Oxford University Centre for Business Taxation

Public pressure and corporate tax behaviour

September 2014

WP 14/16

Scott D Dyreng
Fuqua School of Business
Duke University

Jeffrey L Hoopes
Fisher School of Business
Ohio State University

Jaron H Wilde
Tippie College of Business
University of Iowa

Working paper series | 2014

SAID BUSINESS SCHOOL

UNIVERSITY OF OXFORD

Public Pressure and Corporate Tax Behavior

Scott D. Dyreng
Fuqua School of Business
Duke University

Jeffrey L. Hoopes
Fisher College of Business
Ohio State University

Jaron H. Wilde
Tippie College of Business
University of Iowa

July 29, 2014

Abstract: We examine whether public pressure related to compliance with subsidiary disclosure rules influences corporate tax behavior. ActionAid International, a non-profit activist group, levied public pressure on non-compliant U.K. firms in the FTSE 100 to comply with a rule requiring U.K. firms to disclose the location of all of their subsidiaries. We use this natural experiment to examine whether the public pressure led scrutinized firms to decrease tax avoidance and reduce the use of subsidiaries in tax haven countries relative to other firms in the FTSE 100 not affected by the public pressure. The evidence suggests that the public scrutiny sufficiently changed the costs and benefits of tax avoidance such that tax expense increased for scrutinized firms. The results suggest that public pressure from outside activist groups can exert a significant influence on the behavior of large publicly-traded firms. Our findings extend prior research that has had little success documenting an empirical relation between public scrutiny of tax avoidance and firm behavior.

JEL Codes: H25, H26, H20, G39

We thank Martin Hearson and Chris Jordan of ActionAid International for extensive help understanding ActionAid's investigation of the FTSE 100 firms, and for providing us with data used in our paper. We thank PwC, U.K. for helping us with technical details of the U.K. tax system. We thank Travis Chow (discussant), Dane Christensen, Cristi Gleason, Michelle Hanlon, Aaron Nelson, Ken Merkley, Tom Omer, Jeff Pittman, Steven Savoy, Jake Thornock, Connie Weaver and Ryan Wilson for comments on a previous draft of this paper. We also thank workshop participants at the University of Iowa, the 2014 Midwest Accounting Research Conference at Ohio State University, the University of Michigan 2014 MTAXI Conference, and the University of Oxford 2014 Summer Tax Symposium. This paper previously circulated under the title, "Real Costs of Subsidiary Disclosure: Evidence from Corporate Tax Behavior."

1. Introduction

Research examining the determinants and consequences of tax avoidance in publicly-traded firms has grown dramatically in the past decade [Hanlon and Heitzman 2010]. Despite the substantial research on tax avoidance, little is known about how firms respond to public scrutiny of their corporate tax avoidance behavior. Decision makers within the firm potentially view public scrutiny of tax avoidance activities negatively because of fears that the public pressure could result in backlash against the firm or its products from investors, regulators, and customers [Ernst & Young 2014; Graham et al. 2013]. On the other hand, investors potentially view public scrutiny positively as it could signal that fewer of the firm's resources will be lost to the government because the firm has strategically arranged its affairs to reduce tax payments. Moreover, if the firm is compliant with tax rules and regulations, the risks associated with tax avoidance could be small [Dyreng et al. 2014]. In this study, we use a natural experiment to investigate whether increased public scrutiny of the location of firm subsidiaries leads to changes in firms' corporate tax avoidance activities.

As with other financial disclosures [Lisowsky et al. 2013], disclosure about the location and identity of specific subsidiaries can reveal information about corporate tax behavior given the significant operating implications and tax consequences associated with the jurisdictions in which firms locate their operations [Creal et al. 2014; Dyreng and Lindsey 2009; Lewellen and Robinson 2013; Robinson and Stocken 2013]. In particular, subsidiary disclosure is important because it provides external parties with information about firms' use of tax havens and geographic exposure.

In contrast to U.S. regulations that only require disclosure of significant subsidiaries, the U.K.'s Companies Act of 2006 ("Companies Act") requires firms to disclose the name and

location of *all* subsidiaries, regardless of size or materiality. Although the U.K. law went into effect in 2006, in 2010, ActionAid International, a global non-profit dedicated to ending poverty worldwide, discovered that approximately half of the firms in the FTSE 100 were not disclosing the name and location of all subsidiaries.[1] ActionAid's finding was *prima facie* evidence that the Companies House was not enforcing the subsidiaries disclosure requirement. More importantly, the fact that some firms chose not to comply with the law suggests that the cost of disclosing detailed information on subsidiaries was greater than the benefit of a more complete information environment for the non-compliant firms.[2]

The ActionAid discovery came about as part of an attempt to publicly shame FTSE 100 firms for having subsidiaries located in tax haven countries, hoping to increase their willingness to pay taxes.[3] To secure data on FTSE 100 firms' tax haven use, ActionAid took advantage of the requirement for public firms to disclose the name and location of each of their subsidiaries in two ways. First, ActionAid contacted the Companies House and asked them to enforce the subsidiary disclosure regulation for noncompliant firms (see the letter in Appendix A). Second, ActionAid directly pressured individual firms to comply. This pressure involved threatening the possibility of negative publicity for non-compliance with the disclosure rules and reminding firms of ActionAid's previous success in garnering negative media attention aimed at specific

[1] The FTSE are the 100 largest market cap firms trading on the London Stock Exchange. These 100 firms represent over 75 percent of total market cap traded on the London Stock Exchange.

[2] While the subsidiary disclosure portion of the Company Act of 2006 was unenforced, the Companies Act of 2006 did provide for explicit monetary fines for non-compliance. However, these fines, set at a maximum of £1,000 for initial noncompliance (for the company, and each officer in default), would have been inconsequential for the FTSE 100 firms we examine (Companies Act of 2006, Section 410 (4) and 410 (5)).

[3] In this shaming, ActionAid did not attempt to differentiate between subsidiaries located in nations for non-tax reasons and those used for tax avoidance purposes. For example, it is plausible a U.K. firm could have a subsidiary in Ireland, a country labeled as a tax haven, for a variety of non-tax reasons ranging from supply chain efficiencies to lower operating costs.

firms.[4] The increased pressure was sufficient to bring nearly all FTSE 100 firms into compliance with the disclosure rule within two years of the report.

The fact that a large proportion of FTSE 100 firms initially failed to comply with the subsidiary disclosure rule suggests that these firms likely perceived subsidiary disclosure as costly. Recent survey evidence suggests that tax related disclosure imposes significant costs on corporations because publicity and reputation concerns can alter interactions with tax authorities, invite customer retaliation and organized boycotts, affect relationships with government clients, and require firms to reassure key shareholders [Ernst & Young 2014].[5] The survey reports that 89 percent of the largest respondent firms indicate that they are somewhat or significantly concerned about media coverage of firms' tax activities. Negative publicity spreads rapidly, and the reputational harm such scrutiny can inflict suggests that public pressure to disclose information related to a firm's tax function can be costly. For example, as a recent PwC report illustrates, "We're living in a world of 24-hour news and Twitter, a world where information is amplified and distributed in seconds and…where complex issues are brutally summarized. Great damage can be done before a company has a chance to explain their position. Public opinion, even if it's based on inaccurate information, is powerful [PWC 2012]."

In this study, we use the public pressure instigated by the ActionAid investigations as a natural experiment. We examine whether the public pressure to comply with the subsidiary

[4] In email correspondence with the authors ActionAid explained that they used these tactics. For one example, see http://www.theguardian.com/business/2010/nov/29/sabmiller-india-africa-actionaid-report. For more recent examples of ActionAid's work in this area, see http://www.actionaidusa.org/eu/2013/12/barclays-must-stop-promoting-use-tax-havens-africa-actionaid-report, noting Barclay's use of tax havens in Africa, and how it deprives African school children of tax money. This particular attack on Barclays was part of a larger campaign, #taxpaysfor, by ActionAid, in which people posted on Twitter what vital services taxes paid for, and how tax haven use would deprive the government of funds to be put to those purposes. Over 500 tweets reference #taxpaysfor (see https://twitter.com/search?f=realtime&q=%23taxpaysfor&src=typd).

[5] ActionAid's 2011 report titled "Addicted to Tax Havens" garnered significant media coverage, resulting in members of the U.K. Parliament sponsoring and signing two early day motions to press U.K. government officials to confront tax haven use, as well as resulting in abnormal trading market returns for firms targeted in the report [Choy et al. 2014].

disclosures rules made tax avoidance more costly by exposing to the public a channel through which tax avoidance takes place, namely the use of subsidiaries located in foreign countries commonly considered tax havens. That is, we ask whether the public pressure to disclose the location of all subsidiaries sufficiently changed the net costs and benefits of tax avoidance and using tax haven operations such that it altered firms' tax avoidance behavior.

Using a difference in differences research design, we find that FTSE 100 firms that ActionAid specified in the report as not compliant with subsidiary disclosure rules (noncompliant firms) report higher effective tax rates following the public scrutiny, indicating a decrease in tax avoidance relative to FTSE 100 firms that were not affected by the scrutiny (compliant firms). Specifically, our estimates suggest a 3.7 percentage point increase in the effective tax rates (ETRs) of noncompliant firms relative to the effective tax rates of compliant firms in the years following the initial public pressure to comply.

We verify this finding in a number of ways. First, we conduct a placebo test in which we change the time period of the ActionAid scrutiny to one of the two years before it occurred. In this placebo test, we find no evidence of significantly higher ETRs in the pre-scrutiny period. Second, we find that noncompliant firms decreased the proportion of their subsidiaries located in tax havens relative to compliant firms, consistent with the increase in ETRs being driven by noncompliant firms curtailing tax avoidance strategies that involve tax haven subsidiaries.

Third, we provide evidence that the decrease in tax avoidance for noncompliant firms in the post-scrutiny period is stronger in the subsample of firms with a decrease in the percentage of total subsidiaries located in tax haven countries. In addition, we find the decrease in tax avoidance for noncompliant firms in the post-scrutiny period is most pronounced in the subsample of firms that experience a decrease in the percentage of total subsidiaries located in

small ("dot") tax haven countries—countries where subsidiaries are unlikely to have operational substance [Desai et al. 2006].[6] These results suggest that noncompliant firms responded to negative public scrutiny by decreasing subsidiary use in locations where they would incur high disclosure costs (e.g., political and reputation costs arising from increased scrutiny from taking authorities, customer and political outcry, or market penalties) and where it would be relatively easy to close subsidiaries without generating significant operating costs.

Finally, we conduct a test to validate our assumption that non-disclosure of subsidiary information was a firm choice motivated by the relative costliness of these disclosures. We examine market returns around a well-publicized ActionAid report that highlights tax haven use by all FTSE 100 firms [Choy et al. 2014]. We find that the short-window market returns for firms that initially did not disclose their subsidiary list are significantly more negative than returns for firms that initially disclosed, demonstrating one cost (market penalties) of public scrutiny related to noncompliant firms' use of subsidiaries in tax haven nations. In combination, the results are consistent with noncompliant firms failing to initially disclose the full list of their subsidiaries because they perceived costs to the disclosure and that such costs are associated with their corporate tax behavior.

This study contributes to the literature in a several ways. First, our evidence suggests that activist groups can have a meaningful influence on firm outcomes, improving our understanding of the role of non-traditional monitors in overseeing firms' behavior [Dyck et al. 2010; Miller 2006]. This evidence is consistent with other research indicating that firms respond to pressure

[6] Desai et al.(2006) delineate between tax haven countries associated with tax benefits, but few operational benefits (i.e., "dot" havens) and tax haven countries that provide some tax benefits, but also have a sufficiently large workforce to potentially provide operational benefits (Big 7 tax havens). Typically, tax haven subsidiaries located in "dot" havens suggest a tax-focused motive for the location decision.

from external stakeholders [Smith 1995], internal employees [Wilde 2013], and non-binding shareholder votes [Ertimur et al. 2012].

Second, our study provides evidence that firms behave as though public scrutiny of tax avoidance activities is costly, complementing survey evidence in Graham et al. [2013], who find that reputational concerns are a significant deterrent to corporate tax avoidance. The results also contribute to research examining activities that firms undertake to avoid tax-related scrutiny [Hasegawa et al. 2013]. Our findings are significant in this respect because although researchers often conjecture that reputational concerns influence corporate tax decisions [Gallemore et al. 2013; Graham et al. 2013], archival evidence supporting this claim has been difficult to document [Austin and Wilson 2013; Gallemore et al. 2013; Hanlon and Slemrod 2009]. We posit that reputational concerns of tax avoidance are likely to be concentrated in a specific kind of firm and we identify such firms by exploiting the public pressure setting in which firms reveal their sensitivity to public scrutiny of disclosure that reveals tax-related information (e.g., tax haven usage). Specifically, this study focuses on firms that provide an *ex ante* signal of the costliness of negative publicity by not initially disclosing the information that would eventually warrant negative publicity. By focusing on firms for which reputational concerns are likely greater, we provide archival evidence consistent with the notion that certain firms perceive reputational costs to negative publicity about tax avoidance.

Third, this study contributes to research examining the role of enforcement in other financial settings [Bushman et al. 2005; Daske et al. 2008] by highlighting how non-regulator external party scrutiny can facilitate and encourage enforcement efforts that have significant economic implications for firms. Our results suggest that firms do not always comply with

written laws, but that public pressure to comply with existing laws can change both corporate behavior and government enforcement of existing laws.

Fourth, our study is informative to policy debates regarding the granularity of firm disclosures related to geographic operations and the taxes paid to the governments in which these operations are located (e.g., the OECD's initiative on country by country reporting).[7] With many countries experiencing growing revenue shortfalls, countries are interested in reducing corporate tax avoidance in order to increase government revenue. Several countries, including the U.S., have increased tax-related disclosure requirements for both public and private information (e.g., accounting for uncertain tax positions, Schedule UTP, Schedule M-3, additional 1099 informational reporting, etc.). Firms' expanding geographic footprints coupled with increasing globalization of capital markets, trade, and reporting standards has given rise to calls for increased geographic disclosures that allow investors to better understand firm activities [Jaworski 2012]. Our paper speaks to the potential effects of increased geographic disclosure and should be useful as policymakers consider the implications of expanding disclosure requirements for multinational corporations. The results also complement and extend the findings in Hope et al. [2013], who find changes in ETRs surrounding voluntary changes in geographic segment reporting in the US.

Finally, our study provides evidence of real consequences to disclosure of subsidiary locations, particularly as they relate to tax avoidance. While much of the work in the tax literature examines economic and managerial determinants of tax avoidance [Badertscher et al. 2013; Brown and Drake 2013; Dyreng et al. 2010; Holms 2011; McGuire et al. 2014; Rego and Wilson 2012], our study provides evidence that firms incur real tax costs following public

[7] To view the OECD's most recent report, see http://www.oecd.org/ctp/transfer-pricing/discussion-draft-transfer-pricing-documentation.pdf.

pressure to disclose the location of all subsidiaries. Moreover, the results suggest that firms potentially incur real non-tax costs associated with altering their corporate organizational structure to avoid disclosing too many subsidiaries located in tax haven countries.

2. Background and Hypothesis

In 2006, the U.K. Parliament enacted changes in publicly-traded firms' subsidiary disclosure requirements. Sections 409 and 410 of the Companies Act mandate that all U.K. companies disclose a complete list of all subsidiaries either in their annual report or annual return.[8] In 2010, ActionAid International, a non-profit dedicated to ending poverty worldwide, examined the annual returns and annual reports of all firms included on the FTSE 100 to understand their tax haven use. Its aim was to obtain data that it could use to publicly shame firms as part of its "Tax Justice" campaign.

As part of their ongoing efforts to end poverty worldwide, ActionAid had individuals on the ground in jurisdictions where it knew FTSE 100 firms had operations that were not disclosed (e.g., SABMiller). After obtaining the annual reports and annual returns which are both publicly available, ActionAid noted that nearly half of the FTSE 100 firms were not compliant. For example, many of the noncompliant firms indicated in their annual report that they would provide a complete list of subsidiaries as an addendum to their annual return. However, upon further investigation, ActionAid found that many of the firms provided no such list. ActionAid intended to shame firms' use of tax havens, and in order to do so effectively, it needed firms to comply with the requirement to provide their full list of subsidiaries. Accordingly, after identifying noncompliant firms, ActionAid took steps to motivate firms to provide the full list of

[8] The annual report refers to the financial statement report and other information similar to the annual reports of publicly-traded U.S. firms. U.K. law also requires firms to file an "annual return," which refers to a specific form that lists information about a firm's directors, address, shares and shareholders. It is not the firm's tax return. The annual return form can be accessed, for a fee, at https://www.gov.uk/file-an-annual-return-with-companies-house.

subsidiaries by (1) providing Companies House with a list of noncompliant FTSE 100 firms and requesting that Companies House compel such firms to provide the full list; and (2) threatening firms with negative publicity related to their failure to comply with disclosure law.

ActionAid's revelation of widespread noncompliance with the disclosure mandate by some of the largest firms in the U.K. led to an investigation by the U.K. Business Secretary [Holms 2011] and subsequently resulted in nearly 100 percent compliance with the subsidiary disclosure requirements. Moreover, Choy et al. [2014] note that ActionAid's 2011 report, titled "Addicted to Tax Havens," attracted significant media coverage and led to two early day motions in the U.K. Parliament to press HMRC, the U.K.'s tax authority, to confront U.K. multinationals on their haven use.

The ActionAid investigation scrutinized the tax planning strategies of all FTSE 100 firms in order to identify their use of tax havens. In seeking to shame firms' use of tax havens, ActionAid did not differentiate between firms that had initially complied and those that did not comply with the disclosure requirement. Firms' failure to initially comply with the subsidiary disclosure requirement followed by an exogenous shock in ActionAid pressure to do so provides a unique natural experiment that allows us to examine the effect of public scrutiny on corporate tax behavior. Firms that initially complied with the disclosure requirement provided an *ex ante* signal that they perceived a relatively low cost to the public knowing about their tax haven usage by disclosing that usage. However, firms that initially did not disclose their full subsidiary list (i.e., noncompliant firms) provided an *ex ante* signal that it was costly for them to provide information about the location of their subsidiaries. To the extent that such costs are associated with tax behavior, the exogenous and relatively sudden public pressure to disclose likely leads to changes in these firms' tax planning activities.

ActionAid's efforts could affect the tax avoidance behavior of scrutinized firms through two related forces. First, ActionAid intended to increase public awareness of firms' tax avoidance activities. Public scrutiny of tax avoidance activities can increase the costs of tax avoidance in several ways including shareholder penalties, tax enforcement actions, reputational damage, customer boycotts, and political backlash [Choy et al. 2014; Graham et al. 2013; Hanlon and Slemrod 2009].

Two recent events in the U.K. illustrate some of these costs. First, recent public scrutiny of Starbucks' tax avoidance activities provides anecdotal support for the notion that reputational concerns matter. In 2012, numerous articles in the financial press revealed that Starbucks paid no corporate income tax to the U.K. despite strong growth in its U.K. sales. The negative publicity resulted in verbal attacks from members of Parliament, customer boycotts of Starbucks stores, significant drops in the firm's reputation ratings, and numerous store closures [Christensen et al. 2014]. The reputational damage prompted the firm to voluntarily pay future taxes and relocate physical offices to the U.K., even though the company had purportedly been in compliance with U.K. tax law.[9] A second example involves Ethical Consumer magazine's proposed boycott of Amazon, which was supported by eight members of the U.K. parliament. Ethical Consumer demanded a boycott based on the fact that Amazon paid only 0.1 percent of their U.K. sales in U.K. taxes, noting that "if enough people boycott Amazon then we will damage their business. Amazon's market share and reputation matters."[10]

These anecdotes suggest that public scrutiny can affect firm behavior. Given that consumer boycotts often have negative implications for firm value [Ernst & Young 2014; Pruitt and Friedman 1986], managers may be sensitive to customers who prefer to purchase goods and

[9] See, for example, http://www.telegraph.co.uk/finance/newsbysector/retailandconsumer/10769497/Starbucks-to-pay-corporation-tax-on-profits-in-the-UK-after-HQ-move.html.
[10] See http://www.ethicalconsumer.org/boycotts/boycottamazon.aspx.

services from providers that they perceive as good corporate citizens paying their "fair share" of taxes [Austin and Wilson 2013]. However, recent work provides inconclusive evidence on the association between reputational concerns and corporate tax behavior. Prior research in other settings suggests that executives are concerned about protecting their reputation and finds that executives seek to influence media coverage [Westphal and Deephouse 2010], and recent survey evidence suggests that tax executives at multinational firms are concerned about the reputational costs associated with corporate tax planning decisions [Graham et al. 2013]. Yet, to date there is little archival evidence to support the claim that reputational concerns influence tax activities [Austin and Wilson 2013; Gallemore et al. 2013].

Stakeholders' reactions to the complete subsidiary disclosures provides a second channel through which ActionAids' actions could affect firms' corporate tax behavior. How publicly disclosed information related to the income tax function affects different firm stakeholders (e.g., investors, tax authorities, customers, and policymakers) is not well understood, partly because the information could have offsetting effects. For example, tax related disclosures could provide information to shareholders regarding the effectiveness of the firm's tax function in reducing tax payments to tax authorities. Moreover, this information could reduce information asymmetry between management and shareholders, thereby reducing the cost of capital or increasing liquidity [Botosan 1997; Easley and O'hara 2004]. Another possibility is that shareholders only want firms to avoid taxes if the tax avoidance is not made public. If shareholders expect customer backlash after tax avoidance activities are made public, then shareholders are likely sensitive to public pressure on firms' tax activities [Hanlon and Slemrod 2009]. Indeed, Robinson and Schmidt [2013] show that investors reward firms with high costs of disclosure for having low disclosure quality. Further, in a recent survey conducted by Ernst and Young about

reputational concerns and tax avoidance, one survey participant noted, "There is a far higher threshold for public approval of a tax position than there is when you are dealing with a tax auditor" [Ernst & Young 2014]. Thus, the cost of tax avoidance increases as more information is disclosed, potentially leading to shareholders demanding that firms not provide information related to tax avoidance.

Tax related disclosures can also directly influence tax enforcement by tax authorities. While it is unclear whether shareholders desire public disclosure of the firm's tax avoidance activities, tax authorities may demand the information. Research suggests that tax related disclosures can prove useful to the taxing authority in determining where to allocate scarce enforcement resources [Mills 1998]. Thus, if the taxing authority can use the information to more efficiently audit firms' tax positions, disclosure of information related to the tax function may be costly to the firm. Depending on the reporting requirements of a taxing authority, such information disclosed for financial reporting purposes can provide new information for tax authorities. For example, recent evidence suggests that the IRS finds FIN 48 disclosures in the U.S. useful for tax enforcement purposes [Towery 2012]. The U.K. does not have a tax reporting requirement for firms to disclose their subsidiaries or investments in other firms; however, HMRC may compel firms to provide such information if it is deemed necessary in the case of a tax investigation. Thus, the mandatory subsidiary disclosures could provide new information to tax authorities in the U.K. and other jurisdictions. In fact, some evidence suggests that such disclosures may have been useful to non-U.K. tax authorities investigating the tax behavior of U.K.-based firms [Maylie 2011]. In anticipating the use of that information, it is possible that the noncompliant firms responded by not fully complying with the disclosure requirement.[11]

[11] It is very unlikely that the increase in tax expense we observe is the actual result of tax authority action against FTSE firms. Tax enforcement actions are a lengthy process for large, complex, multinational corporations such as

Many countries have recently proposed or adopted financial statement disclosures that are directly or indirectly related to the tax function. For example, Australia recently enacted a bill that mandates public disclosure of certain tax return information for firms reporting total income in excess of AUS $100 million [Dummond, 2013]. In late 2006, the U.S. expanded its required tax disclosures through the promulgation of FIN 48, giving investors and the IRS more information about a firms' uncertain tax positions. In addition, the IRS has demanded expanded disclosure and third party information reporting for both large and small firms through Schedule UTP [Towery 2012] and additional 1099 reporting. Finally, as recently as January 30, 2014, the OECD released a discussion draft to tax authorities discussing the possibility of country-by-country reporting standards that would help countries better eliminate aggressive transfer pricing schemes used by international firms [OECD 2014]. While this OECD discussion is in the early stages, it highlights a belief that increased disclosure may have real effects on both firms' tax avoidance behavior and tax authorities' ability to enforce the tax law.

Whether these disclosure requirements will have an effect on firms' tax avoidance behavior is uncertain, and there is little academic evidence on the issue. One possible exception is Hope et al. [2013], who find that firms that discontinued disclosure of geographic earnings after the implementation of SFAS 131 had lower ETRs than other firms. Although SFAS 131 still requires sales and assets reporting by geographic segment, it relaxed the requirement for firms to report earnings by geographic segments [Collins and Shackelford 1997; Dyreng and Markle 2013; Klassen and Laplante 2012]. Nevertheless, exactly how the Hope et al. [2013] result relates to public scrutiny of subsidiary disclosure is unclear for at least two reasons. First, geographic segment information rarely corresponds to legal jurisdictions that are meaningful for tax

members of the FTSE 100. As a result, it is unlikely that any immediate response we observe would be the direct result of tax authority sanctions, although it could reflect the firms' response to anticipated future investigations.

purposes. For example, Akamah et al. [2014] note that most firms' disclosures offer "very limited (if any) information useful in understanding specific geographic operations and the use of structured transactions in foreign countries to avoid taxes."[12] Second, the disclosure of earnings by geographic segment and the definition of the scope of the geographic segment are firm choices and it is unclear how public pressure related to mandatory subsidiary disclosures is associated with firms' corporate tax avoidance behavior.

Despite the fact that ActionAid's objective was to examine the tax avoidance activities of all members of the FTSE 100, we assume that not all firms in the FTSE 100 would be equally affected by the scrutiny. Prior research has hypothesized that firms in the retail industry, or other industries with more direct exposure to retail customers, are more sensitive to public scrutiny of tax avoidance activities [Hanlon and Slemrod 2009]. Those studies usually use industry membership or proxies for exposure to the public (e.g., advertising expense) as a conditioning variable when examining the hypothesis that public pressure affects tax avoidance. However, those proxies are likely to have substantial measurement error, perhaps explaining the weak results associated with tests of the hypothesis. In contrast, in our setting, about half of the FTSE 100 revealed a preference to not provide information to the public related to their tax function through their non-compliance with the subsidiary disclosure requirements of the Companies Act. The noncompliant firms failed to disclose the full list of their subsidiaries presumably because the costs of disclosure exceeded the benefits. However, the public scrutiny levied by ActionAid, and the subsequently increased enforcement activities of the Companies House forced those firms into disclosing all subsidiaries while simultaneously shining the public spotlight on their tax planning activities.

[12] Indeed, only 0.87 percent of all segments listed in the Compustat Segment data can be associated with a tax haven country, and only 0.45 percent can be associated with "dot" havens.

In sum, ActionAid's investigation and subsequent public campaign likely affect the corporate tax avoidance behavior of firms in the FTSE 100 in ways that correlate with the costs of such disclosure (i.e., especially for those firms that were not complying with the Companies Act before the ActionAid investigation in 2010). This public scrutiny could directly affect corporate tax avoidance behavior by increasing public awareness of tax avoidance activities or indirectly by requiring disclosure of more information related to the tax function, which could in turn increase the costs of tax avoidance. Accordingly, we compare the tax activities of firms that were forced to comply with the subsidiary disclosure in 2010 with the tax avoidance activities of firms that were already in compliance with the requirement before the ActionAid investigation.

3. Research Design, Sample Selection, and Data

3.1 Research Design: Tax Avoidance Tests

The exogenous shock in public pressure related to subsidiary disclosure described in the previous section provides a powerful setting to investigate our research question. Approximately half of FTSE 100 firms did not comply with the required subsidiary disclosure laws prior to the third party scrutiny that began in 2010. Using compliant and noncompliant firms and the pre- and post- scrutiny treatment, we employ a difference-in-differences estimation to identify the effect of public scrutiny on firms' tax planning activities. The difference-in-differences research design allows us to control for time-invariant differences between treatment firms (noncompliant firms) and control firms (compliant firms) as well as for economic trends common to both treatment and control firms. We estimate the following difference-in-differences model:

$$ETR = \beta_{FE} + \beta_1 Incomplete\ Subs\ List + \beta_2 Post\ Pressure + \beta_3 Incomplete\ Subs\ List \times Post\ Pressure + \beta_4 Size + \beta_5 Leverage + \beta_6 Intangibles + \beta_7 Inventory\ Intensity + \beta_8 RD\ Intensity + \beta_9 Capital\ Intensity + \beta_{10} Capex + \beta_{11} Return\ on\ Assets + \beta_{12} \%\ Havens + \varepsilon. \quad \textbf{(1)}$$

We use *ETR*, the book effective tax rate of the firm, as the dependent variable. This commonly used proxy of tax avoidance is widely available for public firms in the U.K., and, is a well-accepted summary measure of firms' tax behavior (e.g., Hanlon and Heitzman 2010).[13] Because U.K. corporate statutory tax rates change throughout our sample period, we adjust our measure of ETR by subtracting the top corporate U.K. statutory rate from the firm's ETR in each year.[14] *Incomplete Subs List* is an indicator variable equal to one for FTSE 100 firms that changed their disclosure as a result of the ActionAid request to the Companies House. β_1 reflects the average pre-pressure difference in *ETR* between noncompliant and compliant firms. *Post Pressure* is an indicator variable equal to one for firm-year observations ending during 2010 or later (i.e., the period of the initial increase in public pressure), and equal to zero otherwise. β_2 represents compliant firms' average difference in *ETR* between the pre- and post-pressure periods. The variable of interest in the model is *Incomplete Subs List* × *Post Pressure*, and β_3 reflects the effect of public scrutiny of the subsidiary disclosure on the ETRs of noncompliant (i.e., treatment) FTSE 100 firms relative to control firms already compliant with subsidiary disclosure requirements. We describe all other variables below and in Table 1.

We also control for various determinants of ETRs documented in prior research to help alleviate concerns that correlated omitted variables are confounding our inferences.[15] First, as mentioned before, we accommodate statutory changes in the U.K. corporate tax rate by

[13] While widely accepted, ETR does have certain well-known limitations. For example, ETR does not capture all tax activity, such as the use of accelerated depreciation or other tax savings mechanisms designed to delay the postponement of tax, rather than completely avoid it [Neubig 2006]. That firms may try to reduce their subsidiary disclosure requirements without affecting their tax expense, and therefore earnings, is important, especially in light of evidence that firms will undergo costs to avoid depressing earnings [Erickson et al. 2004; Robinson 2010].

[14] Our results are qualitatively similar if we use the unadjusted measure of ETR (i.e., the coefficient on *Incomplete Subs List* × *Post Pressure* retains the same sign and level of significance).

[15] We acknowledge that these variables are, to some extent, firm choices, and so we are potentially confounding the interpretability of our test parameters by including endogenous right hand side variables in the regression. However, excluding these controls leaves us with identical inferences, and does not greatly affect the magnitude of our documented effects, suggesting the endogenous nature of our control variables is likely not a large problem.

subtracting from the effective tax rate the highest statutory tax rate applicable in the U.K. in each year.[16] Further, we control for firm size (*Size*) using the natural log of assets because larger firms potentially have higher political costs [Zimmerman 1983] or greater tax planning opportunities [Rego 2003]. Following prior research, we also control for other firm attributes that are potentially associated with firms' tax planning activities, including *Leverage*, *Intangibles*, *Inventory Intensity*, *R&D Intensity*, *Capital Intensity*, and *Capex* [Chen et al. 2010; Hoopes et al. 2012].[17] Table 1 provides definitions for each variable.

We also control for pre-tax profitability (*Return on Assets*) and the use of tax havens (*% Havens*) given prior work that suggests that firm performance and tax haven usage are associated with ETRs [Dyreng and Lindsey 2009; Rego 2003]. We winsorize ETR at [0,1] prior to adjusting it by the statutory tax rate, and all other continuous variables are winsorized at the 1st and 99th percentiles. We only retain firm-years with positive pre-tax income, given the confounding effects of negative denominators in ETR regression models [Dyreng et al. 2008]. In our tests, we report results with alternative specifications using industry, year, and firm fixed effects and cluster standard errors by firm [Petersen 2009].

3.2 Research Design: Changes in Subsidiaries Tests

ActionAid's investigation focused on FTSE 100 firms' subsidiary disclosures in order to publicize their use of tax havens. Given that noncompliant firms did not disclose the full list of their subsidiaries in the pre-scrutiny period, it is likely that full disclosure was costly to these firms. Accordingly, we investigate whether public pressure surrounding subsidiary disclosure

[16] Note that we cannot control for the statutory tax rate by including it as a right hand side control while simultaneously including year fixed effects.

[17] For some of the variables that we include in Model (1), we set missing values equal to zero in order to retain observations for our tests (i.e., *Intangibles*, *RD Intensity*, and *Capex*). Results are qualitatively similar (i.e., the coefficient on *Incomplete Subs List* × *Post Pressure* retains the same sign and significance) if we estimate Model (1) after separately omitting the variables for which we set missing values to zero or include separate indicator variables equal to one for observations for which we set missing values of equal to zero.

results in a change in firms' subsidiary location decisions. To investigate this possibility, we examine whether noncompliant firms reduce their use of tax haven subsidiaries relative to compliant firms in the year following the public pressure. Specifically, we estimate the following difference-in-differences model:

$$\Delta Havens = \beta_{FE} + \beta_1 \Delta Subs + \beta_2 Incomplete\ Subs\ List + \beta_3 Incomplete\ Subs\ List \times \Delta Subs + \Sigma \beta_j Controls + \varepsilon, \quad \textbf{(2)}$$

where *ΔHavens* is the change in subsidiaries located in tax haven countries, measured as the change in tax haven subsidiaries from the period immediately following ActionAid's investigation and noncompliant firms' purported subsequent disclosure compliance to the subsidiary disclosure period for the following year. *ΔSubs* is the change in total subsidiaries over the same time period.[18] The coefficient of interest, β_3, represents the extent to which the association between the change in haven subsidiaries to the change in total subsidiaries is different for firms that did not initially disclose their complete subsidiary list. We expect haven subsidiaries as a fraction of total subsidiaries to be less for *Incomplete Subs List* firms. Therefore, we expect β_3 to be negative.

3.3 Sample Selection

Our initial sample consists of all FTSE 100 firm-year observations from 1997 through 2012, which provides a sufficiently long time series to allow us to examine the effects of public scrutiny of mandatory subsidiary disclosures.[19] Because subsidiary disclosure scrutiny focused on FTSE 100 firms in 2010, we use the list of FTSE 100 firms as of 2010 to identify the relevant

[18] ActionAid undertook the effort to hand-collect the complete subsidiary lists from FTSE 100 firms' individual Annual Reports and Annual Returns for both the period immediately following ActionAid's investigation and noncompliant firms' purported subsequent disclosure compliance as well as the subsidiary disclosure period for the following year . We thank ActionAid for providing the data.

[19] We do not include the small number of firm-year observations have fiscal years ending in 2013. The results are qualitatively similar if we include these observations (i.e., the coefficient on *Incomplete Subs List* × *Post Pressure* retains the same sign and significance as reported in the primary tests). Our results are also qualitatively similar if we shorten the sample period, as we report later in the paper.

firms for the study. We obtain the list of FTSE 100 firms that were compliant (not compliant) with subsidiary disclosure requirements from ActionAid International, and we obtain financial statement data for our model variables from Compustat Global. We require firms to have data for Model (1) in the year prior to, initial year of, and the first year after subsidiary disclosure scrutiny (i.e., for years 2009, 2010, and 2011, respectively).[20] Because our sample consists of a relatively small set of firms, we take various precautions to ensure that a few influential observations are not driving our results. Specifically, in addition to winsorizing model variables at the 1st and 99th percentiles, we estimate Model (1) after removing any observation with a Cook's D outlier statistic in the top two percent of observations, leaving a final sample of 921 firm-year observations, representing 72 unique firms.[21]

4. Results

4.1 Sample Descriptive Statistics

Table 1 reports the summary statistics for the variables in Model (1). We present the statistics for the full sample and also report the statistics separately for the firms in the noncompliant and compliant subsamples. During the pre-pressure sample period, noncompliant firms have an average ETR of -0.4 percent, which is significantly lower than compliant firms' average ETR of 2.7 percent (p-value < 0.01). Recall that our ETRs are adjusted for the statutory

[20] When we relax this requirement and only require observations to have non-missing data for the model, our inferences are unchanged (i.e., the coefficient on *Incomplete Subs List* × *Post Pressure* remains positive and significant, p-value < 0.05).

[21] Given our small sample, we also take two additional measures to mitigate concerns that our results are driven by a relatively small number of influential observations. First, in untabulated tests, we re-estimate Model (1) without removing influential observations based on the Cook's D outlier statistic. Second, we re-estimate Model (1) after removing the top two percent of influential observations based on the Cook's D outlier statistic, the DFFIT outlier statistic, and/or studentized residuals. In both of these analyses, we find qualitatively similar results (i.e., the coefficient on *Incomplete Subs List* × *Post Pressure* retains the same sign and significance as reported in the primary tests). We also use two alternative regression techniques, median regression and robust regression, to further assess the sensitivity of our results to outliers. Using both approaches, we also find evidence consistent with the primary tests. These results mitigate concerns that research design choices related to influential observations drives our results.

tax rate, which changed over our sample period.[22] Lower ETRs suggest that noncompliant firms' initial reluctance to disclose their subsidiary list may indeed be related to tax avoidance behavior. Tellingly, the pattern reverses in the post-pressure period such that noncompliant firms have higher ETRs relative to compliant firms, average ETRs of -0.6 percent and -2.0 percent, respectively, although the difference is insignificant.

Table 2 presents correlation coefficients for the Model (1) variables. Consistent with the summary statistics reported in Table 1, noncompliant firms are smaller and have a lower percentage of tax havens actually reported.[23] Although the univariate tests suggest that noncompliant firms tend to be smaller statistically, all firms in our sample are part of the FTSE 100, which comprises the largest firms in the U.K. and thus, are likely to be associated with relatively higher levels of scrutiny from external parties generally.

4.2 Multivariate Results Analysis of Public Scrutiny of Subsidiary Disclosure and ETRs

In Table 3, we present the results of our difference-in-differences regression (Model 1). We estimate Model (1) using two specifications. In Column (1), we report the results of estimating Model (1) with year and industry fixed effects. In Column (2), we report the results of estimating Model (1) with year and firm fixed effects.

In Table 3 Column (1), the coefficient on *Incomplete Subs List* × *Post Pressure* is positive and significant (*p*-value < 0.01), indicating that scrutiny of noncompliant FTSE 100 firms is associated with significantly higher ETRs relative to control firms which were already compliant with subsidiary disclosure requirements. This estimate suggests that after controlling

[22] Unadjusted ETRs for noncompliant firms averaged 29.3 percent in the pre-pressure period, which is significantly lower than compliant firms' average Unadjusted ETR of 32.5 percent (p-value < 0.01).
[23] In untabulated collinearity diagnostics, we do not find evidence to suggest that Model (1) suffers from degrading collinearity problems (e.g., variance inflation factors are no larger than 2.01).

for industry and time effects, public pressure related to subsidiary disclosure is associated with significantly higher *ETR*s for noncompliant firms relative to control firms.

Table 3, Column (2), which reports the results of the most conservative model with both year and firm fixed effects, in estimates a treatment effect of 3.7 percent. We include both year and firm fixed effects in this difference-in-differences specification to verify that time-invariant firm attributes do not drive our results. Note that this precludes the inclusion of *Incomplete Subs List*, a time-invariant firm variable, and *% Haven*s, which is measured for the initial period in which both compliant and noncompliant FTSE 100 firms purportedly disclosed the full list of their subsidiaries, as compiled by ActionAid.

The results of this test suggest that the effect of the public scrutiny related to subsidiary disclosures was to reduce the corporate tax planning of noncompliant firms such that their ETRs increased by 3.7 percent. The 3.7 percent increase in ETRs is statistically significant and economically meaningful. The 34 firms subject to the scrutiny treatment in 2010 had median pre-tax book income of £618 million. Using a simple calculation, a 3.7 percent increase in ETR indicates increased tax expense of roughly £23 million (about $40 million) per firm. To put this estimate in perspective, consider the case of Starbucks previously mentioned. Starbucks, U.K., was purportedly willing to voluntarily pay £10 million in cash taxes to avoid negative publicity [Pfanner 2012]. Compared to the Starbucks case, our estimate of an average effect of £23 million in additional tax expense for noncompliant FTSE 100 firms (i.e., some of the largest firms in the U.K.), appears economically significant, but reasonable.

4.3 Parallel Trends Assumption, Placebo Effects, and By-Year Model Estimates

Difference-in-differences estimation requires that in the period prior to the treatment both treatment and control firms exhibit parallel trends in the outcome [Roberts and Whited 2012].

Although this assumption is not formally testable, we conduct falsification tests to examine whether the parallel trends assumption is reasonable. We estimate Model (1) after disaggregating the *Post Pressure* indicator into separate year indicators in order to assess whether noncompliant firms have significantly different ETRs in any of the individual years. We estimate the following difference-in-differences model using individual year indicator and interaction variables:

$$\begin{aligned} ETR \;=\; & \beta_{FE} + \beta_1 Incomplete\ Subs\ List + \beta_2 Yr2008 + \beta_3 Yr2009 + \beta_4 Yr2010 + \beta_5 Yr2011 + \\ & \beta_6 Yr2012 + \beta_7 Incomplete\ Subs\ List \times 2008 + \beta_8 Incomplete\ Subs\ List \times 2009 + \\ & \beta_9 Incomplete\ Subs\ List \times 2010 + \beta_{10} Incomplete\ Subs\ List \times 2011 + \\ & \beta_{11} Incomplete\ Subs\ List \times 2012 + \beta_j Controls + \varepsilon, \end{aligned} \quad \textbf{(3)}$$

where *ETR* and *Incomplete Subs List* are as defined above and in Table 1. We include year fixed effects for 2008-2012 and the interaction of these year fixed effects with *Incomplete Subs List* in order to examine the trend for these two sets of firms in the years just before the treatment by ActionAid. In Model (2), the interactions of *Incomplete Subs List* and each of the post-pressure years (i.e., 2010, 2011, and 2012, respectively) comprise the variables of interest. Model (2) allows us to assess whether there appears to be an inconsistent trend in *ETR*s between compliant and noncompliant firms in the period prior to the public scrutiny. To the extent that the coefficients *Incomplete Subs List* × *2008* [*2009*] are positive and significant, it suggests that an alternative factor distinct from public pressure is likely driving our results. Similar to our expectations in Model (1), we expect β_9, β_{10}, and/or β_{11} to be significantly positive to the extent that subsidiary disclosure scrutiny of noncompliant (i.e., treatment) FTSE 100 firms has a persistent effect on the ETRs of noncompliant firms relative to control firms.

Table 4 reports the results of our estimates of Model (2). We begin by examining the coefficients on *Incomplete Subs List* × *2008* and *Incomplete Subs List* × *2009*, which reflect placebo treatment year observations prior to the actual subsidiary disclosure scrutiny. The coefficients on *Incomplete Subs List* × *2008* [*2009*] are insignificant (*p*-value > 0.10), indicating

that noncompliant FTSE 100 firms did not have a significantly different trend in *ETR*s prior to the shock in public pressure surrounding subsidiary disclosure than the trend exhibited by compliant control firms. In addition, we find that the coefficients on *Incomplete Subs List* × *2010*, *Incomplete Subs List* × *2011*, and *Incomplete Subs List* × *2012* are positive and significant (p-value < 0.05), consistent with the notion that increased subsidiary disclosure regulation is associated with significantly higher *ETR*s for noncompliant firms relative to control firms. The fact that we observe positive and significant coefficients of 0.050, 0.048, and 0.059 on the interaction variables for 2010, 2011, and 2012, respectively, suggests that the effect of public pressure related to subsidiary disclosure on noncompliant firms' *ETR*s relative to control firms is a relatively persistent shift in tax avoidance activities rather than an immediate shift in *ETR*s that then reverts to pre-pressure levels.

Figure 1 presents the coefficients on the interaction terms for 2008 through 2012. Graphing the interaction coefficients from Model (2) allows us to visually observe how differences in ETRs between noncompliant and compliant FTSE 100 firms varies in the pre- and post-pressure periods after controlling for other factors, industry, and year fixed effects. The parallel trends assumption suggests that the trend in the difference-in-differences coefficient estimates should be relatively flat in the pre-pressure period. Then, to the degree that public pressure related to subsidiary disclosures is associated with a significantly different effect on *ETR*s for noncompliant versus compliant firms, one would expect to observe a shift in the trend from the pre-pressure period to the post-pressure period. Consistent with our expectations, Figure 1 shows a relatively flat trend in difference-in-differences coefficients in the pre-pressure period, with a noticeable positive shift in the post-pressure periods, reflecting a significant increase in the difference between noncompliant and compliant firms' *ETR*s in the post-pressure period.

4.4 Changes in Subsidiary Locations

Table 5 reports the results of tests examining how changes in tax haven subsidiaries relative to changes in total subsidiaries compare between compliant and noncompliant firms in the year following ActionAid's scrutiny. We focus our tests of Model (2) on changes in the post-pressure period. We use the complete subsidiary disclosure data in 2010 and 2011, as provided by ActionAid. In Column (1) (Column (2)), we report estimates of Model (2), without controls and without (with) industry fixed effects. In Column (3), we report estimates of Model (2) with controls and industry fixed effects. In each of the tests, we find that the coefficient on *Incomplete Subs List* × *ΔSubs* is negative and significant (*p*-value < 0.05), indicating that in the post-pressure disclosure period, for each added subsidiary, noncompliant firms are less likely to locate the subsidiary in a tax haven country.

4.5 Changes in Subsidiary Locations and Tax Avoidance Outcomes

The results reported in Tables 3 through 5 indicate that public pressure related to subsidiary disclosure is associated with tax avoidance activities and real subsidiary location decisions. The decrease in tax avoidance for noncompliant firms relative to compliant firms could reflect noncompliant firms responding to enforced subsidiary disclosure requirements by changing their tax positions in existing haven subsidiaries or by decreasing the number of subsidiaries located in tax havens altogether. The evidence indicates that noncompliant firms began reporting higher ETRs relative to compliant firms in the first year following the public pressure. For the decrease in tax avoidance to be associated with public pressure, firms would need to be able to change their tax avoidance behavior within the first year following the scrutiny. Such changes are likely to take one of two forms: (1) changing (unwinding) specific tax positions and/or (2) discontinuing the use of subsidiaries in tax haven jurisdictions. A recent

survey conducted in collaboration with the Tax Executives Institute suggests that firms can unwind a majority of their tax positions within one year. Tax executives of large corporations report that: 12 percent of tax positions could be changed with one month; 39.6 percent within six months; and nearly 70 percent within one year, suggesting that tax avoidance changes within one year seem plausible [Hoopes et al. 2012].

Given the heightened scrutiny of tax haven subsidiaries and noncompliant firms' sensitivity to that scrutiny, it is possible that the tax avoidance results also reflect decreases in the number of subsidiaries located in tax havens. We expect firms that are particularly sensitive to public pressure related to corporate tax activities would initially decrease tax haven use in locations where they would incur *high reputational costs* but *low operational costs* (i.e., where it would be relatively easy to close subsidiaries without incurring significant operating costs). To investigate this conjecture, we conduct two additional analyses in which we examine whether the relative decrease in noncompliant firms' tax avoidance is most pronounced among firms showing a decrease in their use of tax haven subsidiaries. In the first test, we construct two subsamples based on whether firms decrease the percentage of tax havens in the post pressure period (*Decrease % Havens* = 1) or do (*Decrease % Havens* = 0). Then, we re-estimate Model (1) and use the [Chow 1960] test to assess differences in tax avoidance outcomes in the post-pressure period for noncompliant firms relative to compliant firms. We report the results in Table 6, Columns (1) and (2). Consistent with subsidiary location decisions being associated with the relative increase in *ETR*s of noncompliant firms relative to compliant firms, the coefficient on *Incomplete Subs List* × *Post Pressure* is only significant for the observations experiencing a decrease in the percentage of their tax haven subsidiaries and that the 0.048 difference in the

coefficients on *Incomplete Subs List* × *Post Pressure* across the two subsamples is marginally significant (*p*-value < 0.10).

We conduct an additional test similar to the previous test, but in which we divide the sample into two subsamples based on whether firms experience a decrease in the percentage of total subsidiaries located in "Dot" tax haven countries (i.e., jurisdictions typically characterized as providing tax rather than operational benefits, [Desai et al. 2006]). In particular, following Desai et al. [2006], we delineate between tax haven countries associated with tax benefits but few operational benefits (i.e., "dot" havens) and tax haven countries that provide some tax benefits but also have a sufficiently large workforce to potentially provide operational benefits (Big 7 tax havens). This distinction is notable given that tax haven subsidiaries located in "dot" havens typically suggest a tax-focused motive for the location decision and subsidiaries in these havens are often shell corporations with little non-tax operating benefits. Table 6, Columns (3) and (4) reports the results of this test. Consistent with tax-focused subsidiary disclosure being associated with the increase in ETRs of noncompliant firms relative to compliant firms, we find that the coefficient on *Incomplete Subs List* × *Post Pressure* is only significant for the observations experiencing a decrease in the percentage of their "dot" tax haven subsidiaries. We also find that the 0.054 difference in the coefficients on *Incomplete Subs List* × *Post Pressure* across the two subsamples is significant(*p*-value < 0.05).

5. Additional Tests

5.1 Returns Analysis around ActionAid's Report on Tax Haven Usage

A key assumption in this study is that the noncompliant FTSE 100 firms consciously failed to disclose their full list of foreign subsidiaries in 2006 because they faced a higher cost to the disclosure. In this section, we document evidence consistent with non-disclosing firms being

more sensitive to public pressure. On October 11, 2011, ActionAid released a groundbreaking report, "Addicted to Tax Havens", which received widespread attention. This report was the subject of general interest, many popular press articles, and parliamentary discussion. Choy et al. [2014] document significant negative returns for FTSE 100 firms on this date, consistent with market participants anticipating negative consequences from the unwanted publicity. In this section, we show that the negative returns for FTSE 100 firms around the October 11, 2011 event date are especially concentrated in firms that did not disclose their full subsidiary list in 2006.

Specifically, we calculate the three-day buy-and-hold returns for all publicly-traded U.K. firms (i.e., including all FTSE 100 firms, whether headquartered in the U.K. or not), from October 10 to October 12, 2011, using the entire sample of firms available on Compustat Global. Figure 2 graphs the averages of these returns for three groups of firms: (1) Non-FTSE 100 Firms, (2) FTSE 100 firms that initially disclosed their full subsidiary list, and (3) FTSE 100 firms that did not initially disclose their full subsidiary list. The returns of the non-disclosing FTSE 100 firms are nearly 1 percentage point lower than the other two groups of firms.

To provide standard errors for this estimate, Table 7, Column (1) tabulates regressions of the buy-and-hold return on *Incomplete Subs List*, an indicator coded to equal one for FTSE 100 firms that did not disclose their full subsidiary list in 2006. Including all U.K. firms in the regression implies that the intercept term captures the market return for disclosing firms. Non-disclosing FTSE 100 firms had a return that was 0.9 percent lower than the market. As reported in Column (2) we observe a similar result when we estimate the model only for FTSE 100 firms. FTSE 100 firms that did not initially comply with the disclosure requirement experienced significant negative market returns relative to other FTSE 100 firms in the window surrounding

widespread attention on FTSE 100 firm's tax haven usage. These results are consistent with noncompliant firms having higher costs of public scrutiny.

5.2 Public Pressure, Political Sensitivity, and Corporate Tax Avoidance

We also examine whether firms' political sensitivity affects the impact of public pressure on firms' corporate tax avoidance. Choy et al. [2014] highlight significant political outcry among members of Parliament related to firms' use of tax havens. Thus, we expect that political sensitivity will incrementally affect corporate tax avoidance activities for FTSE 100 firms that signaled a costliness of disclosing all their subsidiaries. We use the politically-sensitive industry designations from [Julio and Yook 2012] to construct two subsamples based on whether the firm is in a politically sensitive industry (i.e., tobacco products, pharmaceuticals, health care, defense, petroleum and natural gas, telecommunications, and transportation) or not. Then, we re-estimate Model (1) on the two subsamples and use the Chow [1960] test to evaluate differences in the difference-in-difference estimators (β_3) across the two subsamples. The coefficient on *Incomplete Subs List* × *Post Pressure* is positive and significant for both subsamples (*p*-values < 0.10 and < 0.01 for the less-politically-sensitive and politically-sensitive subsamples, respectively). However, the effect of public pressure on *ETR*s is significantly more pronounced among firms that are in politically-sensitive industries (*p*-value < 0.01). This suggests that potential political costs represent an additional factor influencing how firms respond to public pressure related to corporate tax behavior.

5.3 U.K. Change to the Territorial Tax System

In July 2009, the U.K. tax law changed the tax treatment for U.K. firms receiving dividends from non-U.K. companies in which the U.K. firms had a significant investment. Unlike territorial systems in other countries, U.K. firms do not pay tax on the underlying

business income of the non-U.K. firms unless controlled foreign corporation (CFC) rules apply. Prior to July 2009, dividend receipts were taxable to the U.K. firm receiving the dividends. From July 1, 2009 forward, such dividends are exempt from U.K. tax. Given that the adoption of this system is close to the period of public pressure related to subsidiary disclosure in our study (2010 and later), it is important to consider the potential effect of such a shift on our results.

The nature of our sample and the evidence from our tests mitigate concerns that the change in the U.K. treatment of foreign dividends drives our results. For example, although the extent to which a territorial tax system will affect firms is not measurable with precision, we note that our sample is comprised of the FTSE 100 firms, all very large, multinational firms. Indeed, ActionAid's publicity of U.K. firms' tax activities highlights the fact that 98 of the FTSE 100 firms had subsidiaries in tax havens. Notably, we control for the percentage of subsidiaries located in tax haven nations in our multivariate tests to mitigate concerns that our results reflect differences in subsidiary location that would give rise to differences in ETRs related to income sourced to lower tax jurisdictions. Finally, because the U.K. territorial tax system was initiated in 2009, if territoriality explains our results, we would expect to find a significant effect on the difference-in-differences estimator for *Incomplete Subs List* × *2009* in our tests in Table 4. However, as discussed in section 4.3, we find no evidence of such an effect.

5.4 Other Robustness Tests

In this section, we discuss several robustness tests we perform. First, we re-estimate Model (1) on a sample limited to FTSE 100 firms domiciled in the U.K. Although general scrutiny of FTSE 100 firms likely is associated with significantly higher *ETR*s for noncompliant firms relative to compliant firms in the post-pressure period, the specific provisions requiring U.K. publicly-traded firms to report the full list of their subsidiaries (Companies Act of 2006,

Sections 409 and 410) technically applies to U.K.-domiciled firms. In untabulated results, we restrict the sample to only U.K. domiciled firms and find that the coefficient on *Incomplete Subs List* × *Post Pressure* is .041, and is statistically different from zero (*p*-value < 0.05), suggesting that the small number of non-U.K.-domiciled firms in the FTSE 100 do not drive the results.

We also examine our results using alternative sample periods in the pre-pressure time period. Our primary analyses uses the period 1996-2012. To assess the sensitivity of the results to this design choice, we re-estimate Model (1) using alternative sample periods beginning in 2001 and in 2006 (the year that Parliament enacted the subsidiary disclosure requirements). In both untabulated analyses, we find that our results are qualitatively similar to our primary tests (i.e., the coefficient on *Incomplete Subs List* × *Post Pressure* is positive and significant, *p*-value < 0.05), suggesting that our results are likely not driven by sample period selection.

6. Conclusion

In this paper, we examine whether public scrutiny related to firms' tax avoidance activities has a significant effect on their tax avoidance behavior. ActionAid International, a non-profit, conducted an investigation to identify which FTSE 100 firms were not complying with rules requiring firms to disclose the full list of their subsidiaries. ActionAid then petitioned the Companies House of the U.K. to enforce the disclosure rule. This pressure resulted in nearly 100 percent compliance with the disclosure requirement. We find firms that were newly required to disclose a full subsidiary list decreased their tax avoidance and use of tax havens. We also find the decrease in tax avoidance for noncompliant firms in the post-pressure period is most pronounced in the subsample of firms that experience a decrease in the percentage of total subsidiaries located in small ("dot") tax haven countries, which are generally considered tax havens that provide significant tax benefits but very limited operational benefits [Desai et al.

2006]. In combination, the evidence suggests that public pressure related to subsidiary disclosure can have a significant effect on the tax avoidance activities and subsidiary location decisions of large publicly-traded firms.

These findings suggest that activist groups such as ActionAid can influence corporate outcomes, consistent with other research that shows firms respond to pressure from external stakeholders [Smith 1995]. Our study is informative to policy debates regarding how much firms should be required to disclose with regards to the extent and location of their multinational operations. Our paper speaks to potential effects of increased geographic disclosure and should be useful as policymakers consider the proposals to expand disclosure requirements for multinational corporations.

References

AKAMAH, H. T., O.-K. HOPE, and W. B. THOMAS. 2014. Tax Havens and Disclosure Aggregation. *Working Paper*.

AUSTIN, C., and R. WILSON. 2013. Are Reputational Costs a Determinant of Tax Avoidance? *Working Paper*.

BADERTSCHER, B. A., S. P. KATZ, and S. O. REGO. 2013. The separation of ownership and control and corporate tax avoidance. *Journal of Accounting and Economics* 56 (2–3): 228–250.

BOTOSAN, C. A. 1997. Disclosure Level and the Cost of Equity Capital. *The Accounting Review* 72 (3): 323–349.

BROWN, J. L., and K. D. DRAKE. 2013. Network Ties Among Low-Tax Firms. *The Accounting Review* 89 (2): 483–510.

BUSHMAN, R. M., J. D. PIOTROSKI, and A. J. SMITH. 2005. Insider Trading Restrictions and Analysts' Incentives to Follow Firms. *The Journal of Finance* 60 (1): 35–66.

CHEN, S., X. CHEN, Q. CHENG, and T. SHEVLIN. 2010. Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics* 95 (1): 41–61.

CHOW, G. C. 1960. Tests of Equality Between Sets of Coefficients in Two Linear Regressions. *Econometrica* 28 (3): 591–605.

CHOY, S. K., T. LAI, and T. NG. 2014. *Do Treasure Islands Create Firm Value*. Working paper, Shanghai University of Finance and Economics.

CHRISTENSEN, D. M., D. S. DHALIWAL, S. BOIVIE, and S. D. GRAFFIN. 2014. Top Management Conservatism and Corporate Risk Strategies: Evidence from Managers' Personal Political Orientation and Corporate Tax Avoidance. *Strategic Management Journal*.

COLLINS, J. H., and D. A. SHACKELFORD. 1997. Global organizations and taxes: An analysis of the dividend, interest, royalty, and management fee payments between U.S. multinationals' foreign affiliates. *Journal of Accounting and Economics* 24 (2): 151–173.

CREAL, D. D., L. A. ROBINSON, J. L. ROGERS, and S. L. C. ZECHMAN. 2014. The Multinational Advantage. *Working Paper*.

DASKE, H., L. HAIL, C. LEUZ, and R. VERDI. 2008. Mandatory IFRS Reporting around the World: Early Evidence on the Economic Consequences. *Journal of Accounting Research* 46 (5): 1085–1142.

DESAI, M. A., C. F. FOLEY, and J. R. HINES JR. 2006. The demand for tax haven operations. *Journal of Public Economics* 90 (3). Special issue published in cooperation with the National Bureau of Economic Research: Proceedings of the Trans-Atlantic Public Economics Seminar on Fiscal Federalism 20–22 May 2004: 513–531.

DYCK, A., A. MORSE, and L. ZINGALES. 2010. Who Blows the Whistle on Corporate Fraud? *The Journal of Finance* 65 (6): 2213–2253.

DYRENG, S. D., M. HANLON, and E. L. MAYDEW. 2008. Long-run corporate tax avoidance. *The Accounting Review* 83 (1): 61–82.

———. 2010. The effects of executives on corporate tax avoidance. *The Accounting Review* 85 (4): 1163–1189.

DYRENG, S. D., and B. P. LINDSEY. 2009. Using Financial Accounting Data to Examine the Effect of Foreign Operations Located in Tax Havens and Other Countries on U.S. Multinational Firms' Tax Rates. *Journal of Accounting Research* 47 (5): 1283–1316.

DYRENG, S., M. HANLON, and E. L. MAYDEW. 2014. Rolling the Dice: When Does Tax Avoidance Result in Tax Uncertainty?

DYRENG, S., and K. MARKLE. 2013. The Effect of Financial Constraints on Tax-Motivated Income Shifting by U.S. Multinationals.

EASLEY, D., and M. O'HARA. 2004. Information and the Cost of Capital. *The Journal of Finance* 59 (4): 1553–1583.

ERICKSON, M., M. HANLON, and E. L. MAYDEW. 2004. How much will firms pay for earnings that do not exist? Evidence of taxes paid on allegedly fraudulent earnings. *The Accounting Review* 79 (2): 387–408.

ERNST & YOUNG. 2014. Bridging the divide: Highlights from the 2014 Tax risk and controversy survey.

ERTIMUR, Y., F. FERRI, and D. A. MABER. 2012. Reputation penalties for poor monitoring of executive pay: Evidence from option backdating. *Journal of Financial Economics* 104 (1): 118–144.

GALLEMORE, J., E. L. MAYDEW, and J. R. THORNOCK. 2013. The Reputational Costs of Tax Avoidance. *Contemporary Accounting Research*.

GRAHAM, J. R., M. HANLON, T. SHEVLIN, and N. SHROFF. 2013. Incentives for Tax Planning and Avoidance: Evidence from the Field. *The Accounting Review* 89 (3): 991–1023.

HANLON, M., and S. HEITZMAN. 2010. A review of tax research. *Journal of Accounting and Economics* 50 (2–3): 127–178.

HANLON, M., and J. SLEMROD. 2009. What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public Economics* 93 (1–2): 126–141.

HASEGAWA, M., J. L. HOOPES, R. ISHIDA, and J. B. SLEMROD. 2013. The Effect of Public Disclosure on Reported Taxable Income: Evidence from Individuals and Corporations in Japan. *National Tax Journal* 6 (33): 571–608.

HOLMS, L. 2011. Cable calls for fines on firms failing to disclose tax havens. *This Is Money*, March 5.

HOOPES, J. L., D. MESCALL, and J. A. PITTMAN. 2012. Do IRS Audits Deter Corporate Tax Avoidance? *The Accounting Review* 87 (5): 1603–1639.

HOPE, O.-K., M. (SHUAI) MA, and W. B. THOMAS. 2013. Tax avoidance and geographic earnings disclosure. *Journal of Accounting and Economics* 56 (2–3): 170–189.

JAWORSKI, T. 2012. A Closer Look at SEC Reviews of Foreign Cash. *Tax Notes*, August 6.

JULIO, B., and Y. YOOK. 2012. Political Uncertainty and Corporate Investment Cycles. *The Journal of Finance* 67 (1): 45–83.

KLASSEN, K. J., and S. K. LAPLANTE. 2012. Are U.S. Multinational Corporations Becoming More Aggressive Income Shifters? *Journal of Accounting Research* 50 (5): 1245–1285.

LEWELLEN, K., and L. A. ROBINSON. 2013. Internal Ownership Structures of U.S. Multinational Firms. *Working Paper*.

LISOWSKY, P., L. ROBINSON, and A. SCHMIDT. 2013. Do Publicly Disclosed Tax Reserves Tell Us About Privately Disclosed Tax Shelter Activity? *Journal of Accounting Research* 51 (3): 583–629.

MAYLIE, D. 2011. SABMiller Under Scrutiny. *Wall Street Journal*, June 17.

MCGUIRE, S. T., D. WANG, and R. J. WILSON. 2014. Dual Class Ownership and Tax Avoidance. *The Accounting Review* 89 (4): 1487–1516.

MILLER, G. S. 2006. The Press as a Watchdog for Accounting Fraud. *Journal of Accounting Research* 44 (5): 1001–1033.

MILLS, L. F. 1998. Book-tax differences and Internal Revenue Service adjustments. *Journal of Accounting Research* 36 (2): 343–356.

NEUBIG, T. 2006. Where's the applause? Why most corporations prefer a lower rate. *Tax Notes*, April 24.

OECD. 2014. Discussion Draft On Transfer Pricing Documentation and CbC Reporting.

PETERSEN, M. A. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies* 22 (1): 435–480.

PFANNER, E. 2012. Starbucks Offers to Pay More British Tax Than Required. *The New York Times*, December 6, sec. Business Day / Global Business.

PRUITT, S. W., and M. FRIEDMAN. 1986. Determining the effectiveness of consumer boycotts: A stock price analysis of their impact on corporate targets. *Journal of Consumer Policy* 9 (4): 375–387.

PWC. 2012. Tax strategy and corporate reputation: a tax issue, a business issue.

REGO, S. O. 2003. Tax-Avoidance Activities of U.S. Multinational Corporations. *Contemporary Accounting Research* 20 (4): 805–833.

REGO, S. O., and R. WILSON. 2012. Equity Risk Incentives and Corporate Tax Aggressiveness. *Journal of Accounting Research* 50 (3): 775–810.

ROBERTS, M. R., and T. M. WHITED. 2012. Endogeneity in Empirical Corporate Finance. *Working Paper*.

ROBINSON, L. A. 2010. Do Firms Incur Costs to Avoid Reducing Pre-Tax Earnings? Evidence from the Accounting for Low-Income Housing Tax Credits. *The Accounting Review* 85 (2): 637–669.

ROBINSON, L. A., and A. P. Schmidt. 2013. Firm and Investor Responses to Uncertain Tax Benefit Disclosure Requirements. *The Journal of the American Taxation Association* 35 (2): 85–120.

ROBINSON, L. A., and P. C. STOCKEN. 2013. Location of Decision Rights Within Multinational Firms. *Journal of Accounting Research* 51 (5): 1261–1297.

SMITH, D. G. 1995. Corporate Governance and Managerial Incompetence: Lessons from Kmart. *North Carolina Law Review* 74: 1037.

TOWERY, E. M. 2012. How do disclosures of tax aggressiveness to tax authorities affect reporting decisions? Evidence from Schedule UTP.

WESTPHAL, J. D., and D. L. DEEPHOUSE. 2010. Avoiding Bad Press: Interpersonal Influence in Relations Between CEOs and Journalists and the Consequences for Press Reporting About Firms and Their Leadership. *Organization Science* 22 (4): 1061–1086.

WILDE, J. 2013. Citizen Watch in the Accounting Department? Tax and Financial Reporting Responses to Employee Whistleblowing Allegations. *Working paper, University of Iowa*.

ZIMMERMAN, J. L. 1983. Taxes and firm size. *Journal of Accounting and Economics* 5: 119–149.

Appendix: ActionAid Letter

ActionAid
33-39 Bowling Green Lane
London EC1R 0BJ
United Kingdom

Phone +44 (0)20 3122 0559
Fax +44 (0)20 7278 5667
Email XXXXXXXX@actionaid.org
www.actionaid.org.uk

actionaid

XXXXXXXXX
Technical Offences Manager
Companies House
Crown Way
Maindy
Cardiff CF14 3UZ

2nd February 2011

Dear XXXXXXX,

Complaint concerning 49 companies not in compliance with provisions 409 & 410 of the Companies Act 2006

Last year, ActionAid submitted complaints concerning several of large companies which failed to disclose a full list of their subsidiary undertakings including their place of incorporation. As a result of Companies House action in response to these complaints, a number of these companies resubmitted their annual returns to ensure that they were compliant.

As part of my ongoing research at ActionAid, I have examined the compliance of a larger group of companies (the UK-registered members of the FTSE100 listing) and noted that half these companies display a similar non-compliance. In each case there is a statement in the annual report indicating that the list of companies displayed therein concerns the principal subsidiaries (as opposed to a comprehensive list); in many cases there is also an indication that a full list would be appended to these companies' annual returns. None of these companies' annual returns as available from the Companies House Webcheck service includes a full list of subsidiaries.

This applies to the following 46 companies:
****List of 46 companies**

In addition, the following three companies include only a list of the names of their subsidiary undertakings in their annual returns, without specifying the country of registration.

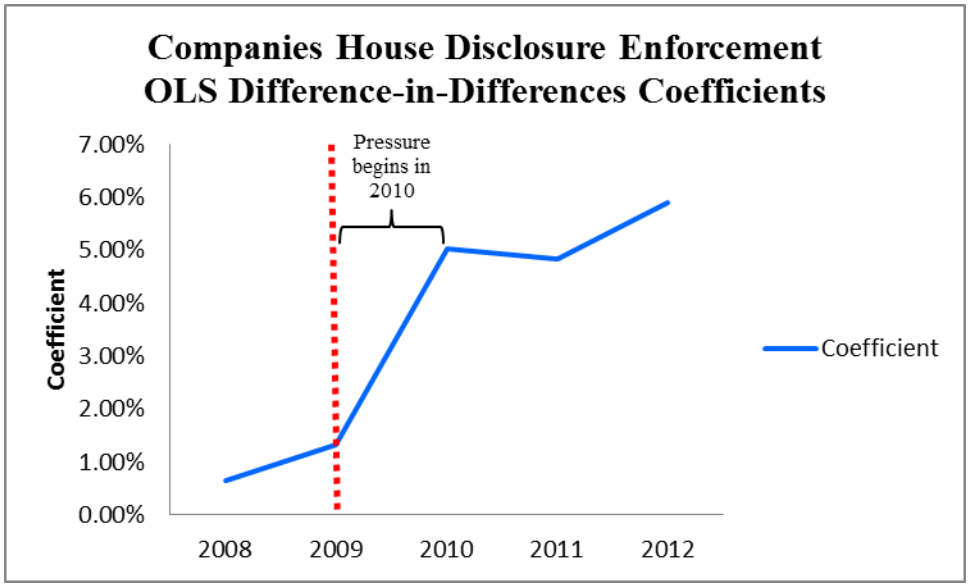
****List of three companies**

I am sure that Companies House will want to take forward these complaints, and look forward to receiving notification that they have been resolved.

Yours sincerely,

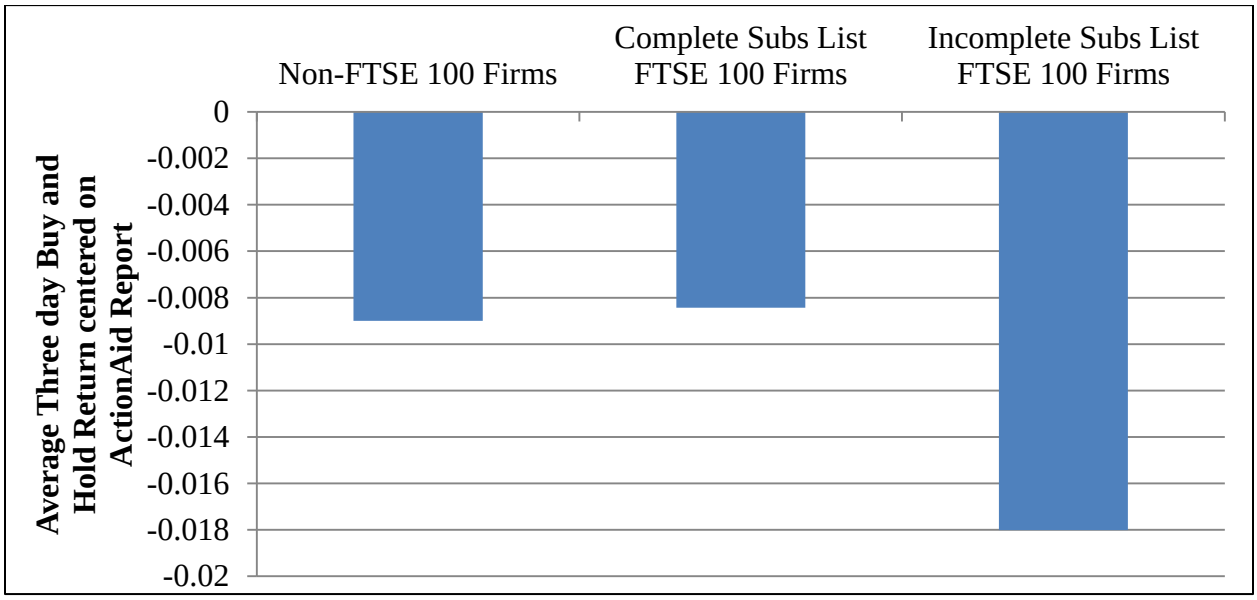
XXXXXXXXXXX
Policy Adviser

Figure 1
Public Pressure and Corporate Tax Avoidance Trends



Notes. Figure 1 graphs the coefficients on the difference-in-differences coefficients in Model (2) (i.e., as reported in Table 4 for the interaction terms for 2008 through 2012). The figure depicts how *ETR* differences between noncompliant and compliant FTSE 100 firms vary in the pre-pressure (2009 and before) and post-pressure (2010 and later) periods, after including control variables and industry and year fixed effects. The red dotted line depicts the beginning of the public pressure related to firms' subsidiary disclosure; the vertical axis reflects the Model (2) coefficients, with *ETR* as the dependent variable; the horizontal axis reflects years 2008 through 2012; and the blue line shows the trends in the difference-in-differences coefficients (*Incomplete Subs List* × *2008*, *Incomplete Subs List* × *2009*, etc.) for years 2008 through 2012. In Model (2) *ETR* is the ETR (txt/pi), bound between [0,1] less the top corporate statutory tax rate for the U.K. in the given year and *Incomplete Subs List* is an indicator variable equal to one for FTSE 100 firms that did not disclose the full list of their subsidiaries prior to the 2010 public pressure to disclose and equal to zero, otherwise.

Figure 2
Buy and Hold Returns Surrounding ActionAid Report on Tax Haven Usage



Notes. This graph depicts the three day buy and hold returns, centered around October 11, 2011, the date on which ActionAid released a well-publicized report on FTSE 100 firms' use of tax havens. Three groups of firms are depicted. First, all U.K. firms not in the FTSE 100 (all firms on Compustat Global daily security file (comp.g_secd) with non-zero or missing returns with LOC="GBR" or FIC="GBR"). Second, all FTSE 100 firms that ActionAid found to have been in compliance with the subsidiary disclosure requirements. Third, all FTSE 100 firms that ActionAid determined were not initially disclosing their full subsidiary list.

Table 1
Summary Statistics

	Full Sample						Firms with Incomplete Subs List (N=436)		Firms with Complete Subs List (N=486)	
	N	Mean	Median	Std Dev	P25	P75	Mean	Median	Mean	Median
ETR	922	0.007	-0.004	0.129	-0.044	0.048	-0.005	-0.005	0.018 ***	-0.001
ETR Pre-pressure							-0.004	-0.006	0.027 ***	0.002
ETR Post-pressure							-0.006	0.000	-0.020	-0.016
Unadjusted ETR	922	0.297	0.288	0.131	0.244	0.337	0.285	0.286	0.308 ***	0.291
Unadjusted ETR Pre-pressure							0.293	0.292	0.325 ***	0.301
Unadjusted ETR Post-pressure							0.255	0.261	0.242	0.250
Incomplete Subs List	922	0.473	0.000	0.500	0.000	1.000				
Post Pressure	922	0.207	0.000	0.405	0.000	0.000				
Size	922	9.097	8.949	1.814	7.831	10.182	8.406	8.233	9.717 ***	9.484 ***
Leverage	922	0.177	0.155	0.145	0.064	0.247	0.191	0.178	0.164 ***	0.119 ***
Intangibles	922	0.185	0.078	0.210	0.013	0.331	0.205	0.131	0.166 ***	0.050 ***
Inventory Intensity	922	0.068	0.050	0.070	0.007	0.106	0.080	0.054	0.058 ***	0.043
RD Intensity	922	0.013	0.000	0.031	0.000	0.004	0.013	0.000	0.013	0.000 *
Capital Intensity$_{t-1}$	922	0.302	0.222	0.264	0.081	0.497	0.310	0.246	0.295	0.159 ***
Capex	922	0.061	0.045	0.061	0.017	0.088	0.064	0.056	0.058	0.035 ***
Return on Assets	922	0.106	0.092	0.081	0.047	0.144	0.119	0.101	0.095 ***	0.081 ***
% Havens	922	0.237	0.207	0.101	0.168	0.282	0.221	0.203	0.252 ***	0.222

Notes. *ETR* is the ETR (txt/pi), bound between [0,1] less the top corporate statutory tax rate for the U.K. in the given year. *Incomplete Subs List* is an indicator variable equal to one for FTSE 100 firms that did not disclose the full list of their subsidiaries prior to the 2010 public pressure to disclose and equal to zero, otherwise. *Post Pressure* is an indicator variable equal to one for firm-year observations ending during 2010 (i.e., following the beginning of the increase in public pressure) or later and equal to zero, otherwise. *Size* is the natural log of total assets (at). *Leverage* is the long-term debt (dltt), scaled by total assets (at). *Intangibles* is intangible assets (intan), scaled by total assets (at). *Inventory Intensity* is inventory (invt), scaled by total assets (at). *RD Intensity* is research and development expense (xrd), scaled by total assets (at). *Capital Intensity$_{t-1}$* is the net property, plant, and equipment (ppent), scaled by total assets (at) (in the prior period). *Capex* is capital expenditures (capx), scaled by lagged assets (at). *Return on Assets* is pre-tax income (pi), scaled by total assets (at). *% Havens* is the percentage of total subsidiaries ultimately reported that are located in tax havens (as indicated in ActionAid's initial report). We set missing values of xrd, intan, and capx to zero. We winsorize continuous variables at the 1st and 99th percentiles.

Table 2
Correlation Matrix

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
(1) ETR		**-0.086**	**-0.081**	**0.131**	**-0.178**	-0.026	-0.021	-0.052	**-0.087**	-0.007	**-0.115**	-0.027
(2) Incomplete Subs List	-0.056		0.020	**-0.361**	**0.092**	**0.093**	**0.158**	0.008	0.028	0.053	**0.149**	**-0.158**
(3) Post Enforcement	**-0.068**	0.020		**0.110**	0.053	**0.160**	-0.034	-0.004	-0.041	-0.023	0.035	0.014
(4) Size	0.062	**-0.366**	**0.124**		**-0.242**	**-0.180**	**-0.277**	**-0.135**	**-0.150**	**-0.297**	**-0.382**	**0.196**
(5) Leverage	**-0.108**	**0.136**	**0.076**	**-0.162**		**0.143**	**0.077**	**-0.131**	**0.222**	**0.113**	**0.095**	**-0.095**
(6) Intangibles	0.024	**0.122**	**0.172**	**-0.152**	**0.264**		-0.047	**0.201**	**-0.421**	**-0.306**	-0.046	0.028
(7) Inventory Intensity	0.056	**0.127**	0.002	**-0.270**	**0.148**	**0.080**		**0.119**	-0.017	**0.069**	**0.326**	**-0.172**
(8) RD Intensity	-0.044	**0.066**	0.047	-0.045	0.018	**0.306**	**0.313**		**-0.157**	**-0.084**	**0.257**	0.023
(9) Capital Intensityt-1	-0.038	**0.087**	-0.035	**-0.174**	**0.309**	**-0.275**	**0.296**	**0.087**		**0.594**	**0.195**	**-0.165**
(10) Capex	0.037	**0.142**	-0.032	**-0.329**	**0.205**	**-0.232**	**0.347**	0.064	**0.799**		**0.387**	0.026
(11) Return on Assets	-0.044	**0.166**	**0.071**	**-0.392**	**0.067**	**0.095**	**0.465**	**0.309**	**0.354**	**0.517**		**-0.123**
(12) % Havens	-0.015	**-0.155**	0.002	**0.203**	**-0.088**	-0.008	**-0.164**	**0.066**	**-0.218**	**-0.160**	**-0.074**	

Notes. This table tabulates the Pearson (above the diagonal) and Spearman (below the diagonal) correlations for our sample. We report significant (p-value < 0.05) coefficients in bold. *ETR* is the ETR (txt/pi), bound between [0,1] less the top corporate statutory tax rate for the U.K. in the given year. *Incomplete Subs List* is an indicator variable equal to one for FTSE 100 firms that did not disclose the full list of their subsidiaries prior to the 2010 public pressure to disclose and equal to zero, otherwise. *Post Pressure* is an indicator variable equal to one for firm-year observations ending during 2010 (i.e., following the beginning of the increase in public pressure) or later and equal to zero, otherwise. Table 1 defines all other control variables (*Size*, *Leverage*, *Intangibles*, *Inventory Intensity*, *RD Intensity*, *Capital Intensity*$_{t-1}$, *Capex*, *Return on Assets*, and *% Havens*). We winsorize continuous variables at the 1st and 99th percentiles.

Table 3
Public Pressure and Corporate Tax Avoidance

		(1)		(2)	
		ETR		*ETR*	
	Prediction	Coefficient	(*p*-value)	Coefficient	(*p*-value)
Incomplete Subs List		-0.008	(0.683)		
Post Pressure		-0.022	(0.406)	-0.040	(0.228)
Incomplete Subs List × Post Pressure	+	0.050**	(0.014)	0.037**	(0.048)
Size		0.016***	(0.003)	0.035***	(0.000)
Leverage		-0.091*	(0.053)	-0.035	(0.446)
Intangibles		0.049	(0.230)	-0.024	(0.637)
Inventory Intensity		-0.051	(0.751)	-0.133	(0.439)
RD Intensity		0.083	(0.707)	-0.383	(0.381)
Capital Intensity$_{t-1}$		-0.062	(0.261)	-0.014	(0.789)
Capex		0.444***	(0.000)	0.269**	(0.019)
Return on Assets		-0.063	(0.486)	-0.144	(0.103)
% Havens		-0.083	(0.288)		
Constant		-0.152*	(0.095)	-0.281***	(0.001)
Industry Fixed Effects		Yes		No	
Year Fixed Effects		Yes		Yes	
Firm Fixed Effects		No		Yes	
Cluster by Firm		Yes		No	
Observations		922		922	
Adj. R-squared		0.159		0.247	

Notes. *ETR* is the ETR (txt/pi), bound between [0,1] less the top corporate statutory tax rate for the U.K. in the given year. *Incomplete Subs List* is an indicator variable equal to one for FTSE 100 firms that did not disclose the full list of their subsidiaries prior to the 2010 public pressure to disclose and equal to zero, otherwise. *Post Pressure* is an indicator variable equal to one for firm-year observations ending during 2010 (i.e., following the beginning of the increase in public pressure) or later and equal to zero, otherwise. Table 1 defines all other control variables (*Size*, *Leverage*, *Intangibles*, *Inventory Intensity*, *RD Intensity*, *Capital Intensity$_{t-1}$* , *Capex*, *Return on Assets*, and *% Havens*). We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are clustered by firm, and are robust to heteroskedasticity. The superscripts asterisks ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests (one-tailed test when we have a prediction and the sign of the coefficient is consistent with the prediction).

Table 4
Public Pressure and Corporate Tax Avoidance: By Year and Placebo Analysis

		(1)	
		ETR	
	Prediction	Coefficient	(*p*-value)
Incomplete Subs List		-0.009	(0.633)
Yr2008		-0.000	(0.997)
Yr2009		-0.001	(0.984)
Yr2010		-0.052**	(0.017)
Yr2011		-0.034	(0.270)
Yr2012		-0.026	(0.352)
Incomplete Subs List × 2008		0.006	(0.839)
Incomplete Subs List × 2009		0.013	(0.695)
Incomplete Subs List × 2010	+	0.050**	(0.027)
Incomplete Subs List × 2011	+	0.048*	(0.096)
Incomplete Subs List × 2012	+	0.059**	(0.037)
Size		0.016***	(0.004)
Leverage		-0.092*	(0.052)
Intangibles		0.048	(0.230)
Inventory Intensity		-0.049	(0.755)
RD Intensity		0.084	(0.704)
Capital Intensity$_{t-1}$		-0.063	(0.251)
Capex		0.445***	(0.000)
Return on Assets		-0.063	(0.486)
% Havens		-0.082	(0.287)
Constant		-0.151*	(0.096)
Industry Fixed Effects		Yes	
Year Fixed Effects		Yes	
Firm Fixed Effects		No	
Cluster by Firm		Yes	
Observations		922	
Adj. R-squared		0.155	

Notes. *ETR* is the ETR (txt/pi), bound between [0,1] less the top corporate statutory tax rate for the U.K. in the given year. *Incomplete Subs List* is an indicator variable equal to one for FTSE 100 firms that did not disclose the full list of their subsidiaries prior to the 2010 public pressure to disclose and equal to zero, otherwise. *Post Pressure* is an indicator variable equal to one for firm-year observations ending during 2010 (i.e., following the beginning of the increase in public pressure) or later and equal to zero, otherwise. Table 3 defines all other control variables (*Size*, *Leverage*, *Intangibles*, *Inventory Intensity*, *RD Intensity*, *Capital Intensity*$_{t-1}$, *Capex*, *Return on Assets*, and *% Havens*). We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are clustered by firm, and are robust to heteroskedasticity. The superscript asterisks ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests (one-tailed test when we have a prediction and the sign of the coefficient is consistent with the prediction).

Table 5
Public Pressure and Changes in Subsidiaries in Tax Havens

		(1)	(2)	(3)
		Coefficient	Coefficient	Coefficient
		(*p*-value)	(*p*-value)	(*p*-value)
	Prediction	*ΔHavens*	*ΔHavens*	*ΔHavens*
ΔSubs		0.186***	0.187***	0.214***
		(0.000)	(0.000)	(0.000)
Incomplete Subs List		-1.741	-3.000	-2.225
		(0.553)	(0.376)	(0.593)
Incomplete Subs List × ΔSubs	-	-0.096**	-0.110**	-0.119**
		(0.027)	(0.022)	(0.036)
Size				2.741*
				(0.075)
Leverage				7.311
				(0.716)
Intangibles				-6.702
				(0.742)
Inventory Intensity				-20.881
				(0.703)
RD Intensity				14.983
				(0.895)
Capital Intensity$_{t-1}$				0.295
				(0.985)
Capex				-22.002
				(0.591)
Return on Assets				33.634
				(0.285)
Constant		3.257	-2.064	-27.548
		(0.112)	(0.679)	(0.264)
Industry Fixed Effects		No	Yes	Yes
Year Fixed Effects		N/A	N/A	N/A
Firm Fixed Effects		N/A	N/A	N/A
Cluster by Firm		N/A	N/A	N/A
Observations		89	89	82
Adj. R-squared		0.460	0.411	0.374

Notes. This analysis examines changes in total subsidiaries and subsidiaries in tax havens from 2010 to 2011(the period immediately following the public pressure related to subsidiary disclosure) for FTSE 100 firms for which ActionAid publicly disclosed the data, rendering one observation per firm. *ΔHavens* is the total change in subsidiaries in tax havens for the period. *ΔSubs* is total change in subsidiaries for the period. *Incomplete Subs List* is an indicator variable equal to one for FTSE 100 firms that did not disclose the full list of their subsidiaries prior to the 2010 public pressure to disclose and equal to zero, otherwise. Table 1 defines all other control variables (*Size*, *Leverage*, *Intangibles*, *Inventory Intensity*, *RD Intensity*, *Capital Intensity$_{t-1}$* , *Capex*, *Return on Assets*, and *% Havens*). We winsorize continuous variables at the 1st and 99th percentiles. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests (one-tailed test when we have a prediction and the sign of the coefficient is consistent with the prediction).

Table 6
Analyses by Changes in Tax Haven Subsidiaries

	(1)	(2)	(3)	(4)
	Decrease % Havens = 0	***Decrease % Havens = 1***	***Decrease %"Dot" Havens = 0***	***Decrease %"Dot" Havens = 1***
	Coefficient (*p* -value) *ETR*	Coefficient (*p* -value) *ETR*	Coefficient (*p* -value) *ETR*	Coefficient (*p* -value) *ETR*
Incomplete Subs List	-0.009	-0.013	-0.048**	0.014
	(0.669)	(0.661)	(0.036)	(0.445)
Post Pressure	0.005	-0.023	-0.009	-0.034
	(0.896)	(0.525)	(0.807)	(0.287)
Incomplete Subs List × Post Pressure	0.018	0.066***	0.015	0.069***
	(0.429)	(0.009)	(0.423)	(0.007)
Size	0.015*	0.032***	0.024***	0.018**
	(0.092)	(0.000)	(0.001)	(0.018)
Leverage	-0.151**	0.014	-0.081	-0.024
	(0.018)	(0.812)	(0.172)	(0.697)
Intangibles	0.018	-0.055	0.031	0.009
	(0.786)	(0.439)	(0.579)	(0.901)
Inventory Intensity	0.201	-0.108	0.299	-0.123
	(0.225)	(0.713)	(0.111)	(0.632)
RD Intensity	-0.730***	0.237	-0.288	0.193
	(0.010)	(0.152)	(0.449)	(0.367)
Capital Intensityt-1	-0.106	-0.056	-0.142	-0.065
	(0.160)	(0.335)	(0.108)	(0.196)
Capex	0.311*	0.189*	0.370*	0.470***
	(0.073)	(0.095)	(0.059)	(0.000)
Return on Assets	-0.167	-0.156	-0.071	-0.230
	(0.247)	(0.272)	(0.631)	(0.137)
Constant	-0.103	-0.311***	-0.147	-0.232**
	(0.403)	(0.001)	(0.213)	(0.012)
Industry Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Firm Fixed Effects	No	No	No	No
Cluster by Firm	Yes	Yes	Yes	Yes
Observations	539	340	481	398
Adj. R-squared	0.173	0.240	0.188	0.215
Chow (1960) test of differences across coefficients on Incomplete Subs List × Post Enforcement:	*Decrease %Havens* = 0 versus *Decrease %Havens* = 1: **0.048***		*Decrease %"Dot" Havens = 0* versus *Decrease %"Dot" Havens = 1* : **0.054****	

Notes. This analysis examines the effect of public pressure related to subsidiary disclosure on tax avoidance for FTSE 100 firms that were initially compliant with disclosure requirements (i.e., not subject to public pressure related to subsidiary disclosure) relative to those that were not. In these analyses we partition the sample based on firms' subsidiary changes in the initial year following the public pressure (i.e., from 2010 to 2011). *Decrease %Havens* (*Decrease %"Dot" Havens*) is equal to one if the firm reports a decrease in the percentage of ("Dot") tax haven subsidiaries in the post-pressure period and is equal to zero, otherwise. "Dot" haven subsidiaries are located in countries with few operating advantages and are generally considered to be established primarily for tax planning purpose. *ETR* is the ETR (txt/pi), bound between [0,1] less the top corporate statutory tax rate for the U.K. in the given year. *Incomplete Subs List* is an indicator variable equal to one for FTSE 100 firms that did not disclose the full list of their subsidiaries prior to the 2010 public pressure to disclose and equal to zero, otherwise. *Post Pressure* is an indicator variable equal to one for firm-year observations ending during 2010 (i.e., following the beginning of the increase in public pressure) or later and equal to zero, otherwise. Table 1 defines all other variables. We winsorize continuous variables at the 1st and 99th percentiles. Standard errors are clustered by firm, and are robust to heteroskedasticity. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively, using two-sided tests.

Table 7
Buy and Hold Returns Surrounding ActionAid Report on Tax Haven Usage

		(1)	(2)
		Three day Buy and Hold Return Centered on ActionAid Report Date	
	Prediction	Coefficient (*p*- value)	Coefficient (*p*- value)
Incomplete Subs List	-	-0.009***	-0.01**
		(-2.59)	(-1.98)
Constant		-0.009***	-0.008**
		(-5.95)	(-2.32)
All UK and FTSE 100 Firms		Yes	No
Only FTSE 100 Firms		No	Yes
Observations		1,524	83
Adj. R-squared		0.00	0.03

Notes. The dependent variable is the Three day Buy and Hold Return centered on the ActionAid report date, October 11, 2011. This report is the focus of Choy et al [2014]. *Incomplete Subs List* is an indicator variable equal to one for FTSE 100 firms that did not disclose the full list of their subsidiaries prior to the 2010 public pressure related to subsidiary disclosure and equal to zero, otherwise. Standard errors are Huber-White robust standard errors. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively, using two-tailed tests (one-tailed tests when we have a prediction and the sign of the coefficient is consistent with the prediction).

Oxford University Centre for Business Taxation
Working Paper series recent papers

WP 14/15 Eric Zwick and James Mahon *Do financial frictions amplify fiscal policy? Evidence from business investment stimulus*

WP 14/14 David Weisbach *The use of neutralities in international tax policy*

WP 14/13 Rita de la Feria *Blueprint for reform of VAT rates in Europe*

WP 14/12 Miguel Almunia and David Lopez Rodriguez *Heterogeneous responses to effective tax enforcement: evidence from Spanish firms*

WP 14/11 Charles E McLure, Jack Mintz and George R Zodrow *US Supreme Court unanimously chooses substance over form in foreign tax credit*

WP 14/10 David Neumark and Helen Simpson *Place-based policies*

WP 14/09 Johannes Becker and Ronald B Davies *A negotiation-based model of tax-induced transfer pricing*

WP 14/08 Marko Koethenbuerger and Michael Stimmelmayr *Taxing multinationals in the presence of internal capital markets*

WP 14/07 Michael Devereux and Rita de la Feria *Designing and implementing a destination-based corporate tax*

WP 14/05 John W Diamond and George R Zodrow *The dynamic economic effects of a US corporate income tax rate reduction*

WP 14/04 Claudia Keser, Gerrit Kimpel and Andreas Oesterricher *The CCCTB option – an experimental study*

WP 14/03 Arjan Lejour *The foreign investment effects of tax treaties*

WP 14/02 Ralph-C. Bayer Harald Oberhofer and Hannes Winner *The occurrence of tax amnesties: theory and evidence*

WP14/01 Nils Herger, Steve McCorriston and Christos Kotsogiannisz *Multiple taxes and alternative forms of FDI: evidence from cross-border acquisitions*

WP13/25 Michael Devereux, Niels Johannesen and John Vella *Can taxes tame the banks? Evidence from European bank levies*

WP13/24 Matt Krzepkowski *Debt and tax losses: the effect of tax asymmetries on the cost of capital and capital structure*

WP13/23 Jennifer Blouin, Harry Huizinga, Luc Laeven, Gaëtan Nicodème *Thin capitalization rules and multinational firm capital structure*

WP13/22 Danny Yagan *Capital tax reform and the real economy: the effects of the 2003 dividend tax cut*

WP13/21 Andreas Haufler and Christoph Lülfesmann *Reforming an asymmetric union: on the virtues of dual tier capital taxation*

WP13/20 Michael Blackwell *Do the haves come out ahead in tax litigation? An empirical study of the dynamics of tax appeals in the UK*

WP13/19 Johannes Becker and Ronald B Davies *Learning and international policy diffusion: the case of corporate tax policy*

WP13/18 Reuven S Avi-Yonah *And yet it moves: taxation and labour mobility in the 21st century*

WP13/17 Anne Brockmeyer *The investment effect of taxation: evidence from a corporate tax kink*

WP13/16 Dominika Langenmayr and Rebecca Lesterz *Taxation and corporate risk-taking*

WP13/15 Martin Ruf and Alfons J Weichenrieder *CFC legislation, passive assets and the impact of the ECJ's Cadbury-Schweppes decision*

WP13/14 Annette Alstadsæter and Martin Jacob *The effect of awareness and incentives on tax evasion*

WP13/13 Jarkko Harju and Tuomos Matikka *The elasticity of taxable income and income-shifting between tax bases: what is "real" and what is not?*

WP13/12 Li Liu and Andrew Harper *Temporary increase in annual investment allowance*

WP13/11 Alan J Auderbach and Michael P Devererux *Consumption and cash-flow taxes in an international setting*

WP13/10 Andreas Haufler and Mohammed Mardan *Cross-border loss offset can fuel tax competition*

WP13/09 Ben Lockwood *How should financial intermediation services be taxed?*

WP13/08 Dominika Langenmayr, Andreas Haufler and Christian J bauer *Should tax policy favour high or low productivity firms?*

WP13/07 Theresa Lohse and Nadine Riedel *Do transfer pricing laws limit international income shifting? Evidence from European multinationals*

WP13/06 Ruud de Mooij and Jost Heckemeyer *Taxation and corporate debt: are banks any different?*

WP13/05 Rita de la Feria *EU VAT rate structure: towards unilateral convergence?*

WP13/04 Johannes Becker and Melaine Steinhoff *Conservative accounting yields excessive risk-taking - a note*

WP13/03 Michael P.Devereux, Clemens Fuest, and Ben Lockwood *The Taxation of Foreign Profits: a Unified View*

WP13/02 Giorgia Maffini *Corporate tax policy under the Labour government 1997-2010*

WP13/01 Christoph Ernst, Katharina Richter and Nadine Riedel *Corporate taxation and the quality of research & development*

WP12/29 Michael P Devereux and Simon Loretz *What do we know about corporate tax competition?*

WP12/28 Rita de la Feria and Richard Krever *Ending VAT Exemptions: Towards A Post-Modern VAT*

WP12/27 Theresa Lohse, Nadine Riedel and Christoph Spengel *The Increasing Importance of Transfer Pricing Regulations – a Worldwide Overview*

WP12/26 Harry Huizinga, Johannes Voget and Wolf Wagner
Capital gains taxation and the cost of capital: evidence from unanticipated cross-border transfers of tax bases

WP12/25 Harry Huizinga, Johannes Voget and Wolf Wagner
International taxation and cross border banking

WP12/24 Johannes Becker and Nadine riedel
Multinational Firms Mitigate Tax Competition

WP12/23 Michael Devereux, Li Liu and Simon Loretz
The Elasticity of Corporate Taxable Income: New Evidence from UK Tax Records

WP12/22 Olivier Bargain, Mathias Dolls, Clemens Fuest, Dirk Neumann, Andreas Peichl, Nico Pestel, Sebastian Siegloch
Fiscal Union in Europe? Redistributive and Stabilising Effects of a European Tax-Benefit System and Fiscal Equalisation Mechanism

WP12/21 Peter Egger, Christian Keuschnigg, Valeria Merlo and Georg Wamser *Corporate taxes and internal borrowing within multinational firms*

WP12/20 Jarkko Harju and Tuomos Kosonen *The impact of tax incentives on the economic activity of entrepreneurs*

WP12/19 Laura Kawano and Joel slemrod *The effects of tax rates and tax bases on corporate tax revenues: estimates with new measures of the corporate tax base*

WP12/18 Giacomo Rodano, Nicolas Serrano-Velarde and Emanuele Tarantino *Bankruptcy law and the cost of banking finance*

WP12/17 Xavier Boutin, Giacinta Cestone, Chiara Fumagalli, Giovanni Pica and Nicolas Serrano-Velarde *The Deep pocket effect of internal capital markets*

WP12/16 Clemens Fuest, Andreas Peichl and Sebastian Siegloch *Which workers bear the burden of corporate taxation and which firms can pass it on? Micro evidence from Germany*

WP12/15 Michael P. Devereux *Issues in the Design of Taxes on Corporate Profit*

WP12/14 Alan Auerbach and Michael P. Devereux *Consumption Taxes In An International Setting*

WP12/13 Wiji Arulampalam, Michael P. Devereux and Federica Liberini *Taxes and the location of targets*

WP12/12 Scott Dyreng, Bradley Lindsey and Jacob Thornock *Exploring the role Delaware plays as a tax haven*

WP12/11 Katarzyna Bilicka and Clemens Fuest *With which countries do tax havens share information?*

WP12/10 Giorgia Maffini *Territoriality, Worldwide Principle, and Competitiveness of Multinationals: A Firm-level Analysis of Tax Burdens*

WP12/09 Daniel Shaviro *The rising tax-electivity of US residency*

WP12/08 Edward D Kleinbard *Stateless Income*

WP12/07 Vilen Lipatov and Alfons Weichenrieder *Optimal income taxation with tax competition*

WP12/06 Kevin S Markle *A Comparison of the Tax-motivated Income Shifting of Multinationals in Territorial and Worldwide Countries*

WP12/05 Li Liu *Income Taxation and Business Incorporation: Evidence from the Early Twentieth Century*

WP12/04 Shafik Hebous and Vilen Lipatov *A Journey from a Corruption Port to a Tax Haven*

WP12/03 Neils Johannesen *Strategic line drawing between debt and equity*

WP12/02 Chongyang Chen, Zhonglan Dai, Douglas A. Shackelford and Harold H. Zhang, *Does Financial Constraint Affect Shareholder Taxes and the Cost of Equity Capital?*

WP12/01 Stephen R. Bond and Irem Guceri, *Trends in UK BERD after the Introduction of R&D Tax Credits*