Negative media coverage of ESG issues and corporate tax avoidance

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Abstract

Purpose – This study aims to investigate the role of negative media coverage of environmental, social and governance (ESG) issues in deterring tax avoidance. Inspired by media agenda-setting theory and legitimacy theory, this study hypothesises that an increase in ESG negative media coverage should cause a reputational drawback, leading companies to reduce tax avoidance to regain their legitimacy. Hence, this study examines a novel channel that links ESG and taxation.

Design/methodology/approach – This study uses panel regression analysis to examine the relationship between negative media coverage of ESG issues and tax avoidance among the largest European entities. This study considers different measures of tax avoidance and negative media coverage.

Findings – The results show that negative media coverage of ESG issues is negatively associated with tax avoidance, suggesting that media can act as an external monitor for corporate taxation.

Practical implications – The findings have implications for policymakers and regulators, which should consider tax transparency when dealing with ESG disclosure requirements. Tax disclosure should be integrated into ESG reporting.

Social implications – The study has social implications related to the media, which act as watchdogs for firms' irresponsible practices. According to this study's findings, increased media pressure has the power to induce a better alignment between declared ESG policies and tax strategies.

Originality/value – This study contributes to the literature on the mechanisms that discourage tax avoidance and the literature on the relationship between ESG and taxation by shedding light on the role of media coverage.

Keywords Tax avoidance, Negative media coverage, Reputational risk, ESG

Paper type Research paper

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1. Introduction

Media coverage of environmental, social and governance (ESG) issues has the power to inform and reflect the public opinion of an entity (Zhang and Cheng, 2020; Burke, 2022). Media agenda-setting theory postulates that negative news can increase public scrutiny of firms, leading them to implement actions aimed at regaining their eroded legitimacy (Kent and Zunker, 2013). Recent studies show that negative media coverage of ESG issues acts as an external monitor of a firm's ESG activities, for instance, leading to a decrease in earnings management (Chen *et al.*, 2020) or an increase in ESG disclosures (Rupley *et al.*, 2012).

A controversial aspect related to ESG is represented by corporate taxation in general and tax avoidance in particular. Firms' approach towards taxation is no longer considered solely a matter of compliance but a signal of commitment to societal responsibility, legitimising the company in the eyes of stakeholders.

Responding to pressures to disclose more about paid taxes, several tax transparency regulations and standards have been implemented in the past decade (e.g. CbCr, UK tax strategy reports, GRI 207: Tax). Recent media coverage of the relatively low tax rates of the highest ESG-rated companies fuelled a debate on the relationship between ESG reputation and tax avoidance practices, suggesting that when ESG performance is high, firms do not perceive a reduction in tax avoidance as a means to gain legitimacy, with the risk of an ESG–tax detachment [1]. Additionally, the perception of tax avoidance practices can vary across and within countries depending on institutional and cultural factors (Ortas and Gallego-Álvarez, 2020).

According to media agenda-setting theory, events such as negative media coverage could increase the salience of reputational drawbacks, thus leading firms to consider reducing tax avoidance as a legitimising action when they are hit by negative news on ESG. While prior studies considered the relationship between media coverage and overall ESG performance, tax avoidance distinguishes itself from other ESG topics, as it has not an immediate and visible impact on society but rather a more subtle, even if not less damaging, long-term effect. For instance, engaging in tax avoidance schemes does not abruptly interrupt public services, whereas discontinuing a corporate philanthropy program generates immediate inconveniences for its beneficiaries, thus attracting public scrutiny. Given the growing attention and awareness of greenwashing practices, firms responding to ESG negative media coverage by changing what is traditionally perceived as a corporate ESG policy (e.g. environmental protection, working conditions, philanthropy) could face backfire as a demonstration of "organised hypocrisy" (Sikka, 2010). Therefore, entities could adopt a "diversion strategy" in response to ESG negative media coverage, shifting the focus from core ESG topics to non-core (new) ESG topics, such as taxation.

In light of this background, this work examines ESG negative media coverage as a channel that links ESG and tax avoidance. The analysis of STOXX Europe 600 entities reveals that higher levels of negative media coverage of ESG issues, measured using RepRisk, are associated with lower tax avoidance, thus indicating that media can monitor tax avoidance practices in line with media agenda-setting theory.

This study contributes to the literature on the mechanisms that discourage tax avoidance and the literature on the relationship between ESG and taxation in several ways. First, we enrich the evidence on how ESG is linked to tax avoidance by considering the role of reputational concerns. Prior studies rely on ESG proxies mostly derived from firms' disclosures. However, emerging literature indicates that reputational ESG risk is a distinct theoretical construct from ESG performance or disclosure (Lange and Washburn, 2012; Kölbel *et al.*, 2017). Reputational risk derived from ESG issues enhances the perceived risk, potentially inducing a response in companies' responsible behaviour.

Prior studies highlight that considering reputational risk connected to ESG media coverage instead of ESG disclosure or performance allows for a better understanding of the process that generates a risk for the firm and, consequently, the mechanisms and channels through which ESG is related to firm practices (Hasan *et al.*, 2022). Thus, we extend the literature on ESG and tax avoidance by considering how risk emerging from ESG issues, rather than the risk-managing process (ESG performance; see Stuebs and Sun, 2010; Kölbel *et al.*, 2017), determines tax avoidance practices. Another important difference is that while corporate disclosures are primarily directed to investors and analysts, the media can easily reach a wider public and a broader range of stakeholders (Culpepper, 2015).

Moreover, using RepRisk measures offers better inferences than ESG disclosure or performance measures, as it is timelier and more precise, gives less weight to firms' documents and distinguishes between major and minor ESG issues (Hasan *et al.*, 2022).

Additionally, we add to prior studies on monitoring mechanisms for tax avoidance. By considering the whole range of ESG-related reputational concerns, we distinguish from prior studies that focus on the relationship between generic media coverage and tax avoidance (Gallemore *et al.*, 2014; Graham *et al.*, 2014; Kanagaretnam *et al.*, 2018) or narrow the scope to specific tax issues raised by the media (Chen *et al.*, 2019). These studies are concerned with overall media coverage while focusing on negative news could help understand firms' reactions to a loss in legitimacy. Furthermore, these studies are single-country (Gallemore *et al.*, 2014; Graham *et al.*, 2014; Chen *et al.*, 2019) or rely on country-level metrics to proxy for media coverage (Kanagaretnam *et al.*, 2018). To the best of our knowledge, this is the first cross-country study which examines the relationship between reputational risk and tax avoidance by measuring both reputational risk and tax avoidance at the firm level, thus providing a more granular analysis. Finally, we differentiate from prior studies by interpreting corporate taxation (i.e. a reduction in tax avoidance) as a lever to re-establish corporate reputation, endangered by other issues (core ESG issues), rather than considering reputational concerns linked to tax avoidance as *ex-ante* outcome costs (Wilde and Wilson, 2018). Hence, we contribute to shed light on the determinants of the so-called "under-sheltering" (Weisbach, 2002; Desai and Dharmapala, 2006; Hanlon and Heitzman, 2010) by providing evidence in support of managers adjusting their firms' tax avoidance to counterbalance other reputational concerns.

The remainder of the paper is structured as follows. Section 2 introduces the theoretical framework. Section 3 discusses the literature and describes the hypothesis development. Methodology is illustrated in Section 4. Section 5 reports the results, which are discussed in Section 6. Section 7 concludes the study.

2. Theoretical framework

According to legitimacy theory, an organisation's management creates a perception within the community that its values align with the larger social system in which it operates (Deegan, 2009). Breaching the implicit social contract with society can negatively affect the organisation's survival. In this context, corporate tax practices can be crucial in maintaining or regaining legitimacy. Taxation is becoming a crucial part of ESG policies. Effective retention or restoration of legitimacy requires displaying actual actions to inform stakeholders about the firm paying its "fair share" of taxes.

The values and expectations of the community are not fixed but change over time, necessitating organisations to be responsive to the evolving ethical and moral environment (Suchman, 1995). While the theory suggests that managers disclose specific information to minimise the legitimacy gap between society's perception of an organisation's values and

the larger social systems' values (Lindblom, 1994), there is a need to examine the factors that bring certain issues to the attention of the relevant publics in the first place.

The media has been identified as a significant factor in creating legitimacy gaps for organisations by revealing previously unknown information about firms (Kent and Zunker, 2013). The disclosure of such information can pose legitimacy challenges for an organisation. Researchers have recognised the media's role in shaping community concerns and expectations, leading to the development of media agenda-setting theory. This theory suggests that the media actively shape the public agenda rather than simply reflecting community concerns (Carroll and McCombs, 2003; Zucker, 1978). It implies a relationship between the level of media coverage and the degree of public interest, asserting that increased media attention to an event leads to greater community concern and makes the issue a priority. It is believed that individuals rely on the media to determine the importance of issues in the real world, by a varying degree between obtrusive and unobtrusive events (Zucker, 1978). On the one hand, obtrusive events involve issues that people have direct experience with and can easily relate to, such as inflation or health problems caused by extreme weather conditions. On the other hand, unobtrusive events are those where the public has less direct knowledge or personal experience, such as the use of harmful chemicals in remote locations. For instance, the literature often considers environmental issues as unobtrusive events (Eyal *et al.*, 1981), thus being the effect of media coverage stronger for those issues (Zucker, 1978).

An associated dynamic of media agenda-setting is the time lag between media coverage and the public agenda (McCombs and Shaw, 1994). The media agenda will precede public concern for specific issues as the media influences public awareness. It is demonstrated that public agenda changes occur after the media has covered an issue (Wanta *et al.*, 2004).

In the accounting literature, several studies have used media agenda-setting theory in conjunction with legitimacy theory (Aerts and Cormier, 2009; Patten, 2002).

However, no studies have applied this theoretical framework to corporate tax avoidance practices within the field of ESG. In the outlined theoretical framework, the media acts as a catalyst of public attention towards an *object*, i.e. the firm (*basic agenda setting*), for which it outlines the salience of certain *attributes*, i.e. negative ESG behaviour (*attribute agenda setting*). Once the media targets the firm and the negative ESG behaviour, it can transfer the salience of the relationships between the *object* (firm) and the *attribute* (negative ESG event) on the *networked* public agenda (*networked agenda setting*). At this stage, the networked agenda (firm – negative ESG event) is melted with the public's preferences (*agenda melding*). The melding of the *networked objects* and *attributes* (i.e. firm's negative ESG event) and the public's *preferences* (i.e. tax as an ESG component) explains the underlying mechanism that links the constructs of ESG negative media coverage and corporate tax avoidance. Eventually, the expected firm's reaction to restore its legitimacy, in line with the public's preferences, will be a reduction in tax avoidance.

3. Literature and hypothesis

A universally accepted definition of tax avoidance is still missing in the literature, as it is difficult to draw a line between aggressive and non-aggressive tax practices (Blouin, 2014; De Colle and Bennett, 2014). Tax avoidance is a broad concept, encompassing all actions aimed at reducing explicit taxes, ranging from perfectly legal actions to the most aggressive practices (Hanlon and Heitzman, 2010). At the aggressive end of this continuum, Lenz (2020) defines tax avoidance as "the artificial (non-genuine) arrangement of transactions undertaken predominantly or exclusively by rational agents with the objective of tax optimisation [. . .]" (Lenz, 2020; p. 684). The view of tax avoidance as an element of ESG

policies is related to its perception as a cost to society (Weisbach, 2002) and is commonly viewed as unethical or irresponsible by the public and the media.

The literature has explored the relationship between ESG and tax avoidance (Krieg and Li, 2021; Scarpa and Signori, 2023). Studies on this topic can be divided into those finding that ESG performance and tax avoidance act as complements and those finding a substitution between the two.

The former strand of research argues that more virtuous firms also show lower levels of tax avoidance (Hoi *et al.*, 2013; Lanis and Richardson, 2012, 2015). This finding can be explained by stakeholder theory, as companies undertake ESG activities for the benefit of a wide array of stakeholders, including their shareholders, employees, customers, suppliers, creditors and the communities in which they operate. If public authorities (e.g. tax authorities, regulators, governments) are considered part of these stakeholders, tax avoidance should be seen as incompatible with ESG activities.

The latter strand of studies uses legitimacy and risk management theories to explain the positive association between ESG performance and tax avoidance (Watson, 2015; Davis *et al.*, 2016; Col and Patel, 2019). Companies might reduce tax avoidance to restore legitimacy when ESG performance declines or when some events threaten their reputation. From the point of view of legitimacy theory, reducing tax avoidance activities repairs the loss in legitimacy caused by poor ESG practices. From the point of view of risk management theory, ESG activities, including those related to tax avoidance, are primarily a risk-management strategy that a firm uses to enhance its reputation.

A positive association between ESG performance and tax avoidance can also be interpreted as a consequence of companies not paying attention to tax avoidance levels when ESG performance is high.

The context influences this relationship. For instance, studies focusing on the European Union (EU) context generally document a positive relationship between ESG performance and tax avoidance (Fallan and Fallan, 2019; Fourati *et al.*, 2019; Gandullia and Piserà, 2020; Alsaadi, 2020), in line with legitimacy theory. However, differences across jurisdictions have been observed, mostly due to institutional characteristics that moderate this relationship, such as cultural factors (Ortas and Gallego-Álvarez, 2020), book-tax conformity levels (Alsaadi, 2020), country-level governance (Zeng, 2019) or firm-specific characteristics, such as ownership (e.g. Landry *et al.*, 2013 for Canadian firms).

An important factor driving the need for firms to (re)gain legitimacy in the eyes of stakeholders is represented by the salience of ESG issues. Thus, a company might pay closer attention to a reduction in tax avoidance as a legitimising tool when some ESG issues are brought to the public's attention, thus directing stakeholders' attention to a decrease in ESG performance. According to media agenda-setting theory, the media play a crucial role in increasing the salience of a particular issue due to their growing power and role as a source of information (Culpepper, 2015). Having the power to direct public opinion and beliefs (Scheufele and Tewksbury, 2007), the media can affect the reputations of a firm (Li *et al.*, 2023) and its executives or directors (Zingales, 2000; Borden, 2007; Dyck *et al.*, 2010). By stressing certain narratives over others, media frames can shift the weighting of a certain belief over others (Kneafsey and Regan, 2022). Disseminating existing information and conducting independent investigations are two ways the media can exert its influence (Miller, 2006; Kanagaretnam *et al.*, 2018).

Despite the affirmed notion that tax avoidance is conditioned by reputational costs and thus associated with the level of scrutiny a company is exposed to, empirical evidence about the association between external scrutiny and tax avoidance is inconclusive. Some studies find that media coverage is associated with tax planning, tax avoidance or tax disclosure (Graham *et al.*, 2014; Dyreng *et al.*, 2016; Kanagaretnam *et al.*, 2018; Hoi *et al.*, 2022;

Kneafsey and Regan, 2022). Others show no association between media coverage and tax avoidance (Gallemore *et al.*, 2014 on tax sheltering activities; Chen *et al.*, 2019 on media around taxes and tax avoidance).

While those studies either refer to overall media coverage or a specific news type, tax news, no studies have investigated how negative media coverage of ESG issues affects tax avoidance. Understanding this linkage reinforces the evidence around the media's capability to monitor unethical behaviours, shedding light on the channels that link ESG to tax avoidance by considering reputational issues (Krieg and Li, 2021). Examining negative news could help understand how firms react to a reputational loss driven by the media.

Traditional ESG policies could be less effective in contrasting reputational loss because they could be interpreted as "organised hypocrisy" (Sikka, 2010). Hence, we hypothesise that firms under increased scrutiny adopt a "diversion strategy" in response to ESG negative media coverage, shifting the focus from core ESG topics to non-core (new) ESG topics such as taxation, which is an ideal domain for this diversion for two main reasons. First, income taxes can be double-checked directly from financial statements by any user of corporate disclosure [2]. Accordingly, the media, regulators and watchdog groups often focus on GAAP effective tax rates (ETR) when evaluating whether a firm pays its "fair share of taxes" (Benlemlih *et al.*, 2023). Second, the tax-related information reported in financial statements is subject to the tax authority's scrutiny. This makes it hard for firms to manipulate reported tax figures, increasing users' confidence in tax information disclosed in (audited) financial statements. In other words, assurance, traceability and enforcement levels of tax-related disclosure are largely higher than other ESG-related information (Berg *et al.*, 2022). Therefore, a change in corporate tax policy represents a more credible and verifiable signal to show responsible behaviour that firms could use to restore their legitimacy when hit by negative ESG news.

Having the power to increase the salience of a deterioration in ESG performance, negative media coverage of ESG issues could lead companies negatively targeted by ESG news to reduce tax avoidance to restore their image and legitimise their actions in line with media agenda-setting theory. Hence, we formulate the following hypothesis:

H1. Negative media coverage of ESG issues is negatively associated with tax avoidance.

4. Methodology

4.1 Data set

We focus on the STOXX Europe 600 Index, derived from the STOXX Europe Total Market Index and a subset of the STOXX Global 1800 Index. With a fixed number of 600 components, which are selected based on free-float market capitalisation, this index represents companies across 17 countries of the European region: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, The Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland and the UK [3]. It covers approximately 90% of the free-float market capitalisation of the European stock market [4]. We consider the period that goes from 2014 to 2018. Companies' breakdown by industry [5] and country is presented in Table 1 Panel A. Our sample features 2,309 firm-year observations (reduced to 2,142 in tests using cash ETR due to missing information for some companies), which are analysed using panel regressions.

4.2 Assessment of the association between media coverage and tax avoidance

4.2.1 Dependent variable. We use the three-year forward average GAAP effective tax rate (*GAAP_ETR*), measured as the average of the ratio between income taxes and pre-tax

Panel A – Sample composition

Country	Business equipment	Chemicals and allied products	Consumer durables	Consumer non-durables	Finance	Health care	Manufacturing	Media	Oil, gas and coal extraction	Utilities	Wholesale, retail and services	Others	Total
Austria	1	0	0	0	1	1	2	0	0	1	1	1	8
Belgium	1	1	1	3	4	1	0	0	0	2	1	3	17
Denmark	5	0	0	0	7	4	0	1	0	2	1	1	21
Finland	3	0	2	4	4	1	2	0	0	0	1	0	17
France	2	8	3	3	21	9	9	5	4	1	6	15	86
Germany	9	8	2	4	22	2	9	2	2	1	5	10	76
Ireland	0	1	1	1	2	1	0	0	0	0	1	0	7
Italy	4	1	0	3	8	0	3	2	0	3	7	2	33
Luxembourg	0	0	0	0	1	0	0	0	0	0	0	0	1
The Netherlands	7	2	1	3	5	0	4	0	1	1	1	5	30
Norway	1	0	2	1	7	0	3	0	0	0	1	1	16
Poland	0	1	0	2	2	1	1	0	0	0	0	1	8
Portugal	0	1	0	0	0	0	0	1	0	1	0	0	3
South Africa	0	0	0	0	1	0	0	0	0	0	0	0	1
Spain	2	0	0	1	5	3	3	2	1	1	5	2	25
Sweden	2	0	4	2	11	3	6	0	1	3	4	10	46
Switzerland	3	1	1	3	9	5	6	4	0	3	4	12	51
UK	7	5	3	7	36	12	26	8	7	6	13	24	154
Total	47	29	20	37	146	43	74	25	16	25	51	87	600

Table 1.
Sample composition, descriptive statistics for firm-level variables and correlation matrix

Table 1.

Panel B – Descriptive statistics

Variable	N	Mean	Median	SD
Avg3_GAAP_ETR	2,309	0.247	0.232	0.134
Avg3_Cash_ETR	2,142	0.249	0.232	0.152
NegM_Peak_FY (unscaled)	2,309	25.188	25.000	17.386
NegM_Peak_Q4 (unscaled)	2,309	19.636	20.000	16.317
NegM_Peak_Q4Q1 (unscaled)	2,309	21.903	22.000	16.919
Size	2,309	16.255	16.108	1.515
Leverage	2,309	0.198	0.185	0.146
Profitability	2,309	0.081	0.066	0.085
PPE	2,309	0.278	0.208	0.264
Intangibles	2,309	0.278	0.215	0.259
RD	2,309	0.017	0	0.033
Cash	2,309	0.091	0.064	0.095
MTBV	2,309	3.289	2.417	3.439

Panel C – Correlation matrix

	Avg3_GAAP_ETR	Avg3_Cash_ETR	NegM_peak_FY	NegM_peak_Q4	NegM_peak_Q4Q1	Size	Leverage	Profitability	PPE
Avg3_Cash_ETR	0.644***								
NegM_peak_FY	0.152***	0.167***							
NegM_peak_Q4	0.159***	0.172***	0.937***						
NegM_peak_Q4Q1	0.163***	0.167***	0.893***	0.939***					
Size	0.129***	0.106***	0.527***	0.548***	0.542***				
Leverage	0.030	-0.054**	-0.04	-0.005	-0.006	-0.016**			
Profitability	-0.074***	-0.071***	-0.177***	-0.177***	-0.185***	-0.435***	-0.169***		
PPE	-0.104***	-0.188***	-0.011	0.003	-0.001	-0.001	0.397***	-0.043**	
Intangibles	0.061**	0.136***	-0.100***	-0.124***	-0.116***	-0.196***	0.216***	0.049**	-0.321***
RD	-0.059***	0.008	0.008	-0.007	-0.010	-0.120***	-0.125***	0.166***	-0.163***
Cash	0.048**	0.026	-0.074***	-0.078***	-0.062***	-0.281***	-0.217***	0.217***	-0.233***
MTBV	-0.043**	-0.034	-0.108***	-0.126***	-0.127***	-0.349***	-0.016	0.528***	-0.153***
GDP	-0.039*	-0.038*	-0.055***	-0.053***	-0.049**	-0.070***	-0.105**	0.064***	-0.100***
Jud_ind	-0.148***	-0.122***	-0.113***	-0.105***	-0.107***	-0.166***	-0.133***	0.116***	-0.085***
Shar_gov	0.043**	0.010	-0.023	-0.020	-0.009	0.014	-0.030	0.029	-0.055***
BTC	0.090***	0.074***	0.116***	0.107***	0.116***	0.144***	0.017	-0.129***	0.002
CSTR	0.161***	0.152***	0.128***	0.137***	0.141***	0.203***	0.068***	-0.155***	-0.012

(continued)

	Intangibles	RD	Cash	MTBV	GDP	Jud_ind	Shar_gov	BTC
RD	0.212***							
Cash	0.054***	0.163***						
MTBV	0.151***	0.184***	0.257***					
GDP	0.046**	0.113***	−0.034	0.043***				
Jud_ind	0.014	0.057***	−0.030	0.130***	0.634***			
Shar_gov	0.056***	−0.001	0.027	−0.011	0.268***	0.098***		
BTC	−0.029	0.111***	0.015	0.39*	−0.188***	−0.446***	−0.051**	
CSTR	0.060***	0.027	0.027	−0.192***	−0.308***	−0.529***	−0.046**	0.549***

Notes: Size, Leverage, Profitability, PPE, Intangibles, RD, Cash and MTBV are winsorized at the 1st and 99th percentiles; ***, ** and * indicate significance levels at 1, 5 and 10%, respectively
Source: Authors own creation

Table 1.

income for the current year, the year $t+1$ and the year $t+2$ and the three-year forward average cash effective tax rate (*Cash_ETR*), measured as the ratio between taxes paid and pre-tax income over the same period, as dependent variables. The variables are computed as follows for every single period:

$$GAAP\ ETR_t = \frac{Income\ taxes_t}{Pretax\ income_t}$$

$$Cash\ ETR_t = \frac{Cash\ taxes\ paid_t}{Pretax\ income_t}$$

Avg3_ GAAP_ETR is the three-year forward average GAAP effective tax rate, calculated for each year as the average of GAAP ETR for the current year and the two following years. Similarly, *Avg3_Cash_ETR* is the three-year forward average cash effective tax rate, calculated for each year as the average of GAAP ETR for the current year and the two following years.

ETR are the most widely used measures to proxy for tax avoidance (Phillips, 2003; Rego, 2003). Because the numerator is derived from a firm's taxable income, whereas the denominator consists of pre-tax accounting earnings, they capture only tax avoidance strategies that reduce taxable income (i.e. income taxes) without affecting accounting earnings simultaneously. As a result, the ETRs are considered measures of *non-conforming* tax avoidance (Badertscher *et al.*, 2019).

This kind of tax avoidance is the most impactful from a reputational standpoint, including the most aggressive practices, such as tax sheltering. In sensitivity analyses, we also use alternative tax avoidance measures (Henry and Sansing, 2018), which are less sensitive to loss firms. Data to calculate GAAP and cash ETR have been retrieved from Refinitiv Datastream. In line with previous studies, we truncate the values of *GAAP_ETR* and *Cash_ETR* to define a range between 0 and 1. Thus, all negative values have been replaced with 0, whereas values higher than 1 have been replaced with 1 (Armstrong *et al.*, 2012; De Simone *et al.*, 2020). To maximise result generalizability, we have included companies with a negative pre-tax income (De Simone *et al.*, 2020).

4.2.2 Independent variable. Following previous research, we use the RepRisk score to measure a firm's negative media coverage concerning ESG practices (Burke *et al.*, 2019; Asante-Appiah, 2020).

RepRisk systematically collects data from over 80,000 media sources in 23 different languages, such as websites, newspapers and social media and uses artificial intelligence to search for information on ESG issues. A proprietary algorithm aggregates data into a composite score for each company. A higher score of RepRisk indicates a higher value attributed to negative media on ESG issues and, consequently, a worse reputation.

RepRisk offers monthly data about negative media coverage of ESG issues. In line with previous studies (e.g. Burke *et al.*, 2019), we consider peaks in negative media coverage in the months immediately preceding the publication of the financial statements. Hence, we consider the peaks in negative media coverage in the fourth quarter of the fiscal year (*NegM_peak_Q4*) and in the period that spans the last quarter of the fiscal year and the first quarter of the following year (*NegM_peak_Q4Q1*). We also consider the peak in negative media coverage throughout the whole fiscal year (*NegM_peak_FY*).

Following Burke *et al.* (2019), we scale each RepRisk measure by the average value of that measure in the year to consider scale effects.

4.2.3 Control variables. We control for firm size, leverage, profitability, PPE intensity, intangible intensity, research and development expenditure levels, cash holdings and market-to-book value (Derashid and Zhang, 2003; Plesko, 2003; Chen *et al.*, 2010). Size is the natural logarithm of total assets (*Size*) (Plesko, 2003). Leverage is the ratio between long-term debt and total assets (*Leverage*) (Plesko, 2003; Chen *et al.*, 2010). Profitability is the ratio between pre-tax income and total assets (*Profitability*) (Plesko, 2003). PPE intensity is the ratio between PPE and lagged total assets (*PPE*) (Plesko, 2003; Gallemore *et al.*, 2014). Intangible intensity is the ratio between intangible assets and lagged total assets (*Intangibles*) (Hoi *et al.*, 2013). Research and development intensity (*RD*) is measured as the ratio between research and development expenditure and lagged total assets (Hoi *et al.*, 2013). As most companies in our sample adopt IFRS, we include capitalised development costs for the period in total research and development expenditure. We compute the ratio between cash and lagged total assets (*Cash*) to consider cash holdings (Hoi *et al.*, 2013). Market-to-book value (*MTBV*) is the ratio between the market value of equity and the book value of equity (Hoi *et al.*, 2013; Gallemore *et al.*, 2014). Data to obtain firm-level control variables have been downloaded from Refinitiv Datastream.

We also control for country-level variables. We use the natural logarithm of gross domestic product (*GDP*) to control for the economic cycle. We use the World Economic Forum measures for judicial independence (*Jud_ind*) and shareholder governance (*Shar_gov*) as additional controls. To consider the level of alignment between book income and taxable income, we build a country-level book-tax conformity measure (*BTC*). We create a dummy variable equal to one when the financial accounts serve as the basis for the tax accounts and the tax law requires that several items be treated equally in the financial accounts and the tax accounts, zero otherwise (Peek *et al.*, 2010). We acknowledge that differences in the ETRs in our sample might be partially due to the different levels of statutory tax rates across jurisdictions. Hence, we add the country's statutory tax rate as a control (*CSTR*). *CSTR* is obtained from KPMG corporate tax rate tables (Bonacchi *et al.*, 2019). Finally, we control for industry, country and year fixed effects.

4.2.4 Model. We estimate the following panel regression model:

$$
\begin{aligned}
Avg\_Tax\_avoid_{t-t+2} = \ & \alpha + \beta_1 Neg\_media_t + \beta_2 Size_t + \beta_3 Leverage_t \\
& + \beta_4 Profitability_t + \beta_5 PPE_t + \beta_6 Intangibles_t + \beta_7 RD_t \\
& + \beta_8 Cash_t + \beta_9 MTBV_t + \beta_{10} GDP_t + \beta_{11} Jud\_ind_t \\
& + \beta_{12} Shar\_gov_t + \beta_{13} BTC + \beta_{14} CSTR_t \\
& + industry, country, and\ year\ fixed\ effects + \varepsilon \quad\quad (1)
\end{aligned}
$$

$Avg\_Tax\_avoid_{t\cdot t+2}$ is $Avg3\_GAAP\_ETR$ or $Avg3\_Cash\_ETR$, calculated as the average of GAAP ETR and cash ETR over the period from t to $t + 2$, respectively. *Neg_media* is one of the measures for peaks in negative media coverage in ESG issues, which are measured in the whole fiscal year t (*NegM_peak_FY*), the last quarter of the fiscal year t (*NegM_peak_Q4*) or the last quarter of the fiscal year t and the first quarter of the following year (period $t + 1$) (*NegM_peak_Q4Q1*).

As the Hausman test is not significant when comparing a model with firm and year fixed effects with a model with industry, country, and year fixed effects in our model specifications (p ranging between 0.11 and 0.97), we did not include firm fixed effects, thus resorting to a random-effects model.

5. Results

5.1 Main analyses

Descriptive statistics show that the average GAAP ETR for firms in the sample is 24.7%, while the median value is 23.2% (Table 1 Panel B). These values are close to the cash ETR (mean value of 24.9% and median value of 23.2%). Companies in the sample show low levels of negative media coverage. While the scores assigned by RepRisk range from 0 (no negative media coverage) to 100 (highest levels of negative media coverage), the mean value of monthly peaks in the whole fiscal year is 25.19, with a median value of 25. Results are similar when we consider peaks in the fourth quarter of the fiscal year, or the fourth quarter of the fiscal year and the first quarter of the following year.

The correlation matrix shows no collinearity problems (Table 1 Panel C). Negative media coverage variables are positively and strongly associated with GAAP and cash ETRs. Among the other coefficients, size shows a strong relationship with media coverage, while the country variable judicial independence shows strong relationships with *GDP*, *BTC* and *CSTR*. Similarly, *BTC* and *CSTR* are strongly associated. However, the maximum VIF values suggest that collinearity does not affect our results.

Multivariate analysis results confirm the positive and significant association between negative media coverage of ESG issues and tax avoidance (Table 2), suggesting that companies more exposed to the media on ESG issues show lower levels of tax avoidance. This finding holds for both GAAP and cash ETR, regardless of the time horizon considered for negative media coverage [6]. Peaks in media coverage of ESG issues that happen during the fiscal year, as well as peaks that originate when the financial statement publication date approaches, i.e. in the last quarter of the fiscal year or in the period that spans the last quarter and the first quarter of the following year, are significantly associated with tax avoidance. Hence, our hypothesis on the negative relationship between negative media coverage of ESG issues and tax avoidance is supported.

5.2 Additional analyses

The additional tests performed to strengthen our results include alternative measures for the dependent and the independent variables, assessing the role of ESG performance, change specification, two-stage estimation, long-term effect test and subsample analyses [7].

5.2.1 Alternative tax avoidance measure. We consider alternative measures of tax avoidance. The first measure (*Delta_tax*) has been developed by Henry and Sansing (2018) and is based on the basic assumption that a firm is tax-favoured (tax-disfavoured) if its cash taxes paid are lower (greater) than the firm's pre-tax book income multiplied by the corporate statutory tax rate (CSTR). We apply a modified version of the measure by removing changes in tax refund receivables. Other than being less sensitive to loss-making firms, this metric is useful in assessing tax avoidance when analysing cross-country samples. Our *Delta_tax* measure is built as follows:

$$Delta\_tax_t = \frac{Cash\_tax_t - (Pretax\_inc_t \times CSTR)}{MVA_t}$$

Where *Cash_tax* is taxes paid, *Pretax_inc* is the pre-tax income, *CSTR* is the corporate statutory tax rate for the country where the company is based and *MVA* is the market value of assets, computed as the sum market value of equity and book value of assets, minus book value of equity.

Positive values of this measure indicate that a company's effective taxes paid are higher than the hypothetical taxation, whereas negative values indicate that a company has paid

Dependent variable	Predicted sign	Avg3_GAAP_ETR	Avg3_GAAP_ETR	Avg3_GAAP_ETR	Avg3_cash_ETR	Avg3_cash_ETR	Avg3_cash_ETR
Const		−0.809 (1.462)	−0.681 (1.462)	−0.685 (1.462)	−0.857 (1.709)	−0.671 (1.707)	−0.706 (1.711)
NegM_peak_FY	+	0.013*** (0.005)			0.022*** (0.006)		
NegM_peak_Q4	+		0.013*** (0.004)			0.022*** (0.005)	
NegM_peak_Q4Q1	+			0.014*** (0.004)			0.019*** (0.005)
Size		0.011*** (0.004)	0.011** (0.004)	0.011*** (0.004)	0.009** (0.004)	0.007* (0.004)	0.009** (0.004)
Leverage		0.071** (0.030)	0.071** (0.030)	0.070** (0.030)	−0.008 (0.035)	−0.008 (0.035)	−0.009 (0.035)
Profitability		0.026 (0.042)	0.025 (0.041)	0.027 (0.041)	−0.034 (0.050)	−0.035 (0.050)	−0.034*** (0.050)
PPE		−0.063*** (0.018)	−0.063*** (0.018)	−0.062*** (0.018)	−0.072*** (0.020)	−0.072*** (0.020)	−0.072*** (0.020)
Intangibles		0.009 (0.015)	0.010 (0.015)	0.010 (0.015)	0.061*** (0.017)	0.063*** (0.017)	0.063*** (0.017)
RD		−0.202* (0.129)	−0.201 (0.123)	−0.201 (0.123)	0.056 (0.141)	0.058 (0.140)	0.061 (0.141)
Cash		0.036 (0.036)	0.035 (0.036)	0.033 (0.036)	0.013 (0.043)	0.011 (0.043)	0.010 (0.043)
MTBV		0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
GDP		0.083 (0.142)	0.071 (0.142)	0.071 (0.142)	0.105 (0.166)	0.089 (0.166)	0.091 (0.166)
Jud_ind		−0.032*** (0.009)	−0.032*** (0.009)	−0.032*** (0.009)	−0.032*** (0.011)	−0.033*** (0.011)	−0.033*** (0.011)
Shar_gov		−0.003 (0.005)	−0.002 (0.005)	−0.003 (0.005)	−0.006 (0.007)	−0.005 (0.007)	−0.006 (0.007)
BTC		−0.019 (0.050)	−0.017 (0.050)	−0.018 (0.050)	−0.074 (0.056)	−0.071 (0.056)	−0.073 (0.056)
CTSR		0.751*** (0.286)	0.748*** (0.286)	0.767*** (0.286)	0.335 (0.347)	0.335 (0.347)	0.353 (0.348)
Industry FE		Yes	Yes	Yes	Yes	Yes	Yes
Country FE		Yes	Yes	Yes	Yes	Yes	Yes
Year FE		Yes	Yes	Yes	Yes	Yes	Yes
N		2,309	2,309	2,309	2,142	2,142	2,142
R^2 (overall)		0.12	0.12	0.12	0.13	0.14	0.13
Wald Chi^2		167.90***	170.30***	170.16***	160.68***	166.36***	159.61***
Max VIF		2.46	2.46	2.46	2.46	2.46	2.46

Notes: Standard errors in parentheses. Size, Leverage, Profitability, PPE, Intangibles, RD, Cash and MTBV are winsorised at the 1st and 99th percentiles; ***, ** and * indicate significance levels at 1, 5 and 10%, respectively. Coefficients in bold refer to hypothesis testing
Source: Authors own creation

Table 2.
Baseline models:
negative media
coverage of ESG and
ETRs

less in taxes than expected. Hence, we predict a positive association between negative media coverage of ESG issues and *Delta_tax*.

Additionally, we use modified versions of the tax avoidance measures used by Hasan *et al.* (2014), adapted to a non-US setting. *BTD* is a book-tax difference measure computed as:

$$\text{BTD}_t = \frac{Pretax\_inc_t \: - \: (Cur\_dom\_tax_t / \: CSTR) \: - \: Cur\_for\_tax_t}{TA_{t-1}}$$

Cur_dom_tax represents current domestic taxes, and *Cur_for_tax* is the current foreign tax [8]. *TA* is total assets. Data are obtained from Refinitiv Datastream. Where absent, we replace *Cur_dom_tax* and *Cur_for_tax* with a value equal to 0. The lower this measure, the less aggressive the firm's tax strategy. Hence, we predict a negative association between negative media coverage of ESG issues and *BTD*.

Finally, we estimate the abnormal permanent book-tax differences as in Hasan *et al.* (2014) (*Ab_perm_BTD*) based on Frank *et al.* (2009) discretionary permanent book-tax difference. We first compute the permanent differences as follows:

$$Perm_t = \frac{Pretax\_inc_t \quad - \quad \frac{(Cur\_dom\_tax_t + Cur\_for\_tax_t)}{CSTR} - \frac{(Inc\_tax_t - Cur\_dom\_tax_t - Cur\_for\_tax_t)}{CSTR}}{TA_t}$$

Where *Inc_tax* represents income taxes accrued in the year and deferred taxes are obtained as a difference between income taxes (*Inc_tax*) and current taxes (*Cur_dom_tax*, *Cur_for_tax*). We then use the residuals from the following model to compute abnormal permanent differences:

$$Perm_t = \alpha + \beta_1 + \beta_2 Perm_{t-1} + industry, \: country, and \: year \: fixed \: effects + \varepsilon \quad (2)$$

Higher levels of abnormal permanent differences are considered a sign of higher tax avoidance. Hence, we expect a negative relationship between negative media coverage of ESG issues and *Ab_perm_BTD*. We rerun the baseline models, replacing ETR measures with *Delta_tax*, *BTD* and *Ab_perm_BTD*. Results show that negative media coverage is positively and significantly associated with *Delta_tax* and negatively and significantly with *BTD* and *Ab_perm_BTD* (Table 3).

Untabulated figures show that the results also hold when using the three-year forward average of these alternative measures computed from t to $t + 2$. Overall, the findings of the baseline models are confirmed when we use alternative tax avoidance measures.

5.2.2 Different measures of negative media coverage. As a company could also react to the pressure deriving from cumulative negative news throughout a period, we run the same analyses, replacing the peaks in negative media coverage with the sum of monthly RepRisk scores in the same period. Results confirm the results found in the baseline models (Table A1 in the Appendix).

5.2.3 Effect on environmental, social and governance performance. We run an additional test using the Refinitiv Datastream Combined ESG score to compare the impact of negative media coverage on ESG performance with the observed impact on tax avoidance. *ESG_Score* is the dependent variable, and ESG negative media coverage metrics are the main independent variables. As the impact of media coverage on ESG performance might not be immediate, we consider not only current (t) but also future ESG performance by using the *ESG_Score* in the fiscal year following the one to which the peak in negative media coverage refers ($t + 1$). As in Di Giuli and Kostovetsky (2014), we include firm-level controls for size, profitability, cash holdings, leverage and market-to-book value. We also include

Dependent variable	Delta_tax	Delta_tax	Delta_tax	BTD	BTD
Const	−0.065 (0.097)	−0.057 (0.097)	0.054 (0.097)	0.779 (0.733)	0.728 (0.734)
NegM_peak_FY	0.001*** (0.000)				
NegM_peak_Q4		0.001*** (0.000)		−0.007*** (0.002)	
NegM_peak_Q4Q1			0.001*** (0.000)		−0.005*** (0.002)
Size	−0.001*** (0.000)	−0.001*** (0.000)	−0.001*** (0.000)	0.007*** (0.002)	0.007*** (0.002)
Leverage	−0.003* (0.002)	−0.003* (0.002)	−0.004* (0.002)	0.035** (0.014)	0.035** (0.014)
Profitability	−0.077*** (0.028)	−0.077*** (0.003)	−0.077*** (0.003)	0.527*** (0.020)	0.527*** (0.020)
PPE	−0.002 (0.001)	−0.002 (0.001)	−0.002 (0.001)	0.016* (0.008)	0.016* (0.008)
Intangibles	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	−0.016** (0.007)	−0.016** (0.007)
RD	0.008 (0.008)	0.008 (0.008)	0.008 (0.008)	−0.090 (0.057)	−0.092 (0.057)
Cash	0.004 (0.002)	0.004 (0.002)	0.004 (0.002)	−0.091*** (0.017)	−0.090*** (0.017)
MTBV	0.001*** (0.000)	0.001*** (0.000)	0.001*** (0.000)	−0.002*** (0.000)	−0.002*** (0.000)
GDP	0.008 (0.009)	0.007 (0.009)	0.007 (0.009)	−0.090 (0.071)	−0.085 (0.071)
Jud_ind	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.005 (0.004)	0.005 (0.004)
Shar_gov	−0.001*** (0.000)	−0.001*** (0.000)	−0.001*** (0.000)	0.001 (0.003)	0.001 (0.003)
BTC	−0.003 (0.003)	−0.003 (0.003)	−0.002 (0.003)	0.014 (0.022)	0.014 (0.022)
Industry FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
N	2,156	2,156	2,156	2,309	2,309
R^2 (overall)	0.26	0.26	0.26	0.21	0.21
Wald Chi^2	973.18***	975.26***	985.07***	806.33***	801.90***
Max VIF	2.46	2.46	2.46	2.46	2.46

Notes: Standard errors in parentheses. Size, Leverage, Profitability, PPE, Intangibles, RD, Cash and MTBV are winsorised at the 1st and 99th percentiles; ***, ** and * indicate significance levels at 1, 5 and 10%, respectively. Coefficients in bold refer to hypothesis testing
Source: Authors own creation

(*continued*)

Dependent variable	BTD	Ab_Perm_BTD	Ab_Perm_BTD	Ab_Perm_BTD
Const	0.730 (0.734)	0.348 (1.239)	0.257 (1.239)	0.291 (1.237)
NegM_peak_FY	−0.005*** (0.002)	−0.006*** (0.002)		
NegM_peak_Q4	0.007*** (0.002)		−0.006*** (0.002)	
NegM_peak_Q4Q1				−0.007*** (0.002)
Size	0.035** (0.014)	0.001 (0.001)	0.001 (0.001)	0.002 (0.001)
Leverage	0.526*** (0.020)	−0.009 (0.012)	−0.009 (0.012)	−0.009 (0.012)
Profitability	0.016* (0.008)	0.194*** (0.018)	0.195*** (0.018)	0.194*** (0.018)
PPE	−0.016** (0.007)	0.003 (0.007)	0.003 (0.007)	0.003 (0.007)
Intangibles	−0.093 (0.057)	−0.007 (0.006)	−0.008 (0.006)	−0.008 (0.006)
RD	−0.090*** (0.017)	0.112** (0.047)	0.113** (0.047)	0.113** (0.047)
Cash	−0.002*** (0.000)	−0.029* (0.015)	−0.028* (0.015)	−0.027* (0.015)
MTBV	−0.085 (0.071)	−0.001*** (0.000)	−0.001*** (0.000)	−0.001*** (0.000)
GDP	0.005 (0.004)	−0.038 (0.120)	−0.029 (0.120)	−0.033 (0.120)
Jud_ind	0.001 (0.003)	0.004 (0.005)	0.004 (0.005)	0.004 (0.005)
Shar_gov	0.014 (0.022)	0.002 (0.003)	0.002 (0.003)	0.002 (0.003)
BTC		0.017 (0.022)	0.016 (0.022)	0.017 (0.022)
Industry FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
N	2,309	1,860	1,860	1,860
R^2 (overall)	0.21	0.13	0.14	0.14
Wald Chi^2	801.11***	216.06***	220.27***	223.67***
Max VIF	2.46	2.46	2.46	2.46

Table 3.

country (Ye *et al.*, 2016), year and industry fixed effects to account for differences in environmental sensitivity (Patten, 2002).

Results (Table 4) show that the association between negative media coverage of ESG issues and ESG performance is not statistically significant. This test confirms our prediction concerning corporate taxation as a peculiar ESG issue. Negative media coverage influences tax avoidance differently (negative relationship) than ESG performance (no relationship). We interpret these results as firms enhancing their reputation by leveraging corporate tax policies rather than other ESG factors. Additionally, they allow us to rule out that ESG performance drives our results.

5.2.4 Change specification. We performed a change specification. We use a dummy variable (*Ch_NegM*) that captures a shift from no negative media coverage of ESG issues to negative media from a year to the following and relate that variable to the change in ETRs. We regress the changes in the three-year average GAAP and cash tax rates on *Ch_NegM* and the year-on-year changes of the time-variant control variables used in the baseline models. Our prediction is that when a company previously not covered by the media on ESG issues is hit by bad ESG-related news, its tax payments will increase (i.e. tax avoidance will decrease).

Results (Table 5) show that when negative media coverage of ESG starts, companies increase their GAAP effective tax rate for the current and the two subsequent years by an average of 0.37% (coefficient of *Ch_NegM* in Column 1 times mean GAAP ETR of our sample) and their cash effective tax rate by 0.5% (coefficient of *Ch_NegM* in Column 2 times mean cash ETR of our sample). The results in Table 5 also help mitigate the endogeneity concern on the spurious regression issue, which is less likely to affect change specification.

5.2.5 Long-term effects. Prior studies (Desai and Dharmapala, 2006) suggest that it often takes years to plan tax sheltering activities, set up offshore subsidiaries in tax havens and, in general, elaborate complex tax planning schemes. To better address the impact of ESG-related negative news on future tax avoidance practices, we consider GAAP and cash ETRs in the fiscal year following the one to which the peak in negative media coverage refers $(t + 1)$ and the following year $(t + 2)$. We rerun our main model using the forward GAAP ETRs and cash ETRs at year $t + 1$ and year $t + 2$ as dependent variables.

Results (Table A2 in the Appendix) confirm the findings obtained in the baseline model. The effect is of particular magnitude for the cash ETR at time $t + 2$ (coefficients between 0.034 and 0.040 in the three regressions), suggesting that the response intensity increases over time, especially for an item generally regarded as more impactful on public opinion, i.e. cash taxes paid.

5.2.6 Endogeneity. We argue that our results show that endogeneity should not be an issue. If an unobservable factor, such as responsible managerial practices, affected both our dependent variable and our independent variable of interest, a company would be exposed to less negative media coverage of ESG and engage less in tax avoidance behaviours. Hence, we would have observed a positive relationship between negative media coverage of ESG issues and tax avoidance. However, our findings document a negative relationship between negative media coverage and tax avoidance, suggesting that media can act as an external monitor and that endogeneity is not likely to affect our results. Similar to Barth *et al.* (2017), who claim that the observation of a negative relationship between reporting quality and information asymmetry indicates that endogeneity is not likely to affect their results, our findings suggest that unobservable factors do not affect our research design. Moreover, negative media coverage does not entirely depend on a company's choices and practices but also on the media's willingness to cover that company.

Nonetheless, we perform a two-stage regression to address those concerns. We instrument ESG negative media coverage using two instrument variables: industry environmental

Dependent variable	ESG score(t)	ESG score(t)	ESG score(t)	ESG score (t + 1)	ESG score (t + 1)	ESG score (t + 1)
Constant	−0.939 (9.554)	−1.317 (9.566)	−1.101 (9.589)	7.238 (9.859)	4.653 (9.873)	5.729 (9.901)
NegM_peak_FY	0.151 (0.488)			0.704 (0.557)		
NegM_peak_Q4		0.017 (0.448)			−0.209 (0.507)	
NegM_peak_Q4Q1			0.079 (0.419)			0.129 (0.471)
Size	3.344*** (0.446)	3.374*** (0.446)	3.358*** (0.447)	3.081*** (0.468)	3.287*** (0.468)	3.204*** (0.469)
Leverage	−2.323 (3.249)	−2.333 (3.249)	−2.339 (3.251)	0.903 (3.591)	0.800 (3.594)	0.840 (3.595)
Profitability	9.288** (4.198)	9.292** (4.198)	9.279** (4.197)	4.441 (4.664)	4.435 (4.666)	4.463 (4.664)
Cash	−8.795** (3.762)	−8.801** (3.763)	−8.789** (3.762)	−6.059 (4.129)	−5.964 (4.132)	−6.022 (4.131)
MTBV	0.119 (0.103)	0.119 (0.103)	0.119 (0.103)	0.003 (0.113)	0.003 (0.113)	0.004 (0.113)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	2,253	2,253	2,253	1,811	1,811	1,811
R^2 (overall)	0.141	0.141	0.141	0.133	0.129	0.131
Wald Chi²	387.2***	387.1***	387.2***	195.5***	193.8***	193.6***
Max VIF	1.80	1.86	1.84	1.80	1.86	1.84

Notes: Standard errors in parentheses. Size, Leverage, Profitability, Cash and MTBV are winsorised at the 1st and 99th percentiles; ***, ** and * indicate significance levels at 1, 5 and 10%, respectively
Source: Authors own creation

Table 4.
Negative media
coverage of ESG and
ESG performance

Dependent variable	ΔAvg3_GAAP_ETR	ΔAvg3_cash_ETR
Const	−0.010 (*0.009*)	−0.023** (*0.011*)
Ch_NegM	*0.015** (0.008)*	*0.020** (0.009)*
ΔSize	0.022** (*0.011*)	0.024* (*0.013*)
ΔLeverage	0.014 (*0.032*)	−0.023 (*0.038*)
ΔProfitability	0.023 (*0.031*)	−0.031 (*0.038*)
ΔPPE	−0.042* (*0.025*)	−0.015*** (*0.029*)
ΔIntangibles	−0.025 (*0.015*)	0.003 (*0.018*)
ΔRD	−0.046 (*0.125*)	0.008 (*0.147*)
ΔCash	−0.002 (*0.028*)	−0.012 (*0.033*)
ΔMTBV	0.002** (*0.001*)	0.002* (*0.001*)
ΔGDP	0.075 (*0.194*)	0.165 (*0.230*)
ΔJud_ind	−0.018* (*0.011*)	−0.032*** (*0.013*)
ΔShar_gov	−0.002 (*0.005*)	0.001 (*0.006*)
BTC	−0.027 (*0.019*)	0.016 (*0.022*)
ΔCTSR	−0.285 (*0.275*)	−0.256 (*0.342*)
Industry FE	Yes	Yes
Country FE	Yes	Yes
Year FE	Yes	Yes
N	2,091	1,924
R^2 (overall)	0.06	0.05
Wald Chi^2	128.24***	100.27***

Notes: Standard errors in parentheses. Size, Leverage, Profitability, PPE, Intangibles, RD, Cash and MTBV are winsorised at the 1st and 99th percentiles; ***, ** and * indicate significance levels at 1, 5 and 10, respectively. Coefficients in bold refer to hypothesis testing
Source: Authors own creation

Table 5.
Change specification

sensitivity (Patten, 2002) and a country's orientation towards sustainability (Simoni *et al.*, 2020). In the first stage, ESG negative media coverage measures are regressed on the two instruments and all the control variables used in the baseline models. The second stage equals the baseline model, but RepRisk measures are replaced with predicted values estimated in the first stage. Results (Table A3 in the Appendix) largely confirm those in the main analysis, showing a positive and significant coefficient in five of the six models.

5.2.7 Channel tests. We identify two channels through which negative media coverage of ESG issues can influence tax avoidance: the strength of a country's tax enforcement and media ownership. A company targeted by negative media coverage of ESG issues will have a higher likelihood of being audited by tax officials. The intensity of this tax auditing activity is a function of the tax enforcement strength at the country level, which, in turn, reduces the probability of engaging in tax avoidance (Hoopes *et al.*, 2012; Beuselinck *et al.*, 2015). We collect data on tax enforcement drawing from the OECD Tax Administration Guide, measured as the ratio of citizens to tax staff at the central government tax agency (De Vito *et al.*, 2019; Alexander *et al.*, 2020). We interact the tax enforcement metric with the three negative media coverage variables included in the main models, documenting positive and statistically significant coefficients for the interaction terms when using cash ETR as a dependent variable (Table A4, Panel A in the Appendix). Hence, ESG negative media coverage shows a stronger association with taxes paid when the pressure exerted by the tax authority is higher.

Media ownership can influence the process of collecting information and making it available to the public, in general, and to corporate stakeholders, specifically. By supplying alternative views to the public, privately owned and independent media will prevent

government-owned media from distorting and manipulating information to entrench incumbent politicians and preclude voters and consumers from making informed decisions (Djankov *et al.*, 2003). We collect country-level data for media ownership (Djankov *et al.*, 2003) and interact the TV state ownership variable, representing the number of top five TV enterprises in each country owned by the state weighted by market share, with the three negative media coverage variables included in the main models. Regressions (Table A4, Panel B in the Appendix) show negative and significant coefficients for the interaction terms involving media coverage variables in regressions using cash ETRs. We regard cash ETR as a more truthful proxy of tax avoidance because taxes relevant to tax authorities are those paid and attract greater scrutiny from the media.

5.2.8 Subsamples. We replicate our main models on three different sub-samples to rule out that certain categories of firms drive our results. We excluded firm-year observations that report negative pre-tax income, companies in the financial sector and UK companies. Results (Table A5 in the Appendix) confirm the positive and significant association between negative media coverage of ESG issues and tax rate measures throughout the three sub-samples.

5.2.9 Country-by-country reporting. Further analysis involves Country-by-Country reporting (CbCr) adoption across European countries to address the role of tax transparency in shaping tax avoidance. CbCr was initially introduced in the EU with Directive 2013/36/EU, requiring EU financial institutions to disclose CbCr reports from 2014 publicly. For large non-financial companies, CbCr became compulsory in 2016. South Africa followed the same timeline for all its companies. Switzerland implemented CbCr for large multinational companies in 2018. Firms affected by CbCr display an increase in their GAAP ETRs and a decline in tax-motivated income shifting (Joshi, 2020).

We rerun the main model, including a dummy variable *CbCr*, which is 1 for firm-year observations in which CbCr requirements were in place in the respective jurisdiction, based on revenue thresholds, and 0 otherwise (Table 6). We interact *CbCr* with all three main metrics of negative media coverage of ESG issues. We run the same analysis on the full sample (Table 6 Panel A) and a sub-sample of non-financial firms (Table 6 Panel B), most affected by CbCr. Results indicate a higher intensity in the response by companies subject to CbCR hit by negative ESG news when considering GAAP ETRs but not cash ETRs. In line with Joshi (2020), we document a significant impact of CbCr on the GAAP ETRs of European companies but not on their cash ETRs. Hence, CbCr contributed to a moderate reduction of tax avoidance (concerning GAAP ETR) for companies hit by negative ESG-related news.

6. Discussion
Our findings show that firms exposed to negative media coverage of ESG issues show lower tax avoidance due to higher scrutiny by stakeholders driven by media pressures. According to media agenda-setting theory, negative news on ESG issues determines a reputation loss, enhancing companies' need to be responsible in the eyes of stakeholders. This spurs companies to restore their legitimacy by being less tax aggressive. Paying more taxes helps their stakeholders perceive them as good "corporate citizens". Hence, companies seem to limit tax avoidance levels as a tool that allows them to (re)gain legitimacy when legitimacy itself is threatened by negative events with high salience due to media coverage. This result aligns with prior studies stating that media coverage acts as a phenomenon that increases companies' need to act responsibly due to legitimacy reasons, thus connecting media agenda-setting and legitimacy theories (Kent and Zunker, 2013).

Dependent variable	Avg3_GAAP_ETR	Avg3_GAAP_ETR	Avg3_GAAP_ETR	Avg3_Cash_ETR	Avg3_Cash_ETR	Avg3_Cash_ETR
Panel A: full sample						
Const	−0.535 (1.464)	−0.415 (1.463)	−0.397 (1.463)	−0.704 (1.717)	−0.513 (1.716)	−0.528 (1.720)
NegM_peak_FY	0.002 (0.006)			0.015** (0.007)		
NegM_peak_Q4		0.002 (0.005)			0.017*** (0.006)	
NegM_peak_Q4Q1			0.002 (0.006)			0.014** (0.007)
CbCr	−0.002 (0.010)	−0.001 (0.010)	−0.001 (0.009)	−0.001 (0.012)	0.002 (0.011)	0.003 (0.011)
NegM_peak_FY × CbCr	0.020*** (0.006)			0.011 (0.008)		
NegM_peak_Q4 × CbCr		0.019*** (0.005)			0.009 (0.006)	
NegM_peak_Q4Q1 × CbCr			0.020*** (0.006)			0.008 (0.007)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	2,309	2,309	2,309	2,142	2,142	2,142
R^2 (overall)	0.12	0.13	0.13	0.14	0.14	0.14
Wald Chi^2	185.99***	191.10***	190.99***	165.69***	171.42***	163.98***
Panel B: exclusion of financial firms						
Const	−0.361 (1.655)	−0.232 (1.654)	−0.203 (1.653)	−0.513 (1.856)	−0.321 (1.855)	−0.387 (1.858)
NegM_peak_FY	0.002 (0.006)			0.014* (0.007)		
NegM_peak_Q4		0.002 (0.006)			0.016** (0.006)	
NegM_peak_Q4Q1			0.004 (0.006)			0.014** (0.007)
CbCr	0.008 (0.013)	0.010 (0.013)	0.007 (0.013)	0.008 (0.015)	0.010 (0.015)	0.011 (0.015)
NegM_peak_FY × CbCr	0.023*** (0.007)			0.011 (0.008)		
NegM_peak_Q4 × CbCr		0.021*** (0.006)			0.009 (0.007)	
NegM_peak_Q4Q1 × CbCr			0.024*** (0.006)			0.009 (0.007)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	1,760	1,760	1,760	1,633	1,633	1,633
R^2 (overall)	0.13	0.14	0.14	0.15	0.16	0.16
Wald Chi^2	149.31***	154.62***	158.12***	147.62***	152.73***	148.48***

Notes: Standard errors in parentheses. Controls include all the controls used in the baseline model; ***, ** and * indicate significance levels at 1, 5 and 10%, respectively
Source: Authors own creation

Table 6.
Impact of CbCr on the relationship between negative media coverage of ESG and tax avoidance

Higher levels of negative media coverage of ESG issues are positively associated not only with ETRs but also with taxes paid on top of the theoretical tax burden based on the statutory tax rate, as shown by our additional analyses.

Our study extends two literature streams: the literature on the mechanisms that discourage tax avoidance and the literature on the relationship between ESG and tax avoidance.

Regarding the former, studies documented that media independence can act as an external monitor for tax avoidance (Kanagaretnam *et al.*, 2018), while tax avoidance is not associated with tax news (Chen *et al.*, 2019). We add to this debate by shedding light on two characteristics of media coverage. First, we focus on negative media coverage, which can cause serious reputational drawbacks. Second, we consider ESG news.

Regarding the latter research stream, we document that firms with poor ESG performance pay more taxes to balance that poor performance, in line with part of the prior literature. However, unlike prior studies, we document the role played by the media in shaping this relationship. Thus, we contribute to this stream of literature by providing novel evidence on the process that generates a risk for the firm, represented by media coverage, contributing to understanding the mechanisms and channels through which ESG is related to firm practices (Hasan *et al.*, 2022).

7. Conclusion

Negative media coverage of ESG issues has recently attracted scholars' attention mainly for the capability of the media to function as an external monitor that can spur companies' responsible behaviour. Drawing on media agenda-setting theory and legitimacy theory, we have examined whether the salience of ESG issues connected to negative media coverage can lead companies to reduce tax avoidance practices in the attempt to regain their legitimacy. Considering that large corporations are increasingly scrutinised on tax issues and the related (ir)responsible behaviours, our study helps to understand how the reputational damage deriving from ESG controversies can influence tax avoidance. By considering the whole range of ESG-related reputational concerns, we distinguish from prior studies that focus on the relationship between generic media coverage and tax avoidance (Graham *et al.*, 2014; Gallemore *et al.*, 2014) or narrow the scope to specific tax issues raised by the media (Chen *et al.*, 2019).

While prior studies have examined the association between ESG disclosure or performance and tax avoidance, this paper contributes to a better understanding of the channels and mechanisms that link ESG and tax avoidance. We postulate and find that media coverage monitors tax avoidance as it causes an increase in firm risk (Hasan *et al.*, 2022) and subsequent response by entities. Hence, reducing tax avoidance becomes a legitimising tool when companies are hit by negative media coverage of ESG issues. Moreover, using RepRisk measures based on third-party evaluations offers better inferences than other data providers' ESG disclosure or performance measures (Hasan *et al.*, 2022).

In light of these results, policymakers and regulators are warned not to overlook tax transparency when dealing with ESG disclosure requirements, suggesting that tax disclosure should be integrated into ESG reporting. Our findings could assist standard setters in their decisions, considering the recent approval of the CSR directive and the development of non-financial reporting standards by EFRAG. Tax-relevant information could be integrated into European Sustainability Reporting Standards by issuing a standard devoted to tax sustainability rather than including taxes in governance or community-related standards. Integrated disclosure of tax strategies could help users verify their alignment with a firm's declared ESG policy. This can have a positive impact on society, as

a more granular tax disclosure should facilitate the detection of corporate tax avoidance schemes, improving the tax collection process to fund public goods.

We are aware that this study has some limitations, as the focus on the European context might hamper the results' generalizability. Nonetheless, we have considered the largest European companies, which usually have operations in several countries and continents and are subject to high scrutiny. Future studies could extend our results by investigating other geographic areas or considering smaller entities. Additionally, further studies could advance the debate by investigating other channels through which ESG policies are transmitted to tax avoidance strategies and practices. Finally, tax-responsible practices, such as transparency, could be further investigated, considering their relationship with ESG issues.

Notes

1. "ESG investment favours tax-avoiding tech companies", *Financial Times*, 22 February 2022, https://on.ft.com/3qGQLG1

2. Both IFRS and US GAAP mandate the disclosure of tax expense in financial statements.

3. We retrieved the STOXX 600 Europe components list in February 2020. As the criterion for inclusion is the stock exchange companies are listed on, companies based in different countries might be included. For this reason, a company from South Africa has been included in our sample.

4. Data as of 31 March 2021. Source: www.stoxx.com.

5. Industry classification is based on Fama-French 12 industries.

6. Results are robust to a different specification of long-run average tax rates, obtained by dividing the sum of income taxes (or cash taxes paid) by the sum of pre-tax income over a period of three years as in Dyreng *et al.* (2008) (untabulated results).

7. Tax-related news could theoretically affect the examined relationship. However, as less than 5% of firm-month observations in the sample show some tax-related news in the database, it is unlikely that our results are driven by tax-related news.

8. *Current foreign taxes* are a substitute for the item *Income taxes (other)* provided in book-tax differences computed by Manzon and Plesko (2001).

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Appendix

Dependent variable	Predicted sign	Avg3_GAAP_ETR			Avg3_cash_ETR		
Const		−0.734 (1.464)	−0.658 (1.464)	−0.647 (1.463)	−0.678 (1.711)	−0.587 (1.709)	−0.622 (1.711)
NegM_sum_FY	+	0.010** (0.005)			0.023*** (0.006)		
NegM_sum_Q4	+		0.011*** (0.004)			0.021*** (0.005)	
NegM_sum_Q4Q1	+			0.014*** (0.005)			0.022*** (0.005)
Size		0.012*** (0.004)	0.011*** (0.004)	0.010*** (0.004)	0.007 (0.004)	0.007* (0.004)	0.007* (0.004)
Leverage		0.072*** (0.030)	0.071*** (0.030)	0.071** (0.030)	−0.007 (0.035)	−0.008 (0.035)	−0.009 (0.035)
Profitability		0.027 (0.042)	0.026 (0.042)	0.026 (0.041)	−0.034 (0.050)	−0.035 (0.050)	−0.034 (0.050)
PPE		−0.063*** (0.018)	−0.063*** (0.018)	−0.063*** (0.018)	−0.072*** (0.020)	−0.073*** (0.020)	−0.072*** (0.020)
Intangibles		0.009 (0.015)	0.010 (0.015)	0.010 (0.015)	0.063*** (0.017)	0.064*** (0.017)	0.064*** (0.017)
RD		−0.198 (0.123)	−0.201 (0.123)	−0.203* (0.123)	0.057 (0.140)	0.056 (0.140)	0.055 (0.140)
Cash		0.037 (0.036)	0.035 (0.036)	0.033 (0.036)	0.013 (0.043)	0.011 (0.043)	0.009 (0.043)
MTBV		0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	−0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
GDP		0.076 (0.142)	0.069 (0.142)	0.069 (0.142)	0.91 (0.166)	0.082 (0.166)	0.085 (0.166)
Jud_ind		−0.032*** (0.009)	−0.032*** (0.009)	−0.032*** (0.009)	−0.032*** (0.011)	−0.033*** (0.011)	−0.033*** (0.011)
Shar_gov		−0.003 (0.005)	−0.002 (0.005)	−0.003 (0.005)	−0.006 (0.007)	−0.005 (0.007)	−0.006 (0.007)
BTC		−0.018 (0.050)	−0.017 (0.050)	−0.017 (0.050)	−0.072 (0.056)	−0.070 (0.056)	−0.071 (0.056)
CTSR		0.750*** (0.287)	0.742*** (0.287)	0.759*** (0.286)	0.328 (0.348)	0.326 (0.347)	0.348 (0.348)
Industry FE		Yes	Yes	Yes	Yes	Yes	Yes
Country FE		Yes	Yes	Yes	Yes	Yes	Yes
Year FE		Yes	Yes	Yes	Yes	Yes	Yes
N		2,309	2,309	2,309	2,142	2,142	2,142
R^2 (overall)		0.12	0.12	0.12	0.14	0.14	0.14
Wald Chi^2		164.30***	167.42***	170.43***	162.68***	165.29***	164.37***
Max VIF		2.46	2.46	2.46	2.46	2.46	2.46

Notes: Standard errors in parentheses. Size, Leverage, Profitability, PPE, Intangibles, RD, Cash and MTBV are winsorised at the 1st and 99th percentiles; ***, ** and * indicate significance levels at 1, 5 and 10%, respectively; Coefficients in bold refer to hypothesis testing
Source: Authors own creation

Table A1.
Sum of negative
media coverage and
tax avoidance

Dependent variable	F_GAAP_ETR			F2_GAAP_ETR		
Panel A: GAAP ETR						
Const	−1.289 (2.699)	−1.157 (2.701)	−1.172 (2.701)	1.002 (3.050)	1.185 (3.050)	1.166 (3.051)
NegM_peak_FY	*0.016** (0.007)*			*0.017*** (0.008)*		
NegM_peak_Q4		*0.013** (0.006)*			*0.019*** (0.007)*	
NegM_peak_Q4Q1			*0.013* (0.007)*			*0.018*** (0.008)*
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	2,309	2,309	2,309	2,309	2,309	2,309
R^2 (overall)	0.07	0.07	0.07	0.06	0.07	0.07
Wald Chi^2	122.24***	122.27***	121.52***	110.83***	113.68***	112.65***
Panel B: Cash ETR						
Dependent variable	F_Cash_ETR			F2_Cash_ETR		
Const	−2.667 (3.131)	−2.443 (3.135)	−2.512 (3.139)	0.036 (3.411)	0.362 (3.408)	0.371 (3.406)
NegM_peak_FY	*0.030*** (0.009)*			*0.034*** (0.010)*		
NegM_peak_Q4		*0.025*** (0.008)*			*0.036*** (0.008)*	
NegM_peak_Q4Q1			*0.019** (0.008)*			*0.040*** (0.009)*
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	2,190	2,190	2,190	2,224	2,224	2,224
R^2 (overall)	0.07	0.07	0.07	0.07	0.07	0.07
Wald Chi^2	118.45***	118.20***	112.82***	109.57***	116.37***	117.87***

Notes: Standard errors in parentheses. Controls include all the controls used in the baseline model; ***, ** and * indicate significance levels at 1, 5 and 10%, respectively; Coefficients in bold refer to hypothesis testing
Source: Authors own creation

Table A2.
Long-term effects

Dependent variable	Avg3_GAAP_ETR			Avg3_cash_ETR		
Const	−0.089 (0.164)	−0.343 (0.270)	−0.135 (0.193)	0.114 (0.256)	0.227 (0.264)	0.157 (0.292)
Pred_NegM_peak_FY	0.069*** (0.027)			0.080* (0.045)		
Pred_NegM_peak_Q4		0.034 (0.039)			0.085** (0.038)	
Pred_NegM_peak_Q4Q1			0.055** (0.028)			0.086* (0.046)
Size	−0.008 (0.007)	0.003 (0.012)	−0.005 (0.008)	−0.009 (0.011)	−0.015 (0.012)	−0.012 (0.013)
Leverage	0.051** (0.023)	0.055* (0.031)	0.053** (0.026)	−0.026 (0.033)	−0.028 (0.033)	−0.027 (0.035)
Profitability	−0.023 (0.042)	0.022 (0.043)	−0.002 (0.042)	−0.036 (0.050)	−0.045 (0.051)	−0.038 (0.052)
PPE	−0.059*** (0.013)	−0.063*** (0.018)	−0.061*** (0.014)	−0.078*** (0.019)	−0.079*** (0.019)	−0.073*** (0.021)
Intangibles	0.026*** (0.013)	0.011 (0.016)	0.023* (0.014)	0.074*** (0.019)	0.082*** (0.018)	0.079*** (0.019)
RD	−0.393*** (0.093)	−0.215* (0.130)	−0.334*** (0.102)	−0.085 (0.138)	−0.093 (0.133)	−0.039 (0.145)
Cash	0.079** (0.034)	0.015 (0.036)	0.044 (0.036)	−0.005 (0.042)	−0.014 (0.043)	−0.021 (0.045)
MTBV	−0.001 (0.001)	0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)	−0.001 (0.001)
GDP	0.039*** (0.015)	0.055*** (0.023)	0.043*** (0.017)	0.027 (0.022)	0.026 (0.022)	0.030 (0.025)
Jud_ind	−0.017*** (0.006)	−0.026*** (0.007)	−0.020*** (0.007)	−0.017** (0.008)	−0.019** (0.009)	−0.021** (0.009)
Shar_gov	0.001 (0.006)	−0.002 (0.005)	−0.002 (0.006)	−0.009 (0.006)	−0.008 (0.006)	−0.009 (0.006)
BTC	−0.009 (0.007)	−0.016 (0.012)	−0.010 (0.009)	−0.011 (0.012)	−0.009 (0.006)	−0.013 (0.013)
CTSR	0.264*** (0.067)	0.295*** (0.106)	0.259*** (0.076)	0.266** (0.104)	0.237** (0.104)	0.240** (0.116)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	2,309	2,309	2,309	2,142	2,142	2,142
R^2 (overall)	0.07	0.09	0.08	0.10	0.10	0.09
Wald Chi^2	210.82***	125.22***	171.10***	144.21***	147.66***	126.84***

Notes: Standard errors in parentheses. Size, Leverage, Profitability, PPE, Intangibles, RD, Cash and MTBV are winsorized at the 1st and 99th percentiles; ***, ** and * indicate significance levels at 1, 5 and 10%, respectively; Coefficients in bold refer to hypothesis testing. Reported results refer to the second stage
Source: Authors own creation

Table A3.
Two-stage models

Dependent variable	Avg3_GAAP_ETR			Avg3_Cash_ETR		
Panel A: tax enforcement						
Const	−0.830 *(1.463)*	−0.721 *(1.462)*	−0.72 *(1.463)*	−0.883 *(1.709)*	−0.668 *(1.706)*	−0.720 *(1.710)*
NegM_peak_FY	0.024* *(0.013)*			−0.008 *(0.015)*		
NegM_peak_Q4		0.019* *(0.011)*			−0.012 *(0.013)*	
NegM_peak_Q4Q1			0.016 *(0.012)*			−0.019 *(0.014)*
FTE	−0.023 *(0.033)*	−0.028 *(0.033)*	−0.029 *(0.033)*	0.021 *(0.040)*	0.015 *(0.039)*	0.015 *(0.039)*
NegM_peak_FY × FTE	−0.011 *(0.013)*			0.032** *(0.016)*		
NegM_peak_Q4 × FTE		−0.006 *(0.011)*			0.036*** *(0.010)*	
NegM_peak_Q4Q1 × FTE			−0.003 *(0.012)*			0.041*** *(0.014)*
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	2,309	2,309	2,309	2,142	2,142	2,142
R^2 (overall)	0.12	0.12	0.12	0.14	0.14	0.14
Wald Chi^2	169.62***	171.69***	171.12***	167.85***	177.14***	171.77***
Panel B: TV state ownership						
Const	−0.622** *(0.245)*	−0.595** *(0.245)*	−0.598** *(0.245)*	−0.272 *(0.274)*	−0.237 *(0.274)*	−0.250 *(0.274)*
NegM_peak_FY	0.045** *(0.021)*			0.079*** *(0.025)*		
NegM_peak_Q4		0.035* *(0.018)*			0.072*** *(0.022)*	
NegM_peak_Q4Q1			0.038* *(0.020)*			0.066*** *(0.023)*
TV_st	−0.003 *(0.061)*	−0.017 *(0.059)*	−0.014 *(0.060)*	0.058 *(0.070)*	0.048 *(0.067)*	0.042 *(0.068)*
NegM_peak_FY × TV_st	−0.054 *(0.036)*			−0.010* *(0.042)*		
NegM_peak_Q4 × TV_st		−0.038 *(0.031)*			−0.088** *(0.036)*	
NegM_peak_Q4Q1 × TV_st			−0.041 *(0.033)*			−0.082** *(0.039)*
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	No	No	No	No	No	No
Industry-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
N	2,304	2,304	2,304	2,137	2,137	2,137
R2 (overall)	0.09	0.09	0.09	0.11	0.11	0.11
Wald Chi2	141.38***	143.08***	142.64***	143.17***	149.12***	141.01***

Notes: Standard errors in parentheses; Controls include all the controls used in the baseline model; ***, ** and * indicate significance levels at 1, 5 and 10% respectively
Source: Authors' own creation

Table A4.
Channel tests

Dependent variable	Avg3_GAAP_ETR			Avg3_Cash_ETR		
Panel A: removing loss-making firms						
Const	−1.164 (1.425)	−1.017 (1.425)	−0.960 (1.424)	−0.996 (1.657)	−0.753 (1.654)	−0.714 (1.659)
NegM_peak_FY	0.014** (0.005)			0.026*** (0.006)		
NegM_peak_Q4		0.014*** (0.004)			0.026*** (0.005)	
NegM_peak_Q4Q1			0.016*** (0.004)			0.023*** (0.005)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	2,155	2,155	2,155	2,004	2,004	2,004
R^2 (overall)	0.15	0.15	0.15	0.17	0.18	0.17
Wald Chi^2	163.10***	166.04***	167.78***	188.11***	196.01***	187.01***
Panel B: removing financial firms						
Const	−0.886 (1.647)	−0.749 (1.648)	−0.767 (1.647)	−0.841 (1.836)	−0.646 (1.835)	−0.729 (1.838)
NegM_peak_FY	0.012** (0.006)			0.019*** (0.006)		
NegM_peak_Q4		0.013*** (0.005)			0.020*** (0.006)	
NegM_peak_Q4Q1			0.015*** (0.005)			0.018*** (0.006)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	1,760	1,760	1,760	1,633	1,633	1,633
R^2 (overall)	0.12	0.13	0.13	0.15	0.15	0.15
Wald Chi^2	129.64***	131.99***	133.58***	141.38***	146.53***	142.55***
Panel C: removing UK firms						
Const	−0.960 (1.571)	−0.849 (1.571)	−0.839 (1.571)	−0.668 (1.760)	−0.468 (1.758)	−0.499 (1.763)
NegM_peak_FY	0.012** (0.006)			0.022*** (0.007)		
NegM_peak_Q4		0.012*** (0.005)			0.024*** (0.006)	
NegM_peak_Q4Q1			0.013** (0.005)			0.022*** (0.006)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
N	1,716	1,716	1,716	1,564	1,564	1,564
R^2 (overall)	0.15	0.15	0.15	0.16	0.17	0.16
Wald Chi^2	135.23***	136.71***	137.42***	128.96***	135.93***	131.13***

Notes: Standard errors in parentheses. Controls include all the controls used in the baseline model; ***, ** , and * indicate significance levels at 1, 5 and 10%, respectively; Coefficients in bold refer to hypothesis testing
Source: Authors own creation

Table A5.
Subsamples

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