



Corporate social responsibility and tax avoidance: the effect of shareholding structure—evidence from the UK

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Received: 9 September 2022 / Accepted: 28 January 2023 / Published online: 9 February 2023
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Abstract

During their 47th G7 summit in June 2021, the largest economies agreed to combat tax evasion. This paper investigates tax avoidance phenomenon by examining the possible moderation effect of shareholding structure (internal and external shareholdings), as a corporate governance mechanism, on the relationship between corporate social responsibility (CSR) and tax avoidance. Using a sample of FTSE350 non-financial listed firms from 2002 to 2016, I find that institutional shareholding dampens the positive relationship between firms' social responsibility and tax citizenship. However, the association between corporate social and tax citizenship is magnified for firms with entrenched managerial shareholding. The empirical findings inform tax policymakers and regulators about the need to consider the corporate shareholding structure that magnifies/dampens the tax avoidance risk. Generally, the findings hold for alternative measures of tax avoidance and CSR commitment, two-stage least squares and Tobit regressions, and additional control variables.

Keywords Corporate social responsibility · Tax avoidance · Shareholding structure · The UK

Introduction

This paper investigates whether the association between firms' social responsibility and tax behaviour is moderated by shareholding structure (i.e. internal and external shareholdings) among FTSE350 non-financial listed companies from 2002 to 2016. Firms' contribution of their fair share of taxes is an integrated aspect of their social responsibility towards the broader society. This is because governments use corporate taxes to fund public goods and services (e.g. education and public health care) and consequently improve the welfare of society as a whole (Lanis and Richardson 2012, 2013; Whait et al. 2018; Aronmwan and Okaiwele 2020). Therefore, encouraging firms to contribute their fair share of taxes is one of the main dimensions in many

regional and multinational corporate social responsibility (CSR) and sustainability initiatives worldwide (Lanis and Richardson 2018).

According to HM Revenue and Customs, corporation tax receipts in 2018–19 contributed about £55.1 billion to the UK economy (around 2.6% of GDP) (HMRC, 2019). This shows how vital corporate tax payments are to financing the UK government's public funding plans. Therefore, after extensive coverage in the media, the tax avoidance behaviour of multinational companies (e.g. Amazon, Google, and Starbucks) has attracted public concern.¹ The criticism of this unfavourable behaviour on the part of multinational companies shows how such behaviour could damage their reputations and lead to legitimacy and economic issues (as a result of customer boycott campaigns) (Khan et al. 2017;

¹ <https://www.bbc.com/news/magazine-20560359>, accessed April 25, 2021.

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Kovermann and Velte 2019; Baudot et al. 2020). Recently, the UK government has introduced tax accountability measures through the UK Finance Act of 2016, which requires firms to report their tax strategy for UK subsidiaries. Furthermore, the UK is one of the G7 countries that recently (in June 2021) agreed to deter global tax avoidance by imposing a minimum corporate taxation of 15%.

The general public and many scholars perceive tax avoidance as unethical and immoral because of its negative consequences on the economy and society (Landolf 2006; Williams 2007; Baudot et al. 2020). Additionally, firms have a tendency not to pay their fair share of tax which could destroy their reputation as responsible corporate citizens, despite their other ethical, social, voluntary and philanthropic activities (Khan et al. 2017; Lanis and Richardson 2018; Kovermann and Velte 2019).

On the other hand, the corporate economic benefits of engaging in tax avoidance (such as minimising tax liabilities and increasing cash flows) could outweigh its potential costs (such as reputational loss, penalties and litigation costs). Therefore, managers are encouraged to avoid paying their fair share of tax as this could maximise shareholder benefits, maintain managers' reputations in the employment market and justify their compensation (Khurana and Moser 2013; Qu et al. 2020; Jia and Gao 2021). In addition, firms are responsible for following the letter of the law related to tax payments. Accordingly, they could use complex tax arrangements and opportunities to manage their taxes while claiming to be responsible citizens (Baudot et al. 2020; Ortas and Gallego-Alvarez, 2020). Furthermore, firms' social activities and performance might be a substitute for paying their fair contribution to corporate taxes. This means firms could trade between paying their fair share of taxes and having a high CSR profile in other regards (e.g. social and environmental activities). Davis et al. (2016) report that socially responsible firms are less likely to pay their fair tax burden. Similarly, Fallan and Fallan (2019) document that firms with a high level of voluntary environmental disclosure are more likely to engage in aggressive tax activities.

This inconclusiveness in the theoretical link between CSR and tax avoidance extends to the empirical evidence. The majority of past studies reported a negative relationship between CSR performance and tax avoidance (e.g. Lanis and Richardson 2012, 2015, 2018; Huseynov and Klamm 2012; Hoi et al. 2013; Ortas and Gallego-Alvarez, 2020), while other scholars found a positive link (Landry et al. 2013; Lanis and Richardson 2013; Davis et al. 2016; Fallan and Fallan 2019). Nevertheless, there is a paucity of studies on investing factors that may moderate the relationship between firms' social performance and their tax behaviour, and therefore provides a better explanation of the inconsistent findings on CSR–tax behaviour nexus literature. Additionally,

the direct effect of shareholding structure as an effective corporate governance mechanism on either CSR or corporate tax behaviour has been examined in many past studies (e.g. Desai and Dharmapala 2006; Khurana and Moser 2013; Armstrong et al. 2015; Ying et al. 2017; Chang et al. 2021). Therefore, the current study is motivated by a desire to examine the probable interaction effect of firms' social performance and their shareholding structure on corporate tax behaviour. This means that shareholding structure could affect management decisions on the trade-off between firms' social performance and tax behaviour.

Different countries have dissimilar cultures and legal and institutional settings, which affect stakeholders' expectations and influences on corporate behaviour and decision-making (including CSR activities and tax behaviour) (Kovermann and Velte 2019; Baudot et al. 2020). Institutional shareholding shows a noticeable increase in the UK (Cox et al. 2004). Furthermore, there is an accelerating trend of socially responsible investment where shareholders emphasise the social citizenship profile of their investments (UKSIF 2018). However, the vast majority of the CSR–corporate tax behaviour nexus literature has investigated this link in the US market (e.g. Hanlon and Heitzman 2010; Hoi et al. 2013; Davis et al. 2016; Lanis and Richardson 2018; Baudot et al. 2020), Canada (e.g. Landry et al. 2013), France (e.g. Laguir et al. 2015) or in the Australian context (e.g. Lanis and Richardson 2012, 2013). Therefore, the current study is motivated by a desire to examine the generalisability of these findings and their explanations in other countries, such as the UK, that may have different institutional and legal frameworks (Cox et al. 2004; Kovermann and Velte 2019; Baudot et al. 2020).

This study contributes to the literature on the CSR–corporate tax behaviour nexus in the following ways. First, it examines the intricate association between management, shareholders, stakeholders and firms' social performance in forming corporate tax plans. Specifically, it investigates the moderation effect of shareholding structure (management and institutional shareholdings) on the association between firms' social responsibility and tax behaviour. Therefore, this study answers the calls of past studies to investigate the possible moderation effect of shareholding structure on the CSR–tax avoidance link (e.g. Lanis and Richardson 2018). The current study finds that institutional shareholding negatively impacts (dampens) the relationship between CSR and tax avoidance. The additional analysis shows evidence of the curvilinear effect of managerial shareholding on this link. Specifically, entrenched managerial shareholding positively impacts (magnifies) this relationship and supports corporate citizenship and social responsibility performance, including payment of fair corporate taxes.

Second, the current study supports the negative effect of CSR performance on corporate tax avoidance in the UK



context and therefore confirms the negative link reported by past studies in different contexts (e.g. Lanis and Richardson 2012, 2018; Hoi et al. 2013). Third, it also helps tax policy-makers and regulators to identify corporate tax structure that heightens/ dampens the risk of tax avoidance. Additionally, it furnishes insights to investors and other stakeholders into factors that may strengthen or dilute the link between firms' social responsibility and their tax behaviour, particularly following the recent media coverage and public criticism of the corporate tax behaviour of large companies. Finally, to the best of the author's knowledge, this paper is one of the few that empirically investigate the shareholding moderation factors on the CSR–tax behaviour link and are the first to study these associations in the UK context. For example, Landry et al. (2013) examined the moderation effect of family ownership on the association between CSR and tax aggressiveness based on Canadian data for 2004 to 2008. They found that family ownership structure moderates this relationship.

The remainder of this paper is structured as follows. Section 2 discusses the background, theory and hypotheses development. Section 3 presents the research design. Section 4 reports the results and discussion. Section 5 concludes.

Background and hypothesis development

Firms may use some plans and activities that are outside the spirit of the government legislation to avoid paying their fair taxes. These activities include transferring profits to offshore tax havens and assuming ineligible tax deductions (Lanis and Richardson 2013; Khan et al. 2017; Baudot et al. 2020). Recently, corporates' involvement in aggressive tax planning to minimise their tax burden has received considerable attention from the general public, the media, scholars, governments and multinational institutions (Landry et al. 2013; OECD 2013; Khan et al. 2017; Kovermann and Velte 2019; Baudot et al. 2020; Ortas and Gallego-Alvarez, 2020). This criticism of unethical tax behaviour, particularly that of large multinational firms, escalated after governments suffered from a revenue shortage due to the global financial crisis (Whait et al. 2018).

Firms' social responsibility performance and commitment may be reflected in how they plan and direct their activities (including paying their fair share of the tax burden) to ensure the welfare of the economy and society (Williams 2007; Landry et al. 2013). To fulfil their commitments as responsible corporate citizens, firms usually engage in activities targeting the welfare of society and the environment beyond their legal obligations (European Commission 2011). Firms contribute their fair share of taxes (beyond the letter of government legislation) as part of their social citizenship (Lanis and Richardson 2018; Baudot et al. 2020).

However, both the social activities of firms and their fair tax contribution are associated with benefits and costs to the company and its shareholders (Lanis and Richardson 2013; Halioui et al. 2016; Khan et al. 2017; Kovermann and Velte 2019; Qu et al. 2020). Therefore, the likely effect of shareholding structure on the link between CSR and tax payment is uncertain. Usually, firms intend to minimise their tax payment, but at the same time, they try to avoid the damaging reputational effect of tax avoidance on their social citizenship profile (Landry et al. 2013; Lanis and Richardson 2018). Past studies have examined the direct impact of shareholding structure on firms' social performance or tax payments (e.g. Desai and Dharmapala 2006; Armstrong et al. 2015; Ying et al. 2017). However, the moderation impact of shareholding structure on the link between CSR and tax payment behaviour is still unclear.

Employing one theory to describe the association between CSR, tax avoidance and corporate governance (including shareholding structure) is insufficient to explain these complex relationships (Whait et al. 2018; Kovermann and Velte 2019; Baudot et al. 2020). Therefore, the current study uses agency theory and legitimacy theory in a complementary fashion to explain the possible moderation effect of shareholding structure on the relationship between a firm's social responsibility performance and tax behaviour.

A firm's social and environmental activities have recently come to be considered an integrated part of its primary business operations that reflects corporate moral and ethical commitment towards society and the economy (Whait et al. 2018; Alsaifi et al. 2020). Therefore, firms are keen to maintain a citizenship profile as a socially responsible business to legitimise their operations and ensure their survival and long-term sustainability (Suchman 1995; Whait et al. 2018; Kovermann and Velte 2019).² Firms can contribute to society through their fair tax payment. Furthermore, corporate tax avoidance, as an immoral, opportunistic and irresponsible social performance, could result in reputational damage and adverse effects on corporate legitimacy, which deter firms from incorporating such activities. Moreover, such behaviour could harm other parties, such as shareholders, employees, creditors and managers (Hanlon and Heitzman 2010; Badertscher et al. 2013; Khan et al. 2017).

Corporate governance mechanisms, including shareholding structure, could contribute to ensuring that firms' operations are legitimised by engaging in CSR activities and minimising tax avoidance behaviour. Therefore, firms with high levels of insiders and/or institutional shareholdings could be less likely to be involved with aggressive tax

² Legitimising firms' operations could help secure many economic benefits, such as capital inflow, customer loyalty and government support (Laguir et al. 2015).



practices (Desai and Dharmapala 2006; Badertscher et al. 2013; Khurana and Moser 2013; Ortas and Gallego-Álvarez 2020).

On the other hand, agency theory (pragmatic legitimacy to shareholders and fiduciary responsibilities) argues that managers perceive CSR activities as illegitimate attempts to transfer wealth from shareholders without their consent (Desai and Dharmapala 2006; Avi-Yonah 2008; Fallan and Fallan 2019). Managers may engage in social and environmental activities to serve their political interests and careers at the expense of the shareholders, which magnifies the agency conflict (McWilliams and Siegel 2001; Laguir et al. 2015). Managerial shareholding as a corporate governance mechanism could help align the interests of managers and shareholders by motivating managers to minimise investment in CSR activities. Similarly, institutional shareholding as an efficient corporate governance mechanism could help to minimise agency problems by monitoring managerial behaviour related to overinvesting in social and environmental activities (Khan et al. 2017).

Furthermore, tax avoidance activities may provide economic benefits to firms, making more profit, saving cash flow and ultimately maximising the wealth of shareholders (Halioui et al. 2016; Kovermann and Velte 2019; Qu et al. 2020; Jia and Gao 2021). This is supported by the argument that firms' primary responsibility is to maximise their shareholders' wealth (Laguir et al. 2015). Thus, businesses can fulfil this responsibility and avoid obligations by planning taxes to follow the letter of government legislation at the expense of its spirit (Landry et al. 2013; Whait et al. 2018; Baudot et al. 2020). This may explain the worldwide expansion of tax-aggressive behaviour (Lanis and Richardson 2013; Fallan and Fallan 2019). Past studies reported that corporate governance mechanisms, including shareholding structure, play an essential role in mitigating agency issues between management and shareholders through minimising firms' tax contributions. Managerial shareholding aligns the interests of managers with those of shareholders and motivates managers to engage in risky tax avoidance activities (Rego and Wilson 2012; Armstrong et al. 2015; Ying et al. 2017). Similarly, institutional shareholding is an efficient mechanism that helps to monitor managers' opportunistic behaviour and align the interests of managers and shareholders towards maximising firm value (Khan et al. 2017).

CSR, tax behaviour and managerial shareholding

Agency theory argues that the firm's main objective is to maximise shareholder wealth (Jensen and Meckling 1976). Therefore, investment in social and environmental but unprofitable projects could be perceived as a waste of

corporate resources (Laguir et al. 2015). Managers may engage in social and environmental activities for their benefit (e.g. professional reputation), even at the expense of shareholder interests (Friedman 1970; McWilliams and Siegel 2001).

Similarly, tax avoidance activities may involve significant benefits and costs to firms and managers. As argued above, if benefits outweigh expected costs, managing taxes could increase the net benefits and, thereby, shareholders' wealth. Agency conflicts between managers and shareholders may provide managers with incentives to engage in different levels of corporate tax avoidance compared to shareholder preferences (Armstrong et al. 2015; Khan et al. 2017). If tax authorities flag tax management strategies, managers' costs may include job loss and reputation damage (Badertscher et al. 2013; Kovermann and Velte 2019). As a corporate governance mechanism, managerial shareholding is used to align the divergent interests of managers and shareholders towards maximising the firm's value (Jensen and Meckling 1976; Laguir et al. 2015). Therefore, managerial ownership may motivate managers to engage in risky tax avoidance expected to maximise the firm's wealth and shareholder value (Desai and Dharmapala 2006; Rego and Wilson 2012; Armstrong et al. 2015).

On the other hand, managers' concentration of ownership and control could direct owner-managers' attitudes towards avoiding investment in projects with high risk (Fama and Jensen 1983; Badertscher et al. 2013). Tax avoidance behaviour could be associated with high legitimacy risk and cause severe costs (such as reputation damage, penalties and legal costs) (Landry et al. 2013; Baudot et al. 2020). Legitimacy theory argues that firms undertake social and environmental activities, including paying their fair share of taxes, to legitimise and ensure the sustainability of their operations (Lanis and Richardson 2013, 2018). Therefore, if the costs of tax avoidance outweigh its benefits, firms with high management equity shareholdings are likely to pay their fair taxes beyond the letter of the law.

The inconsistent empirical evidence reflects the conflict in the theoretical evidence of the association between managerial shareholdings and tax avoidance. Desai and Dharmapala (2006) find a negative relationship between managerial equity incentives and tax avoidance, particularly when corporate governance structures are poor. Similarly, Badertscher et al. (2013) report that firms with greater managerial ownership are less likely to engage in tax avoidance practices. However, Minnick and Noga (2010), Rego and Wilson (2012), and Armstrong et al. (2015) report a positive association between equity risk incentives and tax avoidance strategies. Similarly, Lanis and Richardson (2012) find that corporations with a higher cumulative proportion of ownership held by insiders who



serve on the board are more likely to engage in tax aggressiveness. Fallan and Fallan (2019) report that board ownership is positively significantly linked with tax aggressiveness. Laguir et al. (2015) find an insignificant relationship between the number of managers serving on the board as directors with shareholdings of their ordinary stock and tax aggressiveness. In conclusion, managerial shareholders could use cost–benefit analysis for the trade-off between tax avoidance and CSR profile to determine the appropriate level of tax avoidance. Therefore, the first hypothesis is as follows:

H₁. The relationship between firms' social responsibility performance and tax avoidance levels is magnified/dampened for higher managerial shareholdings.

CSR, tax behaviour and institutional shareholding

Agency theory argues that concentrated ownership controlled by institutions strengthens the position of such institutions to monitor managers' opportunistic behaviour effectively and, therefore, maximise firm value and shareholder wealth (Khan et al. 2017; Ying et al. 2017; Shahab and Ye 2018; Kovermann and Vejdilte, 2019). Tax planning to minimise tax expenses could save costs and increase a firm's after-tax performance (Minnick and Noga 2010; Khan et al. 2017). Moreover, there is weak accountability for tax behaviour and fading evidence for the adverse reputational effects of tax avoidance (Baudot et al. 2020; Ortas and Gallego-Alvarez, 2020). Therefore, institutional shareholding could be considered an efficient corporate governance mechanism that monitors managers' opportunistic behaviours to ensure alignment with shareholders' interests by avoiding paying tax rates greater than required by the letter of the law.

On the other hand, past studies reported that firms committed to sound corporate governance mechanisms, such as institutional shareholding, are less likely to be involved with aggressive tax practices (Khurana and Moser 2013). Long-term-oriented institutional owners such as pension funds are more likely to be risk-averse shareholders. Therefore, they are less likely to be engaged in or encourage tax avoidance activities that may attract adverse publicity. Furthermore, the recent emergence of social and environmentally responsible investors could deter or minimise corporate tax avoidance behaviour due to the damaging effect of tax aggressiveness on social welfare (Lanis and Richardson 2018; Ortas & Gallego-Álvarez 2020).

Empirically, consistent with the conflict in theoretical evidence of the association between institutional ownership, CSR performance and tax avoidance, previous studies examining the effect of institutional ownership on CSR or

tax behaviour show mixed results. The first group of studies shows a positive association between institutional shareholdings and tax avoidance behaviour (e.g. Bird and Karolyi 2017; Huseynov et al. 2017; Khan et al. 2017; Chen et al. 2019). However, other past studies report a negative link (e.g. Moore, 2012; Khurana and Moser 2013; Ying et al. 2017). To conclude, institutional investors assess costs against the benefits of tax avoidance and CSR activities to determine the appropriate trade-off level between them.

H₂. The relationship between firms' social responsibility performance and tax avoidance levels is magnified/dampened for higher institutional shareholdings.

Research design

Sample selection

This paper uses a sample of cross-sectional FTSE350 publicly listed corporations from 2002 to 2016. CSR and corporate governance data (including managerial and institutional shareholdings) are provided by ASSET4 DataStream (Refinitiv Eikon) for the years starting in 2002. Data were collected up to 2016 because big companies in the UK were required to disclose information regarding their tax strategy following the issuance of the UK Financial Act 2016. This mandatory disclosure of tax strategy is effective for financial years starting after 15th September 2016, which may affect corporate tax planning. Similar to previous CSR–tax behaviour nexus studies, financial firms were excluded because they are subject to specific regulations affecting their effective tax rates and CSR activities (e.g. Lanis and Richardson 2012; Alsaifi et al. 2020; Ortas and Gallego-Alvarez, 2020). Therefore, the final sample consists of 1,840 to 1,895 firm-year observations (unbalanced data set) for 201 corporations.³ The choice of FTSE 350 largest market capitalisation companies to be used in this study is because such companies can effectively control their taxes (Dyregang et al. 2008; Minnick and Noga 2010) and they reflect the UK's CSR performance (Helfaya and Moussa 2017; Alsaifi et al. 2020).

Variables measurement

Dependent variable

Consistent with tax avoidance literature, this study defines *tax avoidance* as firms' attempts to minimise taxable income by using tax planning mechanisms (such as earnings manipulation, shifting income to low tax jurisdictions and the

³ This range of the unbalanced data set is the incidence of some missing (CSR or shareholding) data.



extensive use of tax reliefs) (Lanis and Richardson 2012; Chan et al. 2013; Ying et al. 2017). Although tax avoidance activities do not necessarily imply improper/illegal behaviour, it is against the spirit of government legislation (Minnick and Noga 2010; Laguir et al. 2015; Whait et al. 2018; Ortas and Gallego-Alvarez, 2020). There are several proxies for firms' tax behaviour, such as effective tax rates (e.g. GAAP effective tax rates and cash effective tax rates), the difference between national statutory tax rate and a company's effective tax rate, and the gap between book and taxable income (Hanlon and Heitzman 2010; Landry et al. 2013; Lanis and Richardson 2018; Aronmwan and Okaiwele 2020; Schwab et al. 2022).

Similar to the mainstream tax avoidance/aggressiveness literature, this study uses GAAP effective tax rates as a proxy for tax avoidance, where a higher effective tax rate reflects less tax avoidance (e.g. Minnick and Noga 2010; Lanis and Richardson 2012; Halioui et al. 2016; Khan et al. 2017; Kovermann and Velte 2019; Chytis et al. 2020; Schwab et al. 2022).⁴ Effective tax rate as a proxy for tax avoidance can capture corporate tax aggressive activities where companies attempt to minimise their taxable income and, at the same time, keep/increase their accounting income (Khan et al. 2017; Kovermann and Velte 2019). It is also extensively used by stockholders and other stakeholders to assess firms' tax behaviour (Hanlon and Heitzman 2010; Lanis and Richardson 2012; Schwab et al. 2022). Therefore, effective tax rate as a tax avoidance measure is appropriate for our sample of FTSE100 and FTSE250 large publicly listed firms.

Furthermore, it is suitable for this paper's interest to measure the distribution of tax expense across firms and the fairness of the tax burden (Aronmwan and Okaiwele 2020). One more reason for using GAAP effective tax rate (the ratio of income tax expense to pre-tax income) rather than other effective tax rate ratios such as cash effective tax rate (cash taxes paid divided by pre-tax income) is that the latter suffers from a mismatch between cash taxes paid (calculated using cash basis) and pre-tax income (calculated using accrual basis). Thus, the cash effective tax rate reflects both tax avoidance behaviour and accrual management (Austin 2019; Aronmwan and Okaiwele 2020; Schwab et al. 2022). In the same vein, using cash flow effective tax rate (the ratio of tax expense divided by net cash flow from operating activities) as a measure of tax avoidance could result in a data truncation bias in cases of negative net operating cash flow (Aronmwan and Okaiwele 2020).

Independent variable

This paper uses the CSR index as a proxy measure for the extent to which a corporation engages in and commits to CSR activities, which is the average of the economic, social and environmental scores. These scores are provided by ASSET4 DataStream, one of the most used databases for measuring CSR performance (Helfaya and Moussa 2017; Ortas and Gallego-Alvarez, 2020; Sarhan & Al-Najjar, 2022). Our study also follows past studies that used the three CSR dimensions (i.e. economic, social, and environmental) to measure corporate attitudes towards being ethical and responsible citizens (e.g. Van Marrewijk 2003; Laguir et al. 2015). A firm could be labelled a sustainable organisation by fulfilling and balancing these three pillars. Additionally, several papers have used independent assessment scores provided by social audits or specialised agency ratings to measure CSR performance pillars (e.g. Landry et al. 2013; Laguir et al. 2015; Lanis and Richardson 2018; Ortas and Gallego-Alvarez, 2020).

Managerial shareholding is the percentage of total shares owned by employees or those with a substantial position in a company. Institutional shareholding is the percentage of strategic shareholdings of 5% or more owned by investment banks or institutions and pension funds or endowment funds. This paper's main independent variable is the interaction term of ownership structure and CSR performance, where $MSHRS \times CSRAS$ is the interaction term of managerial shareholding and CSR performance. $ISHRS \times CSRAS$ is the interaction term of institutional shareholding and CSR performance.

Control variables

Consistent with corporate tax behaviour literature, this paper controls for several variables to consider the other effects on tax avoidance. The DataStream database was used to collect data for the control variables: firm size, leverage, capital intensity, return on assets and Tobin's Q. Industry and year dummies are also controlled for in this study.

This paper controls for firm size because of its possible effect on tax behaviour. Some authors argue that large companies are more likely to avoid political costs, regulatory actions and media attention by paying their fair share of taxes (Hanlon and Slemrod, 2010; Minnick and Noga 2010). However, others argue that large firms can use their political and economic resources to minimise tax expenses (Richardson et al. 2016; Lanis and Richardson 2012, 2018). This paper also controls for leverage because interest payment reduces taxable income. Thus, it is expected that a high level of leverage is positively associated with tax avoidance. Several past papers report a positive association between

⁴ Corporate tax behaviour literature usually employs the terms tax aggressiveness, tax avoidance, and tax management interchangeably (e.g. Lanis and Richardson 2012; Laguir et al. 2015).



Table 1 Variables definitions

Variable	Measure
ETAXR	The ratio of income tax expense to pre-tax book income
CSRAS	Corporate Social Responsibility Score is the average of the social, environment and economic scores
MSHRS	Managerial (insiders) shareholding is the percentage of total shares owned by employees, or by those with a substantial position in a company
ISHRS	The percentage of strategic share holdings of 5% or more owned by investment banks or institutions, and pension funds or endowment funds
FSIZE	Natural log of book value of net income
LEVR	Long-term debt divided by total assets
CPINT	Net property plant and equipment divided total assets
TOBQ	Tobin's Q is the ratio of total assets minus book value of equity plus market value of equity to total assets in a financial year
ROA	Earnings divided by total assets
Year dummies	Year dummy variables for the period from 2002 to 2016
Industry dummies	Industry dummy variable that take a value of 1 if the company's industry belongs to one of the following industries: Basic materials, Consumer goods, Consumer services, Health care, Industrials, Oil and gas, Technology, Telecommunications, and Utilities, and 0 otherwise

leverage and tax avoidance/aggressiveness (e.g. Lanis and Richardson 2012, 2018; Ortas and Gallego-Alvarez, 2020).

Similarly, a firm's capital intensity is expected to be positively related to tax avoidance due to the effect of depreciation charges on taxable income. The positive link between capital intensity and tax avoidance has been reported in many past papers (e.g. Lanis and Richardson 2018; Ortas and Gallego-Alvarez, 2020); however, other studies reported a negative association (e.g. Laguir et al. 2015).

Tax behaviour literature finds inconclusive results regarding the association between profitability and tax avoidance. Some previous papers report a positive association between corporate profitability and tax avoidance (e.g. Lanis and Richardson 2012, 2018; Laguir et al. 2015; Ortas and Gallego-Alvarez, 2020), while others find a negative link (e.g. Minnick and Noga 2010) consistent with the argument that firms usually pay progressive tax rates for higher income levels. Similarly, this paper controls for Tobin's Q because managers could engage in aggressive tax activities to inflate the market value of a firm. Empirically, some past papers find a positive relationship between the market value of equity and tax avoidance (e.g. Lanis and Richardson 2012). Finally, tax avoidance may fluctuate across different types of industries and/or years; therefore, and consistent with tax behaviour literature, this paper controls for industry sectors and years by including industry and year dummies (e.g. Minnick and Noga 2010; Lanis and Richardson 2012, 2018; Whait et al. 2018; Fallan and Fallan 2019).

Empirical model

This study employs the following ordinary least squares (OLS) regression analysis to test the moderation effect of

shareholding structure on the association between CSR and tax behaviour⁵:

$$\begin{aligned}
 ETAXR_{i,t} = & \beta_0 + \beta_1 CSRAS_{i,t} + \beta_2 MSHRS_{i,t} \\
 & + \beta_3 ISHRS_{i,t} + \beta_4 MSHRS_{i,t} \times CSRAS_{i,t} \\
 & + \beta_5 ISHRS_{i,t} \times CSRAS_{i,t} + \beta_6 FSIZE_{i,t} \\
 & + \beta_7 LEVR_{i,t} + \beta_8 CPINT_{i,t} + \beta_9 TOBQ_{i,t} \\
 & + \beta_{10} ROA_{i,t} + \text{Year dummies} \\
 & + \text{Industry dummies} + \varepsilon_{i,t}
 \end{aligned} \quad (1)$$

where ETAXR is the effective tax rate, which is our measure to assess a firm's level of tax avoidance—a lower effective tax rate indicates a higher level of tax avoidance. CSRAS represents the score of CSR, which is calculated using the average of the economic, social and environmental scores. MSHRS and ISHRS refer to the percentage of ownership held by managers and institutional shareholders, respectively. $MSHRS \times CSRAS$ is the interaction term between CSRAS and MSHRS. $ISHRS \times CSRAS$ is the interaction term between CSRAS and ISHRS. FSIZE refers to firm size. LEVR is the level of leverage. CPINT represents capital intensity. TOBQ is the market measure of a firm's performance/profitability (i.e. Tobin's Q), while ROA represents the accounting measure of a firm's performance/profitability (i.e. return on assets). Year dummies represent year binary variables for the sample period from 2002 to 2016. Industry dummies refer to binary variables for the industries of basic materials, consumer goods, consumer services, health care, industrials, oil and gas, technology, telecommunications and

⁵ Many past papers have used OLS to test the determinants of tax behaviour (e.g. Landry et al. 2013; Armstrong et al. 2015).



Table 2 Descriptive analysis

	Mean	SD	25th percen- tile	Median	75th per- centile
ETAXR	23.8978	38.3103	16.3863	25.4898	31.5811
CSRAS	63.4212	22.4367	47.2400	67.2967	82.4667
MSHRS	6.13	14.418	0.00	0.00	1.00
ISHRS	13.32	14.728	0.00	9.00	19.00
FSIZE	11.5132	1.7335	10.4416	11.4162	12.5210
LEVR	20.6754	20.3924	5.1120	18.0549	29.2676
CPINT	29.4545	24.4637	8.9302	23.5011	44.6321
TOBQ	1.9538	1.3929	1.1643	1.5559	2.2254
ROA	8.6658	17.6561	2.1093	6.8156	12.4483

Variables definitions: See Table 1 for variables definitions

utilities. ε refers to the error term. Table 1 displays variable measurements.

Empirical results and discussion

Descriptive statistics

Table 2 reports the descriptive statistics of the study variables. The dependent variable (ETAXR) has a mean (median) of 23.90% (25.49%). This shows results similar to those of past papers that use effective tax rates as their main dependent variable. For example, Landry et al. (2013) report 26.4% as the mean value of the effective tax rate. CSR score (CSRAS) has a mean (median) of 63.42% (67.30%). As expected, our sample of FTSE 350 shows a high level of CSR compliance because these corporations are the largest listed firms on London Stock Exchange, and the UK has witnessed a large public and regulator awareness of the importance of corporate citizenship for the welfare of society (Helfaya & Moussa 2017; Alsaifi et al. 2020). The mean values for shareholding structure variables MSHRS

and ISHRS are 6.13% and 13.32%, respectively, which are reasonably consistent with previous studies (e.g. McKnight & Weir 2009; Elmagrhi et al. 2020). The remaining control variables show a reasonably wide range of variation consistent with CSR–tax behaviour literature.

The correlation matrix of the study variables is reported in Table 3. These results present an acceptable level of collinearity between our explanatory variables. The highest correlation coefficient (0.551) is between CSRAS and FSIZE. Additionally, variance inflation factors (VIFs) have been calculated for our regression models, and the unreported results also indicate that multicollinearity is not a threat to our study models (i.e. lower than 10 for any of the explanatory variables) (Hair et al. 2010).

Regression results

The regression results of testing the study's prediction of the moderation effect of shareholding structure on the association between firms' social responsibility and tax behaviour are documented in Table 4. The adjusted coefficients of determination (adjusted R-square) values of our models reported in Table 4 are between 16.56% and 17.76%. These values show the proportion of variance in ETAXR that can be explained by the test and control variables. They are comparable to past tax avoidance studies (e.g. Badertscher et al. 2013; Hoi et al. 2013; Davis et al. 2016). For example, Huseynov and Klamm (2012) reported R-square values between 4.4% and 18.6% for their main models.

All models of Table 4 show a positive and significant association between CSR and tax behaviour ($p < 0.01$). This result indicates that firms' attitudes towards their social responsibility could be a key factor in determining their tax behaviour. The findings are consistent with past studies which document that firms with high CSR performance are less likely to avoid paying their fair

Table 3 Correlation matrix

	ETAXR	CSRAS	MSHRS	ISHRS	FSIZE	LEVR	PPEA	TOBQ	ROA
ETAXR	1								
CSRAS	−0.006	1							
MSHRS	−0.011	−0.23***	1						
ISHRS	0.015	−0.179***	−0.135***	1					
FSIZE	−0.152***	0.551***	−0.088***	−0.282***	1				
LEVR	−0.007	0.071***	−0.086***	−0.032*	0.021	1			
CPINT	−0.011	0.096***	0.069***	−0.004	0.153***	0.171***	1		
TOBQ	−0.002	−0.172***	0.093***	−0.041**	−0.011	−0.105***	0.056***	1	
ROA	0.035*	−0.07***	0.005	−0.003	0.065***	−0.123***	0.012	0.373***	1

Variables definitions: See Table 1 for variables definitions

*Significance at the .10 level. **Significance at the .05 level. ***Significance at the .01 level



Table 4 Association between CSR performance and tax avoidance

	ETAXR (1)	ETAXR (2)	ETAXR (3)	ETAXR (4)	ETAXR (5)	ETAXR (6)
CSRAS	.2451*** (6.42)	.2440*** (6.16)	.2376*** (5.97)	.2430*** (6.14)	.2578*** (6.50)	.2460*** (6.23)
MSHRS	–	.0291 (0.51)	.0746 (1.15)	–.2849** (–2.22)	–	–
ISHRS	–	–.1875** (–2.30)	–.2574*** (–3.08)	–.1459 (–1.61)	–	–.2509*** (–3.01)
MSHRS×CSRAS	–	–	.0024 (0.93)	–	–	–
ISHRS×CSRAS	–	–	–.0079*** (–3.40)	–	–	–.0079*** (–3.41)
MSHRS ²	–	–	–	.0082*** (2.74)	.0041*** (2.68)	.0039*** (2.56)
ISHRS ²	–	–	–	–.0026 (–0.90)	–.0042 (–1.46)	–
MSHRS ² ×CSRAS	–	–	–	–	.0001** (2.05)	.0001* (1.75)
ISHRS ² ×CSRAS	–	–	–	–	0.0000 (0.10)	–
FSIZE	–5.4705*** (–9.71)	–5.7178*** (–9.88)	–5.9092*** (–10.14)	–5.8764*** (–10.07)	–5.5213*** (–9.72)	–5.9955*** (–10.33)
LEVR	–.0134 (–0.31)	–.0135 (–0.31)	–.0167 (–0.38)	–.0136 (–0.31)	–.0125 (–0.28)	–.0135 (–0.31)
CPINT	.0007 (0.02)	–.0023 (–0.07)	–.0049 (–0.14)	–.0018 (–0.05)	–.0080 (–0.23)	–.0069 (–0.20)
TOBQ	1.6006** (2.24)	1.8709** (2.54)	1.6669** (2.27)	1.7002** (2.30)	1.6757** (2.26)	1.4873** (2.01)
ROA	–.0300 (–0.60)	–.0373 (–0.73)	–.0347 (–0.69)	–.0381 (–0.75)	–.0423 (–0.83)	–.03019 (–0.60)
Constant	109.6115*** (13.15)	119.151*** (12.42)	125.5408*** (12.79)	121.3663*** (12.62)	111.5066*** (12.63)	124.9393*** (12.89)
Year dum	Included	Included	Included	Included	Included	Included
Ind dum	Included	Included	Included	Included	Included	Included
Obs	1895	1871	1871	1871	1871	1871
Adj. R2%	16.56	17.02	17.52	17.29	17.14	17.76

Variables definitions: See Table 1 for variables definitions

Table shows coefficient estimates and t-statistics (in parentheses) for explanatory variables

*Significant at the 10% level, **significant at the 5% level, and ***significant at the 1% level

share of taxes, and thus the complementary association of both corporate social and tax citizenship (e.g. Lanis and Richardson 2012, 2015, 2018; Hoi et al. 2013; Ortas and Gallego-Alvarez, 2020).

The coefficient of CSRAS captures the relationship between corporate citizenship and tax behaviour, while the interaction terms between shareholdings structure and CSRAS (i.e. MSHRS×CSRAS and ISHRS×CSRAS), which are the main explanatory variables of this study, capture the incremental effect of managerial and institutional shareholding, respectively.⁶ The theoretical and empirical literatures expect a stronger/weaker relationship between ETAXR and CSRAS for firms with higher managerial/institutional shareholding. Our results in Model 3 of Table 4 show a negative and significant coefficient of the interaction term ISHRS×CSRAS, supporting H2. This result indicates that the positive association between CSR and corporate tax citizenship is of lower magnitude

(dampened) in firms with high levels of institutional shareholdings. This finding is consistent with the agency theory argument that institutional shareholding is an efficient monitoring mechanism to maintain shareholders' interests through engaging in tax avoidance activities and dealing with CSR performance and fair tax payments as substitutes. Our results are consistent with past studies, which document a negative effect of institutional shareholdings on corporate tax citizenship (e.g. Bird and Karolyi 2017; Huseynov et al. 2017; Khan et al. 2017; Chen et al. 2019).

On the other hand, the coefficient of the interaction term MSHRS×CSRAS is positive but insignificant. This result indicates that managerial shareholding may be neutral for the association between CSR and tax behaviour. Our finding is consistent with some past studies which reported an insignificant effect of managerial shareholding on corporate tax behaviour (e.g. Laguir et al. 2015).

There is mixed evidence of the association between shareholding structure and tax avoidance (Kovermann and Velte 2019). In addition, some previous studies find a nonlinear relationship between ownership structure and tax avoidance (e.g. Richardson et al. 2016). Therefore, the current study uses further analysis to investigate the curvilinear

⁶ Consistent with past studies, the CSR and shareholding variables are mean-centred to avoid potential collinearity from introducing the interaction variables in our regression modules (Ortas and Gallego-Alvarez, 2020).



Table 5 Association between CSR report and tax avoidance

	ETAXR (1)	ETAXR (2)	ETAXR (3)	ETAXR (4)	ETAXR (5)
CSRR	5.7554*** (2.99)	5.6190*** (2.90)	5.4701*** (2.82)	5.4024*** (2.78)	5.7034*** (2.91)
MSHRS	–	–.0236 (–0.42)	–.0192 (–0.34)	–.3224** (–2.49)	–
ISHRS	–	–.2094** (–2.55)	–.2633*** (–3.06)	–.1580* (–1.73)	–
MSHRS × CSRR	–	–	.1235 (1.07)	–	–
ISHRS × CSRR	–	–	–.2360* (–1.87)	–	–
MSHRS ²	–	–	–	.0078*** (2.58)	.0013 (0.97)
ISHRS ²	–	–	–	–.0033 (–1.14)	–.0070* (–1.89)
MSHRS ² × CSRR	–	–	–	–	.0048* (1.73)
ISHRS ² × CSRR	–	–	–	–	–.0035 (–0.67)
FSIZE	–3.8990*** (–7.88)	–4.2359*** (–8.23)	–4.3826*** (–8.45)	–4.3688*** (–8.43)	–3.9624*** (–7.97)
LEVR	–.0270 (–0.62)	–.0280 (–0.63)	–.0331 (–0.74)	–.0279 (–0.63)	–.0277 (–0.62)
CPINT	.0130 (0.37)	.0105 (0.30)	.0101 (0.29)	.0102 (0.29)	.0051 (0.14)
TOBQ	1.5449** (2.14)	1.8484** (2.49)	1.7937** (2.41)	1.6851** (2.26)	1.7693** (2.37)
ROA	–.0566 (–1.13)	–.0627 (–1.23)	–.0643 (–1.26)	–.0640 (–1.26)	–.0739 (–1.46)
Constant	103.8073*** (12.43)	116.4241*** (12.04)	116.6933*** (12.07)	118.6229*** (12.24)	108.4813*** (12.34)
Year dum	Included	Included	Included	Included	Included
Industry dum	Included	Included	Included	Included	Included
Obs	1895	1871	1871	1871	1871
Adj. R2%	15.13	15.69	15.85	15.95	15.68

Variables definitions: See Table 1 for variables definitions

Table shows coefficient estimates and t-statistics (in parentheses) for explanatory variables

*Significant at the 10% level, **significant at the 5% level, and ***significant at the 1% level

moderating effect of shareholding structures on the association between CSR and tax avoidance. Interestingly, our further analysis in Model 5 of Table 4 indicates a nonlinear moderation effect of shareholding structure on this association. Specifically, results reported in Model 5 show that the interaction term between entrenched managers with higher shareholdings and CSR performance (MSHRS² × CSRRAS) has a significant positive coefficient, supporting H1. This indicates that the positive link between CSR and corporate tax citizenship is of greater magnitude (magnified) in firms with entrenched managers holding a higher level of shares.

In line with legitimacy theory, our results indicate that entrenched managers with a higher percentage of shareholdings in companies with high CSR performance are less likely to engage in aggressive tax activities to avoid economic and reputational risks associated with flagging this out. Therefore, increasing insiders' shareholdings will align the interest of managers and stakeholders to enhance the corporate social profile, including paying fair tax contributions. Our findings are consistent with past studies which report a negative association between managerial shareholdings and tax avoidance behaviour (e.g. Desai and Dharmapala 2006; Badertscher et al. 2013), and a negative effect of managerial entrenchment on tax management (e.g. Minnick and Noga 2010).

Model 5 of Table 4 shows the interaction between high-level concentrated institutional shareholdings and CSR performance (ISHRS² × CSRRAS) with a positive and insignificant coefficient. This indicates that the moderation effect of institutional shareholdings on the association between CSR and corporate tax citizenship is neutralised at higher levels of institutional shareholdings. Our findings suggest that institutional shareholders with high levels of ownership in firms with high CSR profiles have a symbolic effect on tax behaviour and are reluctant to engage in tax avoidance activities which may minimise their wealth via reducing a firm's value. Adjusted R-square values of the models reported in Table 4 show a slight increase in Models 2 to 6 compared with Model 1. However, the marginal increase in adjusted R-square values indicates that shareholding structure variables and interaction terms enhance the explanatory power of CSRRAS to variation in ETAXR in different models.

Concerning control variables, our results in Table 4 show that large firms are engaged with more tax avoidance behaviour, which is consistent with the argument that large companies have political and economic powers that may help them minimise their tax expenses. Empirically, these results are consistent with other researchers who report a positive association between firm size and tax avoidance/aggressiveness (Dyrenge et al. 2008; Halioui et al. 2016; Lanis and Richardson 2018; Ortas and Gallego-Alvarez, 2020). Tobin's Q is positive and



Table 6 CSR performance and tax avoidance: TOBIT, long-term effective tax rate and differential tax rate

	TOBIT (1)	TOBIT (2)	LT-ETAXR (3)	LT-ETAXR (4)	DIFF – ETAXR (5)	DIFF – ETAXR (6)
CSRAS	.2602*** (6.40)	.2791*** (6.88)	.0400*** (2.84)	.0434*** (3.09)	-.1435*** (-4.41)	-.1555*** (-4.83)
MSHRS	.1015 (1.57)	–	.0567** (2.48)	–	.0049 (0.09)	–
ISHRS	-.2847*** (-3.38)	–	.0245 (0.83)	–	.1633** (2.39)	–
MSHRS × CSRAS	.0030 (1.17)	–	.0007 (0.74)	–	-.0002 (-0.08)	–
ISHRS × CSRAS	-.0079*** (-3.39)	–	-.0015* (-1.77)	–	.0057*** (3.01)	–
MSHRS ²	–	.0046*** (3.05)	–	.0021*** (3.87)	–	-.0025** (-2.06)
ISHRS ²	–	-.0045 (-1.56)	–	-.0009 (-0.86)	–	.0037 (1.55)
MSHRS ² × CSRAS	–	.0001** (2.13)	–	.0000 (0.94)	–	-.0001* (-1.62)
ISHRS ² × CSRAS	–	.0000 (0.34)	–	-.0000 (-0.71)	–	.0000 (0.65)
FSIZE	-6.6801*** (-11.29)	-6.2737*** (-10.87)	-.3356* (-1.62)	-.4027** (-2.01)	3.9183*** (8.23)	3.6217*** (7.80)
LEVR	-.0025 (v0.06)	.0017 (0.04)	.0566*** (3.62)	.0583*** (3.74)	.0067 (0.18)	.0038 (0.10)
CPINT	-.0180 (-0.50)	-.0208 (-0.58)	-.0354** (-2.85)	-.0368*** (-2.97)	-.0025 (-0.09)	.0005 (0.02)
TOBQ	1.9896*** (2.68)	1.9834*** (2.56)	1.2161*** (4.66)	1.1629*** (4.43)	-.6710 (-1.12)	-.6670 (-1.10)
ROA	-.0521 (-1.03)	-.0609 (-1.20)	.0016 (0.09)	.0058 (0.32)	.0036 (0.09)	.0069 (0.16)
Constant	134.5946*** (13.65)	119.7293*** (13.54)	28.9767*** (8.32)	30.5433*** (9.80)	-53.1960***-6.63	-43.9357***(-6.09)
Year dum	Included	Included	Included	Included	Included	Included
Indu. dum	Included	Included	Included	Included	Included	Included
Obs	1871	1871	1871	1871	1871	1871
Adj. R2%	–	–	17.48	17.77	6.46	6.06
Pseudo R2%	2.83	2.77	–	–	–	–

Variables definitions: See Table 1 for variables definitions

Table shows coefficient estimates and t-statistics (in parentheses) for explanatory variables

*Significant at the 10% level, **significant at the 5% level, and ***significant at the 1% level

significantly associated with the effective tax rate, supporting the idea that firms with high market value are less likely to avoid tax. Our results are inconsistent with past studies, which report a positive association between tax aggressiveness and a firm's market value (e.g. Lanis and Richardson 2012).

Additional analyses and robustness tests

Several additional analyses and robustness tests have been employed in this study to assess the reliability of the empirical results, as follows.

Alternative proxy for CSR commitment

Many CSR studies use corporate stand-alone CSR report as a proxy for CSR commitment and orientation (e.g. Helfaya & Moussa 2017; Sarhan & Al-Najjar, 2022). Therefore, this

study will re-estimate Eq. 1 using a corporate CSR report (CSRR) as an alternative proxy to measure CSR commitment. Consistent with the findings reported in Table 4, the five models in Table 5 show a significant positive association between issuing a corporate stand-alone CSR report and effective tax rate (ETAXR) ($p < 0.01$). This finding supports the notion that firms with a high CSR profile and commitment are less likely to engage in tax avoidance activities. Furthermore, Models 3 and 5 of Table 5 report significant negative and positive coefficients of the interaction variables $ISHRS \times CSRR$ and $MSHRS^2 \times CSRR$, respectively, further supporting our main findings laid out in Table 4. These findings suggest that institutional shareholding (entrenched managerial shareholding) dampens (magnifies) the association between firms' social responsibility and tax citizenship.



Table 7 CSR performance and tax avoidance: 2SLS and board characteristics

	2SLS (1)	2SLS (2)	ETAXR (3)	ETAXR (4)
CSRAS	.2455*** (4.40)	.2730*** (4.96)	.1976*** (4.85)	.2167*** (5.34)
MSHRS	.1372** (1.98)	–	.0851 (1.30)	–
ISHRS	.2046*** (2.77)	–	-.2574*** (-3.03)	–
MSHRS × CSRAS	.0035 (1.19)	–	.0023 (0.89)	–
ISHRS × CSRAS	-.0061** (-1.99)	–	-.0075*** (-3.14)	–
MSHRS ²	–	.0046*** (2.90)	–	.0048*** (3.12)
ISHRS ²	–	.0069** (2.18)	–	-.0042 (-1.42)
MSHRS ² × CSRAS	–	.0001** (2.00)	–	.0001** (2.12)
ISHRS ² × CSRAS	–	.0001 (1.39)	–	.0000 (0.40)
FSIZE	-4.4978*** (-6.98)	-4.8524*** (-7.61)	-6.7828*** (-10.26)	-6.6246*** (-10.14)
LEVR	-.1824*** (-3.70)	-.1680*** (-3.41)	-.0257 (-0.58)	-.0221 (-0.50)
CPINT	.0232 (0.68)	.0093 (0.27)	-.0005 (-0.02)	-.0031 (-0.09)
TOBQ	1.0905 (1.35)	.9778 (1.20)	1.5674** (2.10)	1.5096** (2.01)
ROA	-.0656 (-1.20)	-.0484 (-0.89)	-.0299 (-0.59)	-.0334 (-0.66)
BOARDS	–	–	6.7851** (2.05)	9.0963*** (2.73)
BOARDDD	–	–	.2848*** (3.44)	.2983*** (3.59)
BOARDI	–	–	.0364 (0.57)	.0418 (0.65)
Constant	59.73759*** (8.71)	63.67103*** (10.05)	120.8446*** (10.70)	103.7809*** (10.10)
Year dum	–	–	Included	Included
Indu. dum	–	–	Included	Included
Obs	1714	1714	1,840	1,840
Adj. R2%	4.65	4.56	18.06	17.85

Variables definitions: BOARDS refers to board size. BOARDDD refers to board diversity. BOARDI refers to board independence. See Table 1 for other variables definitions

Table shows coefficient estimates and z-statistics/t-statistics (in parentheses) for explanatory variables

*Significant at the 10% level, **significant at the 5% level, and ***significant at the 1% level

Tobit regression model

Many previous tax behaviour studies employ the Tobit regression model to account for truncated effective tax rates in the 0–1 range, as Tobit formulation would be more appropriate to empirical analysis with the truncated dependent variable (i.e. Lanis and Richardson 2012; Ortas and Gallego-Alvarez, 2020). Therefore, consistent with such literature, our study estimates Tobit regression models as an additional sensitivity check. Models 1 and 2 of Table 6 show Tobit regression results that support our main findings as reported in Models 3 and 5 of Table 4.

Long-term effective tax rates

To assess whether our findings will hold if firms' long-term ability to avoid taxes is considered, this paper uses the average of effective tax rates for each firm in our sample. The long-term measure of tax avoidance helps to neutralise isolated events that could affect the one-year measure of the effective tax rate (Khan et al. 2017; Lanis and Richardson 2018) and to capture the effect of long-term-oriented

shareholding. Models 3 and 4 of Table 6 report the OLS regression results using the long-term effective tax rate as the dependent variable (LT-ETAXR). The interaction term (ISHRS × CSRAS) has a significant negative coefficient, supporting H1. This finding indicates that the institutional shareholders in firms with superior CSR performance are more likely to encourage long-term tax avoidance practices.

Alternative proxy for tax avoidance

To test the robustness of the results to the use of another proxy for tax avoidance, this study has followed tax literature and uses differential ETAXR (DIFF-ETAXR) as an independent variable (e.g. Hanlon & Heitzman 2010; Chan et al. 2013; Ortas & Gallego-Alvarez, 2020). DIFF-ETAXR is the difference between the national statutory applicable tax rate and a firm's ETAXR, with high levels of DIFF-ETAXR designating high tax aggressiveness. Models 5 and 6 of Table 6 report the results of re-estimating Eq. 1 using DIFF-ETAXR as the dependent variable. These results are similar to our main findings in Models 3 and 5 of Table 4.



Two-stage least squares model

This study uses the Two-Stage Least Squares model (employing lagged CSRAS and industry same-year average CSRAS as instrumental variables) to address the potential endogeneity concerns arising from possible reverse causality between ETAXR and CSRAS variables. The instrumental variables are correlated with the endogenous variable (CSRAS) but do not affect the dependent variable (ETAXR) (Alsaifi et al. 2020). Models 1 and 2 of Table 7 indicate significant negative and positive coefficients of the interaction variables $ISHRS \times CSRR$ and $MSHRS^2 \times CSRR$, respectively, supporting our main findings.

Control for board characteristics

Consistent with the tax behaviour literature, this paper controls for board characteristics such as board size (BOARDS) (the natural logarithm of the total number of board members), board gender diversity (BOARDG) (percentage of women on the board of directors), and board independence (BOARDI) (percentage of non-executive board members) (e.g. Lanis and Richardson 2018; Kovermann and Velte 2019; Chytis et al. 2020). The findings reported in Models 3 and 4 of Table 7 further support the results documented in Table 4.

To summarise, the regression findings regarding the moderation effect of shareholding structure (internal and external) on the CSR–tax behaviour link reasonably hold for alternative CSR and tax avoidance proxies, Tobit and two-stage least squares regression models, and additional control variables.

Conclusion

The association between firms' social responsibility and tax behaviour has attracted many scholars who report inconclusive results. The reasons for these mixed results could be attributed to the voluntary/non-regulatory nature of social and environmental activities, the complex nature of corporate tax rules, and the associated costs as well as benefits for such activities, which lead to a discrepancy in the level of corporate commitment towards their social responsibility performance, including corporate tax behaviour (Landolf 2006; Williams 2007; Avi-Yonah 2008; Fallan & Fallan 2019; Kovermann and Velte 2019; Baudot et al. 2020). Moreover, limited studies investigate factors that are likely to moderate this relationship. Therefore, the current study aims to extend past the CSR–tax behaviour nexus literature by investigating the possible moderation effect of shareholding structure (i.e. managerial and institutional shareholdings) that may ameliorate or restrict the association between firms'

social performance and their tax avoidance behaviour and, therefore, explain the inconclusive findings of past studies. To the best of our knowledge, this paper is one of the first attempts to examine the moderation effect of shareholding structure (internal and external shareholding) on the relationship between CSR and tax behaviour in the UK context, where the shareholders' rights are protected, and institutional owners are active in influencing firms' CSR practices.

Based on a sample of non-financial FTSE350 publicly listed firms between 2002 and 2016, the regression results document some empirical evidence demonstrating that shareholding structure moderates the association between CSR profile/commitment and corporate tax practices. Specifically, the findings indicate that institutional shareholding negatively moderates the association between CSR and corporate fair tax contribution. This means institutional shareholders in firms with high CSR profiles tend to encourage tax avoidance activities, indicating a trade-off between CSR commitment and corporate tax citizenship. Additionally, this paper documents that entrenched managers with higher shareholdings magnify the positive relationship between firms' social performance and corporate tax citizenship. Finally, this paper provides additional support to previous studies that document a positive association between firms' social responsibility and tax citizenship. Therefore, firms' tax behaviour complements their social responsibility activities.

This study has several theoretical and practical implications. Our study extended the CSR–tax behaviour literature by providing novel evidence on the moderation effect of shareholding structure on the CSR–tax behaviour link. Our empirical findings also inform tax policymakers and regulators to consider the corporate shareholding structure that magnifies/dampens the tax avoidance risk. It also helps shareholders, managers, and other stakeholders identify circumstances and factors that may motivate corporations to engage in tax avoidance activities and cause corporate financial, social and reputational damage and negative consequences to the economy and society.

Similar to the CSR–tax behaviour literature, this study has some limitations that could provide motivation for future studies. Our study investigates the moderation effect of shareholding structure on the relationship between firms' social responsibility and tax behaviour. Other studies could use Media and Non-governmental organisations (NGOs) as modern corporate governance mechanisms that may moderate such relationships. Second, our sample is based on FTSE350 large publicly listed firms which may have established CSR profiles. Future studies may consider a larger sample (e.g. listed and/or unlisted firms), cross-national research design or comparison between developed and developing countries to enhance the generalisability of the



findings. Third, our main dependent variable, effective tax rate, is calculated using financial statement data that are subject to judgement and discretion by preparers and, therefore, considerably affect its accuracy. Other studies could use corporate tax returns, filings and assessments to proxy for tax avoidance.

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