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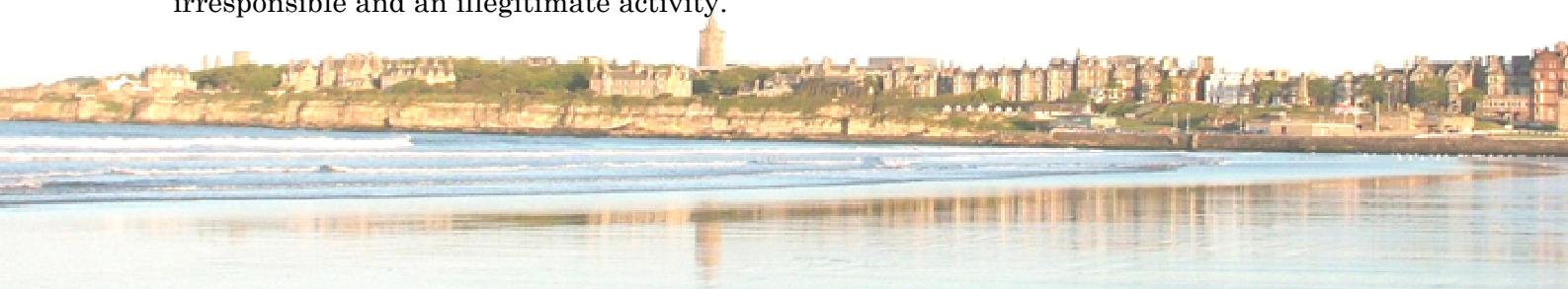
**Tax avoidance and
Sustainable Development
Goal disclosure: A cross
country analysis**

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Tax avoidance and Sustainable Development Goal disclosure: A cross country analysis

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Abstract

This paper examines the impact of firm-level Sustainable Development Goal (SDG) disclosure on corporate tax avoidance. Using an international sample of 5,020 firms operating in 56 countries and across 62 industries over the period 2016-2021, we find an inverse relationship between SDG disclosure and corporate tax avoidance. Furthermore, we demonstrate that certain corporate governance attributes enhance the negative relationship between SDG disclosure and tax avoidance behaviour. Such traits range from board term, board meetings, external corporate affiliations and gender diversity. Our results hold when exploring alternative model specifications and sub-samples, as well as when controlling for additional firm and country – level factors. To mitigate endogeneity concerns we use the country-industry-year average of the SDG disclosure index as an instrument and re-estimate our baseline model by employing a Two-Stage Least Squared (2SLS) model. Overall, our results support the stakeholder view, which suggests that firms that engage in socially responsible behaviour view tax avoidance as a socially irresponsible and an illegitimate activity.

Keywords: Sustainable Development Goals, Tax Avoidance, Social Responsibility

1. Introduction

In September 2015 the United Nations introduced the Sustainable Development Goals (SDGs), to address global concerns in health, education, social equity and justice, economic security, and environmental issues (Patuelli et al., 2022; Sullivan et al., 2018; UN, 2015). As a more holistic approach, the SDGs aim to connect economic development, social inclusion, and environmental sustainability (UN, 2015). While the 2030 Agenda for Sustainable Development encompasses 17 goals, each with 169 specific indicators and metrics of sustainability covering diverse sectors (United Nations, 2015), the adoption of this agenda raises multiple concerns. These concerns primarily pertain to the allocation of responsibilities, the roles assigned to different actors, and the financing required for successful implementation. According to the UN SDG Report (2021), COVID-19 has not only caused a major disruption to the global efforts to accomplish the SDGs, but intensified social and environmental concerns within and among countries. Indeed, the pandemic has caused immense economic challenges, at the country and organisational levels, especially for the business community (UN, 2020). This in turn raises further concerns over the financing required to achieve the SDGs. For instance, a deficit of USD 1.7 trillion was reported for 2020 increasing the existing gap toward financing and meeting the 17 SDGs by 2030. This coincides with the increase in the level of corporate tax avoidance, which is directly linked with a deficiency in the finance of SDGs. To put this simply, corporate tax avoidance enables money to drain away and prevents revenue collected by tax authorities and distributed to the benefit of society (Bird & Davis-Nozemack, 2018). However, taxation can be a powerful tool to mobilise and effectively adopt domestic resources aiming to enhance sustainable development. In fact, the UN Tax Committee has highlighted the importance of addressing (among others) harmful tax avoidance and abuse as a means of enhancing trust in government, which in turn enhances opportunity creation for society¹.

In theory, two contrasting perspectives exist regarding the connection between sustainability practices adopted by companies and their strategies for tax avoidance. These viewpoints are commonly known as the shareholder view and the stakeholder view (Huseynov & Klamm, 2012; Davis, 2016; Lanis & Richardson, 2015). The payment of fair corporate taxes does have pivotal implications for society through supporting the government in providing public goods such as education, national defence, and health care (Sikka, 2010; Lanis & Richardson, 2015).

¹ For further information on the SDGs and Tax Avoidance provided by the UN please visit the following [link](#).

Without tax revenue, which represents a significant percentage of government funds, governments will fail to meet the demand for public services—in particular during crisis times. Corporations also benefit from tax revenue through financial markets, enforcement, and oversight activities. Thus, if paying a fair share of tax is perceived by firms as part of sustainability practices, it is unlikely for firms to engage in strategic tax planning to minimise tax payments. Adoption of sustainable practices aligned with the Sustainable Development Goals (SDGs), should view tax avoidance as socially irresponsible and illegitimate. They should refrain from engaging in activities aimed at reducing their tax liability. This perspective aligns with the notion that a company's influence extends beyond its shareholders and encompasses a broad range of stakeholders (Lanis & Richardson, 2015; Davis et al., 2016).

Nevertheless, the volume of tax avoidance scandals raises doubt about corporate tax responsibility, with corporations engaging in strategic tax behaviour to increase their bottom-line profit and meet shareholder expectations. For instance, Amazon, Pfizer, Google, and Starbucks are struggling to defend their tax avoidance, with Starbucks paying £20 million in tax settlements (Graetz and Doud 2013). Governments lose an estimated of around 4-10% of global corporate income tax revenues, or USD 100-240 billion annually as a result of tax dodging by multinational corporations (OECD, 2021). These scandals support the shareholder view on corporate tax avoidance. In the same vein, several studies argued and reported that firms engage in tax avoidance, as part of their primary responsibility to the shareholder and their wealth maximisation. In this view, tax avoidance is viewed separately from firms' social responsibility. Supporting this argument, Abdelfattah & Aboud (2020) and Lanis & Richardson (2012) find that firms with CSR activities engage in aggressive tax avoidance. This is in line with the robust evidence on implicit and explicit incentives of management to engage in tax avoidance (Armstrong et al., 2012; Khan et al., 2017; Rego & Wilson, 2012). In this context, tax avoidance is perceived by management as a risk-taking activity that can increase the expected future cash flows of the firm, and thereby arguably is a value-enhancing activity (Davis et al., 2016). Rego and Wilson (2012) find evidence that shareholders provide equity risk incentives for managers to engage in risky tax avoidance. Moreover, some studies argue that tax payment could act as a deterring factor that reduces innovation, investment, and economic development, and therefore suggested a positive relationship between CSR and corporate tax avoidance (Djankov et al. 2008).

To date, the empirical evidence on the link between sustainability reporting and corporate tax avoidance is inconclusive. For instance, Hoi et al. (2013) and Laguir et al. (2015) support a negative relationship between sustainability reporting and the level of corporate tax aggressiveness. In contrast, Lanis & Richardson (2012) find that tax-aggressive corporations report additional sustainability information in their annual reports to mitigate potential public concern over the negative community impact of corporate tax aggressiveness and to gain social legitimacy. While prior studies examined the link between sustainability reporting and corporate tax avoidance, this study focuses specifically on the nexus between SDGs disclosure and corporate tax avoidance. This provides a more conclusive setting to test the two competing views on tax avoidance as a “*sustainability problem*”. In particular, it enables us to test the potential conflict between shareholders' profit maximisation objective and their commitment to sustainability practices. As sustainability is becoming a central driver of long-term value creation, particularly for investors (Edmans, 2023), SDGs can offer a realistic framework for ESG mapping and can help to surge the adoption of sustainable investing, reassure responsible corporate behaviour, and align a firm's goals to meet the long-term societal goals. Evidently, a large percentage of the world's largest companies, recognise the SDGs in their corporate reporting and include the global goals in their CEO and/or Chair's statements (KPMG, 2022). A key advantage is that the SDGs form part of a standardised framework set out by the United Nations aiming to identify and record progress towards specific goals. Thus far, academics, practitioners, as well as various stakeholders have focused on the ESG framework or CSR indicators developed by various providers in order to assess environmental and social issues in the context of corporate governance. In contrast to the SDGs, the aforementioned metrics – specifically regarding ESG- have often faced criticism in recent years over greenwashing and being non-standardised, with academic evidence revealing that often firms talk the talk, rather than just walking the walk (e.g., García-Sánchez et al., 2022; Eliwa et al., 2023). SDGs tackle the disagreement in ESG ratings by introducing clearly defined goals with a global acceptance and hence less discrepancy over the scope.

In this study, we use a sample of 5,020 firms from 56 countries over the period 2016-2021 to examine the link between SDG disclosure and tax avoidance. While we used SDGs to proxy for corporate symbolic engagement with the SDG 2030 agenda, we used tax avoidance to reflect the truthfulness of firms' social responsibility. We find that firms' commitment to SDGs is aligned with less tax avoidance practices. In particular, our baseline model provides robust evidence suggesting that firms who participate less in tax avoidance, engage stronger in SDG disclosure. Our findings support the broader view of CSR activities in which the payment of

tax is a central way to have a significant impact on all of the firm's stakeholders. Moreover, our further analysis implies that SDG disclosure and tax avoidance varies with certain corporate governance attributes. We demonstrate that the negative relation between SDG disclosure and tax avoidance behaviour is more pronounced for those firms with longer than average board terms and meet more regularly than average. We also document that the inverse relation between SDG disclosure and tax avoidance is more dominant for those firms whose mean number of other corporate affiliations on board are below average and where gender diversity falls below average. Our main results are robust to a battery of robustness tests including alternative model specifications, measurement and endogeneity checks.

Our study makes several important contributions to the literature. First, this study contributes to the emerging research on SDGs by providing international evidence on the status of SDGs reporting globally. SDG reporting can support the achievement of the Sustainable Development Agenda by increasing transparency and accountability and enhancing capital-market decisions (Haj et al., 2023; Pizzi et al., 2020). Second, it builds on the inconclusive research on the link between CSR and tax avoidance by testing the relationship between SDGs as a holistic framework of sustainability and tax avoidance. Using SDGs as a direct measure of sustainability rather than generic-CSR, this study indicates that firms with better SDGs reporting are less likely to engage in corporate tax avoidance. Third, we extend the literature on corporate governance by addressing moderating effects of corporate governance attributes on the SDGs- tax avoidance nexus. Finally, our findings introduce insightful implications for policymakers and regulators, and society about the necessity of framing tax avoidance as a sustainability problem.

2. Relevant literature and hypothesis development

2.1 Sustainable Development Goals Reporting

Extant studies established that the main objectives of sustainability reporting including SDGs is to enhance transparency, and comparability and support resource allocation decisions (Haj et al., 2023, Eliwa et al., 2020), which arguably may achieve the intended objectives of sustainability, as determined by UN 2030 Agenda. In general, sustainability practices incorporate environmental, social, and governance concerns into their business operations and decision-making processes (Aguinis and Glavas, 2012). However, as briefly mentioned in the

previous section there are some slight differences between ESG and Sustainable Development Goals (SDG) reporting. The SDG framework is a set of global goals that aim to guide international development efforts towards a more sustainable future for all, whereas ESG related ratings help investors and companies make more informed decisions that align with sustainable values and long-term value creation. Consequently, it can be argued that SDGs fall under a standardised and generalised framework that helps to identify and document progress towards specific goals, while ESG has some flaws and lacks set guidelines in its nature (Edmans, 2023). Although ESG often focuses on a company's overall performance regarding social and environmental responsibilities, SDGs also integrate and emphasise topics relating to human rights and species conservation. Another difference to consider is the time frame, as SDGs have a deadline to be achieved -i.e. 2030- while the ESG framework does not have a predetermined deadline. Moreover, ESG and SDG can be considered complementary to each other, where ESG metrics can be used to evaluate a company's SDG practices. Once these metrics are integrated into the company's operations, they will enhance the SDG activities of the firm. Therefore, ESG feeds into the SDG framework. Overall, the SDG framework provides a roadmap for global sustainable development, while ESG is a tool for investors and companies to assess sustainability risks and opportunities (Paetzold et al., 2022).

Although ample studies address sustainability issues, SDG reporting is still in its infancy (Haji et al., 2023; Eliwa et al., 2020; Moussa et al., 2022; Bose and Khan 2022). Recently, a few studies addressed the current status of SDGs reporting and its determinants in different contexts (Moussa et al., 2022; Bose and Khan 2022; Pizzi et al., 2021). The reported evidence suggests an increase in the engagement and reporting of SDGs, however, the aforementioned information is mainly qualitative and generic. For instance, Moussa et al. (2022) demonstrate a large degree of variability and inconsistency in the reporting of environmental goals in the UK. Likewise, using a sample from thirty countries, Bose and Khan (2022) find an upward trend in SDG reporting over time. These findings imply that further work is needed from firms to improve the quality of communications with stakeholders about their engagement with the 17 SDGs.

Furthermore, a stream of research addressed the firm-level and country-level determinants of SDGs reporting (Moussa et al., 2022; Bose and Khan 2022; Pizzi et al., 2021; Rosati and Faria 2019a). Their findings suggest that corporate governance attributes play an important role in shaping the level of SDG reporting. While Pizzi et al. (2021) reported a positive relationship

between a firm's SDG reporting and the presence of independent directors on the board, Moussa et al. (2022) find a higher environmental goal reporting for firms with sustainability committees, and sustainability assurance. In addition, Rosati and Faria (2019b) indicate that firm-level characteristics such as firm size, higher level of intangible assets, gender diversity and younger board of directors are positively related to SDGs reporting. Moving to country-level factors, Rosati and Faria (2019) find that politics and law, economics and finance, society and culture, and technology and innovation are important factors for SDGs reporting. In the same vein, Bose and Khan (2022) demonstrate that the level of SDGs reporting is higher in countries with national sustainability regulation and with better SDGs performance scores and in shareholder-oriented countries. Therefore, although there is emerging research on SDGs, several issues remain relatively unexplored. Thus, we extend the literature on SDGs by examining the relationship between SDGs reporting and tax avoidance across the globe.

2.2 Sustainable Development Goals Reporting and Tax Avoidance

Corporate tax avoidance and sustainable development are two interrelated issues that have gained little attention recently (Bird and Davis-Nozemack, 2018). Instead, most studies broadly focus on the relationship between Corporate Social Responsibility and tax avoidance (e.g., Huseynov and Klamm, 2012; Lanis and Richardson, 2015). CSR is generally seen as a voluntary approach to doing business that goes beyond legal compliance and aims to create value for society and the environment. While SDGs provide a comprehensive framework for addressing sustainability issues and mobilising the private sector to contribute to sustainable development (Erin et al., 2022). The COVID-19 pandemic has underscored the relevance of the SDGs in addressing global challenges and building resilient and sustainable societies (Alam et al., 2021). In particular, the pandemic has highlighted the need to address health inequalities, strengthen social protection systems, and promote sustainable economic growth that benefits all people.

However, financing the SDGs has been a major challenge, and there is a growing recognition that traditional development aid alone is insufficient to achieve these objectives (Paetzold et al., 2022). Therefore, private sector investment is seen as a critical source of financing, with many companies integrating the SDGs into their business strategies and corporate social responsibility initiatives (Paetzold et al., 2022). In fact, the SDGs and CSR share a common goal of promoting sustainable and inclusive development, and there are many ways in which

companies can contribute to the SDGs through their CSR initiatives. For instance, firms can align their CSR initiatives with the SDGs and use them as a framework for setting goals and measuring progress (Sinha et al., 2021). Additionally, firms engage with stakeholders, including governments, civil society organisations, and local communities, to identify opportunities for collaboration and partnership in support of the SDGs, report on their CSR and SDG-related activities, and disclose their progress and impact to stakeholders through sustainability reporting.

However, some firms' decisions could undermine the achievement of such goals. Among the most relevant are taxes. Some companies engage in tax avoidance practices, and scholars contest whether such activities can or cannot undermine their CSR commitments (Lanis and Richardson, 2015). One stream of research argues that tax avoidance allows firms to keep more of their own money and invest it in ways that will benefit shareholders and the economy as a whole (e.g., Mankiw, 2013). In contrast, a claim that tax avoidance undermines the tax system's fairness and deprives governments of the cash flow to finance their activities (e.g., Zucman, 2013). Hence, companies that engage in aggressive tax planning undermine the social contract between business and society by not contributing their fair share of taxes (Watson, 2015). Nonetheless, private firms are known to be more efficient in allocating financial resources (Davis et al., 2016). Both taxation and sustainable investments involve such allocation of resources towards shareholders and non-shareholders stakeholders. Therefore, an inefficient allocation of financial resources by the private sector could result in sustainable activities (such as investment in renewable energy, supporting community projects, or improving working conditions for employees) that create more value and positively affect the SDGs.

Theoretically, companies that avoid paying taxes may have more resources to invest in CSR activities. Nevertheless, this investment may be seen as deflecting attention from its tax avoidance practices. In general, the evidence between tax avoidance and CSR is complex and multifaceted (Dowling, 2014). For Instance, Hoi et al. (2013) found that firms with irresponsible CSR behaviour are more likely to be involved in tax-related disputes. This can be explained by a corporate culture issue that leads to a low degree of commitment to CSR practices. In this regard, Graham et al. (2014) suggested that reputation is a relevant issue when managers make decisions on tax planning. Corporate tax planning is naturally influenced by the firm top executives' behaviour, which wants to maximise their interests (Dyrenge et al.,

2010). Desai et al. (2007) contend that managers who act in their self-interest may manipulate company resources and structure the business to minimise taxes and benefit themselves.

Tax avoidance can generate reputational costs, negatively impacting a company's reputation and image. In recent years, there has been increased public and regulatory scrutiny of tax avoidance practices, with many companies facing criticism and backlash for engaging in such behaviour (Benkraiem et al., 2021). This situation can lead to a loss of trust from consumers, investors, and other stakeholders, as well as negative media coverage and potential legal and financial repercussions (Dowling 2014). Reputational damage can also affect a company's ability to attract and retain employees and customers. Therefore, companies should weigh the potential benefits of tax avoidance against the potential reputational costs and consider the ethical implications of their tax strategies. Furthermore, Davis et al. (2016) suggest that CSR and tax payments can be complements or substitutes. Following the maximising stakeholder view, if a company considers paying taxes the same way it considers CSR, then one should expect a negative relationship between CSR and tax avoidance, which does not necessarily require maximising financial value. Alternatively, following a shareholder's view, if CSR and tax payments are substitutes and the latter is seen as an inefficient allocation of resources, then the relationship between CSR and tax avoidance should be positive.

Based on these considerations, we investigate whether greater disclosure of a company's efforts to achieve SDGs will decrease (increase) tax avoidance, supporting the stakeholder view (shareholder view). Higher SDGs disclosure implies that companies are transparent about their environmental, social, and governance (ESG) practices, including their tax policies and CSR practices. Transparency could increase public scrutiny and pressure companies to be more responsible in tax planning and payment. Additionally, companies genuinely committed to sustainable development and responsible business practices may be less likely to engage in tax avoidance as it conflicts with their social values and sustainable objectives. Studies have found that greater transparency and disclosure of CSR practices can lead to increased accountability and better corporate behaviour (e.g., Lii and Lee, 2012). Moreover, companies that engage in tax avoidance may face negative reputational consequences and controversies, such as loss of public trust and social licence to operate, which can have significant negative financial implications (Graham et al., 2014). Therefore, it is plausible that greater SDG disclosure could reduce tax avoidance, as it would increase accountability and public pressure on companies to be more responsible in their tax practices. However, higher SDG disclosure may be linked to higher tax avoidance, as managers may voluntarily increase their sustainability disclosure to

disguise the adoption of tax avoidance practices or to gain any anticipated rewards from sustainability reporting. Given the above we opt to explore which of the two following hypotheses hold in the research setting of our paper:

H1: Sustainable Development Goals (SDG) disclosure is negatively related to tax avoidance (TA) (*Stakeholder view*)

H2: Sustainable Development Goals (SDG) disclosure is positively related to tax avoidance (TA) (*Shareholder view*)

3. Sample and Model Specification

3.1. Sample

To examine the impact of SDG disclosure on tax avoidance we employ information from a number of sources. In particular, to capture SDG disclosure we use firm-level information provided by Eikon Refinitiv's "*Mapping to the UN Sustainable Development Goals*" tool. Firm-level characteristics are also obtained by Eikon Refinitiv. Country-level information is drawn from the World Bank (WB) and the OECD. Following the tax avoidance literature, we exclude financial and insurance firms (Hoi et al., 2013). Our working sample covers 5,020 firms operating in 56 countries and across 62 industries over the period 2016-2021². This results in a final panel dataset of 13,798 firm – year observations. Our final working sample is derived after implementing certain criteria, which are standard in the relevant literature. In particular, we remove any entity with negative pre-tax income or negative effective tax rates. In addition, we follow Dyreng et al. (2010) and Hope et al. (2013) to further winsorise effective tax rates, which are greater than one to be equal one. All other explanatory variables are winsorised at the 1% unless otherwise declared. Finally, we drop any firm for which there is a missing value with regard to the disclosure of support of any of the SDGs. Table 1 provides information regarding variable description and sources. Table 2 provides the descriptive statistics for our working sample and Table 3 provides the correlation matrix.

² The timeframe of the sample is determined by the availability of data with respect to the availability of information regarding the Sustainable Development Goals. The Sustainable Development Goals were formulated in 2015 by the United Nations General Assembly. Hence, information on whether firms support the SDGs start becoming available from 2016 onwards.

3.2. Model Specification

In order to assess whether and to what extent SDG disclosure influences tax avoidance we derive a model of the following form:

$$\text{Tax avoidance} = f(\text{SDG_INDEX}, \text{Controls}) \quad (1)$$

Where *Tax Avoidance* refers to the tax avoidance measure taken into consideration; *SDG_INDEX* refers to the proxy used to capture SDG disclosure; and *Controls* represent the control variables included to capture firm level characteristics. The model is estimated using ordinary least squares (OLS) and includes *Industry* and *Year* fixed effects. Standard errors are clustered at the firm level.

More precisely, *Tax Avoidance* is defined as the amount of tax a firm has forgone in a given period of time as captured by the tax expenses or payments made (Artwood et al., 2012; Dyreng et al. 2008; 2010). Following prior academic research (e.g., Artwood et al. 2012; Huseynov et al., 2012; Hoi et al., 2013), we use two alternative measures to capture tax avoidance: (i) *TAVOID_1*³, which is defined as the ratio of the current tax expenses to the pre-tax accounting income and (ii) *TAVOID_2*, which is defined as the difference between pre-tax earnings, adjusted at the home country's statutory corporate tax rate and the taxes paid, as a fraction of the firm's pre-tax earnings (Artwood et al., 2012). We rely on the five-year average values for both measures in order to eliminate the effect of yearly fluctuations⁴.

The core variable of interest in our study, *SDG_INDEX*, captures the extent to which firms disclose their support towards the Sustainable Development Goals as outlined by the 2030 Agenda. We draw this information from Eikon Refinitiv's "*Mapping to the UN Sustainable Development Goals*" tool, which provides detailed information on whether a firm has disclosed its support towards each and every one of the 17 SDGs. More precisely, for each SDG there is a Boolean variable that reflects whether a firm has expressed its support to any of the 17 SDGs in one of its annual or sustainability reports. If support has been stated towards a particular SDG, then the respective variable takes the value "TRUE", otherwise takes the value "FALSE". As a first step, we draw all 17 variables that reflect the support of each SDG goal⁵.

³ In order to facilitate interpretation, we multiply the variable with "-1".

⁴ In further analysis we also take into consideration alternative tax avoidance proxies in order to ensure the robustness of our results. Please see Section 4.3. for additional information.

⁵ For further information regarding the definition of these variables, please see Table 1.

For example, Amazon Inc., has been assigned “TRUE” for SDG 1 (*No poverty*). The following summary is provided by information drawn by Amazon’s 2021 Sustainability Report ⁶: *“At Amazon, there are multiple ways our sustainability work aligns with these global goals. The following shows how our programs correspond to the UN SDGs: 1 No Poverty (...) Community At Amazon, we are focused on leveraging our scale and assets for good to strengthen communities where our employees and customers live and work. We work side by side with community partners to find solutions to some of the world's most pressing challenges and build long-term, innovative programs that have a lasting, positive impact. (...) We also committed a total of \$6.2 million through our Right Now Needs Fund, a flexible fund designed to meet the basic needs of schoolchildren and help eliminate barriers to learning. These funds have already provided support to more than 28,000 students with food, shelter, clothing, school supplies, and hygiene items in the states of Washington and Virginia.”* Amazon’s support towards this goal is also evident on the relevant SDG infographic available in the Appendix of the same report (pp. 96). From the above there is adequate evidence of Amazon’s support towards this goal, hence being assigned the value “TRUE” for the variable SDG1. On the other hand, for SDG 6 (*Clean Water and Sanitation*) the assigned value is “FALSE” as there is not enough evidence suggesting that Amazon is actively supporting this goal.

The next step is to aggregate the individual SDG variables to an overall index for each firm per year. Hence, for the core analysis of this study we employ the aggregated index (SDG_INDEX), which reflects a firm’s overall performance against the 17 SDGs. To construct this index, we first convert each of the Boolean variables to a binary form. We recode each individual SDG variable from taking the values “TRUE/ FALSE” to “1/0”, where “TRUE” is re-coded to “1” and “FALSE” is re-coded to “0”. Following the spirit of Maas (2018) and Deckop et al., (2006) we construct the overall index on the basis of the summated scores of each individual SDG value per firm. The SDG_INDEX takes values between 0 and 17, where lower values reflect lower support and higher values reflect higher support towards the SDGs ⁷. For example, the SDG_INDEX for Alibaba Group Holding Ltd is equal to 17 for the years between 2019-2021. This means that Alibaba has been allocated a score of 1 for each of the seventeen SDGs for these years reflecting its support for all 17 goals. On the other hand,

⁶ The full report can be found in the following [link](#).

⁷ It is worth clarifying at this point that any missing values for any of the respective SDG variables are dropped in order to avoid any misleading results. Hence, when 0 is assigned to the overall SDG index this strictly denotes that there is no evidence of support of a goal.

MAZDA Motor Corp has an overall score of 10 for 2021, suggesting that there is evidence that the company supports 10 out of the 17 SDGs. In additional analysis we disaggregate the SDG_INDEX to reflect each SDG Goal from 1 to 17 (SDG1 – SDG17)⁸.

Finally, following prior literature (e.g., Kanagaretham et al., 2018; Kanagaretham et al., 2016; Artwood et al., 2012) we account for firm-level (Firm) and country-level (Country) characteristics in our baseline analysis. The first set of controls relate to firm-level characteristics and capture the following aspects: (i) Profitability (Return on Assets ratio), (ii) Leverage (Total long-term debt to total assets), (iii) Market capitalisation (Natural logarithm of firm's market capitalisation), (iv) Market value (Price to book ratio) and Size (Natural logarithm of total assets)⁹. The full definition of all variables can be found in Table 1.

1. 4. Empirical results and discussion

2. 4.1 Descriptive statistics

Table 2 Panel A provides the descriptive statistics for standard measure of tax avoidance, as well as several alternative tax avoidance measures, the SDG index, and firm-level and country-level variables. Consistent with prior studies the average values of tax avoidance proxies are equal to -0.227 and 0.261 respectively, with standard deviations equal to 0.14 for TAVOID_1 and 0.265 for TAVOID_2 (Artwood et al., 2012; Hope et al., 2013). For the alternative tax avoidance measures, the average value for TAVOID_ADJ is 0.0010, TAVOID_IND is 0.0011, and TAVOID_SIZE is 0.0013. Panel B of Table 2 shows information on SDG index and other control variables. For the core variable of interest, the average value for SDG_INDEX is 2.35. In order to provide further insight with regard to trends on SDG support we tabulate the average of the SDG_INDEX per year (Table 4) and provide a graph that depicts the average score per industry (Figure 1) and per country (Figure 2). We noticed that from 2019 onwards firms have become much more active in reporting their support on the SDGs, as there is a substantial drop in the number of firms assigned the value zero from 2019 (77%) to 2021 (46%). This pattern is in line with the general increased trend on SDG reporting¹⁰. Figure 1 depicts the average

⁸ For further information regarding the definition of variables SDG1-SDG17 please see Table 1.

⁹ In further analysis we expand the list of firm-specific as well as country-specific controls. For further information please see section 4.3.

¹⁰ For instance, the 2022 KPMG Survey of sustainability reporting reports a sharp increase of global SDG reporting rates from 2017 (39%-43%) to 2022 (71%-74%). For further details please view the full report in the following [link](#).

SDG_INDEX per industry. The red reference line on the graph reflects the working sample average. From a glance, Healthcare Technology, Airlines and Hotels, Restaurants & Leisure appear to be amongst those industries that disclose less towards the SDGs. In contrast, Automobiles, Personal products, Marine and Wireless communication appear to be amongst the top industries engaging their support towards SDGs. Turning to Figure 2, the graph depicts the average SDG_INDEX per country. As with Figure 1 the reference line reflects the working sample's average. There are several countries where the average SDG index is equal to zero (Bahamas, Czech Republic, Gibraltar, Oman, Panama, Uruguay). The countries that appear to be at the lower end of the list, with lower than average SDG score are Macau, Israel, UAE and USA. Countries such as Austria, Belgium, Portugal and Greece appear to score higher than average, whereas there are certain countries with strikingly high average scores (e.g., Romania, Slovenia). The latter should be considered with caution, as the figures are mainly driven by a very small number of firms operating in these countries that score high in the SDG score. Finally, Table 3 shows the Pearson correlation among variables. TAVOID_1 and TAVOID_2 are negatively correlated with SDG_Index, but only for the first measure the value is significant. No excessively high correlation values are evident among the control variables, although they are significant in most cases.

4.2. Baseline results

We start our investigation by assessing the effect of SDG disclosure on our two standard tax avoidance measures. Table 5 presents the baseline results for the regression models. In column 1 we use TAVOID_1 as the dependent variable; whereas in column 2 we use TAVOID_2. We control for firm-level characteristics and time and industry fixed effects in both models. Consistent with hypothesis H1 (*Stakeholder view*), we find a negative and significant coefficient for the SDG_Index, indicating that a higher level of SDG disclosure decreases both TAVOID_1 and TAVOID_2. From an economic standpoint, a one unit increase in SDG_Index is related to a 0.1 percentage point decrease in TAVOID_1 and 0.9 in TAVOID_2. The effect is more substantial for the second measure; however, the considerations drawn from both are similar. Furthermore, performing a marginal analysis we are able to infer that a one standard deviation increase in the SDG_Index decreases the likelihood of a firm engaging in tax avoidance by 4% and up to 16% when TAVOID_1 and TAVOID_2 respectively. This places the SDG_Index among the top 4 determinants of tax avoidance.

Our results support the notion that firms with strong sustainability cultures are less likely to engage in irresponsible tax strategies (Desai and Dharmapala 2006; Lanis and Richardson, 2012; Hoi et al. 2013). Our findings suggest that SDGs and taxes behave as complements rather than substitutes. Companies firmly committed to sustainable development goals are less likely to engage in tax avoidance, as this practice would conflict with their values. In addition to the above, our findings also support long-term sustainability, which implies that achieving short-term financial benefits through tax avoidance practices is not aligned with the principles of CSR, which emphasise a holistic and sustainable approach to business. Thus, commitments to responsible tax practices is part of firms' overall commitment to CSR. However, our findings contradict the strand of research suggesting that firms may deliberately engage in CSR to cover up their irresponsible tax practices and avoid the possible negative attention or regulatory action through gaining legitimacy by providing higher SDGs (Davis et al. 2016). Finally, regarding the control variables, our results are mixed. Consistent with prior studies, we find that firms with high leverage are less likely to engage in tax avoidance in all models. However, the results for ROA, MARKET_CAP, PRICE_TO_BOOK and SIZE are mixed.

4.3. Robustness analysis

In this section we present the results of additional analysis conducted to ensure the robustness of the baseline results presented in the previous section. In particular, we re-estimate our baseline model by: (i) Incorporating alternative tax avoidance measures, (ii) Adjusting our working sample, (iii) Enhancing our baseline model and (iv) Disaggregating the SDG index. The results are presented in Table 6 to Table 10.

Alternative Tax Avoidance Measures

Given that there is no “well-accepted” tax avoidance proxy in the tax avoidance literature we employ an alternative measure, which allows us to capture the extent of tax aggressiveness, rather than a firm’s tax avoidance activity. More precisely, we follow Balakrishnan et al. (2019) and generate a tax avoidance proxy (*TAVOID_ADJ*), which benchmarks a firm’s tax aggressiveness to that of similar sized firms operating in the same industry. This measure further accounts for cross-sectional variation within a firm’s total tax planning. We also calculate two separate proxies based on the aforementioned measure where the tax aggressiveness measure is adjusted for industry (*TAVOID_IND*) and size only (*TAVOID_SIZE*). As per our main tax avoidance measures, higher values suggest more

aggressive tax avoidance strategies. The results presented in Columns (1) – (3) in Table 6 show that both the sign and significance of our core variable of interest (*SDG_INDEX*) remains intact for all three variations of Tax Avoidance.

Sample alterations

As evident from Table 4 and further discussed in earlier sections of the paper we observe very low activity of SDG disclosure during the years 2016 – 2018. In order to ensure that our results are not driven or distorted by this pattern in the working sample, we re-estimate our baseline model by restricting the years between 2019-2021, where SDG disclosure activity is more pronounced. As reported in Columns (4) and (5) of Table 6, the results remain unchanged for both tax avoidance measures used as dependent variables. Furthermore, another pattern observed in our working sample that may cause a potential concern relates to the higher presence of firms from certain countries. In particular, we record a higher percentage of firms in our working sample for the United States of America (22.13%) and China (17.06%). Although these figures are not extremely high in the sense that they do not cover more than 50% of our sample, they are still higher than those of most of the other countries in our sample. For instance, the representation of the other countries in our sample range from 0.01 % (Bahamas) to 8.34% (Japan). Therefore, we re-estimate our baseline model by excluding firms from the U.S.A. and China. As evident from Columns (6) and (7) of Table 6, this exercise does not alter our results.

Enhanced baseline model specification

We further account for several firm and country-specific characteristics that could influence a firm's decision to engage in tax avoidance. In particular, we first opt to include the following set of board-level characteristics as control variables: (i) Board size (*BOARD_SIZE*), which is the total number of board members recorded at the end of each fiscal year; (ii) Board diversity (*BOARD_DIV*), which captures the percentage of females on the company's board; (iii) Board Term (*BOARD_TERM*), which is defined as the lowest number of years in which a member of the board is subject to re-election; (iv) Board Membership affiliation (*BOARD_MEMBERSHIP*), which reflects the average number of other corporate affiliations per board member; (v) Board Meetings (*BOARD_MEETINGS*), which reflects the average overall attendance of a company's board meetings. All variables are defined in Table 1. We opt to include these characteristics as additional controls, as prior literature suggests that board

attributes have a meaningful impact on tax avoidance strategies, highlighting that part of the effect cannot be explained solely by firm characteristics (e.g., Dyreng et al., 2010; Duan et al., 2018). In particular, extant studies suggest that board attributes have a central role in shaping tax avoidance strategies, however the reported evidence remain ambiguous (Kovermann and Velte, 2019). Table 7 reports the results. At a glance we observe that the relationship between our core variable of interest (*SDG_INDEX*) and both tax avoidance measures (*TAVOID_1*; *TAVOID_2*) remains negative and significant at the 1% level. Therefore, even when controlling for key board-level factors our results remain intact.

In addition to the above, we follow empirical evidence that suggests that certain country-level factors influence corporate tax activity (Kanagatheram et al., 2018; Kanagatheram et al., 2016). First, we include a proxy that captures a country's economic growth as measured by GDP growth (*GDP_GR*). Moreover, we account for the extent of a country's capital market development by considering the country's stock market capitalisation adjusted by the country's GDP (*STMCAP*). Furthermore, we include the level of a country's foreign direct investment (*FDI*), as this may signal the availability of opportunities of earnings transfer or income shift from one jurisdiction to another. Finally, prior academic studies have highlighted the role of institutional characteristics in shaping corporate tax avoidance practices. We opt to include an aggregate measure of institutional quality. In particular, similarly to prior empirical studies (e.g., Gaganis et al., 2020) we use the World Bank's WGI in order to capture a country's overall institutional attainment. In particular, we apply a Principal Component Analysis (PCA) in order to obtain an overall index of institutional quality. The core measure is derived by considering the following dimensions provided by the WGI dataset, namely *Rule of Law*, *Control of corruption* and *Regulatory quality*. All variables are defined in Table 1. The results of this exercise are reported in Table 8. As expected the results of our baseline model remain intact when controlling for additional firm and country- specific factors explaining tax avoidance.

Disaggregating the SDG index

The core variable of interest for this study (*SDG_INDEX*) has been computed by summing the scores of each individual variable that reflects individual SDG goals (SDG1-SDG17)¹¹. Although the main objective of this study is to explore the aggregated effect that SDG reporting has on tax avoidance, we opt to explore whether and to what extent the reporting of each

¹¹ Please see Table 1 for further details regarding variable definition.

dimension of the SDG framework influences tax avoidance activities. Therefore, we re-estimate our baseline model by substituting the overall index with the individual dummy variables reflecting whether a company reports its support towards a specific SDG.¹² In the majority of cases, the individual goals appear to exert a negative and statistically significant effect on tax avoidance regardless of the tax avoidance proxy in consideration. However, there are two notable observations. First, SDG 2 (“Zero hunger”) and SDG14 (“*Life below water*”) enter the regression with a negative but insignificant sign, whereas SDG 1 (“No Poverty”) enters the regression with a negative, but insignificant sign when TAVOID_2 is considered. Therefore, these particular dimensions do not appear to have a contributing role in shaping tax avoidance practices. Second, we observe a slightly different pattern depending on which tax avoidance measure is used. It is worth highlighting that although both measures capture tax avoidance, each of them do so through a different angle. More precisely, TAVOID_1 relates to income tax expenses, whereas TAVOID_2 relates to cash tax payments. Hence, it is common in this line of literature to observe different effects depending on which proxy is used (e.g., see Huseynov et al., 2012).

4.4. Addressing Endogeneity

A potential issue that may distort our baseline results could be the presence of endogeneity arising from reverse causality, omitted variable bias and/or measurement error. In particular, the core purpose of our research is to disentangle the effect that SDG reporting has on corporate tax avoidance. Nonetheless, one could argue regarding the direction of the examined effect that it could well be that a firm’s tax avoidance activity and strategies define whether and to what extent the firm engages and supports the SDG framework (*reverse causality*). Turning to *omitted variable bias*, a prime concern lies under the fact that SDG reporting may be driven by other, unobserved, factors for which we have not considered or cannot be considered simply because they cannot be measured. Despite saturating our models by incorporating a range of firm and country – level factors, it is still possible that certain aspects are not taken into account. Finally, *measurement error* of our explanatory variables may influence our baseline findings.

In order to eliminate any of the aforementioned concerns we proceed to two alternative approaches in order to ensure the robustness of the reported results. First, we re-estimate Equation (1) by including all control variables lagged by one year. This enables us to capture

¹² To conserve space the results are available upon request.

potential lagged effects that any of the control variables may have on the dependent variables of our baseline specification. The sign and significance of the core variable of interest (*SDG_INDEX*) remains intact, regardless of the dependent variable considered (*TAVOID_1*; *TAVOID_2*)¹³.

Second, we perform an *Instrumental Variable (IV)* analysis in order to mitigate any remaining concerns. The endogenous variable in our setting is the SDG index. The most challenging component of implementing an IV analysis relates to the choice of instruments. In particular, instruments ought to be relevant both on a conceptual as well as methodological perspective, whilst fulfilling the relevance and exclusion criterion. That is, the chosen instruments need to be selected in such a way that they relate to the first-stage dependent variable (i.e., the endogenous or in our case the *SDG_INDEX*), but not with the residuals of the second stage regression. For the purpose of this exercise we opt to include the country-industry-year average of the SDG disclosure index (*SDG_AVG*) as an instrument and re-estimate our baseline model by employing a Two-Stage Least Squared (2SLS). We select this instrument, as the average SDG disclosure adjusted to the firm's country and industry per year can, at least from a theoretical point of view, be a direct determinant of firm-level SDG disclosure (relevance criterion). At the same time though, the general consensus of SDG reporting at the country and industry level per year does not directly influence firm-level tax avoidance. It only does indirectly through firm-level SDG disclosure, hence, fulfilling the exclusion criterion. Regarding the specification and validity of this instrument, it is apparent from Table 9 that all post-estimation tests, namely under and weak identification, are passed. The sign and significance of the instrument (*SDG_AVG*) is in accordance with our expectations. That is *SDG_AVG* enters the first stage regression positively and significantly at the 1% level for both tax avoidance measures. Most importantly, the core variable of interest, *SDG_INDEX*, retains its sign and significance.

5. Additional analysis

Our analysis thus far confirms that firms with higher SDG disclosure are less likely to engage in tax avoidance practices. In this section we complement our core analysis by exploring potential channels that could provide further insight to our initial findings. In particular, we aim to assess whether and how our core results may differ for a range of board related traits:

¹³ To conserve space we do not report these results. They are available upon request.

(i) Board Size, (ii) Gender Diversity, (iii) Board Term, (iv) Board Membership, (v) Board meetings. The aforementioned dimensions have already been incorporated in our robustness section as additional control variables. Motivated by empirical precedent (e.g., Dyreng et al., 2010; Duan et al., 2018; Kovermann and Velte, 2019) suggesting that managerial characteristics can explain tax avoidance decisions on top of firm-related traits; this section furthers our analysis and explores whether the impact of SDG disclosure on corporate tax avoidance is altered given the above variables. To carry out this exercise we split the sample for each variable (i) – (iv) into two groups: Above and Below mean. Therefore, for each one of the board characteristics listed above we create two variables, one that takes the value “1” if a firm’s board measure falls above the sample average and “0” otherwise (Above) and another one that takes the value “1” if a firm’s board measure falls below the sample average and “0” otherwise (Below). The definitions of the board related traits are available on Table 1. Table 10 reports the results of this exercise. Panel (i) reports the results of the regressions when TAVOID_1 is the dependent variable, whereas Panel (ii) reports the results of the regressions when TAVOID_2 is the dependent variable.

First, we observe that the inverse relationship between SDG disclosure and tax avoidance persists regardless of whether a firm falls above or below average in terms of board size. Therefore, one could argue that independent of a firm’s board size, SDG disclosure exerts a negative and significant impact on tax avoidance. This result holds for both measures of tax avoidance. Second, turning to gender diversity, when TAVOID_1 is considered we find that the inverse relationship between SDG disclosure and tax avoidance is significant for those firms where gender diversity falls below average only. That is, higher SDG disclosure is associated with lower tax avoidance for those firms with lower than average female participation on board. However, when considering TAVOID_2 the inverse relationship is consistent for both groups (Above and Below). It is worth recalling at this point that the tax avoidance literature (e.g., Husseyonov et al. 2012) has highlighted in the past such discrepancies, which can be attributed to the nature of the tax avoidance measure. Therefore, when the tax avoidance measure captures income tax expenses (TAVOID_1) we find that the negative effect of SDG disclosure on tax avoidance is more pronounced for firms who fall below average in terms of female representation on board, whereas when cash tax payments are considered as a proxy (TAVOID_2) the inverse relationship between SDG disclosure and tax avoidance is consistent regardless of the gender representation on a firm’s board.

Third, we find that our baseline results hold for cases where firms' board terms and meeting frequency fall under the above average threshold. That is, higher SDG disclosure leads to lower tax avoidance practices for those firms with longer than average board terms and who meet more regularly than average. These results hold for both measures of tax avoidance. Last but not least, we find that a reverse relationship persists between SDG disclosure and tax avoidance for those firms whose mean number of other corporate affiliations on board are below average. Overall, we observe that apart from board size, some of the key board-related traits can enhance the impact that SDG disclosure has on tax avoidance. We also find that for certain cases, the results differ based on the type of tax avoidance proxy used. Therefore, all in all we argue that certain firm related traits are important conditional factors that influence the impact that SDG disclosure has on firm tax avoidance.

6. Summary and conclusion

Although prior studies examined the effects of corporate social responsibility on tax avoidance, evidence is inconclusive thus far (Jiang et al., 2022; Hoi et al., 2013a; Laguir et al., 2015; Lanis & Richardson 2013). Moreover, they have heavily relied on the ESG framework, which has been under pressure from various stakeholders for lacking standardisation, and discrepancy between ESG rating agency as a result of the variation in methodology, scope and coverage of ESG factors between suppliers of these ratings (e.g., García-Sánchez et al., 2022; Eliwa et al., 2023; Edmans, 2023). To fill this gap, this paper focuses on the SDGs framework, as a holistic reporting that captures all sustainability issues (Bebbington and Unerman, 2018), to test the nexus between CSR and tax avoidance. SDG reporting presents a clearer picture to organisations on what should constitute a corporate sustainability targets, and thus provide a basis for key performance indicators (KPIs) to measure sustainable performance. The SDGs aim to address global challenges such as poverty, inequality, and climate change, and their success relies heavily on adequate funding. Tax avoidance possesses a significant risk on the SDGs, as it reduces the revenue available for governments to invest in crucial social and environmental programs, thereby hindering progress towards the SDGs.

Therefore, we argue that companies that prioritise SDG reporting are likely to be more committed to sustainable development and more transparent about their business practices. This may reduce the likelihood of engaging in tax avoidance activities, as such activities may conflict with the company's commitment to sustainability and transparency. Our results using alternative proxies of tax avoidance and SDGs reporting suggest that firms with high quality

SDGs are less likely to engage in tax avoidance. These results imply that firms that engage in SDGs reporting are more likely to face scrutiny from stakeholders, including investors, customers, and civil society organisations, which may deter them from engaging in tax avoidance activities. Furthermore, SDGs reporting may encourage companies to align their tax practices with their sustainability goals and contribute to the financing of SDGs through fair and transparent tax payments. It supports the notion that firms with greater SDGs avoid any action such as tax avoidance that could affect their reputation and image (Landry et al., 2013; Lin et al., 2010). Our finding supports the stakeholder theory in that companies with good CSR culture and commitment to SDGs consider the interests of all stakeholders when making decisions, including the impact of tax avoidance on the wider community. Moreover, our results imply that socially responsible firms prioritise social responsibility over short-term financial returns generated by tax avoidance. This in turn contradicts the logic that obligation to maximise shareholder value remains the key priority of corporations and socially responsible firms carefully balance competing interests to create sustainable outcomes for all stakeholders.

Appendix

Table 1: Variable Description

Variables	Description	Source
<i>Tax Avoidance variables</i>		
TAVOID_1	Current tax expenses divided by the pre-tax accounting income.	Eikon Refinitiv & Authors' calculations
TAVOID_2	Difference between pre-tax earnings tax, adjusted at the home-country's statutory corporate tax rate and the taxes paid, as a fraction of the firm's pre-tax earnings.	Eikon Refinitiv & Authors' calculations
TAVOID_ADJ	Firm's mean industry-size GAAP ETR minus the firm's GAAP ETR	Eikon Refinitiv & Authors' calculations
TAVOID_IND	Firm's mean industry GAAP ETR minus the firm's GAAP ETR	Eikon Refinitiv & Authors' calculations
TAVOID_SIZE	Firm's mean firm size GAAP ETR minus the firm's GAAP ETR	Eikon Refinitiv & Authors' calculations
<i>SDG reporting variables</i>		
SDG_INDEX	Overall index of firm-level SDG reporting. It is calculated by summing up variables SDG1-SDG17. Higher values reflect higher SDG support and vice versa.	Eikon Refinitiv & Authors' calculations
SDG1	Takes "1" if a company provides evidence supporting SDG Goal 1 (" <i>No poverty</i> "), "0" otherwise.	Eikon Refinitiv
SDG2	Takes "1" if a company provides evidence supporting SDG Goal 2 (" <i>Zero hunger</i> "), "0" otherwise.	Eikon Refinitiv
SDG3	Takes "1" if a company provides evidence supporting SDG Goal 3 (" <i>Good health and well-being</i> "), "0" otherwise.	Eikon Refinitiv

SDG4	Takes "1" if a company provides evidence supporting SDG Goal 4 (" <i>Quality Education</i> "), "0" otherwise.	Eikon Refinitiv
SDG5	Takes "1" if a company provides evidence supporting SDG Goal 5 (" <i>Gender equality</i> "), "0" otherwise.	Eikon Refinitiv
SDG6	Takes "1" if a company provides evidence supporting SDG Goal 6 (" <i>Clean water and sanitation</i> "), "0" otherwise.	Eikon Refinitiv
SDG7	Takes "1" if a company provides evidence supporting SDG Goal 7 (" <i>Affordable and clean energy</i> "), "0" otherwise.	Eikon Refinitiv
SDG8	Takes "1" if a company provides evidence supporting SDG Goal 8 (" <i>Decent work and economic growth</i> "), "0" otherwise.	Eikon Refinitiv
SDG9	Takes "1" if a company provides evidence supporting SDG Goal 9 ("Industry, innovation and infrastructure"), "0" otherwise.	Eikon Refinitiv
SDG10	Takes "1" if a company provides evidence supporting SDG Goal 10 ("Reduced inequality"), "0" otherwise.	Eikon Refinitiv
SDG11	Takes "1" if a company provides evidence supporting SDG Goal 11 (" <i>Sustainable cities and communities</i> "), "0" otherwise.	Eikon Refinitiv
SDG12	Takes "1" if a company provides evidence supporting SDG Goal 12 (" <i>Responsible Consumption and Production</i> "), "0" otherwise.	Eikon Refinitiv
SDG13	Takes "1" if a company provides evidence supporting SDG Goal 13 ("Climate Action"), "0" otherwise.	Eikon Refinitiv
SDG14	Takes "1" if a company provides evidence supporting SDG Goal 14 (" <i>Life below water</i> "), "0" otherwise.	Eikon Refinitiv
SDG15	Takes "1" if a company provides evidence supporting SDG Goal 15 (" <i>Life on land</i> "), "0" otherwise.	Eikon Refinitiv
SDG16	Takes "1" if a company provides evidence supporting SDG Goal 16 (" <i>Peace and justice, strong institutions</i> "), "0" otherwise.	Eikon Refinitiv
SDG17	Takes "1" if a company provides evidence supporting SDG Goal 17 (" <i>Partnerships to achieve the Goal</i> "), "0" otherwise.	Eikon Refinitiv

Firm- level variables

ROA	Net income divided by total assets.	Eikon Refinitiv
LEVERAGE	Total long-term debt divided by total assets.	Eikon Refinitiv
MARKET_CAP	Natural logarithm of the firm's market capitalisation.	Eikon Refinitiv
PRICE_TO_BOOK	Closing price divided by book value per share.	Eikon Refinitiv
SIZE	Natural logarithm of total assets.	Eikon Refinitiv
BOARD_SIZE	The total number of board members at the end of the fiscal year.	Eikon Refinitiv
BOARD_DIV	Percentage of females on board.	Eikon Refinitiv
BOARD_TERM	The smallest interval of years in which the board members are subject to re-election.	Eikon Refinitiv
BOARD_MEMBERS		
HIP	Average number of other corporate affiliations per board member.	Eikon Refinitiv
BOARD_MEETINGS	The number of board meetings during the year.	Eikon Refinitiv

Country- level variables

CITR	Statutory corporate income tax rate.	OECD
GDP_GR	Annual percentage of GDP growth rate.	World Bank
STMCAP	Market capitalisation of domestic listed companies as a percentage of GDP.	World Bank
FDI	Net flows of foreign direct investment as a percentage of GDP	World Bank
INSTITUTIONAL	Index of a country's overall institutional environment using the first Principal Component of the following dimensions of the WGI dataset: Rule of Law, Control of corruption and Regulatory quality.	World Bank & Authors' calculations

Table 2: Descriptive statistics

This table shows the summary statistics for the variables included in our analysis. Panel A presents the summary statistics for the alternative Tax Avoidance measures used. Panel B presents the summary statistics for the SDG Index and all other control variables. Variable definitions are presented in Table 1.

Descriptive statistics					
Variable	Obs.	Mean	Std. dev.	Min	Max
Panel A: Tax avoidance measures					
			0.14550		
TAVOID_1	13,798	-0.2274	8	-1	0
		0.26149	0.26578	0.01094	0.94195
TAVOID_2	12,679	1	5	3	2
		0.00100	0.13228	-	0.31928
TAVOID_ADJ	13,798	1	3	0.94783	6
		0.00111	0.13444	-	0.27778
TAVOID_IND	13,798	6	3	0.95015	2
		0.00133	0.14528	-	0.24106
TAVOID_SIZE	13,798	1	4	0.77805	5
Panel B: SDG index and Control variables					
		2.35388	4.60567		
SDG_INDEX	13,798	1	4	0	17
		0.07427	0.05784	0.00249	0.31156
ROA	13,798	8	4	5	2
		0.19418	0.15771		0.77761
LEVERAGE	13,798	8	9	0	1
		8.36576	1.37543	5.11553	12.0112
MARKET_CAP	13,798	5	2	6	8
		3.91541	5.09789		
PRICE_TO_BOOK	13,798	5	1	0.33	34.91
		22.0996	1.47463	17.1410	25.6445
SIZE	13,798	4	3	6	3
		2.64975	3.61803	-	8.68122
GDP_GR	13,517	7	3	10.9527	9
		2.74443	5.92175	-	35.7664
FDI	13,513	9	7	22.1051	7
		9.42826	2.94419		
BOARD_SIZE	13,748	4	2	1	30
BOARD_DIV					
		2.30550	1.13488		
BOARD_TERM	12,840	5	3	1	6
BOARD_MEMBERS		0.87392	0.73903		
HIP	13,741	5	4	0	6.43
		91.4334	10.8675		
BOARD_MEETINGS	11,562	9	9	0	100

		138.997	170.981		1274.78
STMCAP	9,085	5	5	19.7452	9
		-	1.59702	-	2.03280
INSTITUTIONAL	13,774	0.09091	7	3.34625	3

Table 3: Correlation matrix

This table shows the correlation coefficients for the variables included in our analysis. Variable definitions are presented in Table 1.

Variables	TAVOID 1	TAVOID 2	TAVOID ADJ	TAVOID IND	TAVOID SIZE	SDG INDEX	ROA	LEVERAGE	MARKET CAP
TAVOID_1	1								
TAVOID_2	0.013	1							
TAVOID_ADJ	0.908	0.030	1						
TAVOID_IND	0.923	0.023	0.984	1					
TAVOID_SIZE	0.999	0.013	0.909	0.922	1				
SDG_INDEX	-0.002	-0.085	0.012	0.007	0.003	1			
ROA	0.083	-0.134	0.095	0.102	0.079	-0.016	1		
LEVERAGE	0.001	-0.130	-0.062	-0.068	0.007	0.042	-0.332	1	
MARKET_CAP	0.037	-0.034	0.063	0.042	0.059	0.096	0.115	0.025	1
PRICE_TO_BOOK	0.013	-0.067	0.033	0.032	0.011	-0.032	0.427	-0.041	0.241
SIZE	-0.028	0.024	0	-0.023	-0.001	0.142	-0.284	0.273	0.739
GDP_GR	0.046	0.273	0.062	0.060	0.046	-0.061	0.057	-0.142	0.075
FDI	0.085	-0.087	0.067	0.070	0.088	0.017	-0.008	0.011	-0.012
BOARD_SIZE	-0.079	-0.114	-0.027	-0.040	-0.066	0.070	-0.120	0.077	0.346
BOARD_DIV	-0.021	-0.153	-0.021	-0.025	-0.020	0.107	0.016	0.107	0.055
BOARD_TERM	0.038	0.298	0.057	0.061	0.036	0.038	-0.008	-0.165	-0.040
BOARD_MEMBERSHIP	-0.041	-0.089	-0.014	-0.026	-0.031	0.096	-0.032	0.092	0.241
BOARD_MEETINGS	0.062	0.282	0.084	0.081	0.061	0.189	0.023	-0.208	-0.043
STMCAP	0.078	-0.225	0.072	0.075	0.083	0.014	0.002	0.045	0.038
INSTITUTIONAL	-0.045	-0.392	-0.097	-0.095	-0.043	-0.041	-0.053	0.255	-0.087

Table 3: Correlation matrix (cont.)

Variables	PRICE_TO_BOO K	SIZE	GDP_G R	FDI	BOARD_SIZ E	BOARD_DI V	BOARD_TER M	BOARD_MEM B	BOARD_MEE T	STMCA P	INSTIT.
TAVOID_1											
TAVOID_2											
TAVOID_ADJ											
TAVOID_IND											
TAVOID_SIZE											
SDG_INDEX											
ROA											
LEVERAGE											
MARKET_CAP											
PRICE_TO_BOO K	1										
SIZE	-0.221	1									
GDP_GR	0.016	0.036	1								
FDI	-0.063	0.046	0.034	1							
BOARD_SIZE	-0.082	0.448	-0.032	0.058	1						
BOARD_DIV	0.075	0.007	-0.074	-0.056	0.032	1					
BOARD_TERM	-0.026	-0.038	0.153	0.062	0.039	-0.025	1				
BOARD_MEMB	-0.036	0.292	-0.025	0.141	0.127	0.024	-0.033	1			
BOARD_MEET	-0.063	-0.018	0.090	0.057	-0.051	-0.007	0.258	0.003	1		
STMCAP	-0.030	0.076	-0.205	0.621	0.094	-0.011	-0.047	0.165	-0.086	1	
INSTIT	-0.016	-0.052	-0.285	0.154	-0.108	0.297	-0.351	0.023	-0.242	0.307	1

Table 4: Summary statistics for SDG Index per year

This table shows the summary statistics for the SDG Index per year. Variable definitions are presented in Table 1.

SDG_INDE							
X	2016	2017	2018	2019	2020	2021	Total
0	2,285	2,696	3,546	3,126	2,245	2,271	16,169
1	0	0	0	20	25	32	77
2	1	0	2	22	32	25	82
3	0	0	0	42	80	77	199
4	0	0	1	51	94	126	272
5	0	0	1	84	129	182	396
6	0	0	2	110	180	231	523
7	0	0	1	85	153	236	475
8	0	0	1	90	168	240	499
9	0	0	3	72	185	251	511
10	0	0	1	75	140	201	417
11	0	0	1	68	126	219	414
12	0	0	4	62	127	209	402
13	0	0	1	37	85	202	325
14	0	0	0	39	93	151	283
15	0	0	1	22	64	119	206
16	0	0	1	17	46	87	151
17	0	0	1	73	149	267	490
Total	2,286	2,696	3,567	4,095	4,121	5,126	21,891

Table 5: Baseline Results

This table shows the results obtained when estimating our baseline model in Equation 1. Column 1 reports the results when TAVOID_1 is considered as the dependent variable, whereas Column 2 reports the results when TAVOID_2 is considered as the dependent variable. We control for industry and year fixed effects. Standard errors are clustered at the firm level. Variable definitions are presented in Table 1. T-statistics are reported in parentheses. *, **, *** denote significance at the 10%, 5% and 1% respectively.

VARIABLES	(1) TAVOID_1	(2) TAVOID_2
SDG_INDEX	-0.00122*** (0.000335)	-0.00931*** (0.00155)
ROA	0.212*** (0.0386)	-1.542*** (0.150)
LEVERAGE	-0.0253* (0.0132)	-0.588*** (0.0536)
MARKET_CAP	0.0152*** (0.00329)	-0.0281** (0.0116)
PRICE_TO_BOOK	-0.00142*** (0.000464)	0.00685*** (0.00153)
SIZE	-0.0115*** (0.00312)	0.0356*** (0.0105)
Constant	-0.127*** (0.0490)	-0.273* (0.165)
Observations	13,798	12,679
R-squared	0.173	0.125
Time dummies	YES	YES
Industry dummies	YES	YES

Table 6: Robustness Analysis (1)

This table shows the results obtained when estimating our baseline model in Equation 1 under alternative scenarios. Columns 1 – 3 reports the results when three alternative proxies of tax avoidance are considered (TAVOID_ADJ, TAVOID_IND, TAVOID_SIZE). Columns 4-5 report the results when the sample is restricted to years 2019-2021. Finally, columns 6-7 report the results when countries with high representation in our sample are dropped. The exercises in Columns 4-7 are performed by both core measures of tax avoidance (TAVOID_1 & TAVOID2). In all regressions we control for industry and year fixed effects. Standard errors are clustered at the firm level. Variable definitions are presented in Table 1. T-statistics are reported in parentheses. *, **, *** denote significance at the 10%, 5% and 1% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>Alternative Proxy</i>	<i>Alternative Proxy</i>	<i>Alternative Proxy</i>	<i>2019 -2021</i>	<i>2019 -2021</i>	<i>Excl. high freq. countries</i>	<i>Excl. high freq. countries</i>
VARIABLES	TAVOID ADJ	TAVOID IND	TAVOID SIZE	TAVOID 1	TAVOID 2	TAVOID 1	TAVOID 2
SDG_INDEX	-0.00115*** (0.000332)	-0.00122*** (0.000335)	-0.00119*** (0.000335)	-0.00113*** (0.000343)	-0.00952*** (0.00162)	-0.00122*** (0.000335)	-0.00931*** (0.00155)
ROA	0.196*** (0.0380)	0.212*** (0.0386)	0.219*** (0.0385)	0.140*** (0.0450)	-1.769*** (0.170)	0.212*** (0.0386)	-1.542*** (0.150)
LEVERAGE	-0.0255* (0.0130)	-0.0253* (0.0132)	-0.0266** (0.0132)	-0.0242 (0.0156)	-0.730*** (0.0635)	-0.0253* (0.0132)	-0.588*** (0.0536)
MARKET_CAP	0.0154*** (0.00322)	0.0152*** (0.00329)	0.0151*** (0.00329)	0.0213*** (0.00334)	-0.0366*** (0.0118)	0.0152*** (0.00329)	-0.0281** (0.0116)
PRICE_TO_BOOK	-0.00125*** (0.000460)	-0.00142*** (0.000464)	-0.00132*** (0.000461)	-0.00168*** (0.000544)	0.00849*** (0.00185)	-0.00142*** (0.000464)	0.00685*** (0.00153)
SIZE	-0.00925*** (0.00306)	-0.0115*** (0.00312)	-0.00860*** (0.00312)	-0.0167*** (0.00324)	0.0522*** (0.0115)	-0.0115*** (0.00312)	0.0356*** (0.0105)
Constant	0.0463 (0.0481)	0.0983** (0.0490)	0.0384 (0.0490)	-0.0188 (0.0511)	-0.483*** (0.177)	-0.127*** (0.0490)	-0.273* (0.165)
Observations	13,798	13,798	13,798	8,368	7,716	13,798	12,679
R-squared	0.030	0.031	0.171	0.141	0.137	0.173	0.125
Time dummies	YES	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES	YES	YES	YES
R-sq	0.0302	0.0311	0.171	0.141	0.137	0.173	0.125

Table 7: Robustness Analysis (2)

This table shows the results obtained when estimating our baseline model in Equation 1 enhanced with additional firm-level controls. Columns 1,3,5,7 and 9 report the results when TAVOID_1 is considered as the dependent variable, whereas Columns 2, 4, 6, 8 and 10 report the results when TAVOID_2 is considered as the dependent variable. In all regressions we control for industry and year fixed effects. Standard errors are clustered at the firm level. Variable definitions are presented in Table 1. T-statistics are reported in parentheses. *, **, *** denote significance at the 10%, 5% and 1% respectively.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	TAVOID 1	TAVOID 2	TAVOID 1	TAVOID 2	TAVOID 1	TAVOID 2	TAVOID 1	TAVOID 2	TAVOID 1	TAVOID 2
SDG_INDEX	-0.00119*** (0.000336)	-0.00904*** (0.00155)	0.00116*** (0.000336)	-0.00877*** (0.00155)	-0.00119*** (0.000346)	-0.00932*** (0.00158)	0.00118*** (0.000337)	-0.00859*** (0.00151)	-0.00132*** (0.000357)	-0.0114*** (0.00169)
ROA	0.210*** (0.0386)	-1.549*** (0.151)	0.212*** (0.0386)	-1.527*** (0.150)	0.217*** (0.0403)	-1.515*** (0.149)	0.213*** (0.0387)	-1.525*** (0.150)	0.195*** (0.0395)	-1.667*** (0.160)
LEVERAGE	-0.0265** (0.0132)	-0.595*** (0.0532)	-0.0221 (0.0134)	-0.548*** (0.0516)	-0.0240* (0.0139)	-0.518*** (0.0529)	-0.0253* (0.0133)	-0.581*** (0.0534)	-0.00819 (0.0140)	-0.566*** (0.0593)
MARKET_CAP	0.0152*** (0.00329)	-0.0280** (0.0116)	0.0157*** (0.00333)	-0.0229** (0.0115)	0.0127*** (0.00347)	-0.0250** (0.0115)	0.0152*** (0.00329)	-0.0271** (0.0116)	0.0148*** (0.00338)	-0.0283** (0.0126)
PRICE_TO_BOOK	-0.00140*** (0.000464)	0.00701*** (0.00153)	0.00142*** (0.000464)	0.00675*** (0.00151)	-0.00131*** (0.000494)	0.00668*** (0.00152)	0.00141*** (0.000464)	0.00684*** (0.00152)	-0.00143*** (0.000476)	0.00745*** (0.00158)
SIZE	-0.0106*** (0.00316)	0.0482*** (0.0106)	-0.0120*** (0.00315)	0.0311*** (0.0103)	-0.00938*** (0.00324)	0.0383*** (0.0106)	-0.0112*** (0.00313)	0.0407*** (0.0107)	-0.0113*** (0.00319)	0.0410*** (0.0114)
BOARD_SIZE	-0.00117 (0.000718)	-0.0150*** (0.00247)								
BOARD_DIV			0.000295** (0.000121)	-0.00296*** (0.000438)						
BOARD_TERM					0.00652*** (0.00167)	0.0709*** (0.00529)				
BOARD_MEMBE R.							-0.00296 (0.00262)	-0.0446*** (0.00925)		

BOARD_MEETIN
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									0.000720***	0.00679***
									(0.000179)	(0.000640)
Constant	-0.134***	-0.396**	-0.114**	-0.171	-0.163***	-0.519***	-0.130***	-0.359**	-0.192***	-0.978***
	(0.0488)	(0.165)	(0.0496)	(0.161)	(0.0508)	(0.169)	(0.0492)	(0.166)	(0.0508)	(0.187)
Observations	13,758	12,640	13,751	12,633	12,840	11,813	13,741	12,623	11,562	10,731
R-squared	0.169	0.132	0.169	0.132	0.175	0.138	0.166	0.129	0.186	0.139
Time dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
R-sq	0.169	0.132	0.169	0.132	0.175	0.138	0.166	0.129	0.186	0.139

Table 8: Robustness Analysis (3)

This table shows the results obtained when estimating our baseline model in Equation 1 enhanced with additional country-level controls. Columns 1,3,5 and 7 report the results when TAVOID_1 is considered as the dependent variable, whereas Columns 2, 4, 6 and 8 report the results when TAVOID_2 is considered as the dependent variable. In all regressions we control for industry and year fixed effects. Standard errors are clustered at the firm level. Variable definitions are presented in Table 1. T-statistics are reported in parentheses. *, **, *** denote significance at the 10%, 5% and 1% respectively.

VARIABLES	(1) TAVOID_1	(2) TAVOID_2	(3) TAVOID_1	(4) TAVOID_2	(5) TAVOID_1	(6) TAVOID_2	(7) TAVOID_1	(8) TAVOID_2
SDG_INDEX	-0.000659* (0.000342)	-0.00376** (0.00157)	-0.00127*** (0.000339)	-0.00928*** (0.00158)	-0.000935** (0.000433)	-0.00754*** (0.00241)	-0.00116*** (0.000336)	-0.00829*** (0.00152)
ROA	0.236*** (0.0393)	-1.319*** (0.140)	0.205*** (0.0390)	-1.550*** (0.153)	0.240*** (0.0477)	-1.557*** (0.207)	0.215*** (0.0386)	-1.463*** (0.147)
LEVERAGE	-0.00556 (0.0135)	-0.381*** (0.0446)	-0.0226* (0.0132)	-0.625*** (0.0547)	-0.0474*** (0.0153)	-0.629*** (0.0636)	-0.0118 (0.0140)	-0.402*** (0.0471)
MARKET_CAP	0.0128*** (0.00329)	-0.0402*** (0.0113)	0.0148*** (0.00329)	-0.0339*** (0.0119)	0.00707* (0.00389)	-0.0429*** (0.0155)	0.0155*** (0.00331)	-0.0236** (0.0114)
PRICE_TO_BOOK	-0.00161*** (0.000465)	0.00399*** (0.00142)	-0.00134*** (0.000463)	0.00698*** (0.00155)	-0.000888* (0.000468)	0.00763*** (0.00193)	-0.00146*** (0.000465)	0.00549*** (0.00147)
SIZE	-0.0102*** (0.00312)	0.0342*** (0.00985)	-0.0108*** (0.00313)	0.0421*** (0.0108)	-0.00342 (0.00366)	0.0469*** (0.0134)	-0.0123*** (0.00315)	0.0235** (0.0101)
GDP_GR	0.00575*** (0.000620)	0.0581*** (0.00288)						
FDI			0.00190*** (0.000250)	-0.00497*** (0.000510)				
STMCAP					6.06e-05*** (1.07e-05)	-0.000410*** (2.86e-05)		
INSTITUTIONAL							-0.00410*** (0.00115)	-0.0565*** (0.00409)
Constant	-0.150*** (0.0491)	-0.316** (0.152)	-0.144*** (0.0490)	-0.340** (0.168)	-0.241*** (0.0574)	-0.320 (0.202)	-0.112** (0.0496)	-0.0402 (0.156)

Observations	13,517	12,411	13,513	12,411	9,085	8,409	13,774	12,672
R-squared	0.180	0.204	0.178	0.132	0.205	0.152	0.174	0.160
Time dummies	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES	YES	YES	YES	YES
R-sq	0.180	0.204	0.178	0.132	0.205	0.152	0.174	0.160

Table 9: Addressing Endogeneity

This table shows the results obtained when estimating a Two Stage Least Square (2SLS) model. Column 1 reports the results when TAVOID_1 is considered as the dependent variable, whereas Column 2 reports the results when TAVOID_2 is considered as the dependent variable. Panel A reports the second stage results, whereas Panel B report the first stage results. In all regressions we control for industry and year fixed effects. Standard errors are clustered at the firm level. Variable definitions are presented in Table

	(1)	(2)
Panel A: 2nd Stage results		
VARIABLES	TAVOID_1	TAVOID_2
SDG_INDEX	-0.0034 *** (0.0004)	-0.0262 *** (0.0017)
Observations	13,798	
R-squared	0.169	
Controls	YES	YES
Time dummies	YES	YES
Industry dummies	YES	YES
Panel B: 1st Stage results		
<i>Dep. Var: SDG_INDEX</i>		
<i>Instrument</i>		
SDG_AVG	0.9926*** (0.0118)	0.9943 *** (0.0125)
Time dummies	YES	YES
Industry dummies	YES	YES
Kleibergen-Paap rk LM statistic	1507.158	1362.092
Kleibergen-Paap Wald F statistic	7033.551	6245.315

Table 10: Additional analysis (a)

This table shows the results obtained when estimating the effect of certain corporate governance traits. Columns 1 – 4 report the results when splitting the sample into below and above mean in terms of board size, whereas, Columns 5-8 report the results when splitting the sample into below and above mean in terms of gender diversity. Columns 1,2,5 and 6 report the results when TAVOID_1 is considered as the dependent variable, whereas Columns 3,4,7 and 8 report the results when TAVOID_2 is considered as the dependent variable. In all regressions we control for industry and year fixed effects. Standard errors are clustered at the firm level. Variable definitions are presented in Table 1. T-statistics are reported in parentheses. *, **, *** denote significance at the 10%, 5%

VARIABLES	Board Size				Gender Diversity			
	Above mean	Below Mean	Above mean	Below Mean	Above mean	Below Mean	Above mean	Below Mean
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	TAVOID 1	TAVOID 1	TAVOID 2	TAVOID 2	TAVOID 1	TAVOID 1	TAVOID 2	TAVOID 2
SDG_INDEX	-0.00107** (0.000513)	-0.00121*** (0.000424)	-0.00941*** (0.00228)	-0.00817*** (0.00184)	-0.000652 (0.000482)	-0.00172*** (0.000445)	-0.00663*** (0.00115)	-0.0108*** (0.00275)
ROA	0.166** (0.0719)	0.242*** (0.0409)	-1.561*** (0.240)	-1.535*** (0.179)	0.216*** (0.0488)	0.219*** (0.0573)	-1.083*** (0.143)	-1.978*** (0.231)
LEVERAGE	-0.00805 (0.0208)	-0.0384** (0.0164)	-0.685*** (0.0856)	-0.475*** (0.0614)	0.00298 (0.0181)	-0.0448** (0.0189)	-0.326*** (0.0491)	-0.706*** (0.0780)
MARKET_CAP	0.0160*** (0.00569)	0.0154*** (0.00357)	-0.0420** (0.0172)	-0.0101 (0.0126)	0.0179*** (0.00447)	0.0133*** (0.00472)	-0.0143 (0.00928)	-0.0307 (0.0209)
PRICE_TO_BOOK	-0.00168** (0.000715)	-0.00126** (0.000570)	0.00854*** (0.00172)	0.00558*** (0.00211)	-0.00205*** (0.000554)	-0.000578 (0.000756)	0.00163 (0.00105)	0.0129*** (0.00283)
SIZE	-0.0149*** (0.00552)	-0.00736** (0.00340)	0.0463*** (0.0147)	0.0405*** (0.0128)	-0.0153*** (0.00435)	-0.00824* (0.00438)	-0.00660 (0.0105)	0.0645*** (0.0162)
Constant	-0.0679 (0.0851)	-0.196*** (0.0554)	-0.354 (0.228)	-0.544*** (0.205)	-0.0740 (0.0687)	-0.173** (0.0679)	0.519*** (0.172)	-0.856*** (0.247)
Observations	5,818	7,980	5,404	7,275	6,782	7,016	6,172	6,507
R-squared	0.158	0.199	0.135	0.153	0.208	0.155	0.093	0.194
Time dummies	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES	YES	YES	YES	YES
R-sq	0.158	0.199	0.135	0.153	0.208	0.155	0.0929	0.194

Table 10: Additional analysis (b)

This table shows the results obtained when estimating the effect of certain corporate governance traits. Columns 1 – 4 report the results when splitting the sample into below and above mean in terms of board term, whereas, Columns 5-8 report the results when splitting the sample into below and above mean in terms of board membership. Columns 9-12 report the results when splitting the sample into below and above mean in terms of board meetings. Columns 1,2,5,6, 9 and 10 report the results when TAVOID_1 is considered as the dependent variable, whereas Columns 3,4,7,8, 11 and 12 report the results when TAVOID_2 is considered as the dependent variable. In all regressions we control for industry and year fixed effects. Standard errors are clustered at the firm level. Variable definitions are presented in Table 1. T-statistics are reported in parentheses. *, **, *** denote significance at the 10%, 5% and 1% respectively.

VARIABLES	Board Term				Board Membership				Board Meetings			
	Above mean	Below Mean	Above mean	Below Mean	Above mean	Below Mean	Above mean	Below Mean	Above mean	Below Mean	Above mean	Below Mean
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	TAVOID_1	TAVOID_1	TAVOID_2	TAVOID_2	TAVOID_1	TAVOID_1	TAVOID_2	TAVOID_2	TAVOID_1	TAVOID_1	TAVOID_2	TAVOID_2
SDG_INDEX	-0.00131*** (0.000395)	-0.000587 (0.000600)	-0.0111*** (0.00215)	-0.000932 (0.000861)	-0.000708 (0.000523)	-0.00110** (0.000428)	-0.00332 (0.00253)	-0.0114*** (0.00165)	0.00108*** (0.000354)	-0.00167* (0.000923)	-0.0130*** (0.00173)	0.00201 (0.00399)
ROA	0.172*** (0.0516)	0.331*** (0.0594)	-1.920*** (0.225)	-0.570*** (0.134)	0.300*** (0.0572)	0.155*** (0.0489)	-1.320*** (0.219)	-1.657*** (0.202)	0.209*** (0.0451)	0.229*** (0.0699)	-1.815*** (0.180)	-0.638*** (0.217)
LEVERAGE	-0.0406** (0.0173)	0.0323 (0.0212)	-0.701*** (0.0768)	0.0121 (0.0335)	-0.0136 (0.0206)	-0.0310* (0.0164)	-0.376*** (0.0881)	-0.669*** (0.0634)	-0.0300* (0.0165)	-0.0187 (0.0210)	-0.664*** (0.0685)	-0.199*** (0.0583)
MARKET_CAP	0.0197*** (0.00397)	0.00434 (0.00555)	-0.0301 (0.0186)	0.00223 (0.00649)	0.00577 (0.00525)	0.0224*** (0.00393)	-0.0165 (0.0164)	-0.0327** (0.0142)	0.0208*** (0.00369)	0.00175 (0.00583)	-0.0275** (0.0134)	-0.0215* (0.0125)
PRICE_TO_BOOK	-0.00120** (0.000587)	-0.00183** (0.000752)	0.00806*** (0.00265)	-0.000505 (0.000753)	-0.00174** (0.000748)	-0.00129** (0.000582)	0.00211 (0.00133)	0.00918*** (0.00252)	0.00236*** (0.000642)	4.00e-05 (0.000569)	0.00940*** (0.00228)	0.00174* (0.000976)
SIZE	-0.0131*** (0.00376)	-0.00418 (0.00538)	0.0596*** (0.0147)	-0.0216*** (0.00716)	-0.00487 (0.00495)	-0.0160*** (0.00367)	0.0186 (0.0133)	0.0553*** (0.0146)	-0.0184*** (0.00350)	0.00392 (0.00562)	0.0394*** (0.0125)	0.0198* (0.0112)
Constant	-0.110* (0.0578)	-0.229*** (0.0853)	-0.770*** (0.225)	0.645*** (0.127)	-0.203** (0.0792)	-0.0804 (0.0575)	-0.0218 (0.214)	-0.646*** (0.229)	-0.00612 (0.0560)	-0.371*** (0.0871)	-0.376* (0.203)	-0.0121 (0.172)
Observations	8,389	5,409	7,885	4,794	5,791	8,007	5,347	7,332	9,972	3,826	9,188	3,491
R-squared	0.175	0.218	0.163	0.079	0.168	0.198	0.096	0.186	0.150	0.271	0.142	0.100

Time dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
R-sq	0.175	0.218	0.163	0.0788	0.168	0.198	0.0955	0.186	0.150	0.271	0.142	0.0997

Figure 1: Mean of SDG Index per industry

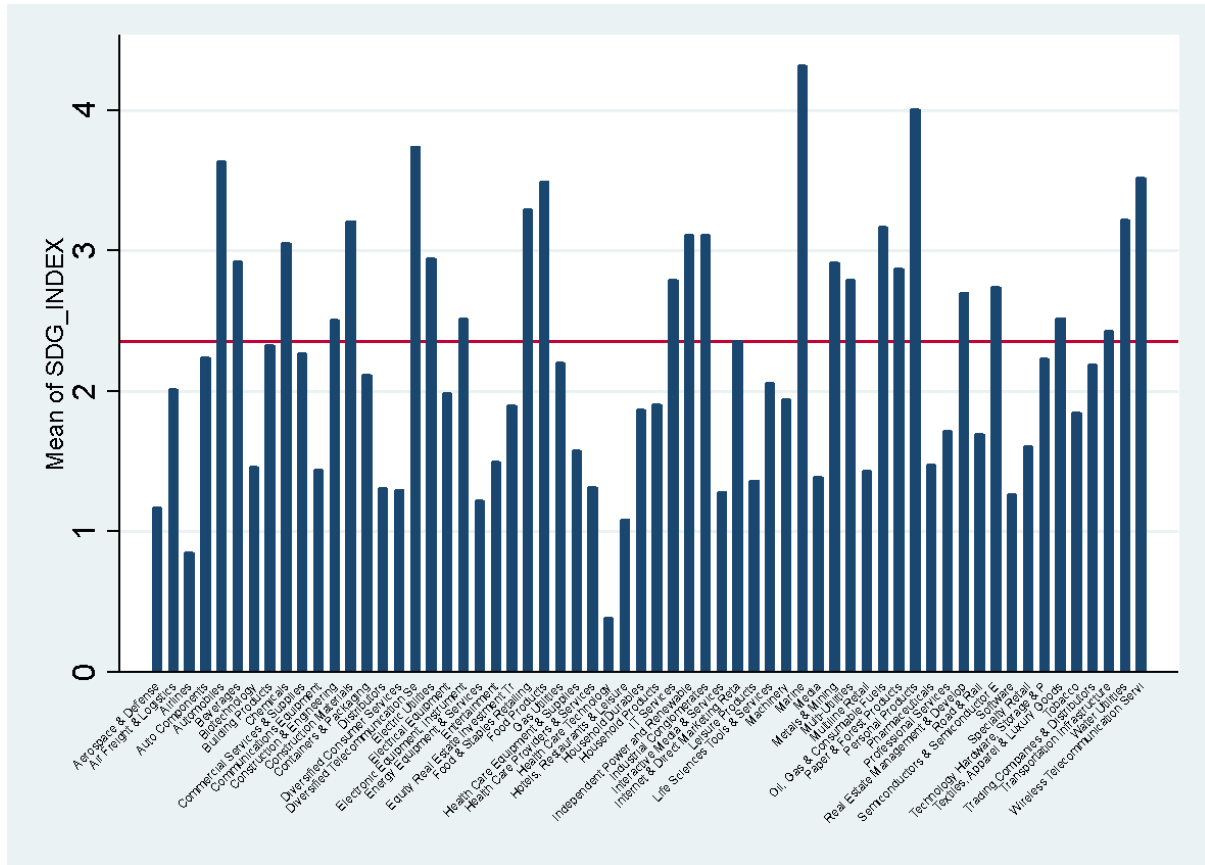
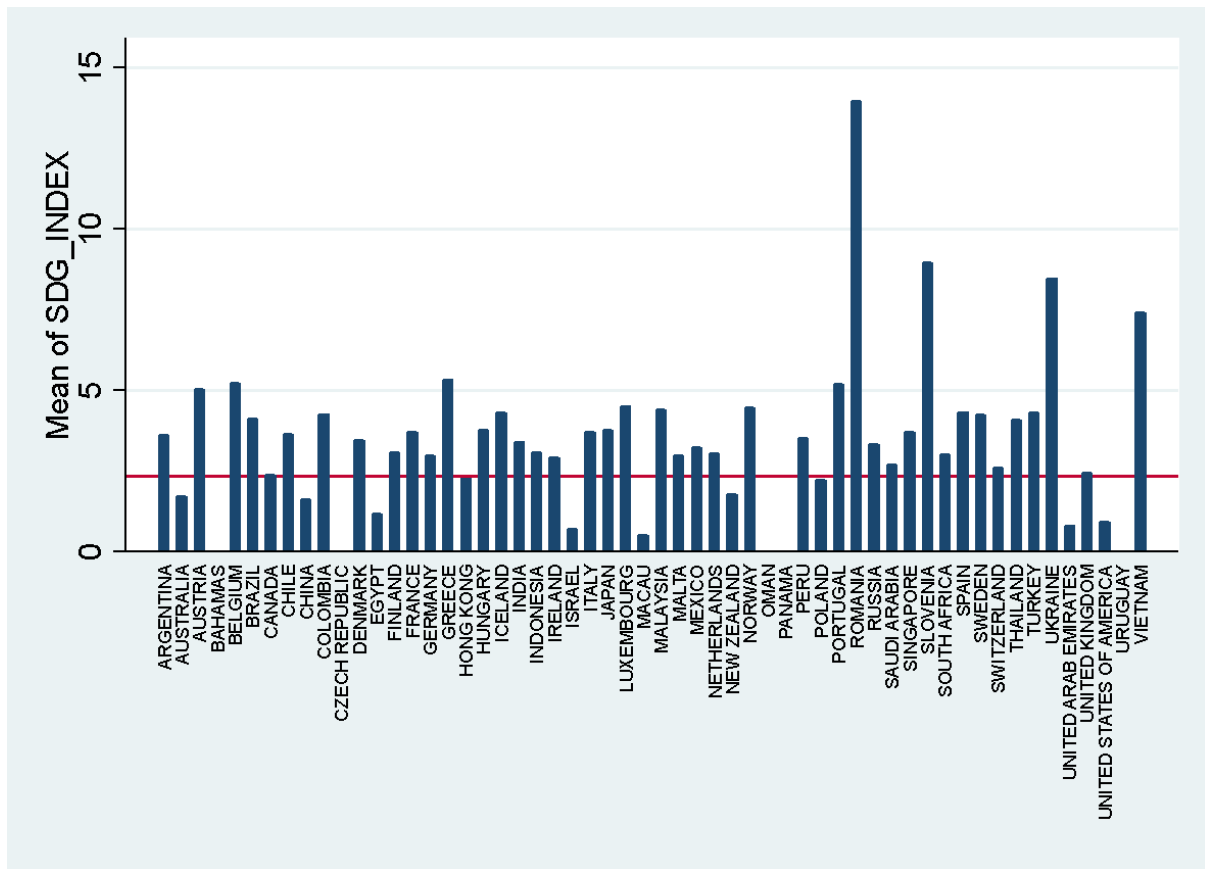


Figure 2: Mean of SDG Index per country



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