better tax compliance in the long term.

A R T I C L E I N F O

INTRODUCTION

In recent years, tax avoidance has gained increasing global attention due to its adverse implications for fiscal sustainability, economic inequality, and public trust in tax systems (Lanis & Richardson, 2013). Multinational enterprises frequently adopt legal but ethically questionable strategies to reduce their tax burdens, including transfer pricing, profit shifting, and the use of tax havens. According to the Tax Justice Network (2020), global tax revenue losses caused by tax avoidance exceed USD 427 billion annually, with Asia accounting for approximately 27.57% of the total.

The ASEAN-5 countries (Indonesia, Malaysia, Singapore, Thailand, and the Philippines) face substantial challenges in combating tax avoidance, particularly within the manufacturing sector. These nations differ in their tax structures, regulatory environments, and levels of ESG (Environmental, Social, and Governance) adoption, making them a relevant context for investigating how corporate sustainability performance relates to tax planning behavior. For instance, Indonesia loses more than USD 4.7 billion annually in potential tax revenue, while Singapore attracts aggressive tax planning due to its low corporate tax regime and status as a regional financial hub (OECD, 2021).

While ESG has increasingly been adopted as a governance framework to promote corporate sustainability and ethical behavior, its relationship with tax avoidance remains inconclusive. Some scholars argue that high ESG-performing firms are less likely to engage in aggressive tax practices due to reputational risk and stakeholder pressure (Yoon et al., 2021). Others suggest that ESG initiatives may serve merely as a façade for legitimacy, allowing firms to maintain socially responsible appearances while continuing to exploit tax loopholes (Mao, 2019; Alsaadi, 2020).

Board gender diversity, particularly the presence of female directors, has also received growing scholarly attention in relation to ethical governance. Prior research indicates that female leaders tend to adopt more conservative and ethical business practices, which may influence tax compliance and ESG effectiveness (Wu et al., 2021). However, the moderating role of female board members in the ESG–tax avoidance relationship has been underexplored, especially in the ASEAN region, where institutional structures and cultural dynamics may limit their influence.

Grounded in Agency Theory and Legitimacy Theory, this study aims to fill the research gap by examining whether ESG performance affects tax avoidance in manufacturing firms across ASEAN-5 and whether the presence of female directors moderates this relationship. The study employs panel data from 2019 to 2023 and applies the System Generalized Method of Moments (System GMM) to address endogeneity and dynamic panel bias in the estimation process.

This research contributes to the literature in three main ways. Theoretically, it extends the discourse on ESG and corporate tax behavior in developing economies. Methodologically, it adopts a robust estimation technique to ensure more reliable results. Practically, it offers policy-relevant insights for governments, regulators, investors, and corporations in strengthening corporate governance and promoting tax compliance through ESG and gender diversity initiatives.

LITERATURE REVIEW
Agency Theory, Legitimacy Theory, and Gender Leadership Theory
This study adopts an integrated theoretical perspective to explain how ESG performance relates to corporate tax avoidance and how female board representation may moderate this relationship. Drawing from Agency Theory, Legitimacy Theory, and Gender Leadership Theory, the framework explores the interplay between internal governance mechanisms, external legitimacy pressures, and board-level dynamics in shaping corporate financial behavior.

Agency Theory (Jensen & Meckling, 1976) suggests that conflicts of interest arise when managers act in their own self-interest rather than in the best interest of shareholders. Tax avoidance, though legal, is often a manifestation of such opportunistic behavior. Managers may attempt to maximize short-term performance metrics or personal

incentives by exploiting legal loopholes in tax regulation. In this context, ESG performance is viewed as a governance mechanism that limits agency costs by promoting transparency, accountability, and long-term orientation.

Legitimacy Theory (O'Donovan, 2002) complements this view by emphasizing the importance of aligning corporate behavior with societal expectations. Companies are increasingly held accountable not only for their financial performance but also for their ethical conduct, including how they contribute to or undermine public finances. Although tax avoidance may comply with legal standards, it can be perceived as socially irresponsible. ESG initiatives particularly when communicated through sustainability reports are often used to signal responsible behavior and maintain corporate legitimacy. However, some firms may adopt ESG superficially to divert attention from aggressive practices, a phenomenon commonly referred to as greenwashing (Mao, 2019; Lin et al., 2017).

Finally, Gender Leadership Theory (Eagly & Carli, 2007) adds a behavioral dimension to the framework. It posits that female leaders are more likely to demonstrate ethical sensitivity, risk aversion, and a commitment to transparency. The presence of women on boards may therefore strengthen the substance of ESG adoption, ensuring that sustainability initiatives translate into genuinely responsible practices, including in the domain of taxation. Nevertheless, the extent to which female directors influence strategic decisions may vary depending on institutional strength and cultural norms (Aabo & Giorici, 2023).

Together, these theories provide a comprehensive foundation for understanding how ESG performance might constrain tax avoidance and how gender diversity in leadership could reinforce this effect.

Tax Avoidance
Tax avoidance refers to the legal use of tax regulations and accounting strategies to minimize a company's tax obligations. While it does not violate the law, it often raises ethical concerns and has significant implications for government revenue, fiscal policy, and public trust. According to

Dyreng et al. (2017), tax avoidance typically involves practices such as transfer pricing manipulation, income shifting to low-tax jurisdictions, the use of tax havens, and aggressive tax planning. These actions may be strategically advantageous for firms but can undermine equitable tax contributions and intensify economic inequality.

In emerging economies such as those in the ASEAN-5, tax avoidance poses a critical threat to fiscal stability and development financing. The Tax Justice Network (2020) estimates that Asia loses over 27% of its potential tax revenue annually due to international tax abuse. For example, Indonesia alone suffers from tax revenue losses exceeding USD 4.7 billion each year. Such conditions exacerbate income disparity and limit government capacity to provide essential public services, especially in sectors like education, health, and infrastructure.

From an ethical perspective, tax avoidance is controversial. While legally permissible, it may be perceived as socially irresponsible, especially when conducted by firms that publicly promote sustainability and corporate social responsibility. This perception gap creates reputational risks that can damage stakeholder trust. Scholars such as Lanis and Richardson (2013) argue that tax avoidance, although technically within legal bounds, violates the broader social contract between corporations and society.

To empirically assess the extent of tax avoidance, researchers commonly use quantitative proxies such as the Current Effective Tax Rate (CETR), which is calculated as tax expense divided by pre-tax income. Lower CETR values typically indicate higher levels of tax avoidance (Hanlon & Heitzman, 2010). This study employs CETR as the primary proxy to measure tax avoidance among manufacturing firms in the ASEAN-5 region.

ESG Performance and Its Relationship with Tax Avoidance
Environmental, Social, and Governance (ESG) performance has gained increasing prominence as a benchmark for corporate sustainability and ethical conduct. ESG encompasses a company's efforts in reducing environmental impact,

upholding social responsibility, and ensuring strong governance practices. Firms with high ESG ratings are often perceived as more transparent, ethical, and stakeholder oriented. In this study, ESG performance is measured using the Refinitiv ESG Score, a composite index that reflects company disclosures in key sustainability dimensions (Reuters, 2022).

From a theoretical standpoint, ESG performance may influence tax-related decisions in several ways. According to stakeholder theory, firms that prioritize ESG are likely to adopt more responsible tax strategies to preserve long-term trust and legitimacy. These firms tend to face greater scrutiny from investors, regulators, and civil society, making aggressive tax avoidance practices reputationally costly. Prior studies, such as Yoon et al. (2021), found that companies with strong ESG ratings tend to engage less in tax avoidance, indicating a complementary relationship between sustainability and fiscal responsibility.

Moreover, legitimacy theory suggests that public visibility through ESG reporting increases pressure on firms to comply with ethical standards, including taxation. In developing countries such as those in the ASEAN-5, where regulatory enforcement varies, ESG initiatives may act as soft control mechanisms, encouraging firms to avoid reputational risks associated with tax abuse.

Nevertheless, the empirical evidence is mixed. Some scholars argue that companies may adopt ESG as a symbolic tool to enhance image while continuing aggressive financial practices behind the scenes, a phenomenon known as greenwashing (Mao, 2019; Lin et al., 2017). This raise concerns that ESG adoption may not always reflect genuine ethical commitment.

Considering these perspectives, this study examines whether ESG performance significantly reduces the level of tax avoidance among manufacturing companies in ASEAN-5. Accordingly, the following hypothesis is proposed:

H1: ESG performance has a negative effect on tax avoidance.

Female Board Presence and the ESG-Tax

Avoidance Relationship

The presence of women on corporate boards has been increasingly recognized as a key factor in promoting ethical decision-making and enhancing corporate transparency. According to Gender Leadership Theory (Eagly & Carli, 2007), female leaders are generally more risk-averse, ethically conscious, and stakeholder-oriented. These characteristics may lead to more responsible corporate behavior, including the reduction of aggressive tax strategies. Within the ESG framework, female directors are often associated with stronger commitments to sustainability values, suggesting that their presence can reinforce the effectiveness of ESG initiatives in constraining tax avoidance.

Empirical studies provide support for this proposition. Wu et al. (2021) found that companies with greater female board representation are more likely to engage in responsible tax behavior and report stronger ESG performance. Female board members tend to enhance oversight in corporate governance and reduce managerial discretion, particularly in areas involving ethical ambiguity, such as tax planning. In this sense, gender diversity in the boardroom can serve as a reinforcing mechanism that aligns ESG practices with broader social responsibility, including tax compliance.

However, the effect of gender diversity may vary depending on organizational culture, industry norms, and institutional environments. Aabo & Giorici (2023) argue that in certain contexts, particularly in emerging economies, female directors may face structural limitations that constrain their influence on strategic decisions. In ASEAN-5 countries, where cultural and regulatory differences persist, the moderating role of gender in ESG-related outcomes may not be uniformly strong.

Despite these variations, this study believes that female board presence strengthens the negative relationship between ESG performance and tax avoidance. In other words, the presence of women in the boardroom is expected to enhance the credibility and impact of ESG commitments, thereby reducing the likelihood of tax avoidance.

Based on this discussion, the following hypothesis

is proposed:

H2: Female board presence strengthens the negative relationship between ESG performance and tax avoidance.

RESEARCH METHOD
Research Design
This study adopts a quantitative, causal-explanatory design using panel data regression to examine the relationship between ESG performance and tax avoidance, including the moderating role of female board presence. System GMM is employed to address potential endogeneity and dynamic effects, ensuring reliable estimation in short panel settings (Baltagi, 2005). Country dummy variables are included to control for institutional heterogeneity across ASEAN-5, with Indonesia as the baseline.

Population and Sample
The population in this study includes manufacturing companies listed on the stock exchanges of ASEAN-5 countries Indonesia, Malaysia, Singapore, Thailand, and the Philippines during the 2019–2023 period. A purposive sampling method was applied to select companies that consistently disclosed ESG scores, female

board composition, and complete financial data throughout the observation period.

After excluding firms with incomplete disclosures or extreme financial values, the final sample consists of 243 firm-year observations from 55 manufacturing companies. All data were collected from secondary sources, including Refinitiv Eikon, company annual and sustainability reports, and official stock exchange filings.

Research Model
This study employs a Dynamic Panel Data (DPD) approach using the System Generalized Method of Moments (System GMM). This methodology is suitable for addressing the potential endogeneity and autocorrelation often present in panel data models where the dependent variable is influenced by its own lagged values (Arellano & Bover, 1995; Blundell & Bond, 1998). System GMM enhances estimation efficiency by combining moment conditions from both the level and first-differenced equations, making it particularly relevant for short time-series, wide-panel datasets such as this study.

Two regression models are developed to test the research hypotheses:

Table 1. Two Regression Models

$$TaxAvoid_{it} = \alpha + \beta_1 TaxAvoid_{it-1} + \beta_2 ESGP_{it} + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 MTB_{it} + \beta_7 GDP_{it} + \beta_8 CountryDummy_{it} + \varepsilon_{it}$$

$$TaxAvoid_{it} = \alpha + \beta_1 TaxAvoid_{it-1} + \beta_2 ESGP_{it} + \beta_3 Gender + \beta_{4(} Gender_{it} * ESGP_{it}) + \beta_5 LEV_{it} + \beta_6 SIZE_{it} + \beta_7 ROA_{it} + \beta_8 MTB_{it} + \beta_9 GDP_{it} + \beta_{10} CountryDummy_{it} + \varepsilon_{it}$$

Where: $TaxAvoid_{it}$ is the level of tax avoidance of firm *i* in year *t*, measured using the Current Effective Tax Rate (CETR). $TaxAvoid_{it-1}$ represents the lagged dependent variable to capture the persistence of tax avoidance behavior over time. $ESGP_{it}$ denotes the firm's ESG performance score based on Refinitiv data. $Gender_{it}$ is a dummy variable equal to 1 if a female director is present on the board, and 0 otherwise. $Gender_{it} \times ESGP_{it}$ is the

interaction term reflecting the moderating role of female board presence in the relationship between ESG performance and tax avoidance. LEV_{it} is leverage, measured as the ratio of total liabilities to total assets. $SIZE_{it}$ is firm size, calculated as the natural logarithm of total assets. ROA_{it} is return on assets, measuring profitability. MTB_{it} is the market-to-book ratio, capturing firm growth opportunities. GDP_{it} is the GDP growth rate of the firm's home

country. CountryDummy$_{it}$ includes dummy variables for Malaysia, Singapore, Thailand, and the Philippines, with Indonesia as the reference group. ε_{it} is an idiosyncratic error term.

Variables and Measurement
Dependent Variable
In this study, tax avoidance is proxied using the Current Effective Tax Rate (CETR), which is calculated using the following formula:

$$CETR = \frac{Current\ Tax\ Expense}{Pretax\ Income}$$

The use of CETR as a proxy for tax avoidance follows prior cross-country studies (Abid & Dammak, 2022; Alsaadi, 2020; Gulzar et al., 2018). CETR reflects the proportion of a firm's pre-tax income that is actually paid as current tax in the reporting year. It captures a firm's short-term tax payment behavior, including any tendency to delay or avoid tax burdens through planning strategies.

CETR values range from 0 to 1. A higher CETR indicates a larger share of earnings is paid as tax, implying lower tax avoidance or higher compliance. Conversely, a lower CETR suggests the firm pays a relatively small portion of its earnings in taxes, which can be interpreted as an indication of higher tax avoidance practices. Therefore, within the context of this study, an increase in CETR corresponds to a lower tendency for tax avoidance.

Independent Variable
ESG performance is measured using ESG scores from Thomson Reuters Refinitiv, which evaluates companies based on three pillars: Environmental (34%), Social (35.5%), and Governance (30.5%) (Reuters, 2022). The final ESG score ranges from 0 to 100, with higher scores indicating stronger sustainability performance.

This scoring system is widely used in prior studies (D'Amato et al., 2022; Hambali & Adhariani, 2022) as a reliable measure of corporate responsibility and transparency. A higher ESG score reflects better commitment to sustainability and ethical practices, while a lower score suggests weaker ESG engagement.

Moderating Variable
The moderating variable Gender captures the presence of female directors on a company's board. It is measured using a binary dummy: 1 if at least one woman serves on the board in year *t*, and 0 otherwise.

Data is sourced from annual, and sustainability reports as well as official online publications. This variable is used to assess whether female board presence strengthens the relationship between ESG performance and tax avoidance, reflecting the role of gender diversity in corporate decision-making

Control Variables
Leverage
Leverage is measured as the ratio of total liabilities to total assets (LEV), representing the extent to which a firm uses debt in its capital structure. Highly leveraged firms tend to have stronger incentives for tax avoidance due to the deductibility of interest expenses, which can lower taxable income (Frank et al., 2009). However, excessive leverage may also increase financial risk and scrutiny from stakeholders. In developing countries, leverage is often used strategically to reduce tax liabilities while managing fiscal exposure (Zeng, Du, & Lai, 2022).

Firm Size
Firm size (SIZE) is measured using the natural logarithm of total assets. Larger firms typically have greater access to tax planning resources and international subsidiaries, enabling more sophisticated tax strategies (Setiawan, Wibowo, & Pham, 2020). At the same time, they face higher public and regulatory pressure to maintain transparency, which may reduce their propensity for aggressive tax avoidance (Rego, 2003).

Profitability
Profitability is measured by Return on Assets (ROA), calculated as net income divided by total assets. More profitable firms have higher tax burdens and therefore stronger motivation to reduce them through tax planning. However, they are also more likely to be targeted by tax authorities due to their larger potential contribution to tax revenue (Chen et al., 2010). Prior research has shown a positive association between profitability and the likelihood of aggressive tax behavior (Wang & Zhang, 2021).

Market to Book Ratio

The Market-to-Book ratio (MTB) is calculated as the ratio of market capitalization to book value. A higher MTB reflects greater growth expectations, which may create pressure for managers to improve short-term earnings, including through tax minimization strategies (Lanis & Richardson, 2011). Yoon, Kim, and Park (2021) suggest that firms with high MTB scores may selectively engage in tax avoidance while maintaining a strong ESG image, particularly in capital market-oriented economies.

Gross Domestic Product

GDP is included as a macroeconomic control variable, measured using the annual GDP growth rate of each country. Higher GDP growth indicates a more robust fiscal system, greater tax enforcement, and generally higher tax compliance. Conversely, countries with weaker economies may have lower enforcement capacity, increasing the likelihood of tax avoidance (Akbas, 2022). GDP is also used to account for macroeconomic shocks, such as those brought about by the COVID-19 pandemic, which have influenced both ESG disclosure and tax planning behavior across sectors.

Country Dummy

Country dummy variables are included to control for fixed effects associated with institutional, legal, and tax policy differences across ASEAN-5 countries. Indonesia is used as the baseline category, while Malaysia, Singapore, Thailand, and the Philippines are represented by binary dummies. These dummies ensure that variations in tax avoidance are not driven by country-specific policies or regulatory environments but are instead attributable to firm-level characteristics, particularly ESG performance and the presence of female board members (Hoi, Wu, & Zhang, 2020).

RESULT AND ANALYSIS

Descriptive Statistic Analysis

Descriptive statistics were conducted to summarize the distribution, central tendency, and variability of the variables prior to regression analysis. This step helps identify potential outliers and ensures data adequacy. Table 1 presents the descriptive statistics for all variables used in the model.

Table 2. Descriptive Statistic

Variabel	Obs	Mean	Std. Dev.	Min	Max
TaxAvoid	243	0.2083	0.1421	0.0000	1.0638
ESGP	243	56.0638	18.7983	3.9712	91.9734
Gender	243	0.8313	0.3753	0.0000	1.0000
SIZE	243	21.4717	1.5708	18.3458	24.8473
LEV	243	0.5176	0.5018	0.0000	2.2395
ROA	243	0.1030	0.1160	0.0003	1.0264
MTB	243	1.4770	3.6890	0.000000	36.3122
GDP	243	–62.9730	225.0962	-951.8294	88.618589

The average Current Effective Tax Rate (CETR) is 0.2083, indicating that firms in the sample pay about 20.83% of pre-tax income in current taxes. A wide standard deviation (0.1421) and values ranging from 0 (e.g., Thai Union Group PCL) to 1.0638 (e.g., AEM Holdings Ltd) reflect diverse tax behavior, from aggressive tax avoidance to potential fiscal adjustments. This supports Agency Theory and highlights legitimacy concerns from excessive avoidance.

The mean ESG score is 56.06 (SD = 18.80), ranging from 3.97 to 91.97, suggesting significant variability in sustainability practices across firms. High scorers like Delta Electronics show strong ESG commitment, while lower scores reflect poor disclosure or weak sustainability integration, consistent with Legitimacy and Agency Theory.

Female board presence has a mean of 0.8313, indicating that most firms include at least one female director. This aligns with Leadership Theory, as female participation may enhance ethical oversight and transparency, particularly relevant in ESG and tax governance.

Control variables also exhibit notable dispersion. Firm size ranges from 18.35 to 24.85 (log assets), leverage varies from 0 to 2.2395, and ROA from 0.03% to 102.64%, showing broad differences in

financial structures. MTB values span from 0 to 36.31, reflecting varied investor expectations. GDP growth fluctuates widely (mean –62.97, SD = 225.10), with extremes during COVID-19, emphasizing the role of macroeconomic shocks in shaping corporate behavior.

These variations underscore the need for robust regression analysis to identify significant predictors of tax avoidance and how ESG and gender dynamics interact within that framework.

Diagnostic Test and Model Validity
To ensure the robustness and reliability of the regression results, a comprehensive series of diagnostic tests was conducted. First, a stationarity test using the Fisher-type unit root (Phillips-Perron method) confirmed that most variables including Tax Avoidance, ESG, LEV, ROA, SIZE, and GDP are stationary at level ($p < 0.01$), eliminating concerns over spurious regression. Although the log-transformed Market-to-Book Ratio (log_MTB) did not exhibit formal stationarity due to the limited time dimension (T = 5), its transformation was retained based on established panel data practices.

Multicollinearity was assessed using the Variance Inflation Factor (VIF), and all variables exhibited VIF values below the conventional threshold of 10, with a mean VIF of 1.99. This indicates that the regression model does not suffer from serious multicollinearity, ensuring the reliability of coefficient estimates.

To determine the most suitable panel model, the Hausman test was employed and confirmed the Fixed Effects (FE) model as the more appropriate approach ($p = 0.0003$), implying the presence of correlation between individual-specific effects and the regressors. Additionally, the Durbin-Wu-Hausman test for endogeneity showed that ESG is exogenous ($p = 0.396$), justifying its use in the model without instrumentation. Nonetheless, to address any potential latent endogeneity and dynamic panel structure, the System Generalized Method of Moments (System GMM) estimator was applied.

Instrument validity in the System GMM model was confirmed through the Hansen test ($p = 0.474$), and Difference-in-Hansen tests further supported the exogeneity of instrument subsets, including both GMM-style and externally treated instruments (ROA, LEV, SIZE, MTB, GDP, Gender, and country dummies). The Arellano-Bond test results showed no evidence of second-order autocorrelation (AR(2), $p = 0.374$), affirming the correct model specification.

To check for cross-sectional dependence, the Breusch-Pagan LM test yielded a significant result ($p = 0.000$), indicating correlation among firms. This was addressed using Windmeijer-corrected standard errors in the GMM model, which mitigates heteroskedasticity and dependence across panels. Moreover, robustness checks with alternative model specifications such as one-step GMM, clustered two-step GMM, and fixed effects with clustered standard errors confirmed the consistency of findings. Across all models, ESG did not show a statistically significant effect on tax avoidance. However, ROA consistently emerged as a significant predictor, reinforcing its critical role in explaining firm-level tax behavior.

In sum, the System GMM Two-Step estimator with robust standard errors was deemed the most reliable and theoretically appropriate model for this study, effectively addressing endogeneity, heteroskedasticity, autocorrelation, and cross-sectional dependencies.

Regression Analysis
Regression of ESG on Tax Avoidance
The regression results are presented in Table 2, which shows the relationship between ESG performance and tax avoidance, proxied by the current effective tax rate (CETR). The model includes ESG as the main explanatory variable, with controls for profitability (ROA), leverage (LEV), firm size (SIZE), market-to-book ratio (MTB), macroeconomic growth (GDP), and country fixed effects. A lagged tax avoidance variable (L1. TaxAvoid) is also included to capture persistence in firms' tax planning behavior over time

Table 3. Regression Results: Effect of ESG on Tax Avoidance using System GMM Two-Step Robust

Variabel	Koefisien	P>|t|
L1 TaxAvoid	-0.1695	0.386
ESG	0.0019	0.354
Gender	-0.0131	0.8
ROA	-0.1645	0.392
LEV	0.0241	0.573
SIZE	-0.0084	0.61
MTB	0.0095	0.498
GDP	−0.00006	0.289
Dummy_Malaysia	-0.0756	0.469
Dummy_Singapura	0.0168	0.794
Dummy_Thailand	-0.0886	0.35
Dummy_Filipina	-0.0508	0.496
Cons	0.3633	0.33

Interpretation of the Regression of ESG on Tax Avoidance

The estimation results using the two-step System GMM approach with Windmeijer correction are presented in Table 2, investigating the effect of ESG performance on corporate tax avoidance. The model includes the lagged dependent variable (L1.TaxAvoid), ESG score as the main explanatory variable, and several firm-level and macroeconomic control variables such as ROA, leverage (LEV), firm size (SIZE), market-to-book ratio (MTB), GDP growth, and country dummies.

The lagged tax avoidance variable has a negative but statistically insignificant coefficient (β = −0.1695; p = 0.386), indicating weak persistence in firms' tax behavior across time. The ESG variable shows a positive yet insignificant association with tax avoidance (β = 0.0019; p = 0.354), suggesting that higher ESG scores do not necessarily lead to reduced tax avoidance among firms in the ASEAN-5 manufacturing sector. This finding provides no empirical support for the assumption that ESG-oriented firms consistently adopt more conservative tax strategies in this context.

The Gender variable, representing the presence of women on corporate boards, also yields a negative coefficient (β = −0.0131; p = 0.800), indicating a potential inverse relationship with tax avoidance. However, the result lacks statistical significance and should be interpreted with caution.

Among the control variables, profitability (ROA) and firm size (SIZE) show negative coefficients (β = −0.1645 and β = −0.0084, respectively), suggesting that more profitable and larger firms may have less incentive to engage in aggressive tax planning. Meanwhile, leverage (β = 0.0241; p = 0.573) and market-to-book ratio (β = 0.0095; p = 0.498) display positive but insignificant associations, hinting that growth-oriented and more leveraged firms might be inclined to avoid taxes, though the results remain inconclusive.

The GDP growth coefficient is also insignificant (β = −0.00006; p = 0.289), indicating that macroeconomic conditions do not strongly influence firms' tax behavior in this sample. Likewise, all country dummy variables, Malaysia, Singapore, Thailand, and the Philippines, have p-values above 0.05, suggesting that institutional differences across these countries do not significantly affect corporate tax avoidance in the observed period.

In sum, the model does not identify any statistically significant determinants of tax avoidance. The ESG score, although theoretically expected to reduce tax aggressiveness, does not show an empirical impact in this setting. These findings highlight the complexity of tax behavior and suggest that ESG performance alone may not sufficiently explain variations in corporate tax practices across ASEAN-5 manufacturing firms.

ESG and Tax Avoidance with Gender as Moderator

The regression results are presented in Table 3, which investigates the relationship between ESG performance and tax avoidance, proxied by the current effective tax rate (CETR). The model incorporates an interaction term between ESG and the presence of women on the board (ESG_Gender) to assess whether board gender diversity influences the ESG–tax avoidance relationship. ESG is the main explanatory variable, and the model controls firm profitability (ROA), leverage (LEV), firm size (SIZE), market valuation (MTB), macroeconomic conditions (GDP), and country-specific effects. A lagged tax avoidance variable (L1.TaxAvoid) is also included to capture the temporal dynamics in firms' tax planning strategies.

Table 4. Moderation Regression: Female Board Presence on ESG and Tax Avoidance

Variabel	Koefisien	P>|t|
L1 TaxAvoid	-0.107	0.604
ESG	-0.0012	0.776
Gender	-0.2228	0.213
ESG_Gender	0.0038	0.286
ROA	-0.3236	0.195
LEV	0.0465	0.142
SIZE	-0.0186	0.404
MTB	0.0043	0.739
GDP	-0.00008	0.174
Dummy_Malaysia	-0.0989	0.306
Dummy_Thailand	-0.1223	0.109
Dummy_Filipina	-0.0366	0.633
Dummy_Singapura	-0.0204	0.725
Cons	0.7709	0.095

Interpretation of the Regression of ESG and Tax Avoidance with Gender as Moderator

The regression results presented in Table 3 indicate that none of the variables in the model are statistically significant at conventional levels. The coefficient for the lagged dependent variable (L1.TaxAvoid) is –0.107 (p = 0.604), suggesting that past tax avoidance has no meaningful effect on current behavior, and the dynamic aspect of tax planning is not statistically supported in this model.

The coefficient for ESG is –0.0012 (p = 0.776), indicating a negative but statistically insignificant relationship between ESG performance and tax avoidance. This suggests that, in isolation, higher ESG scores do not meaningfully reduce tax avoidance levels among ASEAN-5 manufacturing firms.

The presence of female board members (Gender) is associated with a coefficient of –0.2228 (p = 0.213), and the interaction term ESG_Gender yields a coefficient of 0.0038 (p = 0.286). Although these variables were intended to test the moderating role of gender diversity, both effects are statistically insignificant. This indicates that female board representation neither directly influences tax avoidance nor moderates the ESG–tax avoidance relationship in a measurable way.

All control variables, including profitability (ROA), leverage (LEV), firm size (SIZE), market-to-book ratio (MTB), and macroeconomic growth (GDP), also fail to demonstrate statistically significant effects, with p-values exceeding the 0.10 threshold. This suggests that these firm-level characteristics do not provide sufficient explanatory power for variations in tax avoidance behavior.

Country dummy variables (Malaysia, Thailand, the

Philippines, and Singapore) likewise show no significant differences compared to the Indonesian baseline, implying that fiscal policy differences across ASEAN-5 countries do not systematically affect firm-level tax avoidance in the sample.

In summary, Model 2 fails to provide statistical support for the moderating effect of female board presence on the ESG–tax avoidance relationship. These findings suggest that the link between ESG and tax behavior is complex and may be influenced by other contextual or institutional factors not captured in this model.

Discussion
The Effect of ESG on Tax Avoidance
The regression results show that the Environmental, Social, and Governance (ESG) variable has a positive coefficient of 0.0019 with a p-value of 0.354, well above the 10% significance level. Statistically, this indicates that ESG has no significant effect on the level of tax avoidance among manufacturing firms in ASEAN-5 during the 2019–2023 period. In other words, an increase in ESG scores does not appear to reduce or increase a firm's tendency to engage in tax avoidance practices.

This finding contradicts the initial hypothesis, which expected that the adoption of ESG principles intended to promote more ethical and responsible corporate behavior would lead to lower tax aggressiveness. The absence of a significant effect can be attributed to several contextual factors.

First, ESG implementation in the ASEAN-5 region remains at a developmental stage, with many firms treating ESG as a symbolic commitment (i.e., greenwashing), rather than as a substantive shift in corporate governance culture. As a result, ESG is not yet fully integrated into firms' financial strategies, including in the area of tax planning.

Second, ESG regulations across ASEAN countries remain relatively weak and inconsistent, both in terms of reporting requirements and enforcement mechanisms. ESG reports are often prepared merely to fulfill formal obligations and lack independent verification or evaluation of actual implementation impact. This turns ESG into a tool for external reputation legitimacy, rather than a strategic instrument to discipline corporate behavior, particularly with respect to tax compliance.

These findings align with those of Lanis and Richardson (2012), who argue that in countries with underdeveloped ESG governance infrastructure, there is no significant link between ESG performance and tax avoidance behavior. However, this result contrasts with studies in more developed economies such as Davis et al. (2016) which found that firms with higher ESG performance tend to be more fiscally compliant and engage in lower levels of tax avoidance.

In the context of manufacturing firms in ASEAN-5, the findings suggest that ESG initiatives must be strengthened not only in terms of disclosure but also in terms of the internal quality of implementation, particularly in the area of tax governance. Only when ESG is embedded in strategic management and financial practices can it function as an effective mechanism to reduce firms' incentives for tax avoidance and promote more ethical and sustainable business conduct.

The Moderating Role of Female Board Presence in the ESG-Tax Avoidance Relationship
The regression results from Model 2 indicate that the interaction variable between ESG and Gender (ESG_Gender) has a coefficient of 0.0038 with a p-value of 0.286. This value falls well above the 10% significance threshold, suggesting that, statistically, the presence of female directors does not significantly moderate the relationship between ESG performance and corporate tax avoidance among manufacturing firms in ASEAN-5 during the study period.

This result contradicts the study's hypothesis, which proposed that the presence of women on corporate boards characterized by stronger ethical sensitivity, prudence, and sustainability orientation would amplify the positive effect of ESG in reducing tax avoidance. The lack of a significant moderating effect may be explained by several structural and contextual factors.

First, the proportion of women on corporate boards in the ASEAN-5 region, particularly within the manufacturing sector, remains relatively low.

As a result, their presence may not yet exert sufficient influence to shape strategic policy decisions, including those related to tax compliance. This is consistent with the findings of Adams and Ferreira (2009), who argue that the benefits of board gender diversity materialize only when the number of female directors reaches a critical mass.

Second, many manufacturing firms in ASEAN-5 operate within hierarchical and patriarchal organizational cultures, which tend to limit the strategic decision-making influence of women in leadership roles. Consequently, the presence of female directors often fails to translate into meaningful influence over fiscal governance and tax-related ESG integration.

Third, the roles assigned to female board members are often concentrated in areas such as corporate social responsibility and environmental sustainability, rather than technical domains such as tax planning or financial risk oversight. This aligns with Bear et al. (2010), who suggest that female directors tend to emphasize CSR initiatives, which may not directly affect tax avoidance behaviors.

Overall, this finding contributes to the corporate governance and ESG literature by suggesting that while gender diversity is important, the presence of female directors alone is insufficient to function as a moderator in the ESG–tax avoidance nexus. Thus, achieving ethical, inclusive, and responsible corporate governance requires not only increasing the representation of women but also strengthening their substantive influence in strategic decision-making processes.

CONCLUSION

This study investigates the effect of Environmental, Social, and Governance (ESG) performance on tax avoidance, as well as the moderating role of female board presence in this relationship. Focusing on manufacturing firms in the ASEAN-5 region over the period 2019–2023, the analysis employs a dynamic panel approach using the System GMM two-step estimator with Windmeijer-corrected robust standard errors. The findings reveal that ESG performance does not significantly influence tax avoidance behavior, indicating that improvements in ESG scores have not translated into reduced tax aggressiveness among firms in the region. Furthermore, the interaction term between ESG and female board presence is statistically insignificant, suggesting that female representation on boards has yet to enhance the disciplinary role of ESG in shaping fiscal behavior. Additionally, key financial characteristics such as profitability (ROA), leverage (LEV), firm size (SIZE), market-to-book ratio (MTB), and GDP growth also fail to show a significant effect on corporate tax avoidance. Importantly, the regression model satisfies key diagnostic criteria, as the Hansen test confirms the validity of the instruments and the Arellano-Bond test shows no second-order autocorrelation, ensuring the estimation is consistent and unbiased.

These results imply that ESG and board gender diversity have yet to assume a strategic role in curbing tax avoidance within the ASEAN-5 manufacturing sector. However, this study has limitations. Its quantitative design, while robust for identifying statistical trends, cannot explain the underlying reasons or motivations behind these insignificant findings. The absence of a qualitative study, such as in-depth interviews with corporate decision-makers, means that the explanation for why ESG and female directors do not yet impact tax behavior remains a contextual interpretation.

Therefore, to address this limitation and build upon these findings, future research is strongly recommended to adopt a qualitative or mixed-methods approach. In-depth interviews with managers and directors could provide rich insights into their perceptions of ESG (whether it is a substantive strategy or a "greenwashing" tool), the actual influence of female directors on fiscal policy, and the structural barriers that may prevent ethical principles from being integrated into tax practices. Such an approach would be invaluable for enhancing the managerial implications by uncovering the "why" behind the quantitative results.

Ultimately, strengthening ESG implementation beyond symbolic disclosure and empowering women in board-level fiscal oversight may be necessary to transform these governance mechanisms into effective tools for promoting

ethical and transparent financial conduct in the   ASEAN manufacturing context.

REFERENCES

KPMG. (2017). *A look inside tax departments worldwide and how they are evolving*. Summary report: Global tax benchmarking survey 2017.

OECD. (2019). *OECD investment policy review of Southeast Asia*. https://www.oecd.org/investment/oecd-investment-policy-review-southeast-asia.htm

Santoso, I., & Ning, R. (2013). *Corporate tax management*. Ortax.

Thomson Reuters. (2017). *Thomson Reuters ESG Scores (Date of issue: March 2017)*. Thomson Reuters EIKON, March.

Reuters, T. (2022). *Environmental, social and governance (ESG) scores*. London: Thomson Reuters.

Abdelfattah, T., & Aboud, A. (2020). Tax avoidance, corporate governance, and corporate social responsibility: The case of the Egyptian capital market. *Journal of International Accounting, Auditing and Taxation*, 38, 100304. https://doi.org/10.1016/j.intaccaudtax.2020.100304

Abid, S., & Dammak, S. (2022). Corporate social responsibility and tax avoidance: The case of French companies. *Journal of Financial Reporting and Accounting*, 20(3/4), 618–638. https://doi.org/10.1108/JFRA-04-2020-0119

Alsaadi, A. (2020). Financial-tax reporting conformity, tax avoidance and corporate social responsibility. *Journal of Financial Reporting and Accounting*, 18(3), 639–659. https://doi.org/10.1108/JFRA-10-2019-0133

Bae, S. M., Masud, M. A. K., & Kim, J. D. (2018). A cross-country investigation of corporate governance and corporate sustainability disclosure: A signaling theory perspective. *Sustainability (Switzerland)*, 10(8). https://doi.org/10.3390/su10082611

Baker, M., Jones, S., & Lay, B. F. (2017). The relationship between CSR and tax avoidance: An international perspective. *Australian Tax Forum*, 32(1), 95–127. https://search.informit.org/doi/10.3316/agispt.20180905001346

Bodhanwala, S., & Bodhanwala, R. (2018). Does corporate sustainability impact firm profitability? Evidence from India. *Management Decision*, 56(8), 1734–1747. https://doi.org/10.1108/MD-04-2017-0381

Duong, T.-Q., & Huang, Y.-C. (2022). The mediation effects of tax avoidance between ESG and cost of debt, firm value: Evidence from ASEAN listed corporations. *Journal of Entrepreneurship, Business and Economics*, 10(2S2), 201–232.

Dyreng, S. D., Hanlon, M., & Maydew, E. L. (2008). Long-run corporate tax avoidance. *The Accounting Review*, 83(1), 61–82. https://doi.org/10.2308/accr.2008.83.1.61

Dyreng, S. D., Hanlon, M., Maydew, E. L., & Thornock, J. R. (2017). Changes in corporate effective tax rates over the past 25 years. *Journal of Financial Economics*, 124(3), 441–463. https://doi.org/10.1016/j.jfineco.2017.04.001

Garg, M., Khedmati, M., Meng, F., & Thoradeniya, P. (2022). Tax avoidance and stock price crash risk: Mitigating role of managerial ability. *International Journal of Managerial Finance*, 18(1), 1–27. https://doi.org/10.1108/IJMF-03-2020-0103

Giannetti, M., Liao, G., & Yu, X. (2015). The brain gain of corporate boards: Evidence from China. *The Journal of Finance*, 70(4), 1629–1682. https://doi.org/10.1111/jofi.12198

Hambali, A., & Adhariani, D. (2022). Sustainability performance at stake during COVID-19 pandemic? Evidence from Sharia-compliant companies in emerging markets. *Journal of Islamic Accounting and Business Research*, ahead-of-print(ahead-of-print). https://doi.org/10.1108/JIABR-01-2022-0014

Hoi, C. K., Wu, Q., & Zhang, H. (2013). Is corporate social responsibility (CSR) associated with tax avoidance? Evidence from irresponsible CSR activities. *Accounting Review*, 88(6), 2025–2059. https://doi.org/10.2308/accr-50544

Jarboui, A., Kachouri Ben Saad, M., & Riguen, R. (2020). Tax avoidance: Do board gender diversity and sustainability performance make a difference? *Journal of Financial Crime*, 27(4), 1389–1408. https://doi.org/10.1108/JFC-09-2019-0122

Lanis, R., & Richardson, G. (2012). Corporate social responsibility and tax aggressiveness: An empirical analysis. *Journal of Accounting and Public Policy*, 31(1), 86–108. https://doi.org/10.1016/j.jaccpubpol.2011.10.006

Lanis, R., & Richardson, G. (2018). Outside directors, corporate social responsibility performance, and corporate tax aggressiveness: An empirical analysis. *Journal of Accounting, Auditing and Finance*, 33(2), 228–251. https://doi.org/10.1177/0148558X1665483

Lin, K. Z., Cheng, S., & Zhang, F. (2017). Corporate social responsibility, institutional environments, and tax avoidance: Evidence from a subnational comparison in China. *The International Journal of Accounting*, 52(4), 303–318. https://doi.org/10.1016/j.intacc.2017.11.002

López-González, E., Martínez-Ferrero, J., & García-Meca, E. (2019). Does corporate social responsibility affect tax avoidance? Evidence from family firms. *Corporate Social Responsibility and Environmental Management*, 26(4), 819–831. https://doi.org/10.1002/csr.1723

Mao, C. W. (2019). Effect of corporate social responsibility on corporate tax avoidance: Evidence from a matching approach. *Quality and Quantity*, 53(1), 49–67. https://doi.org/10.1007/s11135-018-0722-9

Taj, S. A. (2016). Application of signaling theory in management research: Addressing major gaps in theory. *European Management Journal*, 34(4), 338–348. https://doi.org/10.1016/j.emj.2016.02.001

Yoon, B. H., Lee, J. H., & Cho, J. H. (2021). The effect of ESG performance on tax avoidance—Evidence from Korea. *Sustainability (Switzerland)*, 13(12), 1–17. https://doi.org/10.3390/su13052778

Tax Justice Network. (2020). *The state of tax justice 2020: Tax justice in the time of COVID-19*.

Undang-Undang (UU) Nomor 7 Tahun 2021 tentang Harmonisasi Peraturan Perpajakan. Diunduh tanggal 16 Juni 2024, dari https://peraturan.bpk.go.id/Home/Details/185162/uu-no-7-tahun-2021

Aabo, T., & Giorici, I. C. (2023). *Do female CEOs matter for ESG scores*. Denmark: Random effects regression analysis.

Wu, Q., Furuoka, F., & Lau, S. C. (2021). *Corporate social responsibility and board gender diversity: A meta-analysis*. USA: Content analysis and meta-analysis.

Shaw, W. (2022). *Relationship between female board changes and ESG scores with CSR influences*. USA: Linear regression analysis.