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RESEARCH ARTICLE

Sustainable institutional investors, corporate sustainability performance, and corporate tax avoidance: Empirical evidence for the European capital market

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Abstract

This study addresses the influence of sustainable institutional investors (SII), based on the signatory status of the UN Principles for Responsible Investment (PRI), on corporate tax avoidance. Moreover, the moderating influence of corporate sustainability performance (CSP) is analyzed. The analyses concentrate on a European sample consisting of 1689 firm-year observations between 2014 and 2020 (EUROSTOXX 600) embedded in a stakeholder agency theoretical framework. Correlation, regression, and robustness analyses are conducted. The results are in line with prior studies on equity ownership and tax avoidance and indicate that SII have a negative impact on tax avoidance and that CSP strengthens this negative effect. These results are robust to a battery of sensitivity analyses. SII represent a major monitoring mechanism in promoting responsible tax behavior, which is in line with other stakeholders' interests. Tax avoidance should be integrated into overall sustainability management to realize an increased firm reputation. As the European Commission initiated several regulations on sustainable finance, sustainability reporting, and tax disclosure, the empirical results stress the interdependencies between ownership structure, CSP, and tax avoidance. The study makes a major contribution to prior analyses, as this study is the first to assess the link between SII and tax avoidance and the moderating impact of CSP to urge top management to increase sustainability efforts.

KEYWORDS

corporate sustainability performance, stakeholder agency theory, sustainable corporate governance, sustainable institutional investors, tax avoidance

1 | INTRODUCTION

This analysis concentrates on the effect of sustainable institutional investors (SII), based on the signatory status of the UN Principles for Responsible Investment (PRI) on corporate tax avoidance. Moreover, we include corporate sustainability performance (CSP) as a possible

moderator of this relationship. The research contributes to prior studies that have addressed the impact of specific corporate governance characteristics on corporate tax avoidance, such as management compensation (Rego & Wilson, 2012), board composition (Lanis & Richardson, 2011), auditing (Klassen et al., 2016), and ownership structure (Badertscher et al., 2013), with heterogeneous results.

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In detail, only a few studies have analyzed the impact of institutional ownership on tax avoidance, with both positive (e.g., Khan et al., 2017) and negative results (e.g., Alkurdi & Mardini, 2020). Ownership concentration (Jiang et al., 2021), hedge fund intervention (Cheng et al., 2012), and foreign institutional ownership (Hasan et al., 2022) moderate the relationship between institutional ownership and tax avoidance. Moreover, we recognized that studies regarding the impact of sustainable corporate governance on CSR outputs (e.g., Garcia Martin & Herrero, 2020; Giannarakis et al., 2018; Stanny & Ely, 2008) have increased. However, sustainable board characteristics, such as gender diversity, sustainability expertise (e.g., CSR committees), and sustainability-related compensation systems, have mainly been addressed (Velte, 2023a).

Given the growing importance of recognizing sustainability aspects in investment decisions by institutional investors (e.g., Reverte, 2016; Utz, 2019), this analysis focusses on SII as another sustainable corporate governance mechanism that is consistent with sustainable boards. As SII have considerable experience and resources, they should mainly influence corporate sustainability strategies and thus reduce tax avoidance. Moreover, SII may be active owners and monitors and should pressure management to implement sustainable business models and strategies (Focke, 2022). Thus, we expect that SII are aware of stakeholder concerns, such as climate change, board gender diversity, and other global sustainability challenges. We refer to Dyck et al. (2019) and structured institutional owners by whether they signed the UN PRI as SII (Focke, 2022).

Our analysis contributes to prior research on institutional ownership and tax avoidance. Consistent with the increased importance of sustainability within investment decisions, this study explicitly concentrates on the impact of SII on corporate tax avoidance and assumes a negative relationship. We are not aware of any prior studies regarding this link. Empirical research on the impact of SII on CSR performance has represented an attractive research topic in recent years (e.g., Dyck et al., 2019; Kordsachia et al., 2022). Moreover, we stressed that the number of studies on the link between CSR performance and tax avoidance has increased (e.g., Kovermann & Velte, 2019). In this study, we integrate these two research strengths as SII should impact the degree of tax avoidance and CSR performance should moderate this link. We are interested in the monitoring role of SII as substantial contributors to ethical management. SII should urge for reduced tax avoidance in line with stakeholder interests. By relying on this setting, we contribute mainly to prior research and like to guide business practices and regulatory bodies. As regulatory bodies assume that sustainable finance may be a significant motivation for top managers to change their tax and CSR strategies, our analysis is mainly relevant.

The analyses concentrate on a European sample consisting of 1689 firm-year observations between 2014 and 2020 (EUROSTOXX 600) embedded in a stakeholder agency theoretical framework. We focus on the European capital market as a unique regulatory setting for the following reasons. In contrast to other regimes, the European Commission (EC) started the European Union (EU) Green Deal project to achieve climate neutrality until 2050. To fulfill this ambitious goal,

many sustainability reporting, corporate governance, and finance regulations have been implemented. Since the 2017 financial year, some public interest entities (PIEs) must publish non-financial declarations. The new EU directive on Corporate Sustainability Reporting (CSRD) of 2022 led to a mandatory full environmental, social and governance (ESG) report as part of the management report for an increased number of corporations. Moreover, in 2021, the EU implemented a new directive on Country-by-Country-Reporting for specific multinational corporations to increase tax transparency and responsible tax management. These regulatory aspects stress the need for empirical research on the European capital market. As such, empirical quantitative analyses as correlation, regression, and robustness analyses have been conducted. The results indicate that SII negatively affect the degree of tax avoidance and that CSP strengthens this negative effect. These results are robust to a battery of sensitivity analyses. SII represent a major monitoring mechanism for promoting responsible tax behavior which is in line with other stakeholders' interests. Our results are consistent with prior studies on equity ownership and tax avoidance (Alkurdi & Mardini, 2020; Dakhli, 2022; Hasan et al., 2022; Khurana & Moser, 2013; Moore, 2012; Taylor & Richardson, 2013; Ying et al., 2017).

We strongly recommend that tax avoidance should be integrated into overall sustainability management to increase a firm's reputation. As the EC initiated several regulations on sustainable finance, sustainability reporting, and tax disclosure, the empirical results stress the interdependencies between ownership structure, CSP, and tax avoidance. This study provides a major contribution to prior analyses, as this study is the first to assess the link between SII and tax avoidance and the moderating impact of CSP to urge top management to increase sustainability efforts.

Our analysis is structured as follows. First, we present a stakeholder agency theoretical foundation, followed by a short literature review on the relationship between SII, CSP, and tax avoidance and then our hypotheses. The data and methodology of the empirical analysis include the sample selection, main variables, and regression models. We then focus on the research results of the correlations, regression, and robustness analyses. Moreover, a discussion with theoretical and practical implications, limitations, and precise research recommendations is included. A summary is also provided.

2 | THEORETICAL FRAMEWORK, LITERATURE REVIEW, AND HYPOTHESES DEVELOPMENT

2.1 | Role of SII

In 2006, the UN PRI network was introduced by some investors assuming that an economically efficient, sustainable global financial system is important for long-term value creation (Bauckloh et al., 2023; UN PRI, 2022). Former UN Secretary-General Annan initiated the UN PRI as an alignment with the UN Global Compact as one of the world's most important frameworks on sustainable business. The UN PRI



stresses the need to recognize ESG factors in the investment decision-making process (Bauckloh et al., 2023; UN PRI, 2022), which should increase investor attraction to sustainable investments (UN PRI, 2022). In previous years, the UN PRI became one of the most important voluntary guidelines for sustainable investments (Velte, 2023b). Investors who joined this network are called “UN PRI signatories”, as they signed a joint commitment to integrate the following six PRI in their asset management approach: (1) to include ESG issues into investment analysis and decision-making processes, (2) to be active owners and incorporate ESG aspects into ownership policies and practices, (3) to seek appropriate ESG reporting by the entities in which signatories invest, (4) to promote acceptance and implementation of the principles within the investment industry, (5) to work together to enhance the effectiveness in implementing the principles, and (6) to report their activities and progress toward implementing the principles (UN PRI, 2022). UN PRI signatories must pay membership fees based on the amount of assets under management (Bauckloh et al., 2023; UN PRI, 2022). We also stress that most sustainable investors who sign the UN PRI belong to institutional investors (Kordsachia et al., 2022; UN PRI, 2022).

We further stress the importance of institutional ownership as a major monitoring mechanism. First, in contrast to non-institutional ownership (e.g., private investors), institutional owners have more experience and resources and thus mainly influence corporate strategies. Several institutions are active owners who monitor the boards of directors of investment firms and pressure management to increase corporate sustainability efforts (e.g., Basse Mama & Mandaroux, 2022). Most of these institutions have a highly complex portfolio of firms from an international perspective. As sustainability topics (e.g., climate change or biodiversity) represent global challenges, we expect that institutions are aware of stakeholder concerns (Velte, 2023a, 2023b). Consequently, institutions tend to demand more corporate sustainability information and successful management tools compared with other forms of equity ownership and pressure management to strengthen their sustainability performance. Second, as institutional investors invest money on behalf of others, the literature stresses their special stewardship function (e.g., based on compliance with national stewardship codes), which should also increase their probability of becoming sustainable investors and long-term oriented (Klettner, 2021). In line with these remarks, institutional investors and their activism related to sustainability issues have greatly increased (e.g., Chang et al., 2021). From an international perspective, the largest listed firms are currently owned by institutions (Li, Liu, et al., 2021; Li, Wang, et al., 2021).

2.2 | Concept of tax avoidance

Corporate tax avoidance as “anything that reduces the firm's taxes relative to its pretax income” (Dyreng et al., 2010), covers a broad range of activities that may be “aggressive” and are either legal or illegal. During the last decade, researchers, regulators, and business practice have controversially discussed tax avoidance, as public concerns on irresponsible tax strategies of multinational group corporations,

such as Apple, Facebook, and Starbucks, have started (Davis et al., 2016). In this context, researchers have emphasized that one out of 10 US firms has effective tax rates (ETR) below 20% between 2005 and 2016 (Thomsen & Watrin, 2018).

Empirical research has largely used ETR and book-tax-differences (BTD) as tax avoidance proxies (Kovermann & Velte, 2019). ETR, as the ratio of tax expenses to pretax book income, represents an inverse measure of tax avoidance and can be easily measured from financial statements. The literature differentiates various ETR proxies, such as Generally Accepted Accounting Principles (GAAP) (Phillips, 2003), current (Gupta & Newberry, 1997), and cash ETR (Dyreng et al., 2008). BTD, as the difference between book income and taxable income (Hanlon, 2005), is also well-established. A few studies have also included other tax avoidance proxies, such as tax shelters (e.g., Wang et al., 2021).

2.3 | Impact of SII on tax avoidance

From a theoretical perspective, the motivations of top management to conduct tax avoidance are ambitious. The classical principal agent theory (Jensen & Meckling, 1976; Ross, 1973) assumes that tax avoidance is in line with shareholders' interests because tax avoidance may push cash flows and after-tax incomes (Austin & Wilson, 2017). In contrast to this theory, stakeholder agency theory (Hill & Jones, 1992) stresses that publicly known tax avoidance leads to negative stakeholder reactions and bad firm reputation, thus decreasing firm value. Prior research on ownership structure and tax avoidance predominantly referred to principal agent theory and the separation of ownership and control (Badertscher et al., 2013). In this context, the classical agency theory assumes that principals are risk neutral (Demski & Feltham, 1978), as they hold stocks in highly diversified portfolios. The assumption of risk neutrality may be useful in the case of free float; however, it is not realistic for every shareholder (Shleifer & Vishny, 1986). Therefore, we need a more nuanced analysis of ownership structure. Specific (short-term) shareholders may like an increased level of tax avoidance to promote their own benefits, such as dividends, as tax avoidance strategies are linked to increased after-tax cash flows. In contrast to this feature, more risk averse (sustainable) shareholders recognize the risk of low firm reputation as a reaction to publicly known tax avoidance, which decreases firm values. Sustainable investors pressure management to decrease tax aggressiveness, which is consistent with other stakeholders' demands. Thus, managers select a level of tax avoidance, which is in line with the interests of relevant shareholders, as long as strong monitoring and incentive alignment are implemented (Fama, 1980). Institutional investors, in contrast to private investors, invest money on behalf of others, such as pension funds, mutual funds, banks, and insurance firms (Shleifer & Vishny, 1986). The literature stresses that institutional investors fulfill a major stewardship function (Klettner, 2021) that is linked to active monitoring and increased expertise. Based on their exit and voice options, they pressure the management to fulfill their individual preferences. As classical agency theory assumes that

institutional investors' preferences are homogeneous (Jensen & Meckling, 1976), we refer to stakeholder agency theory (Hill & Jones, 1992). Therefore, firms must recognize a broad range of stakeholder interests to reduce agency conflicts. Environmental, social, and governance goals represent major stakeholder interests which are also related to the information needs of SII.

Information asymmetries and conflicts of interests between management and stakeholders are reduced if the top management lowers the level of tax avoidance. Otherwise, negative stakeholder reactions may occur. Given their voting power and ability to influence business strategies, SII engage in active oversight and push for less tax avoidance. Monitoring efforts to decrease tax avoidance may be useful for SII to the extent that they secure additional investment inflow from their ethically motivated client base, and SII can take the exit or voice option (Hirschman, 1970). First, they may threaten the executive directors to leave the firm as an exit option when the institutional investors are not satisfied with them. Second, they may hold their investment in the firm and pressure management as an active monitoring (voice option) to change firm strategies. Institutional investors have several channels to exercise this pressure. The main examples are, among others, letter writings, proxy battles, litigation, publicity campaigns, dialog with executives or the full board, asking questions at the general meeting, shareholder proposals, or say-on-pay-votes (Obermann & Velte, 2018; Velte & Obermann, 2021). As institutional investors are also represented as nonexecutive board members (one-tier system) or members of the supervisory board (two-tier system), a strong link is observed between the monitoring function of shareholders and the board of directors. Thus, we assume, that the board of directors represents a major channel for institutional investors to reach their goal of increased corporate sustainability (Federo et al., 2020). Among others, SII pressure the management to increase sustainable board composition (e.g., gender diversity, sustainability expertise via chief sustainability officers or CSR committees), and CSR-related compensation packages of the executives.

Researchers have largely analyzed the impact of corporate governance on tax avoidance during the last decade (Armstrong et al., 2015; Bauer, 2016), which “deals with the ways in which suppliers of finance to corporations assure themselves on getting a return on their investment” (Shleifer & Vishny, 1997). The main goal of corporate governance is for the management to act in line with shareholders' and other stakeholders' interests, leading to firm value maximization. A growing body of research has also analyzed the influence of institutional ownership on tax avoidance with both positive (Bird & Karolyi, 2017; Chen et al., 2019; Cheng et al., 2012; Jiang et al., 2021; Khan et al., 2017; Li, Liu, et al., 2021; Li, Wang, et al., 2021) and negative results (Alkurdi & Mardini, 2020; Dakhli, 2022; Hasan et al., 2022; Khurana & Moser, 2013; Moore, 2012; Taylor & Richardson, 2013; Ying et al., 2017). In detail, the ratio of institutional ownership increases (Bird & Karolyi, 2017; Jiang et al., 2021; Khan et al., 2017) or decreases (Alkurdi & Mardini, 2020; Dakhli, 2022; Moore, 2012; Taylor & Richardson, 2013; Ying et al., 2017) tax avoidance. Few studies related to institutional investor heterogeneity and have stressed that the reductions of

dedicated institutional investors (Li, Liu, et al., 2021; Li, Wang, et al., 2021), quasi-indexer institutions (Chen et al., 2019), and hedge fund intervention (Cheng et al., 2012) increase tax avoidance. Moreover, foreign institutional ownership (Hasan et al., 2022) and long-term institutions (Khurana & Moser, 2013) reduce tax avoidance.

We are aware of the controversial results regarding the impact of institutional ownership on tax avoidance and assume that only specific institutions push their management to increase responsible tax practices. Institutional investors may rely on a classical “shareholder value maximization” goal and pressure management to increase short-term financial outputs. This issue implies an increased amount of tax avoidance (decreased tax payments), as potential dividend payments may be higher. Short-term institutional investors may not care much about CSR issues and long-term investments, which may explain the research results indicating a positive impact of institutional ownership on tax avoidance (e.g., Chen et al., 2019; Cheng et al., 2012; Li, Liu, et al., 2021; Li, Wang, et al., 2021). As we strictly refer to SII and their ethical attitude toward corporate sustainable efforts, in line with our stakeholder agency theoretical framework, SII fulfill a specific stewardship function to include environmental, social and governance aspects in their decision making (Focke, 2022; Velte, 2023b). Consequently, we are congruent with studies that have found a negative relationship between institutional owners and tax avoidance (Alkurdi & Mardini, 2020; Dakhli, 2022; Hasan et al., 2022; Khurana & Moser, 2013; Moore, 2012; Taylor & Richardson, 2013; Ying et al., 2017). Tax avoidance contrasts with sustainability management processes and stakeholder demands. SII who joined the UN PRI are requested to be active monitors of the firm due to sustainable business practices. Thus, tax avoidance practices should be recused, as they lead to future negative stakeholder reactions (e.g., by customers, suppliers, or NGOs) and reduced firm reputation if tax avoidance becomes public. Thus, in line with stakeholder agency theory, we posit the following hypothesis:

Hypothesis 1. The ratio of SII is negatively associated with tax avoidance.

2.4 | CSP as a moderator of the link between SII and tax avoidance

In line with the controversial impact of institutional ownership on tax avoidance, CSP and tax avoidance may be positively or negatively related (Kovermann & Velte, 2021). The classical agency theory argues that the key interests of shareholders to increase financial performance are neglected if material investments in CSP and higher tax payments will arise (Jensen & Meckling, 1976; Ross, 1973). Shareholders pressure management to increase financial outputs and dividends. However, CSR has the potential to establish a positive moral capital among stakeholders that provides insurance-like protection against reputational risks to the firm and therefore may contribute to long-term shareholder wealth (Kovermann & Velte, 2021). As tax

avoidance also creates reputation risks for firms, CSP may compensate for increased tax avoidance strategies as a potentially safe harbor. This decoupling or CSR washing strategy indicates that firms both increase CSP and tax avoidance. In contrast to this issue, the stakeholder agency theory assumes that tax payments benefit a wide range of stakeholders and stakeholders prefer both firms with increased CSP and ethical tax practices (Hill & Jones, 1992). The implementation of a sound stakeholder management system will lead to increased CSP if stakeholders are satisfied with corporate practices. Intrinsic managers will also include tax planning and management into overall sustainability management processes. Thus, CSP and tax avoidance are classified as opposite corporate strategies and should be negatively related.

An increased number of studies have addressed the impact of CSR on tax avoidance. CSP and tax avoidance may be negatively related (Huang et al., 2017; Jones et al., 2017; Kim & Im, 2017; Mao & Wu, 2019; Mgbame et al., 2017; Muller & Kolk, 2015; Zeng, 2016). A few studies have also stressed the positive impact of CSP on tax avoidance (Davis et al., 2016; Gulzar et al., 2018; Zeng, 2019).

We have already stated that SII are a major monitoring tool in both including sustainability strategies and reducing tax avoidance (Focke, 2022). SII may decrease the central agency problems of information asymmetries and conflicts of interest between managers and stakeholders (Hill & Jones, 1992). The monitoring function of SII, which leads to responsible tax behavior, is more successful if corporations are already active in (other) sustainability practices and thus CSP is increased. Investments in sustainability can be classified as a special form of strategic investments by firms to achieve long-term (non) financial success, and SII may be involved in such decisions.

A growing body of research has investigated the impact of SII on corporate sustainability outputs (e.g., Dyck et al., 2019; Gloßner, 2019; Kim et al., 2019). In detail, Dyck et al. (2019) found that SII positively influence firms' environmental and social performance. Moreover, Kim et al. (2019) stressed that local, socially responsible investment funds reduce the quantity of toxic chemicals. Alda (2019) also found that socially responsible funds and environmental performance are positively related. More recently, Kordsachia et al. (2022) documented the positive impact of SII on environmental (climate) performance.

In our moderating analysis, we combine the research strands on (1) the impact of institutional ownership on tax avoidance, (2) the impact of SII on CSR performance, and (3) the link between CSR performance and tax avoidance. Consistent with the stakeholder agency theory and prior literature, we assume that CSP, as a moderator variable, strengthens the negative link between SII and tax avoidance. This feature can be explained by the main interdependency between ethical tax behavior and CSR strategies, the stewardship function of SII to increase environmental, social, and ethical tax behavior and the increased expertise and power of SII to urge management in this direction. As a consequence, we state the following hypothesis:

Hypothesis 2. The negative link between SII and tax avoidance is strengthened by CSP.

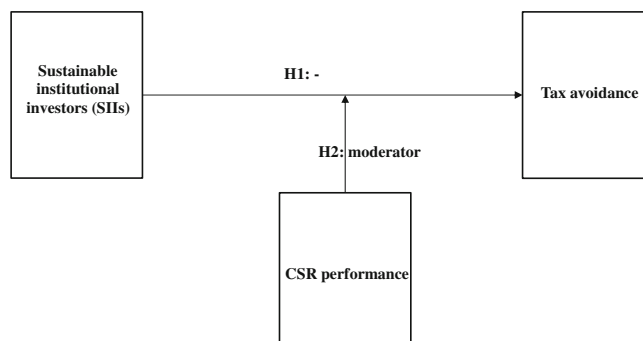


FIGURE 1 Research framework.

Figure 1 shows an overview of our research framework.

3 | DATA AND METHODOLOGY

3.1 | Sample selection

We focused on firms listed in the EUROSTOXX 600 from 2014 to 2020. We hand-collected the UN PRI signatory statuses of investors from the UN PRI signatory and outreach. The firm structure of each signatory was analyzed, and subsidiaries were included as signatories if they communicated their engagement with the UN PRI on the company's website. This strategy overcomes possible concerns over the applicability of the UN PRI to the lower-level units of parent companies. Detailed information about each company's 100 largest shareholders was retrieved using the unique InvestorPermId from the Refinitiv database in line with prior research (Focke, 2022; Kordsachia et al., 2022). This database collects ownership information from various sources, such as SEC 13F filings, annual reports, mutual fund aggregates, IPO prospectuses, and the UK Share Register. The UN PRI signatory status was matched based on the names of individual shareholders. For each firm-year observation, the percentage of total shares outstanding owned by UN PRI signatories was calculated and we matched this aggregated variable with the Refinitiv database using unique instrument codes.

As we previously mentioned, the European capital market as a unique setting for empirical research was selected due to the increased regulations applied to sustainable management and tax transparency over the last few years. The 2014 financial year was the starting point, because this was the year when the European standard setter published the Non-Financial Reporting Directive, leading to a mandatory non-financial declaration. The included firms cover approximately 90% of the free-float market capitalization of the European stock market. We obtained primary data from the Refinitiv database. In line with prior studies, we dropped all financial services companies due to their specific capital structure and regulatory requirements. Missing (non)-financial information meant fewer firm-year observations. Table 1 provides an overview of the final sample, with 1689 firm years-observations.

TABLE 1 Final sample.

	2014	2015	2016	2017	2018	2019	2020
Listed European companies in the STOXX Europe 600	600	600	600	600	600	600	600
Less							
Financial services firms	131	131	131	131	131	130	131
Observations with missing firm-level data on Eikon database	227	227	227	227	227	230	230
Final Sample (base regression) $n = 1689$	242	242	242	242	242	240	239

TABLE 2 Variables of the study.

Panel A: Dependent variables	
CETR	Cash taxes paid scaled by pretax income. CETR is set to missing when the denominator is zero or negative. We winsorize CETR to the range [0, 1].
TBTD	Total book-tax differences, computed following Li, Liu, et al. (2021); Li, Wang, et al. (2021) as: $TBTD_t = \frac{TXDI_t + (STR - ETR_t) \times PI_t}{AT_{t-1}}$ Where TXDI is deferred tax expense, STR is the corporate statutory tax rate, ETR is income tax expense divided by pretax income, PI is pretax book income, and AT is total assets.
Panel B: Independent variable	
SII	Total equity owned by the firm's largest 100 investors that are signatories to the UN PRI (hand-collected)
Panel C: Control variables	
CSP	Environmental performance (Pillar score measuring a company's impact on living and non-living natural systems, including the air, land, and water, as well as complete ecosystems) + Social performance (Pillar score measuring a company's capacity to generate trust and loyalty with its workforce, customers, and society)/2 obtained from Eikon
SIZE	Firm size = natural logarithm of total assets obtained from Eikon
ROA	Return on assets = (Net income before preferred dividends + ((Interest expense on debt-interest capitalized) × (1 – Tax rate)))/Average of last year's and current year's total asset obtained from Eikon
LEV	Leverage = Long-term debt scaled by total assets obtained from Eikon
R&D	(Research and Development Expense)/(Net Sales or Revenues) obtained from Eikon
BOARDIN	Board independence = (Independent board members)/(Total number of board members) obtained from Eikon.
BOARDS	Board size = natural logarithm of the amount of directors on the board obtained from Eikon.
ANALYST	Natural logarithm of the number of analysts following the firm obtained from Eikon.
FREE_FLOAT	Free float as a percentage of shares outstanding obtained from Eikon.

3.2 | Dependent variables

In line with prior research (e.g., Li, Liu, et al., 2021; Li, Wang, et al., 2021), we recognized two popular tax avoidance measures as dependent variables. First, the cash effective tax rate (CETR) equals the cash tax paid scaled by the pretax income. The second, the total book-tax differences (TBTD), is estimated following the methods of Li, Liu, et al. (2021); Li, Wang, et al. (2021). A lower CETR value or a higher TBTD value indicates that firms engage in more temporary tax planning strategies (i.e., more tax avoidance). To increase comparability, we multiplied CETR by -1 so that both measures showed the same direction.

3.3 | Independent and moderator variables

We referred to prior studies (Dyck et al., 2019; Gloßner, 2019; Kordsachia et al., 2022) and selected SII as our independent variable.

SII can be classified as institutional investors with signatures to the UN PRI and thus actively monitor the sustainability efforts of the invested firms.

Our moderating variable CSP is a proxy for corporate sustainability performance. CSP was collected by Refinitiv. The total CSP score can be classified as an aggregated value of CSP in many environmental, social, and governmental items, such as employment quality, health and safety, training and development, human rights, and community. Each item was divided into a set of key performance indicators, for example, work life balance or training hours. The overall CSP score implies an equal weighting of all relevant data points and z-scoring, which were then compared with the data points of all other companies to obtain a relative measure of performance expressed as a percentage ranging from 0% to 100% (a z-score is a relative measure indicating the value of the standard deviation of a given observation from the mean value of all other observations). As SII are a major corporate governance tool, we deleted the governance score and included only the environmental and social sub-pillars of CSP.

3.4 | Control variables

We included several control variables commonly used in this research area (e.g., Kim et al., 2019; Kordsachia et al., 2022). Firm size (SIZE) is included as the natural logarithm of total assets because firm size is related to the economics of scale or scope, which may be relevant to competitive aspects. We assumed a positive impact on tax avoidance. Financial performance must also be included as it may positively influence tax avoidance. We included return on assets (ROA). We also recognized leverage (LEV) to control the financial stability of the firm. Furthermore, we included R&D expenses (R&D) as a major proxy for corporate innovation and assumed a positive impact on tax avoidance.

As corporate governance variables, that should have a positive impact on tax avoidance, we first recognized board independence (BOARDIN). Board independence is measured as the ratio of independent directors on the board as reported. Second, board size (BOARDS) refers to the logarithm of the number of board directors. We also recognized the extent of analyst following (ANALYST) and the percentage of shares held by public investors (FREE_FLOAT) as external corporate governance mechanisms and assumed a positive impact on tax avoidance. An overview of the included variables is provided in Table 2.

3.5 | Regression models

To analyze the impact of (lagged) SII on firm tax planning decisions and to test hypotheses 1 and 2, we estimated the following regression models:

1. $CETR_{it+1}$ or $TBTD_{it+1} = \alpha_0 + \beta_1 SII_{it} + \beta_2 CSP_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 LEV_{it} + \beta_6 R\&D_{it} + \beta_7 BOARDIN_{it} + \beta_8 BOARDS_{it} + \beta_9 ANALYST_{it} + \beta_{10} FREE_FLOAT_{it} + e_{it}$.
2. $CETR_{it+1}$ or $TBTD_{it+1} = \alpha_0 + \beta_1 SII_{it} + \beta_2 CSP_{it} + \beta_3 SII * CSP_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 LEV_{it} + \beta_7 R\&D_{it} + \beta_8 BOARDIN_{it} + \beta_9 BOARDS_{it} + \beta_{10} ANALYST_{it} + \beta_{11} FREE_FLOAT_{it} + e_{it}$.

Based on significant Lagrange multiplier tests, F-tests for overall significance, and Hausman tests, we used panel data regression. We included country-fixed effects, industry-fixed effects based on two-digit SIC codes, and year-fixed effects. The two tax avoidance measures (CETR and TBTD) were forwarded by 1 year to model a possible causal relationship and mitigate potential endogeneity concerns due to reverse causality. We used fixed effect panel regressions with robust standard errors adjusted for heteroscedasticity. We calculated the variance inflation factors (VIF) to test for multicollinearity. Multicollinearity may occur if the VIF is higher than 10 (Hair et al., 2009). In our data, no VIF is higher than 3.8; thus multicollinearity should not be realistic.

TABLE 3 Descriptive statistics.

Variable	Mean	Median	SD	Min	Max
Panel A: Dependent variables					
CETR	0.245	0.235	0.201	0.045	0.476
TBTD	0.008	0.005	0.018	0.001	0.021
Panel B: Independent variable					
SII	0.190	0.158	0.175	0.000	0.858
Panel C: Control variables					
CSP (also moderator)	0.635	0.528	0.141	0.000	0.826
SIZE	18.932	20.131	1.798	11.314	27.641
ROA	0.178	0.121	0.014	0.012	0.528
LEV	0.131	0.125	0.404	0.242	0.602
R&D	0.164	0.298	0.128	0.000	0.498
BOARDIN	0.518	0.602	19.412	0.000	1.000
BOARDS	9.432	9.531	3.742	3.000	27.000
ANALYST	2.432	2.531	0.598	0.000	3.789
FREE_FLOAT	0.612	0.793	0.298	0.000	1.000

4 | RESEARCH RESULTS

4.1 | Descriptive statistics

Table 3 reports the descriptive statistics of the two main measures of tax avoidance, SII, and control variables. The average cash CETR is 0.245, whereas the average TBTD is 0.08. On average, SII own 19.00% of the equity outstanding, with a median value of 15.8%. The average CSP of our sample is 0.635 with a median value of 0.528.

4.2 | Correlation results

Table 4 presents the Pearson correlation matrix for the dependent, independent, as well as the control variables. As supposed, the SII and CSP are negatively significantly correlated with CETR and TBTD.

4.3 | Regression results

This section presents the main regression results of the impact of SII on tax avoidance (Table 5). Models 1 and 2 include the link between SII and our tax avoidance measures and Models 3 and 4 include the moderator variable (SII*CSP). We determined that SII is negatively and significantly linked with CETR and TBTD. Thus, tax avoidance is reduced and hypothesis 1 is supported. Regarding Models 3 and 4, we identified that the significant negative link between SII and our two tax avoidance proxies is more pronounced by CSP. Thus, hypothesis 2 is also supported. The degree of R² is satisfactory.

TABLE 4 Pearson correlation matrix.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) CETR	1.000											
(2) TBTD	0.442***	1.000										
(3) SII	-0.353**	-0.242**	1.000									
(4) CSP	-0.352**	-0.143**	0.354**	1.000								
(5) SIZE	0.225**	0.214**	0.223**	0.124	1.000							
(6) ROA	0.321**	0.333**	0.241**	0.312*	0.114*	1.000						
(7) LEV	-0.124**	-0.142**	-0.054	-0.111	-0.142	-0.112*	1.000					
(8) R&D	0.141**	0.156**	0.124*	0.511	0.421*	0.114*	-0.131*	1.000				
(9) BOARDIN	-0.178**	-0.221**	0.141*	0.251*	0.221*	0.153**	-0.142*	0.121*	1.000			
(10) BOARDS	0.214**	0.214*	0.514	0.114*	0.251**	0.341**	0.531	0.244**	0.042	1.000		
(11) ANALYST	0.141*	0.114*	0.153*	0.215	0.121**	0.091	0.212*	0.114*	0.131	0.125	1.000	
(12) FREE_FLOAT	0.221**	0.151*	0.155*	0.421*	0.114*	0.115	0.413*	0.224	0.012	0.314	0.112	1.000

Note: This table represents the correlation coefficients between independent, dependent, and control variables for the whole sample. The variables are defined in Table 2. CETR is multiplied by -1. Significance levels: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

5 | ROBUSTNESS CHECK

Throughout this paper, we employed various panel data methods to mitigate endogeneity concerns. To further mitigate potential endogeneity problems, we applied a two-stage least squares instrumental variable design (2SLS/IV). To perform this method, we constructed the industry-year averages for SII (SII_mean) in line with prior research (Kordsachia et al., 2022). These averages exclude the focal firm of analysis and are therefore regarded as exogenous to tax avoidance. We also deleted any industry-year combinations with fewer than 10 observations. The results shown in Table 6 are consistent with our previous analysis. The second stage coefficients for SII are negative and statistically significant to CETR (-0.496; p -value = 0.000) and TBTD (-0.424; p -value = 0.021). Post-estimation analysis confirms the strength and relevance of our instrument.

6 | DISCUSSION

Our regression analyses indicate that SII and tax avoidance are negatively related, and that CSR performance strengthens this relationship. These results are consistent with both prior empirical research and stakeholder agency theory (Hill & Jones, 1992). The stakeholder agency theory assumes that SII increase sustainability management and responsible tax behavior due to the monitoring function. The decreased level of tax avoidance is linked with reduced information asymmetries and conflicts of interest (agency conflicts). The signature of the UN PRI is connected to the active monitoring and promotion of ethical tax behavior. Among others, sustainable boards may be a major channel for institutional investors to increase the sustainability duties of firms. In this context, CSR performance represents a significant moderator variable that promotes the monitoring function of SII. Thus, CSR performance and ethical tax behavior represent complementary business strategies if a substantive sustainable management system is included. Otherwise, symbolic use of CSR reporting and related performance measures are present. Our main regression results are in line with prior studies, that assume a negative impact of institutional ownership on tax avoidance (Alkurdi & Mardini, 2020; Dakhli, 2022; Moore, 2012; Taylor & Richardson, 2013; Ying et al., 2017) and a positive impact of SII on CSR performance (e.g., Dyck et al., 2019; Kordsachia et al., 2022).

6.1 | Theoretical implications

Initially, we mentioned that most research on the impact of institutional ownership on tax avoidance still relies on classical principal agent theory (Jensen & Meckling, 1976; Ross, 1973), leading to the assumption that institutional investors are homogeneous in their CSR preferences. We contribute to few prior studies on the impact of institutional investor heterogeneity on tax avoidance: lower dedicated institutional investors (Li, Liu, et al., 2021; Li, Wang, et al., 2021), quasi-indexer institutions (Chen et al., 2019), and hedge fund

TABLE 5 Regression analyses.

Variables	Model 1 (CETR)	Model 2 (TBTD)	Model 3 (CETR; Interaction)	Model 4 (TBTD; Interaction)
SII	−0.315** (0.040)	−0.351** (0.042)	−0.224*** (0.022)	−0.226*** (0.020)
CSP	−0.225** (0.015)	−0.244** (0.014)	0.155** (0.051)	0.131** (0.034)
SII*CSP	—	—	0.262*** (0.015)	0.241*** (0.011)
SIZE	2.412** (0.087)	2.451** (0.089)	2.142*** (0.014)	2.140*** (0.015)
ROA	0.415** (0.041)	0.409** (0.043)	0.319** (0.021)	0.321** (0.031)
LEV	−0.179* (0.141)	−0.176* (0.146)	−0.252** (0.254)	−0.255** (0.265)
R&D	0.221* (0.141)	0.208* (0.153)	0.196** (0.146)	0.193** (0.142)
BOARDIN	1.414** (0.041)	1.402** (0.042)	1.561* (0.031)	1.498* (0.029)
BOARDS	2.012 (0.219)	2.029 (0.221)	2.123** (0.031)	2.244** (0.041)
ANALYST	6.113** (0.231)	6.021** (0.241)	6.231** (0.221)	6.198** (0.241)
FREE_FLOAT	0.051 (0.041)	0.048 (0.042)	0.045 (0.044)	0.041 (0.049)
CONSTANT	−1.312** (2.001)	−1.303** (2.002)	−1.441** (2.072)	−1.434** (2.069)
Observations	1689	1689	1689	1689
R ² (adj.)	0.251	0.259	0.219	0.221
Industry FE	YES	YES	YES	YES
Country FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES

Note: This table presents results from panel regressions of sustainable institutional investors (SII) on Cash Effective Tax Rate (CETR) (model 1), on Total Book-Tax Difference (TBTD) (model 2), interaction of corporate sustainability performance (CSP) (models 3–4), and controls over the period 2014–20 for the whole sample. Total variables are explained in Table 2. Robust and clustered (by firm) standard errors are reported in parentheses. The *p* values are two-tailed. The symbols ***, **, and * indicate significance at the 1, 5, and 10% level, respectively. CETR is multiplied by −1.

intervention (Cheng et al., 2012) increase tax avoidance. Moreover, foreign institutional ownership (Hasan et al., 2022) and long-term institutions (Khurana & Moser, 2013) reduce tax avoidance. In our study we include SII as a novel measure of institutional investor heterogeneity and analyze the impact on tax avoidance. Moreover, as SII are directly linked to ESG issues, we include CSP as a useful moderator of this relationship. The inclusion of SII, CSP, and tax avoidance is extremely useful to overcome the non-realistic assumptions of classical principal agent theory. Thus, we adopted an extended stakeholder agency theoretical framework. We stressed the need to include other stakeholders' preferences and the interaction with the decision-making process of SII, who signed the UN PRI. We assumed that SII include other stakeholders' CSR demands in their decisions as part of their stewardship role and reflection on business as part of society.

The change from the principal to stakeholder agency theory is important in this research topic to describe the monitoring role of SII in decreasing tax avoidance and the moderating function of CSR performance. Thus, we encouraged future researchers to include non-shareholder preferences in their theoretical framework and link them with the monitoring role of SII.

6.2 | Practical implications

Our research results have many practical implications. First, firms should be informed of the massive stakeholder awareness on tax avoidance and the moral duty of firms in implementing sustainable management processes (Velte, 2021). Therefore, managers should

TABLE 6 Robustness check (2SLS/IV design).

Variables	Model 5 (first stage)	Model 6 (second stage; CETR)	Model 7 (second stage; TBTD)
SII_mean (instrument)	1.532** (0.031)	–	–
SII	–	–0.496** (0.000)	–0.424** (0.021)
CSP	1.421** (0.043)	–0.253** (0.036)	–0.265** (0.056)
SIZE	0.432 (0.242)	2.232** (0.047)	2.324** (0.056)
ROA	0.398** (0.062)	0.365** (0.052)	0.376* (0.043)
LEV	0.154 (0.123)	–0.151* (0.131)	–0.159* (0.137)
R&D	0.152 (0.241)	0.202* (0.131)	0.214* (0.148)
BOARDIN	1.512** (0.045)	1.412** (0.041)	1.454** (0.039)
BOARDS	1.732** (0.035)	2.031 (0.214)	2.154 (0.212)
ANALYST	6.056** (0.240)	6.176** (0.231)	6.228** (0.242)
FREE_FLOAT	1.451** (0.032)	0.045 (0.153)	0.042 (0.145)
CONSTANT	–1.852** (2.254)	–1.236** (2.143)	–1.244** (2.141)
Observations	1634	1634	1634
R ² (adj.)	–	0.231	0.214
Country FE	YES	YES	YES
Year FE	YES	YES	YES

Note: This table presents results from 2SLS/IV regressions of sustainable institutional investors (SII) on tax avoidance. Model (5) presents first stage results using SII_mean as the dependent variable. Model (6) and (7) present second stage results using Cash Effective Tax Rate (CETR) (model 6) and Total Book-Tax Difference (TBTD) (model 7) as dependent variables. Based on the Hansen J statistic all equations are exactly identified. Robust standard errors in parentheses. The symbols ***, **, and * indicate significance at the 1, 5, and 10% level, respectively. CETR is multiplied by –1.

conduct careful investor analysis and differentiate between specific characteristics of institutional ownership. The traditional assumption that investors dominantly push for financial outputs, thus tolerating tax avoidance strategies, should be questioned. In view of the increased importance of SII in line with the UN PRI and the influence of institutional owners on corporate decisions, executive directors should increase their relations with PRI investors to prevent potential conflicts in the shareholders' meeting. Among other, executives may decide to include a voluntary “say on climate vote” by shareholders to reach more trust for corporate climate strategies. Second, firms should connect their sustainability reports with tax disclosures. Stand-alone sustainability reports, which are consistent with the standards of the Global Reporting Initiative (GRI), are the best practice for international corporations (KPMG, 2022). The new GRI 207 also addresses tax strategies and management processes as a new part of the

sustainability report. More interlinks should be provided between tax reporting and CSR reporting in the future. SII will demand an integration of tax in CSR reports, as it will decrease the probability of greenwashing and symbolic management behavior. In line with our results, the CSR report should both inform about the overall tax strategy of the firm, the goal of ethical tax behavior and on sustainability performance, which should be regarded as complementary issues. As SII are also interested in financial figures, a full integration of financial, tax, and sustainability information is useful in the long run. Few multinational companies have decided to prepare such an integrated report. The German SAP group is a typical example for voluntary integrated reporting. From a European perspective, this factor is crucial, as the new EU Corporate Sustainability Reporting Directive does not integrate tax issues into the new sustainability report. Moreover, in contrast to GRI 207, the future EU public Country-by-Country-Report



will not be a part of the management report and does not contain information on the link between tax strategies and sustainability management. We found a great risk of greenwashing and symbolic use of sustainability reports if the tax strategies are not integrated into the sustainability management process.

6.3 | Limitations and research recommendations

We further stress the major limitations of our analysis. First, the regulatory effects after the financial crisis of 2008–09 include the learning effects of the firm. As our period (2014–20) does not include the recent regulatory initiatives of the EU Green Deal project, future studies should explicitly address this topic. Second, we collected most of our data from the Refinitiv database, leading to subjective influences. Our SII variable is hand-collected and limited to the 100 largest institutions, which also reduces validity. We also excluded other forms of equity ownership, such as family, state, or managerial ownership. Future researchers should also differentiate between certain types and other characteristics of SII, such as foreign, independent, or active owners. Moreover, during recent years, many institutional owners have signed the UN PRI as a “best practice”. However, recent researchers have questioned the relevance of the UN PRI in promoting corporate sustainability (e.g., Bauckloh et al., 2023). The UN PRI and the six principles may represent a “low-hanging fruit” for institutional investors; they are not linked with an ambitious and precise motivation for SII to change their investment behavior. Thus, future researchers should differentiate between the symbolic and substantive use of the UN PRI.

As additional selective research recommendations, future researchers should address institutional ownership heterogeneity in research designs. Among others, scarce information is known about specific institutions, such as pension, mutual, or hedge funds or banks and insurances. Heterogeneity within institutional investors is reflected in the classification approaches of Brickley et al. (1988) (pressure resistant versus pressure sensitive) and Bushee (1998) (dedicated, transient, and quasi-indexes). We question whether these classical identification strategies are still valid. As banks and insurances have traditionally been classified as “gray” and passive monitors, they also appear as dual holders of equity and debt capital and may conduct an active monitoring role nowadays. With few exceptions, prior research has only recognized one type of ownership and has not analyzed the interrelationships between specific categories of ownership, such as the complementary effects of foreign and institutional investors, or the combined effects of ownership concentration and foreign ownership.

Another recommendation for future research is linked to moderator and mediator analyses. We did not find any studies regarding the impact of ownership on tax avoidance with a mediator analysis. Given that ownership may either have a positive or negative impact on tax avoidance, this link is influenced by other drivers as useful channels of the monitoring process.

From a methodological perspective, archival research on the link between ownership and tax avoidance is confronted with massive

endogeneity concerns, such as omitted variable bias and reversed causality. Many studies have not properly checked for endogeneity, solely measuring correlation but not causality. Even though we included panel regression, a time lag, and the instrumental variable approach, causality tests as quasi-natural experiments based on the diff-in-diff approach remain useful (Armstrong et al., 2022). Although diff-in-diff approaches in prior research regarding the impact of ownership on tax avoidance are still rather low, we recognized an increased amount during the past years, especially for studies on institutional ownership (Alharbi et al., 2022). Regression discontinuity models also represent quasi-natural experiments and have similarities to diff-in-diff approaches (Armstrong et al., 2022).

7 | SUMMARY

This analysis addresses the influence of SII on corporate tax avoidance. Moreover, we included the moderating effect of CSP on this relationship. To the best of our knowledge, we presented the first study on this topic. In line with our stakeholder agency theoretical framework (Hill & Jones, 1992), we assumed that SII, as a monitoring tool, increase the awareness of stakeholder demands and thus decrease tax avoidance. A decreased level of tax avoidance is related to reduced information asymmetries and conflicts of interest between the firm and related stakeholder groups.

In view of the great importance of SII and regulatory efforts on sustainability reporting and tax transparency, our study provides a key contribution to prior research on the European capital market. We selected listed European firms (1689 firm-year observations; EUROSTOXX 600) covering the business years 2014–2020. By conducting panel regressions, SII exhibit a negative and significant impact on our two tax avoidance measures (CETR and TBTD). Moreover, the negative relationship between SII and tax avoidance is strengthened by CSP. Thus, the dual existence of sustainable investors and sustainability performance is highly effective in realizing responsible tax behavior. The results are robust after conducting the instrumental variable approach. Moreover, the results are in line with stakeholder agency theory and recent studies, which found a negative link between institutional ownership and tax avoidance (Alkurdi & Mardini, 2020; Dakhli, 2022; Moore, 2012; Taylor & Richardson, 2013; Ying et al., 2017).

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