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Qualitative Information Disclosure: Is Mandating Additional Tax Information Disclosure Always Useful?

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Qualitative Information Disclosure: Is Mandating Additional Tax Information Disclosure Always Useful?*

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Abstract

Firms are facing progressively more stringent tax disclosure requirements. In this paper, we examine whether increased *qualitative* tax transparency leads to intended outcomes using, as an exogenous shock, the 2016 UK reform that mandated the disclosure of a tax strategy for firms above a certain size threshold. We find that firms that have to publish a separate tax strategy report significantly increase their voluntary tax disclosure in the annual reports, but we show no widespread effect on tax avoidance, measured by changes in effective tax rates. We document two mechanisms through which mandating a tax strategy report affects overall tax disclosure. First, we find large changes in disclosure for firms facing high public scrutiny. Second, firms with higher quality of tax strategy reports increase the qualitative discussion of their tax affairs in their annual reports by larger amounts, while firms with lower quality reports show increases in tax avoidance. Our results demonstrate the difficulty of generating a standard that effectively incentivizes desirable behavior when the disclosure mandate is asking for purely *qualitative* information.

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1 Introduction

Information accessibility is a fundamental component to achieve efficient resource allocation and, thus, economic growth. Therefore, information disclosure regulations are increasingly used to promote desirable behavior complementing the regulations that explicitly prohibit undesirable behavior, e.g., in areas such as product quality, environmental policy, and taxation (see Leuz and Wysocki, 2016; Grewal and Serafeim, 2020). In this paper, we evaluate a *qualitative* tax disclosure mandate aimed at increasing tax transparency and reducing tax avoidance. By this, we contribute to a better understanding of how useful disclosure mandates are as regulations to promote desirable behavior. While there is already a growing literature on the effects of *quantitative* tax disclosures, we know little about the effects of *qualitative* tax disclosures. However, these types of disclosure mandates are becoming increasingly popular. Since the characteristics of qualitative disclosure differ fundamentally from quantitative disclosure, it is crucial to understand their effectiveness as an additional tool available to regulators.

For a decade now, there has been a major push towards increasing tax transparency, as these measures are considered one of the most important policy tools to reduce tax avoidance and to raise revenues (see OECD Tax Transparency forum, 2020). In general, previous literature identifies three channels through which tax transparency initiatives can reduce tax avoidance by firms (Müller et al. (2020)). First, disclosed information can be used by tax authorities in firm audits; second, it can help to detect loopholes in tax law and, thus, improve the current tax system; and, third, in case of public disclosure, increased public pressure can induce changes in firm behavior. The empirical evidence from examining the disclosure of additional *quantitative* tax information suggests that requiring firms to disclose additional tax figures in financial statements (e.g., unrecognized tax benefits under FIN48) can represent an effective tool to reduce tax avoidance (Hope et al., 2013, Gupta et al., 2014, Henry et al., 2016) and provide valuable information to tax authorities (Bozanic et al. (2017)). Further, while making disaggregated data at the country level available to the general public can trigger voluntary disclosure (Kays (2020)), it has a limited effect on profit shifting behavior (Hoopes et al., 2018; Joshi et al., 2020).

In this paper, we study the effects of a disclosure mandate which required firms to provide purely *qualitative* information. We focus on the introduction of mandatory tax strategy reporting in 2016 in the UK, which has the goal of curbing tax avoidance and increasing the availability of tax information to the general public.[1] This regulatory change forced a group of UK firms to publish a report discussing the firm's tax strategy with respect to firm-level tax risk governance, attitude towards tax planning, and the relationship with the local tax authority, Her Majesty's Revenue and Customs (HMRC). The mandated tax strategy report must be easily accessible but can be a standalone report or may be integrated in another report, e.g., the annual report. The HMRC guidelines explicitly state the possibility to avoid any numerical disclosure, making this regulatory change the perfect setting to investigate the effect of mandating a qualitative tax disclosure.

Additionally, the tax strategy disclosure regulation was introduced in a setting where many firms were already voluntarily discussing their tax strategy in their annual reports. We take advantage of this feature to study how firms' mandatory disclosure decisions interact with firms' voluntary disclosure choices. Further, similar to the corporate social responsibility disclosures (see Grewal and Serafeim (2020))[2], our setting enables us to study managers' decision on the choice between two disclosure methods: the tax strategy report (standalone report) and the annual report.

Our analysis proceeds in two steps; First, we provide descriptive evidence on the newly-introduced tax strategy disclosure, where we discuss examples of tax strategy reports and their quality. Then, we show trends and descriptive statistics on tax strategy disclosure patterns in firms' annual reports. Second, using regression analysis, we investigate whether and how the mandate affected firms' tax strategy disclosure in the annual reports and their tax avoidance behavior. We focus on the disclosure effects in annual reports because it is not clear how salient a new disclosure channel, such as a separate tax strategy report, is to stakeholders on its own. In contrast, annual reports are subject to more attention and constitute a very important firm disclosure outlet (e.g., Hope (2003)). For the analysis of annual report disclosures, we build a novel text-based measure of qualitative tax disclosure by, first, manually classifying sentences describing firms' tax strategy from a representative sub-sample of annual reports. We then use a naïve Bayes machine learning approach to classify sentences as tax strategy sentences or non-tax strategy sentences in all annual reports in our sample. We proxy for firms' tax avoidance by Cash and Book ETRs.

To provide causal evidence, we use difference-in-difference methodology to compare

[1]For more details, see Schedule 19 of the Finance Act 2016, https://www.gov.uk/guidance/large-businesses-publish-your-tax-strategy.

[2]We consider the tax strategy disclosure mandate to be in many respects similar to a corporate social responsibility type disclosure. Indeed, the Global Sustainability Standards Board has recently recommended to incorporate a discussion of a firm's tax strategy in its corporate social responsibility report, see https://www.globalreporting.org/information/news-and-press-center/Pages/First-global-standard-for-tax-transparency.aspx.

UK firms affected by the reform, i.e., those with turnover exceeding GBP 200m and/or the balance sheet total exceeding GBP 2bn, and those unaffected, before and after the reform. To focus exclusively on the effects of *qualitative* tax disclosure on firms, we exclude the very large firms that fall under the *quantitative* Country by Country (CbC) reporting requirements, which were introduced around the same time. Hence, our treated sample includes only firms above the mandatory *qualitative* threshold and below the CbC reporting threshold. Our control group includes firms below the *qualitative* threshold, which are most comparable to the treatment group. For this purpose, we exclude small and medium-sized firms (SMEs). Our final sample includes 225 firms and 2,104 observations over the period 2010-2019.

It is not clear ex-ante whether we can expect an effect of a qualitative tax disclosure regulation on firm behavior. This is because qualitative disclosures differ fundamentally from quantitative disclosures. For example, qualitative disclosure may include more nuanced information and may be better suited to provide information to less sophisticated stakeholders (e.g., customers, employees, civil society). Nevertheless, qualitative disclosures risk being boilerplate, and, therefore, effective qualitative disclosures are hard to formulate (e.g., Christensen et al., 2019, Dyer et al., 2017). However, even ineffective qualitative disclosure mandates can impose substantial additional costs on firms. To address these issues, in additional analyses, we examine the heterogeneity of our results as a function of the degree of public attention paid to firms (as measured by media attention and business to consumer, B2C, industries), firm characteristics (voluntary disclosure, level of tax avoidance and percentage of board members with a tax/accounting background) and the quality of firms' tax strategy report disclosure (length, specificity, similarity, and compliance).

The qualitative disclosures on tax strategies that we study are geared towards a broad range of stakeholders, in particular, the general public. Specifically, the intend of the policymaker was to force large firms to provide insights into their tax-related practices to discourage aggressive tax planning via increased public attention on tax practices of corporations (HMRC (2015), Point 1.18.). Public attention changed disclosure decisions in the UK with regard to quantitative disclosures before (Dyreng et al. (2016)), and, therefore, our hypothesis is that it could also have an effect in case of qualitative disclosure (see also the survey by Graham et al. (2014)). From prior studies we know that new, or more disseminated, information about the reporting firm allows activists and consumers to shame firms to change their behavior (e.g., Christensen et al. (2017); Dyreng et al. (2016); Rauter (2020); Hoopes et al. (2018); Christensen et al. (2019)).

We expect this to be the case, even in a context where firms already disclose their tax strategy voluntarily prior to the reform. As shown by Grewal (2021) in the context of *quantitative* disclosures, mandatory disclosure requirements affect firms that already comply with the disclosure requirement pre-reform and induce them to decrease their green house gas emissions even further. There are two channels through which such a behavioral change may occur: first, mandated disclosure reduces information processing costs for stakeholders by providing a benchmark (Healy and Palepu (2001); Maines and McDaniel (2000), Grewal (2021)). Regulation could, therefore, increase the use of and the attention to disclosures by stakeholders, resulting in additional pressure on voluntary-disclosing firms to change behavior after mandated reporting. Second, the introduction of new disclosure regulation may increase managers' fears of further regulatory actions (Grewal (2021)).

However, in order for public pressure to influence firm behavior, disclosure needs to impose additional costs for the firm. This may not be the case in our setting for two reasons. First, because of its qualitative nature, the disclosure mandated by the UK reform is potentially less actionable (Cao et al. (2018)). Qualitative disclosure often does allow more boilerplate and non-specific disclosure (Hope et al. (2016)), which in turn does not allow stakeholders to exert pressure on companies to change real activity (Christensen et al. (2019)). Second, the UK regulation may not be tight enough: in principle, mandated qualitative disclosures may increase the informativeness of previously voluntary disclosures by providing benchmarks against which users of the disclosed information can judge the disclosures (Christensen et al. (2019)). Yet, the law explicitly invites affected firms to go beyond what is strictly demanded and to exclude sensitive information. This means that the definition of each category becomes very broad and might not function as a bench-marking tool.

Consistent with these arguments, we find that the mandate to publicly discuss the tax strategy only partially affected firm behavior relative to what policymakers intended. We show that firms comply with the disclosure requirement[3], but they do not reduce their tax avoidance. When examining the quality of the tax strategy reports, we document variation in terms of the length of the report and the level of boilerplate and specificity of the mandated disclosure. We show that firms' discussion of their tax strategy increased on average: treated firms in our sample tend to go beyond what is required by the law by providing both a separate tax strategy report and increasing tax strategy disclosure in their annual reports. The heterogeneity analysis reveals that firms that were previously subject to low public attention, firms that provided disclosure voluntarily before the reform, and firms with higher quality of their tax strategy reports increase their tax strategy disclosure in their annual reports more relative to control firms in the same groups. The public pressure channel plays an important role in the amount of voluntary

[3]Firms in our sample largely comply, and even non-UK affected firms did, see Belnap (2019b).

tax strategy disclosure provided in annual reports. Firms subject to public attention have high levels of tax strategy disclosure before the reform already, and the new disclosure requirement forces firms that were previously subject to low public scrutiny to increase their tax strategy disclosure substantially.

The heterogeneity analysis provides no evidence of reductions in firm tax avoidance, even for those firms that increase qualitative tax strategy disclosure the most, those that are subject to larger public scrutiny, or those that showed more tax avoidance prior to the reform. However, we find evidence that providing lower quality disclosures in response to the mandate is related to decreased Cash ETRs. This suggests an important interplay between the quality of qualitative disclosure and firm tax avoidance. Therefore mandating the publication of a tax strategy report may not generate the kind of actionable disclosure that allows stakeholders to pressure firms into changing their tax avoidance behavior. Instead, the descriptive evidence and heterogeneity analysis suggest that firms use the tax strategy disclosure in annual reports to portray themselves as "good tax citizens". Firms mostly comply or even over-comply in their disclosure. The compliance in the letter of the law but not in the spirit that we observe in response to this qualitative disclosure mandate may lead to undesirable effects. At the extreme, it may reduce the informativeness of firms' annual report disclosure to its readers by increasing non-informative disclosures while at the same time imposing opportunity costs on managers (Christensen et al. (2019)).

Our study contributes to three streams of literature. First, we complement the literature on corporate disclosure regulation. We show the effects of mandated qualitative tax disclosure on firm behavior and on voluntary disclosure. While firms are compliant, and some firms are even over-compliant in their disclosure, they provide disclosure that is potentially uninformative and does not change firm behavior. Earlier literature shows already that boilerplate disclosure may be used by firms strategically to dilute the informativeness of mandated qualitative disclosures. Consistent with this argument, Dyer et al. (2017) demonstrate by means of large-scale textual analysis of US financial reports that firms regularly respond to new disclosure requirements in annual reports by extending their unspecific and boilerplate disclosure in these documents. We take their analysis to a specific regulatory setting, in which firms have the choice of where to disclose the mandated information, to investigate how the mandate affected firms' behavior and their voluntary disclosure choices in the annual reports. We show that in our setting, firms also increase their overall qualitative tax disclosure beyond what is strictly mandatory, yet we find that this increase in disclosure is disconnected from changes in tax avoidance behavior.

Second, we contribute to the literature on tax transparency initiatives. Mandating the disclosure of *quantitative* information can affect firm behavior (Hope et al. (2013), Gupta et al. (2014), Henry et al. (2016), Overesch and Wolff (2019), Joshi et al. (2020) and Joshi (2020)) and it offers valuable information to tax authorities (Bozanic et al. (2017)). At the extreme, mandating the disclosure of country-level economic activity can affect the organizational structures of MNEs (De Simone and Olbert (2020)). At the same time, making tax payments data available to the general public leads to consumer backlash and negative market reactions for tax aggressive firms (Hoopes et al. (2018)), that respond by voluntarily enhancing the transparency around their tax affairs (Kays (2020)). However, only very limited evidence exists on the effects of mandating *qualitative* tax information. The paper closest to ours is Xia (2020), which also finds no changes in tax avoidance behavior in response to the 2016 UK tax reform. Our paper considers broader implications of this reform for the overall level of qualitative tax disclosure of affected firms.

More broadly, our paper contributes to the literature on corporate social responsibility (CSR) by analyzing the real effects of CSR-like narrative disclosure, which are still comparatively understudied (Christensen et al. (2019)). Not only is paying "responsible taxes" increasingly viewed as a CSR topic (e.g., Grewal and Serafeim (2020)), but, similar to tax strategy reports, a key feature that characterizes CSR reporting and sets it apart from financial reporting includes the diversity of *users and uses*. Users of CSR reports tend to be relatively unsophisticated when it comes to reading financial reports, i.e., workers, consumers, NGOs, and the general public. Since these stakeholders have mostly a passive relationship with firms, CSR standards that are informative might have the largest value for this group. When it comes to uses of the CSR reports, stakeholders can learn about how firms contribute to society and adhere to specific norms and ethical values (Christensen et al. (2019)). In our context, the tax strategy report can be, for example, an important tool to effectively convey the story behind complex tax numbers. Hence, we expect that the tax strategy reports, which are geared towards the wider public, may be used to evaluate the firm's tax strategy based on wider societal norms and values. Our findings demonstrate that if CSR disclosure mandates are supposed to affect firm behavior in desirable ways, they need to be very specific (Christensen et al. (2019)). Otherwise, firms can (over-)comply with the disclosure standard by providing disclosures without reconciling them with the underlying real activity, e.g., tax avoidance.

2 Institutional Setting

Domestic and international regulations are increasingly mandating multinational enterprises around the world to disclose more information on their tax strategies and on the geographical distribution of tax payments. The United States has been at the forefront of such policies with the Dodd-Frank Financial Reform and Consumer Protection Act, with Financial Accounting Standards Board (FASB) requiring firms to publicly disclose contingent tax liabilities and reporting their uncertain tax positions directly to the Internal Revenue Service (IRS) since 2010. The European Union has followed by mandating the disclosure of *quantitative* CbC information for financial institutions (CRD IV and the Capital Requirements Regulation). Since 2014, financial institutions have to disclose data on employees, turnover, profits, and taxes at the country level and a list of all entities or branches and their locations. In 2015, the OECD launched the BEPS Action Plan, including in Action 13 a proposal for a CbC reporting extending to all industries to be disclosed only to tax authorities.[4] By now, most countries around the world have a CbC reporting requirement included in their national law.

This increased pressure for tax transparency from international organizations resulted in *voluntary* disclosure of *qualitative* and *quantitative* tax information in some countries long before any reform mandating such disclosure was enacted (PwC, 2016). For example, in the UK in 2015, 64% of the FTSE100 companies disclosed their approach to tax and 56% their tax governance on a voluntary basis. Additionally, 37% provided information on their total annual tax contributions and 28% where such tax contributions are paid (i.e., "geographical segment reporting"). Finally, 18% of the selected UK firms published public information on cash tax reconciliation (i.e., the difference between the statutory tax charged and the effective tax paid).

More recently, tax authorities around the world started to promote or mandate the disclosure of *qualitative* tax information, for example, the Tax Transparency Package Proposal by the European Commission in 2015 and the tax strategy disclosure regulation issued by the UK government in 2016. In this paper, we analyze Schedule 19 of the Finance Act 2016 issued by the UK government mandating large businesses to publish a tax strategy report.[5] This UK regulation, which was passed in Parliament on September 15, 2016, requires certain firms with a UK presence to publish either a separate tax strategy report on their website or integrate the discussion on their tax strategy in an existing report, e.g., the annual report. Further, the board is responsible for approving the tax strategy report. Almost all firms opted for publishing a separate tax strategy report, and only very few integrated the required discussion of their tax strategy in the annual report.

[4]Under the OECD proposal, an additional item, total assets, would be disclosed at the country level. For a complete overview on Action 13 of the BEPS project, see https://read.oecd-ilibrary.org/taxation/transfer-pricing-documentation-and-country-by-country-reporting-action-13-2015-final-report_9789264241480-en#page1 (accessed on 13.04.2020).

[5]For the complete law, see "Schedule 19 - Large business: tax strategies and sanctions" of the Finance Act 2016, available at https://www.legislation.gov.uk/ukpga/2016/24/schedule/19 (accessed on 14.04.2020).

The information required covers four broad topics. First, firms need to discuss how UK tax risk is managed, resulting in statements like *"The CFO and Head of Tax oversee tax risk management, which is undertaken by the Group's tax team. The tax team consists of the Head of Tax, who leads the team, two Tax Managers and a Tax Accountant."* or *"Overall responsibility for ensuring that tax risk is managed effectively across the Group lies with the Board. The Audit Committee reviews the effectiveness of the risk management process on behalf of the Board."*[6] Second, firms should describe their attitude to tax planning resulting in sentences such as *"Cairn undertakes tax planning that supports our business and reflects commercial and economic activity. The Group's policy is not to enter into any artificial tax avoidance schemes."* or *"Cairn will base its views on the relevant tax laws in force at the time and seeks to minimize disputes."*[7] Third, firms should offer insights on their tax risk appetite, which led to disclosures like *"It is the aim of RM to minimize the level of risk taken in relation to both UK and overseas taxation matters wherever possible. Given the size and diversity of the business, taken with the complexities of taxation legislation in multiple tax jurisdictions, it is inevitable that an element of tax risk will arise."* or *"Where complete mitigation of a risk is not possible, reduction to a minimum level is sought."*[8] Fourth, firms should explain their relationship with HMRC, which was done in sentences like *"The Group is committed to the principles of integrity, transparency and openness and seeks to apply these in its dealings with the UK tax authorities."* or *"Where possible we seek constructive and early discussions on any new tax matter to obtain certainty. We engage positively when discussing any differences in legal interpretation between ourselves and HMRC."*[9]

These new disclosure requirements apply to firms that have turnover exceeding GBP 200m and/or their balance sheet total assets exceeding GBP 2bn in the last year.[10] Although the first articles highlighting the proposal to introduce a mandatory tax strategy report are from May 2015; the size threshold was only announced in the summer of 2015 (HMRC (2015)). This threshold applied to turnover and assets in 2015. Thus, we can rule out anticipation effects. The reform is effective for fiscal years starting on or after September 2016.

The mandatory disclosure of a tax strategy report is part of a broader package of measures enacted in 2016, including CbC reporting and *'special measures'* for persis-

[6]The sentences are taken from SEGRO's Tax Strategy.

[7]The sentences are taken from Cairn's Tax Strategy.

[8]The sentences are taken from RM's Tax Strategy.

[9]The sentences are taken from Clipper Logistics' Tax Strategy.

[10]For more details, see HMRC (2016). UK subsidiaries of an MNE group with global turnover exceeding EUR 750m are also required to publish a tax strategy report. See Schedule 19 "Large business: tax strategies and sanctions" of the Finance Act 2016, available at https://www.legislation.gov.uk/ukpga/2016/24/schedule/19 (accessed on 13.04.2020).

tently uncooperative behavior, designed to induce improvements in tax compliance of large businesses.[11] The overall aim of this package of reforms was to increase tax revenues by reducing tax avoidance of large businesses operating in the UK.[12] The specific goal of mandating the publication of a tax strategy report was to influence corporate behavior via increased stakeholder pressure. Thus, forcing large firms to provide insights into their tax-related practices should discourage aggressive tax planning via increased public attention on tax practices of corporations (HMRC (2015), Point 1.18.).

Compliance was ensured in two ways. First, there is a penalty for not publishing a tax strategy report: a non-compliant firm faces a monetary punishment of GBP 7,500 for being caught without a tax strategy report and another GBP 7,500 if the report is not published six months after it should have been, plus GBP 7,500 for each following month until the firm becomes compliant. Second, high public pressure on UK firms should ensure compliance. In 2010, UK firms were subject to public scrutiny from ActionAid International, a global non-profit organization, highlighting how around 50 percent of the FTSE100 were not compliant with the requirement to disclose the full list of subsidiaries and their respective locations in annual reports. The reputational threat was sufficient to induce almost all FTSE100 to become fully compliant within the two years after the ActionAid International campaign (Dyreng et al., 2016). There was a similarly successful public shaming campaign aimed at inducing non-compliant firms to publish their tax strategy reports (Belnap (2019b)).

3 Hypothesis Development

Bushman et al. (2004) state that corporate transparency is “the widespread availability of firm-specific information concerning publicly listed firms in the economy to those outside the firm”. The authors define a conceptual framework for corporate transparency summarizing information devices into three main categories, which include: firms’ information disclosure (both mandatory and voluntary), private information acquisition (firms’ information collected and made publicly available by analysts or institutional investors), and information dissemination (media information spread). In this paper, we focus on the first information device - information disclosure.

Information accessibility is a fundamental component to achieve efficient resource-allocation and, thus, economic growth (e.g., Bushman et al. (2004)). As suggested by the

[11] Note, that the CbC reporting threshold applies to firms with global turnover exceeding €750m. Thus, some firms will be affected by the *qualitative* tax disclosure requirements, but not the *quantitative* ones, and we take advantage of this difference to design our empirical strategy.

[12] See https://www.gov.uk/government/speeches/david-gaukes-speech-at-hmrcs-annual-stakeholder-conference.

unraveling result, private information about the true firm performance will be revealed by managers on a voluntary basis, given certain conditions, such as, for example, costlessness of information provision and verifiable information (Grossman, 1981; Grossman and Hart, 1980; Milgrom and Roberts, 1986; Milgrom, 1981). However, the required conditions are often not met in practice, as information disclosure is costly, and this results in managers exercising discretion in disclosing decision-useful information about the firm to external stakeholders.[13]

This means that regulators typically step in to ensure an adequate degree of corporate transparency. Further, mandating increased disclosure can represent a policy tool to incentivize desirable behavior complementing the regulations which explicitly prohibit certain behaviors (see Leuz and Wysocki (2016)). This is especially true in the context of mandating increased transparency in areas such as product quality, environmental policy, and, more recently, taxation. In general, initiatives promoting or mandating tax transparency have the goal to improve firms' accountability and compliance towards stakeholders, including the general public (Müller et al. (2020)). In this paper, we focus on a recent trend of demanding qualitative tax disclosure.

We start by discussing the benefits of mandating a non-numerical disclosure. First, qualitative, as opposed to purely quantitative disclosure, can give more nuanced information on firms' tax affairs. In the context of financial disclosures, textual information provides insights about the data generating function of the numerical financial data and helps in understanding corporate decisions (Li (2010)). Since the ETR is often a complex metric for investors to understand (Hutchens (2019)), increasing the supply of tax-related information could lead to more transparent resource-allocation decisions. Second, *qualitative* disclosure can also help with addressing behavioral biases in information processing by less sophisticated users of disclosures (e.g., the general public, employees). This is because *quantitative* disclosure may, for instance, lead to the issue of fixation on a particular set of tax numbers (Kays (2020), Dierynck et al. (2020)). By focusing on a single metric in the judgment of the firm's tax position, stakeholders may misinterpret the overall tax position of the firm (see also Hoopes et al. (2018), Dierynck et al. (2020)). For example, in a controlled experiment, Dierynck et al. (2020) find that retail investors become worse at identifying firm's tax avoidance once they receive extra quantitative tax disclosures beyond narrative information on ETR reconciliations. Therefore, more nuanced purely qualitative tax disclosures may be better processed by external parties, especially when

[13]The intuition underlying the unraveling result is summarized by Verrecchia (1983); "when a salesperson, say, withholds information, buyers' suspicions about the quality of the product are so great that they discount its quality to the point that the salesperson is always better served to disclose what he knows. In effect, the threshold level of disclosure collapses to the least favorable possible information the salesperson can possess; this forces the salesperson to always reveal what he knows."

the disclosure targets a broad audience such as the general public. Finally, mandated qualitative disclosures may increase the informativeness of previously voluntary disclosed information by providing benchmarks against which users of the disclosed information can judge the disclosures (Christensen et al. (2019)).

Mandating the disclosure of *qualitative* tax information can have drawbacks compared to *quantitative* tax information because of the inherent characteristics of such disclosure. First, since it is provided in a non-standardized and new format, qualitative information can impose high processing costs to external stakeholders (Blankespoor (2019)). Survey evidence suggests that investors demand less frequent disclosure of qualitative relative to quantitative information (PwC (2017)). Second, mandating qualitative disclosure might not affect firms' behavior through the public pressure channel if the resulting disclosure is not actionable. Since non-numerical disclosure is often drafted using boilerplate and non-specific terms (Hope et al. (2016)), we would expect no change in firm behavior following mandating a tax strategy report if the qualitative statements are uninformative about the actual tax strategy of the firm.

In 2016, the UK government mandated the disclosure of a tax strategy report with the aim of (1) increasing overall transparency of firms' tax affairs and (2) reducing tax avoidance. In what follows, we discuss the two main hypotheses we build based on the UK government's expectations and prior literature.

3.1 Voluntary Disclosure

Given that almost all firms comply with publishing the tax strategy report, we focus our analysis on studying the effects of the reform on the voluntary disclosure of tax strategy information in the annual reports. We use this as a proxy for the overall transparency of firms' tax affairs. Bozanic et al. (2017) document that when firms are required to privately disclose quantitative information to the tax authority, they are more likely to voluntarily disclose the information to the public, as the tax-related proprietary cost of such information (e.g., the increased risk of tax audits) is lower. Kays (2020) finds that public disclosure of quantitative tax information (e.g., firm's country-level tax payments) by the tax authority induces firms to provide supplementary voluntary disclosure to the public. This is positively related to the firm's expected reputational costs and negatively associated with the tax-based proprietary costs of such information. The fact that reputational concerns influence voluntary tax disclosure is supported by survey evidence highlighting that public pressure has strongly influenced tax disclosure of large firms (PwC (2014)).

Therefore, given that the reform we study specifically targets the general public, one could expect reputational concerns to induce firms to go beyond what is strictly demanded and offer additional information on a voluntary basis. However, reputational concerns might not lead to increased transparency around firm's tax affairs if, due to the qualitative nature of the disclosure, firms are able to draft the tax strategy report in a vague language (Freedman and Vella (2015, 2016)). If such reports offer no factual information stakeholders could use against the firm, then reputational costs might be limited, and we would expect no change in the voluntary disclosure of tax information in the annual reports.

Given the above discussion, we state our first hypothesis as follows:

H1: Firms that disclose tax strategy information in a standalone report also increase their voluntary tax strategy disclosure in the annual report.

H1a: The increase in the voluntary tax strategy disclosure in the annual report will be smaller for firms with lower quality of their tax strategy reports.

3.2 Tax avoidance

The literature has mainly focused on analyzing the effects of mandating *quantitative* tax information on tax avoidance. For example, in the context of FIN48 adoption in the United States, evidence suggests that public disclosure of additional tax figures on unrecognized tax benefits enables the detection of tax avoidance (Lisowsky et al. (2013)) and helps to estimate current and future tax figures (Ciconte et al. (2016)). Further, there was a documented reduction in tax avoidance (measured in terms of changes in different types of ETRs) after the introduction of FIN48 (e.g., Hope et al. (2013), Gupta et al. (2014), Henry et al. (2016)).

Since tax authorities tend not to have access to information regarding the segment of cross-border transactions occurring within their territory, this makes the effectiveness of administration and enforcement of tax payments difficult (OECD (2017)). Recent tax transparency initiatives aim at supporting tax authorities in obtaining the full picture of foreign operations. For example, CbC Reporting gives tax authorities the full organizational structure of MNE activities abroad and enables them to accurately verify the information provided in the tax declaration (De Simone and Olbert (2020); Joshi (2020)). This is supposed to reduce firms' ability to conduct aggressive tax planning.[14] A reduction (yet limited) in profit shifting behavior has been documented around the introduction of the public CbC Reporting under the CRD IV (e.g., Joshi et al. (2020); Overesch and Wolff (2019)).

Requiring the disclosure of *qualitative* tax information could induce similar benefits to those of quantitative tax disclosure. Specifically, mandating the publication of a tax

[14]For more details, see OECD, Action 13.

strategy report should foster shareholders, investors, and public scrutiny over firms' tax affairs. For example, in the UK, intensive media coverage of tax scandals has proved successful in increasing transparency of firm's tax affairs and even in reducing their tax avoidance (Dyreng et al. (2016). Therefore, we would expect that mandating a formalized written tax strategy has the potential to reduce corporate tax avoidance via increased public scrutiny of firms' tax affairs. However, we might expect no change in tax avoidance behavior if the resulting disclosure is vague and boilerplate. This could be the case, even when clear categories of disclosure are demanded by regulation, as is the case under Schedule 19 of the Finance Act 2016. Firms might even be tempted to provide no factual information, as, for instance, the online guideline of UK tax authorities explicitly allows firms to avoid disclosing any "information that might be commercially sensitive".

Given the above discussion, we state our second hypothesis as follows:

H2: Firms do not reduce the level of tax avoidance as a result of the mandatory disclosure of a tax strategy report.

4 Sample Selection and Variable Measurement

4.1 Sample Construction

Our initial sample consists of 1,895 listed firms that have headquarters in the UK based on the ownership information from Bureau Van Dijk Orbis database. We focus our analysis on listed firms for two reasons. First, to construct our measure of tax disclosure, we require firms to have easily accessible and comparable annual reports, i.e., all written under IFRS (international financial reporting standards) rather than local generally accepted accounting principles (GAAP) standard. Second, listed firms are potentially subject to more public scrutiny (Dyreng et al., 2016). Thus, we expect that those firms would face the highest compliance burden and the highest reputational costs. The reason we focus on UK MNEs is two-fold. First, being MNEs, they face similar tax avoidance opportunities, which are different from those of domestic firms (Bilicka, 2019). Second, all UK MNEs face similar compliance burdens with respect to the 2016 reform. These are higher compared to non-UK headquartered, foreign MNEs, for which only part of the structure is subject to the regulation.

For each of those 1,895 firms, we obtain data from four different sources. Accounting data and firm information come from Datastream; profile information on board members is from BoardEx; firm media exposure comes from RavenPack. We merge these datasets using ISIN numbers. Annual reports are from the Perfect Information Filings Experts database, where they are stored using firm names. We match firms from the Perfect

Information Filings Experts database by firm name to firms in Datastream. We then remove observations for which the annual report has not been correctly converted. We remove observations for which we have no financial data on relevant variables (tax paid, pre-tax income, assets, sales) two years prior and two years after the reform. Next, we restrict our sample to firms that are not subject to CbC reporting and are not small-to-medium-sized firms.[15] In the UK, the CbC Reporting requirement was also introduced in 2016 but at a different size threshold, i.e., for MNEs having sales above EUR 750 Million. Excluding these firms enables us to isolate the effect of mandating the disclosure of a tax strategy report. Our cleaned sample consists of 2,104 firm-year observations for 225 unique firms. Table 1 provides an overview of each step for the final sample selection.

Using this sample, we construct a treatment and a control group for our analysis. Our treated firms are MNEs that have to publish tax strategy reports from 2016 onward but do not have to disclose a CbC Reporting: i.e., firms that have over GBP 200 million in annual sales or GBP 2 billion of total assets but have sales below EUR 750 Million. Firms in our control group are those that do not have to publish the tax strategy report and are not SMEs. Of the 225 firms in our sample 113 are treated and 112 belong to the control group.

4.2 Measure of Tax Strategy Disclosure

We construct a measure of tax strategy disclosure in the annual reports by employing textual analysis techniques. We pick a representative sub-sample of annual reports and manually collect sentences in which firms discuss their tax strategy. Our classification is based on PwC analysis studying the voluntary tax disclosure in annual reports of firms listed in the FTSE100 ((PwC, 2016)). The analysis conducted by PwC considers five categories of information: approach to tax, tax governance, cash tax reconciliation, total tax contribution, and geographical reporting of the tax liability. We only consider the first two categories because they represent purely qualitative tax information and reflect the information required in the tax strategy reports under Schedule 19 of the Finance Act 2016.

We use our manually constructed training sample to classify the tax sentences in all annual reports using the naïve Bayes classifier.[16] Based on the classified sentences in each annual report, we construct a measure of firm-year level qualitative tax information

[15] To identify SMEs, we use the definition provided under the UK R&D tax credit regulation. SMEs are firms with less than 50 employees, less than GBP 11.4 Million total assets, and/or less than GBP 22.8 Million annual turnover. Removing SMEs under this specific definition alleviates the concerns that differences in ETRs are not driven by tax avoidance but by the different generosity of the R&D tax credit for SME versus non-SME.

[16] For a detailed discussion on the technique used in this paper, please see Appendix A.3.

disclosure, which is equal to the number of tax strategy sentences in a firm's annual report. In Appendix A.3, we include examples of the tax strategy sentences classified using the trained naïve Bayes classifier. We also create a scaled and a binary version of this measure by (a) dividing the total number of tax strategy sentences by the total number of sentences in the annual report or (b) setting the variable equal to one when the number of sentences describing tax strategy is greater than zero, respectively. While our first two measures capture the volume of the tax strategy disclosure, the latter captures the decision of a firm to provide a tax strategy disclosure in its annual report at all. In untabulated results, we consider which firm characteristics determine which firms voluntarily discuss their tax strategy before the 2016 reform and the extent of such disclosure. We show that media attention weakly incentivizes a firm to offer insights into its tax practices. An important driver of a firm's willingness to discuss its tax strategy and the extent of such disclosure is board composition. Firms with a higher degree of tax and accounting expertise by the board members tend to disclose their firm tax strategy in the annual reports, and in such firms, this type of disclosure is, on average, longer compared to firms with no tax and accounting expertise by the board members.

4.3 Measures of Tax Avoidance

Following Hanlon and Heitzman (2010), we employ two commonly used tax avoidance proxies available when analyzing non-US settings, Cash and Book ETRs.[17] Note that both of those capture non-conforming tax avoidance only and do not capture changes in tax accounting accruals. However, our sample is exclusively composed of listed firms, which face high capital market pressure and thus are less likely to adopt conforming tax avoidance (e.g., Hanlon and Heitzman (2010); Badertscher et al. (2019)). Further, Cash ETR captures tax deferral strategies, which are not included in the Book ETR measure. Following the related literature, we drop ETR observations in loss years, since losses distort ETR-based tax measures and make them hard to interpret (e.g., Dyreng et al. (2017), Chyz et al. (2019), Robinson et al. (2010)).

5 Empirical Strategy

5.1 Difference-in-difference Estimation

In this section, we discuss our identification strategy to test the effect of mandating disclosure of qualitative tax information. We use the introduction of mandatory tax

[17] The lack of foreign tax expenses prevent us from using book-tax difference proxies and reporting of the item "unrecognized tax benefit" is not required under IFRS.

strategy reporting in the UK in 2016 as an exogenous shock to tax information disclosure and employ a difference-in-difference strategy. This legislation requires groups over a certain size to disclose additional qualitative tax information. Thus we consider firms that have to publish a tax strategy report as treated firms. As control group, we use firms that are below the size threshold and are not required to publish a tax strategy report. Our difference-in-difference specification takes the following form:

$$\begin{aligned} ReformOutcomes_{it} = \alpha + \beta_1 Post_t \times TaxStrategyReport_i \\ + BX_{it} + \gamma_i + \delta_t + \epsilon_{it} \end{aligned} \tag{1}$$

where i is firm, and t is year. $Post_t$ is a dummy, which denotes years after 2016. $TaxStrategyReport_i$ is a dummy equal to one for those firms that are required to publish a tax strategy report. As firm-level controls (X_{it}), we follow Balakrishnan et al. (2019) and use size, leverage, age, geographical complexity, market to book ratio, operating volatility, an information production quantity proxy, and performance volatility. We include firm (γ_i) and year (δ_t) fixed effects. Thus, we estimate the effect of mandatory disclosure using the within-firm variation. We add two-way cluster robust standard errors at the firm-year level.

We examine the effect of the reform on tax strategy disclosure in annual reports by looking at the volume of tax strategy sentences (TSD_{it}) in the annual report as an outcome variable. We alternatively use the scaled version of TSD, where we scale by the total number of sentences in the annual report. Second, we test whether mandating a tax strategy report has an impact on firm tax avoidance, measured by Cash ETR ($CashETR_{it}$) or Book ETR ($BookETR_{it}$). Hypothesis 1 indicates that the reform will positively affect disclosure in the annual reports. Thus, we expect coefficient β_1 to be positive and significant in regressions with TSD as a dependent variable. Hypothesis 2 suggests no effect on tax avoidance. Hence, we expect the coefficient on β_1 to have a small magnitude and to be insignificant in specifications with Cash or Book ETRs as outcome variables.

5.2 Event Study

Our identification strategy is based on the assumption that qualitative tax disclosure and the appetite for tax avoidance for the control and treated firms would have evolved in parallel in the absence of treatment. We test this assumption using event study methodology. We also use this method to evaluate the speed with which the reform affects our outcome variables. We estimate equation 2 separately for control and treated group, a version of equation 1, in which we replace the coefficient on the interaction between the post-2016 dummy and the treated firm indicator with seven separate indicator variables, each marking one year during the t-4 to t+3 periods relative to the year before the treatment event date (t=0). We omit the indicator for period t-1 to serve as benchmark. The treatment indicators are binned at endpoints, such that t-4 indicates treatment at time t-4 and all previous ones. Hence, we do not plot the estimates for t-4 (McCrary, 2007). We estimate the following equation:

$$ReformOutcomes_{it} = \sum_{k=-4}^{3} \beta_k \times D_t^k + \gamma_i + BX_{it} + \epsilon_{it} \quad (2)$$

The variables of interest are the dummies D_t^k that indicate a point in time k periods from the reform year (2016). The coefficient on each of those dummies estimates the difference in each dependent variable in that year relative to year k-1 (2015). As dependent variable, we use different reform outcomes described above. We add firm fixed effects (γ_i) as well as controls (X_{it}) and two-way cluster-robust standard errors, as specified in equation 1.

6 Results

6.1 Descriptive Evidence

Tax strategy reports In Table 2, we summarize the characteristics of tax strategy reports. We manually search for those reports for every treated firm in our sample and find information for 74 out of 113 firms.[18] First, the length of documents in our treated sample varies substantially between 63 words and 3,166 words. In Appendix AA.4, we present examples of two extreme cases. RPS, a UK MNE offering professional services, provides a one-page long tax strategy report where the description of its tax planning strategy and its relationship to tax authorities is limited to a few lines, while the discussion of its risk management extends over three paragraphs. Jupiter, a UK fund management group, presents an eleven pages long tax strategy report where, besides the mandatory topics, an overview of the firm's total tax contribution and geographical distribution of

[18] Schedule 19 of the 2016 Finance Act set thresholds at the unconsolidated level. Under UK law, UK parents are not required to disclose their unconsolidated profit and loss account when having a consolidated one (see Company Act 2006 – S408). Thus, we have no access to unconsolidated data for UK MNEs. We rely on the assumption that if a UK MNE firm falls above the threshold using consolidated data it also does using unconsolidated data. This represents a well-founded assumption based on a survey we conducted with experts from the Big4 located in the UK. However, since we do not find tax strategy reports for 39 treated firms in our sample, we check the robustness of our baseline results, excluding those treated firms without tax strategy reports, and (untabulated) results are unchanged.

tax payments is offered.

Second, the guidelines issued by the UK tax authorities highlight the necessity to mention the law under which the tax strategy report is written, namely Schedule 19 of the UK Finance Act 2016. We use a firm's mentioning of the law as a proxy for the degree of compliance. While the guidelines on the content for each category are very broad, and there is no rule on the report title, the mentioning of the law represents the only strict requirement for the drafting of such a report. Surprisingly, not all firms in our sample comply with this requirement, as 16 percent do not mention "Schedule 19" and/or "Finance Act 2016" in their tax strategy report.

Third, we measure the quality of the reports using specificity and similarity. To capture the degree of specificity, we calculate how often the text refers to specific people, places, organizations, times, or numbers divided by the total number of words, following Dyer et al. (2017) and Hope et al. (2016). To capture the degree of similarity across firms' disclosure, we compare tax strategy reports using WCopyFind, an open-source tool that is able to detect similar sentences across documents and has been used in the related literature ((Belnap, 2019a; McMullin, 2016)).

We find that the quality of the reports varies substantially. On average, the degree of specificity is 7 percent, with a peak at 8 percent (Figure 1). In Appendix A.4, we present an example of a disclosure with a high degree of specificity. Macfarlane, a UK packaging and label MNE, scores 19 percent on our specificity index. For example, it states the exact period of time to which the described tax payment overview refers, it describes organizational details of the tax function, and it lists each subsidiary with the corresponding name and location.

We find the average similarity score between tax strategy reports to be 11 percent, with a peak of observations at 4 percent (1). These vary between no similarity at all to 64 percent similarity, and around 6 percent of the analyzed reports display a similarity level exceeding 30 percent. In Appendix A.4, we show a side-by-side comparison of two tax strategy reports where the detected level of similarity is 63 percent. [19]

Annual reports disclosure and tax avoidance In Table 3, we show the overall pre-2016 univariate descriptive statistics for the variables used in our analysis, while in Table A1 in the Appendix, we break these down into treatment and control groups. Firms in our sample disclosed, on average, 4.7 tax strategy sentences in their annual reports before 2016, which corresponds to 0.3 percent of the total number of sentences in the annual

[19] Our distribution of similarity score frequencies is right-skewed as the one of Belnap (2019a), who conducted an analysis of tax strategy reports focusing only on UK firms belonging to foreign MNE groups. But, the average level of similarity in our sample is substantially lower than the one found by Belnap (2019a).

report. Firms in the treated group disclosed, on average, 5.5 sentences while those in the control group disclosed 3.4 sentences.

Figure 2 depicts the evolution of the average number of tax strategy sentences, non-tax strategy sentences, and the fraction of tax strategy divided by the total sentences in the annual report for control and treated firms separately. First, the average number of tax strategy sentences increased over the years for both treated and control groups. Second, on average, treated firms include more tax strategy and non-tax strategy sentences in their annual reports relative to the control group. Finally, there is a clear jump in the number (and ratio) of tax strategy sentences for the treated group starting in 2016 that we do not observe for the control group.

Firms in our sample have mean Cash and Book ETRs of 23.2% and 24.9%, respectively. In Table A1, we show that treated firms report having similar Cash and Book ETRs to control group firms prior to the 2016 reform. Treated firms are significantly larger, they have more leverage, they are older, and less likely to be loss-making. This is to be expected given that the threshold to belong to the treated groups depends on size and turnover. Since we show that our outcome variables of interest evolve similarly before the reform, these level differences in other observable firm-level characteristics do not invalidate our identification strategy.

Finally, Table 4 reports Pearson correlation coefficients for the key variables in the regression analysis. At the $p < 0.05$ level, both Cash ETR and voluntary tax strategy disclosure in annual reports are positively correlated with Media Attention (corr. = 0.293 and corr. = 0.121). Additionally, Cash ETR is significantly positively correlated with the volume of voluntary tax strategy disclosure in annual reports (corr. = 0.087), but significantly negatively correlated with the volume of the mandatory tax strategy disclosure in the separate report (corr. = - 0.079). Further, Cash ETR is negatively correlated with the quality of the separate tax strategy report, both with respect to compliance level (corr. = -0.128) and specificity level (corr. = -0.081). This suggests that firms with higher Cash ETR may have a preference for discussing their tax strategy at length in the annual report. In turn, voluntary tax strategy disclosure in annual reports is positively correlated with the volume of the mandatory tax strategy disclosure in the separate report (corr. = 0.100) but negatively with the specificity level (corr. = -0.151). This provides some evidence that voluntary disclosure in the annual reports is a complement, rather than a substitute, for disclosure in tax strategy reports. However, the length of discussion does not necessarily come with a high degree of specific details, which points towards the potential un-informativeness of the tax strategy disclosure.

6.2 Benchmark Results

In this section, we describe our baseline difference-in-difference and event study results. In Panel A of Table 5, we present results for tax strategy disclosure (TSD) in the annual reports. Column (1) reports the effect on disclosure measured in terms of the absolute number of tax strategy sentences, while column (2) reports the effect on the tax strategy sentences scaled by the total number of sentences in the annual report. We find that, for affected firms, the tax strategy disclosure in the annual report significantly increased relative to the control firms after the reform. This is true for both the absolute and scaled number of tax strategy sentences. Results from column (1) indicate that treated firms increased the number of sentences describing their tax strategy in the annual report by 3.2 on average, compared to control firms after the reform. Given that the average treated firm had 5.5 tax strategy sentences in their annual report prior to the reform (Table A1), this suggests an increase of almost 60 percent.

In Panels a) and b) in Figure 3, we present the corresponding dynamic event study results. We plot coefficient estimates for each year separately for the treated and control group together with the 95 percent confidence intervals. We show that treated and control group firms are no different in terms of their tax strategy disclosure prior to 2016, even though both types of firms increase this disclosure throughout the sample period. However, since the reform, treated firms increased their tax strategy disclosure at a much quicker rate than control group firms. To the extent that annual reports are read by a wider range of stakeholders than tax strategy reports, this suggests a salient effect of the reform on tax transparency.

In Panel B in Table 5, we report the effect of the reform on Cash and Book ETR. We find no significant effect for our treated firms after the reform using both of our tax avoidance measures. Further, the point estimates are also close to zero. In Panels c) and d) in Figure 3, we present the corresponding dynamic event study results. We show that there was no significant difference in ETRs between treated and control firms before the reform in any of the pre-periods, as well as in any post-treatment periods.

7 Additional Analysis

7.1 Are Firm Reactions Driven by Public Pressure?

In the hypothesis development, we identify public pressure as a potential mechanism through which tax avoidance and voluntary qualitative disclosure in the annual reports may be affected after the reform. The literature offers mixed evidence on the effects of public pressure on firm behavior (e.g., Chen et al. (2019); Dyreng et al. (2020); Dyreng et al. (2016)). In our setting, Belnap (2019b) shows that media scrutiny was used effectively to induce compliance with respect to publishing tax strategy reports for US MNCs. To test whether public pressure plays an important role in driving our results, we repeat the analysis from section 6.1, splitting the sample into firms subject to high and low media attention measured in pre-reform years. Firms in the high media attention category have above-median news coverage prior to the reform, while firms in the low media attention category have below-median news coverage. We complement this result by splitting firms into business to consumer (B2C) and business to business (B2B) firms in columns (3) and (4), respectively, where B2C firms are more likely to be exposed to consumer scrutiny. We present the results in Table 6.

In column (1) in Panel A, we show that treated firms subject to high media attention do not significantly increase their tax strategy disclosure relative to the control group firms after the reform. In column (2), we show that the increase in tax strategy disclosure observed in our baseline estimates is driven by firms subject to low media attention prior to the reform.[20] Note that the pre-reform average number of tax strategy sentences in the annual reports is 5.9 for the control group firms subject to high media attention, while it is only 3.7 for firms in low media attention sub-sample (reported at the bottom of panel A). In Figure A1 in the Appendix, we plot the dynamic evolution of these coefficients separately for treatment and control groups. We find that both treated and control group firms subject to high media attention increase their tax strategy disclosure in their annual reports, which explains why we find no effect in the difference-in-difference estimates. They also both start from higher benchmark voluntary disclosure. This suggests that firms subject to public attention feel the need to justify their tax positions to outside stakeholders even before the mandate, and that need increases following the tax strategy report mandate, even if they are not subject to that mandate itself. This is consistent with the public exerting pressure on those firms to do so and managers possibly expecting their control group firms to be subject to tax strategy reporting mandates soon as well. In turn, only treated firms subject to low media attention prior to the reform increase their disclosure significantly. One potential explanation is that the reform draws public attention to these firms. The results using B2B and B2C firms in columns (3) and (4) broadly confirm the high media attention ones.[21] Taken together, these results suggest that high media scrutiny may be an important driver of qualitative tax strategy disclosure in annual reports.

[20]Note that we do not find these coefficients to be statistically significantly different from each other, but that can be due to the small sample size.

[21]Note that only very few firms in our sample are non-B2C. Thus our preferred split to analyze the the public pressure channel is to distinguish firms by the level of media attention. Further, media attention is a firm-level measure of potential public pressure, while B2C vs. B2B is industry level.

In Panel B of Table A1, we consider the effects of the reform on Cash ETR for firms subject to different media attention levels. We find no significant effect in any of the specifications suggesting that public pressure does not affect real behavior. At most, it looks like firms subject to low media attention before the reform decreased their Cash ETR. If anything, this would suggest an increase in tax avoidance, but the effect is not statistically significant.

7.2 The Role of Firm Characteristics

In this section, we discuss the relationship between firm-level characteristics and the effects of the reform on tax avoidance and voluntary disclosure by repeating the baseline analysis from section 6.1 splitting the sample based on these firm-level characteristics. We consider the following to be relevant: (1) the volume of the pre-reform voluntary disclosure, (2) the level of tax avoidance, and (3) the presence of board members with a tax and accounting background. We measure the volume of pre-reform voluntary disclosure by the mean number of tax strategy sentences before the reform. We classify firms as high volume pre-reform voluntary disclosing if their tax strategy disclosure is above the median of all firms pre-treatment. We classify firms as high tax-avoiding if their average Cash ETR before the reform is below the median of all firms pre-treatment. Following Chychyla et al. (2019), we define an accounting expert as a board member with at least one of the following qualifications: has a CPA (or similar certification), or has been employed either as an auditor, tax professional, financial controller, treasurer, or CFO.

Pre-reform Voluntary Disclosure In our setting, certain firms voluntarily disclose their tax strategy in their annual report even before the regulatory requirement. Firms often used this voluntary tax strategy disclosure to showcase their low levels of tax avoidance. For example, one firm writes in its annual report: *"...the group has established ethics regarding its tax policy which have been ratified by the board. These include the following key points: a commitment to ensure full compliance with all statutory obligations including full disclosure to all relevant tax authorities [of] any tax planning strategy entered into ..."*, while a second one writes: *"we take our corporate responsibility seriously with respect to taxation and aim to be a good corporate citizen by bearing our fair share of the tax burden"*.[22] With a mandate for tax disclosure, the signal from voluntary disclosure would be diminished. Thus, if voluntary disclosure is used to signal low tax avoidance before the reform, high-disclosing firms should choose to increase their disclosure after the reform

[22] In Table A3 in the Appendix, we show that firms that are are voluntary disclosing tax strategy information before the reform have a higher Cash ETR, although this difference is not statistically significant.

even further to distinguish themselves from the previously non-disclosing firms. For the same reasons, they could also reduce their tax avoidance.

In columns (1) and (2) in Table 7, we show results for disclosure outcomes, while corresponding columns in Table 8 include results for the tax avoidance outcome. In column (1), we restrict the sample to firms with above-median voluntary disclosure of tax strategy before the reform, while in column (2), to firms with below-median voluntary disclosure. We find that treated firms, which were voluntarily disclosing more information on their tax strategy in the annual reports prior to the reform, increased their disclosure significantly relative to the control group firms that were also voluntarily disclosing more in pre-reform years. In turn, we show no significant difference in disclosure outcomes for treated firms with below-median voluntary disclosure prior to the reform. This finding supports the hypothesis that firms that want to distinguish themselves by voluntary disclosure prior to the reform also feel the pressure to provide more comprehensive disclosure than their peers after the reform.

Pre-reform Tax Avoidance On the one hand, firms with high pre-reform tax avoidance could increase voluntary disclosure and reduce tax avoidance more. As they may be more exposed to public attention after the reform, they may feel that they have to justify their tax positions, and if they cannot do so credibly, they may reduce their tax avoidance. On the other hand, firms with high pre-reform tax avoidance may continue avoiding taxes and may avoid increasing their disclosure to not draw too much attention to their practices.

In columns (3) and (4) in Table 7, we test this empirically and show that firms with low tax avoidance levels prior to the reform, i.e., those with higher Cash ETRs, increase their disclosure more relative to the control group with similar Cash ETR before the reform and relative to firms that were more likely to have high tax avoidance levels prior to the reform. Note that both groups increase their voluntary disclosure in the annual reports, just by different magnitudes. This further underscores that firms that are less likely to avoid taxes use the tax strategy disclosure on their annual reports to signal their "good" compliance behavior.

Presence of Tax and Accounting Board Members The reform requires that a board member signs off the tax strategy report. According to the tax authorities, imposing board-level oversight on the tax strategy report should ensure that the tax strategy is discussed in the boardroom. Additionally, survey evidence suggests that board members discourage harmful tax practices (TNS (2015)). We split the sample according to whether the board includes any tax expertise to test whether the board member involvement in tax matters reduces tax avoidance, as the government hoped. If the board already included someone with tax expertise, issues of tax strategy were likely to be already discussed at the board level. As such, we expect firms with a tax specialist on the board to change their disclosure and tax avoidance by less than those without tax or accounting background members. In columns (5) and (6) in Table 7, we show that this is empirically true.[23]

Heterogeneity in Tax Avoidance Outcomes In Table 8, we consider the same sub-sample splits but look at tax avoidance as an outcome variable. We continue to find no significant effect of the reform on Cash ETRs. These results suggest that even for those sub-groups that increased the disclosure of their tax strategies in their annual reports substantially, the qualitative information demanded is not imposing large enough costs to change their real behavior. If anything, the direction of coefficients suggests a decrease in Cash ETRs for firms that did not voluntarily disclose a lot of information on their tax strategies (column 2), those that had high levels of tax avoidance prior to the reform (column 3), and those with a tax or accounting board member (column 5). Taken together, our results suggest that for firms with purposefully higher levels of tax avoidance, the tax strategy mandate may enable them to explain some of their more aggressive practices to the general public and continue engaging in these.

7.3 The Role of Disclosure Quality

In this section, we discuss the interplay between the type of disclosure firms include in their tax strategy reports and their annual reports. We focus on the quality of the separate tax strategy report and test whether that affects voluntary disclosure and tax avoidance of treated firms. Consistent with hypothesis 1a, we expect that the increase in the voluntary tax strategy disclosure in the annual report will be smaller for firms with lower quality tax strategy reports. We conjecture that firms with a higher quality tax strategy report are likely to comply with the reform to a larger extent and may also reduce their tax avoidance as a result. If post-reform voluntary disclosure is not related to a commitment to provide real information, we would not expect a change.

In Tables 9 and 10, we repeat the benchmark results from section 6.1, splitting our sample by the quality of the separately published tax strategy reports. We proxy the quality of the tax strategy reports by the length (column 1), the specificity (column 2), the similarity (column 3) and the compliance with the disclosure requirements (column 4). Since the differences in the quality of tax strategy reports only exist for treated firms, we keep all control group firms in all heterogeneity splits. We find that firms with longer, more specific, and more similar tax strategy reports that comply with the

[23]Note that these coefficients are not statistically significantly different from each other, but their relative magnitudes support our hypothesis.

disclosure requirements by explicitly citing the law increase their tax strategy disclosure in their annual reports more than firms with low-quality tax strategy reports.[24] These results suggest that higher voluntary tax strategy disclosure in annual reports is related to higher quality tax strategy disclosures. Therefore, spill-over to annual report disclosures seems to be a sign of more informative compliance with the reform. Further, results from column (1) suggest that firms with longer tax strategy reports also voluntarily disclose more information on their tax strategy in their annual reports. Again, similar to evidence from Table 4, this is in line with a view that disclosure in the annual reports is not a substitute, but a complement, to the tax strategy report.

In Table 10, we show the corresponding heterogeneity splits for Cash ETRs. We do not observe a change in Cash ETRs for firms with high-quality tax strategy reports. However, we show that low quality of tax strategy reports is linked with lower Cash ETRs. Specifically, firms with shorter tax strategy reports and lower compliance levels significantly increase their tax avoidance following the reform. Note that the differences in coefficients between high- and low-quality splits are statistically significant here. These results suggest that firms can reduce their Cash ETRs when the quality of their strategy report is poor without reputational consequences. If the mandated disclosure was tight enough, firms would not be able to have poor quality tax strategy disclosures. One possible explanation is that qualitative tax disclosure is not actionable for outside stakeholders, even if firms comply with the disclosure mandate.

8 Robustness Checks

In this section, we discuss several tests we conduct to check the robustness of our baseline findings. First, we examine how our results are affected by choice of an alternative identification strategy. Second, we consider how a different classification of tax strategy sentences in the annual reports influences our conclusions. Third, we use alternative measures of tax avoidance as outcomes and run specifications without control variables. The results we discuss here are not tabulated to simplify the paper's exposition.

We chose a difference-in-difference design as our preferred identification strategy. However, a regression discontinuity design would, in principle, also be suitable. Note that in the regression discontinuity analysis, the sample is restricted to firms just around the treatment threshold; therefore, the measured effect is local, and this would reduce our relatively small sample even further. Nevertheless, we can demonstrate the existence of discontinuity in the number of tax strategy sentences in the annual report around the

[24]Note that the coefficients are only statistically significantly different in case of firms with different law compliance levels. Again, this can be due to the small sample we have.

reporting threshold, but not for Cash ETRs. We use this to estimate the effect of the mandate on our outcome variables. We find these results to be broadly similar to our baseline. In particular, we find that the reform increases the tax strategy disclosure in annual reports by 3.3 sentences, on average, which is a similar magnitude to that presented in the benchmark estimates in Table 5.

Our preferred method of identifying tax strategy sentences in the annual reports involves using a naive Bayesian algorithm, which could be considered a complex method. However, for the purpose of our analysis, the dictionary approach that simply counts the number of sentences that use the word tax is not that well suited. There is no set of ideal keywords, which we can use to clearly identify tax strategy sentences. When a firm discusses its approach to tax or tax governance, examples of the most frequent phrases include group tax, tax laws, tax rate, and tax position. The above-listed words can be used in several other tax contexts in the annual reports not related to tax strategy. Thus, it is the sentence as a whole that determines whether a firm is discussing its approach to tax or tax governance. Still, as a robustness test, we construct a very conservative dictionary-based count of the most frequent words used in tax strategy sentences but not used in non-tax strategy sentences. We use this dictionary approach to classify sentences in the annual reports. Since we explicitly exclude words that appear in both types of sentences, the resulting classification severely under-estimates the volume of the true tax strategy sentences in the annual reports. We find that the tax strategy mandate significantly increases voluntary disclosure in the annual reports. However, the magnitude of the effect is much smaller; we find a 0.8 tax strategy sentences increase. This is consistent with the conservative way we construct the tax strategy sentences count here.

Our benchmark results use Cash and Book ETRs as a main tax avoidance measure. As an alternative, we can use size- and industry-adjusted Cash and Book ETRs, following the measure of tax aggressiveness developed by Balakrishnan et al. (2019). A positive value would indicate an increase in tax avoidance. Our results suggest no significant change in tax avoidance using this alternative measure. Our coefficients have positive magnitudes; hence, if anything, this would suggest that firms are more tax aggressive after the reform. Finally, we check the robustness of our results by running all specifications without control variables. The coefficient magnitudes and directions are broadly similar; in particular, we find no reductions in tax avoidance across all tests and an increase in voluntary tax strategy disclosure in annual reports.

9 Conclusion

Currently, governments around the world are taking action to reduce corporate tax avoidance and increase tax transparency. In this study, we focus on one of such measures, mandating qualitative tax disclosure, and investigate its effects on firm behavior. We find that affected firms increase tax disclosure in their annual reports, but we find no effect on tax avoidance behavior. We show that public pressure plays an important role in incentivizing firms to increase their tax strategy disclosure in their annual reports. Further, we emphasize that the quality of tax strategy reports is key in enforcing compliance with the law, especially when it comes to reducing tax avoidance. As such, we demonstrate the difficulty of generating a standard that avoids low-quality disclosures when the disclosure mandate is asking for qualitative information only. The results of our study contribute to a better understanding of the differences between demanding *qualitative* and *quantitative* tax disclosures on firm activities. In contrast to mandates for quantitative tax disclosures, our findings suggest that qualitative information may not be actionable for outside stakeholders, and firms may instead use increased qualitative disclosures as a type of insurance against negative public attention.

The goal of the policymakers was to mandate firms to explain their tax strategy to a wide audience and a broad set of stakeholders and to reduce tax avoidance. Our findings suggest that firms comply and even over-comply with the regulation, showing an image of exceptional "tax citizens" but this does not change their real behavior. This over-compliance may, at the extreme, reduce the informativeness of tax strategy disclosures in the annual reports and impose large opportunity costs on managers having to draft these disclosures. Further, since the UK tax strategy reports are in many respects similar to tax CSR disclosures, which are becoming more common, our findings are of relevance to policymakers thinking about introducing these regulations.

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Tables and Figures

Table 1: Sample Selection Steps.

	Unique Firms	Firm-Year Observations
Unbalanced sample: Domestic MNEs with time-series data in Datastream for the period 2010-2019	1,074	9,839
Of which:		
Domestic MNEs with available BoardEx data for the period 2010-2019	976	8,375
Domestic MNEs with available Ravenpack data for the period 2010-2015	814	3,963
Domestic MNEs with available correctly converted documents from Perfect Information for the period 2010-2019	752	4,942
Sample balanced on sales, taxes paid, total assets and cash ETR for the period 2014-2018	699	6,600
Dropping SMEs	(270)	(2,503)
Dropping CbCR	(204)	(1,993)
Final Sample	225	2,104

Table 2: Descriptive Statistics - Tax Strategy Reports.

Variable	Obs	Mean	St. Dev.	Min	P25	Median	P75	Max
Length	74	772	477	63	527	697	947	3,166
Compliance	74	0.835	0.371	0.000	1.000	1.000	1.000	1.000
Specificity	74	0.070	0.031	0.019	0.051	0.067	0.087	0.189
Similarity	74	0.112	0.143	0.000	0.030	0.055	0.11	0.640

Note: This table presents summary sample statistics related to relevant variables used in the analysis on the tax strategy reports. For the sample of treated firms, we manually collected 74 tax strategy report. All variables are defined in Appendix A.

Table 3: Descriptive Statistics.

Variable	Obs	Mean	St. Dev.	P25	Median	P75
TSD	621	4.697	5.409	1.000	3.000	6.000
TSD (scaled)	621	0.003	0.003	0.001	0.003	0.005
Cash ETR	1,039	0.232	0.210	0.092	0.200	0.290
Book ETR	1,064	0.249	0.183	0.159	0.234	0.298
B2C	1,159	0.837	0.370	1.000	1.000	1.000
Media Attention	942	7.598	8.485	2.000	4.000	13.000
Board (% Tax & Acc)	1,012	0.220	0.125	0.126	0.200	0.286
Size	1,066	11.942	1.383	10.950	12.004	12.998
Leverage	1,155	0.137	0.183	0.000	0.069	0.213
Age	1,159	3.036	0.772	2.639	3.178	3.584
Geographic Complexity	1,159	0.584	0.310	0.343	0.537	0.907
Mkt to Book Ratio	1,066	1.226	1.347	0.458	0.795	1.423
Std Dev of Sales	1,099	9.800	1.073	9.076	9.827	10.497
Analyst Following	968	1.530	0.612	1.099	1.386	1.946
Std Dev of Returns	1,070	2.229	0.456	1.955	2.204	2.484

Note: This table presents the pre-2016 summary sample statistics related to relevant variables used in the analysis. The sample consists of 1,159 firm-year observations representing 224 unique firms which do not have a loss observation for each year or for which we are not missing the annual report. The data therefore spans the 2010–2015 fiscal year period. All variables are defined in Appendix A. All variables are winsorized at the 1st and 99th percentiles besides Cash and Book ETRs which are winsorized to be between 0 and 1.

Table 4: Pearson Correlation Matrix.

Variables	1	2	3	4	5	6	7	8	9
1 TSD	1.000								
2 Cash ETR	**0.087**	1.000							
3 B2C	0.001	0.017	1.000						
4 Media Attention	**0.293**	**0.121**	-0.020	1.000					
5 Board (% Tax & Acc)	**0.079**	-0.022	0.014	-0.020	1.000				
6 Length	**0.100**	**-0.079**	**0.115**	0.049	**-0.152**	1.000			
7 Compliance	-0.005	**-0.128**	**0.095**	0.054	**-0.091**	**0.318**	1.000		
9 Specificity	**-0.151**	**-0.081**	**0.133**	**-0.271**	**0.339**	**-0.082**	-0.019	1.000	
10 Similarity	0.015	0.006	**-0.099**	0.020	**0.101**	0.041	**0.179**	0.033	1.000

Note: This table presents the Pearson correlation coefficients for key variables in the regression analysis. The significant correlation coefficients at a 0.05 level are bolded. All variables are defined in Appendix A.

Table 5: The Effect of Mandatory Qualitative Tax Disclosure Regulation.

	(1)	(2)
Panel A: Voluntary Tax Disclosure		
Dep. Var.	TSD	TSD (scaled)
Treated × Post	3.182**	0.000997*
	(1.103)	(0.000530)
Observations	1,048	1,048
Number of Firms	145	145
R-squared	0.814	0.758
Panel B: Tax Avoidance		
Dep. Var.	Cash ETR	Book ETR
Treated × Post	-0.00810	0.00772
	(0.0255)	(0.0216)
Observations	1,500	1,514
Number of Firms	200	200
R-squared	0.393	0.396
Firm FE	✓	✓
Year FE	✓	✓
Controls	✓	✓

Note: The dependent variable is displayed at the top of each column, respectively, Tax strategy disclosure (TSD), TSD (scaled), Cash ETR, Book ETR. Treated denotes those firms that are required according to Schedule 2019 of the Finance Act 2016 to publish a tax strategy report. Post denotes the period after the introduction of Schedule 2019 of the Finance Act 2016 starting from 2016. In all columns we control for: Size, Leverage, Age, Geographic Complexity, Loss Firms, Market-to-Book Ratio, Standard Deviation of Sales, Analyst Following and Return Volatility. All variables are defined in Appendix A. Standard errors are two-way clustered at firm-year level and are reported in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6: Heterogeneity of the Effect of Mandatory Qualitative Tax Disclosure Regulation - Public Attention.

Sub-sample	(1) ***High Media Attention***	(2) ***Low Media Attention***	(3) ***B2C***	(4) ***Non-B2C***
	Panel A: Voluntary Tax Disclosure			
Dep. Var.	TSD	TSD	TSD	TSD
Treated × Post	1.248	2.658*	3.590**	3.469
	(1.439)	(1.254)	(1.240)	(2.103)
Observations	515	429	829	219
Number of Firms	65	60	115	30
R-squared	0.828	0.768	0.820	0.811
P-Val. Test of Equ.	0.314	0.314	0.956	0.956
Pre-Reform Mean	5.876	3.658	4.866	4.630
	Panel B: Tax Avoidance			
Dep. Var.	Cash ETR	Cash ETR	Cash ETR	Cash ETR
Treated × Post	0.00663	-0.0504	-0.00446	-0.0277
	(0.0241)	(0.0884)	(0.0322)	(0.0255)
Observations	1,234	266	700	679
Number of Firms	165	35	88	88
R-squared	0.412	0.337	0.411	0.376
Equiv. P-Value	.525	.525	.448	.448
Pre-Reform Mean	0.235	0.194	0.233	0.229
Firm FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓

Note: The dependent variable is tax strategy disclosure (TSD) (at the top of each column). Treated denotes those firms that are required to publish a tax strategy report. Post denotes the period after the introduction of Schedule 2019 of the Finance Act 2016 starting from 2016. In column one (two) the sample is restricted to firms that are in B2C (non-B2C) industries. In column three (four) the sample is restricted to firms with above (below) pre-treatment median attention. In all columns we control for: Size, Leverage, Age, Geographic Complexity, Loss Firms, Market-to-Book Ratio, Standard Deviation of Sales, Analyst Following and Return Volatility. All variables are defined in Appendix A. All columns report regressions with firm and year fixed effects. Standard errors are two-way clustered at firm-year level and are reported in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7: Heterogeneity of the Effect of Mandatory Qualitative Tax Disclosure Regulation on Annual Report Tax Strategy Disclosure (TSD) - Firm Characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)
Sub-sample	***Voluntary Disclosing***	***Non-Voluntary Disclosing***	***High Tax Avoidance***	***Low Tax Avoidance***	***Tax & Acc Board Mem.***	***Non-Tax & Acc Board Mem.***
Dep. Var.	TSD	TSD	TSD	TSD	TSD	TSD
Treated × Post	3.632*	1.295	2.708*	3.709**	2.548*	3.994**
	(1.926)	(0.724)	(1.219)	(1.510)	(1.363)	(1.389)
Observations	500	492	479	569	596	452
Number of Firms	63	64	68	77	87	58
R-squared	0.781	0.577	0.800	0.827	0.821	0.799
P-Val. Test of Equ.	0.239	0.239	0.572	0.572	0.401	0.401
Firm FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓

Note: The dependent variable is tax strategy disclosure (TSD) (at the top of each column), which denotes the number of sentences in the annual report that describe the tax strategy. Treated denotes those firms that are required to publish a tax strategy report. Post denotes the period after the introduction of Schedule 2019 of the Finance Act 2016 starting from 2016. In column one (two) the sample is restricted to firms that have mean tax strategy sentences of pre-treatment above (below) the median of all firms pre-treatment. In column three (four) the sample is restricted to firms that have a pre-reform mean Cash ETR above (below) the pre-reform median of all firms.In column five (six) the sample is restricted to firms that have (do not have) at least a board member with a tax/accounting background pre-treatment. In all columns we control for: Size, Leverage, Age, Geographic Complexity, Loss Firms, Market-to-Book Ratio, Standard Deviation of Sales, Analyst Following and Return Volatility. All variables are defined in Appendix A. All columns report regressions with firm and year fixed effects. Standard errors are two-way clustered at firm-year level and are reported in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 8: Heterogeneity of the Effect of Mandatory Qualitative Tax Disclosure Regulation on Tax Avoidance - Firm Characteristics.

	(1)	(2)	(3)	(4)	(5)	(6)
Sub-sample	***Voluntary Disclosing***	***Non-Voluntary Disclosing***	***High Tax Avoidance***	***Low Tax Avoidance***	***Tax & Acc Board Mem.***	***Non-Tax & Acc Board Mem.***
Dep. Var.	Cash ETR	Cash ETR	Cash ETR	Cash ETR	Cash ETR	Cash ETR
Treated × Post	0.00284	-0.00851	-0.0205	0.00742	-0.0406	0.0229
	(0.0609)	(0.0392)	(0.0248)	(0.0507)	(0.0380)	(0.0289)
Observations	500	568	789	711	799	701
Number of Firms	66	70	100	100	112	88
R-squared	0.463	0.326	0.390	0.318	0.410	0.380
Equiv. P-Value	.968	.968	.675	.675	.169	.169
Firm FE	✓	✓	✓	✓	✓	✓
Year FE	✓	✓	✓	✓	✓	✓
Controls	✓	✓	✓	✓	✓	✓

Note: The dependent variable is Cash ETR. Treated denotes those firms that are required to publish a tax strategy report. Post denotes the period after the introduction of Schedule 2019 of the Finance Act 2016 starting from 2016. In column one (two) the sample is restricted to firms that have mean tax strategy sentences of pre-treatment above (below) the median of all firms pre-treatment. In column three (four) the sample is restricted to firms that have a pre-reform mean Cash ETR above (below) the pre-reform median of all firms. In column five (six) the sample is restricted to firms that have (do not have) at least a board member with a tax/accounting background pre-treatment. In all columns we control for: Size, Leverage, Age, Geographic Complexity, Loss Firms, Market-to-Book Ratio, Standard Deviation of Sales, Analyst Following and Return Volatility. All variables are defined in Appendix A. All columns report regressions with firm and year fixed effects. Standard errors are two-way clustered at firm-year level and are reported in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 9: The Relationship Between Quality of Tax Strategy Reports (TSR) and Increased Annual Report Tax Strategy Disclosure (TSD) .

	(1)	(2)	(3)	(4)
Dep. Var.	TSD	TSD	TSD	TSD
Sub-sample	***Long TSR***	***High TSR Specificity***	***High TSR Similarity***	***High Compliance***
Treated × Post	3.614**	3.344**	3.922**	3.285**
	(1.203)	(1.120)	(1.480)	(1.141)
Observations	828	843	673	990
Number of Firms	116	117	94	136
R-squared	0.821	0.818	0.825	0.811
Sub-sample	***Short TSR***	***Low TSR Specificity***	***Low TSR Similarity***	***Low Compliance***
Treated × Post	2.129*	2.637*	2.526**	1.847
	(1.124)	(1.432)	(1.069)	(1.173)
Observations	629	614	784	467
Number of Firms	92	91	114	72
R-squared	0.797	0.807	0.800	0.817
P-Val. Test of Equ.	0.360	0.636	0.659	0.047
Firm FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Controls	✓	✓	✓	✓

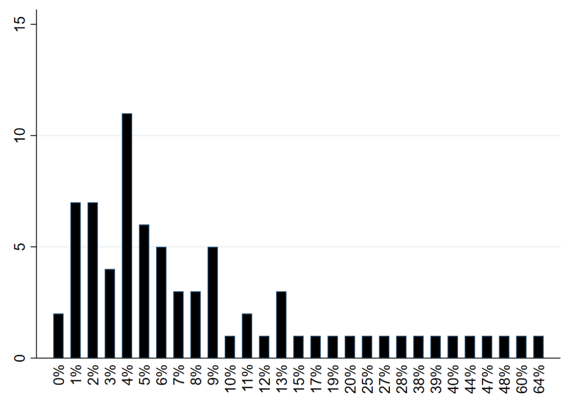
Note: The dependent variable is tax strategy disclosure (TSD) (at the top of each column). Treated denotes those firms that are required to publish a tax strategy report. Post denotes the period after the introduction of Schedule 2019 of the Finance Act 2016 starting from 2016. In column one the sample is split by long (short) TSR, a dummy equal to one (zero) if a firm has above (below) median number of words in its tax strategy report. In column two the sample is split by high (low) TSR Specificity). In column three the sample is split by high (low) TSR Similarity. In column four the sample is split by high (low) Compliance. In all columns we control for: Size, Leverage, Age, Geographic Complexity, Loss Firms, Market-to-Book Ratio, Standard Deviation of Sales, Analyst Following and Return Volatility. All variables are defined in Appendix A. All columns report regressions with firm and year fixed effects. Standard errors are two-way clustered at firm-year level and are reported in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 10: The Relationship Between Quality of Tax Strategy Reports (TSR) and Tax Avoidance.

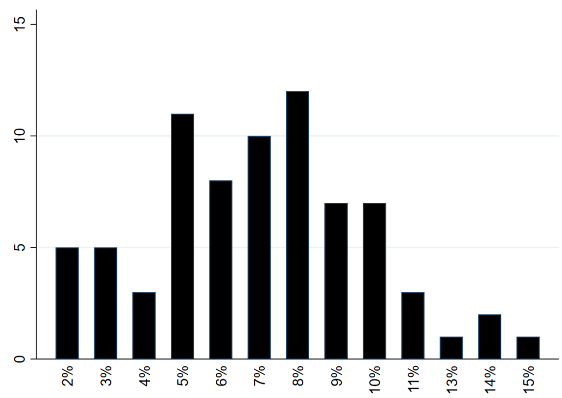
	(1)	(2)	(3)	(4)
Dep. Var.	Cash ETR	Cash ETR	Cash ETR	Cash ETR
Sub-sample	***Long TSR***	***High TSR Specificity***	***High TSR Similarity***	***High Compliance***
Treated × Post	0.0166	0.00563	0.0384	-0.00194
	(0.0280)	(0.0298)	(0.0336)	(0.0254)
Observations	1,227	1,219	1,003	1,4255
Number of Firms	165	163	138	189
R-squared	0.396	0.387	0.381	0.394
Sub-sample	***Short TSR***	***Low TSR Specificity***	***Low TSR Similarity***	***Low Compliance***
Treated × Post	-0.0604**	-0.0358	-0.0435	-0.0977**
	(0.0243)	(0.0253)	(0.0240)	(0.0330)
Observations	943	951	1,167	745
Number of Firms	130	132	157	106
R-squared	0.396	0.400	0.411	0.396
Equiv. P-Value	0.015	0.550	0.001	0.057
Firm FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
Controls	✓	✓	✓	✓

Note: The dependent variable is Cash ETR. Treated denotes those firms that are required to publish a tax strategy report. Post denotes the period after the introduction of Schedule 2019 of the Finance Act 2016 starting from 2016. In column one, the sample is split by long (short) TSR. In column two, the sample is split by high (low) TSR Specificity). In column three, the sample is split by high (low) TSR Similarity. In column four the sample is split by high (low) Compliance. In all columns we control for: Size, Leverage, Age, Geographic Complexity, Loss Firms, Market-to-Book Ratio, Standard Deviation of Sales, Analyst Following and Return Volatility. All variables are defined in Appendix A. All columns report regressions with firm and year fixed effects. Standard errors are two-way clustered at firm-year level and are reported in parentheses, *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Figure 1: The Quality of the Tax Strategy Reports



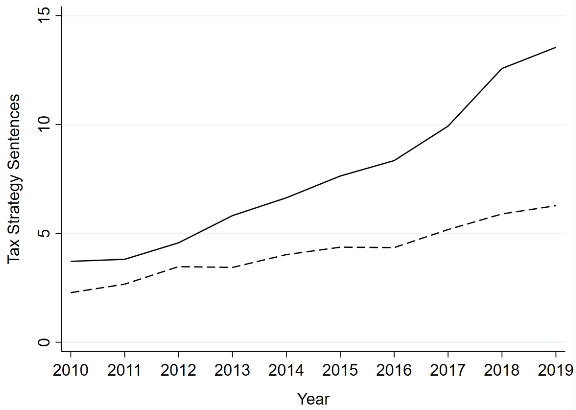
(a) Similarity



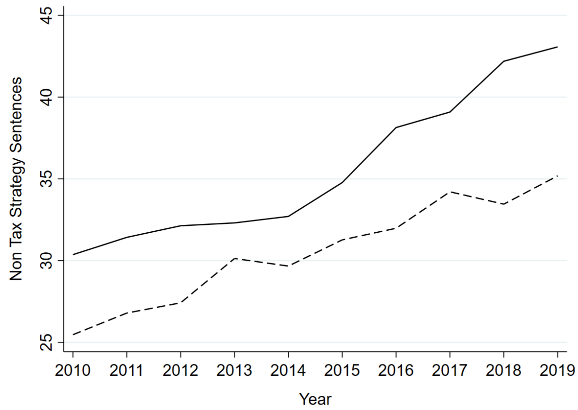
(b) Specificity

Note: This figure displays (a) the distribution of the maximum similarity score obtained when comparing each tax strategy report to every other tax strategy report in our sample (b) the distribution of the level of specificity of our sample firms' tax strategy reports. All variables are defined in Appendix A.

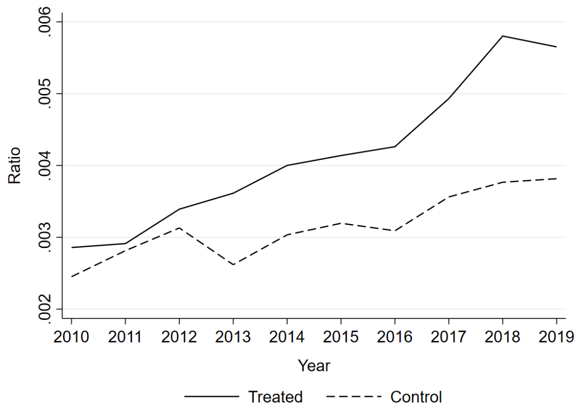
Figure 2: The evolution of qualitative tax disclosure measure



(a) Tax Strategy Sentences



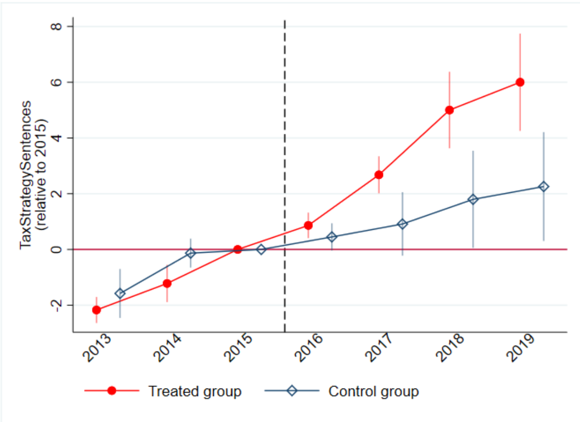
(b) Non Tax Strategy Sentences



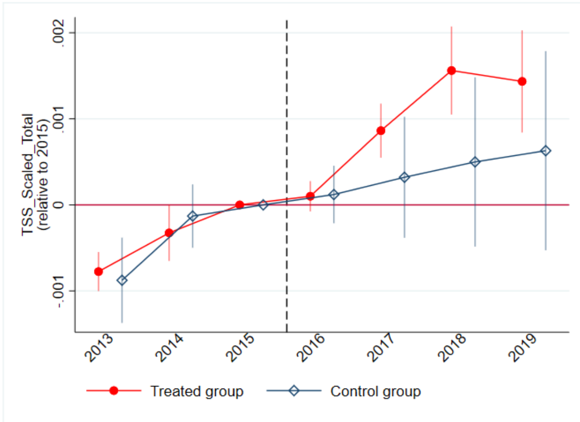
(c) Ratio of Tax Strategy Sentences to Total Sentences

Note: This figure shows the evolution over time of the average number of Tax Strategy Sentences, Non-Tax Strategy Sentences and the Ratio of Tax Strategy to Total Sentences for control and treated firms. Where Tax Strategy Sentences are the sentences in the annual report that describe the tax strategy; Non-Tax Strategy Sentences correspond to the Tax Sentences in the annual report which do not pertain to the firm's tax strategy and Total Sentences represent the total number of sentences in a firm's annual report. All variables are defined in Appendix A.

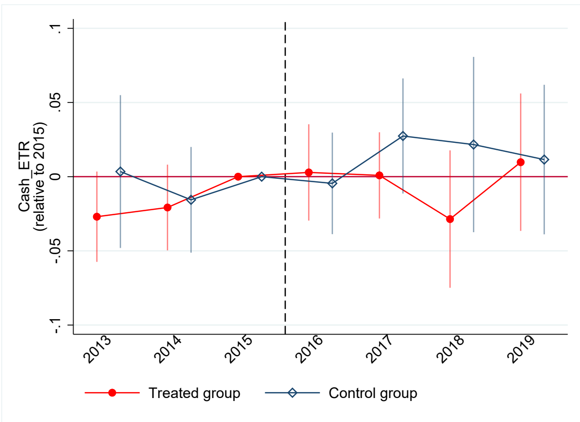
Figure 3: Dynamic Effects of the Reform on Qualitative Tax Disclosure - Event Studies.



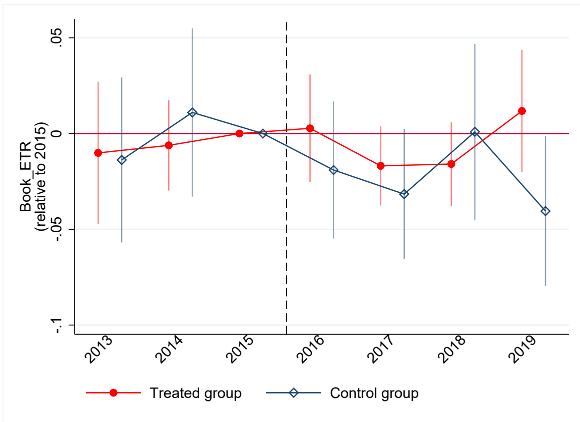
(a) Tax Strategy Disclosure



(b) Tax Strategy Disclosure (scaled)



(c) Cash ETR



(d) Book ETR

Note: The figure plots the time-trends regression coefficients (the blue diamonds and red dots), $\beta_k s$, and 95 percent confidence intervals (the blue and red vertical lines) based on two-way cluster robust standard errors (firm-year) from the following specification: $ReformOutcomes_{it} = \sum_{k=-4}^{3} \beta_k * D_t^k + BX_{it} + \gamma_i + \epsilon_{it}$, where we run regressions seperately for treated and control group. $ReformOutcomes_{it}$ is TSD (tax Strategy Disclosure) in Panel A, TSD scaled by total sentences in the annual report in Panel B, Cash ETR in Panel C, Book ETR in Panel D. All variables are defined in Appendix A. In Panel C and D we drop loss observations from the sample. $\sum_{k=-4}^{3} \beta_k * D_t^k$ is a series of year dummies that equal one in each of the k years before and after the reform. We bin event dummies at endpoints of the event window, at k=4 and show coefficients only for 3 years before the reform. BX_{it} is a set of firm-level controls: Size, Leverage, Age, Geographic Complexity, Loss Firms, Market-to-Book Ratio, Standard Deviation of Sales, Analyst Following and Return Volatility. γ_i are the firm fixed effects. ϵ_{it} is the error term. We use year 2015, k=-1, as the base year in this fixed effects estimation.

Appendices

A Variable Definitions

A.1 Main variables

Tax Disclosure: The total number of tax sentences in each annual report, i.e. all sentences containing the three letters "tax" written sequentially, eliminating those where the only time the three letters "tax" appear are in: "pre-tax", "net of tax", "before income tax", "after tax", "before tax", "tax free"

TSD: Tax Strategy Disclosure - The number of sentences in the annual report that describe the tax strategy

TSD (scaled): The number of tax strategy sentences in an annual report divided by the total number of sentences in that annual report

TSD (binary): A dummy equal to one if the variable TSD is above zero

Cash ETR: The ratio of tax paid over pre-tax income, set to one if if above 1 or if tax paid is positive and pre-tax income negative and set to zero if tax paid is negative

Book ETR: The ratio of tax expense over pre-tax income, set to one if above 1 or if tax expense is positive and pre-tax income negative and set to zero if tax expense is negative

Tax & Accounting Board Members : A dummy equal to one if the firm has at least a board member with a tax/accounting background pre-treatment. Following Chychyla et al. (2019) an accounting expert is a board member with at least one of the following qualifications: has a CPA (or similar certification), or has been employed either as an auditor, tax professional, financial controller, treasurer, or CFO.

Voluntary Disclosing: A dummy equal to one (zero) if the mean tax strategy sentences of the firm pre-treatment is below (above) the median of all firms pre-treatment.

High (Low) Tax Avoidance: A dummy equal to one (zero) if the mean Cash ETR of the firm pre-treatment is below (above) the median of all firms pre-treatment.

B2C: A dummy equal to one if a firm is in a business-to-consumer sector defined as in Boyd and Kannan (2018). Refer to their Web Appendix A for the 4-digits SIC codes of non B2C firms

High (Low) Media Attention: A dummy equal to one (zero) if a firm has above (below) median coverage computed considering the counts of distinct news events about a firm in the last 91 days as stated in Ravenpack

Length (TSR): The total number of words in a tax strategy report

TSR Long (Short): A dummy equal to one (zero) if a firm has above (below) median number of words in its tax strategy report

High (Low) Specificity: A dummy equal to one (zero) if a firm has above (below) median specificity level expressed as the percentage of specific words over the total number of words. Following Hope et al. (2016) specific words are defined as: entity names, including names of persons, locations, and organizations; quantitative values in percentages; money values; times; and dates as captured by the Stanford Named Entity Recognition (NER) tool

High (Low) Similarity: A dummy equal to one (zero) if a firm has above (below) similarity level of 30% (where similarity denotes the percentage of the same sequence of words detected when comparing between two tax strategy reports computed using the software WCopyFind)

High (Low) Compliance: A dummy equal to one (zero) if a firm post-treatment makes (lacks) a reference to the law the tax strategy report refers to, namely Schedule 19 of the UK Finance Act 2016.

A.2 Control variables

Size: The natural logarithm of market value of equity

Leverage: The ratio of long-term debt over total assets

Loss: A dummy equal to one if the firm has negative profit/loss before taxes for the majority of the selected period

Age: The natural logarithm of the number of years the firm has been listed on Datastream

Geographic Complexity: The sum of squares of each geographical segment's sales as a percentage of the total firm sales

Mkt to Book Ratio: The ratio of the market value of assets to the book value of assets

Std Dev of Sales: The standard deviation of annual sales computed over the previous five years (or less than five years, if less than five previous years are available)

Analyst Following: The log of the number of analysts following the firm

Std Dev of Returns: The log of the standard deviation of returns computed over three years

Table A1: Test for the Difference in Means for Control and Treated Firms Pre-treatment.

	Control		Treated		Difference in means			
Variable	Obs	Mean	Obs	Mean	Diff	St Err	t-value	p-value
TSD	253	3.446	368	5.557	-2.111	0.444	-4.750	0.000
TSD (scaled)	253	0.003	368	0.004	-0.001	0.000	-2.800	0.005
Cash ETR	501	0.226	538	0.239	-0.130	0.013	-1.000	0.324
Book ETR	509	0.251	555	0.247	0.003	0.011	0.250	0.796
Board (% Tax & Acc)	484	0.212	528	0.228	-0.016	0.008	-2.050	0.042
B2C	556	0.815	603	0.858	-0.043	0.022	-1.950	0.051
Media Attention	457	4.779	485	10.254	-5.474	0.517	-10.600	0.000
Size	517	11.207	549	12.634	-1.427	0.072	-19.650	0.000
Leverage	554	0.116	601	0.157	-0.040	0.011	-3.800	0.000
Age	556	2.973	603	3.094	-0.122	0.045	-2.700	0.007
Geographic Complexity	556	0.572	603	0.596	-0.024	0.018	-1.300	0.186
Market to Book Ratio	517	1.012	549	1.427	-0.415	0.081	-5.150	0.000
Std Dev of Sales	524	9.268	575	10.284	-1.016	0.058	-17.650	0.000
Analyst Following	450	1.286	518	1.742	-0.455	0.036	-12.550	0.000
Std Dev of Returns	517	2.296	553	2.167	0.129	0.028	4.650	0.000

Note: This table reports the results of the t-test for the difference in means for our main outcome and control variables for treated and control firms respectively over the pre-period. All variables are defined in Appendix A.

Table A2: Differences in Means of Pre-Reform Voluntary Tax Strategy Disclosure in Annual Reports by Sub-Samples.

	Mean (No/Low)	Mean (Yes/High)	Diff.	SE	T-Val.	P-Val.
Public Attention						
B2C (No/Yes)	4.630	4.866	-0.237	1.038	-0.25	0.821
Media Attention (Low/High)	3.658	5.876	-2.218	0.897	-2.45	0.015
Firm Characteristics						
Voluntary Disclosing (Low/High)	1.579	8.247	-6.669	0.684	-9.75	0.000
Tax Avoidance (Low/High)	5.371	4.151	1.22	0.838	1.45	0.147
Tax & Acc Board Mem (No/Yes)	3.933	5.55	-1.617	0.821	-1.95	0.051
TSR Report Characteristics						
Long TSR (No/Yes)	4.381	6.139	-1.758	1.058	-1.65	0.102
TSR Specificity (Low/High)	5.934	4.625	1.308	1.085	1.20	0.234
TSR Similarity (Low/High)	5.144	5.966	-0.823	2.046	-0.40	0.690
Compliance (Low/High)	5.719	5.168	0.551	1.403	0.40	0.702

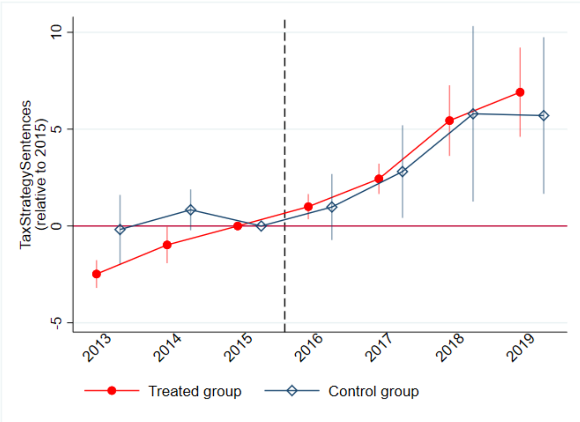
Note: This table shows means and differences in means of pre-reform voluntary tax strategy disclosure in annual reports by sub-groups as named in the left most column. Observations are collapsed at firm-level (one observation per firm) in the following way: Pre-reform voluntary tax strategy disclosure is the firm-mean tax strategy disclosure in the years prior to the introduction of Schedule 2019 of the Finance Act 2016, i.e., in the years until 2015. All variables are defined in Appendix A.

Table A3: Differences in Means of Pre-Reform Cash ETRs by Sub-Samples.

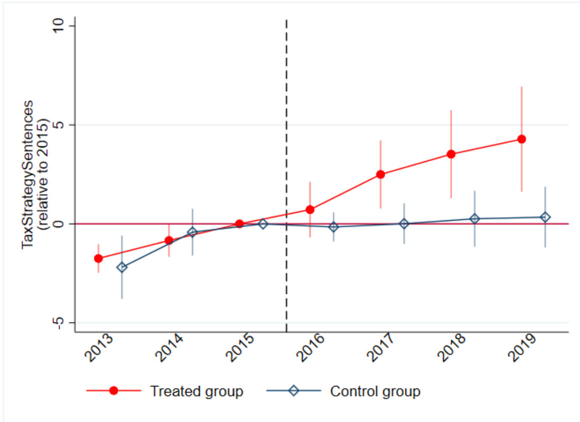
	Mean (No/Low)	Mean (Yes/High)	Diff.	SE	T-Val.	P-Val.
Public Attention						
B2C (No/Yes)	0.194	0.235	-0.041	0.024	-1.70	0.090
Media Attention (Low/High)	0.229	0.233	-0.004	0.022	-0.20	0.855
Firm Characteristics						
Voluntary Disclosing (Low/High)	0.248	0.255	-0.006	0.026	-0.25	0.813
Tax Avoidance (Low/High)	0.311	0.148	0.163	0.018	9.25	0.000
Tax & Acc Board Mem (No/Yes)	0.256	0.206	0.050	0.020	2.45	0.015
TSR Report Characteristics						
Long TSR (No/Yes)	0.240	0.222	0.019	0.037	0.50	0.615
TSR Specificity (Low/High)	0.233	0.230	0.003	0.037	0.05	0.941
TSR Similarity (Low/High)	0.230	0.245	-0.016	0.068	-0.25	0.821
Compliance (Low/High)	0.290	0.218	0.072	0.063	1.15	0.273
TSR Ref. in AR (No/Yes)	0.238	0.208	0.030	0.040	0.75	0.472

Note: This table shows means and differences in means of pre-reform Cash ETR by sub-groups as named in the left most column. Observations are collapsed at firm-level (one observation per firm) in the following way: Pre-reform Cash ETR is the firm-mean Cash ETR in the years prior to the introduction of Schedule 2019 of the Finance Act 2016, i.e., in the years until 2015. All variables are defined in Appendix A.

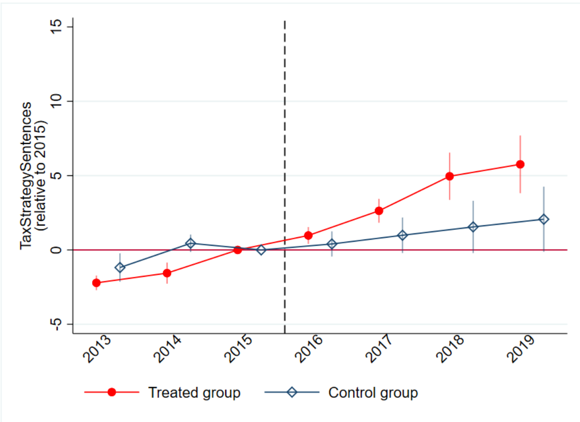
Figure A1: Dynamic Effects of the Reform on Qualitative Tax Disclosure - Media Attention/ B2C Splits.



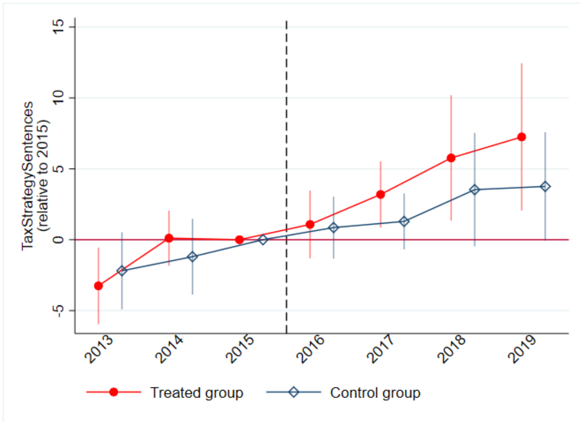
(a) High Media Attention



(b) Low Media Attention



(c) B2C



(d) non B2C

Note: The figure plots the time-trends regression coefficients (the blue diamonds and red dots), $\beta_k s$, and 95% confidence intervals (the blue and red vertical lines) based on two-way cluster robust standard errors (firm-year) from the following specification: $ReformOutcomes_{it} = \sum_{k=-4}^{3} \beta_k * D_t^k + BX_{it} + \gamma_i + \epsilon_{it}$, where we run regressions seperately for treated and control group and split for firms with (a) B2C firms, (b) non-B2C firms, (c) high media attention and (d) low media attention. $ReformOutcomes_{it}$ is TSD. TSD is the number of sentences in the annual report that describe the tax strategy. $\sum_{k=-4}^{3} \beta_k * D_t^k$ is a series of year dummies that equal one in each of the k years before and after the reform. We bin event dummies at endpoints of the event window, at k=4 and show coefficients only for 3 years before the reform. BX_{it} is a set of firm-level controls: Size, Leverage, Age, Geographic Complexity, Loss Firms, Market-to-Book Ratio, Standard Deviation of Sales, Analyst Following and Return Volatility. All variables are defined in Appendix A. γ_i are the firm fixed effects. ϵ_{it} is the error term. We use year 2016, t=0, as the base year in this fixed effects estimation.

A.3 Naïve Bayes Classifier - Statistics and Outcomes

We select a sub-sample of 450 annual reports from firms listed in the FTSE100 for the period 2010-2016 as our training set.We explicitly select annual reports from this group of firms to maximize the volume of detected tax strategy sentences. Partitioning the annual reports into sentences leads to 1,116,411 million sentences from which we exclude all sentences not containing the three letters "tax" when appearing sequentially. This enables us to preserve sentences containing the word "tax" as well as sentences containing the word "taxation". We then eliminate sentences in which the only time the three letters "tax" appear is for the words "pre-tax", "net of tax", "before income tax", "after tax", "before tax", "tax free". We end up with 41,683 tax sentences, i.e. sentences all containing the three letters "tax".[25] Out of this set of sentences, we then manually select tax strategy sentences and remove duplicates to obtain a final sample of 2,534 tax strategy sentences.

Next, we chose sentences in which the firm does not discuss its tax strategy, but which have a high degree of semantic similarity to the tax strategy sentences. For this purpose, we perform a cosine similarity analysis between all sentences in the training set, which contain the word tax and the manually selected tax strategy sentences.[26] This is a crucial step to ensure that once we proceed with the machine learning approach, we can train the algorithm on non-tax strategy sentences for which the risk of misclassification is the highest. Our final sample is a balanced sample of 2,534 tax strategy sentences (sentences discussing a firm's approach to tax or tax governance) and 2,534 non-tax strategy sentences (sentences not discussing a firm's approach to tax or tax governance, but semantically similar to the sentences discussing a firm's approach to tax or tax governance).

We use the collected sample of sentences to train the naïve Bayes algorithm, which is a supervised machine learning methodology. We use naïve Bayes to classify all sentences in our complete sample of annual reports that contain a word "tax".[27] This approach is a prediction model, where the input variables are the words in the document and the predicted value is the probability of a certain category. In the context of our study, the sentence categories are sentences containing information on a firm's tax strategy and sentences not containing information on a firm's tax strategy. The conditional probabilities of a word occurrence given a sentence category are learned based on the set of manually labelled sentences on which a machine learning model is trained. Since naïve

[25] This enables us to minimize the risk of false positives (Type I Error), by restricting our analysis to a subset of sentences where tax strategy sentences are most likely to appear. The drawback of our filtering approach is the increase in the risk of false negative (or Type II Error) since we might not capture sentences in which a firm discusses its tax strategy without explicitly using words "tax".

[26] For the cosine similarity exercise, we use tf-idf (term frequency-inverse document frequency) as weighting scheme.

[27] Also, for the Naïve Bayes, we use tf-idf (term frequency-inverse document frequency) as weighting scheme.

Bayes is machine-based, it facilitates the analysis of a large corpus and it avoids possible biases induced by the researcher's subjectivity.[28] Overall, naïve Bayes represents a fairly straightforward approach, which delivers consistently good classification accuracy, and thus it is the single most used classifier in the finance and accounting literature (El-Haj et al. (2019)).

Our complete sample is made of 9,742,293 sentences of which 279,853 contain the three letters "tax" when written sequentially after excluding those sentences in which the only time the three letters "tax" appear is for words "pre-tax", "net of tax", "before income tax", "after tax", "before tax", "tax free". We classify them into 10,946 tax strategy sentences and 268,907 non-tax strategy sentences using the trained naïve Bayes classifier. Our naïve Bayes approach achieves classification accuracy of 91 percent in the in-sample validation test, which is line with the related literature (Huang et al. (2014)).[29]

Below, we present the key statistics on the performance of our naïve Bayes classifier based on the average of 50 Naive Bayes models (iterations).

We, first, present the result of the confusion matrix, which is build using our training set (Tables A9 and A10). These tables show how many sentences are predicted to be tax strategy sentences and are actually tax strategy sentences and the same for non-tax strategy sentences. False stands for non-tax strategy sentences and true stands for tax strategy sentences. Precision indicates the fraction of true tax strategy sentences over the total number of sentences classified as tax strategy sentences (that is the sum of true tax strategy sentences and false tax strategy sentences). Thus, precision stands for the ability of our classifier to avoid classifying a sentence as a tax strategy sentence when in reality it is a non-tax strategy sentence. Recall indicates the fraction of true tax strategy sentences over the total number of correctly classified sentences (that is the sum of true tax strategy sentences and false non-tax strategy sentences). Thus, recall stands for the ability of our classifier to find all true tax strategy sentences. F1-score is the average between precision and recall. Support are the total number of considered sentences. Our accuracy score is 91.56 per cent which is the average between the F1-score of the tax strategy sentences and non-tax strategy sentences.

Table A4: Confusion Matrix

actual \predicted	FALSE	TRUE
FALSE	426.28	24.62
TRUE	47	351.1

[28] For the formal derivation of Naïve Bayes, see Antweiler and Frank (2004).

[29] In Appendix A.3, we show all statistics of our naïve Bayes classifier on our training sample. We also show the performance of using alternative supervised machine learning classifier, namely SVM and Random Forest.

Table A5: Naive Bayes (10 iteration for each model)

Model	Class	Precision	Recall	F1-score	Support
4009*2	FALSE	0.9	0.95	0.92	450.9
	TRUE	0.93	0.88	0.91	398.1

We also compared the accuracy of our model to the one we would obtain using alternative approaches. We test the accuracy we would obtain using two alternative supervised machine learning classifiers, which are also used in the finance and accounting literature. Using SVM or the random forest, we achieve similar accuracy level as with naïve Bayes, but slightly lower in case of SVM (90%).

Second, we offers a representative set of examples of sentences capture under the category "Tax Strategy Sentences" versus the one capture under the category "Non-Tax Strategy Sentences".

Example of Tax Strategy Sentences:

- tax planning is always aligned with our commercial and economic activity.
- taxation: the audit committee reviewed the group tax risk policy which sets out compliance with relevant jurisdictional legislation, identifying areas of tax risk for appropriate focus and managing the overall group tax risk.
- where appropriate, the group enters into consultation with tax authorities to help shape proposed legislation and future tax policy.
- we also used our own tax specialists to critically assess the appropriateness of the future tax planning strategies.
- our board continues to work toward being assessed as 'low risk' by hmrc and ensures that the group adheres to the revised tax policy adopted in 2014 of not undertaking tax planning or making use of tax havens.
- an open dialogue is maintained with HMRC involving regular meetings to review tax issues and brief them on business issues.
- the group takes a responsible approach to the management and control of its tax affairs and is cooperative in its dealings with the tax authorities.
- our principal activities are uk-based and we have regular meetings with hm revenue and customs to discuss tax matters and business developments.

- we will pay the right and fair amount of tax in each territory we trade from in accordance with the letter and spirit of local laws and regimes.
- the board is regularly updated on tax matters, and any tax implications of commercial activities are highlighted to the board with the use of a risk matrix to assess the appropriateness of a proposal.

Example of Non-Tax Strategy Sentences:

- these shares may be withdrawn at any point during years four and five, but income tax and national insurance would then be payable on any amounts withdrawn.
- deferred income tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets against current tax liabilities and when the deferred income taxes and liabilities relate to income taxes levied by the same taxation authority on either the taxable entity or different taxable entities when there is an intention to settle the balance on a net basis.
- these discount rates are derived from the group's post-tax weighted average cost of capital as adjusted for the specific risks relating to each geographical region.
- retail sales and delivery receipts are recorded net of returns, relevant vouchers, and value added tax and recognised upon dispatch from the warehouse at which point title and risk passes to the customer.
- the group provides for potential tax liabilities that may arise on the basis of the amounts expected to be paid to the tax authorities.
- the carrying amount of deferred tax assets is reviewed at each statement of financial position date and reduced to the extent that it is no longer probable that sufficient taxable income will be available to allow all or part of the asset to be recovered.
- this revenue growth reflected the strength of tax and accounting's product offerings and demand in the global tax and accounting market.
- the discount rates used reflect the post-tax yields to maturity that can be obtained on government bonds with similar maturity dates and currencies to those of the deferred tax assets or liabilities.
- there is no time restriction over the utilisation of tax losses.
- impairment of assets the carrying amounts of the group's non-financial assets, other than inventories (see accounting policy 'inventories') and deferred tax balances (see

accounting policy 'deferred taxation'), are reviewed at each balance sheet date to determine whether there is an indication of impairment.

Overall, since some tax strategy sentences can be hard to identify clearly, we construct a rather conservative measure of tax strategy disclosure in annual reports to avoid false positives. Precisely our measure is conservative in the following sense: we do not count sentences as tax strategy sentences as soon as the classified probability of being a tax strategy sentences vs.a non-tax strategy sentences lies just above 50%, instead we chose a cut-off value of 99%, in order to avoid false positives.

A.4 Examples of tax strategy reports

In this section, we provide an examples of tax strategy reports from our sample of treated firms.

First, we provide two examples of tax strategy report with very different length. On one side RPS, a UK MNE offering professional services, offers one page long tax strategy report, and on the other side, Jupiter, a UK fund management group, presents a 11 page long tax strategy report.

Table A6: Tax Strategy Report - RPS

RPS GROUP PLC
TAX STRATEGY
YEAR ENDED 31 DECEMBER 2019[1]

Overriding principle

We comply with all relevant tax laws and regulations.

Risk management and governance

We manage our tax risk as follows:

- Simplicity and certainty – as a multinational group our tax affairs are complex and the application of tax regulations may be uncertain which leads to risk. We mitigate this risk by seeking to simplify, where possible, transactions and processes. We reduce uncertainty through careful consideration of the regulations, taking professional advice and working with tax authorities where appropriate.

- Resources and processes - RPS Group operates through business sectors that comprise a number of legal entities operating in different jurisdictions. Each sector mitigates tax risk by having appropriate staff and processes and the support of the Group Tax team.

- Monitoring - tax risk is monitored regularly by the Group Tax team and, if individual risks are sufficient, the Executive Committee and the Board. In particular, Group Tax considers the tax impact of all major transactions around the group including acquisitions, business in new territories, taxable presence, reorganisations and financing. The Audit Committee formally reviews the Group's tax affairs including consideration of tax risk twice a year.

Attitude to tax planning

We structure our operations and transactions in a way that aligns with commercial and economic activity. We use tax reliefs and incentives where available and we utilise them in the manner intended.

Dealings with tax authorities

We work with tax authorities in a collaborative, courteous and timely manner and in respect of disputed matters seek early agreement and certainty.

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[1] As required in the UK by para 16(2) Schedule 19 Finance Act 2016

Table A7: Tax Strategy Report - Jupiter

Next we offer an example of a disclosure with high degree of specificity, namely the one of Macfarlane, a UK packaging and label MNE, which scored 19 per cent on our specificity index. The specificity score captures how often the text refers to specific people, places, organizations, times, or numbers. We extracted parts of the whole tax strategy report, where the firm discuss times, places and tax-related roles.

Table A8: Tax Strategy Report - Macfarlane

MACFARLANE GROUP PLC

GROUP TAX STRATEGY

This strategy paper applies to all taxes, including corporate income taxes, VAT and other sales taxes, property taxes and all employment related taxes and takes effect from 1 January 2019. This statement covers the initial period from 1 January 2019 to 31 December 2019 and has been approved by the Group Board of Macfarlane Group.

Responsibility for the Group's tax affairs lies with the Group Finance Director who is the Senior Accounting Officer ("SAO") for Macfarlane Group, with governance and oversight by the Board of Directors of Macfarlane Group PLC who approve this Tax Strategy.

PARENT COMPANY	**Company number**	**Country of registration**
Macfarlane Group PLC	SC004221	Scotland
TRADING SUBSIDIARIES		
Macfarlane Group UK Limited	01630389	England
Macfarlane Labels Limited	SC027016	Scotland
Nelsons for Cartons & Packaging Limited	03655833	England
Nottingham Recycling Limited	03249021	England
Tyler Packaging (Leicester) Limited	03460830	England
Harrisons Packaging Limited	06999588	England
Ecopac (UK) Limited (*Acquired 2 May 2019*)	02783546	England
Macfarlane Group Ireland (Labels & Packaging) Limited	00111824	Ireland
Macfarlane Group Sweden AB	556236-3712	Sweden

Finally we provide a comparison of two tax strategy reports using WCopyFind. This software works best using txt files, this is why we convert all tax strategy reports into txt format. Additionally, under WCopyFind, several parameters, which delineate a text string match, can be adjusted. In choosing the parameters, we follow the guidelines provided by the developer of the tool. Below the comparison of the tax strategy report from Croda International, a UK MNE active in the chemistry industry, and Carpetright, a UK retailers of floor coverings and beds. When the same word appears in both document, it is highlighted in red. The detected level of similarity across these two report is 63 percent.

Table A9: Tax Strategy Report - Carpetright

Carpetright plc

Tax Strategy
(..) 2. Implementation
The Group Tax team partners with our businesses to ensure that:
The strategy is adopted and followed consistently across the Group, with clear lines of responsibility and accountability.
There is alignment of the strategy with the Group's overall approach to corporate governance and risk management, and
The Group pays the right amount of tax required of it under the laws and regulations of the countries in which it operates.
3(..)Carpetright is a responsible taxpayer and is committed to conducting its tax affairs consistent with the following objectives, to:
Apply professional diligence and care in the management of all risks associated with tax matters, and ensure governance and assurance procedures are appropriate.
Foster constructive, professional and transparent relationships with tax authorities, based on the concepts of integrity, collaboration and mutual trust.
The Group will use incentives and reliefs to minimise the tax costs of conducting its business activities, but will not use them for purposes which are knowingly contradictory to the intent of the legislation.
4.1 Compliance with laws, rules and regulations. Carpetright is committed to observing all applicable laws, rules, regulations, and reporting and disclosure requirements, wherever there is a requirement to do so, as a result of our business presence and transactions.
A dedicated tax team (Group Tax) will collaborate with the Group's businesses to provide advice, monitoring, training, review and guidance necessary to ensure compliance, obtaining external advice where necessary.
(..)
4.2 Consistency with Group strategy Ensure the tax strategy is at all times consistent with the Group's overall strategy, its approach to risk and the Group's core values of being honest and straightforward.
Key business decisions should be made cognisant of the tax consequences and with the aim of optimising the after-tax returns for the Group's shareholders.
Group Tax will partner with the business segments to ensure there is consistency.
4.3 Governance, Assurance and Tax Risk Management Responsibility and accountability for the Group's tax affairs is clearly defined in accordance with a Tax Responsibility Matrix, and decisions will be taken at an appropriate level, determined by formal Group Delegation of Authority limits.
Diligent professional care and judgment will be employed to assess tax risks in order to arrive at well-reasoned conclusions on how the risks should be managed. Where there is uncertainty as to the application or interpretation of tax law, appropriate written advice evidencing the facts, risks and conclusions may be taken from third party advisers to support the decision-making process.
In reviewing the risks of a tax action or decision, always bearing in mind the requirements of the Group Tax Policy, the following would be considered:
the legal and fiduciary duties of directors and employees;
the requirements of Carpetright plc's core values and policies;
the maintenance of corporate reputation;
the tax benefits and impact on the Group's reported result comparative to the potential financial costs involved, including the risk of penalties and interest; and
the wider consequences of potential disagreement with tax authorities, and any possible impact on relationships with them.
Group Tax will employ various risk management processes and systems to provide assurance that the requirements of the Group Tax Policy are being met. This will include compliance and risk monitoring systems and internal audit reviews of tax compliance activity across the Group.
4.4 Relationships with tax authorities The Group is committed to the principles of openness and transparency in its approach to dealing with tax authorities in whichever countries we operate.
All dealings with the tax authorities and other relevant bodies will be conducted in a collaborative, courteous and timely manner.
The aim would be to strive for early agreement on disputed matters, and to achieve certainty wherever possible.
4.5 Incentives, reliefs and tax planning The Group believes that it should pay the amounts of tax legally due in any territory. There will, however, be circumstances where this amount may not be clearly defined, or where alternative approaches may result in differing tax outcomes.
The Group will use its best judgment in determining the appropriate course of action, using available reliefs and incentives where possible but does not undertake aggressive tax planning for the purpose of tax avoidance. (:)
On 9 December 2015, HMRC in the UK published a draft Framework for Cooperative Compliance in the UK, following a consultation process titled "Improving Large Business Tax Compliance". In particular, this addresses the relationship between large businesses and HMRC in the UK, and promotes best practice in a business' governance over its UK tax affairs. This Group Tax Strategy aligns with the published draft and Carpetright plc commits to:
adopt open and collaborative professional relationships at all times with HMRC;
engage in full, open and early dialogue with HMRC to discuss tax planning, strategy, risks and significant transactions;
make fair, accurate and timely disclosure in correspondence and returns, and respond to queries and information requests in a timely fashion;
seek to resolve issues with HMRC in real time and before returns are filed if possible, and where disagreements arise, work with HMRC to resolve issues by agreement (where possible);
be open and transparent about decision-making, governance and tax planning;
reasonably believe that transactions are structured to give a tax result which is not inconsistent with the economic consequences (unless specific legislation anticipates that result), nor contrary to the intentions of Parliament; and
interpret the relevant laws in a reasonable way, and ensure transactions are structured consistently with a co-operative relationship.
(..)

Table A10: Tax Strategy Report - Croda

Croda International Plc

Tax Strategy

Introduction
(..) The Group Tax Department communicates across all of our businesses to ensure that: 1. The tax strategy is adopted and followed consistently across the Group, with clear lines of responsibility and accountability
2. There is alignment of the strategy with the Group's overall approach to corporate governance and risk management, and
3. The Group pays the right amount of tax required of it under the laws and regulations of the countries in which it operates.
Group Tax Policy
The Group is committed to conduct its tax affairs consistent with the following objectives, to: 1. Comply with all relevant laws, rules, regulations, and reporting and disclosure requirements, wherever we operate
2. Ensure the tax strategy is at all times consistent with the Group's overall strategy, its approach to risk, and the Group's values
3. Apply professional diligence and care in the management of all risks associated with tax matters, and ensure governance and assurance procedures are appropriate
4. Foster constructive, professional and transparent relationships with tax authorities, based on the concepts of integrity, collaboration and mutual trust
5. Use incentives and reliefs to minimise the tax costs of conducting its business activities, but not to use them for purposes which are knowingly contradictory to the intent of the legislation.
Group Tax Code of Conduct
(..) The Group's Tax Code of Conduct is set out in detail below. 1. Compliance with laws, rules and regulations. The Group is committed to observing all applicable laws, rules, regulations, and reporting and disclosure requirements, wherever there is a requirement to do so as a result of our business presence and transactions. Regional and local finance teams, supported by Group Finance, will collaborate with the Group's businesses to provide advice and guidance necessary to ensure compliance, obtaining external advice where necessary. 2. Consistency with Group strategy Tax decisions will be made at all times in a manner which are consistent with and complement the Group's overall strategy. Key business decisions should be made having in mind the tax consequences thereof. 3. Governance, Assurance and Tax Risk Management Responsibility and accountability for the Group's tax affairs is clearly defined, and decisions will be taken at an appropriate level, determined by the Group Delegation of Authority. Diligent professional care and judgement will be employed to assess tax risks in order to arrive at well reasoned conclusions on how the risks should be managed. Where there is uncertainty as to the application or interpretation of tax law, appropriate written advice evidencing the facts, risks and conclusions may be taken from third party advisers to support the decision-making process. In reviewing the risks of a tax action or decision, always bearing in mind the requirements of the Group Tax Policy, the following would be considered: · the legal and fiduciary duties of directors and employees
(..)
· the tax benefits and impact on the Group's reported result relative to the potential financial costs involved, including the risk of penalties and interest
· the wider consequences of potential disagreement with tax authorities, and any possible impact on relationships with them. Group Tax will employ various risk management processes and systems to provide assurance that the requirements of the Group Tax Policy are being met. This will include compliance and risk monitoring systems and internal audit reviews of tax compliance activity across the Group. 4. Relationships with tax authorities The Group is committed to the principles of openness and transparency in its approach to dealing with tax authorities wherever we operate. All dealings with the tax authorities and other relevant bodies will be conducted in a collaborative, courteous and timely manner. We strive for early agreement on disputed matters, and to achieve certainty wherever possible, including the obtaining of pre-transaction clearances where appropriate. 5. Incentives and reliefs The Group believes that it should pay the amounts of tax legally due in any territory. There will, however, be circumstances where this amount may not be clearly defined, or where alternative approaches may result in differing tax outcomes. The Group will use its best judgement in determining the appropriate course of action, using available reliefs and incentives where possible. 6. UK context On 9 December 2015 HMRC in the UK published a draft Framework for Cooperative Compliance in the UK, following a consultation process, titled "Improving Large Business Tax Compliance". In particular, this addresses the relationship between large businesses and HMRC in the UK, and promotes best practice in a business' governance over its UK tax affairs. This Group Tax Strategy aligns with the published draft. In particular, the Group commits to:
· adopt open and collaborative professional relationships at all times with HMRC;
· engage in full, open and early dialogue with HMRC to discuss tax planning, strategy, risks and significant transactions; make fair, accurate and timely disclosure in correspondence and returns, and respond to queries and information requests in a timely fashion; · seek to resolve issues with HMRC in real time and before returns are filed if possible, and where disagreements arise, work with HMRC to resolve issues by agreement (where possible); · be open and transparent about decision-making, governance and tax planning; · reasonably believe that transactions are structured to give a tax result which is not inconsistent with the economic consequences (unless specific legislation anticipates that result), nor contrary to the intentions of Parliament; and · interpret the relevant laws in a reasonable way, and ensure transactions are structured consistently with a co-operative relationship.
(..)

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