Print ISSN: 1738-3110 / Online ISSN 2093-7717
JDS website: http://accesson.kr/jds
http://doi.org/10.15722/jds.22.11.202411.77

An Analysis of the Impact of ESG Incidents on Tax Avoidance in Korean Distribution Companies*

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Received: September 18, 2024. Revised: October 14, 2024. Accepted: November 05, 2024.

Abstract

Purpose: The purpose of this study is to analyze the impact of ESG incidents on tax avoidance trends in domestic listed distribution companies. **Research Design, Data, and Methodology:** We collected five years of financial data (2019-2023) for companies included in the KOSPI 200 index to test the hypothesis that ESG incidents lead to reduced tax avoidance. Using ESG incidents data provided by Whosgood, we employed the effective tax rate as a response variable to identify the relationship between tax avoidance and ESG incidents in the distribution industry. This relationship was examined through a multiple regression analysis model, yielding empirical results aligned with the study's objectives. **Results:** The empirical analysis indicated that korea's distribution industry, with its high propensity for tax avoidance due to frequent undocumented transactions, showed a reduced tendency for tax avoidance in companies with high ESG incidents scores. This trend was not observed in the non-distribution industry. Specifically, within the same social score, only distribution companies with significant social issues demonstrated a lower propensity for tax avoidance. **Conclusions:** This study offers several academic contributions. Firstly, it confirms that in companies where ESG risks are realized and actual ESG performance is low, the tendency to avoid taxation decreases as a risk management strategy. Additionally, the study highlights the distinct characteristics of ESG performance in the distribution and non-distribution industries, showing that ESG issues differentially affect corporate policies in the non-distribution industry.

Keywords: ESG Incidents, Tax Avoidance, Tax Evasion, Undocumented Transaction, Distribution Industry.

JEL Classification Code: G11, G12, G40, C30.

1. Introduction

Since the introduction of the Principles for Responsible Investment (PRI) by the United Nations in June 2006, there has been a steady increase in global interest in corporate social responsibility (CSR) activities. The UN recommended that investors consider not only financial analysis but also non-financial factors such as environmental, social, and governance (ESG) in their investment decision-making.

This recommendation prompted many companies, both domestically and internationally, to incorporate ESG factors into their socially responsible investments. Consequently, companies have come to recognize CSR activities as essential and have actively integrated them into their management practices.

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This trend has also influenced ESG risk management. ESG risk encompasses potential risk factors related to environmental, social, and governance issues, including financial, reputational, and operational risks that may arise from inadequate management of these areas.

Such risks can emerge from non-compliance with environmental regulations, labor and human rights violations, and unethical management practices, all of which can negatively impact a company's long-term success.

In relation to these risks, ESG incidents occur when ESG risks materialize. Such incidents can manifest as environmental pollution, human rights violations, management corruption, and unethical practices, all of which can damage a company's reputation and result in financial losses. Effective ESG risk management is crucial for maintaining corporate sustainability by preventing these incidents and responding effectively when they occur.

Meanwhile, due to the nature of the B2C industry, distributors have numerous direct contact points with consumers, enabling them to make greater efforts to mitigate the negative image caused by ESG incidents. As consumers are highly sensitive to companies' ESG practices, distributors manage ESG risks and restore trust through prompt responses and effective communication.

In particular, distributors have numerous opportunities to restore a positive image with consumers through concrete actions such as introducing eco-friendly packaging materials, enhancing supply chain transparency, and fostering an ethical labor environment.

These efforts not only strengthen relationships with consumers but also increase brand loyalty. Given the nature of the B2C industry, retailers can suffer significant cash flow losses if negative ESG risks persist. Therefore, when ESG incidents occur, they have a strong incentive to minimize activities that negatively impact society through other corporate actions.

Tax avoidance refers to actions taken by a company to reduce its tax liability in ways not intended by law. Specifically, it involves utilizing methods to lower the tax burden while achieving the same outcomes as standard transactions by exploiting loopholes in tax legislation (e. g., Lim & Oh, 2013).

Unlike illegal tax evasion, tax avoidance occupies a gray area between lawful tax-saving strategies and tax evasion, making it a significant topic of academic research. Although it is not illegal, tax avoidance is often perceived negatively and can harm a company's social reputation.

The objective of this study is to examine the influence of ESG incidents on tax avoidance trends among domestically listed distribution companies. It is widely recognized that strong ESG performance typically diminishes a company's propensity for tax avoidance.

However, ESG incidents reflect events that have already transpired. To mitigate realized risks, it is anticipated that companies with numerous ESG incidents will engage in less tax avoidance, potentially leading to social issues.

In particular, it is anticipated that the propensity for tax avoidance will be pronounced in the distribution industry, a typical B2C sector. Furthermore, distribution companies without significant carbon emissions issues in their production processes are expected to respond more sensitively to ESG incidents in the social sector, which are closely linked to marketing.

In this study, we analyzed five years of financial data (2019-2023) for companies listed in the KOSPI 200 index to test our hypothesis. Utilizing ESG incident data from Whosgood, we employed the effective tax rate as the response variable for tax avoidance to explore the relationship between tax avoidance and ESG incidents within the distribution industry. Through a multiple regression model, we identified the relationship between these variables and derived empirical results aligned with the research objectives.

The analysis results of this study support all the proposed hypotheses. It was confirmed that companies with high ESG issue scores—specifically, distribution companies with numerous ESG issues—exhibit a reduced tendency to avoid taxes. However, this trend was not observed in non-distribution industries. Notably, within the same social score, only distribution companies with significant social issues demonstrated a lower propensity for tax avoidance.

The findings of this study on the distribution industry offer several academic contributions. Firstly, they highlight the distinction between the impact of ESG performance and actual ESG risks.

Existing literature indicates that companies with high ESG performance (e.g., Lee et al., 2021) exhibit a lower propensity for tax avoidance. Conversely, this study confirms that companies with low actual ESG performance, due to the realization of ESG risks, tend to reduce their tax avoidance propensity from a risk management perspective.

Additionally, the results of this study hold academic significance as they confirm the distinct characteristics of ESG performance in the distribution and non-distribution industries. The study suggests that ESG issues differentially impact corporate policies across these sectors. This perspective aligns with existing research on the distribution industry (e.g., Son & Lee, 2019; Kim & Lee, 2019).

2. Literature Review

The relationship between corporate social responsibility (CSR) and tax avoidance is a subject of active research both domestically and internationally. Generally, efforts to

reduce a company's tax liability are categorized into legal tax savings and illegal tax evasion, with tax avoidance being defined as the reduction of tax liability within the legal framework. According to Lim and Oh (2013), both tax evasion and tax avoidance share a commonality: they represent actions that contravene social norms concerning taxation.

Broadly speaking, the term 'unfair act,' which is a component of tax evasion, refers to the deliberate concealment of tax obligations to prevent recognition by tax authorities. In contrast, tax avoidance is characterized by the abnormal structuring of transactions related to tax requirements, without the need for active concealment.

These concepts are distinct under Korean tax law and are governed by separate legal provisions. However, their shared association with anti-social behavior often leads to significant misunderstandings in the interpretation and application of individual tax law provisions.

According to Lee (2010), corporate tax avoidance is closely linked to investment and management activities and serves as an efficient cost-reduction strategy. Companies facing financial difficulties, in particular, are more inclined to engage in tax avoidance to minimize expenses. Furthermore, research by Jang et al. (2017) indicates that managers with an optimistic outlook on the future are more likely to actively pursue tax avoidance strategies.

From the traditional perspective presented by Graham and Tucker (2006), tax avoidance is believed to enhance corporate value by reducing debt and minimizing cash outflows. However, there is also a negative viewpoint that tax avoidance undermines corporate accounting transparency, leading to information asymmetry, which can result in adverse selection and moral hazard, thereby decreasing corporate investment efficiency.

Low accounting transparency can increase the cost of capital, making managers more likely to engage in inefficient investments or misappropriate resources for personal gain. Additionally, Katz et al. (2013) highlight that tax avoidance can harm corporate reputation and negatively impact business performance.

Given the negative impact of tax avoidance, companies with strong ESG performance are generally inclined to minimize tax avoidance to uphold their reputation. Indeed, several studies have reported a negative correlation between CSR activities and tax avoidance. Hoi et al. (2013) argued that tax avoidance has neither a positive nor negative relationship with irresponsible ESG activities.

Domestic studies by Lee and Park (2017) have also demonstrated that corporate ESG activities effectively suppress tax avoidance. Specifically, the findings indicate that companies fulfilling their social responsibilities tend to reduce tax avoidance. Additionally, Lee et al. (2021), utilizing the authoritative KCGS rating, found that companies with high ESG performance exhibit a lower propensity for tax avoidance.

Meanwhile, Watson (2015) found that the relationship between tax avoidance and CSR is grounded in Penrose's (1959) slack resource theory, which posits that companies with higher corporate value possess more slack resources and are thus more likely to engage in CSR activities. Empirical analysis was conducted with the expectation that this relationship would be alleviated, and the results supported this expectation.

Conversely, Desai and Dharmapala (2009) argue that tax avoidance can negatively impact corporate value by exacerbating information asymmetry between shareholders and managers, thereby increasing agency costs. Their measure of tax avoidance levels directly corresponds to each year's CSR performance.

Meanwhile, Dhaliwal et al. (2011) posit that companies engaged in CSR activities to showcase their ethical values conduct voluntary disclosures to enhance their image, thereby mitigating information asymmetry between shareholders and managers.

Active CSR initiatives can increase corporate trust by curbing unethical behavior among managers and addressing information asymmetry issues between shareholders and managers.

Davis et al. (2016) provide evidence that Corporate Social Responsibility (CSR) activities and tax obligations are not complementary but rather act as substitutes. They confirmed that companies with high levels of social responsibility allocate more resources to tax-related lobbying and presented evidence that such companies engage in higher levels of tax avoidance.

Additionally, Lanis and Richardson (2012) demonstrated that companies aggressively avoiding taxes are more active in CSR activities to mitigate the public's negative perception of tax evasion. Furthermore, Hoi et al. (2013) suggests that companies with a negative stance towards CSR activities engage in more aggressive tax avoidance, indicating that corporate culture influences tax avoidance behaviors.

For reference, Go and Lee (2008) found that Korea's distribution industry exhibited the highest propensity for tax avoidance among domestic industries. This tendency is attributed to the high likelihood of undocumented transactions within certain distribution companies. Additionally, the service industry, characterized by high labor costs, also demonstrated a significant inclination towards tax avoidance.

Corporate characteristics influencing tax avoidance tendencies in the distribution industry include the tax burden level (MTR), tax benefit level (TSE), and profitability (ROE). These factors were found to be significantly more impactful compared to other industries. This is likely due to

the higher propensity for tax avoidance observed in certain distribution companies. Similar patterns were identified in the service industry.

In our country, it is understandable that most tax avoidance activities carry the risk of being classified as tax evasion by tax authorities. Reflecting this situation, Ki (2012) emphasizes that if tax avoidance is deemed tax evasion, non-tax costs such as a decline in stock price, a decrease in sales, and an increase in capital costs may occur due to damage to the corporate image.

Therefore, this paper hypothesizes that distribution companies with high levels of ESG incidents are likely to prefer safe tax strategies with low illegality over risky tax strategies that could result in tax evasion, due to the burden of non-tax costs. Additionally, we aim to explore how these tendencies differ from those in other industries.

Meanwhile, it is widely recognized that companies adopt various policy responses to manage risk and restore reputation when ESG incidents are at a high level.

First, by enhancing transparency, companies clearly disclose the causes, response measures, and future plans for ESG-related incidents, and seek to restore trust with stakeholders through periodic ESG performance reporting (Clark et al., 2015).

Second, by strengthening internal regulation and risk management systems, companies reorganize regulations related to environmental protection, human rights, and ethical management, and increase internal training and inspections to ensure compliance (Flammer, 2013).

Third, companies strengthen long-term sustainable management strategies by resetting sustainability goals, analyzing the causes of incidents, and setting higher objectives (Khan et al., 2016). Fourth, by enhancing social responsibility activities (CSR), companies aim to restore their image, improve relationships with the community and stakeholders, and mitigate the negative effects of incidents (Waddock and Graves, 1997).

Lastly, when ESG events related to governance occur, companies take steps to improve board composition and management transparency, establish an independent audit committee, and increase management accountability (Johnson et al., 2010).

3. Research Hypothesis

Based on the review of existing literature, it has been determined that distribution companies with numerous ESG incidents are inclined to adopt a conservative tax strategy with minimal illegality, rather than a risky tax strategy with a high likelihood of being deemed tax evasion due to the burden of non-tax costs.

This conclusion is supported by the following two points from the literature review: tax avoidance undermines corporate accounting transparency, leading to information asymmetry, which can result in adverse selection and moral hazard, thereby reducing corporate investment efficiency; and tax avoidance can damage corporate reputation and negatively impact business performance.

Applying these literature research findings to the context of Korea, it is anticipated that distribution companies with numerous ESG incidents will exhibit a low propensity for tax avoidance.

In Korea, such companies may enhance the transparency of their information disclosure to prevent further deterioration of their already poor reputation and to secure stable funding.

Given that corporate tax avoidance not only weakens the surveillance system and increases unethical behavior by managers but can also lead to serious consequences such as consumer boycotts, political pressure, and even loss of management rights, it is expected that the tendency to avoid tax avoidance will be more pronounced in distribution companies within the B2C industry. Based on this reasoning, the first hypothesis of this paper is set as follows.

H1: High levels of ESG incidents among companies in the distribution industry will reduce their propensity for tax avoidance.

In the ESG areas, the distribution industry, unlike the manufacturing industry, is anticipated to receive less consumer attention regarding general environmental issues such as eco-friendly energy consumption, circular economy practices in product production, and waste disposal.

However, due to the nature of B2C companies, negative events in the social sector are expected to attract significant consumer attention and thus have a substantial impact on corporate management activities. Consequently, in the distribution industry, incidents in the social sector are predicted to reduce tax avoidance tendencies more than those in the environmental sector.

Therefore, as in the case above, the assumption that the tax avoidance activities of distribution companies with numerous social incidents will decrease is based on the following two points: First, information asymmetry due to tax avoidance leads to adverse selection and moral hazard in investment. Second, tax avoidance is expected to damage a company's reputation and negatively impact business performance. Based on this, the second hypothesis of this paper is set as follows.

H2: A high level of social incidents among companies in the distribution industry will reduce the propensity for tax avoidance.

4. Research Design and Data Description

4.1. Research Design

In this study, the effective tax rate (TER) was employed to assess a company's propensity for tax avoidance. Empirical research on tax avoidance is characterized by diverse definitions and measurement methods, which vary according to the study's focus and objectives.

This research utilized the Generally Accepted Accounting Principles Effective Tax Rate (GAAP ETR), a widely recognized metric in accounting literature. The GAAP ETR indicates the tax burden relative to pre-tax profits. However, it has a limitation in that it becomes challenging to interpret when the numerator, based on accounting standards, results in a negative value.

Additionally, the corporate tax expense (numerator) encompasses both current and deferred corporate tax expenses. However, deferred corporate tax expense represents future tax obligations, posing a limitation in its applicability for tax avoidance purposes.

Despite this, the accounting effective tax rate remains widely utilized due to its reliance on information specified in financial statements, as opposed to direct corporate tax reporting data.

The effective accounting tax rate can be readily verified using corporate disclosure data and is deemed appropriate for analyzing long-term trends (e.g., Dyreng, 2008).

A low effective accounting tax rate indicates that corporate tax expenditures are minimal relative to the company's pre-tax profits, suggesting potential tax avoidance activities. In this study, the effective accounting tax rate was calculated by dividing the corporate tax expense by the net profit before corporate tax expense and then multiplying the result by 100 for ease of calculation.

GAAP Effective Tax Rate(ETR)
= (Current Corporate Tax Expense)
/ (Net profit before corporate tax expense)

To measure ESG incidents, this study utilized the ESG Incident Analysis (IA) index provided by Whosgood. This service employs an AI model to analyze and calculate a company's ESG (environmental, social, governance) risks based on information gathered from news media.

The ESG Incident Score reflects the frequency of a company's exposure to various ESG issues, enabling the derivation of ESG risk trends over time and facilitating comparisons with other companies within the same industry.

ESG incidents are assigned a score based on their severity, which is evaluated using various criteria, including intentionality, social/environmental impact, and financial loss. The results of this analysis include integrated risk scores and sector-specific risk scores, ultimately expressed as a risk score ranging from 5 to 1.

Related ESG issues are classified into 17 major categories according to global standards such as the UN Global Compact, ISO 26000, and PRI. These issues encompass chemical and pollution accidents, climate change response, occupational safety and health, human rights violations, ethics, and inadequate risk management.

In this study, we focus on distribution companies within the KOSPI 200 index. This sample selection reflects the compositional characteristics of ESG incidents as reported by the media, acknowledging the realistic situation where media coverage is limited for smaller companies.

This approach helps avoid estimation problems due to insufficient raw data for machine learning. The sample period was chosen to be 2019-2023, a time when ESG-related content began to proliferate.

Meanwhile, to account for other control variables, existing variables were utilized. Representative studies that examine the relationship between companies' active ESG activities and financial factors include Huseynov et al. (2012), Fry et al. (1982), and Jang et al. (2013), among others.

Huseynov et al. (2012) conducted a regression analysis of the cash effective tax rate and accounting effective tax rate in relation to a company's CSR activities. They found that various corporate and financial variables, including company size (LogTA), debt ratio (Leverage), dividend status (DivDummy), price-to-book ratio (PB), return on total assets (ROA), and foreign sales ratio (ForeignSales), have a significant impact.

Fry et al. (1982) analyzed that companies with a high level of social responsibility tend to spend more on advertising and education and training.

Jang et al. (2013) utilized ESG information from 2008 to 2011 to measure financial performance through stock returns, operating performance, and Tobin's Q (market capitalization/net asset value). They found that companies with high ESG ratings achieved relatively superior stock returns and sales results.

Additionally, a study by Kim et al. (2013) identified capital intensity, ROA, and export ratio as significant factors influencing long-term tax avoidance, while company size, debt ratio, and audit fees did not have a significant impact.

Ryu (2010) analyzed tax avoidance using four types of discretionary accruals (BTD) and found that profitability, equipment assets, and accruals had a positive impact, while growth potential, intangible assets, company size, and debt ratio showed varying directions and significance. In a study by Cho et al. (2017), the majority shareholder's shareholding ratio had a significant positive effect on the relationship between corporate governance and tax avoidance before and after the introduction of K-IFRS,

whereas the foreign shareholding ratio had a significant negative effect.

Based on the discussion, Lee et al. (2021) provides financial metrics including company size (LogTA), debt ratio (Leverage), dividend status (DivDummy), price-to-book ratio (PB), return on total assets (ROA), capital expenditure (CapEx), and advertising expenses (Advertising Expense).

These factors were utilized as control variables. Company size was determined by the logarithm of total assets, the debt ratio was calculated by dividing the total of short-term and long-term debt by total assets, and dividend status was represented as '1' if dividends were recorded, and '0' if not.

In addition, the price-to-book ratio (PBR) was derived from the values provided by FN Guide. The return on total assets (ROA) was calculated by dividing net profit by total assets. Capital expenditure was determined by summing tangible and intangible assets, including their disposal amounts, and dividing this total by the overall assets. Lastly, advertising costs were calculated by dividing advertising expenditures by total assets.

Considering these financial factors, companies with a high ROA are likely to exhibit a greater propensity for tax avoidance to reduce their tax burden. Conversely, companies with a high debt ratio may be less inclined towards tax avoidance due to the tax savings achieved through interest expenses. The impact of company size (LogTA) on effective tax rates may vary according to political cost theory and political influence theory.

According to political cost theory, large corporations are likely to incur higher taxes due to government intervention. In contrast, political influence theory posits that large corporations may receive greater tax benefits, resulting in lower effective tax rates.

4.2. Data Description

To test Hypotheses 1 and 2, this study employed a multiple regression analysis method consistent with existing research. The primary sample comprised distribution companies included in the KOSPI 200. For comparative purposes, the study also incorporated results from non-distribution companies listed in the KOSPI 200.

Table 1 presents summary statistics for all distribution companies. The analysis reveals that the average size of the 74 companies is 4.86, with a relatively consistent distribution (standard deviation of 0.47), and company sizes ranging from a minimum of 4.02 to a maximum of 5.82. The average leverage is 152.12, with a standard deviation of 96.2, indicating significant variability in debt utilization among companies.

Specifically, leverage ranges from a minimum of 4.38 to a maximum of 444.39. The dividend variable shows that all companies have paid dividends, with a fixed value of 1, suggesting uniform dividend payments across all companies.

Table 1: Descriptive Statistics

Statistic	N	Mean	St.Dev.	Min	Max
Size	74	4.86	0.47	4.02	5.82
Leverage	74	152.12	96.2	4.38	444.39
Dividend	74	1	0	1	1
PBR	74	1.27	1.22	0.14	5.16
ROA	74	3.57	4.38	-8.83	18.44
GAAP_ETR	74	0.35	0.98	-1.93	2.98
ESG_score	74	1.55	1.18	0	4.56
E_score	74	0.17	0.43	0	1.88
S_score	74	1.46	1.23	0	3.29
G_score	74	0.87	0.95	0	4.09

Conversely, the average price-to-book ratio (PBR) is 1.27, with a standard deviation of 1.22, indicating significant variability in market valuation among companies. The average return on assets (ROA) is 3.57%, with a standard deviation of 4.38, reflecting considerable differences in performance. ROA ranges widely from -8.83 to 18.44, with some companies experiencing losses while others achieve very high returns.

Meanwhile, the GAAP-based effective tax rate (GAAP_ETR), the primary variable in this model analysis, has an average of 0.35 and a standard deviation of 0.98, ranging from a minimum of -1.93 to a maximum of 2.98. This indicates a significant disparity in tax burdens among companies.

The ESG score has an average of 1.55 and a standard deviation of 1.18, with values ranging from 0 to 4.56, indicating significant differences in ESG performance among companies. Specifically, the environmental score (E-score) is the lowest, with an average of 0.17. The social score (S-score) averages 1.46, and the governance score (G-score) averages 0.87. These figures highlight substantial variability, particularly in environmental and governance scores.

5. Results and Discussion

5.1. Correlation Analysis

The correlation analysis reveals a correlation coefficient of 0.075 between GAAP_ETR (effective tax rate based on GAAP) and ESG-score (ESG thinking score), indicating a

very low positive correlation. This suggests a minimal relationship between these two variables.

Similarly, the correlation between the ESG incident score and GAAP_ETR is weak. Specifically, the correlation coefficient between E-score (environmental incident score) and GAAP_ETR is -0.217, signifying a weak negative correlation.

This implies that companies with more negative environmental media coverage may exhibit slightly lower effective tax rates, potentially due to higher tax avoidance tendencies influenced by environmental tax benefits or green policies.

Conversely, the correlation coefficient between S-score (social thinking score) and GAAP_ETR is 0.16, indicating a weak positive correlation. This suggests that companies with higher socially negative media coverage exhibit a slight tendency towards tax avoidance. Additionally, the correlation between G-score (governance score) and GAAP_ETR is 0.09, confirming an almost negligible correlation.

Table 2: Correlation Coefficient

	Size	Leverage	PBR	ROA	GAAP_ETR	ESG_score	E_score	S_score	G_score
Size	1	-0.031	-0.615	-0.261	-0.176	0.617	0.311	0.569	0.534
Leverage	-0.031	1	0.421	-0.491	-0.218	-0.115	0.063	-0.244	-0.045
PBR	-0.615	0.421	1	0.037	-0.258	-0.232	0.077	-0.34	-0.128
ROA	-0.261	-0.491	0.037	1	-0.087	-0.369	-0.087	-0.31	-0.327
GAAP_ETR	-0.176	-0.218	-0.258	-0.087	1	0.075	-0.217	0.16	0.09
ESG_score	0.617	-0.115	-0.232	-0.369	0.075	1	0.489	0.916	0.794
E_score	0.311	0.063	0.077	-0.087	-0.217	0.489	1	0.191	0.431
S_score	0.569	-0.244	-0.34	-0.31	0.16	0.916	0.191	1	0.576
G_score	0.534	-0.045	-0.128	-0.327	0.09	0.794	0.431	0.576	1

5.2. ESG incident Score and Tax Avoidance

Table 3 presents the results of analyzing the relationship between the ESG issue score (ESG-score) and GAAP_ETR, segmented by the distribution and non-distribution industries. GAAP_ETR indicates a company's degree of tax avoidance, with a higher GAAP_ETR signifying a lower degree of tax avoidance. The ESG issue score reflects negative events in the environmental, social, and governance aspects of a company, with a higher score indicating more ESG issues.

Models 1 and 2 display the analysis results for the distribution industry, while Models 3 and 4 show the results for the non-distribution industry. The model estimates and standard errors are provided.

In Model 2, which analyzes the distribution industry, the ESG issue score is 0.373, indicating a significant positive relationship ($p < 0.01$).

This suggests that companies in the distribution industry with more ESG issues have higher GAAP_ETR and thus a lower degree of tax avoidance.

In other words, distribution companies with numerous ESG issues are less likely to engage in tax avoidance. This contrasts with the results of Model 1, which were not statistically significant, highlighting the influence of control variables in the analysis of corporate tax avoidance.

The results of Model 2, which analyzes these control variables, confirm their influence. According to the analysis, company size had a significant negative effect at -1.939 ($p < 0.01$), indicating that larger distribution companies have a lower GAAP_ETR and thus a greater degree of tax avoidance. Additionally, the price-to-earnings ratio (PBR) had a significant negative effect at -0.621 ($p < 0.01$), suggesting that distribution companies with higher PBR exhibit a greater degree of tax avoidance. Conversely, capital expenditure (CAPEX) had a significant positive effect at 0.069 ($p < 0.05$), indicating that distribution companies with higher capital expenditure tend to engage in less tax avoidance.

In contrast, Models 3 and 4, which analyzed the non-distribution industry, showed that the ESG issue score was not statistically significant. This implies that ESG issues do not consistently impact GAAP_ETR in the non-distribution industry. In Model 4, company size showed a positive relationship, but it was not significant, suggesting that company size and ESG issues do not have a clear effect on tax avoidance in the non-distribution industry.

Therefore, Table 3 supports Hypothesis 1 of this study. In the distribution industry, an increase in ESG issues tends to decrease the degree of tax avoidance. This results in companies paying more taxes due to social pressure or regulations related to ESG issues, leading to a reduction in tax avoidance.

Table 3: ESG Incident Score and Tax Avoidance

	Distribution Companies		Non-Distribution Companies	
Variables	Model(1)	Model(2)	Model(3)	Model(4)
ESG_score	0.063 (0.098)	0.373*** (0.118)	7.108 (5.185)	3.262 (7.932)
Size		-1.939*** (0.347)		11.512 (15.961)
Leverage		0.001 (0.001)		-0.039 (0.027)
Dividend				21.163 (19.169)
PBR		-0.621*** (0.123)		-1.887 (2.800)
ROA		-0.034 (0.029)		-1.349 (0.860)
Advertising costs		0.059 (0.061)		-0.100 (4.446)
Capex		0.069** (0.028)		1.846 (1.451)
Constant	0.256 (0.191)	9.853*** (1.608)	3.668 (10.616)	-48.207 (68.447)
Observations	74	74	892	849
R^2	0.006	0.450	0.002	0.011
Adjusted R^2	-0.008	0.392	0.001	0.001
Residual Standard Error	0.988	0.767	197.261	202.145
F-statistics	0.412	7.730***	1.879	1.132

Conversely, in the non-distribution industry, ESG issues did not significantly impact the degree of tax avoidance. This indicates that ESG issues are less critical in the non-distribution industry compared to the distribution industry, or that other factors are more influential in determining tax strategy.

Conversely, this finding diverges from existing research that suggests general ESG performance reduces tax avoidance. Specifically, Cho et al. (2021) highlight the high ESG performance of Korean companies. While ESG issues can be considered a type of ESG performance, it is believed that the realization of negative risks plays a significant role.

5.3. Environment incident Score and Tax Avoidance

Table 4 presents the score analysis for each ESG item, examining the relationship between the environmental issue score (E-score) and GAAP_ETR, segmented by the distribution and non-distribution industries. The analysis model used is consistent with the empirical model related to overall ESG issues.

In Model 1, which analyzes the distribution industry, the E-score has a significant negative impact at -0.495 ($p < 0.1$), suggesting that distribution companies with more environmental issues tend to have lower GAAP_ETR and higher tax avoidance.

Table 4: Environmental Incident Score and Tax Avoidance

	Distribution Companies		Non-Distribution Companies	
Variables	Model(1)	Model(2)	Model(3)	Model(4)
ESG_score	-0.495* (0.263)	-0.058 (0.257)	-12.965 (12.361)	-31.55** (14.119)
Size		-1.187*** (0.312)		27.002** (12.793)
Leverage		-0.001 (0.001)		-0.062** (0.027)
Dividend				20.860 (19.028)
PBR		-0.437*** (0.127)		-1.731 (2.789)
ROA		-0.078*** (0.027)		-1.513* (0.854)
Advertising costs		0.052 (0.066)		-0.365 (4.424)
Capex		0.074** (0.031)		1.761 (1.434)
Constant	0.439*** (0.121)	7.072*** (1.610)	18.301*** (7.294)	-103.94* (60.973)
Observations	74	74	892	849
R^2	0.047	0.368	0.001	0.016
Adjusted R^2	0.034	0.301	0.0001	0.007
Residual Standard Error	0.967	0.823	197.347	201.567
F-statistics	3.553*	5.501***	1.100	1.742*

This indicates that companies with serious environmental problems in the distribution industry are more likely to pay less in taxes and engage in tax avoidance. However, in Model 2, which includes control variables for a more accurate estimate, the E-score is found to be insignificant, indicating low statistical reliability.

In Model 3, which analyzes the non-distribution industry, the E-score is not significant. However, in Model 4, which includes control variables, the E-score is -31.553, showing a significant negative effect ($p < 0.05$).

This suggests that as environmental issues become more severe in the non-distribution industry, GAAP_ETR decreases significantly, and tax avoidance increases rapidly. From the perspective of general ESG performance, it can be confirmed that companies with good environmental performance tend to engage less in tax avoidance.

Overall, it is challenging to conclude whether the degree of tax avoidance increases or decreases with the severity of environmental issues in the distribution industry.

This likely reflects the characteristics of distribution companies, which are less impacted by carbon emissions and environmental pollution issues, consistent with our hypothesis discussion.

Conversely, in the non-distribution industry, the degree of tax avoidance appears to increase rapidly as environmental issues become more serious, suggesting that poor environmental performance can lead to higher tax avoidance tendencies.

5.4. Social incident Score and Tax Avoidance

Table 5 presents the results of analyzing the relationship between the social issue score (S-score) and GAAP_ETR. The same analysis model as the overall ESG issue model was used. The results for the distribution industry are presented in Models 1 and 2, while the results for the non-distribution industry are presented in Models 3 and 4.

In the distribution industry analysis, Model 2 shows that the S-score has a significant positive impact at 0.310 ($p < 0.01$). This indicates that companies in the distribution industry with more social issues tend to have higher GAAP_ETR and thus a lower degree of tax avoidance. In other words, companies with numerous social problems in the distribution industry are more likely to pay more taxes or reduce tax avoidance. In Model 1, the S-score was 0.128 and not significant, suggesting that the impact of major variables, such as company size, was not properly considered.

Conversely, in Models 3 and 4, which analyze the non-distribution industry, the S-score was not significant. This suggests that social issues in the non-distribution industry do not have a clear effect on the degree of tax avoidance. However, in Model 4, leverage (debt ratio) had a significant negative effect at -0.049 ($p < 0.1$), and ROA (return on total assets) also had a significant negative effect at -1.434 ($p < 0.1$). This indicates that companies with high debt or high profitability in the non-distribution industry are more likely to engage in tax avoidance.

Table 5: Social Incident Score and Tax Avoidance

	Distribution Companies		Non-Distribution Companies	
Variables	Model(1)	Model(2)	Model(3)	Model(4)
ESG_score	0.128 (0.093)	0.310*** (0.107)	1.475 (5.355)	-6.978 (7.544)
Size		-1.714*** (0.314)		24.447 (14.990)
Leverage		0.001 (0.002)		-0.049* (0.027)
Dividend				17.851 (19.273)
PBR		-0.540*** (0.116)		-1.780 (2.796)
ROA		-0.040 (0.029)		-1.434* (0.856)
Advertising costs		0.054 (0.062)		0.398 (4.449)
Capex		0.073** (0.029)		1.626 (1.446)
Constant	0.167 (0.177)	8.819*** (1.493)	13.039 (9.877)	-91.092 (65.755)
Observations	74	74	892	849
R^2	0.025	0.439	0.0001	0.011
Adjusted R^2	0.012	0.380	-0.001	0.002
Residual Standard Error	0.978	0.775	197.461	202.062
F-statistics	1.883	7.391***	0.076	1.219

In the distribution industry, an increase in social issues tends to decrease a company's tax avoidance. This indicates that social issues play a significant role in ESG terms and influence the company's tax strategy. Conversely, in the non-distribution industry, social issues do not have a clear impact on the degree of tax avoidance, with other financial factors exerting a greater influence on a company's tax strategy.

These findings support our research hypothesis 2, highlighting the importance of social issues in the distribution industry. The results clearly differentiate between distribution and non-distribution companies, emphasizing the critical role of social issue management for distribution companies, which predominantly operate in the B2C sector.

5.5. Governance of the Multiple Regression Analysis

Table 6 presents an analysis of the relationship between the governance issue score (G-score) and GAAP_ETR. The analysis employs the same model used for the overall ESG issue model and the environmental and social structure issue analysis. Models 1 and 2 focus on the distribution industry, while Models 3 and 4 examine the non-distribution industry.

In Model 2, which pertains to the distribution industry, G-score exhibits a significant positive effect at 0.446 ($p < 0.01$). This indicates that companies within the distribution industry with higher governance issues tend to have increased GAAP_ETR and reduced tax avoidance.

Table 6: Governance Incident Score and Tax Avoidance

	Distribution Companies		Non-Distribution Companies	
Variables	Model(1)	Model(2)	Model(3)	Model(4)
ESG_score	0.128 (0.093)	0.310*** (0.107)	1.475 (5.355)	-6.978 (7.544)
Size		-1.714*** (0.314)		24.447 (14.990)
Leverage		0.001 (0.002)		-0.049* (0.027)

	Distribution Companies		Non-Distribution Companies	
Variables	Model(1)	Model(2)	Model(3)	Model(4)
Dividend				17.851 (19.273)
PBR		-0.540*** (0.116)		-1.780 (2.796)
ROA		-0.040 (0.029)		-1.434* (0.856)
Advertising costs		0.054 (0.062)		0.398 (4.449)
Capex		0.073** (0.029)		1.626 (1.446)
Constant	0.167 (0.177)	8.819*** (1.493)	13.039 (9.877)	-91.092 (65.755)
Observations	74	74	892	849
R^2	0.025	0.439	0.0001	0.011
Adjusted R^2	0.012	0.380	-0.001	0.002
Residual Standard Error	0.978	0.775	197.461	202.062
F-statistics	1.883	7.391***	0.076	1.219

In other words, distribution companies with significant governance problems are more likely to pay higher taxes or engage in less tax avoidance. This contrasts with the findings in Model 1, where G-score was 0.093 and not significant, likely due to inadequate consideration of control variables.

For the non-distribution industry, Models 3 and 4 reveal that G-score has a significant positive impact, with values of 18.082 and 23.359, respectively ($p < 0.01$). This suggests that in the non-distribution industry, companies with more governance issues also experience higher GAAP_ETR and lower levels of tax avoidance. There is a clear trend indicating that non-distribution companies with numerous governance problems tend to pay more taxes or engage in less tax avoidance.

Overall, Table 6 demonstrates that the degree of tax avoidance decreases as governance issues increase in both the distribution and non-distribution industries. This trend is considered non-discriminatory, as governance issues are recognized as traditional corporate problems applicable to all general companies.

Notably, governance issues can directly impact the replacement of CEOs, implying that both distribution and non-distribution companies may reduce other risk factors, such as tax avoidance, when such issues arise.

6. Conclusions

ESG risk encompasses potential financial, reputational, and operational risks that may arise if a company fails to effectively manage environmental, social, and governance issues. ESG incidents occur when these risks materialize, potentially causing significant negative impacts on a company's reputation and financial performance.

The distribution industry, characterized by its B2C nature, has numerous consumer touchpoints, necessitating greater efforts to mitigate the adverse effects of ESG incidents compared to other industries. Korea's distribution industry had the highest rate of tax avoidance, mainly due to frequent undocumented transactions in certain companies. Given Korean consumers' sensitivity to companies' ESG practices, retailers must respond swiftly to ESG incidents and work diligently to restore consumer trust.

Persistent negative risks from ESG incidents in the distribution industry can lead to substantial cash flow losses, prompting companies to minimize other socially detrimental activities, such as tax avoidance, when such risks arise.

Our study found that investor biases—whether optimistic or pessimistic—are influenced by company size and the location of stock price volatility shocks. These biases significantly affect stock price reversal effects and are linked to the anchoring heuristic.

By systematically analyzing these insights, our research provides a comprehensive framework for understanding stock price behavior following significant market shocks in the Korean distribution industry. This represents a notable advancement beyond the work of Lee et al. (2023). Further examination based on the location of price shocks allows us to effectively organize these findings.

Generally, companies with strong ESG performance are known to have a low propensity for tax avoidance. However, this study hypothesized that companies experiencing numerous ESG incidents would exhibit an even lower propensity for tax avoidance to fulfill their social responsibilities.

We predicted this trend would be more pronounced in the distribution industry, which has strong B2C characteristics, making these companies particularly sensitive to ESG events in the social sector. This sensitivity is due to the nature of their response following an ESG incident.

The study utilized ESG incidents and GAAP_ETR as tax avoidance response variables for KOSPI 200 listed distribution companies from 2019 to 2023, identifying their relationship through multiple regression analysis. The analysis revealed a clear tendency for distribution companies with numerous ESG incidents to reduce tax avoidance, a trend not observed in the non-distribution industry. Specifically, distribution companies with high social incident scores showed a significantly lower tendency to avoid taxes.

This study makes several academic contributions. First, it empirically confirms that the impact of ESG performance and realized ESG risks can differ. While existing research

indicates that companies with high ESG performance tend to avoid taxes less, this study found that tax avoidance further decreases in companies where ESG risks are realized. Second, the study highlights the differential impact of ESG risks on corporate policies between the distribution and non-distribution industries. This finding underscores the distribution industry's heightened sensitivity to ESG risks and its strategic responses to maintain consumer relationships, aligning with existing research on the distribution industry.

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