**Nijmegen School of Management**
**Department of Economics and Business Economics**
**Master's Thesis Economics (MAN-MTHEC)**

# How Corporate Governance moderates the Relationship Between CSR and Tax Avoidance

By Dagmar Steegh (s1004459)

Nijmegen, 30 June 2024

## Abstract

This study examines the relationship between CSR disclosure and corporate tax avoidance. Investigating this relationship is relevant because tax avoidance comes with risks. Further investigation into what moderates this relationship is essential because the literature presents contradictory evidence on the direction of the relationship. Six moderating variables (board diversity, external CSR audit, national governance quality, and reputational industry) are tested in relation to CSR disclosure and tax avoidance. This study examines whether the relationship between CSR disclosure and tax avoidance is weakened or strengthened by each moderator and the interplay between them, using a multiple regression analysis in a dataset of 14,152 firm-year observations. The main analysis revealed a positive relationship between CSR disclosure and tax avoidance but did not reveal any significant moderator relationships. The robustness checks indicate that the relationship between CSR and tax avoidance might be more negative for the single moderator effect of board diversity, national governance, and reputational industry. Conversely, the relationship might be more positive for the single moderator effect of an external CSR audit. Lastly, the robustness checks indicate how multiple moderators might influence the relationship between CSR disclosure and tax avoidance. Since this study contains limitations, results should be interpreted with caution.

# Table of Contents

# 1 Introduction

Corporate tax avoidance has gained significant interest in research literature over the years (Wang et al., 2020; Alsaadi, 2020; Koveremann & Velte, 2021). Corporate tax avoidance can be defined as the actions a firm takes to reduce income tax owed relative to the firm's pre-tax income (Hanlon & Heitzman, 2010). Tax avoidance is attractive for firms because it lowers their tax expenses and increases their profits. This allows the firm to create more firm value by increasing investment. However, tax avoidance does not come without risks. According to Kim et al. (2011), corporate tax avoidance increases the stock price crash risk. Another paper indicates that if tax avoidance is announced in the news, it introduces a reputational risk for the firm (Brooks et al., 2016). Despite these risks, tax avoidance is very prevalent. The Organization for Economic Co-operation and Development estimated that due to tax avoidance, the global corporate income tax revenue losses were between 100 billion and 240 billion US dollars in 2014 (OECD, 2015). The high prevalence of tax avoidance, in combination with the previously stated risks, makes research in this direction very relevant for society.

To hedge against the reputational risk of tax avoidance, corporate social responsibility (CSR) can serve as a reputational insurance (Minor & Morgan, 2011). Engaging in CSR protects firms from stock price declines following adverse events, making CSR a reputational risk-management tool. Often, CSR is used to mitigate the reputational risk arising from tax avoidance (Gulzar et al., 2018; Alsaadi, 2020). This risk mitigation relates to the risk management theory, which posits that firms engage more in CSR disclosure to hedge against the potential reputational risks arising from tax avoidance. Alsaadi (2020) supported this theory, showing that firms with high CSR scores engaged more in tax avoidance than firms with lower CSR scores. Firms involved in tax avoidance used CSR reporting to protect themselves against reputational damage. Multiple other studies further support the risk management theory by revealing a positive relationship between corporate tax avoidance and CSR disclosure (Gulzar et al., 2018; Mao, 2019; Abdelfattah & Aboud, 2020). This positive relationship suggests that firms more involved in tax avoidance also disclose more about CSR, presumably to hedge against potential tax avoidance risks.

Contrary to the positive relationship, literature also supported a negative relationship between CSR disclosure and tax avoidance (Lanis & Richardson, 2012; Sari & Tjen, 2017; Herlina,

2021). The underlying rationale in these studies links to the corporate culture theory (Kreps, 1990). This theory indicates that when a corporate culture leads a firm to engage in CSR, they consider not only their shareholders' interests but also the societal and environmental interests (Mao, 2019). The choices made by a firm reflect their belief in ethical behaviour and avoid harming society (Du & Li, 2023). These socially responsible firms ensure that the negative societal and environmental effects of their corporate decisions are minimised. However, tax avoidance is considered unethical and socially irresponsible (Raiborn et al., 2015). Therefore, tax avoidance does not align with the corporate culture of those socially responsible firms. Firms disclosing CSR because of their corporate culture are less likely to be involved in tax avoidance since this contradicts their socially responsible ethics. Therefore, this theory implies that CSR is negatively related to tax avoidance.

The evidence for the risk management theory and the corporate culture theory is striking, as these findings are contradictory. Several studies focused on variables moderating the relationship between CSR disclosure and tax avoidance to understand the reason for this contradiction. Rakia et al. (2024) identified a moderator in the percentage of women on the board of directors. They found that CSR negatively relates to tax avoidance in firms with a higher percentage of women directors. Lin et al. (2017) found institutional quality as a moderator. This study showed a positive relationship between CSR disclosure and tax avoidance for firms in regions with lower institutional quality. In comparison, firms in regions with higher institutional quality showed a more negative relationship between CSR disclosure and tax avoidance. These moderating variables relate to corporate governance.

Recent research uses a framework dividing corporate governance into several levels. Firstly, Li et al. (2010) examined governance factors influencing the corporate communication of CSR information. The study divided the independent variables into three levels: country-level, industry-level, and firm-level. They argue that all three levels influence CSR communication, and they advocate for their inclusion in analyses. Secondly, Zattoni and van Ees (2023) also plead for a multilevel perspective on corporate governance. They suggest including variables at the firm-level, industry-level, and macro-environmental level in the theoretical framework that measures corporate governance. They proposed the country level as an example of the macro-

environmental level. This study shows that using three levels provides a richer and more contextual understanding of corporate governance compared to investigating one level.

There has been no attempt in the literature to explore how different levels of corporate governance variables interact in moderating the relationship between CSR and corporate tax avoidance. Investigating the interplay of different combinations of moderator variables is interesting because the combinations might amplify certain moderator effects. Therefore, this study aimed to address the following research question: How do factors on different levels of corporate governance moderate the relationship between CSR disclosure and corporate tax avoidance? This study operationalised corporate governance on three levels: firm-level, country-level, and industry-level. By adopting this approach, this study aims to provide a more complete contextual understanding of the interplay between the different levels of corporate governance. The current study focused on the disclosure of CSR since this serves as an adequate measure for both the risk management theory and corporate culture theory. The risk management theory can be operationalised by CSR disclosure because firms seeking to insure themselves against tax avoidance risk are likely to enhance their CSR disclosure. Regarding the corporate culture theory, CSR disclosure is an adequate measure since firms with a corporate culture leading to CSR are inclined to disclose more on CSR. Data from the databases World Bank and DataStream were merged and analysed to answer the research question. The dataset contained variables representing CSR disclosure, corporate tax avoidance, and the three levels of corporate governance.

A dataset consisting of 14,152 firm-year observations was used to analyse the moderator effect of the different levels of corporate governance. A fixed effects OLS regression was conducted for multiple models. Alongside this analysis, robustness checks were done to test the robustness of the findings. The results of these analyses indicate that the base model from the main analysis was significant but in the opposite direction than expected, revealing a positive relationship between CSR disclosure and corporate tax avoidance. None of the moderator relationships were significant in the main analysis. Nevertheless, the robustness checks indicated the presence of significant moderator relationships. Two robustness checks suggested that the relationship between CSR disclosure and corporate tax avoidance was more positive for higher levels of board

diversity. One robustness check suggested that the relationship between CSR disclosure and tax avoidance was more negative when a firm had an external audit on its CSR report. Two robustness checks revealed that the relationship between CSR disclosure and tax avoidance might have been more positive when a firm operated from a country with a high national governance quality. One robustness check indicated that the relationship between CSR disclosure and tax avoidance was more positive for firms operating in the retail industry. Such an effect was not found for firms operating in the financial industry. The combination of the variables external CSR audit and national governance quality negatively moderated the relationship between CSR disclosure and tax avoidance in two robustness checks. Furthermore, the negative multiple moderator effect of board diversity and external CSR audit, as well as the negative multiple moderator effect of an external CSR audit and a firm operating in the retail industry, were proven to be significant by one robustness check.

The findings of the multiple moderator analyses indicated that the negative moderator effect might have been amplified for these three different combinations of two moderators. A negative relationship is desirable for society because this means that firms show alignment between CSR disclosure and tax payment, considering the interests of society. Conversely, a positive relationship indicates that CSR disclosure is used as risk insurance against tax risks. For society, this is undesirable because it means that firms do not value society's interests highly. Therefore, society might benefit from these three combinations of corporate governance moderators, as the relationship between CSR disclosure and tax avoidance was indicated to be more negative for these conditions. These results offer insight into how combinations of moderators shape the relationship between CSR disclosure and tax avoidance. Future research can further investigate these relationships in depth. Furthermore, this study also gives some policy implications on what circumstances might be desirable regarding the relationship between CSR disclosure and corporate tax avoidance. It should be noted that the current study has some limitations. The dataset contained a lot of missing data, variables had extreme values, the models had a low $R^2$, none of the models showing a significant moderator effect had a significant relationship between the dependent and independent variable, and lastly, the construct tax avoidance is hard to operationalise. Therefore, caution should be attained when interpreting the results.

The structure of the current study is as follows: chapter two presents the theoretical background and the hypotheses. Chapter three describes the research design, containing information on the sample, variables, and methods. Chapter four presents the results of the main analysis and robustness checks. Chapter five discusses and interprets the findings, presents the study's limitations, and gives recommendations for future research. Finally, chapter six presents concluding remarks.

# 2 Theoretical Background

## 2.1 CSR disclosure and corporate tax avoidance

A vast amount of literature has explored the relationship between CSR disclosure and corporate tax avoidance (Wang et al., 2020; Alsaadi, 2020; Koveremann & Velte, 2021). CSR disclosure can be defined as socially responsible. As firms behave socially responsibly, they will be expected to increase reporting on this responsible behaviour. Clarkson et al. (2008) supported this by proving a positive relationship between the level of environmentally responsible performance and the level of disclosure of it in social or environmental reports. It is expected that socially responsible firms disclose more on CSR. Contrary to CSR disclosure, tax avoidance can be defined as an unethical practice (Raiborn et al., 2015). Since tax payment benefits society, refraining from tax payment can be regarded as unethical behaviour. Moreover, Shafer and Simmons (2008) state that tax avoidance violates social responsibility principles. Therefore, it is expected that socially responsible firms are less involved in tax avoidance. This reasoning presumes that firms believe in ethical corporate behaviour (Du & Li, 2023) and use CSR as a guideline to contribute to society. This view is related to the corporate culture theory (Kreps, 1990). It indicates that when a corporate culture leads a firm to engage in CSR, they consider not only their shareholders' interests but also the societal and environmental interests (Mao, 2019). These socially responsible firms avoid harming society, for example, by refraining from corporate tax avoidance. Based on the corporate culture theory, tax avoidance is expected to be negatively related to CSR disclosure. Several studies prove this theory by revealing a negative relationship (Lanis & Richardson, 2012; Sari & Tjen, 2017; Herlina, 2021).

However, the literature also provides an opposing theory, expecting a positive relationship between CSR disclosure and corporate tax avoidance. The theoretical framework used by these studies is based on the risk management theory. Corporate tax avoidance comes with several risks. Kim et al. (2011) showed that corporate tax avoidance increases the stock price crash risk, and Brooks et al. (2016) indicated that it also introduces reputational risks for firms. The risk management theory states that firms insure themselves against these risks by compensating with CSR disclosures (Minor & Morgan, 2011). CSR can prevent stock price declines following adverse

events. Therefore, this theory expects that more CSR disclosure is related to higher levels of tax avoidance. This positive relationship is proven by several studies (Alsaadi, 2020; Gulzar et al., 2018; Mao, 2019; Abdelfattah & Aboud, 2020).

The striking contradiction between the corporate culture theory and the risk management theory makes the relationship between CSR and tax avoidance complex. The expected direction of this relationship in the current study is based on a review paper by Kovermann and Velte (2020). It highlights that the majority of recent studies on the relationship between CSR disclosure and corporate tax avoidance found a negative relationship. This finding, in combination with the corporate culture theory, has led the current study to expect a decrease in tax avoidance for firms with a higher level of CSR disclosure. This rationale leads to the following first hypothesis:

*H1: There is a negative relationship between the level of CSR disclosure and corporate tax avoidance.*

The relationship between CSR disclosure and tax avoidance is complex and influenced by various moderator variables (Rakia et al., 2024; Lin et al., 2017). These moderator variables are associated with corporate governance. Therefore, the current study focused on corporate governance as a moderating factor. Corporate governance was measured across three different levels: firm-level, country-level, and industry-level (Li et al., 2010; Zattoni & van Ees, 2023). Consistent with existing literature, one or two moderating corporate governance variables were selected per level in this study. Subsequent sections will address the moderator variables per level of corporate governance.

## 2.2 Corporate Governance – Firm Level

At the firm level of corporate governance, research highlights that the percentage of women on the board moderates the relationship between CSR disclosure and tax avoidance (Rakia et al., 2024). Specifically, firms with a higher percentage of women on the board show a stronger negative relationship between CSR disclosure and corporate tax avoidance. The reason for this relationship might be that female directors tolerate less opportunistic behaviour, are more risk-averse, and improve the board's effectiveness and monitoring (Luo et al., 2017). Furthermore, Nielsen and Huse (2010) suggest that women might be more sensitive to CSR. As a result of the

less opportunistic characteristics and the greater risk-aversion, it is expected that a higher percentage of females on the board strengthens the negative relationship between CSR and tax avoidance.

*H2: A higher percentage of women on the board of directors strengthens the negative relationship between CSR disclosure and corporate tax avoidance.*

The second variable in the category of firm-level corporate governance is whether the CSR report is externally audited. Research shows that auditor age, specialisation, size, and portfolio diversity positively influence the degree of CSR disclosures of the audited firm (Kolsi et al., 2022). Given that auditors examine and verify CSR reports, it is expected that this process decreases the discretion in CSR reporting. Therefore, logically, the chance of using CSR reporting as a reputational insurance diminishes. When firms have their reports audited, this signals more responsible behaviour, and this is inconsistent with the socially irresponsibility practice of tax avoidance. This leads to the expectation that the negative relationship between CSR disclosure and corporate tax avoidance is strengthened when firms have their CSR reports externally audited. The third hypothesis follows from this reasoning:

*H3: An external audit of their CSR report strengthens the negative relationship between CSR disclosure and corporate tax avoidance.*

### 2.3 Corporate Governance – Country Level

The second level at which corporate governance was measured is the country level. Studies have found that the quality of institutions influences the direction of the relationship between CSR disclosure and tax avoidance (Lin et al., 2017). In regions characterised by low-quality institutions, firms reporting more on CSR are more involved in tax avoidance, providing evidence for the risk management theory. However, in regions with higher-quality institutions, firms reporting more on CSR are less involved in tax avoidance, providing evidence for the corporate culture theory. The theory behind their findings stated by this study is based on the conflict between stakeholders and shareholders. While reducing taxes benefits the shareholders, it goes at the cost of society. They state that this relationship is dependent on regional institutions because the government influences public behaviour through rules and regulations. Trust in the

governance increases tax morale and fair behaviour of firms (Torgler, 2004; Leonardo, 2011). Therefore, firms in regions with high-quality institutions value behaving socially responsibly. Contrary to this region, firms in regions with low-quality institutions value economic performance more than behaving socially responsibly. Therefore, firms in low-quality institutional regions show a positive relationship between CSR disclosure and tax avoidance, while firms in high-quality institutional regions show a negative relationship.

A study by Montenegro (2021) challenges these findings by concluding that countries with a strong national governance quality show a positive relationship between CSR disclosure and tax avoidance. However, countries with weak national governance quality show a negative relationship between CSR disclosure and tax avoidance. The theory explaining this finding is that firms with weak national governance voluntarily disclose more CSR information to stand out with their responsible behaviour. Meanwhile, firms in regions with strong national governance use CSR disclosure as a façade or compensatory tool to polish their image. These two studies by Lin et al. (2017) and Montenegro (2021) both identify a significant moderating effect on the national governance quality but in a different direction. A possible explanation for the contradictory findings is that different samples are used. Montenegro's (2021) study uses a sample of OECD countries, while Lin et al. (2017) limited their sample to China. The sample of the current study is more comparable to OECD countries. Therefore, the current study expects findings similar to those of Montenegro (2021). This leads to the following hypothesis:

*H4: A higher level of national governance quality weakens the negative relationship between CSR disclosure and corporate tax avoidance.*

### 2.4 Corporate Governance – Industry Level

The last level of corporate governance focused on the industry level. Col and Patel (2019) suggest that reputational industries exhibit a strong positive relationship between CSR reporting and tax avoidance, supporting the risk management theory. Their theory is that a firm's reputation is more critical in reputational industries than in other industries. Therefore, firms in reputational industries are more prone to insuring their reputation against risks, supporting the risk management theory. It is expected that firms in the reputational industry with more CSR

disclosure may be more involved in corporate tax avoidance since they hedged against the tax avoidance risks using CSR disclosure. Conversely, firms in reputational industries with lower CSR activity may refrain from tax avoidance, since they did not hedge against the tax avoidance risks with CSR disclosure. Given the hypothesised negative direction of the relationship between CSR disclosure and tax avoidance, it is expected that this relationship is weakened for firms operating in reputational industries. According to Macey (2010), the financial industry can be regarded as a reputational industry, and according to Hanlon and Slemrod (2009), customer retail is also a reputational industry. Col and Patel used these two industries as reputational industries in their study. Therefore, they are also the basis for the current study's hypotheses. This leads to the following hypotheses:

*H5: Operating in the retail industry weakens the negative relationship between CSR disclosure and corporate tax avoidance, compared to firms operating in other industries.*

*H6: Operating in the financial industry weakens the negative relationship between CSR disclosure and corporate tax avoidance, compared to firms operating in other industries.*

Lastly, it is expected that the moderators across the three levels of corporate governance, in some way interact with each other, influencing the strength of the relationship between CSR disclosure and tax avoidance. This is expected because many moderators have been found to influence the relationship between CSR disclosure and tax avoidance. When a firm has a combination of multiple moderators that strengthen this relationship on its own, it could be expected that the combination of them amplifies the strengthening influence. Moreover, the literature provides two studies examining the same moderator, governance quality (Lin et al., 2017; Montenegro, 2021), finding a moderator effect in opposite directions. It suggests that more than one moderator variable plays a role in influencing this relationship. Lastly, the proven importance of considering the firm-level, country-level, and industry-level in a model when operationalising corporate governance gives reason to look at the interplay of the different moderators along these three levels (Li et al., 2010; Zattoni & van Ees, 2023). Altogether, this lead to believe it was interesting to test what combinations of moderator variables influence the relationship between CSR disclosure and tax avoidance. The great quantity of moderators creates a large variety of possible combinations between them. There is an excessive number of

combinations and there is a lack of guidance in the literature on which interactions between CSR disclosure and the moderators are most interesting. Therefore, the multiple moderator effects have been investigated exploratively.

# 3 Research Design

## 3.1 Sample

The sample used to investigate the relationship between CSR disclosure, tax avoidance, and the proposed moderators was based on all firms that reported on ESG in the years 2013 until 2022. This timeframe was chosen because fewer firms disclosed ESG information before 2013, while it still provides a robust 10-year data frame per firm. So, to limit missing data the year range starts from 2013 and ends in the most recently reported year which is 2022. All data apart from the national governance quality variable was obtained from the database DataStream. The national governance quality variable was obtained from the World Governance Indicator (WGI), published by the World Bank. The datasets from the two databases were merged into one dataset. A limitation of the dataset was that it originally contained a substantial number of missing values. The composition of the sample and how the observations are distributed over the countries, industries, and years can be observed in Table 1.

TABLE 1. SAMPLE COMPOSITION

| Country | Number of observations | Industry | Number of observations | Year | Number of observations |
|---|---|---|---|---|---|
| Other | 6,057 | Manufacturing | 5871 | 2022 | 2595 |
| United States of America | 2235 | Finance, Insurance, Real Estate | 2501 | 2021 | 2380 |
| United Kingdom | 991 | Transportation, Public Utilities | 1979 | 2020 | 1744 |
| Japan | 988 | Services | 1335 | 2019 | 1662 |
| France | 799 | Mining | 730 | 2018 | 1411 |
| Sweden | 727 | Retail Trade | 726 | 2017 | 1142 |
| Germany | 664 | Construction | 611 | 2016 | 918 |
| South-Africa | 624 | Wholesale Trade | 314 | 2015 | 817 |
| Taiwan | 575 | Agriculture, Forestry, Fishing | 85 | 2014 | 765 |
| India | 492 | | | 2013 | 718 |
| Total Observations | 14,152 | | | | |
| Total Firms | 3,651 | | | | |

Notes: This table contains the composition of the sample used in the current study. The rows represent the variables for which the composition is shown. The row on the right side of the variable represents how the observations are distributed over the categories of that variable.

## 3.2 Variables

The dependent variable in this study was corporate tax avoidance, operationalised by the effective tax rate (ETR). The ETR is a widely used measure for tax avoidance (Abdelfattah & Aboud, 2020; Alsaadi, 2020; Gulzar et al., 2018; Chen et al., 2010). It captures the reduction in a firm's taxes relative to its pre-tax income, which is calculated as tax expenses divided by pre-tax income. A firm with a high ETR represents a low level of tax avoidance. The variables from DataStream representing the ETR are 'Income taxes' (WC01451) divided by 'Pre-Tax Income' (WC01401). These variables were downloaded per firm, per year. The ETR is a proxy for tax avoidance, which is challenging to capture. Therefore, another robustness check was conducted with Cash ETR as the dependent variable. Cash ETR is a frequently used alternative measure for tax avoidance (Li et al., 2021; Chen et al., 2010; Rakia et al., 2024). While the ETR is associated with accounting principles, Cash ETR is not affected by tax accruals but by tax deferrals. The variables from DataStream representing Cash ETR are 'Taxation (Cash Flow)' (WC04150) divided by 'Pre-Tax Income' (WC01401). These variables were downloaded per firm, per year. Another robustness check was conducted with a third measure for tax avoidance. This variable contained the three-year average of the ETR variable (Lin et al., 2017). This was done to account for possible unexplained yearly deviations. It was calculated by taking the average of the ETR of years t-2, t-1, and t. Since the first two yearly observations lack a three-year average, these were dropped for this robustness check.

The independent variable of this study was CSR disclosure, operationalised by the environmental and social pillars from the ESG score. These scores represent the weighted average relative rating of a firm based on the disclosed environmental or social information. Since the rating is based on the disclosed CSR information, it operationalises CSR disclosure adequately. Multiple studies operationalising CSR disclosure also use the ESG rating measure from DataStream, or a similar rating score (Abdelfattah & Aboud, 2020; Tasnia et al., 2021; Ismail & Latiff, 2019). Since the moderator variables represent corporate governance, it is implied that part of the governmental pillar is already captured in the analysis. Therefore, including it as an independent variable would be a duplication. The environmental and social scores were added up and divided by two to get one weighted CSR disclosure score per firm per year. The variable

from DataStream representing the environmental score is called 'Environmental Pillar Score' (ENSCORE), and the variable representing the social score is called 'Social Pillar Score' (SOSCORE). These two variables were obtained per firm, per year.

The moderating concept was corporate governance, which was operationalised by four variables on three levels. The first level was the firm level, and it contains two variables. Firstly, the percentage of women on the board was measured by the board diversity percentage. This variable was represented by the variable 'Board Gender Diversity, Percent' (CGBSO03V) from DataStream. Secondly, the external audit of the CSR disclosure was represented by the variable 'CSR Sustainability External Audit' (CGVSDP030) from DataStream. These two variables were obtained per firm, per year.

The second level on which corporate governance was measured was the country level. The variable used for this level was the quality of national governance. This is a commonly used measure in research (Montenegro, 2021; Zeng, 2019) and it constitutes four dimensions of government: government effectiveness, regulatory quality, rule of law, and control of corruption. The dimensions have a minimum estimated value of -2.5 for the weakest governments and a maximum estimated value of 2.5 for the strongest governments. These four scores were added up and divided by 4. The four dimensions were retrieved from the WGI, published by the World Bank. The quality of national governance was obtained per country.

The last level at which corporate governance was measured was the industry level. For this variable, the SIC codes were retrieved. The variable representing the SIC code in DataStream is called 'SIC Code 1' (WC07021). Two dummies were created from this SIC code variable. The first dummy represents firms active in the retail industry category, having a two-digit SIC code of 50 – 59. The second dummy represents firms active in the financial industry category, having a two-digit SIC code of 60 – 69. The study by Col and Patel (2019) used the same SIC code categories to study a similar relationship. These SIC codes were obtained per firm.

Furthermore, seven control variables were added to the analyses to control for several firm effects. The first control variable was the return on assets (ROA), which was represented by the variable 'Net Income' (WC07250) and divided by the variable 'Total Assets' (WC02999). Several studies investigating the relationship between tax avoidance and CSR disclosure used this control

variable because companies use tax avoidance to enhance performance, and the ROA controls for the performance of a firm (Col & Patel, 2019; Rakia et al., 2024; Lin et al., 2017; Lanis & Richardson, 2015). The second control variable is the firm size represented by the logarithm of the variable 'Total Assets' (WC02999) from DataStream. It is used in similar studies because it is theorised that larger firms are more aggressive in tax avoidance (Col & Patel, 2019; Rakia et al., 2024; Lin et al., 2017; Lanis & Richardson, 2015). The third control variable is the firm's leverage operationalised by the variable 'Total Debt' (WC03255) divided by the variable 'Total Assets' (WC02999) from DataStream. This control variable is used in similar studies because firms with more debt are incentivised to avoid taxes (Col & Patel, 2019; Rakia et al., 2024; Lin et al., 2017; Lanis & Richardson, 2015). The fourth control variable is the firm's property, plant, and equipment. This was calculated by scaling the variable 'Property, Plant, and Equipment - Net' (WC02501) from DataStream by the variable 'Total Assets' (WC02999). This is controlled for in similar studies because tax payment is influenced by different mixes of assets (Lin et al., 2017; Lanis & Richardson, 2015). The fifth control variable is the research and development expenses of a firm. This variable was operationalised by scaling the variable 'Research and Development' (WC01210) from DataStream by the variable 'Total Assets' (WC02999). It is used as a control variable because R&D expense is positively related to tax avoidance (Col & Patel, 2019; Lin et al., 2017; Lanis & Richardson, 2015). The sixth control variable is the firm's market-to-book. This variable was operationalised by dividing the variable 'Market Price' (WCP) from DataStream by the variable 'Book Value Per Share' (WC05476). It was included to control for the growth opportunities that might influence tax avoidance (Col & Patel, 2019; Lin et al., 2017; Lanis & Richardson, 2015). The last control variable was a year dummy (Lanis & Richardson, 2015). This was included to account for possible specific year effects that might have influenced the relationship between CSR disclosure and tax avoidance. The calculations of the dependent variable, robustness check dependent variables, independent variable, moderator variables, and control variables can be observed in Table 2.

TABLE 2. DEFINITIONS OF VARIABLES

| Variable | Calculation |
|---|---|
| Tax Avoidance (ETR) | (Tax expense / pre-tax income) * 100 |
| Tax Avoidance (Cash ETR) | (Cash taxes paid / pre-tax income) * 100 |
| Tax Avoidance (ETR 3-year average) | Average of ETR (tax expense / pre-tax income) t-2, t-1, and t |
| CSR Disclosure | Environmental pillar score + social pillar score / 2 |
| Board Diversity | Percentage of women on the board |
| External audit CSR report | Whether CSR report is externally audited – one dummy variable |
| National Governance Quality | (Government effectiveness + regulatory quality + rule of law + control of corruption) / 4 |
| Reputational industry | Whether financial, retail or other industry – two dummy variables |
| ROA | Net income / total assets |
| Size | Log (total assets) |
| Leverage | Total debt / total assets |
| PPE | Property, plant, and equipment / total assets |
| R&D | Research and development / total assets |
| Market-to-book ratio | Market price / book value per share |
| Year | Dummy variables for each year apart from reference year |

*Notes:* This table contains the definitions of the dependent variable, the robustness check dependent variables, independent variable, moderating variables, and control variables.

The dataset composed of these variables contained a lot of missing values. It contained 584,717 missing values, which was 22.6% of the total dataset. After the missing values for the control variable R&D were imputed on the industry average, the firm-year observations with missing values were omitted to enhance the subsequent analyses. The imputation for the variable R&D was done because this variable contained 98,021 missing values. When omitting all firm-year observations without the imputation of the variable R&D, the dataset contained only a few retail and financial industry firms. This would make an analysis with these variables unreliable. After the R&D imputation, all firm-year observations with missing values were excluded from the dataset. The dataset still consisted of 17,063 observations after the exclusion of observations with missing values. This was the only imputation done because the dataset was still substantially large. Furthermore, observations with values below zero on the ETR and CETR variables were

dropped, as was done in other studies that use these measures (Lin et al., 2017; Abdelfattah & Aboud, 2020; Alsaadi, 2020). This led to an additional exclusion of 2,911 observations. The final dataset used for the analyses consisted of 14,152 firm-year observations.

### 3.3 Econometric Model

Several multiple regression analyses were executed. Since the dataset contained panel data, the Hausman test was performed for a fixed versus random effects model. It indicated the preference to use a fixed effects model for each model of the main analysis. Therefore, the fixed effects model will be used throughout the current study. The results of the Hausman test can be observed in Table A1 in Appendix A. A fixed effects multiple regression analysis with corporate tax avoidance as the dependent variable and CSR disclosure as the independent variable was performed as a base model analysis. Furthermore, four models were created to analyse the moderator relationship for one moderator. For each of these models, an interaction term between the independent variable CSR disclosure and each of the moderator corporate governance variables was added to the base model. Lastly, one fixed effects model containing all four moderator variables was created. Each model that included an interaction term used the standardised version of the numeric variables included in this interaction.

The regression equations for the analyses were as follows:

Base model:

$$\mathrm{TAXAV}_{i,t} = \beta_0 + \beta_1 \mathrm{CSR}_{i,t} + \beta_2 \mathrm{RAO}_{i,t} + \beta_3 \mathrm{Size}_{i,t} + \beta_4 \mathrm{Leverage}_{i,t} + \beta_5 \mathrm{PPE}_{i,t} + \beta_6 \mathrm{RD}_{i,t} + \beta_7 \mathrm{MBR}_{i,t} + \beta_7 \mathrm{year}_{i,t} + \delta_t + \alpha_i + \varepsilon_{i,t}$$

Model with one moderator variable[1]:

$$\mathrm{TAXAV}_{i,t} = \beta_0 + \beta_1 \mathrm{CSR}_{i,t} + \beta_2 \mathrm{CG}_{i,t} + \beta_3 (\mathrm{CSR}_{i,t} \times \mathrm{CG}_{i,t}) + \beta_4 \mathrm{RAO}_{i,t} + \beta_5 \mathrm{Size}_{i,t} + \beta_6 \mathrm{Leverage}_{i,t} + \beta_7 \mathrm{PPE}_{i,t} + \beta_8 \mathrm{RD}_{i,t} + \beta_9 \mathrm{MBR}_{i,t} + \beta_{10} \mathrm{year}_{i,t} + \delta_t + \alpha_i + \varepsilon_{i,t}$$

[1] CG stands for corporate governance, and can be replaced by the variables board diversity, external auditor, national governance, and reputation industry to get the four models with one moderator variable.

Model with all four moderator variables[2]:

$$\begin{aligned}TAXAV_{i,t} = {} & \beta_0 + \beta_1 CSR_{i,t} + \beta_2 CG1_{i,t} + \beta_3 CG2_{i,t} + \beta_4 CG3_i + \beta_4 CG4_i + \beta_5 (CSR_{i,t} \times CG1_{i,t}) \\ & + \beta_6 (CSR_{i,t} \times CG2_{i,t}) + \beta_7 (CG1_{i,t} \times CG3_{i,t}) + \beta_8 (CSR_{i,t} \times CG4_i) + \beta_9 (CG1_{i,t} \times CG3_i) \\ & + \beta_{10} (CG2_{i,t} \times CG3_i) + \beta_{11} (CSR_{i,t} \times CG4_i) + \beta_{12} (CG1_{i,t} \times CG4_i) + \beta_{13} (CG2_{i,t} \times CG4_i) \\ & + \beta_{14} (CG3_i \times CG4_i) + \beta_{15} (CSR_{i,t} \times CG1_{i,t} \times CG2_{i,t}) + \beta_{16} (CSR_{i,t} \times CG1_{i,t} \times CG3_i) + \\ & \beta_{17} (CSR_{i,t} \times CG2_{i,t} \times CG3_i) + \beta_{18} (CG1_{i,t} \times CG2_{i,t} \times CG3_i) + \beta_{19} (CSR_{i,t} \times CG1_{i,t} \times \\ & CG2_{i,t} \times CG3_i) + \beta_{20} (CSR_{i,t} \times CG1_{i,t} \times CG4_i) + \beta_{21} (CSR_{i,t} \times CG2_{i,t} \times CG4_i) + \\ & \beta_{22} (CG1_{i,t} \times CG2_{i,t} \times CG4_i) + \beta_{23} (CSR_{i,t} \times CG3_i \times CG4_i) + \beta_{24} (CG1_{i,t} \times CG3_i \times CG4) \\ & + \beta_{25} (CG2_{i,t} \times CG3_i \times CG4_i) + \beta_{26} (CSR_{i,t} \times CG1_{i,t} \times CG2_{i,t} \times CG3_i) + \beta_{27} (CSR_{i,t} \times \\ & CG1_{i,t} \times CG2_{i,t} \times CG4_i) + \beta_{28} (CSR_{i,t} \times CG1_{i,t} \times CG3_i \times CG4_i) + \beta_{29} (CSR_{i,t} \times CG2_{i,t} \\ & \times CG3_i \times CG4_i) + \beta_{30} (CG1_{i,t} \times CG2_{i,t} \times CG3_i \times CG4_i) + \beta_{31} (CSR_{i,t} \times CG1_{i,t} \times CG2_{i,t} \\ & \times CG3_i \times CG4_i) + \beta_{32} RAO_{i,t} + \beta_{33} Size_{i,t} + \beta_{34} Leverage_{i,t} + \beta_{35} PPE_{i,t} + \beta_{36} RD_{i,t} + \\ & \beta_{37} MBR_{i,t} + \beta_{38} year_{i,t} + \delta_t + \alpha_i + \varepsilon_{i,t}\end{aligned}$$

When checking the assumption of homoscedasticity for the main analysis it was found to be violated. The assumption was checked for every model defined above. The Breusch-Pagan test proved that the assumption of homoscedasticity was violated for all models of the main analysis. The results of the Breusch-Pagan tests are displayed in Table B1 in Appendix B. To account for this violated assumption, the models in the main analysis used White's heteroscedasticity-consistent standard errors. Since there was heteroscedasticity in the main analysis, all models for the robustness checks were also tested for this violation with the Breusch-Pagan test. The results of these tests are displayed in Table B1 in Appendix B. The robustness checks containing models for which the assumption of homoscedasticity was violated can be observed in this table. White's heteroscedasticity-consistent standard errors were used for these models.

[2] CG1 represents the variable board diversity, CG2 represents external audit, CG3 represents national governance, and CG4 represents reputation industry.

# 4 Results

## 4.1 Descriptive Statistics

Table 3 displays the descriptive statistics for all variables. The mean of the dummy variable external auditor is 0.80, indicating that a large share of the firm-year observations had an external audit of their CSR report in this sample. This variable contained many missing values. The high mean might indicate that either 80% of the firms in the population have their CSR report audited or that the missing values were mostly firms without an audit of their CSR report. This will be further addressed in the discussion section.

Table 4 displays the Pearson correlation coefficient and the significance level between the dependent, independent, moderator, and control variables. The correlation between ETR and Cash ETR is 0.48, which has been proven to be significant. This indicates a moderate correlation between these two variables. As they intend to measure the same concept of tax avoidance, a higher correlation was expected. Tax avoidance is a complex concept, and ETR and Cash ETR do not capture the same part. Since these two variables are the dependent variables in a separate analysis, multicollinearity is not an issue. Furthermore, it can be observed in the correlation matrix that the predictors of the current study do not correlate. The highest correlation between predictors is found between national governance quality and board diversity. The correlation coefficient of these predictors is -0.23, indicating little, if any correlation. Therefore, it can be assumed that multicollinearity is not an issue in the dataset used.

TABLE 3. DESCRIPTIVE STATISTICS

| Variable | Obs. | Mean | Median | St. dev. | Min | Max |
|---|---|---|---|---|---|---|
| ETR | 14,152 | 31.83 | 24.25 | 113.94 | 0.00 | 8484.28 |
| Cash ETR | 14,152 | 35.92 | 22.73 | 278.51 | 0.00 | 22600.00 |
| ETR 3-Year Average | 7,762 | 31.07 | 24.28 | 61.97 | 0.00 | 3608.81 |
| ETR Winsorized | 14,152 | 27.22 | 24.25 | 20.42 | 0.64 | 158.55 |
| CSR | 14,152 | 65.00 | 67.04 | 16.77 | 3.82 | 97.69 |
| CSR Winsorized | 14,152 | 65.02 | 67.04 | 16.63 | 21.94 | 93.74 |
| Board Diversity | 14,152 | 25.71 | 25.00 | 12.50 | 2.56 | 75.00 |
| Board Div. Winsorized | 14,152 | 25.68 | 25.00 | 12.37 | 6.25 | 57.14 |
| External Auditor | 14,152 | 0.80 | 1 | 0.40 | 0 | 1 |
| National Governance | 14,152 | 1.15 | 1.40 | 0.71 | -1.05 | 2.11 |
| National Gov. Winsorized | 14,152 | 1.15 | 1.40 | 0.71 | -0.57 | 2.07 |
| Retail Industry | 14,152 | 0.07 | 0 | 0.26 | 0 | 1 |
| Financial Industry | 14,152 | 0.18 | 0 | 0.38 | 0 | 1 |
| ROA | 14,152 | 0.04 | 0.01 | 0.07 | -0.67 | 4.29 |
| Size | 14,152 | 7.62 | 7.43 | 1.17 | 4.50 | 12.30 |
| Leverage | 14,152 | 0.27 | 0.26 | 0.17 | 0.00 | 2.56 |
| PPE | 14,152 | 0.29 | 0.24 | 0.25 | 0.00 | 0.99 |
| R&D | 14,152 | 0.02 | 0.01 | 0.03 | -0.00 | 0.63 |
| Market-to-book ratio | 14,152 | 2.40 | 1.85 | 50.74 | -5283.33 | -1140.65 |

*Notes:* This table discloses the number of observations, the mean, median, standard deviation, minimum, and maximum of the dependent, independent, moderator, and control variables. Definitions of the variables are displayed in Table 2.

TABLE 4. CORRELATIONS

| Variable | ETR | CETR | CSR | BoD | ExA | NGov | RetI | FinI | ROA | Size | Lev | PPE | RD | MB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ETR | - | | | | | | | | | | | | | |
| Cash ETR | 0.48** | - | | | | | | | | | | | | |
| CSR | -0.02 | 0.01 | - | | | | | | | | | | | |
| Board Div. | -0.01 | -0.01 | 0.08** | - | | | | | | | | | | |
| External Au. | -0.02* | 0.00 | 0.25** | 0.04** | - | | | | | | | | | |
| National Gov. | 0.01 | 0.00 | 0.08** | 0.23** | 0.04** | - | | | | | | | | |
| Retail Ind. | 0.01 | 0.02* | -0.02* | 0.09** | -0.02* | 0.00 | - | | | | | | | |
| Financial Ind. | -0.03** | -0.02* | 0.01 | 0.01 | -0.01 | -0.06** | -0.13** | - | | | | | | |
| ROA | -0.06** | -0.02* | 0.06** | 0.16** | -0.01 | 0.20** | 0.03** | -0.14** | - | | | | | |
| Size | -0.01 | -0.01 | 0.23** | -0.35** | 0.20** | -0.27** | -0.07** | 0.30** | -0.34** | - | | | | |
| Leverage | 0.02** | 0.00 | 0.02 | 0.03** | 0.00 | 0.00 | 0.03** | -0.11** | 0.00 | -0.06** | - | | | |
| PPE | 0.02** | -0.01 | -0.05** | -0.06** | -0.03** | 0.01 | -0.01 | -0.19** | -0.02** | -0.10** | 0.26** | - | | |
| R&D | -0.01 | -0.01 | -0.01 | 0.04** | -0.01 | 0.10** | -0.09** | -0.16** | 0.15** | -0.16** | -0.07** | -0.20** | - | |
| Market to book ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | -0.01 | 0.01 | -0.01 | 0.01 | 0.00 | -0.03** | -0.01 | 0.02 | - |

*Notes:* This table discloses all Pearson correlation coefficients between the dependent variables, the independent variables, the moderator variables, and the control variables. ** indicates that the correlation is significant at the 0.01 level, * indicates that the correlation is significant at the 0.05 level. Definitions of the variables are displayed in Table 2.

## 4.2 Regression Analysis

The base model of the main regression analyses shows that the relationship between ETR and CSR disclosure was significantly negative at the 10% level (*b*=-0.239, *t*=-1.713, *p*=.087), see model 1 in Table 4. Two other models of the main analysis including one moderator variable board diversity and national governance also showed this significantly negative relationship at the 10% level (*b*=- 3.827, *t*=-1.775, *p*=.076; *b*=-4.297, *t*=-1.677, *p*=. 094), see model 2 and 4 in Table 4, respectively. This indicates a potential negative relationship between CSR disclosure and the ETR. As a high ETR represents low tax avoidance, this shows that in these models, higher levels of CSR disclosure in a firm were related to higher levels of corporate tax avoidance. This finding is not in line with the first hypothesis, which expected a negative relationship between CSR disclosure and corporate tax avoidance.

Secondly, the moderator effect of board diversity on the relationship between CSR disclosure and tax avoidance was proven to be nonsignificant in the main analysis (*b*=0.591, *t*=0.144, *p*=.886), see model 2 in Table 4. This means that the relationship between CSR disclosure and corporate tax avoidance was not strengthened or weakened for different levels of board diversity. This finding is not in line with the second hypothesis, which expected that higher levels of board diversity would strengthen the hypothesized negative relationship between CSR disclosure and tax avoidance.

Thirdly, the moderator effect of having an external CSR audit on the relationship between CSR disclosure and tax avoidance was proven to be nonsignificant (*b*=19.721, *t*=1.138, *p*=.255), see model 3 in Table 4. This result means that the relationship between CSR disclosure and corporate tax avoidance was not strengthened or weakened by whether firms have an external audit of their CSR reports. This result is not in line with the third hypothesis. The hypothesized effect was that an external audit of the CSR report would strengthen the hypothesized negative relationship between CSR disclosure and tax avoidance.

Fourthly, the moderator effect of national governance quality on the relationship between CSR disclosure and tax avoidance was proven to be nonsignificant (*b*=-3.866, *t*=-1.168, *p*=.243), see model 4 in Table 4. This result means that the relationship between CSR disclosure and corporate tax avoidance was not strengthened or weakened by a changing level of national governance quality. This is not in line with the fourth hypothesis, which expected that the hypothesized negative relationship between CSR disclosure and tax avoidance would be weakened by a higher level of national governance quality.

Fifthly, the moderator effect of operating in the retail industry on the relationship between CSR disclosure and corporate tax avoidance was nonsignificant (*b*=7.495, *t*=1.440, *p*=.150), see model 5 in Table 4. This result means that the relationship between CSR disclosure and corporate tax avoidance was not strengthened or weakened by whether a firm operated in the retail industry. This is not in line with the fifth hypothesis. It was expected that the hypothesized negative relationship between CSR disclosure and corporate tax avoidance would be weakened for firms operating in the retail industry.

Lastly, the moderator effect of operating in the financial industry on the relationship between CSR disclosure and corporate tax avoidance was proven to be nonsignificant (*b*=2.010, *t*=0.403, *p*=.687), see model 5 in Table 4. This means that the relationship between CSR disclosure and corporate tax avoidance was not strengthened or weakened for firms that operated in the financial industry. This is not in line with the sixth hypothesis, which expected that the hypothesized negative relationship between CSR disclosure and corporate tax avoidance was weakened for firms active in the retail industry.

None of the interactions between multiple moderator variables and CSR were proven to be significant in the main analysis. For the cause of brevity, Table 4 contains only the two-way interaction terms. Table C1 in Appendix C does display the main analysis's multiple moderator interaction terms. Only the interactions in combination with CSR disclosure are relevant to the current study since they represent the moderation effect on the relationship between CSR disclosure and tax avoidance. Therefore, only these interactions are displayed in the table to keep it brief and clear. In the discussion section, these results will be further addressed.

TABLE 4. P-VALUES AND BETA COEFFICIENTS MAIN ANALYSIS

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| CSR | -0.239* | -3.827* | -19.228 | -4.297* | -4.946 | -27.015 |
| | (0.140) | (2.155) | (15.112) | (2.562) | (3.237) | (20.921) |
| Board Diversity | - | 1.942 | - | - | - | -0.574 |
| | - | (3.054) | - | - | - | (9.646) |
| External Auditor | - | - | -10.603 | - | - | -19.427 |
| | - | - | (11.680) | - | - | (15.959) |
| National Governance | - | - | - | 1.681 | - | 2.342 |
| | - | - | - | (11.541) | - | (18.802) |
| CSR x Board Diversity | - | 0.591 | - | - | - | 2.561 |
| | - | (4.110) | - | - | - | (21.890) |
| CSR x External Auditor | - | - | 19.721 | - | - | 27.981 |
| | - | - | (17.323) | - | - | (24.464) |
| CSR x National | - | - | - | -3.866 | - | -21.376 |
| | - | - | - | (3.311) | - | (15.652) |
| CSR x Retail Industry | - | - | - | - | 7.495 | 19.206 |
| | - | - | - | - | (5.204) | (23.420) |
| CSR x Financial Industry | - | - | - | - | 2.010 | 24.472 |
| | - | - | - | - | (4.984) | (21.209) |
| ROA | -134.14 | -134.271 | -132.626 | -134.829 | -134.404 | -130.616 |
| | (92.130) | (92.167) | (91.166) | (92.260) | (92.213) | (89.060) |
| Size | -11.341 | -10.983 | -9.668 | -12.976 | -11.777 | -10.428 |
| | (19.050) | (19.249) | (20.449) | (18.202) | (18.860) | (19.285) |
| Leverage | 63.481*** | 63.393*** | 63.103*** | 63.982*** | 63.210*** | 63.147*** |
| | (21.266) | (20.703) | (20.922) | (21.430) | (21.292) | (21.304) |
| PPE | -52.052* | -52.356* | -49.282* | -50.960* | -53.859* | -49.104** |
| | (28.363) | (27.815) | (26.237) | (27.354) | (29.225) | (23.356) |
| R&D | 39.520 | 41.257 | 48.944 | 31.525 | 39.727 | 58.332 |
| | (64.444) | (63.949) | (68.556) | (61.171) | (64.695) | (71.741) |
| Market-to-book ratio | -0.000 | -0.000 | 0.000 | -0.000 | -0.000 | 0.002 |
| | (0.002) | (0.002) | (0. 002) | (0.002) | (0.002) | (0.004) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| White's robust st. errors | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 14,152 | 14,152 | 14,152 | 14,152 | 14,152 | 14,152 |
| Adjusted $R^2$ | -.340 | -0.340 | -0.337 | -0.339 | -0.340 | -0.334 |
| $R^2$ | .008 | 0.008 | 0.010 | 0.008 | 0.008 | 0.016 |

*Notes:* This table discloses the beta coefficient, standard error in paratheses, and the significance level of the p-values of the independent, moderator, and control variables. The dependent variable used for every model is the ETR. '***' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third model includes the moderator external auditor. The fourth model includes the moderator national governance. The fifth model includes the moderator industry. The sixth model is a model with all four moderator variables included. Definitions and calculations of the variables are displayed in Table 2.

### 4.3 Robustness Checks

Corporate tax avoidance is a concept that is hard to operationalize. Using distinct variables to measure tax avoidance checks the adequacy of the initially used measure. Therefore, robustness checks with alternative dependent variables were carried out besides the main multiple regression. The Cash ETR was used as a proxy for tax avoidance since this is often used as a second measure to ensure the robustness of findings (Li et al., 2021; Chen et al., 2010). While the ETR is associated with accounting principles, Cash ETR is not affected by tax accruals but by tax deferrals and payments. Therefore, it adds completeness to include a robustness check using this variable to investigate if the results remain robust over different tax avoidance measures. In addition, another analysis was done with the three-year average of the ETR variable (Lin et al., 2017). The three-year average eliminates possible unexplained yearly deviations. Comparing the original analysis to the one with the three-year average accounts for yearly variations. Furthermore, another robustness check was done with a winsorized version of the ETR variable, CSR disclosure variable, and the national governance quality variable. These variables had some extreme values which were expected to have a possible influence on the analysis. In these three robustness checks, the independent, moderator, and control variables of the fixed effects models were equal to the variables used in the main analysis.

In addition to these robustness checks, several robustness check analyses were done with adjustments to the dataset. Firstly, the dataset was split into the first and last five years. This split was made for two reasons. The temporal split gives an insight into the potential influence time has on the relationships. The relationship between CSR disclosure and tax avoidance might have changed over time due to regulatory or economic changes. The second reason for the split is that the first five years of the dataset contained a lot of missing values. When looking at the sample composition in Table 1, it can be observed that the last five years contain a significantly larger portion of observations. This robustness check will allow observing the possible influence of data deletion on the analysis. Comparing the results of these robustness checks to the main analysis might enrich the analysis with a fruitful insight into the influence time and data deletion might have had. Secondly, another dataset was split, containing the years 2013 up to 2019. This robustness check analysis yields the possibility to filter out any effect the influential COVID-19

pandemic might have had. Athira and Ramesh (2023) find that the pandemic caused firms to increase their tax avoidance to prevent a liquidity crisis. This event might influence the relationship between CSR and tax avoidance data from 2020 onwards. Therefore, a robustness check with data up to 2019 was conducted. Comparing this robustness check analysis to the main analysis shows if the results of the main analysis were consistent when excluding the COVID-19 pandemic. Lastly, a dataset containing only firms in the European Union was analysed. This split was made to observe if the results found in the main analysis are robust in a more homogeneous subsample with a more unified culture and regulation. Comparing the results of this analysis to the main analysis shows whether the results are consistent when filtering out non-European countries. In these four robustness checks, the dependent, independent, moderator, and control variables of the fixed effects models were equal to the variables used in the main analysis.

For the cause of brevity and clarity, only the significant relevant results of the robustness checks are presented below. Relevant results include only interaction effects with CSR disclosure since these are of interest to the current study. Table 5 contains an overview of the relevant significant results from the robustness checks. It should be noted that moderator results only show an indication of possible moderation effect. The main relationship between CSR and ETR was not proven to be significant in any model that found this significant moderation effect. Caution should be attained when interpreting these results.

Firstly, the relationship between CSR disclosure and the ETR was proven to be significantly negative at the 10% level by one model of the robustness check analyses, see Table 5. This effect was found in the model with the moderator variable board diversity for the pre-COVID robustness check ($b$=-6.249, $t$=-1.742, $p$=.082), see Table C7 in Appendix C. This means that, in this model, firms with a higher CSR disclosure had a lower ETR, and thus a higher tax avoidance score. This finding is not in line with the first hypothesis, which expected a negative relationship between CSR disclosure and tax avoidance. None of the base models of the robustness checks were proven to be significant.

Furthermore, the negative moderator effect of board diversity on the relationship between CSR disclosure and the ETR was indicated to be significant in two robustness checks, see Table 5. This effect was revealed by the model containing board diversity as the only moderator in the

robustness checks with the winsorized variables (*b*=-0.472, *t*=-1.737, *p*=.082) and the robustness check with the dataset containing the first 5 years of the original dataset (*b*=-11.050, *t*=-2.510, *p*=.012), see table C4 and C5 respectively in Appendix C. This means that in these models, the relationship between CSR disclosure and ETR was more negative for higher levels of board diversity. Translating it to tax avoidance, this means that the relationship between CSR disclosure and tax avoidance was more positive for higher levels of board diversity. This is not in line with the second hypothesis, which expected that a higher percentage of women on the board would strengthen the hypothesized negative relationship between CSR disclosure and tax avoidance.

The positive moderator effect of having an external CSR audit on the relationship between CSR disclosure and the ETR was proven to be significant in one robustness check, see Table 5. This effect was revealed by the model containing the external CSR audit as the only moderator in the robustness check with the three-year average of the ETR (*b*=18.266, *t*=1.664, *p*=.096), see Table C3 in Appendix C. This means that in this model, the relationship between CSR disclosure and ETR was more positive when a firm had an external audit on the CSR report. Translating it to tax avoidance, the relationship between CSR disclosure and tax avoidance was more negative when a firm had its CSR report externally audited. This is in line with the third hypothesis, which expected that having an external audit on the CSR report would strengthen the hypothesized negative relationship between CSR disclosure and tax avoidance.

Also, the moderator effect of national governance quality on the relationship between CSR disclosure and the ETR was proven to be significantly negative by two robustness checks, see Table 5. This effect was revealed by the model containing all four moderator variables in the robustness checks with Cash ETR as the dependent variable (*b*=-31.308, *t*=-2.313, *p*=.021), and the robustness check with the dataset containing the last 5 years of the original dataset (*b*=-12.289, *t*=-2.880, *p*=.004), see Table C2 and C6 respectively in Appendix C. This result means that in these models, the relationship between CSR disclosure and ETR was more negative for higher levels of national governance. Translating it to tax avoidance, this means that the relationship between CSR disclosure and tax avoidance was more positive for higher levels of national governance quality. This is in line with the fourth hypothesis, which expected that the

hypothesized negative relationship between CSR disclosure and tax avoidance would be weakened for higher levels of national governance quality.

The moderator effect of operating in the retail industry on the relationship between CSR disclosure and the ETR was proven to be significantly negative by one robustness check, see Table 5. This effect was revealed by the model containing all four moderator variables in the robustness check with the dataset containing only the last five years of the original dataset (*b*=-34.239, *t*=19.413, *p*=.078), see Table C6 in Appendix C. This result means that in these models, the relationship between CSR disclosure and the ETR was more negative when firms operated in a retail industry. Translating it to tax avoidance, this means that the relationship between CSR disclosure and tax avoidance was more positive for firms that operated in the retail industry. This is in line with the fifth hypothesis, which expected that operating in the retail industry would weaken the hypothesized negative relationship between CSR disclosure and corporate tax avoidance than firms in other industries. Such an effect was not found for the financial industry in any robustness checks. This hypothesized moderator relationship was proven to be nonsignificant in all the robustness checks, meaning that whether firms operated in the financial industry did not influence the relationship between CSR disclosure and tax avoidance.

Furthermore, the moderator effect of board diversity and national governance quality on the relationship between CSR disclosure and the ETR was proven to be significantly positive by one robustness check, see Table 5. This effect was revealed by the model containing all four moderator variables in the robustness check with winsorized variables (*b*=1.007, *t*=1.658, *p*=.097), see Table C4 in Appendix C. This result means that in this model, the relationship between CSR disclosure and ETR was significantly more positive for firms that had a higher level of board diversity and operated in a country with a high level of national governance quality. Translating this to tax avoidance, it means that the relationship between CSR disclosure and tax avoidance was significantly more negative for firms that had a high level of board diversity and operated in a country with a high level of national governance quality. This is in line with the expectation that some combinations of the moderators would together affect the relationship between CSR disclosure and tax avoidance.

The moderator effect of an external CSR audit and national governance quality on the relationship between CSR disclosure and the ETR was proven to be significantly positive by two robustness checks, see Table 5. This effect was revealed by the model containing all four moderator variables in the robustness check with Cash ETR as the dependent variable ($b$=38.261, $t$=2.663, $p$=.008), and the robustness check with the dataset containing only the last five years ($b$=10.493, $t$=4.543, $p$=.021), see Table C2 and C6 respectively in Appendix C. This result means that in these models, the relationship between CSR disclosure and the ETR was significantly more positive for firms that had an external CSR audit and operated in a country with a high national governance quality. Translating this to tax avoidance, this means that the relationship between CSR disclosure and tax avoidance was significantly more negative for firms that had an external CSR audit and operated in a country with a high level of national governance quality. This is in line with the expectation that some combinations of the moderators would together affect the relationship between CSR disclosure and tax avoidance.

Lastly, the moderator effect of an external CSR audit and operating in the retail industry on the relationship between CSR disclosure and the ETR was proven to be significantly positive by one robustness check, see Table 5. This result was revealed by the model containing all four moderators in the robustness check using the dataset of only the last five years ($b$=40.334, $t$=2.001, $p$=.045), see Table C6 in Appendix C. This result means that in this model, the relationship between CSR disclosure and Cash ETR was significantly more positive for firms that had an external CSR audit and that operated in the retail industry. Translating this to tax avoidance, this means that the relationship between CSR disclosure and tax avoidance was significantly more negative for firms that had an external CSR audit operated in the retail industry. This is in line with the expectation that some combinations of the moderators would together affect the relationship between CSR disclosure and tax avoidance.

TABLE5. RELEVANT SIGNIFICANT EFFECTS ROBUSTNESS CHECKS

| Models | Variables | Main | CETR | 3 Year | Winsorized | First 5 | Last 5 | COVID | EU |
|---|---|---|---|---|---|---|---|---|---|
| Base Model | CSR | -* | | | | | | | |
| Model Board Diversity (BD) | CSR | -* | | | | | | -* | |
| | CSR*BD | | | | -* | -** | | | |
| Model External Auditor (EA) | CSR*EA | | | +* | | | | | |
| Model National Governance (NG) | CSR | -* | | | | | | | |
| Model Industry (IN) | | | | | | | | | |
| Model Four Moderators | CSR*NG | | -** | | | | -*** | | |
| | CSR*Retail | | | | | | -* | | |
| | CSR*BD*NG | | | | +* | | | | |
| | CSR*EA*NG | | +*** | | | | +** | | |
| | CSR*EA*Retail | | | | | | +** | | |

*Notes:* This table discloses the effects that were significant and relevant to the current paper. The direction of the beta coefficients is indicated with '+' or '-'. '***' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The row 'Models' displays the model in which the significant effect was found. The row 'Variables' displays the variable or interaction term for which the beta coefficient was significant. The following rows represent the main analysis and the seven robustness checks. 'CETR' represents the robustness check with Cash ETR as the dependent variable. '3 Year' represents the robustness check with the three-year average of ETR as the dependent variable. 'Winsorized' represents the robustness check with the winsorized variables. 'First 5' represents the robustness check with the dataset containing the first five years, and 'Last 5' represents the robustness check with the last five years. 'COVID' represents the robustness check with the dataset containing the pre-COVID years. 'EU' represents the robustness check with the dataset containing only European countries. Definitions of the variables are displayed in Table 2.

# 5 Discussion

The present study addressed the existing literature's inconsistencies regarding the relationship between CSR disclosure and corporate tax avoidance. However, caution should be exercised when interpreting these results because this study contained several limitations. This chapter starts by reflecting on the results and interprets them per hypothesis. Subsequently, the limitations of the current study are discussed in detail, and finally, recommendations are given for future research.

## 5.1 Key Findings and Interpretation

### 5.1.1 *H1: CSR disclosure and tax avoidance*

The first hypothesized relationship between CSR disclosure and ETR was proven to be significantly negative at the 10% level by three models in the main analysis, and one model in the robustness check containing only the pre-COVID years. This indicates a possible positive relationship between CSR disclosure and corporate tax avoidance. Firms disclosing more on CSR performance might have been more involved in tax avoidance, and it contradicts the expected negative relationship. The negative relationship was hypothesized because recent studies support the corporate culture theory, suggesting a negative relationship (Lanis & Richardson, 2012; Sari & Tjen, 2017; Herlina, 2021). This theory indicates that when a firm’s corporate culture leads to CSR disclosure, the firm considers societal and environmental interests (Mao, 2019). These socially responsible firms avoid harming society. Since tax avoidance is unethical and violates socially responsible principles (Raiborn et al., 2015; Shafer & Simmons, 2008), it is expected that these socially responsible firms will not avoid taxes. Based on the corporate culture theory, tax avoidance was expected to be negatively related to CSR disclosure. Furthermore, Kovermann and Velte (2020) further stated that most recent studies have found a negative relationship between CSR disclosure and corporate tax avoidance. The current research followed this reasoning, expecting firms with higher CSR disclosure to engage less in tax avoidance.

The revealed positive relationship between CSR disclosure and corporate tax avoidance most likely follows the risk management theory, which posits that firms use CSR to hedge against the

reputational risks from tax avoidance. Alsaadi (2020) found that firms with high CSR scores often engage more in tax avoidance than those with lower scores, using CSR reporting as a safeguard against reputational damage. This theory is further supported by studies showing a positive relationship between tax avoidance and CSR disclosure (Gulzar et al., 2018; Mao, 2019; Abdelfattah & Aboud, 2020), suggesting that firms involved in tax avoidance increase CSR disclosure to mitigate potential risks.

It should be noted that this positive relationship between CSR disclosure and corporate tax avoidance does not remain consistent in all six models of the main analysis. Even more remarkable is that the relationship between CSR and tax avoidance is only found to be significant in one model of one robustness check. All other models and robustness checks fail to reveal a significant relationship between these two variables. A possible explanation for the inconsistency might be that the relationship between CSR and tax avoidance is sensitive to the alterations made in the robustness checks. Altering the dependent variable and changing the dataset's time frame and geographical features have made the relation nonsignificant. This underlines the context-dependent importance of the relationship.

Furthermore, it is important to note that none of the models containing a significant moderator relationship also revealed the main relationship between CSR and ETR to be significant. Therefore, the moderator effects discussed below only indicate a possible moderation effect.

### *5.1.2 H2: Moderator board diversity*

The hypothesized moderator effect of board diversity on the relationship between CSR disclosure and the ETR was not proven to be significant by the main analysis. However, the relationship between CSR disclosure and tax avoidance was proven to be more positive for higher levels of board diversity in two models from the robustness checks. This effect was found in the robustness check with the winsorized variables and in the robustness check with the dataset containing the first 5 years of the original dataset. Therefore, there is some indication that the moderator effect of board diversity is relevant in some robustness checks. These results only show an indication of possible moderation since the main relationship between CSR and ETR was

not proven to be significant in the two models that found this significant moderation effect. Caution should be attained when interpreting these results.

Although this relationship is significant, it is not in line with the second hypothesis since the moderation effect was expected to exist in the opposite direction. The hypothesized negative relationship between CSR disclosure and tax avoidance was expected to be strengthened and be more negative for higher levels of board diversity. However, it was proven by the above-mentioned models that this relationship was more positive for higher levels of board diversity. The relationship was hypothesized to be more negative because research indicates that firms with higher female board representation show a stronger negative relationship between CSR disclosure and tax avoidance (Rakia et al., 2024). This may be because female directors are less tolerant of opportunistic behaviour, more risk-averse, and enhance board effectiveness and monitoring (Luo et al., 2017). Additionally, women tend to be more sensitive to CSR issues (Nielsen & Huse, 2010), making them likely to strengthen the negative link between CSR and tax avoidance. Strikingly, some models found a moderator relationship in the opposite direction.

A possible alternative explanation for this finding might be that the impact of board diversity on the relationship between CSR disclosure and tax avoidance is more complex than initially hypothesized. More female directors may not only lead to a board with more risk-aversity and a better focus on CSR. It may also lead to an increased strategic diversity with a broader range of perspectives. A more diverse board might generate a broader network and a possible increase in connections with tax advisors. Additionally, the fact that the moderator relationship is only present in two robustness checks is interesting. This indicates that the main analysis results might have been influenced by the extreme values of variables and the deletion of observations.

### *5.1.3 H3: Moderator external audit on the CSR report*

The hypothesized moderator effect of an external CSR audit on the relationship between CSR disclosure and the ETR was not proven to be significant by the main analysis. However, the three-year average ETR robustness check revealed a positive moderator relationship at the 10% level. This indicates that the relationship between CRS disclosure and ETR was more positive when a CSR report was externally audited. Therefore, this indicates that the relationship between CSR

disclosure and tax avoidance was more negative when a CSR report was externally audited. Since the main relationship between CSR and ETR was not proven to be significant in the model finding this significant moderation effect, these results only show an indication of a possible moderation.

This finding is in line with the third hypothesis which expected that an external audit on a CSR report would strengthen the hypothesized negative relationship between CSR disclosure and corporate tax avoidance. This was expected because research indicates that auditor characteristics such as age, specialization, size, and portfolio diversity positively influence CSR disclosures (Kolsi et al., 2022). Auditing reduces discretion in CSR reporting, thereby diminishing the use of CSR as reputational insurance. Audited reports signal more responsible behaviour, which is inconsistent with tax avoidance. Therefore, it was expected that external CSR audits would strengthen the negative relationship between CSR disclosure and corporate tax avoidance. However, it is remarkable that the effect was only found in one robustness check and was nonsignificant in the other analyses.

A possible explanation for the absence of the moderator effect in the other analyses could be that the influence of an external audit on a CSR report may not be strong enough to impact the relationship with tax avoidance significantly. While CSR reports gain accuracy and reliability from audits, this might not affect corporate tax avoidance. Additionally, firms that participate in tax avoidance might be skilled at portraying their CSR activities in a positive light, regardless of whether the report is audited. Another plausible explanation is that the variable whether the CSR report was externally audited had a lot of missing values. The possibility exists that they were not missing completely at random, but that most missing values lacked an external CSR audit. This might have introduced a bias in the analysis, leading to a nonsignificant moderator relationship of this variable in almost all analyses. Interestingly, the main analysis did not reveal the significant effect, but the analysis with the three-year average ETR did. This might indicate the importance of yearly deviations in this relationship.

### *5.1.4 H4: Moderator quality of national governance*

The hypothesized moderator effect of national governance quality on the relationship between CSR disclosure and the ETR was not proven to be significant by the main analysis. However, the

model with multiple moderators in two robustness checks revealed a significant negative moderator effect of national governance quality on the relationship between CSR disclosure and the ETR. The two robustness checks revealing this significant effect were the one with Cash ETR as the dependent variable, and the one using the dataset containing only the last 5 years of the original dataset. These significant relationships indicate that in these models, firms in countries with higher levels of national governance showed a more negative relationship between CSR disclosure and ETR. This means that firms in countries with higher levels of national governance quality showed a more positive relationship between CSR disclosure and tax avoidance, than firms in countries with lower levels of national governance quality. Since the main relationship between CSR and ETR was not proven to be significant in any of the models finding a significant moderation effect, these results only show an indication of a possible moderation.

The finding from the two robustness checks is in line with the fourth hypothesis, which expected that the hypothesized negative relationship between CSR disclosure and tax avoidance was weakened by the quality of national governance. This was expected because a study by Montenegro (2021) using a comparable sample of countries, concluded that countries with weak national governance show a negative relationship between CSR disclosure and tax avoidance. However, countries with strong national governance have a positive relationship between CSR disclosure and tax avoidance (Montenegro, 2021). The theory behind this finding is that firms in regions with strong national governance use CSR disclosure as a façade or compensatory tool to polish their image.

A plausible explanation for the absence of a moderating effect of national governance quality in the models with one moderator variable might lie in the combination of variables. It is possible that the quality of national governance only moderates the relationship between CSR disclosure and tax avoidance when certain other moderators are also added to the model. These interaction effects may not be captured when analysing the relationship in isolation, leading to nonsignificant results in the models with only one moderator. An explanation for the absence of a significant effect in the main analyses might be that time or missing data was also relevant for this moderator relationship. The relationship is found to be significant in the robustness check containing the last five years of data. This indicates that time might be important to reveal such a moderator

relationship. Furthermore, this data split was done because the last five years of the dataset contained the least missing values and, thus, the least deleted observations. Possibly, this relationship in the main analysis was influenced by deleted observations. Also, the Cash ETR robustness check does yield a significant effect. This might suggest that the effect occurs when using a payment-based measurement for tax avoidance.

### *5.1.5 H5: Moderator retail industry*

The hypothesized moderator effect of the retail industry on the relationship between CSR disclosure and the ETR was not proven to be significant by the main analysis. However, a significant negative relationship at the 10% level was revealed by the multiple moderator model of the robustness check using the last 5 years of the original dataset. The negative moderator effect means that the relationship between CSR disclosure and ETR was more negative for firms operating in the retail industry. This indicates that the relationship between CSR disclosure and tax avoidance was more positive for firms operating in the retail industry. Caution regarding these findings should be attained since the main relationship between CSR and ETR was not proven to be significant in the model, which found a significant moderation effect. Therefore, these results only indicate a possible moderation.

This finding is in line with the fifth hypothesis, which expected that the hypothesized negative relationship between CSR and tax avoidance would be weakened for firms operating in the retail industry. This was expected because previous research supports a positive relationship between CSR reporting and tax avoidance in reputational industries such as finance and retail (Col & Patel, 2019). These industries are also identified as reputational by Macey (2010) and Hanlon and Slemrod (2009). In these industries, the firm's reputation is very important. It is anticipated that firms in these industries with higher CSR disclosure may also be more inclined to engage in tax avoidance since they have hedged for the tax avoidance reputational risks with CSR disclosure. Conversely, firms with lower CSR reporting may be less likely to engage in tax avoidance due to the lack of risk mitigation through CSR disclosure. Given the hypothesized negative relationship between CSR reporting and tax avoidance, it was expected that this relationship would be weakened and be more positive for firms operating within the retail and financial sectors.

A plausible alternative explanation for the inconsistency of this finding over the analyses might be that Col and Patel (2019) make use of a sample with firms from the United States. It is possible that in the United States, industries like finance and retail may highly prioritize reputation management, leading to a stronger link between CSR practices and tax avoidance strategies. However, these dynamics might differ in other countries due to unique cultural and regulatory conditions. As a result, the moderator relationship between CSR disclosure and tax avoidance could vary between regions, impacting the observed results. This is a possible explanation for the lack of a negative moderation effect in the main analysis and almost all robustness checks. Interestingly, a significant relationship was only found in the robustness check with the dataset containing the last five years of the original dataset. This indicates that time or the deletion of missing values might also be relevant to the relationship.

#### *5.1.6 H6: Moderator financial industry*

The hypothesized moderator effect of the financial industry on the relationship between CSR disclosure and ETR was proven to be nonsignificant by the main analysis and by all robustness checks. This means that the relationship between CSR disclosure and tax avoidance does not change depending on whether the firm operates in the financial industry or in another industry. The lack of a significant effect is not in line with the sixth hypothesis, expecting that the hypothesized negative relationship between CSR disclosure and tax avoidance would be weakened for firms operating in the financial industry. The same line of reasoning was followed for this hypothesis as for the hypothesis of the retail industry. Like the plausible alternative reason for the previous hypothesis, it is expected that the effect might depend on whether a firm is based in the United States.

#### 5.1.7 *Multiple moderator variable combinations*

Lastly, it was expected that the combination of multiple moderator variables would also significantly moderate the relationship between CSR disclosure and tax avoidance. This was expected because some firms have a combination of multiple moderators that, for example, strengthen the relationship between CSR disclosure and tax avoidance on their own. This

combination could logically be expected to amplify the strengthening influence even further. Moreover, the literature provides two studies examining the same moderator, governance quality (Lin et al., 2017; Montenegro, 2021), finding a moderator effect in opposite directions. It suggests that the relationship is not influenced by only one moderator variable. When measuring corporate governance, the importance of incorporating the three levels firm, country, and industry was underlined in the studies by Li et al. (2010) and Zattoni and van Ees (2023). These combinations of moderators were analysed exploratively because of the limited guidance from the literature on how different moderators on these levels interact together. The main analysis did not prove any of the interactions between different moderators to be significant. However, the robustness checks did give some indication of how multiple moderators may interact to moderate the relationship between CSR disclosure and tax avoidance.

Firstly, the positive multiple moderator effect of board diversity and national governance was proven to be significant at the 10% level by the robustness check with winsorized variables. This positive effect indicates that the relationship between CSR disclosure and tax avoidance was more negative for firms with a higher level of board diversity and a higher level of quality national governance. Secondly, the positive multiple moderator effect of an external CSR audit and national governance quality was proven to be significant by two robustness checks. One robustness check uses Cash ETR as the dependent variable, and the other uses only the last five years of the original dataset. This significant positive effect means that the relationship between CSR disclosure and tax avoidance was significantly more negative for firms that had an external audit on their CSR report and operated in a country with a high level of national governance. Lastly, the positive multiple moderator effect of an external CSR audit and whether firms operate in a retail industry was proven to be significant by the robustness check using data from the last five years. This significant effect means that the relationship between CSR disclosure and tax avoidance was significantly more negative for firms that had an external audit of their CSR report and operated in the retail industry. Caution should be attained when interpreting these findings because the main relationship between CSR and ETR was not proven to be significant in any of the models that found a significant multiple moderator effect. Therefore, these results only indicate a possible moderation. Also, these multiple moderator relationships are not consistent

over the robustness checks, indicating that the relationship depends on alterations made by the robustness checks.

These findings indicate that combining high-quality national governance with more women on the board might amplify the negative moderator effect on the relationship between CSR disclosure and tax avoidance. A negative relationship is desirable because this means that firms show alignment between CSR disclosure and tax payment and that they consider societal interests. A positive relationship indicates that CSR is used as risk insurance against tax risks. This is undesirable for society because it means that the firm values the shareholder's interest over society's interest. Therefore, combining high-quality national governance with a higher percentage of women on the board might be desirable. Furthermore, this study also indicates that the combination of high-quality governance and an external audit of the CSR report might amplify the desirable negative moderator effect on the relationship between CSR disclosure and tax avoidance. Lastly, the combination of having an external audit on the CSR report and operating in a retail industry might also amplify the negative moderator effect on the relationship between CSR disclosure and tax avoidance. Therefore, this combination is desirable for society.

## 5.2 Limitations

The current research had some limitations, starting with the problem of missing values. 22.6% of the data was missing. Apart from the imputation for the R&D variable, all observations with missing data were deleted. This might have introduced a selection bias. The variable representing whether a firm's CSR report was externally audited contained a lot of missing values. It is unclear whether the values were missing completely at random, or if they were missing because the report was not externally audited. The mean of this external audit variable was 0.8, showing that many firms had their CSR report audited. This either indicates that 80% of the firms in the population have their CSR report audited, or that this percentage is lower and that the deleted values were mostly firms without an audit on their CSR report. This might have introduced a bias in this variable for the analysis, possibly leading to the nonsignificant moderator effect of the external audit. Secondly, some extreme values were not deleted in the main analysis but were accounted for in the winsorized robustness check. The reason for not accounting for them in the

main analysis was that there was no clear reason to assume the extreme values were incorrect and unimportant. These extreme values might have been influential since the main analysis results were inconsistent with the winsorized robustness check results. Thirdly, the adjusted $R^2$ of the main analysis was very low (-0.334 – -0.340). This means that the models were not a good fit and that the independent, moderator, and control variables badly explained the ETR. Fourthly, none of the models finding a significant moderator relationship also showed a significant main effect between CSR disclosure and tax avoidance. For this reason, caution should be attained when drawing conclusions from these moderator relationships. The moderator relationships only suggest an indication of a possible moderation effect. Lastly, the construct of tax avoidance is complex to capture. The robustness checks have used different versions of the ETR measure. The moderate correlation coefficient between Cash ETR and the ETR (.48) shows these measures are not highly correlated. These proxies intend to measure the same construct although they fail to show a major overlap.

### 5.3 Future Recommendations

The current study adds to the literature by indicating how different moderators together may interact, determining the relationship between CSR disclosure and corporate tax avoidance. Future research could use these indications to investigate these specific relationships more thoroughly. Furthermore, future research can focus on developing an accurate measure for tax avoidance. This can fundamentally enrich the research regarding tax avoidance. Moreover, the results are only partially consistent over the different robustness checks. This suggests the importance of econometrical, temporal, and geographical variations. Investigating these geographical and temporal variables in more depth might be fruitful. Another suggestion for future research is to ensure that a dataset with fewer missing values is used. Seeing the increasing interest in CSR reporting and the new CSRD guidelines, it is expected that more will be reported on CSR in the future. The coming years will generate more CSR data with fewer missing values. Replicating the current study in a couple of years will likely have fewer missing values and might yield interesting results.

# 6 Conclusion

The current study's aim was to investigate the relationship between CSR disclosure and tax avoidance, and how the three levels of corporate governance moderate this relationship. Investigating this relationship was relevant because tax avoidance is prevalent (OECD, 2015), yet it also introduces stock price crash risks and reputational risks (Kim et al., 2011; Brooks et al., 2016). The contradictory findings on the direction of the relationship between CSR disclosure and tax avoidance raised interest in investigating what alters this relationship. The research question central to this paper was: How do factors on different levels of corporate governance moderate the relationship between CSR disclosure and corporate tax avoidance? Six hypotheses were formulated to test this question. Firstly, the relationship between CSR disclosure and corporate tax avoidance was expected to be negative. The following five hypotheses expected a corporate governance moderator to strengthen or weaken this negative relationship. The moderators were board diversity, whether a CSR report is externally audited, the quality of national governance, whether a firm operates in the retail industry, and whether a firm operates in the financial industry. A dataset consisting of 14,152 firm-year observations was used to test these hypotheses. A multiple regression main analysis containing multiple models, and several robustness checks with varying dependent variables and datasets were used to analyse the dataset.

The main analysis proved a significant positive relationship between CSR disclosure and tax avoidance. Some robustness checks indicated that the relationship between CSR disclosure and tax avoidance was more positive for higher levels of board diversity. The relationship between CSR disclosure and tax avoidance was indicated to be more negative for firms with an external audit of the CSR report by one robustness check. Two robustness checks indicate that the relationship between CSR disclosure and tax avoidance was more positive for high-quality national governance regions. One robustness check indicates that the relationship between CSR disclosure and tax avoidance was more positive for firms operating in the retail industry. Such an effect was not found in the financial industry.

The models containing multiple moderator variables yielded some interesting results. The findings indicate that the negative moderator effect might be amplified for three different combinations of two moderators. Combining high-quality national governance with more women

on the board might amplify the negative moderator effect on the relationship between CSR disclosure and tax avoidance. Furthermore, combining high-quality governance and having an external audit on the CSR report might amplify the negative moderator effect on the relationship between CSR disclosure and tax avoidance. Lastly, the combination of having an external audit on the CSR report and operating in a retail industry might also amplify the negative moderator effect on the relationship between CSR disclosure and tax avoidance. A negative relationship is desirable because this means that firms show alignment between CSR disclosure and tax payment and consider societal interests. A positive relationship indicates that CSR is used as risk insurance against tax risks. This is undesirable for society because it means that the firm values the shareholder's interest over society's interest. Therefore, these three combinations might benefit society as the relationship between CSR disclosure and tax avoidance is more negative for the combination of these corporate governance moderators.

These results contribute to the literature by adding insight into how combinations of several corporate governance moderator variables alter the relationship between CSR disclosure and tax avoidance. This provides a guide for future research on which multiple moderator relationships to further investigate. Practically, the results are relevant to policymakers since this research gives guidance on under what circumstances the relationship between CSR disclosure and tax avoidance might become more negative. A more negative relationship means that firms align their CSR disclosure with tax payment because they consider society's interests. This is desirable and beneficial for society. Policymakers could focus on ensuring the desirable circumstances are met. It should be noted that this research has some limitations including missing data, extreme values, a low $R^2$, none of the models showing a significant moderator effect had a significant relationship between the dependent and independent variable, and lastly the construct tax avoidance is hard to operationalize. Therefore, caution should be attained when interpreting the results of the current paper.

# 7 References

REFERENCES

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. doi: https://doi.org/10.1016/j.intaccaudtax.2020.100304

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

Athira, A., & Ramesh, V. K. (2023). COVID-19 and corporate tax avoidance: International evidence. *International Business Review, 32*(4), 102143. doi: https://doi.org/10.1016/j.ibusrev.2023.102143

Brooks, C., Godfrey, C., Hillenbrand, C., & Money, K. (2016). Do investors care about corporate taxes? *Journal of Corporate Finance, 38*, 218-248. doi: https://doi.org/10.1016/j.jcorpfin.2016.01.013

Chen, S., Chen, X., Cheng, Q., & Shevlin, T. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics, 95*(1), 41-61. doi: https://doi.org/10.1016/j.jfineco.2009.02.003

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis. *Accounting, Organizations and Society, 33*(4-5), 303-327. doi: https://doi.org/10.1016/j.aos.2007.05.003

Col, B., & Patel, S. (2019). Going to haven? Corporate social responsibility and tax avoidance. *Journal of Business Ethics, 154*, 1033-1050. doi: https://doi.org/10.1007/s10551-016-3393-2

Du, M., & Li, Y. (2023). Tax avoidance, CSR performance and financial impacts: Evidence from BRICS economies. *International Journal of Emerging Markets*. doi: https://doi.org/10.1108/IJOEM-05-2022-0747

Gulzar, M. A., Cherian, J., Sial, M. S., Badulescu, A., Thu, P. A., Badulescu, D., & Khuong, N. V. (2018). Does corporate social responsibility influence corporate tax avoidance of Chinese listed companies? *Sustainability, 10*(12), 4549. doi: https://doi.org/10.3390/su10124549

Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics, 50(*2-3), 127-178. doi: https://doi.org/10.1016/j.jacceco.2010.09.002

Hanlon, M., & Slemrod, J. (2009). What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public Economics, 93*(1-2), 126-141. doi: https://doi.org/10.1016/j.jpubeco.2008.09.004

Herlina, L. (2021). Corporate social responsibility disclosure on tax avoidance. *JASa (Jurnal Akuntansi, Audit Dan Sistem Informasi Akuntansi), 5(*1), 98-103. doi: https://doi.org/10.36555/jasa.v5i1.1512

Ismail, A. M., & Latiff, I. H. M. (2019). Board diversity and corporate sustainability practices: Evidence on environmental, social and governance (ESG) reporting. *International Journal of Financial Research, 10*(3), 31-50. doi: https://doi.org/10.5430/ijfr.v10n3p31

Kim, J. B., Li, Y., & Zhang, L. (2011). Corporate tax avoidance and stock price crash risk: Firm-level analysis. *Journal of Financial Economics, 100*(3), 639-662. doi: https://doi.org/10.1016/j.jfineco.2010.07.007

Kolsi, M. C., Muqattash, R., & Al-Hiyari, A. (2022). How do external auditor attributes impact corporate social responsibility disclosures: Empirical evidence from ADX-listed companies. *Social Responsibility Journal, 18*(2), 293-315. doi: https://doi.org/10.1108/SRJ-02-2020-0041

Kovermann, J., & Velte, P. (2021). CSR and tax avoidance: A review of empirical research. *Corporate Ownership and Control, 18*(2), 20-39. doi: 10.22495/cocv18i2art2

Kreps, D. M. (1990). Corporate culture and economic theory. *Perspectives on Positive Political Economy, 90*(109-110), 8.

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

Lanis, R., & Richardson, G. (2015). Is corporate social responsibility performance associated with tax avoidance? *Journal of Business Ethics, 127*, 439-457. doi: https://doi.org/10.1007/s10551-014-2052-8

Leonardo, G. M. (2011). *Politics and tax morale. The role of trust, values, and beliefs, in shaping individual attitudes towards tax compliance.* Georgia Institute of Technology.

Li, B., Liu, Z., & Wang, R. (2021). When dedicated investors are distracted: The effect of institutional monitoring on corporate tax avoidance. *Journal of Accounting and Public Policy, 40*(6), 106873. doi: https://doi.org/10.1016/j.jaccpubpol.2021.106873

Li, S., Fetscherin, M., Alon, I., Lattemann, C., & Yeh, K. (2010). Corporate social responsibility in emerging markets: The importance of the governance environment. *Management International Review, 50*, 635-654. doi: https://doi.org/10.1007/s11575-010-0049-9

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. doi: https://doi.org/10.1016/j.intacc.2017.11.002

Luo, J. H., Xiang, Y., & Huang, Z. (2017). Female directors and real activities manipulation: Evidence from China. *China Journal of Accounting Research, 10*(2), 141-166. doi: https://doi.org/10.1016/j.cjar.2016.12.004

Macey, J. (2010). The value of reputation in corporate finance and investment banking (and the related roles of regulation and market efficiency). *Journal of Applied Corporate Finance, 22*(4), 18-29. doi: https://doi.org/10.1111/j.1745-6622.2010.00299.x

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

Minor, D., & Morgan, J. (2011). CSR as reputation insurance: Primum non nocere. *California Management Review, 53*(3), 40-59. doi: https://doi.org/10.1525/cmr.2011.53.3.40

Montenegro, T. M. (2021). Tax evasion, corporate social responsibility and national governance: A country-level study. *Sustainability, 13* (20), 1–19. doi: https://doi.org/10.3390/su132011166

Nielsen, S., & Huse, M. (2010). The contribution of women on boards of directors: Going beyond the surface. *Corporate Governance: An International Review, 18*(2), 136-148. doi: https://doi.org/10.1111/j.1467-8683.2010.00784.x

OECD, T. (2015). Measuring and monitoring BEPS, Action 11–2015 final report. OECD/G20 Base Erosion and Profit Shifting Project.

Raiborn, C. A., Massoud, M. F., & Payne, D. M. (2015). Tax avoidance: The good, the bad, and the future. *Journal of Business & Management, 21*(1). doi: https://jbm.johogo.com/pdf/volume/2101/JBM-2101-04-full.pdf

Rakia, R., Kachouri, M., & Jarboui, A. (2024). The moderating effect of women directors on the relationship between corporate social responsibility and corporate tax avoidance? Evidence from Malaysia. *Journal of Accounting in Emerging Economies, 14*(1), 1-24. doi: https://doi.org/10.1108/JAEE-01-2021-0029

Sari, D., & Tjen, C. (2017). Corporate social responsibility disclosure, environmental performance, and tax aggressiveness. *International Research Journal of Business Studies, 9*(2). doi: 10.21632/IRJBS.9.2.93-104

Shafer, W. E., & Simmons, R. S. (2008). Social responsibility, machiavellianism and tax avoidance: A study of Hong Kong tax professionals. *Accounting, Auditing & Accountability Journal, 21*(5), 695-720. doi: https://doi.org/10.1108/09513570810872978

Tasnia, M., Syed Jaafar AlHabshi, S. M., & Rosman, R. (2021). The impact of corporate social responsibility on stock price volatility of the US banks: A moderating role of tax. *Journal of Financial Reporting and Accounting, 19*(1), 77-91. doi: https://doi.org/10.1108/JFRA-01-2020-0020

Torgler, B. (2004). *Tax morale, trust and corruption: Empirical evidence from transition countries* (No. 2004-05). CREMA Working Paper.

Wang, F., Xu, S., Sun, J., & Cullinan, C. P. (2020). Corporate tax avoidance: A literature review and research agenda. *Journal of Economic Surveys, 34*(4), 793-811. doi: https://doi.org/10.1111/joes.12347

Zattoni, A., & van Ees, H. (2023). A multilevel perspective on corporate governance: Firm, industry, and macro environments. *In Oxford Research Encyclopedia of Business and Management*. doi: https://doi.org/10.1093/acrefore/9780190224851.013.415

Zeng, T. (2019). Relationship between corporate social responsibility and tax avoidance: International evidence. *Social Responsibility Journal, 15*(2), 244-257. doi: https://doi.org/10.1108/SRJ-03-2018-0056

# 8 Appendix A

TABLE A1. CHI SQ. AND P-VALUES OF HAUSMAN TEST FIXED VS. RANDOM EFFECTS MODELS

| Analysis | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| Main analysis | 52.146 | 53.064 | 66.897 | 52.889 | 60.951 | 109.05 |
| | .000 | .000 | .000 | .000 | .000 | .000 |

*Notes*: This table discloses the Chi-squared and p-values of the Hausman Test, comparing the fixed effects and random effects model of the main analysis. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables.

# 9 Appendix B

TABLE B1. BP AND P-VALUES OF THE BREUSCH-PAGAN TEST

| Analysis | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| Main analysis | 31.787 | 35.223 | 46.998 | 36.615 | 33.094 | 125.490 |
| | .011 | .009 | .000 | .006 | .033 | .000 |
| Robustness Check – Cash | 16.912 | 17.047 | 17.075 | 17.397 | 30.594 | 47.846 |
| ETR | .391 | .520 | .518 | .496 | .061 | .907 |
| Robustness Check – | 27.655 | 33.232 | 39.507 | 28.185 | 31.812 | 162.750 |
| Three-year average ETR | .016 | .006 | .001 | .030 | .023 | .000 |
| Robustness Check – | 89.979 | 92.744 | 91.319 | 90.549 | 87.884 | 129.69 |
| Winsorized variables | .000 | .000 | .000 | .000 | .000 | .000 |
| Robustness Check – | 19.660 | 21.791 | 33.825 | 25.652 | 21.710 | 94.886 |
| Dataset first 5 years | .050 | .059 | .001 | .019 | .116 | .001 |
| Robustness Check – | 7.205 | 9.264 | 11.850 | 7.489 | 9.745 | 52.944 |
| Dataset last 5 years | .782 | .753 | .540 | .875 | .836 | .628 |
| Robustness Check – | 25.459 | 28.365 | 42.051 | 31.014 | 27.578 | 110.020 |
| Dataset pre-COVID | .020 | .019 | .000 | .009 | .050 | .000 |
| Robustness Check – | 14.631 | 14.744 | 14.947 | 14.648 | 30.181 | 41.703 |
| Dataset EU countries | .552 | .680 | .666 | .686 | .067 | .978 |

*Notes*: This table discloses the BP and below it the p-value of the Breusch-Pagan Test. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables. The left column displays for what analysis the Breusch-Pagan statistics are shown.

# 10 Appendix C

TABLE C1. BETA COEFFICIENTS AND P-VALUES MAIN ANALYSIS

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| CSR | -0.239* | -3.827* | -19.228 | -4.297* | -4.946 | -27.015 |
| | (0.140) | (2.155) | (15.112) | (2.562) | (3.237) | (20.921) |
| Board Diversity | - | 1.942 | - | - | - | -0.574 |
| | - | (3.054) | - | - | - | (9.646) |
| External Auditor | - | - | -10.603 | - | - | -19.427 |
| | - | - | (11.680) | - | - | (15.959) |
| National Governance | - | - | - | 1.681 | - | 2.342 |
| | - | - | - | (11.541) | - | (18.802) |
| CSR x Board Diversity | - | 0.591 | - | - | - | 2.561 |
| | - | (4.110) | - | - | - | (21.890) |
| CSR x External Auditor | - | - | 19.721 | - | - | 27.981 |
| | - | - | (17.323) | - | - | (24.464) |
| CSR x National Governance | - | - | - | -3.866 | - | -21.376 |
| | - | - | - | (3.311) | - | (15.652) |
| CSR x Retail Industry | - | - | - | - | 7.495 | 19.206 |
| | - | - | - | - | (5.204) | (23.420) |
| CSR x Financial Industry | - | - | - | - | 2.010 | 24.472 |
| | - | - | - | - | (4.984) | (21.209) |
| CSR x Board Diversity x | - | - | - | - | - | -3.635 |
| External Auditor | - | - | - | - | - | (21.070) |
| CSR x Board Diversity x | - | - | - | - | - | 12.221 |
| National Governance | - | - | - | - | - | (14.138) |
| CSR x Board Diversity x | - | - | - | - | - | -2.197 |
| Retail Industry | - | - | - | - | - | (22.097) |
| CSR x Board Diversity x | - | - | - | - | - | -0.380 |
| Financial Industry | - | - | - | - | - | (21.752) |
| CSR x External Auditor x | - | - | - | - | - | 24.180 |
| National Governance | - | - | - | - | - | (17.822) |
| CSR x External Auditor x | - | - | - | - | - | -17.164 |
| Retail Industry | - | - | - | - | - | (26.008) |
| CSR x External Auditor x | - | - | - | - | - | -29.784 |
| Financial Industry | - | - | - | - | - | (24.522) |
| CSR x National Governance | - | - | - | - | - | 18.842 |
| x Retail Industry | - | - | - | - | - | (17.071) |
| CSR x National Governance | - | - | - | - | - | 19.864 |
| x Financial Industry | - | - | - | - | - | (15.890) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -11.036 |
| Auditor x National Gov. | - | - | - | - | - | (13.605) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | 0.761 |
| Auditor x Retail Indus. | - | - | - | - | - | (21.550) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | 2.362 |
| Auditor x Financial Indus. | - | - | - | - | - | (21.059) |
| CSR x Board Div. x National | - | - | - | - | - | -11.533 |
| Gov. x Retail Indus. | - | - | - | - | - | (14.624) |
| CSR x Board Div. x National | - | - | - | - | - | -11.448 |
| Gov. x Financial Indus. | - | - | - | - | - | (14.194) |
| CSR x Extern. Au. x National | - | - | - | - | - | -18.059 |
| Gov. x Retail. Indus. | - | - | - | - | - | (18.396) |
| CSR x Extern. Au. x National | - | - | - | - | - | -26.158 |
| Gov. x Financial. Indus. | - | - | - | - | - | (17.929) |

| | | | | | | |
|---|---|---|---|---|---|---|
| CSR x Board. Div. x Extern. | - | - | - | - | - | 8.907 |
| Au. x Nat. Gov. x Ret. Ind. | - | - | - | - | - | (14.406) |
| CSR x Board. Div. x Extern. | | - | - | - | - | 12.092 |
| Au. x Nat. Gov. x Fin. Ind. | - | - | - | - | - | (13.470) |
| ROA | -134.14 | -134.271 | -132.626 | -134.829 | -134.404 | -130.616 |
| | (92.130) | (92.167) | (91.166) | (92.260) | (92.213) | (89.060) |
| Size | -11.341 | -10.983 | -9.668 | -12.976 | -11.777 | -10.428 |
| | (19.050) | (19.249) | (20.449) | (18.202) | (18.860) | (19.285) |
| Leverage | 63.481*** | 63.393*** | 63.103*** | 63.982*** | 63.210*** | 63.147*** |
| | (21.266) | (20.703) | (20.922) | (21.430) | (21.292) | (21.304) |
| PPE | -52.052* | -52.356* | -49.282* | -50.960* | -53.859* | -49.104** |
| | (28.363) | (27.815) | (26.237) | (27.354) | (29.225) | (23.356) |
| R&D | 39.520 | 41.257 | 48.944 | 31.525 | 39.727 | 58.332 |
| | (64.444) | (63.949) | (68.556) | (61.171) | (64.695) | (71.741) |
| Market-to- | -0.000 | -0.000 | 0.000 | -0.000 | -0.000 | 0.002 |
| book ratio | (0.002) | (0.002) | (0. 002) | (0.002) | (0.002) | (0.004) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| White's robust st. errors | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 14,152 | 14,152 | 14,152 | 14,152 | 14,152 | 14,152 |
| Adjusted $R^2$ | -.340 | -0.340 | -0.337 | -0.339 | -0.340 | -0.334 |
| $R^2$ | .008 | 0.008 | 0.010 | 0.008 | 0.008 | 0.016 |

*Notes:* This table discloses the beta coefficient, standard error in paratheses, and the significance level of the p-values of the independent variable, moderator variables, and control variables. The dependent variable used for every model is ETR. '****' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables. The definitions of the variables are displayed in Table 2.

TABLE C2. BETA COEFFICIENTS AND P-VALUES ROBUSTNESS CHECK CASH ETR

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| CSR | 0.186 | 2.133 | 4.247 | 3.241 | 3.194 | 6.718 |
| | (0.429) | (7.279) | (12.055) | (7.209) | (8.200) | (14.685) |
| Board Diversity | - | -3.676 | - | - | - | -21.751 |
| | - | (5.981) | - | - | - | (13.915) |
| External Auditor | - | - | -13.854 | - | - | -22.443 |
| | - | - | (14.602) | - | - | (17.934) |
| National Governance | - | - | - | -10.466 | - | -49.793 |
| | - | - | - | (28.928) | - | (36.660) |
| CSR x Board Diversity | - | -3.568 | - | - | - | -10.322 |
| | - | (4.431) | - | - | - | (11.868) |
| CSR x External Auditor | - | - | -0.850 | - | - | -1.933 |
| | - | - | (12.171) | - | - | (15.015) |
| CSR x National Governance | - | - | - | 0.103 | - | -31.308** |
| | - | - | - | (6.065) | - | (13.534) |
| CSR x Retail Industry | - | - | - | - | 9.281 | -16.934 |
| | - | - | - | - | (24.817) | (48.631) |
| CSR x Financial Industry | - | - | - | - | -3.663 | -7.403 |
| | - | - | - | - | (16.402) | (30.937) |
| CSR x Board Diversity x | - | - | - | - | - | 5.349 |
| External Auditor | - | - | - | - | - | (12.841) |
| CSR x Board Diversity x | - | - | - | - | - | 9.271 |
| National Governance | - | - | - | - | - | (11.062) |
| CSR x Board Diversity x | - | - | - | - | - | 12.809 |
| Retail Industry | - | - | - | - | - | (36.407) |
| CSR x Board Diversity x | - | - | - | - | - | 13.636 |
| Financial Industry | - | - | - | - | - | (28.409) |
| CSR x External Auditor x | - | - | - | - | - | 38.261*** |
| National Governance | - | - | - | - | - | (14.363) |
| CSR x External Auditor x | - | - | - | - | - | 18.397 |
| Retail Industry | - | - | - | - | - | (49.222) |
| CSR x External Auditor x | - | - | - | - | - | 0.330 |
| Financial Industry | - | - | - | - | - | (31.734) |
| CSR x National Governance | - | - | - | - | - | 19.348 |
| x Retail Industry | - | - | - | - | - | (40.543) |
| CSR x National Governance | - | - | - | - | - | 31.517 |
| x Financial Industry | - | - | - | - | - | (26.517) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -15.870 |
| Auditor x National Gov. | - | - | - | - | - | (12.228) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -12.644 |
| Auditor x Retail Indus. | - | - | - | - | - | (40.396) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -9.115 |
| Auditor x Financial Indus. | - | - | - | - | - | (29.949) |
| CSR x Board Div. x National | - | - | - | - | - | -5.375 |
| Gov. x Retail Indus. | - | - | - | - | - | (26.576) |
| CSR x Board Div. x National | - | - | - | - | - | -7.770 |
| Gov. x Financial Indus. | - | - | - | - | - | (24.147) |
| CSR x Extern. Au. x National | - | - | - | - | - | -22.135 |
| Gov. x Retail. Indus. | - | - | - | - | - | (42.868) |
| CSR x Extern. Au. x National | - | - | - | - | - | -37.911 |
| Gov. x Financial. Indus. | - | - | - | - | - | (27.339) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | 5.162 |
| Au. x Nat. Gov. x Ret. Ind. | - | - | - | - | - | (34.638) |
| CSR x Board. Div. x Extern. | | - | - | - | - | 15.827 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Au. x Nat. Gov. x Fin. Ind. | - | - | - | - | - | (26.119) |
| ROA | -56.848 | -56.719 | -55.937 | -56.343 | -57.132 | -49.708 |
| | (54.197) | (54.202) | (54.210) | (54.227) | (54.208) | (54.410) |
| Size | -17.564 | -18.549 | -15.871 | -17.662 | -17.998 | -13.717 |
| | (31.149) | (31.166) | (31.202) | (31.263) | (31.183) | (31.551) |
| Leverage | 67.492 | 68.435 | 66.637 | 67.730 | 66.775 | 63.321 |
| | (45.566) | (45.592) | (45.578) | (45.584) | (45.597) | (46.007) |
| PPE | -26.911 | -26.864 | -25.214 | -27.550 | -28.931 | -27.395 |
| | (64.411) | (64.437) | (64.445) | (64.457) | (64.682) | (65.284) |
| R&D | -162.561 | -166.106 | -159.988 | -164.784 | -162.394 | -134.880 |
| | (365.960) | (366.011) | (366.015) | (366.297) | (365.992) | (367.007) |
| Market-to- | -0.003 | -0.003 | -0.003 | -0.003 | -0.003 | -0.002 |
| book ratio | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) | (0.061) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| White's robust st. errors | No | No | No | No | No | No |
| N | 14,152 | 14,152 | 14,152 | 14,152 | 14,152 | 14,152 |
| Adjusted $R^2$ | -0.348 | -0.348 | -0.348 | -0.348 | -0.348 | -0.350 |
| $R^2$ | 0.001 | 0.002 | 0.002 | 0.001 | 0.001 | 0.004 |

*Notes:* This table discloses the beta coefficient, standard error in paratheses, and the significance level of the p-values of the independent variable, moderator variables, and control variables. The dependent variable used for every model is ETR. '***' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables. The definitions of the variables are displayed in Table 2.

TABLE C3. BETA COEFFICIENTS AND P-VALUES ROBUSTNESS CHECK THREE-YEAR AVERAGE ETR

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| CSR | -0.098 | -2.436 | -17.518 | -1.594 | -1.842 | -13.522 |
| | (0.193) | (3.610) | (12.314) | (3.399) | (4.277) | (12.655) |
| Board Diversity | - | 5.286 | - | - | - | 9.280 |
| | - | (8.955) | - | - | - | (38.144) |
| External Auditor | - | - | -1.348 | - | - | -12.322 |
| | - | - | (1.872) | - | - | (8.197) |
| National Governance | - | - | - | -8.397 | - | -7.800 |
| | - | - | - | (14.310) | - | (19.806) |
| CSR x Board Diversity | - | -6.482 | - | - | - | -51.949 |
| | - | (6.430) | - | - | - | (48.633) |
| CSR x External Auditor | - | - | 18.266* | - | - | 12.301 |
| | - | - | (10.977) | - | - | (11.323) |
| CSR x National Governance | - | - | - | -1.014 | - | -8.933 |
| | - | - | - | (2.186) | - | (8.300) |
| CSR x Retail Industry | - | - | - | - | -1.791 | -1.474 |
| | - | - | - | - | (6.090) | (16.875) |
| CSR x Financial Industry | - | - | - | - | 1.614 | 11.994 |
| | - | - | - | - | (4.083) | (12.441) |
| CSR x Board Diversity x | - | - | - | - | - | 48.807 |
| External Auditor | - | - | - | - | - | (46.255) |
| CSR x Board Diversity x | - | - | - | - | - | -16.081 |
| National Governance | - | - | - | - | - | (19.817) |
| CSR x Board Diversity x | - | - | - | - | - | 64.234 |
| Retail Industry | - | - | - | - | - | (47.532) |
| CSR x Board Diversity x | - | - | - | - | - | 51.917 |
| Financial Industry | - | - | - | - | - | (48.898) |
| CSR x External Auditor x | - | - | - | - | - | 8.083 |
| National Governance | - | - | - | - | - | (7.689) |
| CSR x External Auditor x | - | - | - | - | - | 7.823 |
| Retail Industry | - | - | - | - | - | (15.748) |
| CSR x External Auditor x | - | - | - | - | - | -10.660 |
| Financial Industry | - | - | - | - | - | (11.452) |
| CSR x National Governance | - | - | - | - | - | 2.931 |
| x Retail Industry | - | - | - | - | - | (9.955) |
| CSR x National Governance | - | - | - | - | - | 10.051 |
| x Financial Industry | - | - | - | - | - | (8.380) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | 16.178 |
| Auditor x National Gov. | - | - | - | - | - | (18.532) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -71.126 |
| Auditor x Retail Indus. | - | - | - | - | - | (45.882) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -50.498 |
| Auditor x Financial Indus. | - | - | - | - | - | (46.538) |
| CSR x Board Div. x National | - | - | - | - | - | 22.168 |
| Gov. x Retail Indus. | - | - | - | - | - | (19.172) |
| CSR x Board Div. x National | - | - | - | - | - | 14.723 |
| Gov. x Financial Indus. | - | - | - | - | - | (20.183) |
| CSR x Extern. Au. x National | - | - | - | - | - | 2.604 |
| Gov. x Retail. Indus. | - | - | - | - | - | (9.015) |
| CSR x Extern. Au. x National | - | - | - | - | - | -8.392 |
| Gov. x Financial. Indus. | - | - | - | - | - | (7.682) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | -26.783 |
| Au. x Nat. Gov. x Ret. Ind. | - | - | - | - | - | (17.883) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | -14.165 |
| Au. x Nat. Gov. x Fin. Ind. | - | - | - | - | - | (19.065) |

| | | | | | | |
|---|---|---|---|---|---|---|
| ROA | -62.386 | -62.491 | -62.477 | -62.249 | -62.376 | -60.544 |
| | (55.460) | (55.022) | (55.714) | (55.162) | (55.532) | (51.773) |
| Size | -6.761 | -5.140 | -7.412 | -7.135 | -6.692 | -3.829 |
| | (16.366) | (17.097) | (16.081) | (16.058) | (16.257) | (17.804) |
| Leverage | 33.897*** | 34.382*** | 35.577*** | 34.454*** | 33.989*** | 33.946*** |
| | (12.034) | (12.053) | (12.292) | (12.112) | (12.000) | (12.557) |
| PPE | -2.138 | -4.491 | -2.379 | -2.485 | -1.742 | -8.284 |
| | (14.585) | (14.953) | (14.664) | (14.751) | (14.763) | (16.642) |
| R&D | 39.611 | 51.710 | 41.374 | 34.975 | 39.879 | 62.167 |
| | (64.441) | (75.518) | (64.894) | (62.762) | (64.711) | (81.494) |
| Market-to-book ratio | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) | (0.005) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| White's robust st. errors | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 7,762 | 7,762 | 7,762 | 7,762 | 7,762 | 7,762 |
| Adjusted $R^2$ | -0.364 | -0.362 | -0.362 | -0.364 | -0.364 | -0.352 |
| $R^2$ | 0.005 | 0.007 | 0.007 | 0.005 | 0.005 | 0.022 |

*Notes:* This table discloses the beta coefficient, standard error in paratheses, and the significance level of the p-values of the independent variable, moderator variables, and control variables. The dependent variable used for every model is ETR. '***' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables. The definitions of the variables are displayed in Table 2.

TABLE C4. BETA COEFFICIENTS AND P-VALUES ROBUSTNESS CHECK WINSORIZED VARIABLES

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| CSR | 0.008 | 0.015 | -0.277 | 0.161 | 0.152 | -0.657 |
| | (0.028) | (0.472) | (0.744) | (0.470) | (0.555) | (0.937) |
| Board Diversity | - | -0.155 | - | - | - | -0.117 |
| | - | (0.363) | - | - | - | (0.815) |
| External Auditor | - | - | -0.651 | - | - | -1.651 |
| | - | - | (0.835) | - | - | (1.146) |
| National Governance | - | - | - | -3.287* | - | -4.134 |
| | - | - | - | (1.914) | - | (2.525) |
| CSR x Board Diversity | - | -0.472* | - | - | - | -0.603 |
| | - | (0.272) | - | - | - | (0.839) |
| CSR x External Auditor | - | - | 0.558 | - | - | 0.790 |
| | - | - | (0.746) | - | - | (0.986) |
| CSR x National Governance | - | - | - | -0.261 | - | -0.738 |
| | - | - | - | (0.378) | - | (0.837) |
| CSR x Retail Industry | - | - | - | - | 0.910 | -0.989 |
| | - | - | - | - | (1.367) | (4.040) |
| CSR x Financial Industry | - | - | - | - | -0.366 | -0.399 |
| | - | - | - | - | (0.873) | (1.444) |
| CSR x Board Diversity x | - | - | - | - | - | 0.057 |
| External Auditor | - | - | - | - | - | (0.900) |
| CSR x Board Diversity x | - | - | - | - | - | 1.007* |
| National Governance | - | - | - | - | - | (6.07) |
| CSR x Board Diversity x | - | - | - | - | - | 2.052 |
| Retail Industry | - | - | - | - | - | (1.873) |
| CSR x Board Diversity x | - | - | - | - | - | 1.923 |
| Financial Industry | - | - | - | - | - | (1.498) |
| CSR x External Auditor x | - | - | - | - | - | 0.829 |
| National Governance | - | - | - | - | - | (0.884) |
| CSR x External Auditor x | - | - | - | - | - | 2.615 |
| Retail Industry | - | - | - | - | - | (3.965) |
| CSR x External Auditor x | - | - | - | - | - | -0.471 |
| Financial Industry | - | - | - | - | - | (1.498) |
| CSR x National Governance | - | - | - | - | - | -3.501 |
| x Retail Industry | - | - | - | - | - | (3.015) |
| CSR x National Governance | - | - | - | - | - | 0.887 |
| x Financial Industry | - | - | - | - | - | (1.124) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -0.424 |
| Auditor x National Gov. | - | - | - | - | - | (0.719) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -2.615 |
| Auditor x Retail Indus. | - | - | - | - | - | (2.174) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -1.934 |
| Auditor x Financial Indus. | - | - | - | - | - | (1.312) |
| CSR x Board Div. x National | - | - | - | - | - | 0.895 |
| Gov. x Retail Indus. | - | - | - | - | - | (1.432) |
| CSR x Board Div. x National | - | - | - | - | - | -0.964 |
| Gov. x Financial Indus. | - | - | - | - | - | (0.942) |
| CSR x Extern. Au. x National | - | - | - | - | - | 3.962 |
| Gov. x Retail. Indus. | - | - | - | - | - | (2.914) |
| CSR x Extern. Au. x National | - | - | - | - | - | -1.339 |
| Gov. x Financial. Indus. | - | - | - | - | - | (1.158) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | -2.708 |
| Au. x Nat. Gov. x Ret. Ind. | - | - | - | - | - | (1.931) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | 1.497 |
| Au. x Nat. Gov. x Fin. Ind. | - | - | - | - | - | (1.074) |

| | | | | | | |
|---|---|---|---|---|---|---|
| ROA | -36.626* | -36.626* | -36.558* | -36.513* | -36.651* | -36.567* |
| | (20.473) | (20.447) | (20.458) | (20.403) | (20.490) | (20.423) |
| Size | -5.750** | -5.750** | -5.660** | -5.903** | -5.794** | -5.765** |
| | (2.769) | (2.766) | (2.775) | (2.791) | (2.764) | (2.784) |
| Leverage | 14.727*** | 14.727*** | 14.694*** | 14.836*** | 14.656*** | 15.166*** |
| | (4.038) | (4.029) | (4.031) | (4.041) | (4.046) | (4.057) |
| PPE | -2.836 | -2.836 | -2.712 | -2.959 | -3.033 | -3.570 |
| | (4.903) | (4.892) | (4.898) | (4.896) | (4.908) | (4.844) |
| R&D | -10.450 | -10.450 | -10.111 | -11.790 | -10.437 | -11.104 |
| | (17.38) | (17.455) | (17.279) | (17.213) | (17.367) | (17.994) |
| Market-to-book ratio | -0.000 | -0.000 | -0.000 | -0.000 | -0.000 | -0.000 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| White's robust st. errors | Yes | Yes | Yes | Yes | Yes | Yes |
| N | 14,152 | 14,152 | 14,152 | 14,152 | 14,152 | 14,152 |
| Adjusted $R^2$ | -0.319 | -0.319 | -0.319 | -0.319 | -0.319 | -0.318 |
| $R^2$ | 0.023 | 0.023 | 0.023 | 0.023 | 0.023 | 0.027 |

*Notes:* This table discloses the beta coefficient, standard error in paratheses, and the significance level of the p-values of the independent variable, moderator variables, and control variables. The dependent variable used for every model is ETR. '****' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables. The definitions of the variables are displayed in Table 2.

TABLE C5. BETA COEFFICIENTS AND P-VALUES ROBUSTNESS CHECK FIRST FIVE YEARS

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| CSR | -0.251 | -8.949 | 0.364 | -4.219 | -5.564 | -54.665 |
| | (0.414) | (7.151) | (17.460) | (6.327) | (7.707) | (62.555) |
| Board Diversity | - | 11.704** | - | - | - | 17.749 |
| | - | (5.517) | - | - | - | (24.452) |
| External Auditor | - | - | 1.015 | - | - | -15.098 |
| | - | - | (5.357) | - | - | (15.704) |
| National Governance | - | - | - | -3.443 | - | -20.977 |
| | - | - | - | (20.102) | - | (33.994) |
| CSR x Board Diversity | - | -11.050** | - | - | - | -101.567 |
| | - | (4.403) | - | - | - | (78.332) |
| CSR x External Auditor | - | - | -5.818 | - | - | 44.822 |
| | - | - | (15.497) | - | - | (57.460) |
| CSR x National Governance | - | - | - | 0.148 | - | 50.004 |
| | - | - | - | (5.289) | - | (41.380) |
| CSR x Retail Industry | - | - | - | - | 41.798 | 64.813 |
| | - | - | - | - | (26.229) | (65.282) |
| CSR x Financial Industry | - | - | - | - | -6.883 | 54.264 |
| | - | - | - | - | (16.140) | (64.586) |
| CSR x Board Diversity x | - | - | - | - | - | 97.385 |
| External Auditor | - | - | - | - | - | (76.524) |
| CSR x Board Diversity x | - | - | - | - | - | 20.348 |
| National Governance | - | - | - | - | - | (35.010) |
| CSR x Board Diversity x | - | - | - | - | - | 95.703 |
| Retail Industry | - | - | - | - | - | (76.669) |
| CSR x Board Diversity x | - | - | - | - | - | 108.848 |
| Financial Industry | - | - | - | - | - | (80.752) |
| CSR x External Auditor x | - | - | - | - | - | -50.401 |
| National Governance | - | - | - | - | - | (42.577) |
| CSR x External Auditor x | - | - | - | - | - | -31.908 |
| Retail Industry | - | - | - | - | - | (55.714) |
| CSR x External Auditor x | - | - | - | - | - | -55.211 |
| Financial Industry | - | - | - | - | - | (58.045) |
| CSR x National Governance | - | - | - | - | - | -46.120 |
| x Retail Industry | - | - | - | - | - | (41.177) |
| CSR x National Governance | - | - | - | - | - | -56.109 |
| x Financial Industry | - | - | - | - | - | (43.364) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -22.637 |
| Auditor x National Gov. | - | - | - | - | - | (35.537) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -75.782 |
| Auditor x Retail Indus. | - | - | - | - | - | (75.196) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -99.837 |
| Auditor x Financial Indus. | - | - | - | - | - | (78.359) |
| CSR x Board Div. x National | - | - | - | - | - | -16.070 |
| Gov. x Retail Indus. | - | - | - | - | - | (34.900) |
| CSR x Board Div. x National | - | - | - | - | - | -16.506 |
| Gov. x Financial Indus. | - | - | - | - | - | (34.246) |
| CSR x Extern. Au. x National | - | - | - | - | - | 59.954 |
| Gov. x Retail. Indus. | - | - | - | - | - | (45.219) |
| CSR x Extern. Au. x National | - | - | - | - | - | 37.623 |
| Gov. x Financial. Indus. | - | - | - | - | - | (44.211) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | 10.105 |
| Au. x Nat. Gov. x Ret. Ind. | - | - | - | - | - | (40.440) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | 21.584 |
| Au. x Nat. Gov. x Fin. Ind. | - | - | - | - | - | (35.138) |

| | | | | | | |
|---|---|---|---|---|---|---|
| ROA | -525.197*** | -515.739*** | -526.026 | -525.066 | -528.951*** | -522.353 |
| | (79.692) | (79.719) | (367.050) | (367.658) | (79.730) | (327.207) |
| Size | -70.050** | -74.778** | -70.915* | -70.153* | -69.868** | -72.931* |
| | (32.396) | (32.408) | (39.780) | (40.420) | (32.391) | (40.993) |
| Leverage | 26.906 | 37.699 | 27.255 | 27.184 | 25.709 | 25.214 |
| | (43.799) | (43.878) | (42.302) | (41.576) | (43.805) | (41.623) |
| PPE | -135.222** | -144.673** | -135.418* | -134.973* | -134.078** | -129.457 |
| | (63.077) | (63.067) | (76.066) | (75.364) | (63.214) | (79.432) |
| R&D | 73.015 | 72.753 | 69.700 | 70.874 | 75.534 | 71.751 |
| | (305.791) | (305.381) | (111.865) | (104.029) | (305.747) | (115.397) |
| Market-to-book ratio | 0.019 | 0.014 | 0.019 | 0.020 | 0.020 | 0.016 |
| | (0.087) | (0.087) | (0.026) | (0.027) | (0.087) | (0.025) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| White's robust st. errors | No | No | Yes | Yes | No | Yes |
| N | 4,360 | 4,360 | 4,360 | 4,360 | 4,360 | 4,360 |
| Adjusted $R^2$ | -0.511 | -0.507 | -0.512 | -0.513 | -0.511 | -0.494 |
| $R^2$ | 0.021 | 0.024 | 0.021 | 0.021 | 0.022 | 0.047 |

*Notes:* This table discloses the beta coefficient, standard error in paratheses, and the significance level of the p-values of the independent variable, moderator variables, and control variables. The dependent variable used for every model is ETR. '***' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables. The definitions of the variables are displayed in Table 2.

TABLE C6. BETA COEFFICIENTS AND P-VALUES ROBUSTNESS CHECK LAST FIVE YEARS

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| CSR | -0.117 | -1.867 | 0.850 | -2.287 | -2.629 | 2.024 |
| | (0.150) | (2.511) | (3.937) | (2.534) | (2.952) | (4.845) |
| Board Diversity | - | 2.682 | - | - | - | 2.464 |
| | - | (1.901) | - | - | - | (4.366) |
| External Auditor | - | - | -5.387 | - | - | -7.272 |
| | - | - | (4.680) | - | - | (5.779) |
| National Governance | - | - | - | -11.754 | - | -15.847 |
| | - | - | - | (9.863) | - | (12.172) |
| CSR x Board Diversity | - | 1.319 | - | - | - | 0.730 |
| | - | (1.467) | - | - | - | (3.618) |
| CSR x External Auditor | - | - | -3.487 | - | - | -6.645 |
| | - | - | (3.962) | - | - | (4.985) |
| CSR x National Governance | - | - | - | -2.935 | - | -12.289*** |
| | - | - | - | (2.080) | - | (4.267) |
| CSR x Retail Industry | - | - | - | - | -0.734 | -34.239* |
| | - | - | - | - | (8.295) | (19.413) |
| CSR x Financial Industry | - | - | - | - | 3.093 | -3.524 |
| | - | - | - | - | (5.475) | (9.708) |
| CSR x Board Diversity x | - | - | - | - | - | 2.418 |
| External Auditor | - | - | - | - | - | (3.917) |
| CSR x Board Diversity x | - | - | - | - | - | 3.998 |
| National Governance | - | - | - | - | - | (3.284) |
| CSR x Board Diversity x | - | - | - | - | - | 12.158 |
| Retail Industry | - | - | - | - | - | (16.756) |
| CSR x Board Diversity x | - | - | - | - | - | 1.618 |
| Financial Industry | - | - | - | - | - | (7.716) |
| CSR x External Auditor x | - | - | - | - | - | 10.493** |
| National Governance | - | - | - | - | - | (4.543) |
| CSR x External Auditor x | - | - | - | - | - | 40.334** |
| Retail Industry | - | - | - | - | - | (20.159) |
| CSR x External Auditor x | - | - | - | - | - | 8.620 |
| Financial Industry | - | - | - | - | - | (9.933) |
| CSR x National Governance | - | - | - | - | - | 9.603 |
| x Retail Industry | - | - | - | - | - | (14.500) |
| CSR x National Governance | - | - | - | - | - | 11.262 |
| x Financial Industry | - | - | - | - | - | (7.754) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -3.384 |
| Auditor x National Gov. | - | - | - | - | - | (3.616) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -22.228 |
| Auditor x Retail Indus. | - | - | - | - | - | (17.528) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -4.611 |
| Auditor x Financial Indus. | - | - | - | - | - | (8.327) |
| CSR x Board Div. x National | - | - | - | - | - | 6.370 |
| Gov. x Retail Indus. | - | - | - | - | - | (11.503) |
| CSR x Board Div. x National | - | - | - | - | - | -3.303 |
| Gov. x Financial Indus. | - | - | - | - | - | (6.469) |
| CSR x Extern. Au. x National | - | - | - | - | - | -6.282 |
| Gov. x Retail. Indus. | - | - | - | - | - | (15.806) |
| CSR x Extern. Au. x National | - | - | - | - | - | -11.054 |
| Gov. x Financial. Indus. | - | - | - | - | - | (7.989) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | -7.484 |
| Au. x Nat. Gov. x Ret. Ind. | - | - | - | - | - | (13.048) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | 3.379 |
| Au. x Nat. Gov. x Fin. Ind. | - | - | - | - | - | (7.158) |

| | | | | | | |
|---|---|---|---|---|---|---|
| ROA | -49.860*** | -50.150*** | -49.832*** | -49.877*** | -49.913*** | -49.926*** |
| | (14.062) | (14.066) | (14.063) | (14.070) | (14.066) | (14.105) |
| Size | -46.189*** | -45.261*** | -45.621*** | -47.740*** | -46.197*** | -46.109*** |
| | (11.292) | (11.304) | (11.308) | (11.333) | (11.307) | (11.469) |
| Leverage | 61.697*** | 61.497*** | 61.578*** | 62.911*** | 61.765*** | 63.343*** |
| | (15.503) | (15.502) | (15.506) | (15.521) | (15.509) | (15.645) |
| PPE | -7.586 | -7.466 | -7.801 | -8.037 | -7.388 | -8.127 |
| | (21.380) | (21.380) | (21.383) | (21.387) | (21.470) | (21.673) |
| R&D | -41.926 | -36.898 | -41.420 | -46.981 | -42.115 | -35.775 |
| | (113.711) | (113.743) | (113.723) | (113.765) | (113.726) | (113.963) |
| Market-to-book ratio | -0.0005 | -0.001 | -0.0004 | -0.001 | -0.0005 | -0.001 |
| | (0.015) | (0.015) | (0.015) | (0.015) | (0.015) | (0.015) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| White's robust st. errors | No | No | No | No | No | No |
| N | 9,792 | 9,792 | 9,792 | 9,792 | 9,792 | 9,792 |
| Adjusted $R^2$ | -0.527 | -0.526 | -0.527 | -0.526 | -0.527 | -0.528 |
| $R^2$ | 0.007 | 0.008 | 0.008 | 0.008 | 0.007 | 0.013 |

*Notes:* This table discloses the beta coefficient, standard error in paratheses, and the significance level of the p-values of the independent variable, moderator variables, and control variables. The dependent variable used for every model is ETR. '***' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables. The definitions of the variables are displayed in Table 2.

TABLE C7. BETA COEFFICIENTS AND P-VALUES ROBUSTNESS CHECK PRE-COVID

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| CSR | -0.224 | -6.249* | -4.206 | -3.763 | -4.168 | -25.683 |
| | (0.142) | (3.587) | (5.590) | (2.374) | (4.007) | (24.046) |
| Board Diversity | - | 6.832 | - | - | - | 17.590 |
| | - | (5.991) | - | - | - | (19.260) |
| External Auditor | - | - | 2.756 | - | - | -9.511 |
| | - | - | (2.310) | - | - | (9.033) |
| National Governance | - | - | - | -2.270 | - | -12.564 |
| | - | - | - | (12.002) | - | (20.923) |
| CSR x Board Diversity | - | -7.533 | - | - | - | -43.866 |
| | - | (5.257) | - | - | - | (33.212) |
| CSR x External Auditor | - | - | 0.488 | - | - | 18.920 |
| | - | - | (5.363) | - | - | (21.850) |
| CSR x National Governance | - | - | - | -0.984 | - | 10.049 |
| | - | - | - | (2.340) | - | (10.502) |
| CSR x Retail Industry | - | - | - | - | 18.481 | 29.963 |
| | - | - | - | - | (12.653) | (26.695) |
| CSR x Financial Industry | - | - | - | - | -4.130 | 24.828 |
| | - | - | - | - | (8.071) | (24.647) |
| CSR x Board Diversity x | - | - | - | - | - | 39.529 |
| External Auditor | - | - | - | - | - | (32.059) |
| CSR x Board Diversity x | - | - | - | - | - | -3.648 |
| National Governance | - | - | - | - | - | (7.963) |
| CSR x Board Diversity x | - | - | - | - | - | 43.471 |
| Retail Industry | - | - | - | - | - | (31.666) |
| CSR x Board Diversity x | - | - | - | - | - | 45.253 |
| Financial Industry | - | - | - | - | - | (34.197) |
| CSR x External Auditor x | - | - | - | - | - | -12.094 |
| National Governance | - | - | - | - | - | (12.219) |
| CSR x External Auditor x | - | - | - | - | - | -11.284 |
| Retail Industry | - | - | - | - | - | (21.773) |
| CSR x External Auditor x | - | - | - | - | - | -28.329 |
| Financial Industry | - | - | - | - | - | (22.292) |
| CSR x National Governance | - | - | - | - | - | -11.493 |
| x Retail Industry | - | - | - | - | - | (10.897) |
| CSR x National Governance | - | - | - | - | - | -10.914 |
| x Financial Industry | - | - | - | - | - | (11.095) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | 2.646 |
| Auditor x National Gov. | - | - | - | - | - | (7.973) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -37.627 |
| Auditor x Retail Indus. | - | - | - | - | - | (30.243) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -38.840 |
| Auditor x Financial Indus. | - | - | - | - | - | (32.795) |
| CSR x Board Div. x National | - | - | - | - | - | 7.061 |
| Gov. x Retail Indus. | - | - | - | - | - | (8.717) |
| CSR x Board Div. x National | - | - | - | - | - | 4.131 |
| Gov. x Financial Indus. | - | - | - | - | - | (8.063) |
| CSR x Extern. Au. x National | - | - | - | - | - | 20.935 |
| Gov. x Retail. Indus. | - | - | - | - | - | (13.855) |
| CSR x Extern. Au. x National | - | - | - | - | - | 6.239 |
| Gov. x Financial. Indus. | - | - | - | - | - | (13.781) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | -4.606 |
| Au. x Nat. Gov. x Ret. Ind. | - | - | - | - | - | (9.816) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | 0.973 |
| Au. x Nat. Gov. x Fin. Ind. | - | - | - | - | - | (8.259) |

| | | | | | | |
|---|---|---|---|---|---|---|
| ROA | -366.650* | -361.634* | -367.002* | -366.577* | -369.167*** | -365.594* |
| | (209.11) | (203.78) | (208.84) | (208.88) | (44.623) | (196.77) |
| Size | -24.229 | -24.305 | -24.481 | -24.431 | -24.715 | -25.353 |
| | (15.499) | (15.619) | (15.512) | (15.679) | (16.517) | (16.323) |
| Leverage | 28.069 | 33.159* | 28.113 | 28.421 | 27.223 | 25.260 |
| | (19.400) | (18.324) | (19.405) | (19.304) | (23.050) | (18.449) |
| PPE | -75.539** | -77.807** | -75.720** | -75.101** | -78.199** | -79.438** |
| | (32.989) | (33.748) | (32.986) | (32.771) | (32.164) | (35.324) |
| R&D | 90.036 | 85.028 | 88.962 | 88.175 | 92.128 | 88.979 |
| | (75.904) | (72.698) | (75.689) | (74.032) | (182.084) | (77.404) |
| Market-to-book ratio | -0.001 | -0.001 | -0.001 | -0.001 | -0.001 | -0.002 |
| | (0.011) | (0.011) | (0.011) | (0.011) | (0.044) | (0.011) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| White's robust st. errors | Yes | Yes | Yes | Yes | No | Yes |
| N | 7,433 | 7,433 | 7,433 | 7,433 | 7,433 | 7,433 |
| Adjusted $R^2$ | -0.410 | -0.407 | -0.411 | -0.411 | -0.410 | -0.402 |
| $R^2$ | 0.017 | 0.020 | 0.017 | 0.017 | 0.018 | 0.032 |

*Notes:* This table discloses the beta coefficient, standard error in paratheses, and the significance level of the p-values of the independent variable, moderator variables, and control variables. The dependent variable used for every model is ETR. '***' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables. The definitions of the variables are displayed in Table 2.

TABLE C8. BETA COEFFICIENTS AND P-VALUES ROBUSTNESS CHECK EUROPEAN COUNTRIES

| Variable | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 | Model 6 |
|---|---|---|---|---|---|---|
| CSR | -0.148 | -2.990 | 0.156 | -0.427 | -1.412 | 6.432 |
| | (0.224) | (3.830) | (6.807) | (3.985) | (4.343) | (12.217) |
| Board Diversity | - | 1.929 | - | - | - | -5.103 |
| | - | (2.774) | - | - | - | (13.687) |
| External Auditor | - | - | 2.077 | - | - | -3.748 |
| | - | - | (8.349) | - | - | (16.951) |
| National Governance | - | - | - | -22.682 | - | -34.044 |
| | - | - | - | (22.914) | - | (30.027) |
| CSR x Board Diversity | - | 1.285 | - | - | - | -1.807 |
| | - | (2.247) | - | - | - | (9.695) |
| CSR x External Auditor | - | - | -3.382 | - | - | -5.404 |
| | - | - | (6.985) | - | - | (12.430) |
| CSR x National Governance | - | - | - | -6.614 | - | -8.656 |
| | - | - | - | (4.504) | - | (13.463) |
| CSR x Retail Industry | - | - | - | - | 12.027 | -63.465 |
| | - | - | - | - | (13.036) | (208.211) |
| CSR x Financial Industry | - | - | - | - | -9.420 | -8.980 |
| | - | - | - | - | (8.521) | (19.284) |
| CSR x Board Diversity x | - | - | - | - | - | 1.939 |
| External Auditor | - | - | - | - | - | (10.075) |
| CSR x Board Diversity x | - | - | - | - | - | 0.625 |
| National Governance | - | - | - | - | - | (10.480) |
| CSR x Board Diversity x | - | - | - | - | - | 14.947 |
| Retail Industry | - | - | - | - | - | (56.809) |
| CSR x Board Diversity x | - | - | - | - | - | 6.228 |
| Financial Industry | - | - | - | - | - | (16.878) |
| CSR x External Auditor x | - | - | - | - | - | -1.932 |
| National Governance | - | - | - | - | - | (13.970) |
| CSR x External Auditor x | - | - | - | - | - | 84.275 |
| Retail Industry | - | - | - | - | - | (209.097) |
| CSR x External Auditor x | - | - | - | - | - | -4.566 |
| Financial Industry | - | - | - | - | - | (20.898) |
| CSR x National Governance | - | - | - | - | - | 53.838 |
| x Retail Industry | - | - | - | - | - | (199.151) |
| CSR x National Governance | - | - | - | - | - | -1.904 |
| x Financial Industry | - | - | - | - | - | (22.207) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | 2.356 |
| Auditor x National Gov. | - | - | - | - | - | (11.077) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -33.068 |
| Auditor x Retail Indus. | - | - | - | - | - | (57.794) |
| CSR x Board Divers. x Exter. | - | - | - | - | - | -0.893 |
| Auditor x Financial Indus. | - | - | - | - | - | (17.872) |
| CSR x Board Div. x National | - | - | - | - | - | -11.465 |
| Gov. x Retail Indus. | - | - | - | - | - | (60.006) |
| CSR x Board Div. x National | - | - | - | - | - | -11.465 |
| Gov. x Financial Indus. | - | - | - | - | - | (60.006) |
| CSR x Extern. Au. x National | - | - | - | - | - | -49.246 |
| Gov. x Retail. Indus. | - | - | - | - | - | (199.261) |
| CSR x Extern. Au. x National | - | - | - | - | - | -7.366 |
| Gov. x Financial. Indus. | - | - | - | - | - | (24.536) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | 19.750 |
| Au. x Nat. Gov. x Ret. Ind. | - | - | - | - | - | (61.753) |
| CSR x Board. Div. x Extern. | - | - | - | - | - | -1.091 |
| Au. x Nat. Gov. x Fin. Ind. | - | - | - | - | - | (20.742) |

| | | | | | | |
|---|---|---|---|---|---|---|
| ROA | -27.197 | -27.314 | -27.314 | -27.184 | -27.410 | -28.406 |
| | (17.531) | (17.536) | (17.537) | (17.538) | (17.540) | (17.639) |
| Size | -0.979 | 0.009 | -0.939 | -0.313 | -0.710 | -0.392 |
| | (17.229) | (17.281) | (17.261) | (17.235) | (17.247) | (17.561) |
| Leverage | 18.660 | 17.385 | 19.179 | 17.700 | 17.751 | 11.346 |
| | (22.793) | (22.956) | (22.820) | (22.823) | (22.799) | (23.413) |
| PPE | -36.520 | -35.965 | -37.280 | -37.160 | -38.715 | -41.166 |
| | (33.576) | (33.616) | (33.692) | (33.594) | (33.670) | (34.690) |
| R&D | 40.006 | 45.626 | 38.742 | 25.351 | 42.348 | 27.048 |
| | (163.589) | (163.766) | (163.651) | (163.789) | (163.616) | (164.840) |
| Market-to-book ratio | 0.000 | 0.001 | 0.001 | 0.000 | 0.000 | 0.000 |
| | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) | (0.020) |
| Year Dummies | Yes | Yes | Yes | Yes | Yes | Yes |
| Fixed Effects | Yes | Yes | Yes | Yes | Yes | Yes |
| White's robust st. errors | No | No | No | No | No | No |
| N | 4,067 | 4,067 | 4,067 | 4,067 | 4,067 | 4,067 |
| Adjusted $R^2$ | -0.278 | -0.278 | -0.278 | -0.277 | -0.277 | -0.286 |
| $R^2$ | 0.005 | 0.005 | 0.005 | 0.006 | 0.006 | 0.013 |

*Notes:* This table discloses the beta coefficient, standard error in paratheses, and the significance level of the p-values of the independent variable, moderator variables, and control variables. The dependent variable used for every model is ETR. '***' indicates that the beta coefficient is significant at the 0.01 level, '**' indicates significance at the 0.05 level, and '*' indicates significance at the 0.1 level. The first model is the base model regression analysis. The second model includes the moderator board diversity. The third includes the moderator external auditor. The fourth model includes the moderator national governance quality. The fifth model includes the moderator industry. The sixth model includes all four moderator variables. The definitions of the variables are displayed in Table 2.