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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 European 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. Moreover, we can also confirm a negative relation between high commitment to CSR and tax avoidance by investigating effective tax rates taken from consolidated financial accounts. Our evidence suggests the existence of a corporate culture in which CSR and tax payments act as complements.

Keywords: Profit Shifting, Corporate Social Responsibility, Tax Avoidance, Corporate Governance

JEL Classification: H25, H26, M14

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1. Introduction

Evidence of the extensive profit-shifting activities of large multinational enterprises [MNEs] has raised the public awareness of this phenomenon 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 of profit shifting became particularly evident when disparities between profits and taxes paid by well-known firms 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). Moreover, 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 CSR and tax avoidance through intrafirm profit shifting.

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).

However, it is uncertain how the tax management behavior and CSR performance of MNEs are related. Conflicting empirical evidence suggests that CSR performance and tax payments are either aligned and hence complements (e.g., Hoi et al., 2013), or are substitutes (e.g., Davis et al., 2016). Competing theories exist which explain the link between CSR and

profit shifting. According to risk management theory, a firm is not inherently motivated to engage in CSR for the sake of all stakeholders, as its decisions are entirely based on economic considerations. 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.

The aim of our study is to investigate the link between CSR and intrafirm profit shifting as an important means of tax avoidance. We employ unconsolidated firm-level data from the Amadeus database for subsidiaries domiciled in Europe. 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).

We begin by using a well-known approach to estimate profit shifting (Huizinga & Laeven, 2008) and explore if the CSR performance of European MNEs is linked to different magnitudes of profit shifting. Our results show that the scope of profit shifting and CSR performance are adversely related. Thus, our findings suggest that profit shifting is more pronounced for European firms with a lower overall CSR performance. This is in accordance with corporate culture theory. Tax payments and CSR activities are hence complements.

Moreover, we subsequently examine different CSR dimensions. In particular, we find that a European parent firm's commitment to society and more refined corporate governance are negatively associated with profit shifting. Higher performance in these dimensions is hence related to less profit-shifting activities. Society and corporate governance are considered complements to tax payments in a firm's corporate culture. However, a firm's corporate culture

does seem to substitute rather than align environmental commitment and tax payments, as we find weak evidence of a positive relationship between environmental performance and profit shifting.

We also analyze the profit shifting of US MNEs within their European subsidiaries. Using a matched sample of similar MNEs, we show that the overall CSR performance of US MNEs is also negatively associated with profit-shifting activities. Nonetheless, the association between CSR dimensions and profit shifting differs, at least in the environmental dimension. Unlike for European MNEs, we do not find evidence that US MNEs substitute environmental commitment with tax payments or vice versa.

Further, we assess if the relationship between profit shifting and CSR performance is influenced by reputational concerns or a firm's market power. We find that US MNEs that are less exposed to reputational concerns or competitive threats engage in more profit shifting, but establish a more pronounced corporate culture which aligns tax payments and CSR.

Finally, we find consistent results when using consolidated accounting data to investigate tax avoidance, which reconciles our findings with prior literature (e.g., Hoi et al., 2013). A multinational group's overall CSR performance is positively related to its effective tax rate [ETR]. This lends additional credence to the idea that a corporate culture exists in MNEs that considers CSR and taxes to be complements.

Our study makes several contributions to the existing literature. Most importantly, we show that CSR behavior is related to profit shifting. Profit shifting has been investigated abundantly in academic works (see e.g., Beer et al., 2020; Heckemeyer & Overesch, 2017). While prior empirical research attempts to find evidence for the occurrence and magnitude of profit shifting, a more recent stream of literature tries to identify profit-shifting determinants. These studies focus on firm characteristics, certain profit-shifting channels or restrictions imposed by anti-tax avoidance regulations. We investigate the relationship between profit shifting and multinational groups' attitudes toward responsibilities for the environment, society

and other stakeholders. A contemporaneous working paper by Hasan et al. (2021) finds a positive association between CSR and profit shifting for a worldwide sample, using the estimation method developed by Dharmapala and Riedel (2013).[1] However, this approach mainly captures debt shifting (Riedel, 2018), while we employ the well-known approach by Huizinga and Laeven (2008) and utilize pre-tax profits to consider all profit-shifting channels.

Second, we 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 ambiguous literature on the CSR-tax link by investigating profit shifting as a specific and important form of tax avoidance. Moreover, in contrast to some previous empirical works, we do not solely analyze the overall CSR performance, but also perform a deeper investigation of the different CSR dimensions. From these separate analyses we can also draw inferences about the relation between corporate governance as a part of CSR and profit shifting. 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 considering corporate governance as a component of CSR is crucial, because a corporation's tax planning decision will likely depend on the tradeoff between the benefits and costs of tax avoidance behavior and its responsibilities to both external (including society) and internal stakeholders.

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

[1] The diverging sample composition might explain the contrary result, as the attitude toward CSR as well as CSR performances vary among geographic regions (e.g., Ho et al., 2012; Thanetsunthorn, 2015).

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. Our analyses suggest that the relationship between CSR and profit shifting is indeed not entirely uniform across all CSR dimensions.

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 standards organizations 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 Section 4. In addition, we outline the results for US MNEs and perform an in-depth comparison with European MNEs. We further analyze the influence of reputational concerns and market power. In Section 5, we reconcile our findings with prior literature on CSR and tax avoidance. Section 6 concludes this study.

2. Background and Hypotheses Development

2.1 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.

A growing number of empirical works examines if CSR is associated with corporate tax avoidance, using consolidated accounting data. 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. In a more recent paper, D. Lee (2020) examines tax havens as the most criticized form of tax avoidance and ascertains that firms with headquarters in tax havens exhibit a lower level of CSR activities than otherwise comparable firms located in the US. Lanis and Richardson (2016) provide evidence that the adverse relation between CSR and tax avoidance is magnified by the presence of outside directors.

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.

Most of the literature on CSR and corporate tax behavior primarily uses US data. Evidence for European companies is scarce and sometimes limited to one country. For example, Laguir et al. (2015) explore CSR and tax avoidance in publicly listed French firms and find that the nature of the relation depends on the CSR dimensions. The economic dimension is positively associated with tax avoidance, while the relation is negative for the social one. The latter result is confirmed for firms in coordinated market economies in a study by Kiesewetter and Manthey (2017) that investigates European companies based on aggregate firm data. They further show that the corporate governance dimension is positively related to tax avoidance.

Given the ambiguous results, some empirical studies consider separate CSR dimensions. Huseynov and Klamm (2012) find that firms with strong governance or diversity have a lower ETR but nonetheless support the community. Landry et al. (2013) examine Canadian firms and provide evidence that high scores regarding community and customer commitment are related to more tax aggressiveness, whereas firms with high corporate governance and employee commitment avoid less taxes.

2.2 Tax-Motivated Profit Shifting

Taking into account the aforementioned mixed evidence on the relationship between CSR and the aggregated tax position of a firm, we focus on profit shifting as a specific tax avoidance strategy. MNEs use 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 (OECD, 2015; Riedel, 2018).[2] Most empirical studies refer to a framework established by Hines and Rice (1994). Following their well-known approach, the total pre-tax profit of a subsidiary is composed of two types of income: income earned by real economic activities and income that has been shifted either into or out of the respective subsidiary. Huizinga and Laeven (2008) are the first to modify the model and to employ firm-level data.

More recent research acknowledges the heterogeneity in profit shifting and considers the various determinants, such as research and development [R&D] 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., thin-capitalization rules, Büttner et al., 2012; Overesch & Wamser, 2010).

We argue that MNEs are also inhomogeneous with respect to their relations with and attitude toward society and other stakeholders. Consequently, different CSR levels could also affect their profit-shifting behavior. Therefore, we investigate the association between a parent firm's CSR activities and the extent of profit shifting within the multinational group.

2.3 Hypothesis Development

The mixed evidence on the relationship between CSR and tax avoidance is supported by distinct theories. According to the shareholder theory, which is based on assumptions of the traditional agency theory, a corporation's sole responsibility is to maximize its profits within

[2] 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 percent 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.

the limits of the law (Friedman, 1962). Managers will only engage in CSR activities if they expect a positive payoff. The risk management theory, however, implies that CSR also generates economic value by building up '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). Godfrey et al. (2009) find that negative events have a lower impact on firms that engage in CSR. Socially responsible behavior might be used strategically to serve as an insurance against risks arising from corporate actions. The minimization of tax payments can impose risks on firms as it might result in sanctions or reputational damages. Anecdotal evidence implies that adverse reputational effects can arise from tax avoidance, e.g., due to negative media coverage.[3] Survey evidence suggests that reputational concerns are an important factor for tax executives deciding on tax planning (Graham et al., 2014). C. R. Austin and Wilson (2017) provide empirical evidence that tax avoidance is less prevalent in firms with valuable consumer brands, probably because of these firms' greater exposure to reputational damage. Consequently, the risk management theory suggests that more profit shifting occurs in MNEs with extensive CSR activities, as CSR is used to hedge against risks associated with profit shifting (Hoi et al., 2013).[4]

However, it is not only arguments based on the economic perspective of shareholder or risk management theory that militate in favor of a positive relation between CSR and profit shifting. Firms and managers might feel responsible for societal conditions, but do not consider tax payments to be an appropriate way of contributing to society (Davis et al., 2016). Huseynov and Klamm (2012) find that firms committed to diversity and community avoid more taxes and conclude that these firms lower their tax expenses because the higher profits are used for the

[3] 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).

[4] 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.

benefit of society, e.g., for charitable giving. Taken together, the aforementioned arguments suggest a positive relation between CSR and profit shifting, so that tax payments and CSR act as substitutes. We formulate the following hypothesis:

H1a: Corporate social responsibility 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.[5] Stakeholder theory therefore argues that a firm should incorporate all stakeholders, such as society, customers, employees and the government, in its decisions in order to generate value for all of these parties (Freeman, 1984, 1994; Freeman & Reed, 1983). Similarly, corporate culture theory asserts that corporations might feel responsible for all stakeholders. 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 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. Instead, CSR will be an important part of its corporate culture, since the engagement in CSR activities benefits society, employees, customers, the government and other stakeholders, whereas profit shifting will be inconsistent with such a corporate culture (Col & Patel, 2019; Hoi et al., 2013). Conversely, if the corporate culture of a firm does not incorporate stakeholders' interests, CSR will not be viewed as a necessary activity and profit shifting will not be deemed improper. In

[5] 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).

sum, the preceding arguments imply that CSR and the profit shifting of MNEs are negatively related, so that CSR and tax payments are complements:

H1b: Corporate social responsibility and the profit-shifting behavior of MNEs are adversely related.

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 and firm-level financial data as well as ownership information for a large number of European and US companies.[6] For our analyses, we use samples comprising subsidiary firms in EU and European Economic Area [EEA] countries.

Information on CSR is retrieved from the Refinitiv ESG score database (formerly denoted as Thomson Reuters ASSET4).[7] 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

[6] 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 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).

[7] 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).

news sources.[8] 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. We examine two types of 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 category scores.[9] 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. 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.[10]

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

[8] 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).

[9] 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).

[10] 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.

this database because, compared to other providers, Refinitiv's database has a better long-term coverage of European companies.[11]

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.[12]

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 affiliates with positive pre-tax income (Dharmapala & Riedel, 2013; Huizinga & Laeven, 2008).

[11] For example, the widely-used MSCI ESG (formerly KLD) 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.

[12] 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.

The observational unit in our analysis is the subsidiary of an MNE. Our sample of European MNEs consists of 167,002 observations from 24,409 subsidiary firms in 27 EU 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 addition, we consider a sample of 61,405 observations from 12,489 European subsidiary firms of 956 US parent firms in Section 4.2.

[TABLE 1]

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) (see Section 2.2). We estimate the following regression equation:

$$PBT_{i,t} = \beta_0 + \beta_1 STR_{i,t} + \beta_2 CSR_{j,t} \times STR_{i,t} + \beta_3 CSR_{j,t} + \beta_4 X_{i,t} + Year + Industry_i + Parent_j + u_{i,t} \quad (1)$$

The dependent variable $PBT_{i,t}$ 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.[13] The statutory tax rate of the country where the subsidiary resides ($STR_{i,t}$) is employed to capture the tax incentive to shift profits. Statutory tax rates are collected from the worldwide corporate tax summaries of PwC, KPMG and EY. We expect a negative sign for β_1, as a higher statutory tax rate is likely to result in profits being shifted to other locations. Due to the log-level specification, β_1 directly reports the point semi-elasticity of pre-tax profit.

As a CSR measure ($CSR_{j,t}$), 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.

[13] 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.

The coefficient of interest for our research question is β_2, the coefficient of the interaction term between the CSR variable and tax variable ($CSR_{j,t} \times STR_{i,t}$) which estimates the relation between a parent firm's CSR and profit-shifting behavior.

$X_{i,t}$ 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 an affiliate, 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 (*GDPC*) 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.

[TABLE 2]

We add a parent-specific effect to control for heterogeneity across the different parent companies. We do not include subsidiary or 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 (Clausing, 2006; Heckemeyer & Overesch, 2017). Therefore, estimations require between-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 the country-year level as some tax variables solely vary over the country-year dimension.

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 one percentage point increase in the host country's statutory tax rate leads to a 1.42% smaller reported pre-tax profit of a subsidiary.[14] 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 affiliates 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

[14] This estimate is close to the consensus estimate of -1.5 for recent years (Beer et al., 2020).

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.[15] 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.

The same adverse relation between overall CSR performance and profit shifting is found for the ESG combined score (*ESGCOMB*, Column (3)) which adjusts the ESG score if ESG controversies have occurred. We moreover investigate the robustness of our result for the ESG combined score by separately 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.[16] However, the negative and significant relation between overall ESG performance and profit shifting is still confirmed in Column (4).

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

[15] 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 × 63.5 = -1.43.

[16] 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'.

minimize their tax burdens by shifting profits, whereas profit shifting is not reconcilable with a corporate culture that promotes higher CSR. This result is also consistent with one strand of prior literature, e.g., Hoi et al. (2013) who find that firms with excessive irresponsible CSR activities engage in more tax avoidance.

[TABLE 3]

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 coefficient of the interaction term between the score for the social dimension and the tax rate is positive and significant in Columns (2) and (4). This finding suggests that a higher social commitment of an MNE is related to less profit shifting at the subsidiary level, again supporting H1b. If a firm's corporate culture considers the interests of society, the firm on average engages in less profit shifting.

Moreover, when the governance characteristics of a parent firm are strongly developed, the tax elasticity of pre-tax profits is smaller in absolute values. As is consistent with Landry et al. (2013), 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 that ensure that its executives and board members act in the best interests of long-term shareholders. Hence, the short-term benefits of profit shifting seem to be perceived as detrimental to long-term shareholders' interests in parent firms with highly developed corporate governance activities, perhaps because of potential long-term reputational or financial losses.

For the environmental dimension, however, we observe the opposite association when analyzing all CSR dimensions in Column (4). The coefficient of *ENV* × *STR* is negative and significant, suggesting that higher environmental performance is related to a greater extent of profit shifting in European MNEs. For this dimension, our result confirms H1a. 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 relation is driven in particular by the social and governance dimensions.

[TABLE 4]

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.[17] Moreover, we employ an alternative tax variable which takes the worldwide group structure into account and captures profit-shifting incentives between all subsidiaries.[18] The untabulated results are mostly consistent with prior findings.[19]

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. However, prior research suggests that European firms outperform other countries in terms of CSR performance (Ho et al., 2012). Consequently, we examine whether the relationship between CSR and profit shifting is different if parent firms are located in other countries. More precisely, we analyze European subsidiaries that are part

[17] 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.
[18] 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).
[19] 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.

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.[20]

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, but the negative association between the overall CSR performance of a parent firm and profit shifting seems to be stronger for US MNEs.

The results for the ESG combined score are presented in Column (3). Column (4) investigates the ESG controversies score and ESG score. The direction and significance of the coefficients for the interaction terms between the respective CSR variables and *STR* are similar to our analyses of EU MNEs.

Our regression results including the different CSR dimensions, i.e., environmental, social and corporate governance, in Column (5) deviate from the sample of European MNEs since no link between profit shifting and either the governance or social dimensions of CSR can be confirmed. Instead, the relation between CSR and profit shifting is based on environmental performance, as the coefficient of $STR \times ENV$ is positive and significant. US firms that are strongly committed to the environment engage in less profit shifting.

[TABLE 5]

[20] Additionally, we perform the same robustness tests as in Section 4.1. The untabulated results are similar to our findings presented in Table 5.

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_j which indicates whether the observation is a subsidiary of a US parent firm.

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).

Regarding the CSR dimensions, our results in Column (3) confirm an adverse association between the social and governance dimensions and the profit shifting of EU MNEs. The coefficient of the environmental dimension, however, is negative and significant. The opposite result is found for US MNEs, as the coefficient of $STR \times ENV \times US$ is significant and exhibits a positive sign. We also find a difference between both samples for the governance dimension, as the coefficient $STR \times GOV \times US$ is significant at the 10% level. Nonetheless, for activities regarding society, our direct comparison does not provide evidence in favor of a diverging relation for US MNEs, as the coefficient of the triple interaction term is insignificant.

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*).[21] 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 includes 132 EU parent firms and 132 comparable US MNEs.[22] 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 Equation (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* × *ESG* × *US* and *STR* × *ESGCOMB* × *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.

In Column (6), we again consider the different CSR dimensions. For the EU and US MNEs in our sample, both the social dimension and responsible tax behavior are part of their corporate culture. We find an almost significant (p-value = 0.105) difference between European and US firms regarding the governance dimension of CSR. Thus, corporate governance is aligned with the tax payments of EU MNEs, but not necessarily those of US MNEs. For EU

[21] Definitions of the variables are presented in Panel B of Table A1 in the Appendix.
[22] 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.

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

[TABLE 6]

4.3 Influence of Reputational Concerns and Market Power

The relationship between CSR and profit shifting might differ for distinct kinds of firms. The results for our comparison of European and US MNEs in Table 6 also suggest that the CSR–profit-shifting link might vary for different firm types rather than because of cultural factors. In supplemental tests, we investigate whether variation in the association between CSR and profit shifting exists with respect to a firm's reputational concerns or market power.

Reputational concerns might be one mechanism which explains firm-level heterogeneity regarding the CSR-tax link. Both CSR and corporate tax behavior can be crucial to a firm's reputation (e.g., Graham et al., 2014; Jeffrey et al., 2019). A firm's sensitivity to reputational risks presumably depends on the consumer orientation of its business model. 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 (C. R. Austin & Wilson, 2017). Experimental studies document that consumers' CSR perceptions and consumer reactions are related to tax avoidance (e.g., Antonetti & Anesa, 2017; Hardeck & Hertl, 2014). Hence, firms that operate in more consumer-oriented industries might be more inclined to consider both CSR and tax payments part of their corporate culture to avoid reputational damages than firms focused on business customers.

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, Column (2) suggests that firms operating in the B2C segment engage in significantly less profit shifting than B2B firms. Profit shifting is negatively related to CSR performance for B2B firms, yet unrelated to CSR for B2C firms. This finding suggests that the extent of profit shifting of B2C firms is mainly influenced by the consumer orientation of the business model. 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.

Product market competition (or market power) might be an external governance mechanism that impacts a firm's engagement in CSR and profit shifting. On the one hand, CSR might be considered an expense to be avoided for the sake of liquidity when the business environment is highly competitive (J. H. Lee et al., 2018). Similarly, high competition might induce firms to reduce their tax payments to improve their competitive position. In line with this notion, empirical evidence suggests that greater competition is associated with higher tax avoidance (Atawnah et al., 2021; Wang, 2019). On the other hand, competition can motivate firms to strategically engage in more CSR activities (Fernández-Kranz & Santaló, 2010; Leong & Yang, 2020). 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). A study by Kubick et al. (2015) documents that firms with greater market power and thus weaker competition have greater opportunities for tax avoidance.

Columns (3) to (6) of Table 7 investigate 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. For robustness, 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, the coefficients of *STR* × *ESG* × *LEADER* and *STR* × *ESG* × *HIGH_PCM* are positive and significant. US firms which face less competitive threats lower their tax payments more strongly, but strive harder to establish a culture that promotes both CSR and tax responsibility than firms having many competitors. 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.

[TABLE 7]

5. Reconciliation with Prior Literature on CSR and Tax Avoidance

To reconcile our findings with previous studies, we further investigate the link between CSR and tax avoidance based on *consolidated* data for the multinational groups included in our sample. We therefore use financial data retrieved from the Compustat database and estimate the following OLS regression equation:

$$\begin{aligned} ETR_{j,t} = {} & \alpha_0 + \alpha_1 ESG_{j,t} + \alpha_2 SIZE_{j,t} + \alpha_3 INT\_ASSETS_{j,t} + \alpha_4 LEV_{j,t} \\ & + \alpha_5 ROA_{j,t} + \alpha_6 MTB_{j,t} + \alpha_7 PPE_{j,t} + \alpha_8 RD_{j,t} + \alpha_9 \Delta SALES_{j,t} \\ & + \alpha_{10} CASH_{j,t} + Year + Country_j + Industry_j + u_{j,t} \end{aligned} \quad (2)$$

The dependent variable $ETR_{j,t}$ represents different measures for tax avoidance of the multinational group headed by parent *j*. We employ the cash ETR (*CETR*), calculated as cash taxes paid divided by pre-tax income, and a long-run five-year cash ETR (*CETR5*) as proxies

for tax avoidance.[23] Hereby, we can relate our findings to prior empirical studies (e.g., Davis et al., 2016; Hoi et al., 2013).

Since previous works have considered the overall CSR performance, we focus on the ESG score (*ESG*). The coefficient of interest is α_1 which reflects the relation between a parent firm's overall CSR performance and tax avoidance. We include several variables to control for firm characteristics that prior literature has identified as determinants of tax avoidance and that are included in the CSR studies mentioned above. We control for firm size (*SIZE*), intangible assets (*INT_ASSETS*), leverage (*LEV*), return on assets (*ROA*), market-to-book ratio (*MTB*), property, plant and equipment (*PPE*), R&D (*RD*), sales growth (*ΔSALES*) and cash (*CASH*). For detailed variable descriptions, see Panel B of Table A1 in the Appendix. Country dummies are included, except in the regressions that only include US MNEs. In all regressions, we include year dummies and industry fixed effects based on the two-digit SIC code. Standard errors are clustered at the firm level.

Our regression results are presented in Table 8. In all columns, the coefficient of *ESG* is significant and positive. For the European MNEs, Columns (1) and (2) suggest that the average *CETR* (*CETR5*) of 26.93% (24.75%) increases by 1.52% (1.1%) to 28.45% (25.85%) if the ESG score increases by 20. Tax avoidance is hence less pronounced when the CSR performance is higher. For US multinational groups, the coefficient of *ESG* is significant at the 10% level and positive for both ETR measures, but smaller than for the EU firms.[24] However, when comparing EU and US MNEs in Columns (5) and (6), we do not find evidence that the relation between CSR and tax avoidance differs for US MNEs, as the coefficient of *ESG* × *US* is statistically insignificant.

Overall, the results suggest that CSR and tax payments are complements, which is in line with corporate culture theory. A multinational group whose parent firm engages in less

[23] For easier interpretation, the ETR measures are scaled in the same way as *ESG*, i.e., ranging from 1 to 100.
[24] In untabulated regressions, we exclude the year 2018 since the Tax Cuts and Jobs Act might affect US firms' ETRs. The coefficient of *ESG* remains positive and significant at the 5% (*CETR*) and 10% level (*CETR5*).

CSR activities pursues more intensive tax avoidance practices, while groups whose parent firms are more socially responsible avoid less taxes. Although the economic magnitude of the association is modest, our finding indicates that a negative relation between CSR and tax avoidance behavior also prevails when considering corporate tax behavior at an aggregate level.

[TABLE 8]

6. Conclusion

We investigate 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. First, we examine the association between overall CSR performance and profit shifting. Second, we assess which CSR dimensions (environmental, social or corporate governance) are particularly related to the semi-elasticity of pre-tax profits.

Our findings 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, socially responsible firms are less likely to shift profits. When investigating which CSR dimensions are especially related to profit shifting, our results demonstrate that less profit shifting occurs for affiliates whose parent firms show high performance in the social or corporate governance dimensions. However, the relation between the environmental dimension and profit-shifting activities differs for US MNEs. This result is robust when we use PSM to compare pairs of EU and US MNEs that are similar with respect to certain firm characteristics and industry. With regard to CSR dimensions, the CSR-tax link hence varies depending on CSR and cultural environments. Further, we find that reputational concerns and market power are mechanisms which influence the CSR-tax link for MNEs located in the US. Our results suggest the existence of a negative relation between overall CSR performance and profit shifting for US multinational groups 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.

Overall, our findings cannot confirm the argument of 'corporate hypocrisy' as we do not find evidence that firms promoting higher levels of CSR activities engage in more extensive profit-shifting activities. Instead, the negative relation fosters the belief that CSR can be considered an issue of corporate culture which is related to multinationals' profit shifting. CSR and responsible tax behavior seem to be complements for average MNEs.

Our results are consistent across different types of analyses and financial accounts. Our analyses at the subsidiary level capture intra-group borrowing, a way of minimizing tax payments not reflected in consolidated accounts, as well as the heterogeneity of single group entities. However, for robustness and to reconcile our study with prior literature, we also use consolidated accounting data. We find a negative relation between CSR and tax avoidance. This mitigates concerns that our results based on European subsidiaries are not conferrable to the CSR-tax relation that prevails among the EU and US groups in their entirety. In addition, this finding supports our assumption that a parent firm's CSR policy and corresponding tax behavior is implemented at lower levels of the organization because of the group's corporate culture.

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APPENDIX

Appendix A1: Propensity Score Matching Approach

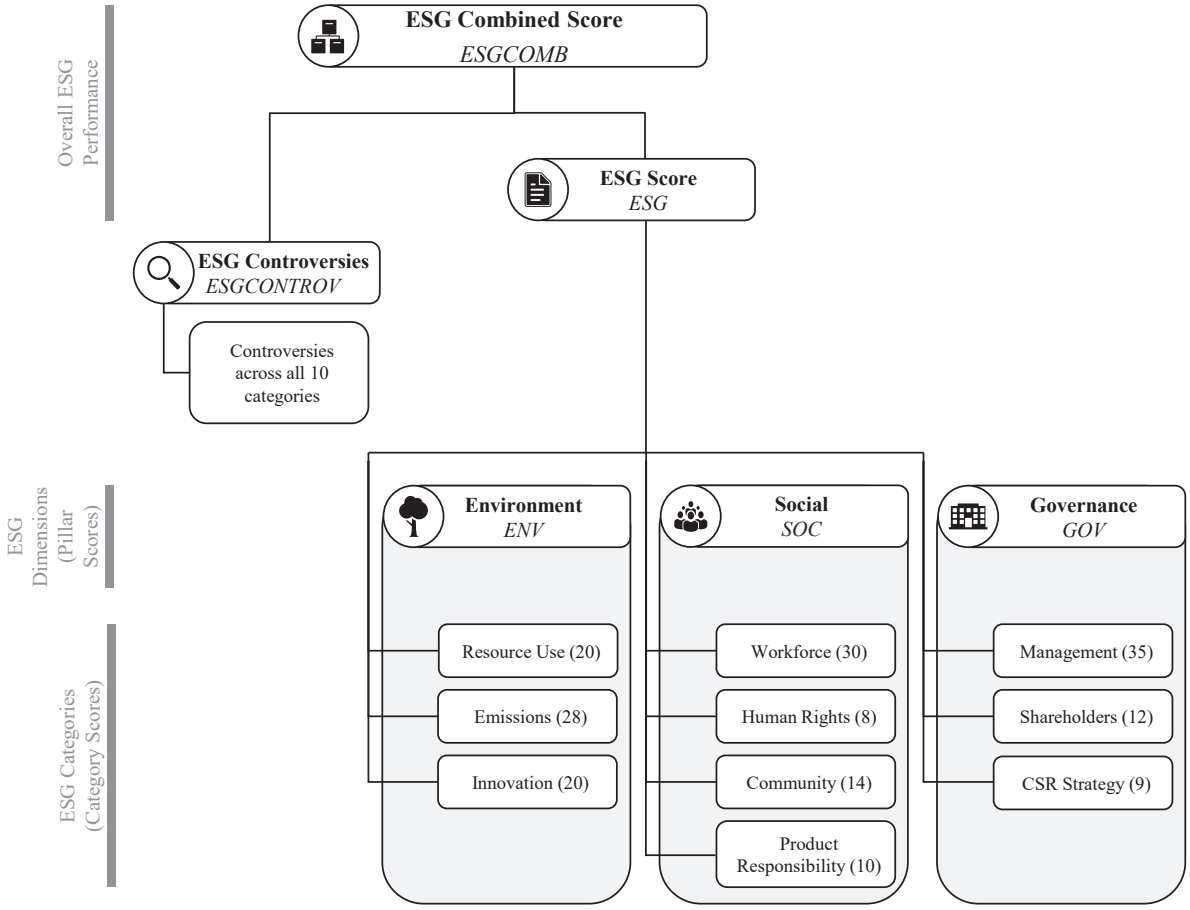
To identify comparable US and European multinational groups in Section 4.2, we retrieve consolidated financial data for all MNEs in our samples from the Compustat Global and North America database. Then, we perform the PSM in two steps, following Rosenbaum and Rubin (1983). First, we estimate the probability that the multinational group's parent firm *j* is based in the EU using the following probit regression:

$$EU_{j,2010} = \delta_1 X_{j,2010} + u_{j,2010} \quad (3)$$

$EU_{j,2010}$ is a time-invariant dummy variable equal to one if the parent firm is located in the EU and zero if it is based in the US. $X_{j,2010}$ denotes a vector of different firm characteristics that are found to determine tax expenses (e.g., Chen et al., 2010; Grubert, 2003; Rego, 2003). We include size (*SIZE*), intangible assets (*INT_ASSETS*), leverage (*LEV*), return on assets (*ROA*), market-to-book ratio (*MTB*) and R&D (*RD*). Definitions of the variables are presented in Panel B of Table A1 in the Appendix. We also include the overall ESG score (*ESG*) to address concerns that the relation between CSR and profit shifting is impacted by the level of CSR. As indicated by the index, the matching is performed in 2010, the first year of our analysis. Based on the probit regression, propensity scores are predicted for EU and US MNEs, respectively. The estimation results are presented in Table A3 in the Appendix.

In a second step, we use the propensity scores to perform a one-to-one nearest neighbor matching in which an EU-based MNE is matched to the most similar US MNE that further is required to operate in the same industry. We refer to the Fama and French 17 classification to find comparable firms. In line with prior literature, we set the caliper, the maximum deviation between EU and US MNEs, to 0.03 (P. C. Austin, 2011).

Figure A1: ESG Scores



Notes: Figure A1 demonstrates the relation between the different Refinitiv ESG scores (as described in Refinitiv, 2020). Numbers in parentheses report the amount of ESG measures included in the respective scores. Terms in italic demonstrate the corresponding variable names used in our regressions. Refinitiv provides scores for a firm's overall ESG performance, as well as its performance in ESG dimensions and in different categories. The ESG combined score and the ESG score both measure a firm's overall CSR performance. The ESG combined score adjusts the ESG score if ESG controversies have occurred which impact the firm. The ESG score measures a firm's commitment and performance in the 10 ESG categories (resource use, emissions, innovation, workforce, human rights, community, product responsibility, management, shareholders and CSR strategy) based on reported information. The 10 ESG categories belong to three ESG dimensions: the environmental, social and governance dimension. The performance in the three dimensions is represented by the respective pillar scores. For a description of the pillar scores and definition of the different categories incorporated in the ESG score and pillar scores, please refer to Table A2 in the Appendix.

Table A1: Variable Definitions

Variable		Definition	Source
Panel A: Profit Shifting and CSR			
Dependent Variable			
PBT	=	Natural logarithm of profit before tax.	Amadeus
Profit-Shifting Incentive Variable			
STR	=	Statutory corporate tax rate of a subsidiary's jurisdiction.	Worldwide corporate tax summaries of PwC, KPMG, and EY
CSR Variables			
ESG	=	ESG score measuring a parent firm's overall CSR performance.	Refinitiv
ESGCOMB	=	ESG combined score measuring a parent firm's overall CSR performance (*ESG*) discounted based on ESG controversies (*ESGCONTROV*).	Refinitiv
ESGCONTROV	=	ESG controversies score measuring the extent of negative media stories on a parent firm. The lower the ESG controversies score, the greater the number of controversies that have occurred.	Refinitiv
ENV	=	Environmental pillar score measuring a parent firm's performance in the environmental dimension.	Refinitiv
SOC	=	Social pillar score measuring a parent firm's performance in the social dimension.	Refinitiv
GOV	=	Corporate governance pillar score measuring a parent firm's performance in the governance dimension.	Refinitiv
Subsidiary-Level Controls			
CAPITAL	=	Natural logarithm of fixed assets.	Amadeus
LABOR	=	Natural logarithm of labor compensation.	Amadeus
INTAN	=	Ratio of intangible assets over total assets.	Amadeus
Country-Level Controls			
GDP	=	Natural logarithm of gross domestic product.	World Bank Development Indicators
GDPC	=	Natural logarithm of gross domestic product per capita.	World Bank Development Indicators
UNEMPLOY	=	Natural logarithm of unemployment rate.	World Bank Development Indicators
CORRUPT	=	Corruption index.	Worldwide Governance Indicators

Panel B: Tax Avoidance and CSR

CETR	=	Cash ETR, calculated as cash taxes paid (txpd) divided by pre-tax income (pi).	Compustat Global & North America
CETR5	=	Long-run cash ETR, calculated as five-year sum of cash taxes paid (txpd) over years t-4 to t divided by the five-year sum of pre-tax income (pi) over years t-4 to t.	Compustat Global & North America
SIZE	=	Natural logarithm of total assets (at).	Compustat Global & North America
INT_ASSETS	=	Intangible assets (intan) divided by lagged total assets (at).	Compustat Global & North America
LEV	=	Long-term-debt (dltt) divided by lagged total assets (at).	Compustat Global & North America
ROA	=	Return on assets, calculated as pre-tax income less ordinary items (pi - xi) divided by lagged total assets (at).	Compustat Global & North America
MTB	=	Price per share (prcc_f) times total common shares outstanding (csho) over book value of equity (ceq). In case that the variables are missing, the variable is calculated based on the Compustat Global Security Daily file as adjusted price close (prccd/ajexdi) times shares outstanding (cshoc) divided by the book value of equity (ceq).	Compustat Global - Security Daily & Compustat North America
PPE	=	Property, plant and equipment (ppent) divided by lagged total assets (at).	Compustat Global & North America
RD	=	R&D expenses (rd) divided by lagged total assets (at). The variable rd is set to zero if it is missing.	Compustat Global & North America
ΔSALES	=	Changes in sales (sale) divided by lagged sales.	Compustat Global & North America
CASH	=	Cash (cash) divided by lagged total assets (at).	Compustat Global & North America

Notes: Table A1 presents definitions for the variables employed in our analyses. All financial data are converted into euro. Panel A shows definitions for the variables employed in our analyses of profit shifting (Section 4). Panel B defines variables that are used to reconcile our findings with prior literature in Section 5 by using consolidated financial data for the multinational parent firm.

Table A2: Composition of ESG Pillar Scores

Pillar	Category Score	Definition
Environmental (*ENV*)	Resource Use	The resource use score reflects a company's performance and capacity to reduce the use of materials, energy or water, and to find more eco-efficient solutions by improving supply chain management.
	Emissions	The emission reduction score measures a company's commitment and effectiveness toward reducing environmental emissions in its production and operational processes.
	Innovation	The innovation score reflects a company's capacity to reduce the environmental costs and burdens for its customers, thereby creating new market opportunities through new environmental technologies and processes or eco-designed products.
Social (*SOC*)	Workforce	The workforce score measures a company's effectiveness in terms of providing job satisfaction, a healthy and safe workplace, maintaining diversity and equal opportunities and development opportunities for its workforce.
	Human Rights	The human rights score measures a company's effectiveness in terms of respecting fundamental human rights conventions.
	Community	The community score measures the company's commitment to being a good citizen, protecting public health and respecting business ethics.
	Product Responsibility	The product responsibility score reflects a company's capacity to produce quality goods and services, integrating the customer's health and safety, integrity and data privacy.
Governance (*GOV*)	Management	The management score measures a company's commitment and effectiveness toward following best practice corporate governance principles.
	Shareholder	The shareholders score measures a company's effectiveness toward equal treatment of shareholders and the use of anti-takeover devices.
	CSR Strategy	The CSR strategy score reflects a company's practices to communicate that it integrates economic (financial), social and environmental dimensions into its day-to-day decision-making processes.

Notes: Table A2 describes the composition of the ESG pillar scores (environmental, social and governance) by presenting definitions of the underlying category scores as provided by Refinitiv (2020). The ESG pillar scores measure a firm's performance in the respective ESG dimension. Terms in italic demonstrate the corresponding variable names used in our regressions. The environmental pillar score consists of the resource use, emissions and innovation category. The social pillar score is an aggregation of the workforce, human rights, community and product responsibility category score. The governance pillar score is calculated based on the management, shareholder and CSR strategy category score. For the environmental and social pillar, the weights of the single categories vary by industry, whereas the weights for the categories incorporated in the governance pillar score are independent of the industry.

Table A3: Probit Regression for PSM

VARIABLES	(1) **EU MNE**
SIZE	-0.447***
	(0.000)
INT_ASSETS	-0.109
	(0.603)
LEV	-0.428
	(0.116)
ROA	-4.028***
	(0.000)
MTB	0.001
	(0.528)
RD	-10.226***
	(0.000)
ESG	0.023***
	(0.000)
Observations	633
Pseudo R^2	0.1630

Notes: Table A3 presents the probit regression result used for the prediction of the propensity scores for PSM, based on Equation (3). The dependent variable is an indicator variable which is set to one for EU MNEs and zero for US MNEs. *P*-values are shown in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table A4: One-to-One Nearest Neighbor Matching Quality

Nearest Neighbor 1:1		Mean		Bias	Bias Reduction	*t*-test	
		Treated	Control	(in %)	(in %)	t	p>t
SIZE	Unmatched	8.2011	8.7176	-33.2		-4.13	0.000
	Matched	8.4086	8.3856	1.5	95.5	0.12	0.905
INT_ASSETS	Unmatched	0.2956	0.3166	-7.7		-0.95	0.341
	Matched	0.3500	0.3128	13.7	-77.3	1.21	0.229
LEV	Unmatched	0.2047	0.2171	-6.1		-0.77	0.444
	Matched	0.2088	0.2116	-1.4	77.5	-0.11	0.916
ROA	Unmatched	0.1095	0.1395	-31.9		-3.95	0.000
	Matched	0.1255	0.1272	-1.8	94.3	-0.15	0.882
MTB	Unmatched	15.7040	3.0408	10.8		1.40	0.163
	Matched	2.2683	3.2040	-0.8	92.6	-0.66	0.511
RD	Unmatched	0.0135	0.0315	-47.0		-5.71	0.000
	Matched	0.0185	0.0184	0.3	99.4	0.03	0.977
ESG	Unmatched	48.9910	45.6800	15.9		1.98	0.048
	Matched	46.1620	46.5570	-1.9	88.1	-0.15	0.879

Notes: Table A4 shows the matching quality by presenting and comparing the relevant matching characteristics between EU and US MNEs before and after the matching. MNEs are matched based on consolidated financial data from Compustat and the ESG score for the year 2010. Results are formed on a one-to-one nearest neighbor matching requiring a difference in propensity scores (caliper) of less than 0.03.

Table 1: Country Distribution of the European Sample

	Subsidiaries		Parent Firms	
Country	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.

Table 2: Descriptive Statistics

VARIABLES	Obs.	Mean	Std. Dev.	Q1	Median	Q3
Panel A: European Sample – EU and EEA Subsidiaries of European MNEs						
PBT	116,702	14.210	2.181	12.824	14.157	15.564
EBIT	115,497	15.903	0.858	15.402	15.574	16.052
STR	116,702	0.268	0.066	0.210	0.279	0.314
TAXDIFF	116,702	0.002	0.060	-0.036	0.006	0.044
ESG	116,702	63.511	18.794	51.227	67.032	78.281
ESGCOMB	116,702	58.795	17.619	46.516	60.356	73.140
ESGCONTROV	116,702	82.614	28.972	75.000	100.000	100.000
ENV	116,702	62.818	25.724	45.990	69.938	83.409
SOC	116,702	66.445	22.045	53.049	70.755	84.317
GOV	116,702	58.736	21.589	42.642	61.074	76.344
CAPITAL	116,702	14.688	3.083	12.666	14.670	16.736
LABOR	116,702	14.969	1.967	13.838	14.956	16.203
INTAN	116,702	0.037	0.107	0.000	0.001	0.015
GDP	116,702	27.438	1.172	26.650	27.787	28.425
GDPC	116,702	10.273	0.478	10.097	10.385	10.540
CORRUPT	116,702	1.240	0.700	0.614	1.456	1.814
Panel B: US Sample – EU and EEA Subsidiaries of US MNEs						
PBT	61,405	14.240	1.961	12.963	14.224	15.488
EBIT	60,775	15.220	1.002	14.506	14.900	15.642
STR	61,405	0.262	0.067	0.200	0.260	0.314
TAXDIFF	61,405	0.007	0.065	-0.042	0.007	0.055
ESG	61,405	52.991	20.934	36.564	53.737	70.166
ESGCOMB	61,405	47.512	18.225	34.358	46.945	61.341
ESGCONTROV	61,405	77.346	33.684	57.813	100.000	100.000
ENV	61,405	43.586	28.921	18.324	44.497	69.772
SOC	61,405	54.287	22.783	36.420	53.804	73.311
GOV	61,405	58.825	22.001	43.811	62.639	76.185
CAPITAL	61,405	14.334	3.022	12.283	14.406	16.464
LABOR	61,405	15.215	1.687	14.135	15.236	16.314
INTAN	61,405	0.031	0.092	0.000	0.000	0.010
GDP	61,405	27.540	1.147	26.659	28.154	28.483
GDPC	61,405	10.322	0.451	10.204	10.424	10.570
CORRUPT	61,405	1.320	0.691	0.670	1.549	1.838
UNEMPLOY	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 Section 4.2. For a detailed description of variables employed, see Table A1 in the Appendix.

Table 3: Overall CSR Performance and Profit Shifting of European MNEs

VARIABLES	(1) Without CSR Variable	(2) ESG Score	(3) ESG Combined Score	(4) ESG Controversies and ESG Score
STR	-1.424***	-2.006***	-1.909***	-1.792***
	(0.000)	(0.000)	(0.000)	(0.000)
STR × ESG		0.009**		0.008**
		(0.020)		(0.039)
STR × ESGCOMB			0.008**	
			(0.036)	
STR × ESGCONTROV				-0.002
				(0.389)
ESG		-0.001		-0.001
		(0.492)		(0.626)
ESGCOMB			-0.002*	
			(0.090)	
ESGCONTROV				0.000
				(0.427)
CAPITAL	0.346***	0.346***	0.346***	0.346***
	(0.000)	(0.000)	(0.000)	(0.000)
LABOR	0.349***	0.349***	0.349***	0.349***
	(0.000)	(0.000)	(0.000)	(0.000)
INTAN	-1.501***	-1.501***	-1.502***	-1.501***
	(0.000)	(0.000)	(0.000)	(0.000)
GDP	0.053***	0.052***	0.053***	0.052***
	(0.000)	(0.000)	(0.000)	(0.000)
GDPC	0.183***	0.182***	0.182***	0.182***
	(0.000)	(0.000)	(0.000)	(0.000)
CORRUPT	0.049***	0.049***	0.049***	0.049***
	(0.005)	(0.005)	(0.005)	(0.005)
UNEMPLOY	-0.108***	-0.110***	-0.109***	-0.109***
	(0.000)	(0.000)	(0.000)	(0.000)
Year Dummies	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓
Observations	116,702	116,702	116,702	116,702
R^2	0.590	0.590	0.590	0.590

Notes: Table 3 provides the regression results for estimating Equation (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. 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 robust standard errors clustered at the country-year level. *P*-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table 4: CSR Dimensions and Profit Shifting of European MNEs

VARIABLES	(1) **Environmental Dimension**	(2) **Social Dimension**	(3) **Governance Dimension**	(4) **All ESG Dimensions**
STR	-1.429***	-1.862***	-2.158***	-2.263***
	(0.000)	(0.000)	(0.000)	(0.000)
STR × ENV	0.000			-0.011**
	(0.983)			(0.022)
STR × SOC		0.006*		0.011**
		(0.056)		(0.029)
STR × GOV			0.012***	0.013***
			(0.001)	(0.002)
ENV	0.000			0.002*
	(0.981)			(0.081)
SOC		-0.000		-0.002
		(0.730)		(0.313)
GOV			-0.003***	-0.003***
			(0.008)	(0.010)
Controls	✓	✓	✓	✓
Year Dummies	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓
Observations	116,702	116,702	116,702	116,702
R^2	0.591	0.591	0.591	0.591

Notes: Table 4 provides the regression results for estimating Equation (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 Section 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 robust standard errors clustered at the country-year level. *P*-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table 5: CSR and Profit Shifting of US MNEs

VARIABLES	(1) **Without CSR Variable**	(2) **ESG Score**	(3) **ESG Combined Score**	(4) **ESG Controversies and ESG Score**	(5) **ESG Dimensions**
STR	-1.386***	-2.670***	-2.502***	-2.803***	-2.399***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
STR × ESG		0.024***		0.025***	
		(0.000)		(0.000)	
STR × ESGCOMB			0.023***		
			(0.000)		
STR × ESGCONTROV				0.001	
				(0.666)	
STR × ENV					0.010*
					(0.057)
STR × SOC					0.008
					(0.217)
STR × GOV					0.002
					(0.667)
ESG		-0.005***		-0.005***	
		(0.001)		(0.001)	
ESGCOMB			-0.006***		
			(0.000)		
ESGCONTROV				-0.000	
				(0.745)	
ENV					-0.002
					(0.124)
SOC					-0.002
					(0.365)
GOV					0.000
					(0.973)
Controls	✓	✓	✓	✓	✓
Year Dummies	✓	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓	✓
Observations	61,405	61,405	61,405	61,405	61,405
R^2	0.582	0.582	0.582	0.582	0.582

Notes: Table 5 provides the regression results for estimating Equation (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), 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. Column (5) 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 Section 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 robust standard errors clustered at the country-year level. *P*-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table 6: Comparison of EU and US MNEs

	(1)	(2)	(3)	(4)	(5)	(6)
	Unmatched Sample			**Matched Sample**		
VARIABLES	**ESG Score**	**ESG Combined Score**	**ESG Dimensions**	**ESG Score**	**ESG Combined Score**	**ESG Dimensions**
STR	-2.051***	-1.955***	-2.334***	-2.598***	-2.819***	-3.087***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
STR × *ESG*	0.009**			0.018**		
	(0.027)			(0.016)		
STR × *ESG* × US_j	0.013**			0.007		
	(0.012)			(0.613)		
STR × *ESGCOMB*		0.008**			0.023***	
		(0.045)			(0.004)	
STR × *ESGCOMB* × US_j		0.013**			0.001	
		(0.022)			(0.939)	
STR × *ENV*			-0.014***			-0.021**
			(0.005)			(0.035)
STR × *ENV* × US_j			0.026***			0.034***
			(0.000)			(0.003)
STR × *SOC*			0.013***			0.021*
			(0.009)			(0.053)
STR × *SOC* × US_j			-0.007			-0.015
			(0.391)			(0.323)
STR × *GOV*			0.014***			0.023***
			(0.002)			(0.001)
STR × *GOV* × US_j			-0.014*			-0.018
			(0.076)			(0.105)
CSR Variables	✓	✓	✓	✓	✓	✓
Further Interaction Terms	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓
Year Dummies	✓	✓	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓	✓	✓
Observations	178,107	178,107	178,107	45,346	45,346	45,346
R^2	0.585	0.585	0.585	0.587	0.587	0.587

Notes: Table 6 presents estimation results for estimating Equation (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* × *CSR*) measures the relation between CSR and profit shifting for EU MNEs, whereas the triple interaction term *STR* × *CSR* × 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 Section 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 robust standard errors clustered at the country-year level. *P*-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table 7: Influence of Reputational Concerns and Market Power

	(1)	(2)	(3)	(4)	(5)	(6)
Cross-Section	**Reputational Concerns**		**Market Power**			
Variable	*B2C*		*LEADER*		*HIGH_PCM*	
Sample	EU	US	EU	US	EU	US
STR	-2.163***	-3.015***	-2.081***	-2.345***	-2.195***	-1.942***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
STR × ESG	0.012***	0.032***	0.007	0.019***	0.009	0.008
	(0.004)	(0.000)	(0.187)	(0.000)	(0.123)	(0.255)
STR × B2C	0.573	1.870***				
	(0.412)	(0.003)				
ESG × B2C	0.001	0.014***				
	(0.812)	(0.000)				
STR × ESG × B2C	-0.012	-0.040***				
	(0.208)	(0.000)				
STR × LEADER			0.247	-1.297**		
			(0.670)	(0.020)		
ESG × LEADER			-0.001	-0.003		
			(0.832)	(0.300)		
STR × ESG × LEADER			0.004	0.016*		
			(0.673)	(0.079)		
STR × HIGH_PCM					0.328	-1.276**
					(0.540)	(0.042)
ESG × HIGH_PCM					-0.000	-0.004
					(0.985)	(0.216)
STR × ESG × HIGH_PCM					-0.001	0.026**
					(0.937)	(0.010)
ESG	-0.001	-0.008***	-0.000	-0.004**	-0.001	-0.002
	(0.406)	(0.000)	(0.860)	(0.037)	(0.739)	(0.359)
LEADER			-0.076	0.295*		
			(0.656)	(0.067)		
HIGH_PCM					-0.049	0.194
					(0.756)	(0.274)
Controls	✓	✓	✓	✓	✓	✓
Year Dummies	✓	✓	✓	✓	✓	✓
Industry Dummies	✓	✓	✓	✓	✓	✓
Parent FE	✓	✓	✓	✓	✓	✓
Observations	116,702	61,404	99,002	54,758	99,002	54,758
R^2	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 Section 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 robust standard errors clustered at the country-year level. *P*-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Table 8: CSR and ETRs of European and US MNEs

	(1)	(2)	(3)	(4)	(5)	(6)
	EU MNEs		**US MNEs**		**EU and US MNEs**	
Dependent Var.	*CETR*	*CETR5*	*CETR*	*CETR5*	*CETR*	*CETR5*
ESG	0.076**	0.055**	0.048*	0.038*	0.081***	0.062***
	(0.031)	(0.029)	(0.064)	(0.070)	(0.007)	(0.007)
ESG × US					-0.050	-0.033
					(0.135)	(0.205)
SIZE	-1.531***	-0.606	-2.294***	-1.462***	-1.893***	-1.072***
	(0.008)	(0.118)	(0.000)	(0.000)	(0.000)	(0.000)
INT_ASSETS	5.443***	0.937	5.041***	2.001*	5.108***	1.380*
	(0.001)	(0.317)	(0.001)	(0.078)	(0.000)	(0.056)
LEV	4.518*	2.945	2.118	-2.152	3.215*	-0.175
	(0.096)	(0.119)	(0.353)	(0.132)	(0.061)	(0.882)
ROA	-73.316***	-20.799***	-34.591***	1.408	-45.941***	-5.020*
	(0.000)	(0.000)	(0.000)	(0.692)	(0.000)	(0.091)
MTB	0.014*	0.010*	-0.003	-0.002	0.000	-0.000
	(0.063)	(0.096)	(0.233)	(0.266)	(0.905)	(0.858)
PPE	-2.839	-5.729***	0.040	-4.753*	-1.496	-4.583***
	(0.342)	(0.003)	(0.991)	(0.097)	(0.491)	(0.005)
RD	24.055	-0.158	-11.564	-34.261***	-5.651	-26.341***
	(0.123)	(0.989)	(0.355)	(0.000)	(0.570)	(0.000)
ΔSALES	-1.745	-1.195	-6.685**	-4.263***	-4.023*	-2.231***
	(0.530)	(0.167)	(0.012)	(0.003)	(0.079)	(0.002)
CASH	10.634*	1.089	-0.158	-5.085**	2.211	-4.136**
	(0.053)	(0.785)	(0.959)	(0.026)	(0.404)	(0.033)
Year Dummies	✓	✓	✓	✓	✓	✓
Country Dummies	✓	✓			✓	✓
Industry FE	✓	✓	✓	✓	✓	✓
Observations	2,573	2,573	3,420	3,420	5,993	5,993
R^2	0.197	0.278	0.121	0.208	0.128	0.187

Notes: Table 8 provides the regression results for estimating Equation (2) to investigate the relation between tax avoidance and the overall CSR performance (*ESG*) in the multinational groups of our profit-shifting samples. Tax avoidance is measured by the cash ETR (*CETR*) in Columns (1), (3) and (5) and a long-run five-year cash ETR (*CETR5*) in Columns (2), (4) and (6). Columns (1) and (2) depict results for the European multinational groups. Columns (3) and (4) use the sample of US multinational groups. Columns (5) and (6) directly compare EU and US MNEs. Year dummies, country dummies (for the EU sample and combined sample) and industry fixed effects are included in the regressions, but not reported. Because of the year and country dummies, we do not include *US* as a stand-alone variable in Columns (5) and (6). Robust standard errors are clustered by firm and year. *P*-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.