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# The relation between corporate social responsibility and profit shifting of multinational enterprises

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## Abstract

We examine the relation between corporate social responsibility [CSR] and international profit shifting. We find consistent evidence that CSR is adversely related to profit shifting within European and US multinational firms. Additional results document that less profit shifting occurs in multinational firms that show high performance in the social or corporate governance dimensions. For US multinational firms, we find that the CSR performance is negatively related to profit shifting, particularly if a multinational firm faces fewer reputational concerns or competitive threats. Our findings point to a corporate culture in which, for international tax planning through profit shifting, CSR and tax payments complement each other.

**Keywords** Profit shifting · Corporate social responsibility · Tax avoidance · Corporate governance

**JEL Codes** H25 · H26 · M14

## 1 Introduction

Evidence of the extensive profit-shifting activities of large multinational enterprises [MNEs] has raised the public awareness in recent years. While not illegal, tax avoidance through profit shifting has increasingly been condemned as unethical and immoral (Barford & Holt, 2013; OECD, 2013). The negative perception became particularly evident when disparities between profits and taxes paid by well-known firms

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such as Starbucks, Google, Apple and Amazon were revealed. These events caused an unprecedented level of public outrage and fueled demands that companies should pay their ‘fair share’ of tax (Bennett & Murphy, 2017; Gribnau & Jallai, 2017). At the same time, MNEs nowadays face certain expectations from society and consumers (Panayi, 2015). Corporate Social Responsibility [CSR] advocates that businesses address the interests of all stakeholders rather than merely concentrating on their own interests, such as profit maximization (Cerioni, 2014). We therefore investigate the relation between the CSR position of the firm and the publicly criticized tax avoidance of MNEs through international profit shifting.

The relationship between tax avoidance and CSR has already been investigated in numerous studies (for a review see Kovermann & Velte, 2021). However, to best of our knowledge, the influence of CSR on the publicly debated phenomenon of international profit shifting has hardly been studied. We therefore focus on profit shifting by MNEs because it is precisely this mechanism of tax avoidance that has been so much in the public debate over the past decade. At the same time, tax administrations and international initiatives have tried to curb profit shifting through anti-tax avoidance regulations. In this study, we analyze whether the CSR position of the firm and profit shifting are related.

Responsible tax behavior can be considered part of a firm’s responsibility to the communities in which it operates (Christensen & Murphy, 2004; Knuutinen, 2014; Murphy et al., 2006). Consequently, avoiding taxes while claiming to be a responsible citizen could be perceived as hypocrisy (Davis et al., 2016; Sikka, 2010). For example, the Irish Times states that ‘[t]he inescapable truth is that people [...] get really annoyed when they hear that companies making billions don’t pay tax. You can publish all the glossy CSR reports you want, you can buy as much green energy as you can find [...], but if you don’t pay tax it’s very hard to argue these days that you are a good corporate citizen’ (McManus, 2013).

Nevertheless, it is uncertain how the tax management behavior and CSR performance of MNEs are related. Competing theories exist in this regard. According to risk management theory, a firm is not inherently motivated to engage in CSR for the sake of all stakeholders. Nonetheless, a firm engages in CSR to build up an ‘insurance-like’ protection to mitigate potential reputational risks that increase with the extent of its profit-shifting activities (Godfrey, 2005). Consequently, the two constructs should be positively related, so that taxes and CSR act as substitutes. By contrast, corporate culture theory makes the opposite prediction and assumes that all decisions of a firm reflect a shared belief about the ‘right’ corporate behavior that takes all stakeholders into account (Hermalin, 2001; Kreps, 1990). If socially irresponsible behavior prevails in a firm, extensive profit shifting and tax avoidance are in line with this corporate culture. Previous empirical literature has investigated the relationship between CSR and tax avoidance only in terms of the overall tax position of companies<sup>1</sup> and finds mixed empirical evidence: CSR performance and tax

<sup>1</sup> Previous studies have mostly examined the relationship between tax avoidance and CSR using an effective tax rate (ETR) determined on the basis of consolidated group accounts, see Kovermann and Velte (2021).

payments are either aligned and hence complements (e.g., Hoi et al., 2013), or are substitutes (e.g., Davis et al., 2016).

The aim of our study is to focus on the phenomenon of profit shifting and to examine the relationship with CSR. We employ a well-known approach to estimate profit shifting (Huizinga & Laeven, 2008) and explore if the CSR performance of European and US MNEs is linked to different magnitudes of profit shifting, using unconsolidated data of their subsidiaries in Europe. We analyze samples of European and US MNEs, as the relationship between CSR and profit shifting is not necessarily the same across different regions. Moreover, we consider the CSR performance of the parent companies by relying on the Refinitiv Environmental, Social and Governance [ESG] scores (formerly Thomson Reuters ASSET4).

Our results suggest that the scope of profit shifting and CSR performance are adversely related for both European and US MNEs. Profit shifting is more pronounced for MNEs with a lower overall CSR performance. Using a matched sample of similar MNEs from Europe and the US, we also show that the relationship between CSR and profit-shifting activities does not significantly differ. The findings for both European and US firms are in accordance with the corporate culture theory. Tax payments and CSR activities are complements.

Moreover, we examine different CSR dimensions. We find that the governance dimension in particular is negatively associated with profit shifting. We also find weak evidence that the social dimension of CSR is associated with less profit shifting. These findings also support the corporate culture theory. For European companies only, we also find some weak evidence of a positive relationship between the environmental dimension of CSR and profit shifting in accordance with risk management theory.

Further, we assess if the relationship between profit shifting and CSR performance is influenced by reputational concerns or a firm's market power. US MNEs that are less affected by reputational concerns of their customers or competitive threats shift more profits. However, for these companies in particular we find a negative relationship between CSR and profit shifting, which is consistent with the corporate culture theory. In contrast, we find no significant relation between CSR and profit shifting if a company has to pay more attention to reputational concerns due to its consumer-oriented business or a weak market position. These MNEs already shift fewer profits to avoid tax-related reputational damages, but show no additional correlation with their CSR position.

Our study makes several contributions to the existing literature. First, we to add to the literature on profit shifting by considering the influence of CSR. Profit shifting has been investigated abundantly in academic works (see e.g., Beer et al., 2020; Heckemeyer & Overesch, 2017). Prior studies find evidence for the magnitude of profit shifting and identify profit-shifting determinants like firm characteristics, certain shifting channels or effects of anti-tax avoidance regulations. We contribute to this literature and use the approach of Hines and Rice (1994) and Huizinga and Laeven (2008) to investigate the relationship between profit shifting and multinational groups' attitudes toward CSR. Our results suggest a negative relation between profit shifting and the CSR position of a firm.

Our study is closely related to a contemporaneous working paper by Hasan et al. (2023). They consider the established approach by Dharmapala and Riedel (2013) to examine profit shifting. Contrary to our results, their findings suggest a positive association between CSR and profit shifting for a worldwide sample. The opposite results might be explained by a diverging geographic sample composition.<sup>2</sup> Moreover, the profit-shifting measure used as the dependent variable by Hasan et al. (2023) is significantly driven by differences in MNEs' pre-shifting earnings rather than by differences in CSR performance.<sup>3</sup> Therefore, an alternative interpretation of the findings of Hasan et al. (2023) would be that better CSR performance is associated with higher pre-shifting earnings of the entire MNE, but not necessarily with profit shifting within the MNE. Using a different approach, our results suggest that profit shifting within MNEs is negatively related to the CSR position of US and European MNEs.

Second, we also contribute to the emerging research field of CSR and tax avoidance. Prior studies that investigate the link between CSR and tax rely on consolidated accounting data to evaluate tax avoidance (generally measured by the ETR or similar measures). The results are inconclusive. While some establish a negative relation between CSR and tax aggressiveness (e.g., Hoi et al., 2013), others affirm that CSR and tax payments are substitutes (e.g., Davis et al., 2016). Our paper adds to the literature on the CSR-tax link by focusing on one specific and controversial channel of tax avoidance, i.e., profit shifting of MNEs. In addition to putting the focus on a particularly controversial form of tax avoidance, the analysis of profit shifting also avoids the technical difficulties related to the use of the ETR as a tax avoidance measure.<sup>4</sup>

For this particular form of tax avoidance, we find robust evidence supporting the corporate culture theory. Moreover, in contrast to some previous empirical works, we also perform a deeper investigation of the different CSR dimensions. In particular, the governance dimension of CSR has often been excluded from prior research or treated as a control variable rather than as an integral part of CSR (e.g., Davis et al.,

<sup>2</sup> Further results from additional analyses suggest that the relationship between CSR and profit shifting also depends on the legal and governmental institutions of countries (see Sect. 4.4).

<sup>3</sup> Hasan et al. (2023) consider the well-known model of Dharmapala and Riedel (2013) to examine profit shifting. In a first step, Hasan et al. (2023) confirm with their data a disproportionate distribution of additional profits of a MNE to its subsidiaries in low-tax countries. In a second step, Hasan et al. (2023) predict what they call a profit-shifting proxy by multiplying the partial fitted value for disproportional profits at low-tax subsidiaries and the pre-shifting earnings of the entire MNE. In a final step, the predicted amounts of the profit-shifting proxy are regressed on CSR performance measures taken from the ASSET4 database. The estimated coefficients of the CSR measures are positive and Hasan et al. (2023) conclude that profit shifting and CSR are positively associated. However, the predicted values of the profit-shifting proxy (the dependent variable of their final regression) vary because of differences in total pre-shifting earnings of the entire multinational group, but not because of a different distribution of earnings within the MNE to the subsidiary under consideration. This is because the coefficient employed for the calculation of the profit-shifting proxy is a constant, so that it does not reflect estimates for the individual subsidiary (Delis et al., 2023). Therefore, an alternative interpretation of the findings of Hasan et al. (2023) would be that better CSR performance of an MNE is associated with higher pre-shifting earnings of the entire MNE group, but not necessarily with a divergent distribution of earnings within the group.

<sup>4</sup> For example, the ETR is also influenced by regulations such as investment tax credits or loss carryforwards, which are not associated with aggressive tax avoidance.

2016; Hoi et al., 2013). Yet, our findings suggest that considering corporate governance as a component of CSR is crucial.

Third, we consider both European and US multinational groups and examine if CSR is linked differently to profit shifting. Comparing distinct regions provides additional insights and hence complements cross-country studies on CSR (Fatima & Elbanna, 2022). Thus, our work also sheds light on the linkage between CSR and tax avoidance in a European setting. Existing evidence on this association is mostly based on US firms. CSR might not be valued similarly by society, managers and other stakeholders from different countries. In addition, the corporate governance culture in Europe could diverge from the US. A global analysis of corporate social performance by Ho et al. (2012) indicates that European countries generally outperform North American companies. Conferring existing results to European companies may therefore not be appropriate, which highlights the need to investigate the CSR-tax link in a European setting. However, our analyses suggest that the relationship between CSR and profit shifting is similar for European and US MNEs.

Overall, our study is also of practical relevance as it can be useful for policymakers interested in the conditions under which the relocation of pre-tax profits might be more likely. Our finding of a negative relation between CSR and profit shifting further suggests that measures promoting CSR (or curbing profit shifting) might be even more advantageous as they might additionally be related to lower profit shifting (or higher CSR engagement). This insight is particularly useful given that regulators and standard setters plan and continue to expand ESG reporting regulations or frameworks (e.g., European Commission, 2021; GRI, 2021; IFRS, 2021; SEC, 2021). Furthermore, the results are also interesting for responsible investors and consumers because they suggest that, for most firms, a higher CSR performance is associated with less aggressive tax behavior.

The remainder of this paper proceeds as follows. Section 2 develops hypotheses based on theoretical backgrounds. Section 3 describes the data and our methodology. The empirical results are presented in Sect. 4. Section 5 concludes.

## 2 Background and hypotheses development

### 2.1 Tax-motivated profit shifting of MNEs

Profit shifting is probably the most significant form of tax avoidance by MNEs. MNEs use intercompany profit shifting to reduce their worldwide tax expenses. Each subsidiary of a multinational firm is subject to corporate tax in its host country. The taxable profits of each subsidiary are computed according to the separate accounting principles. Because corporate tax rates vary significantly across countries, a multinational firm has incentives to manipulate the reported taxable profits. At locations with a higher tax rate, reported profits might be reduced by means of intercompany debt financing or higher prices for intrafirm trade, while profitability in low-tax locations is increased.

Comprehensive empirical evidence has already confirmed the profit shifting of MNEs (for literature reviews see e.g., Beer et al., 2020; Heckemeyer & Overesch,

2017; Riedel, 2018).<sup>5</sup> More recent research acknowledges the heterogeneity in profit shifting and considers various determinants, such as research and development intensity (Grubert, 2003), transfer mispricing (Bernard et al., 2008), patent allocation (Karkinsky & Riedel, 2012), intangible assets (Beer & Loeprick, 2015; Dischinger & Riedel, 2011; Grubert, 2003), internal debt (Büttner & Wamser, 2013), or group structure complexity (Beer & Loeprick, 2015). The effectiveness of anti-tax avoidance regulations has also been analyzed (e.g., Büttner et al., 2012; Overesch & Wamser, 2010).

During the past decade, profit shifting of MNEs has probably been the most controversial tax avoidance strategy and has been condemned as unethical and immoral (Barford & Holt, 2013; OECD, 2013). At the same time, adequate corporate tax payments are increasingly seen as part of CSR. However, with the exception of a study of Hasan et al. (2023), a potential relationship between CSR and profit shifting has hardly been studied.<sup>6</sup>

## 2.2 CSR and corporate tax behavior

Despite the importance that CSR has gained, no universal definition describing the concept exists. The European Commission defines CSR as ‘the responsibility of enterprises for their impacts on society’ and states that CSR ‘concerns actions by companies over and above their legal obligations toward society and the environment’ (European Commission, 2011). Irrespective of the definition employed, CSR depends on a voluntary commitment. The extent of a firm’s CSR activities can thus be chosen deliberately and varies depending on the responsibilities the firm is willing to take and its attitude toward the different issues of CSR. We assume that an MNE’s CSR strategy is centralized at the parent firm and hence applies to subsidiaries, as Epstein and Roy (2007) have shown is the case for environmental strategies.

There are two different theories to explain the consideration of CSR activities by firms. These theories also lead to conflicting expectations regarding the relationship between CSR and profit-shifting behavior. According to the risk management theory, managers will only engage in CSR activities if they expect a positive payoff. This theory is based on the shareholder theory, according to which the sole responsibility of a company is to maximize its profits within the framework of legal requirements (Friedman, 1962). However, CSR also generates economic value by building up a ‘moral capital’. This moral capital mitigates the risks related to negative corporate events as external stakeholders are more lenient toward firms with a positive CSR reputation (Godfrey, 2005). The minimization of tax payments can impose risks on firms as it might result in sanctions or reputational damages. Therefore, socially

<sup>5</sup> The estimated magnitude of profit shifting varies among studies. A meta-analysis by Heckemeyer and Overesch (2017) finds a consensus semi-elasticity of -0.8, indicating that a 10% point increase in the tax variable reduces the pre-tax profits reported in financial statements by 8%. Beer et al. (2020) find that the semi-elasticity has increased over time and equals -1.5 for the most recent years.

<sup>6</sup> The findings of Hasan et al. (2023) can also be interpreted differently due to the empirical approach used, see the discussion in the introduction.



responsible behavior might serve as an insurance against risks arising from more extensive tax avoidance.<sup>7</sup>

In contrast, the corporate culture theory explains the consideration of CSR by the fact that companies and managers have responsibilities not only to shareholders, but also to other stakeholders. This assumption is based on the stakeholder theory which claims that a firm should incorporate all stakeholders, such as society, customers, employees and the government, in its decisions (Freeman, 1984, 1994; Freeman & Reed, 1983).<sup>8</sup> If a company feels committed to all stakeholders, this commitment will shape its corporate culture and no activities potentially harmful to those parties will be undertaken. The concept of corporate culture implies that all the decisions – including those on CSR and tax avoidance – of a corporation will reflect a set of shared values and beliefs regarding the ‘right’ corporate behavior (Deshpande & Webster, 1989; Hermalin, 2001; Hoi et al., 2013; Kreps, 1990). If corporate culture considers CSR activities, profit shifting will be inconsistent with such a corporate culture (Col & Patel, 2019; Hoi et al., 2013).

A growing number of empirical works has already examined how CSR and corporate tax avoidance is associated (for a review see Kovermann & Velte, 2021). Most of these studies have investigated the relationship between CSR and tax avoidance only in terms of the overall tax position of companies taken from consolidated accounts. However, the results are inconclusive. Some studies document that CSR and tax avoidance are negatively related. Lanis and Richardson (2012) find an adverse relation between tax avoidance and the level of CSR disclosures in the annual reports of Australian firms. They conclude that more socially responsible firms are less tax aggressive. This finding is confirmed when the authors investigate the relation between US firms’ CSR engagement and the level of tax disputes as a direct measure of tax avoidance (Lanis & Richardson, 2015). Hoi et al. (2013) examine irresponsible CSR activities and conclude that tax avoidance is more likely to occur in firms with excessive irresponsible CSR activities. A paper by Lee (2020) finds that firms with headquarters in tax havens exhibit a lower level of CSR activities than otherwise comparable firms located in the US. However, other studies suggest that firms claiming to be socially responsible are indeed more tax aggressive. Besides qualitative research (Preuss, 2010; Sikka, 2010), Davis et al., (2016) provide empirical evidence that CSR and tax avoidance are positively related. They hence draw the conclusion that CSR and taxes act as substitutes rather than complements.

While most of the previous literature on CSR and corporate tax behavior considers the overall tax avoidance of MNEs, we focus on profit-shifting activities of MNEs as an important and controversial channel of tax avoidance.

<sup>7</sup> Another theory in favor of a positive relationship between CSR and profit shifting assumes that managers feel responsible for social conditions but do not see tax payments as an appropriate contribution to society (Davis et al., 2016). Consequently, firms avoid taxes because the higher profits can be used for the benefit of society, e.g., for charitable giving (Huseynov and Klamm, 2012).

<sup>8</sup> However, shareholder and stakeholder theory are not necessarily oppositional, as maximizing stakeholder value will also benefit the shareholders (Freeman et al., 2004). If external stakeholders withdrew their resources, a company’s success would be impacted on a large scale (Freeman & Reed, 1983).



## 2.3 Hypothesis development

As the discussion in the previous section has shown, there are two different theories for the consideration of CSR by companies. Accordingly, there are also different expectations for the association between profit shifting and CSR.

### 2.3.1 Relation between CSR and profit shifting

According to risk management theory, moral capital associated with more CSR activities allows the company to pursue activities that are associated with potentially greater reputational risks. Anecdotal evidence implies that adverse reputational effects can arise from tax avoidance, e.g., due to negative media coverage.<sup>9</sup> Moreover, survey evidence suggests that reputational concerns are an important factor for tax executives deciding on tax planning (Graham et al., 2014). Consequently, the risk management theory suggests that more profit shifting occurs in MNEs with extensive CSR activities, as CSR is used to hedge against the risks associated with profit shifting (Hoi et al., 2013).<sup>10</sup> We formulate the following hypothesis:

**H1a** *CSR and the profit-shifting behavior of MNEs are positively related.*

The economic perspective has progressively been challenged by scholars advocating that ethics and values are an integral part of corporate actions, so that companies and managers have responsibilities not only to shareholders, but also to other stakeholders such as society, customers, employees and the government. This commitment will shape its corporate culture and no activities potentially harmful to those parties will be undertaken. Consequently, profit shifting will be inconsistent with such a corporate culture (Col & Patel, 2019; Hoi et al., 2013). In sum, the corporate culture theory implies that CSR and the profit shifting of MNEs are negatively related, so that CSR and tax payments are complements. The corporate culture theory leads to the following hypothesis:

**H1b** *CSR and the profit-shifting behavior of MNEs are adversely related.*

The relationship between CSR and income shifting is not necessarily the same across different regions. The attitude towards CSR might vary among geographic regions (e.g., Ho et al., 2012; Thanetsunthorn, 2015) and whether tax is considered as an integral part of CSR by shareholders (Aguilera et al., 2007). Moreover, the extent to which stakeholders are considered by a firm might also vary among countries. In the

<sup>9</sup> For example, the reputation score for Starbucks provided by the polling firm YouGov dropped significantly after the revelation of their reduced tax payments (Sadgrove, 2015).

<sup>10</sup> However, the reputational costs arising from the minimization of tax payments are disputed. Gallemore et al. (2014) do not find evidence of reputational costs caused by tax shelter involvement for firms or their executives. In contrast, Hanlon and Slemrod (2009) find that firms' stock prices decline after the release of press articles about aggressive tax planning, indicating that investors judge tax avoidance negatively. See, e.g., Krieg and Li (2021) for an extensive review of the literature on the reputational costs of tax avoidance.

US, the main priority has been found to be the shareholders – though the role of stakeholders has presumably increased over time (Keay, 2011; Klettner, 2017; Klettner et al., 2014). By contrast, in European countries, stakeholder-orientation is traditionally strong, based on the understanding that not only shareholders contribute to and have claims on a company's earnings (Keay, 2011; Klettner, 2017). A global analysis of corporate social performance by Ho et al. (2012) indicates that European countries generally outperform North American companies. Therefore, hypothesis H1a (based on the shareholder theory-related risk management theory), might be a better fit for US companies, whereas the stakeholder view in Europe could result in a negative relationship, in accordance with H1b. Therefore, we will consider MNEs from different regions, i.e., European MNEs and in additional analyses also US MNEs.

### 2.3.2 Dimensions of CSR and profit shifting

Companies' CSR activities could also differ because they set different priorities on the dimensions of CSR. CSR activities are usually categorized into three dimensions: governance, social and environmental activities. The dimensions differ with regard to the fields of action. Prior studies that investigate tax avoidance have shown that some dimensions of CSR seem to be more relevant in explaining corporate decisions about tax planning activities (e.g., Hoi et al., 2013; Lanis & Richardson, 2012; Laguir et al., 2015). Consequently, the relationship between profit shifting and CSR could also be different for the distinct CSR dimensions.

From the risk management perspective, engaging in activities concerning the environment or the society could reap greater benefits, because these two dimensions can be expected to be particularly suitable to build up a 'moral capital' against the reputational risks of profit shifting. Activities for the sake of society can also improve corporate reputation (Dhaliwal et al., 2011) by suggesting that the company is in fact a 'good corporate citizen'. As the diminishing of tax payments ultimately impacts the society, implementing social practices could be particularly effective in shielding the company from potential pitfalls of profit shifting, such as damages to the public perception of the company. In the context of risk management theory, engagement in the environmental and (even more so) in the social dimension should therefore be particularly positively related to profit shifting. We formulate an additional hypothesis:

**H2a** *The positive relationship between CSR and the profit-shifting behavior of MNEs is particularly pronounced for the social and environmental dimension.*

If, on the other hand, one follows the corporate culture theory, then the correlation between CSR and profit shifting should be negative. However, there may also be differences in the extent of the relationship depending on different dimensions of CSR activities. The association with profit shifting could be particularly pronounced for the governance dimension. While the environmental and social responsibilities are connected to the operations of a company, the corporate governance dimension reflects how a company's processes and systems ensure that its executives and board members act in the best interests of shareholders. Therefore, the governance dimension of CSR has often been excluded from prior research or treated as a control

variable rather than as an integral part of CSR (e.g., Davis et al., 2016; Hoi et al., 2013). Yet, current research suggests that improving governance structures and processes in particular enables companies to take the interests of all stakeholders into account (Klettner et al., 2014; De Graaf & Stoelhorst, 2013). Following this stakeholder-related view of corporate governance, higher performance in the corporate governance dimension (i.e., better consideration of stakeholders' interests) should be negatively associated with profit shifting if a company has a corresponding corporate culture. This leads to an additional hypothesis:

**H2b** *The negative relationship between CSR and the profit-shifting behavior of MNEs is particularly pronounced for the governance dimension.*

### 2.3.3 Reputational concerns and market power

The relationship between CSR and profit shifting might also differ for distinct kinds of firms because of reputational concerns. Both CSR and corporate tax behavior can be crucial to a firm's reputation (e.g., Graham et al., 2014; Jeffrey et al., 2019). In particular, a firm's sensitivity to reputational risks presumably depends on the consumer orientation of its business model and its market power.

Consumers are an important stakeholder group that are likely to take into account a firm's reputation with regard to CSR issues (Kim, 2019) and tax avoidance. Reputational damages from tax avoidance are found to be higher for firms with valuable consumer brands (Austin & Wilson, 2017). Consequently, reputational concerns should directly affect tax-motivated income shifting. Moreover, experimental studies document that consumers' CSR perceptions and consumer reactions are related to tax avoidance (e.g., Antonetti & Anesa, 2017; Hardeck & Hertl, 2014). Following the risk management theory, firms that operate in more consumer-oriented industries might be more inclined to consider CSR to avoid reputational damages than firms focused on business customers.

Similarly, market competition might affect a firm's engagement in CSR and profit shifting. Firms facing high competition might avoid less taxes as they are presumably more affected by negative outcomes than firms facing low competition, disabling higher risk-taking (Peress, 2010). Therefore, high competition can motivate firms to strategically use CSR activities in order to shift more profits despite the competitive environment (Fernández-Kranz & Santaló, 2010; Leong & Yang, 2020). We formulate the following hypothesis:

**H3a** *The positive relationship between CSR and profit-shifting is particularly pronounced for firms operating in business-to-consumer industries or with weak market power.*

For companies with greater market power and less consumer orientation, reputation and thus the moral capital built up through CSR does not play such a major role. A study by Kubick et al. (2015) documents that firms with greater market power and thus weaker competition have greater opportunities for tax avoidance. An association

between CSR and profit shifting should therefore only arise if the overall corporate culture takes CSR into account. This leads to an additional hypothesis in terms of the corporate culture theory:

**H3b** *The negative relationship between CSR and profit-shifting is particularly pronounced for firms with business-to-business activities or strong market power.*

### 2.3.4 Parent country institutional quality

The institutional setting in which the parent firms are located might also mediate the relationship between CSR and tax avoidance (Lin et al., 2017). Weaker legal or governmental institutions are often associated with higher contractual costs. If CSR serves as a substitute for weak, generally binding institutions, the benefits of CSR are more pronounced for companies in countries with weak institutions. Consequently, the decision to adopt a higher level of CSR is less an expression of building up moral capital but rather a strategic decision to reduce costs due to the absence or weakness of general institutions (Hasan et al., 2023). If the relationship between CSR and income shifting follows the risk management theory, the positive correlation should be weaker in countries with a weak institutional environment:

**H4a** *The positive relationship between CSR and profit-shifting is weaker for firms from countries with weak institutions.*

Moreover, negative correlations between CSR and profit shifting should be found primarily for companies from countries with strong legal systems (Hasan et al., 2023). In these countries, a high level of CSR is more likely to be an expression of a corporate culture that takes into account the interest of various stakeholders.

**H4b** *The negative relationship between CSR and profit-shifting is particularly pronounced for firms from countries with strong institutions.*

## 3 Data and research methodology

### 3.1 Data

We obtain data from two sources for our study. Firm-level accounting data are retrieved from the Amadeus database by Bureau van Dijk. Amadeus provides subsidiary-level financial data as well as ownership information for a large number of European and US companies.<sup>11</sup> For our analyses, we use two samples comprising

<sup>11</sup> We combine multiple versions of the database (from 2020, 2018, 2015 and 2013) to mitigate the survivorship bias of Amadeus arising due to the deletion of companies that have not reported in the last five years (Kalemli-Ozcan et al., 2015). Another drawback of using this database is that ownership data are

subsidiary firms in EU and European Economic Area [EEA] countries: a sample of European MNEs with their European subsidiaries and a sample of US MNEs with their European subsidiaries.

Information on CSR is retrieved from the Refinitiv ESG score database (formerly denoted as Thomson Reuters ASSET4).<sup>12</sup> ESG scores are commonly used by different stakeholders or academic literature to measure a firm's CSR performance (Ioannou & Serafeim, 2012; Yoon et al., 2021). Hence, in the following, the terms ESG and CSR are used interchangeably. Refinitiv offers comprehensive ESG scores for over 10,000 global public companies. Trained content research analysts collect data from publicly available information sources, e.g., company or non-governmental organization websites, CSR reports, stock exchange filings or news sources.<sup>13</sup> The data then undergo algorithmic as well as human quality assurance processes in which they are standardized to guarantee comparability. The company-level information is aggregated into several measures which are employed to generate various ESG scores, ranging from 0 to 100 (with 100 representing the best performance). Figure A1 in the Appendix illustrates the different ESG scores.

First, we consider scores that capture the overall ESG performance of a firm. The *ESG score* measures a firm's overall relative ESG performance, effectiveness and commitment. It is a percentile rank score constructed by aggregating 10 categories.<sup>14</sup> The categories are mainly intended to measure the ESG performance and reflect whether a company has a certain policy and process in place or directly measures a company's actions.<sup>15</sup> In additional analyses, we consider two other ESG measures. The *ESG controversies score* captures scandals that have been discussed in the media and materially impact the firm (Refinitiv, 2020). A lower score represents a higher number of controversies. The *ESG combined score* evaluates a firm's overall ESG performance as well as its conduct by combining the ESG score and the ESG controversies scores.

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solely available for the last reported date, which is 2018 for the majority of the firms in our sample. However, in accordance with previous studies that have acknowledged this caveat (e.g., Dharmapala & Riedel, 2013; Dischinger et al., 2014), we are not overly concerned about the issue of potential misclassifications since, if anything, it is expected to lead to a bias against finding significant results (Budd et al., 2005).

<sup>12</sup> ESG scores evaluate a firm's environmental, social and corporate governance activities. CSR refers to a firm's activities toward being more socially responsible (Gillan et al., 2021). Generally, a firm's responsibility is considered to comprise environmental, social and (indirectly) governance issues (e.g., Elkington, 1997; Gillan et al., 2021; Knuutinen & Pietiläinen, 2017).

<sup>13</sup> We are aware of the issue common to all CSR databases relying on public disclosures that information might not fully reflect the actual CSR activities undertaken by a firm. The CSR disclosures of corporations might be deliberately biased, e.g., to cover up tax avoidance (Moser & Martin, 2012; Sikka, 2010). However, the inclusion of third-party sources which most likely cannot be influenced by the firm itself should mitigate this problem (Cheng et al., 2014). Moreover, rating shopping is less likely, because Thomson Reuters is funded by the investors accessing the data rather than by the rated companies (Barkó et al., 2022).

<sup>14</sup> The different category scores (such as emissions, human rights, etc.) are weighted according to a magnitude matrix which considers the importance of the single ESG themes to different industries. For a detailed definition, see Refinitiv (2020).

<sup>15</sup> To ensure that the data does not merely reflect reporting efforts, the data of Refinitiv also comes from third-party sources, such as NGO websites, news sources, stock exchange information.

The second type of ESG measures included in our analyses are ESG pillar scores that measure the performance in the following three dimensions: (i) environmental, (ii) social and (iii) corporate governance.<sup>16</sup>

Given the aforementioned advantages and a transparent methodology, Refinitiv ESG (or its predecessor ASSET4) scores have been employed in numerous empirical studies (e.g., Cheng et al., 2014; Hawn & Ioannou, 2016; Sassen et al., 2016). They are considered one of the most reliable and diligent sources of CSR data (Stellner et al., 2015). Moreover, we chose this database because, compared to other providers, Refinitiv's database has a better long-term coverage of European companies.<sup>17</sup>

We retrieve the different ESG scores described above and merge the data to ownership information retrieved from Amadeus based on the ISINs of the parent firms. Thereafter, all subsidiaries of parent firms without available CSR information are dropped. In addition, we limit our analyses to the years 2010 to 2018.<sup>18</sup>

To capture international profit shifting, we next identify subsidiaries that are part of a multinational group by using the ownership structure provided by Amadeus. A subsidiary is defined as being part of an MNE if more than 50% of its shares are owned by an independent global ultimate owner that has at least one subsidiary in another country (for a similar approach see, e.g., Barrios & d'Andria, 2020; Huizinga & Laeven, 2008; Maffini & Mokkas, 2011). Subsidiaries without a global ultimate owner or that are not part of an MNE are excluded. The dataset including ownership and CSR information is then merged with subsidiary-level financial data taken from Amadeus. We remove unconsolidated data for the parent firm and all consolidated accounts because we are interested in the taxation of each individual subsidiary. We further delete observations of firms with a fiscal year that differs from 12 months to obtain a uniform accounting period in the sample and assign observations with a year-end date before June 1 to the previous financial year. Following earlier studies, we eliminate observations with negative total, fixed, tangible or intangible assets and a negative cost of employees or turnover (Barrios & d'Andria, 2020; Beer & Loeprick, 2015) and limit our analysis to subsidiaries with positive pre-tax income (Dharmapala & Riedel, 2013; Huizinga & Laeven, 2008).<sup>19</sup>

The observational unit in our analysis is the subsidiary of an MNE. Our sample of European MNEs consists of 116,702 observations from 24,409 subsidiaries in 27 EU

<sup>16</sup> The 10 category scores are used to calculate the ESG pillar scores. See Table A2 in the Appendix for a definition of the category scores and the composition of the corresponding ESG pillars.

<sup>17</sup> For example, the widely-used MSCI ESG database has only included European companies in recent years (Sassen et al., 2016). Moreover, we consider it more appropriate to employ Refinitiv's ESG database due to the different methodology. While Refinitiv provides a score for the overall CSR performance, MSCI differentiates between CSR concerns and strengths in each of its categories. Thus, most studies relying on MSCI data analyze the effect of CSR separately for CSR concerns and strengths. However, some CSR concerns might occur involuntarily. Even if a company tries to compensate for such negative events through other social actions (strengths), the link to the high concerns will not be considered due to the separate analysis.

<sup>18</sup> The availability of CSR data is limited for earlier years. In addition, by choosing this sample period, we do not include the years of the financial crisis in which both the CSR and profit-shifting behavior of MNEs might have been different.

<sup>19</sup> The subsidiaries for which we have financial data mainly cover operative business. Conduit entities and tax-haven subsidiaries are underrepresented in the Amadeus database (Fuest et al., 2022).

and EEA countries and 980 parent firms in 21 countries over the years 2010 to 2018. Table 1 presents an overview of the composition of the European sample. In additional analyses, we consider a sample of 61,405 observations from 12,489 European subsidiaries of 956 US parent firms.

### 3.2 Research methodology

To analyze the profit shifting of a multinational group and its relation to the parent firm's CSR, we employ the identification strategy of Hines and Rice (1994) and Huizinga and Laeven (2008). We estimate the following regression equation:

$$PBT_{it} = \beta_0 + \beta_1 STR_{it} + \beta_2 CSR_{jt} \times STR_{it} + \beta_3 CSR_{jt} + \beta_4 X_{it} + Year_t + Industry_i + Parent_j FE + u_{it} \quad (1)$$

**Table 1** Country distribution of the European sample

Country	Subsidiaries		Parent Firms	
	Observations	Unique Firms	Observations	Unique Firms
Austria	2,648	534	2,013	18
Belgium	7,826	1,418	2,820	23
Bulgaria	1,034	188		
Croatia	680	133		
Czech Republic	3,934	690	522	1
Denmark	2,682	557	1,833	28
Estonia	520	94		
Finland	2,322	516	3,761	34
France	18,623	4,075	24,377	84
Germany	9,014	1,896	15,239	96
Greece			107	11
Hungary	2,265	426	537	4
Iceland	56	16		
Ireland	1,542	363	6,190	35
Italy	10,188	1,966	5,746	41
Latvia	66	11		
Luxembourg	1,005	285	1,210	16
Malta	76	28	57	4
Netherlands	968	324	5,397	58
Norway	3,412	714	2,728	30
Poland	4,876	1,027	933	22
Portugal	2,918	530	469	5
Romania	2,496	495	4	1
Slovakia	1,831	335		
Slovenia	586	100		
Spain	12,576	2,380	6,635	47
Sweden	3,911	1,038	8,524	104
United Kingdom	18,647	4,270	27,600	318
Total	116,702	24,409	116,702	980

Notes: Table 1 depicts the country distribution of the European sample which comprises subsidiaries and parent firms from EU and EEA countries



The dependent variable  $PBT_{it}$  is the log of reported profit before tax of subsidiary  $i$  in year  $t$ . We consider  $PBT$  because it accounts for both transfer pricing manipulation and financial shifting mechanisms.<sup>20</sup> The statutory tax rate of the country where the subsidiary resides ( $STR_{it}$ ) is employed to capture the tax incentive to shift profits.<sup>21</sup> Statutory tax rates are collected from the worldwide corporate tax summaries of PwC, KPMG and EY. We expect a negative sign for  $\beta_1$ , as a higher statutory tax rate is likely to result in profits being shifted to other locations. Due to the log-level specification,  $\beta_1$  directly reports the point semi-elasticity of pre-tax profit.

As a CSR measure ( $CSR_{jt}$ ), we consider variables retrieved from the Refinitiv database that capture the overall CSR performance as well as the performance in separate CSR dimensions (environmental, social and governance) of parent  $j$  of the respective subsidiaries. The coefficient of interest for our research question is  $\beta_2$ , the coefficient of the interaction term between the CSR variable and tax variable ( $CSR_{jt} \times STR_{it}$ ) which estimates the relation between a parent firm's CSR and profit-shifting behavior. The coefficient indicates if the response to the tax incentive is weaker or stronger depending on the CSR position of the parent company.

$X_{it}$  is a vector of subsidiary- or country-level control variables which affect the profit of a subsidiary as shown in prior studies (e.g., Beer & Loeprick, 2015; Huizinga & Laeven, 2008). To estimate the 'true' income of a subsidiary, measures of capital and labor inputs are included in the analysis. Fixed assets and costs of employees serve as proxy for capital ( $CAPITAL$ ) and labor ( $LABOR$ ), respectively. In addition, the share of intangible assets over total assets ( $INTAN$ ) controls for the value of intangibles of a subsidiary. On the country level, GDP ( $GDP$ ), GDP per capita ( $GDP_C$ ) and the unemployment rate ( $UNEMPLOY$ ) are included to control for economic conditions of a subsidiary's host country. Moreover, we add an indicator for the control of corruption ( $CORRUPT$ ). Table 2 provides descriptive statistics of the variables included in our regressions. Definitions of the employed variables can be found in Panel A of Table A1 in the Appendix.

We add parent-specific fixed effects to control for heterogeneity across the different parent companies.<sup>22</sup> This is also the relevant dimension in which our CSR variable varies. We do not include subsidiary or host-country fixed effects to avoid an estimation that is only based on within-country variation, as our estimation of profit shifting is based on tax differences between countries. Including such fixed effects would capture a part of profit shifting and can lead to underestimation (Clausen, 2006; Heckemeyer & Overesch, 2017). Therefore, estimations require between-

<sup>20</sup> Heckemeyer and Overesch (2017) find that transfer pricing and licensing are the main channels of profit shifting. Thus, we conduct robustness tests using earnings before interests and taxes ( $EBIT$ ) to exclude debt shifting.

<sup>21</sup> The tax incentive for individual profit shifting is the difference in tax rates at the group locations. Since only the profits of the subsidiaries and no transaction data are regularly used, the corresponding tax rate difference is unknown. Considering the local corporate tax rate as a reduced form of the tax incentive is common standard in the empirical profit-shifting literature (see Heckemeyer & Overesch, 2017 for an overview). Some literature also uses a weighted average of the tax rate differentials (e.g., Huizinga & Laeven, 2008).

<sup>22</sup> Parent fixed effects also nest parent country fixed effects as no parent firm changed the country of residence during our sample period.

**Table 2** Descriptive statistics

VARIABLES	Obs.	Mean	Std. Dev.	Q1	Median	Q3
<b>Panel A: European Sample – EU and EEA Subsidiaries of European MNEs</b>						
<i>PBT</i>	116,702	14.210	2.181	12.824	14.157	15.564
<i>EBIT</i>	115,497	15.903	0.858	15.402	15.574	16.052
<i>STR</i>	116,702	0.268	0.066	0.210	0.279	0.314
<i>TAXDIFF</i>	116,702	0.002	0.060	-0.036	0.006	0.044
<i>ESG</i>	116,702	63.511	18.794	51.227	67.032	78.281
<i>ESGCOMB</i>	116,702	58.795	17.619	46.516	60.356	73.140
<i>ESGCONTROV</i>	116,702	82.614	28.972	75.000	100.000	100.000
<i>ENV</i>	116,702	62.818	25.724	45.990	69.938	83.409
<i>SOC</i>	116,702	66.445	22.045	53.049	70.755	84.317
<i>GOV</i>	116,702	58.736	21.589	42.642	61.074	76.344
<i>CAPITAL</i>	116,702	14.688	3.083	12.666	14.670	16.736
<i>LABOR</i>	116,702	14.969	1.967	13.838	14.956	16.203
<i>INTAN</i>	116,702	0.037	0.107	0.000	0.001	0.015
<i>GDP</i>	116,702	27.438	1.172	26.650	27.787	28.425
<i>GDPC</i>	116,702	10.273	0.478	10.097	10.385	10.540
<i>CORRUPT</i>	116,702	1.240	0.700	0.614	1.456	1.814
<i>UNEMPLOY</i>	116,702	2.090	0.482	1.762	2.084	2.335
<b>Panel B: US Sample – EU and EEA Subsidiaries of US MNEs</b>						
<i>PBT</i>	61,405	14.240	1.961	12.963	14.224	15.488
<i>EBIT</i>	60,775	15.220	1.002	14.506	14.900	15.642
<i>STR</i>	61,405	0.262	0.067	0.200	0.260	0.314
<i>TAXDIFF</i>	61,405	0.007	0.065	-0.042	0.007	0.055
<i>ESG</i>	61,405	52.991	20.934	36.564	53.737	70.166
<i>ESGCOMB</i>	61,405	47.512	18.225	34.358	46.945	61.341
<i>ESGCONTROV</i>	61,405	77.346	33.684	57.813	100.000	100.000
<i>ENV</i>	61,405	43.586	28.921	18.324	44.497	69.772
<i>SOC</i>	61,405	54.287	22.783	36.420	53.804	73.311
<i>GOV</i>	61,405	58.825	22.001	43.811	62.639	76.185
<i>CAPITAL</i>	61,405	14.334	3.022	12.283	14.406	16.464
<i>LABOR</i>	61,405	15.215	1.687	14.135	15.236	16.314
<i>INTAN</i>	61,405	0.031	0.092	0.000	0.000	0.010
<i>GDP</i>	61,405	27.540	1.147	26.659	28.154	28.483
<i>GDPC</i>	61,405	10.322	0.451	10.204	10.424	10.570
<i>CORRUPT</i>	61,405	1.320	0.691	0.670	1.549	1.838
<i>UNEMPLOY</i>	61,405	2.024	0.453	1.668	2.052	2.308

Notes: Table 2 presents descriptive statistics for our sample firms, requiring non-missing values for all variables. Panel A is based on our sample of EU and EEA subsidiaries of European MNEs. Panel B is based on a sample of EU and EEA subsidiaries of US MNEs as presented in Sect. 4.2. For a detailed description of variables employed, see Table A1 in the Appendix

country variation. At the subsidiary level, however, we use industry dummies at the two-digit NACE code level to control for unobservable heterogeneity, as business models and opportunities for profit shifting vary among industries (e.g., Barrios & d'Andria, 2020). Moreover, as common economic developments may influence subsidiary profitability and can be correlated with the profit-shifting incentive, we add year dummies. Our statistical inferences are based on robust standard errors clustered

at both the parent-year level and the country-year level as the CSR variable and the tax rate vary over these dimensions.

## 4 Empirical results

### 4.1 Regression results for European MNEs

We begin with an analysis of the subsidiary data for European MNEs. The regression results are depicted in Table 3. In Column (1), we estimate a standard profit-shifting model without any CSR variables. The negative and significant coefficient of *STR* across all specifications indicates that the MNEs in our sample engage in profit shifting. The coefficient of -1.42 suggests that on average, a 1% point increase in the host country's statutory tax rate leads to a 1.42% smaller reported pre-tax profit of a subsidiary.<sup>23</sup> The coefficients of capital and labor are positively related to pre-tax profit, which is consistent with prior literature. The coefficient of the ratio of intangibles over total assets is significant and negative. This finding as well as the magnitude are in line with Beer and Loeprick (2015). The coefficients of country-level controls are also plausible and coincide with previous findings. The positive coefficients of GDP and GDP per capita suggest that subsidiaries operating in larger and more productive markets generate higher pre-tax profits. Moreover, a higher control of corruption exercises a positive influence on pre-tax profits. Subsidiaries operating in countries with less unemployment are more profitable.

In Columns (2) to (4), we consider the ESG scores that measure a parent firm's overall CSR performance. The coefficients for the tax rate *STR* are again negative and describe the semi-elasticity of reported pre-tax profits for a hypothetical firm with the CSR variable being 0, i.e., for an extremely socially irresponsible firm. In Column (2), we find a positive coefficient of the interaction term between the overall ESG score and the tax rate. This finding suggests that profit shifting decreases with the overall ESG score, hence with the extent a parent firm engages in CSR. Conversely, profit shifting is more pronounced in MNEs whose overall CSR activities are low. Evaluated at the sample mean of the ESG score, the tax elasticity of reported profits equals -1.43.<sup>24</sup> This magnitude is nearly identical to the extent of profit shifting as depicted in Column (1). However, if we consider a more socially responsible MNE with an ESG score that is one standard deviation higher (increased by 20), our point estimate suggests that the semi-elasticity decreases by 0.18 in absolute values to -1.25, reducing the observed extent of profit shifting by 13% compared to the sample mean.

In Column (3) we find weak evidence for the adverse relation between CSR and profit shifting considering the ESG combined score (*ESGCOMB*). We moreover investigate the robustness of our result for the ESG combined score by separately

<sup>23</sup> This estimate is close to the consensus estimate of -1.5 for recent years (Beer et al., 2020).

<sup>24</sup> The semi-elasticity is calculated as the sum of the coefficient of *STR* (-2.006) and the coefficient of *STR* × *ESG* (0.009) multiplied with the ESG score. At the sample mean of the ESG score, which is equal to 63.5, the semi-elasticity is hence calculated as  $-2.006 + 0.009 \times 63.5 = -1.43$ .

**Table 3** Overall CSR performance and profit shifting of European MNEs

VARIABLES	(1)	(2)	(3)	(4)	(5)
	Without CSR Variable	ESG Score	ESG Combined Score	ESG Contro- versies and ESG Score	Lagged ESG Score
<i>STR</i>	-1.424*** (0.000)	-2.006*** (0.000)	-1.909*** (0.000)	-1.792*** (0.000)	-2.008*** (0.000)
<i>STR</i> × <i>ESG</i>		0.009** (0.043)		0.008** (0.039)	0.010** (0.028)
<i>STR</i> × <i>ESGCOMB</i>			0.008* (0.061)		
<i>STR</i> × <i>ESGCONTROV</i>				-0.002 (0.389)	
<i>ESG</i>		-0.001 (0.537)		-0.001 (0.626)	-0.003* (0.054)
<i>ESGCOMB</i>			-0.002 (0.145)		
<i>ESGCONTROV</i>				0.000 (0.553)	
<i>CAPITAL</i>	0.346*** (0.000)	0.346*** (0.000)	0.346*** (0.000)	0.346*** (0.000)	0.348*** (0.000)
<i>LABOR</i>	0.349*** (0.000)	0.349*** (0.000)	0.349*** (0.000)	0.349*** (0.000)	0.348*** (0.000)
<i>INTAN</i>	-1.501*** (0.000)	-1.501*** (0.000)	-1.502*** (0.000)	-1.501*** (0.000)	-1.504*** (0.000)
<i>GDP</i>	0.053*** (0.000)	0.052*** (0.000)	0.053*** (0.000)	0.052*** (0.000)	0.052*** (0.000)
<i>GDPG</i>	0.183*** (0.000)	0.182*** (0.000)	0.182*** (0.000)	0.182*** (0.000)	0.178*** (0.000)
<i>CORRUPT</i>	0.049*** (0.008)	0.049*** (0.008)	0.049*** (0.007)	0.049*** (0.008)	0.051*** (0.005)
<i>UNEMPLOY</i>	-0.108*** (0.000)	-0.110*** (0.000)	-0.109*** (0.000)	-0.109*** (0.000)	-0.115*** (0.000)
Year Dummies	✓	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓	✓
Observations	116,702	116,702	116,702	116,702	112,239
R <sup>2</sup>	0.590	0.590	0.590	0.590	0.588

Notes: Table 3 provides the regression results for estimating Eq. (1) with different CSR variables that measure a parent firm's overall CSR performance. In all columns, the dependent variable is the natural logarithm of profit before tax (*PBT*). Column (1) estimates the semi-elasticity of reported pre-tax profits with respect to a subsidiary's statutory tax rate *STR*. Column (2) tests the relation between the parent firm's overall CSR performance (*ESG*) and this elasticity. In Column (3), the ESG score adjusted based on ESG controversies (*ESGCOMB*) is employed as the CSR variable. Column (4) tests the relation between ESG controversies (*ESGCONTROV*) and the overall ESG score (*ESG*) and the semi-elasticity of reported pre-tax profits. In Column (5), ESG scores are lagged by one year. Year dummies, two-digit NACE (Rev. 2) industry dummies at the subsidiary level and parent firm fixed effects [parent FE] are included in the regressions, but not reported. All estimation results are based on standard errors clustered at the parent-year and the country-year level. *P*-values are reported in parentheses. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively

examining the relationship between each of the two components, the ESG score and the ESG controversies score (*ESGCONTROV*), and the statutory tax rate in Column (4). The result suggests that the extent to which a parent firm has been subject to controversies during a fiscal year is not significantly related to the tax elasticity of reported profits. Controversies which occur in the short term are not necessarily in line with the overall, long-term CSR performance and are thus not associated with profit-shifting behavior.<sup>25</sup> However, the negative and significant relation between overall ESG performance and profit shifting is still confirmed in Column (4).

In Column (5) of Table 3, we replicate our specification from Column (2), but consider the previous year's value of the firm's CSR performance. This approach reduces potential endogeneity concerns if the current CSR performance is also influenced by current profit-shifting considerations. The result of Column (5) shows similar coefficients for the relationship between CSR and profit shifting if we consider lagged CSR performances. In unreported results we also replicate all specifications by using lagged CSR values and find similar results.

For our sample of subsidiaries of European MNEs, our findings thus confirm an adverse relationship between the overall CSR performance and profit shifting. The negative association supports hypothesis H1b, which is based on corporate culture theory. Companies which do not attach any or a very low importance to CSR in their corporate culture are also more likely to minimize their taxes by shifting profits, whereas profit shifting is not reconcilable with a corporate culture that promotes higher CSR.

With a further analysis, we investigate whether distinct dimensions of CSR are related differently to profit shifting. In Table 4, we consider the three CSR dimensions (environmental, social, and governance) of the overall ESG score. We first investigate the dimensions separately in Columns (1) to (3). Column (4) shows the regression results when all dimensions are considered.

The results of Table 4 suggest that the adverse relation between CSR and profit shifting is mainly associated with the governance dimension. Our findings of a positive and significant interaction term  $STR \times GOV$  in Columns (3) and (4) show that stronger corporate governance mechanisms are associated with a smaller magnitude of profit-shifting activities. The score for the corporate governance dimension measures a company's processes and systems to ensure that its managers act in the best interests of shareholders and - according to the new view - other stakeholders. The findings support our hypothesis H2b.

For the social dimension, we also find weak evidence for an adverse relation between this CSR dimension and profit shifting. However, for the environmental dimension, we observe the opposite association when analyzing all CSR dimensions in Column (4). The coefficient of  $ENV \times STR$  is negative and significant, suggesting that higher environmental performance is related to a greater extent of profit shifting

<sup>25</sup> Indeed, the correlation between the ESG controversies score and overall ESG score in our sample (-0.33) indicates that firms with a higher ESG score tend to have a lower controversies score, i.e., have more controversies. Dorfleitner et al. (2020) suggest that firms with higher ESG scores are affected more strongly by controversies, in line with the saying 'the higher you fly, the harder you fall'.

**Table 4** CSR dimensions and profit shifting of European MNEs

VARIABLES	(1)	(2)	(3)	(4)
	<b>Environmental Dimension</b>	<b>Social Dimension</b>	<b>Governance Dimension</b>	<b>All ESG Dimensions</b>
<i>STR</i>	-1.429*** (0.000)	-1.862*** (0.000)	-2.158*** (0.000)	-2.263*** (0.000)
<i>STR</i> × <i>ENV</i>	0.000 (0.985)			-0.011** (0.047)
<i>STR</i> × <i>SOC</i>		0.006* (0.090)		0.011* (0.052)
<i>STR</i> × <i>GOV</i>			0.012*** (0.002)	0.013*** (0.009)
<i>ENV</i>	0.000 (0.983)			0.002 (0.124)
<i>SOC</i>		-0.000 (0.763)		-0.002 (0.385)
<i>GOV</i>			-0.003** (0.012)	-0.003** (0.030)
Controls	✓	✓	✓	✓
Year Dummies	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓
Observations	116,702	116,702	116,702	116,702
R <sup>2</sup>	0.591	0.591	0.591	0.591

Notes: Table 4 provides the regression results for estimating Eq. (1) with the separate ESG dimensions. The dependent variable is the natural logarithm of profit before tax (*PBT*). Columns (1), (2) and (3) test the relation to profit shifting separately for the environmental (*ENV*), social (*SOC*) and governance (*GOV*) dimensions, respectively. Column (4) tests the relation between all the different dimensions and the semi-elasticity of reported pre-tax profits with respect to a subsidiary's statutory tax rate *STR* simultaneously. All regressions include the subsidiary-level and country-level controls described in Sect. 3.2. Year dummies, two-digit NACE (Rev. 2) industry dummies at the subsidiary level and parent firm fixed effects are included in the regressions, but not reported. All estimation results are based on standard errors clustered at the parent-year and the country-year level. *P*-values are reported in parentheses. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively

in European MNEs. For this dimension, our result confirms H2a. Higher engagement in environmental protection and tax expenses are substitutes.

In sum, the results indicate that the overall negative relation between CSR and profit shifting is not uniform among the different CSR dimensions. Instead, the overall adverse relation is driven in particular by the governance dimension.

We perform several additional analyses to confirm the robustness of our findings. To test whether the relation between CSR and profit shifting also exists when debt shifting is disregarded, we use *EBIT* as the dependent variable.<sup>26</sup> Moreover, we employ an alternative tax variable which takes the worldwide group structure

<sup>26</sup> To avoid losing subsidiaries with negative *EBIT*, we follow Dharmapala and Riedel (2013) and add a constant to the variable that corresponds to the first percentile of the sample distribution before calculating the natural logarithm.

into account and captures profit-shifting incentives between all subsidiaries.<sup>27</sup> The untabulated results are mostly consistent with prior findings.<sup>28</sup>

## 4.2 Comparison with US MNEs

The previous analyses have focused solely on a European setting as we only consider European parent firms and their subsidiaries. In additional analyses, we examine whether the relation between CSR and profit shifting is different if parent firms are located in other countries. More precisely, we analyze European subsidiaries that are part of US MNEs. The regression results are depicted in Table 5. In Column (1), we first investigate the semi-elasticity of reported pre-tax profits without including CSR measures. The point estimate of the host country's tax rate equals  $-1.38$  and is again highly significant. Thus, the semi-elasticity of reported profits is almost identical to findings from our European sample.

Our investigation of the relation between CSR and profit shifting follows the same approach as our analyses of European MNEs. We first analyze the relationship between overall CSR performance and profit shifting. Thereafter, we consider the separate CSR dimensions – the environmental, social, and corporate governance dimension.<sup>29</sup>

Analogously to our findings for EU MNEs, we find an adverse effect of the host country's tax rate on reported profits, whereas the coefficient of the interaction term between the tax rate and the ESG score is significant and positive (Column (2)). Hypothesis H1b is therefore also confirmed for US MNEs. The result of Column (3) shows similar results if we consider lagged CSR values to reduce potential endogeneity concerns. The results for the ESG combined score are presented in Column (4). Column (5) investigates the ESG controversies score and ESG score. The results for the interaction terms between the respective CSR variables and *STR* are similar to our analyses of EU MNEs.

Column (6) shows regression results including the different CSR dimensions, i.e., environmental, social and corporate governance. The results deviate from the sample of European MNEs since no link between profit shifting and the different dimensions of CSR is statistically significant.

To compare the two samples more directly, we combine the two datasets of the subsidiaries of European and US MNEs. In Table 6, Columns (1) to (3) show the regression results for the sample comprising subsidiaries of EU and US MNEs. We add a dummy variable *US<sub>j</sub>* which indicates whether the observation is a subsidiary of a US parent firm.

<sup>27</sup> We compute a tax rate differential (*TAXDIFF*) between the statutory tax rate of the host country where a certain subsidiary is domiciled and the average of the statutory tax rates across all locations of the multinational firm (for a similar approach, see Beer & Loeprick, 2015; Dischinger et al., 2014; Dischinger & Riedel, 2011; Karkinsky & Riedel, 2012).

<sup>28</sup> Only the positive association between environmental performance and profit shifting is not confirmed when using *EBIT* as dependent variable, so that financial profit-shifting mechanisms are disregarded.

<sup>29</sup> Additionally, we perform the same robustness tests as in Sect. 4.1. The untabulated results are similar to our findings presented in Table 5.



**Table 5** CSR and profit shifting of US MNEs

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Without CSR Variable	ESG Score	Lagged ESG Score	ESG Com- bined Score	ESG Con- troversies & ESG Score	ESG Dimen- sions
<i>STR</i>	-1.386*** (0.000)	-2.670*** (0.000)	-2.493*** (0.000)	-2.502*** (0.000)	-2.803*** (0.000)	-2.399*** (0.000)
<i>STR × ESG</i>		0.024*** (0.000)	0.021*** (0.000)		0.025*** (0.000)	
<i>STR × ESGCOMB</i>				0.023*** (0.000)		
<i>STR × ESGCONTROV</i>					0.001 (0.729)	
<i>STR × ENV</i>						0.010 (0.132)
<i>STR × SOC</i>						0.008 (0.327)
<i>STR × GOV</i>						0.002 (0.717)
<i>ESG</i>		-0.005*** (0.007)	-0.005** (0.022)		-0.005*** (0.001)	
<i>ESGCOMB</i>				-0.006*** (0.001)		
<i>ESGCONTROV</i>					-0.000 (0.798)	
<i>ENV</i>						-0.002 (0.222)
<i>SOC</i>						-0.002 (0.452)
<i>GOV</i>						0.000 (0.977)
Controls	✓	✓	✓	✓	✓	✓
Year Dummies	✓	✓	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓	✓	✓

**Table 5** (continued)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Without CSR Variable	ESG Score	Lagged ESG Score	ESG Combined Score	ESG Controversies & ESG Score	ESG Dimensions
Observations	61,405	61,405	58,917	61,405	61,405	61,405
R <sup>2</sup>	0.582	0.582	0.582	0.582	0.582	0.582

Notes: Table 5 provides the regression results for estimating Eq. (1) for an alternative sample of European subsidiaries of US MNEs. In all columns, the dependent variable is the natural logarithm of profit before tax (*PBT*). Column (1) estimates the semi-elasticity of reported pre-tax profits with respect to a subsidiary's statutory tax rate *STR*. Column (2) tests the relation between the parent firm's overall CSR performance (*ESG*) and this elasticity. In Column (3), ESG scores are lagged by one year. In Column (4), the ESG score adjusted based on ESG controversies (*ESGCOMB*) is employed as the CSR variable. Column (5) tests the relation between ESG controversies (*ESGCONTROV*) and the overall ESG score (*ESG*) and the semi-elasticity of reported pre-tax profits. Column (6) depicts the relation between the different ESG dimensions environment (*ENV*), social (*SOC*) and governance (*GOV*) and profit shifting. All regressions include the subsidiary-level and country-level controls described in Sect. 3.2. Year dummies, two-digit NACE (Rev. 2) industry dummies at the subsidiary level and parent firm fixed effects are included in the regressions, but not reported. All estimation results are based on standard errors clustered at the parent-year and the country-year level. *P*-values are reported in parentheses. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively

For both variables measuring the overall CSR performance (*ESG* and *ESGCOMB*) we find a significant and negative relation between CSR and profit shifting (Columns (1) and (2)). The coefficients of the triple interaction terms between the tax rate, the CSR measure and the US dummy suggest that the relation is indeed significantly stronger for US MNEs. Evaluated at the average ESG score for the combined sample (equal to around 60), the combined tax elasticity for subsidiaries of EU MNEs is equal to -1.51 and to -1.23 for US MNEs. An increase in the ESG score by one standard deviation (equal to 20) reduces the semi-elasticity in absolute values by 0.18 for EU MNEs. The reduction is larger for US MNEs (0.44).

However, the samples of EU and US MNEs' subsidiaries might not necessarily be comparable if they belong to MNEs that are systematically different. Certain firm characteristics such as the size of a multinational group or industry membership might influence the relation between CSR and profit shifting. In untabulated *t*-tests, we observe significant differences in several firm characteristics between the European and US parent firms. To mitigate concerns that these differences impact our findings, we employ propensity score matching [PSM] to identify EU and US MNEs which are similar in terms of firm characteristics and belong to the same industry.

For the matching, we consider consolidated financial data for all MNEs in our samples taken from the Compustat Global and North America database. We perform a one-to-one nearest neighbor matching and match on a large set of firm characteristics, including size (*SIZE*), intangible assets (*INT\_ASSETS*), leverage (*LEV*), return on assets (*ROA*), market-to-book ratio (*MTB*), R&D (*RD*) and ESG score (*ESG*).<sup>30</sup> We require that only firms within the same industry are matched. For brevity, we describe the matching approach in more detail in Appendix A1. Our matched sample

<sup>30</sup> Definitions of the variables are presented in Panel B of Table A1 in the Appendix.

**Table 6** Comparison of EU and US MNEs

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Unmatched Sample			Matched Sample		
	ESG Score	ESG Com- bined Score	ESG Dimensions	ESG Score	ESG Com- bined Score	ESG Dimen- sions
<i>STR</i>	-2.051*** (0.000)	-1.955*** (0.000)	-2.334*** (0.000)	-2.598*** (0.000)	-2.819*** (0.000)	-3.087*** (0.000)
<i>STR</i> × <i>ESG</i>	0.009* (0.056)			0.018** (0.026)		
<i>STR</i> × <i>ESG</i> × <i>US<sub>j</sub></i>	0.013** (0.031)			0.007 (0.643)		
<i>STR</i> × <i>ESGCOMB</i>		0.008* (0.079)			0.023*** (0.007)	
<i>STR</i> × <i>ESGCOMB</i> × <i>US<sub>j</sub></i>		0.013** (0.043)			0.001 (0.942)	
<i>STR</i> × <i>ENV</i>			-0.014** (0.010)			-0.021* (0.075)
<i>STR</i> × <i>ENV</i> × <i>US<sub>j</sub></i>			0.026*** (0.002)			0.034** (0.010)
<i>STR</i> × <i>SOC</i>			0.013** (0.014)			0.021* (0.077)
<i>STR</i> × <i>SOC</i> × <i>US<sub>j</sub></i>			-0.007 (0.452)			-0.015 (0.381)
<i>STR</i> × <i>GOV</i>			0.014*** (0.005)			0.023*** (0.004)
<i>STR</i> × <i>GOV</i> × <i>US<sub>j</sub></i>			-0.014 (0.102)			-0.018 (0.170)
CSR Variables	✓	✓	✓	✓	✓	✓
Further Interaction Terms	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Year Dummies	✓	✓	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓	✓	✓

**Table 6** (continued)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Unmatched Sample			Matched Sample		
	ESG Score	ESG Com- bined Score	ESG Dimensions	ESG Score	ESG Com- bined Score	ESG Dimen- sions
Observations	178,107	178,107	178,107	45,346	45,346	45,346
R <sup>2</sup>	0.585	0.585	0.585	0.587	0.587	0.587

Notes: Table 6 presents estimation results for estimating Eq. (1) with a dummy  $US_j$ , using the full sample of EU and EEA subsidiaries of both EU and US MNEs in Columns (1) to (3) (unmatched sample) and a sample comprising the subsidiaries of 132 matched pairs of EU and US MNEs based on PSM (Columns (4) to (6)).  $US_j$  is a dummy variable set to one if the MNE parent firm  $j$  is located in the US and zero if it is located in the EU. The interaction term of the different CSR variables and the profit-shifting incentive ( $STR \times CSR$ ) measures the relation between CSR and profit shifting for EU MNEs, whereas the triple interaction term  $STR \times CSR \times US_j$  measures the difference in this relation for US MNEs compared to EU MNEs. Columns (1) and (4) depict the regression results when the overall ESG score ( $ESG$ ) is included in the regression as the CSR variable to estimate the relation between overall CSR performance and profit shifting. Columns (2) and (5) show results for the ESG combined score ( $ESGCOMB$ ). Columns (3) and (6) display the relation between the different ESG dimensions environment ( $ENV$ ), social ( $SOC$ ) and governance ( $GOV$ ) and profit shifting. All regressions include the subsidiary-level and country-level controls described in Sect. 3.2 and the interaction terms between  $STR$ , CSR variables and  $US_j$ . We further include the CSR variable as a stand-alone variable.  $US_j$  is not included as a stand-alone variable due to the parent fixed effects. Year dummies, two-digit NACE (Rev. 2) industry dummies at the subsidiary level and parent firm fixed effects are included in the regressions, but not reported. All estimation results are based on standard errors clustered at the parent-year and the country-year level.  $P$ -values are reported in parentheses. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively

includes 132 EU parent firms and 132 comparable US MNEs.<sup>31</sup> We use the combined dataset of unconsolidated financial data for EU and EEA subsidiaries of both European and US MNEs and keep only those subsidiaries that are part of the matched MNE pairs. We then estimate Eq. (1) including a dummy variable  $US_j$ .

Columns (4) to (6) of Table 6 show the regression results for the subsidiaries of matched parent firms. The findings for the interactions of CSR variables and the tax rate remain qualitatively unchanged. However, unlike for the unmatched sample, the coefficients of  $STR \times ESG \times US$  and  $STR \times ESGCOMB \times US$  are statistically insignificant (Columns (4) and (5)). For US MNEs which are comparable in terms of firm characteristics, industry and ESG score, the magnitude of the relation between overall CSR performance and profit shifting hence does not differ from the matched European MNEs. Therefore, we cannot confirm a different relation between CSR and profit shifting for similar European and US MNEs.

In Columns (3) and (6), we consider the different CSR dimensions. For the EU and US MNEs in our sample, both the governance dimension and responsible tax behavior are part of their corporate culture. Thus, corporate governance is aligned with the tax payments of EU and US MNEs. Moreover, we find evidence that higher CSR performance in the social dimension is associated with less profit shifting of EU and US firms. These findings thus support the corporate culture theory for both European

<sup>31</sup> The matching quality is presented in Table A4 in the Appendix. The mean bias is reduced from 21.8 to 3.1, so that the PSM removes most of the bias in the considered firm characteristics.

and US MNEs. Only for European MNEs, we find weak evidence that higher (lower) environmental performance is related to higher (lower) profit shifting. Nonetheless, we cannot confirm that the same relation between environmental commitment and profit shifting exists for US MNEs.

### 4.3 Influence of reputational concerns and market power

As also discussed in Sect. 2.3, reputational concerns might be a mechanism which explains firm-level heterogeneity regarding the CSR-tax link. In supplemental analyses, we test hypotheses H3a and H3b.

Columns (1) and (2) of Table 7 show results for a distinction between business-to-consumer (B2C) and business-to-business (B2B) multinational groups, for the European and US MNEs of the unmatched sample, respectively. In Column (1), we do not find a difference between European B2B and B2C multinational groups. For US MNEs, in Column (2) the coefficient for the interaction  $STR \times B2C$  suggests that firms operating in the B2C segment engage in significantly less profit shifting than B2B firms. Moreover, the positive coefficient for the interaction  $STR \times ESG$  suggests that profit shifting is negatively related to CSR performance for B2B firms, yet unrelated to CSR for B2C firms (adverse coefficient for the triple interaction  $STR \times ESG \times B2C$ ). US MNEs that are more sensitive to reputational concerns decrease their profit shifting to avoid tax-related reputational damages and do not necessarily align their CSR behavior despite the potential reputational benefits. However, US MNEs less affected by reputational costs are more inclined to shift profits, but incorporate both tax payments and CSR into their corporate cultures.

In Columns (3) to (6) of Table 7, we investigate the influence of product market competition using two different variables. Following Kubick et al. (2015), we use consolidated data for the multinational group and calculate a weighted price-cost margin [PCM] to measure market power and generate a dummy *LEADER* which equals one for MNEs in the top tercile of PCM by industry and year, indicating high market power. In addition, we also employ a dummy *HIGH\_PCM* which is set to one if a multinational group's PCM is above the median for the industry and year. We do not find evidence that competition impacts CSR, profit shifting or the relation between the two constructs in EU MNEs. For US MNEs, Columns (4) and (6) suggest that less competition (more market power) is related to more extensive profit-shifting activities, which is in line with Kubick et al. (2015). Nonetheless, in Column (6) the coefficient of  $STR \times ESG \times HIGH\_PCM$  is positive and significant. The results suggest that US firms which face less competitive threats lower their tax payments more strongly, but also shift less profits if the company's CSR position is more pronounced.

Overall, the results for US MNEs suggest that a negative relation between CSR and profit shifting mostly exists and is more pronounced for firms that are less exposed to reputational risks or less restricted in their risk-taking due to their competitive position. Thus, the findings support the corporate culture theory (H3b).

**Table 7** Influence of reputational concerns and market power

Cross-Section	(1)	(2)	(3)	(4)	(5)	(6)
	<b>Reputational Concerns</b>		<b>Market Power</b>			
Variable	<i>B2C</i>		<i>LEADER</i>		<i>HIGH_PCM</i>	
Sample	EU	US	EU	US	EU	US
<i>STR</i>	-2.163*** (0.000)	-3.015*** (0.000)	-2.081*** (0.000)	-2.345*** (0.000)	-2.195*** (0.000)	-1.942*** (0.000)
<i>STR</i> × <i>ESG</i>	0.012*** (0.010)	0.032*** (0.000)	0.007 (0.259)	0.019*** (0.002)	0.009 (0.185)	0.008 (0.293)
<i>STR</i> × <i>B2C</i>	0.573 (0.462)	1.870*** (0.007)				
<i>ESG</i> × <i>B2C</i>	0.001 (0.853)	0.014*** (0.000)				
<i>STR</i> × <i>ESG</i> × <i>B2C</i>	-0.012 (0.272)	-0.040*** (0.001)				
<i>STR</i> × <i>LEADER</i>			0.247 (0.688)	-1.297** (0.033)		
<i>ESG</i> × <i>LEADER</i>			-0.001 (0.848)	-0.003 (0.365)		
<i>STR</i> × <i>ESG</i> × <i>LEADER</i>			0.004 (0.700)	0.016 (0.136)		
<i>STR</i> × <i>HIGH_PCM</i>					0.328 (0.575)	-1.276* (0.053)
<i>ESG</i> × <i>HIGH_PCM</i>					-0.000 (0.987)	-0.004 (0.244)
<i>STR</i> × <i>ESG</i> × <i>HIGH_PCM</i>					-0.001 (0.945)	0.026** (0.020)
<i>ESG</i>	-0.001 (0.462)	-0.008*** (0.000)	-0.000 (0.880)	-0.004* (0.071)	-0.001 (0.776)	-0.002 (0.388)
<i>LEADER</i>			-0.076 (0.675)	0.295* (0.083)		
<i>HIGH_PCM</i>					-0.049 (0.773)	0.194 (0.288)
Controls	✓	✓	✓	✓	✓	✓
Year Dummies	✓	✓	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓	✓	✓

**Table 7** (continued)

Cross-Section	(1)	(2)	(3)	(4)	(5)	(6)
	<b>Reputational Concerns</b>		<b>Market Power</b>			
Variable	<i>B2C</i>		<i>LEADER</i>		<i>HIGH_PCM</i>	
Sample	EU	US	EU	US	EU	US
Observations	116,702	61,405	99,002	54,758	99,002	54,758
R <sup>2</sup>	0.590	0.582	0.590	0.583	0.590	0.583

Notes: Table 7 depicts the regression results for performing cross-sectional analyses to investigate whether the link between overall CSR performance (*ESG*) and profit shifting differs across firms. We perform separate analyses of the EU (Columns (1), (3), (5) and US MNEs (Columns (2), (4), (6) of our unmatched sample. The dependent variable in all regressions is pre-tax profit (*PBT*). Columns (1) and (2) investigate whether the link between CSR and profit shifting is different for MNEs operating in business-to-consumer (*B2C*) industries than for business-to-business MNEs. The classification is based on the SIC code of the MNE, following Srinivasan et al. (2011). Because year dummies are included, we do not include *B2C* as a stand-alone variable. Columns (3) to (6) distinguish between MNEs with high market power and MNEs with low market power (product market competition). To identify MNEs with high market power (low competition), we use a dummy variable *LEADER* in Columns (3) and (4). Following Kubick et al. (2015), we set *LEADER* to one for multinational groups whose weighted PCM is in the highest tercile for a given industry-year. In Columns (5) and (6), we employ a dummy *HIGH\_PCM* to define high market power. *HIGH\_PCM* is equal to one for MNEs with a PCM above the median by industry and year. All regressions include the subsidiary-level and country-level controls described in Sect. 3.2, although the estimates are not presented. Year dummies, two-digit NACE (Rev. 2) industry dummies at the subsidiary level and parent firm fixed effects are included in the regressions, but not reported. All estimation results are based on standard errors clustered at the parent-year and the country-year level. *P*-values are reported in parentheses. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively

#### 4.4 Parent country institutional quality

In an additional analysis, we examine possible influences of different qualities of regulation and state institutions in the parent companies' home countries. In additional regressions in Table 8, we analyze our sample of European firms with respect to parent country's institutional environments. We consider country measures for the quality of legal and government institutions taken from the Worldwide Governance Indicators provided by the World Bank: regulatory quality, rule of law and government. We are mainly interested in how these country measures moderate the association between profit shifting and CSR. Therefore, our main focus is on the three-way interaction between the tax rate, the ESG score and the measure of institutional quality ( $STR \times ESG \times PCR$ ). For all different measures of institutional quality, we find positive coefficients for the triple interactions. The results suggest that in particular in countries with strong legal and government institutions, higher CSR performance is associated with less profit shifting. The findings also point to the corporate culture theory (H4b).



**Table 8** Parent country institutional quality

PCR Variable	(1)	(2)	(3)
	Parent Country Regulatory Quality	Parent Country Rule of Law	Parent Country Gov. Effectiveness
Sample	EU	EU	EU
<i>STR</i>	0.787 (0.565)	1.199 (0.399)	1.270 (0.367)
<i>STR</i> × <i>ESG</i>	-0.029 (0.156)	-0.036* (0.080)	-0.040* (0.051)
<i>STR</i> × <i>PCR</i>	-1.781** (0.034)	-2.004** (0.017)	-2.168** (0.013)
<i>ESG</i> × <i>PCR</i>	-0.09** (0.030)	-0.008** (0.030)	-0.010*** (0.077)
<i>STR</i> × <i>ESG</i> × <i>PCR</i>	0.024* (0.057)	0.028** (0.022)	0.033** (0.013)
<i>ESG</i>	0.013** (0.050)	0.013** (0.050)	0.015** (0.015)
<i>PCR</i>	0.392 (0.165)	0.277 (0.332)	0.637** (0.012)
Controls	✓	✓	✓
Year Dummies	✓	✓	✓
Industry Dummies	✓	✓	✓
Parent FE	✓	✓	✓
Observations	116,702	116,702	116,702
R <sup>2</sup>	0.591	0.591	0.591

Notes: Table 8 depicts the regression results that considers parent country heterogeneity. We use our sample of EU firms and consider different country measures of parent country regulation (*PCR*) taken from the World bank data. For the variable *PCR* we consider in Column (1) the parent regulatory quality, in Column (2) parent rule of law and in Column (3) parent government effectiveness taken from the World Bank's World Governance Indicator database. The dependent variable in all regressions is pre-tax profit (*PBT*). All regressions include the subsidiary-level and country-level controls described in Sect. 3.2. Year dummies, two-digit NACE (Rev. 2) industry dummies at the subsidiary level and parent firm fixed effects are included in the regressions, but not reported. All estimation results are based on standard errors clustered at the parent-year and the country-year level. *p*-values are reported in parentheses. \*\*\*, \*\* and \* indicate statistical significance at the 1%, 5% and 10% levels, respectively

## 5 Conclusion

We have investigated the relationship between CSR of European and US multinational parent firms and the profit shifting of their subsidiaries as one specific form of tax avoidance. Our findings mostly suggest a negative relation between CSR performance and profit shifting. Thus, we find that a lower overall CSR performance of multinational parent firms is associated with a greater degree of profit shifting. In contrast, our results suggest that socially responsible firms are less likely to shift

profits. When investigating which CSR dimensions are particularly related to profit shifting, our results demonstrate that less profit shifting occurs mainly for subsidiaries whose parent firms show high performance in the corporate governance and the social dimension. The main findings are similar for European and US companies, in particular, if we use PSM to compare pairs of EU and US MNEs that are similar with respect to firm characteristics and industry. Our main findings consistently support the theory of corporate culture, according to which the consideration of stakeholders' interests results in a reduction of tax avoidance through profit shifting.

Additional results suggest the existence of a negative relation between overall CSR performance and profit shifting in particular for those US MNEs that are less exposed to reputational risks or less restricted in their risk-taking due to their competitive position. Future research could investigate the causes for the different nature of the link between profit shifting and CSR for US MNEs as compared to European MNEs. Moreover, we consider differences in the quality of legal and government institutions. Our results suggest that in particular in parent countries with strong legal and government institutions, higher CSR performance is associated with less profit shifting.

However, we must also admit that our study is subject to some caveats. As with most studies on the influence of CSR, certain endogeneity concerns remain, although we have also considered lagged CSR values to reduce concerns due to a possible repercussion of the tax strategy on CSR positions. Therefore, we do not claim any causal effects. An additional limitation of our study is related to our data. The available subsidiary data mainly covers operative business in high- or middle-tax countries, i.e. conduit entities and tax-haven subsidiaries are underrepresented. Moreover, we consider only MNEs from Europe and the US. The relationship between CSR and tax profit shifting could be different for companies from other regions. Furthermore, we consider only CSR data taken from the Refinitiv ESG database. While an advantage of our sample is that we cover a large number of MNEs from similarly developed countries, future research could consider MNEs from developing countries, use data that also covers activities in tax havens and include different CSR data.

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## Declarations

**Competing interests** The authors declare no competing interests.

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