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Do Tax Directors Face Consequences from Tax Avoidance?

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DO TAX DIRECTORS FACE CONSEQUENCES FROM TAX AVOIDANCE?

by

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Abstract

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I examine the association between tax avoidance and tax director turnover. Specifically, I hand collect the names of tax directors and explore whether tax directors face consequences from making tax avoidance decisions. This unique dataset allows me to identify the tax director, who is directly responsible for taxes, which are one of the most significant accounts, and who prior literature has largely ignored due to a lack of availability of data. I find evidence that the tax director is more likely to face consequences, as measured by turnover, when their firm's effective tax rate is above their industry median's effective tax rate and when the effective tax rate is volatile. Accordingly, these results provide an understanding of the consequences of tax directors' tax avoidance decisions. In supplemental analysis I find that tax directors face turnover when they try to manage earnings utilizing the tax accounts but fail to meet analyst forecasts. In addition, I examine samples of firms that engaged in aggressive tax avoidance, had tax-related restatements and had tax-related internal control weaknesses. For these three tests, I do not find evidence that tax directors face consequences, as measured by turnover, compared to a set of matched tax directors. Overall, these supplemental findings suggest that tax directors face consequences related to middle range tax avoidance decisions but do not face consequences from very aggressive tax avoidance and GAAP-related tax decisions.

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1. Introduction

I examine the association between tax avoidance and tax director [1]turnover. Tax avoidance represents a continuum of tax planning strategies available to managers, ranging from clearly legal transactions at one end to more aggressive strategies at the other end (Hanlon and Heitzman, 2010). The costs and benefits associated with tax avoidance vary based upon where the strategy falls along the continuum. In past papers, Dyreng, Hanlon and Maydew (2010) document that CEOs and CFOs have manager specific fixed effects on a firms' overall tax avoidance behavior and Gallemore, Maydew and Thornock (2014) document that CEOs and CFOs do not bear costs associated with engaging in more aggressive forms of tax avoidance, specifically tax shelters. The Dyreng et al. (2010) and Gallemore et al. (2014) studies use SEC filings to identify the CEOs and CFOs who set the tone at the top regarding tax strategy, rather than the individual that likely has the greatest responsibility for implementation of firms' tax avoidance decisions, the tax director. In this study, I utilize hand collected data from The Tax Directory to identify the tax director which allows me to go beyond publicly available data. Further, I examine whether tax directors face consequences from their tax avoidance decisions. Specifically, I examine turnover as it is the ultimate consequence faced by any employee. Accordingly, this research provides a better understanding of the consequences of tax directors' tax avoidance decisions.

In a recent review paper Hanlon and Heitzman state that "**perhaps a more fundamental question is who makes the tax decisions for the firm**? ...How much control do the top

[1] I utilize the term "Tax Director" throughout this paper to refer to the head of tax although firms utilize various titles for the head of tax and not exclusively "Tax Director". Please refer to Section 4.2 for details on the titles of the head of tax.

executives have over the **tax director, and how is their performance monitored**? ...These are interesting issues we hope to see resolved in the coming years" (2010). Therefore, I identify the person that makes the tax decisions at a firm, the tax director and I examine how tax directors are monitored by looking at turnover, which is a consequence of failing to meet performance expectations. Understanding how tax avoidance decisions affect turnover is important because tax directors' tax avoidance decisions are likely influenced by whether the outcome of such decisions will affect their continued employment with the firm. Further, the outcome of their tax avoidance decisions is of concern to stakeholders because taxes are a significant and material expense for most firms (Armstrong, Blouin and Larcker 2012). Gallemore et al. (2014) explain that managers weigh costs and benefits when deciding whether to engage in tax avoidance strategies however the costs are difficult to identify. In this paper I examine whether turnover, one potential cost, is a result of certain tax avoidance decisions. I assume that tax directors likely weigh the benefits of being overly aggressive (or conservative) against the likelihood of termination when making tax avoidance decisions. I believe that examining tax directors is a strong setting in which to examine the relation between tax avoidance and turnover because these individuals have the most direct influence over implementation of a firms' tax avoidance strategy, and accordingly are likely to be held the most responsible for the outcome of such decisions (Armstrong et al., 2012). For example, in a recent paper on consequences of tax aggressiveness faced by CEOs/CFO, Gallemore et al. (2014) note that "ideally, we would also examine turnover in tax directors, who play a critical role in the tax decisions of the firm" and that, unlike the CEO/CFO, "the tax director is most likely to suffer reputational costs from aggressive tax avoidance" (pg. 1116). Further, in a recent roundtable discussion hosted by the Tax Executives Institute (TEI), CFOs discussed that they spend minimal amount of time on tax

planning decisions as they trust the Tax Director with day-to-day tax planning decisions (TEI 2015). Therefore exploring whether tax directors in fact face consequences from their tax avoidance decisions is worthy of exploration.

I hand collect the names of tax directors within firms' tax departments from The Tax Directory. The Tax Directory is published by Tax Analysts, and contains the names and titles of members of tax departments at Fortune 1000 companies and those listed on the NASDAQ[2]. One volume of The Tax Directory was used by Phillips (2003) to collect contact information to use in sending out a survey on tax directors. I use this dataset in a multiyear setting from 1996 to 2013. This data allows me to identify those individuals that are in charge of the tax department at a firm for the period after FAS109 was enacted[3].

In my main tests I examine three proxies that capture tax director tax avoidance decisions in order to determine whether tax directors face consequences from these tax avoidance decisions. The first proxy I use for tax directors' tax avoidance decisions is a firm's industry-adjusted effective tax rate ("ETR"). Prior literature has shown that the ETR is used to compare one firm to another (Dyreng, Hanlon and Maydew, 2008). Further, prior literature provides evidence that tax directors are evaluated based on the ETR (Armstrong et al., 2012). Additionally, prior literature has found that firms in the same industry have similar opportunities when it comes to tax avoidance (Balakrishnan, Blouin and Guay, 2012). Finally, in a recent working paper, Chyz and Gaertner (2015) find that forced CEO turnover results from having an

[2] The directory is updated annually through research by editors at Tax Analysts and is available to the public for purchase via hardcopy book or online.
[3] As I require three years of data prior to the year of tax director turnover for my volatility measure, I begin my tax sample in 1996 to allow for data to be collected in 1993, 1994 and 1995 which is after FAS109 was enacted in 1993. Similarly for the shelter sample the first shelter was revealed in 1995 and so I require data from 1993 onward in order to measure tax director turnover.

ETR that is higher than their industry peers ETR. Therefore how a firm's ETR compares to its industry peers' ETRs is one tax avoidance decision that a tax director is evaluated based on. I find a significantly positive association between the industry-adjusted GAAP ETR and tax director turnover which means that tax directors are more likely to turnover when their firm's ETR is above their peers and less likely to turnover when their firm's ETR is below their peer's ETR. This result is economically significant with a one standard deviation increase in industry adjusted ETR leading to an increase in the likelihood of tax director turnover by 3.33 percentage points.

The next two proxies I use to capture tax directors' tax avoidance decisions relate to the volatility of the ETR. Firstly, I examine a one year change in the ETR which represents a short-term measure of volatility of the ETR. Next, I use a long term volatility measure of the ETR over a five year horizon. Volatility captures a decision by tax directors to engage in sustainable tax avoidance that does not falter over time (McGuire, Neuman and Omer, 2013). McGuire et al. (2013) find that sustainability of a firm's tax avoidance decisions is important because it provides information about a firm's future earnings and that investors use this information to infer the persistence of earnings. Further, Schmidt (2006) suggests that CEOs dislike earnings surprises that result from tax department activities, suggesting that the more volatile (less stable) the ETR, the more likely tax directors face consequences. Using a one year measure of ETR stability, I find a statistically significant positive association between a one year increase in the GAAP ETR and tax director turnover. I conclude that firms whose GAAP ETR increases from one year to the next are more likely to have tax director turnover. Next, using a long term measure of ETR volatility based on McGuire et al. (2013), I find a statistically significant positive association between ETR volatility and tax director turnover. I conclude that tax

director turnover is a consequence of making more volatile (less stable) long term decisions when it comes to the ETR.

Next, I calculate the variables of interest using the Cash ETR instead of the GAAP ETR and find insignificant results. This finding suggests that tax directors are evaluated on the book ETR and not how much tax the firm actually pays which is consistent with findings in Armstrong et al. (2012). Further, the insignificant results found using Cash ETR coupled with the significant results using GAAP ETR are consistent with recent media coverage which suggest that tax directors care more about GAAP ETR than Cash ETR.

In supplemental analysis I find that tax directors face turnover when they try to manage earnings utilizing the tax accounts but fail to meet analyst forecasts. In addition, I examine samples of firms that engaged in aggressive tax avoidance, had tax-related restatements and had tax-related internal control weaknesses. For these three tests, I do not find evidence that tax directors face consequences, as measured by turnover, compared to a set of matched tax directors.

The results of this study contribute to the tax avoidance literature by showing that a consequence of certain tax avoidance decisions is turnover of tax directors. Prior studies document some consequences of tax avoidance such as increased likelihood of IRS investigation and penalties/ fees, negative stock price reaction and changes to firm value (Hanlon and Heitzman, 2010; Desai and Dharmapala, 2009; Hanlon and Slemrod, 2009). While these prior studies document firm consequences, I document consequences for the key decision maker, the tax director as she is directly responsible for tax avoidance decisions. Further, using a hand-collected dataset, I am able to directly explore this significant role at a firm. This unique dataset expands upon previous papers which have either used proprietary data on tax directors or survey

data, as The Tax Directory is not subject to the constraints posed by those two forms it is a powerful dataset to use.

Additionally, I contribute to the broader turnover literature by identifying that the ETR can be used as a mechanism in disciplining lower level managers. Further, although Dyreng et al. (2010) document executive effects on the ETR they do not examine if they face consequences for decisions related to the ETR. Finally, I am able to examine consequences of those below the CEO which prior literature has shown to be a gap in the literature as most papers focus on CEOs, CFOs and board members (Fee and Hadlock, 2004). I examine consequences faced by tax directors because they are the individuals directly responsible for tax avoidance decisions and they are therefore an important contributor to the firm's bottom line. Additionally, as noted above, Hanlon and Heitzman (2010) note the literature could explore what control executive have over tax directors as well as how firms monitor tax directors' performance. In this paper I answer this call by exploring the role of tax director and one monitoring mechanism which is turnover.

The remainder of paper is organized as follows. In Section 2, I discuss relevant literature. In Section 3, I develop my hypotheses. In Section 4, I explain the research design used to test my hypotheses. In Section 5, I introduce my empirical mode. In section 6, I provide results from testing my hypotheses. In section 7, I perform robustness tests and then perform additional analysis. Finally in section 8, I conclude the paper.

2. Literature Review

2.1 Tax Avoidance

Hanlon and Heitzman (2010) define tax avoidance as a continuum of tax planning

strategies ranging from perfectly legal tax planning strategies on one end to very aggressive tax strategies on the other end. Firms and managers face potential consequences from engaging or not engaging in all forms of tax avoidance depending on what capital markets, shareholders, executives and board of directors see as the appropriate level for the firm.

Prior literature utilizes the ETR as a proxy for tax avoidance and finds that executives are evaluated based on the ETR (Phillips, 2003; Dyreng et al., 2008; Hanlon and Heitzman, 2010; Armstrong et al., 2012). Further, prior literature finds that the ETR is used to measure tax department performance (Douglas Ellingsworth and McAndrews, 1996). In a study on individual fixed effects, Dyreng et al. (2010) find that top executives (CEOs, CFOs, and others listed in the SEC proxy statements) have an impact on their firm's ETR. Finally, Chyz and Gaertner (2015) find that forced CEO turnover occurs when a firm's one year ETR is higher than their industry peers ETR. Additionally, they find mixed results regarding whether turnover occurs when a firm's one year ETR is lower than their industry peers ETR.

While tax avoidance through manipulation of the ETR may be difficult to observe,[4] the use of tax shelters represent intentional aggressive tax avoidance and whose revelation by the IRS/press makes them easy to observe (Hanlon and Heitzman, 2010). Prior literature has looked at consequences of tax shelter use faced by firms and the top five executives. Related to consequences faced by firms, Hanlon and Slemrod (2009) document a negative market reaction when there is a major news article that a firm engaged in a tax shelter. Related to consequences

[4] Hanlon and Heitzman (2010) note some shortcomings of the ETR in that it does not capture conforming tax avoidance, tax avoidance through deferral of taxes and other items that do not reflect tax avoidance may impact the ETR. Although these shortcomings are important I utilize the ETR in my tests as it is a widely used measure in prior literature.

faced by executives, in a survey paper, Graham, Hanlon, Shevlin and Shroff (2014) document that executives consider potential consequences when making certain tax avoidance decisions. However, in a recent empirical paper on tax shelters, Gallemore et al. (2014) document that there are no costs from engaging in tax shelters where costs are measured as market reaction, CEO/CFO/Auditor turnover, changes in customer behavior as measured by changes in sales, sales growth and advertising expenses, and how the media perceives the firm. Although the literature has examined whether there are consequences from engaging in tax shelters prior papers have only looked at consequences faced by CEOs and CFOs and ignored the tax director, the person responsible for implementation of tax avoidance decisions.

2.2 Turnover

Classical principal-agent theory (Holmstrom, 1979) dictates that managers are evaluated using performance metrics that provide information about an individual's efforts and abilities and which are controlled by the agent. Further it has been shown, empirically, that monitoring and review of managers is an important internal managerial control mechanism (Coughlan and Schmidt, 1985). Prior literature has extensively explored two areas of managerial control exercised by boards: compensation and turnover. There are numerous papers which discuss the impact of managers' decisions and actions on their compensation packages. For example, Coughlin and Schmidt (1985) provide evidence indicating that compensation plans approved by boards generally link pay to performance measures. Further it has been shown that managers who manage expectations are rewarded with larger bonuses (Matsunaga and Park, 2001) and higher option compensation (Aboody and Kasznik, 2000), suggesting that decisions made by managers are important determinants of a board's decision during manager reviews.

The second area of managerial review explored in prior literature, and which I explore in this paper, is turnover. Turnover can be voluntary or forced[5] and prior research on CEO turnover has found that forced turnover is the dominant type excluding turnover due to retirement. Much of the extant turnover literature has focused on the determinants of CEO and CFO turnover. Further various papers document that turnover increases following low firm performance (Coughlan and Schmidt, 1985; Warner, Watts and Wruck., 1988; Weisbach, 1988; Parrino, 1997). In the tax literature, performance measures relate to tax avoidance decisions, the effective tax rate reported on the financial statements, and the amount of cash taxes paid to the IRS. For example, Armstrong et al. (2012) find evidence that tax directors' compensation is positively associated with their tax avoidance decisions. Further, they find that unlike tax directors, CEOs and CFOs compensation is not associated with tax avoidance decisions.

Moreover, a growing body of literature has looked at turnover as a proxy for the consequences faced by executives who engage in corporate misconduct. The results in prior literature are mixed as to whether CEOs/CFOs face consequences as a result of financial statement restatements, lawsuits, fraud allegations, regulatory investigations and other actions[6]. For example, Beneish (1999) finds that firms with extremely overstated earnings do not experience increased executive turnover relative to a matched control firm. Further, Agrawal, Jaffe and Karpoff (1999) find no evidence that CEOs/CFOs and members of the board of directors face increased turnover when the firm faces fraud charges. On the other hand, Desai,

[5] Farrell and Whidbee (2003) define forced turnover as "changes other than those arising from retirement, normal management succession, death, illness, or those involving departure for a prestigious position elsewhere."

[6] Feroz, Park and Pastena, 1991; Arthaud-Day, Certo, Dalton and Dalton, 2006; Desai, Foley and Hines, 2006; Hennes, Leone and Miller, 2008 ; Karpoff , Lee and Martin., 2008 ; Collins, Li and Xie, 2009; McTier and Wald, 2011.

Hogan and Wilkins (2006) find that CEOs at firms that restate earnings are more likely to turnover relative to matched control firms. In the tax literature, Gallemore et al. (2014) find that turnover of CEOs and CFOs is no more likely for a sample of shelter firms than for a matched control and they conclude that top executives do not bare costs from aggressive tax avoidance decisions. Although Gallemore look at CEOs and CFOs they concede that "ideally, we would also examine turnover in tax directors, who play a critical role in the tax decisions of the firm" and that unlike the CEO/CFO, "the tax director is most likely to suffer reputational costs from aggressive tax avoidance" (Gallemore et al., 2014, pg. 1116). In a recent tax paper, Armstrong, Blouin, Jagolinzer and Larcker (2015), note that unresolved agency problems may influence a manager to choose a level of tax avoidance that varies from a level desired by shareholders.

2.3 Tax Directors

I focus on identifying tax directors because they are *directly* responsible for implementation of tax decisions at their firms. I choose to focus on the tax director within the tax department because the decisions he or she makes affect the income tax expense, a significant and material expense for the firm. Moreover, the decisions made within the tax department can have implications for other departments and individuals within the firm. For example, anecdotal and empirical evidence suggests that the corporate tax department can serve as a contributor to the bottom line (Crocker and Slemrod, 2005; Robinson, Sikes and Weaver, 2010). Also, prior literature has shown that CEOs' and business unit managers' compensation can be tied to taxes (Phillips, 2003; Guenther, Matsunaga and Williams, 2013). Armstrong et al. (2012) find that GAAP effective tax rates are associated with tax director compensation, thus suggesting that compensation committee's care about ETRs; however there is no empirical

evidence as to whether tax directors face consequences as a result of decisions made related to the ETR.

Prior and concurrent papers have examined executives' impact on the ETR or whether executives face turnover from tax avoidance decisions. Firstly, Dyreng et al. (2010) find that top executives (CEO, CFO and other) have an effect on tax avoidance by setting the "tone at the top" with regard to the firm's tax strategy. However, Dyreng et al. (2010) are only able to look at the top five executives listed in Execucomp (mainly CEO/CFO) and, thus fail to test the person that is directly responsible for day-to-day tax avoidance decisions. Further, a recent roundtable of CFOs hosted by the TEI noted that CFOs spend minimal time on tax planning decisions as they trust the Tax Director with day-to-day tax planning implementation (TEI 2015).

3. Hypothesis Development

Tax Avoidance and Tax Director Turnover

In this paper I look at two tax avoidance decisions related to the ETR, the industry-adjusted ETR and the volatility of the ETR, and examine whether the person I identified as the tax director faces consequences as a result of these two decisions.

3.1 Industry Measure

Firstly, I examine whether there are consequences to tax directors related to the decision to vary from the industry median ETR. Both anecdotal and empirical evidence suggest CEOs and boards are concerned with how their firms' performance compares to their industry peers. Specifically, Ferrell and Whidbee (2003) document that CEOs/CFOs are evaluated based on many variables one such being how they compare to their industry. Although the literature seems to agree that how one measures up to their industry peer matters, what is not clear is whether tax

directors turnover for having an ETR that is higher or lower than their peers ETR.

On the one hand, turnover may be more likely when a firm's ETR is higher than the industry median ETR because the board/CEO believes that the tax director is not engaging in efficient tax planning by not taking advantage of tax planning opportunities. In a Fortune article, a KPMG partner relays a story of a client who said that they were only interested in hiring an accounting firm to perform advisory services if they could "get their tax rate down, because it was higher than their competitors' and they were embarrassed" (Novack, 1998). Further, through discussion with a former tax director, I noted that tax directors are required to present the ETR of their peer firms and need to discuss why they could not keep their ETR inline or lower than their peer firms' ETR. In a recent empirical analysis of forced CEO turnover, Chyz and Gaertner (2015) note that taxes account for a wealth transfer from a firm to the taxing authorities and note that CEOs are held responsible for such a decrease in wealth. As with CEOs, tax directors would be held responsible for having a higher ETR (reporting a higher tax expense) relative to their industry peers when shareholders prefer tax-reducing decisions.

Alternatively, when a firm's ETR is lower than the industry median ETR, the board/CEO could interpret this as the tax director being too aggressive which could impact the firm's reputation.[7] Further, Desai and Dharmapala (2006) note that there could be reputational penalties from engaging in too much tax avoidance and therefore CEOs/boards concerned with this would fire a tax director for having a ETR that is lower than their industry peers ETR. Chyz and Gaertner (2015) use a sample of forced CEO turnovers and find mixed results as to whether turnover is associated with having an ETR lower than their industry peers' ETR.

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[7] Bankman (2004) shows that firms that engage in aggressive tax planning would be labeled "poor corporate citizens" which has adverse effects. Hanlon and Slemrod (2009) find small negative market reaction to firms that

As prior literature is mixed as to whether having an ETR that is higher or lower than industry peers is associates with tax director turnover, I therefore state my first set of hypotheses in the null form as follows:

H1: Turnover is not associated with a firm's industry-adjusted ETR.

3.2 Tax Rate Stability

Another decision made by a tax director is the stability of the firm's ETR. Empirical tax research has explored the volatility of the ETR. Guenther et al. (2013) find that firms with more volatile cash ETRs exhibit greater stock return volatility while McGuire et al. (2013) find that the stability of a firm's tax strategy provides unique information about earnings persistence. Finally, it has been shown that that some firms have the ability to maintain a consistently low effective tax rate over long periods of time (Dyreng et al., 2008) and Schmidt (2006) suggests that executives dislike earnings surprises that result from tax department activities. Assuming that stock returns and earnings are of major concern to boards/CEOs it would follow that they would monitor ETR volatility and that, in turn, tax directors would be evaluated based on the decisions they made related to this measure. Consistent with this idea, the Tax Executive Institute (TEI) found that the ability to avoid tax-related earnings surprises was one of the evaluation criteria for 70 percent of tax executives responding to a survey (TEI 2005). Taken together, one would expect that if the ETR is very volatile the board/CEO would interpret this as the tax director not having sufficient control over tax avoidance and thus I would expect to see volatility associated with turnover.

On the other hand, according to Guenther et al. (2013), a firm's tax payments change over

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engage in tax avoidance.

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time for a variety of reasons, including changes in local or international tax law and the settlement of aggressive tax positions whether for or against the firm. Given this finding, it could be that ETRs appear to be volatile but they are just due to changes in operations and therefore an association between ETR volatility and tax director turnover would not exist empirically.

As prior literature has shown mixed results for finding an association between volatility and turnover I state my second hypothesis in the null form as follows:

H2: Turnover is not associated with the volatility of a firm's ETR.

4. Research Design

4.1 Sample Selection

In order to identify the tax director I hand collect annual information on tax departments from Tax Analysts' The Tax Directory[8]. The Tax Directory was started in 1992 and is available for purchase annually via a hardcopy book or electronically to subscribers. Tax Analysts gathers data for Fortune 1000 firms and those listed on the NASDAQ. On an annual basis the Tax Analysts editors search a public database as well as company websites for information on the members of a firm's tax department. The quantity of tax department members listed varies per firm and depends on what data Tax Analysts can find. For each firm Tax Analysts lists the type of firm (public or private), a measure of firm size (total assets, sales), executive names and executive titles. Although titles vary per firm the usual titles include: Tax director, Tax manager, Legal Counsel, Tax Accountant, Controller, CFO and others.

[8] Information about The Tax Directory was gathered through a visit to the Tax Analysts headquarters and through conversations with The Tax Directory's editor and staff. I would like to thank Tax Analysts for access to the data and for taking the time to meet with me.

This data set has been used before for data for surveys but it has not been used for a long time series in an empirical accounting research paper and therefore I am the first to use it in this setting. The use of this data is my primary contribution as it allows access to a very important set of managers at a firm. All other data used thus far has come from Execucomp which lists the top five compensated executive (CEO, CFO, COO and others). Using The Tax Directory dataset allows me go beyond prior literature and to focus my tests on the person directly responsible for tax decisions.

As The Tax Directory is not linked to Compustat I first matched all company names listed in The Tax Directory from 1996-2013 to all company names listed in the Compustat Annual File for the same period. To match the two sets of company names I utilize a textual matching code which returns a proportion of common letters ("pcl") between the company name listed in Compustat and the company name listed in The Tax Directory and identifies the gvkey in Compustat to be used for each company in The Tax Directory (Rai 2012). Following Rai (2012) I set a pcl threshold of 0.80 and by hand checked all the matches with pcl between 0.80 and 1 to make sure the code worked properly and the company names are the same. To create an initial sample I included 3,379 unique matches, that had a perfect match (a pcl of 1) between the company name listed in The Tax Directory and that listed in Compustat. I then assign matches with pcl less than 1 and greater than 0.80 that had the following as the only differences between the company name listed in The Tax Directory and Compustat company name: corp/ corporation, inc/incorporated, or co/ company. Additionally I included matches with pcl between 1 and 0.80 where the only difference in the company names was the use of the word 'The'. The remaining matches with pcl between 1 and 0.80 that didn't meet any of the above criteria were not added to the initial sample. The match results return the gvkey of the matched firm next to the pcl and so

next I assigned the corresponding Compustat gvkey to each firm in the tax directory turnover file. I then merge the tax director turnover file to a file with all relevant variables from Compustat needed perform tests of H1 and H2 and the initial merge resulted in 8,211 firm-years. I exclude 1,237 firm- years missing a tax director in the previous year as I require two years of tax director data to calculate the *TURNOVER* variable. Additionally, I exclude 438 foreign incorporated firm-years by removing firms with fic !="USA". Next, I exclude subsidiaries by dropping 300 firm-years with Stko = 1 and 2, which are subsidiaries of public and private firms, respectively. Finally, I exclude 182 firm-years with missing pre-tax income and tax expense as pre-tax income and tax expense are the main components used in calculating the GAAP ETR which I need for my main tests. The total firm-year observations are 6,054 firm-years from 1,118 unique firms.

I collect financial data from Compustat for each observation firm-year from 1992-2013. Although my sample is from 1996-2013, as I test whether decisions made by tax directors are associated with *TURNOVER* in year *t* I require data from *t-1* to code the independent and control variables and therefore pull data from 1993 onwards. Specifically for H2, I require that firms have data for five years before my sample in order to calculate the volatility measure which is based on a five year window. I use the ExecuComp database to collect CEO and CFO names to create the *CEOTURNOVER* and *CFOTURNOVER* control variables. I am only able to gather CEO (CFO) data for 2/3 (1/3) of the firm-years and therefore present results for all tests by not including CEOTURNOVER/*CFOTURNOVER* as controls and then including CEOTURNOVER/*CFOTURNOVER* as controls.

Table 2, Panel A provides details about turnover within my sample. In the sample, tax director *TURNOVER* is roughly 4.4% with 265 firm-years with tax director *TURNOVER* and

5789 firm-years with no tax director *TURNOVER*. The 4.4% rate of *TURNOVER* although lower than the turnover rate for CEOs and CFOs[9], is consistent with the notion that turnover is rare and that tax directors will keep their jobs. Panel B of Table 2 presents a breakdown of the sample and the Compustat universe for the same sample period by industry, based on the Fama and French 17 industry classification. Roughly 60% of the sample is from the following industries: Retail Stores (8%), Machinery and Business Equipment (13%), Financial Institutions (15%) and Other (24%). Additionally, the sample is similar in industry makeup to that in Compustat with the exception of 15% of the sample coming from the Financial Institutions industry whereas it comprises 35% of the Compustat universe. From reviewing my sample makeup I noted that about two thirds of the Financial Institutions dropped out of the sample due to The Tax Directory not listing a Tax Director and listing only the CFO. Panel C of Table 2 shows *TURNOVER* by year. The number of firm-years per year is evenly distributed over the sample period of 1996-2013. Finally, Panel D of Table 3 shows the median Total Assets, GAAP ETR and CASH ETR for my sample compared to the universe of firms on Compustat for the same period as my sample (1996-2013). The GAAP and CASH ETRs are comparable between my sample and the Compustat universe but the total assets for my sample are much larger due to The Tax Directory containing only Fortune 1000 firms.

4.2 Measuring Tax Director Turnover

In my sample, tax director turnover is defined as a change in the individual occupying a specific position from year *t* to year *t+1*. For the tax avoidance sample I code the dependent variable, *TURNOVER* as follows: For each firm-year I determine the tax director following Chen

[9] In a prior paper by Farrell and Whidbee paper find CEO turnover for 363/4015 firm-years for period 1986-1997 which is roughly 9%.

et al. (2015) as the person with a title such as "Tax Director," "Vice President-Tax," "Chief Tax Counsel," and "International Tax Counsel"[10]. I then compare the name listed in The Tax Directory in year *t* to the name listed in the year *t+1* Tax Directory, if there is no change I set *TURNOVER* equal to zero, if there is a change I set *TURNOVER* equal to one. I further require a firm have only one entry per year to make sure I am only testing one head of the tax department. For those firms with multiple entries per firm-year[11], I keep the person listed first in The Tax Directory as the tax director and drop the other person listed.

4.3 Measuring Tax Avoidance

I use three measures to capture tax avoidance decisions which capture actions taken that fall along the spectrum of tax avoidance.

Firstly, to test the association between tax avoidance and turnover (H1), I follow Balakrishnan et al. (2012) to calculate my first measure of tax avoidance, *INDDEV*. *INDDEV* is a dummy variable which is set equal to one when firm's ETR is above the industry median ETR and set equal to zero when firm's ETR is below the industry median ETR. I calculate *INDDEV* using the GAAP and the Cash ETR and estimate equation (1) separately for each. I utilize the Fama and French 17 industry classification to group by industry[12]. Following Dyreng et al. (2010) I calculate the *GAAPETR* as total tax expense divided by pretax book income (adjusted

[10] The Tax Directory lists CFOs for some firms as the first person in directory I exclude CFOs as I rather control for them in the main regressions so as to not confuse turnover of the CFO with turnover of a member of the tax department.

[11] I identified 1,064 firm-years with multiple entries and by hand inspected the listing order of the names.

[12] I utilize all firms listed on Compustat to generate the industry median ETR and not just those firms in my sample. The mean/median industry GAAP ETR is 0.325/0.310 which is in line with prior literature and which confirms that the firm-years utilized are appropriate.

for special items). Prior literature has found that GAAP and CASH ETR capture different objectives executives may have when it comes to tax (Dyreng, et al., 2010). Therefore, I then estimate equation (1) using CASHETR instead of GAAPETR to determine whether tax avoidance through the CASHETR is also associated with turnover. To do this, I calculate CASHETR as defined by Dyreng et al. (2008, 2010) as cash taxes paid divided by pretax book income (adjusted for special items). The industry median ETR (GAAP and CASH separately) is found by calculating the ETR for each firm-year listed on Compustat excluding foreign incorporated firms and subsidiaries. Further, following Gupta and Newberry (1997) I bound the GAAP and CASH ETRs to be between 0 and 1 to mitigate the impact of outliers. I then assign each firm-year to an industry based on a firm's two digit sic code. I remove firms with missing ETR values and then calculate the industry median ETR grouping by the two digit sic code and by year. *INDDEV* is a lagged variable as turnover in year *t+1* is based on whether the *ETR* deviated from its industry in year *t*.

Next, to test the association between ETR stability and turnover (H2), I use a one year benchmark measure of ETR as well as a long-term five year measure of ETR volatility. Firstly, I compute a short-term one year measure of ETR stability, *ETRCHANGE*, as a change in the ETR from the previous year (t-1) to current year (t). A positive (negative) value for *ETRCHANGE* means this year's ETR is higher (lower) than last year's indicating an increase (decrease) in the ETR. Second, I follow McGuire et al. (2013) and compute a long-term measure of ETR volatility, *ETRVOL,* which is a measures of the coefficient of variation calculated as the standard deviation of annual ETRs scaled by the absolute value of the annual mean ETRs over the same

five year period (from t-4 to t)[13]. A low coefficient of variation for *ETRVOL* means that the tax strategy is stable. On the other hand, a high coefficient of variation means that the tax strategy is very volatile. In order to be able to calculate the *ETRVOL* variable I require that observations have non-missing data for tax expense for the period *t* to *t-4*. *ETRVOL* is calculated separately using GAAP*ETR* and CASHETR.

5. Empirical Model: Tax Avoidance and Turnover

To test the association between tax avoidance and turnover I estimate the following logistic model:

$$TURNOVER_{i,t+1} = \beta_0 + \beta_1 TAXAVOID_{i,t} + \beta_2 CEOTURNOVERi_{,t} + \beta_3 CFOTURNOVER_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 PROFITABILITY_{i,t} + \beta_6 PERFORMANCE_{i,t} + \beta_j YEAR + \beta_k INDUSTRY + \varepsilon_{i,t} \quad (1)$$

where:

TURNOVER = measure of tax director turnover as defined above;

TAXAVOID = measures of tax avoidance using *INDDEV, ETRCHANGE* and *ETRVOL* as defined above;

CEOTURONOVER = one if the CEO listed in year t is different than the CEO listed in year t-1 and zero otherwise;

CFOTURNOVER = one if the CFO listed in year *t* is different than the CFO listed in year *t-1* and zero otherwise;

[13] I calculate it as follows: $_{ETRVOL}=\frac{\sqrt{[\sum_{t-4}^{t}(GAAP_{ETR\ it}-Avg\ GAAP_{ETR\ i})^2]/N}}{abs\left(\frac{1}{N}(\sum_{t-4}^{t} GAAP_{ETR\ it})\right)}$ where n=5

SIZE = natural log of total assets for year *t*;

PROFITABILTY = the ratio of pre-tax income at year *t* to total assets at the beginning of the year (also known as ROA) at year *t*;

PERFORMANCE = earnings before interest and taxes (EBIT) in year *t* divided by sales in year *t*.

I estimate equation (1) using *INDDEV, ETRCHANGE* and *ETRVOL* as the independent measures of tax avoidance decisions. I winsorized all continuous variables at the 1% and 99% level to correct for extreme outliers in the sample. I also include several control variables utilized in the turnover literature that have been shown to impact turnover such as size, performance and profitability[14]. Next I control for CEO and CFO turnover as it has been shown that a new CEO/CFO could bring a new team of directors and therefore *TURNOVER* could be driven by the new CEO/CFO and not by the measures of tax avoidance decisions (Dyreng et al., 2010). Finally, I include year and industry fixed effects to control for macroeconomic or industry specific events, respectively, which could impact *TURNOVER*. Refer to **Appendix A** for a full description of the variables.

A significant positive coefficient on *INDDEV* implies that tax director *TURNOVER* is more (less) likely to occur when the firm's ETR is above (below) its industry's median ETR.

A significant positive (negative) coefficient on *ETRCHANGE* implies that tax director *TURNOVER* is more likely to occur when the firm's ETR is higher (lower) than it was the previous year, meaning there was an increase in the ETR from the previous year.

[14] Ideally I would like to control for Tax Director Tenure but I am unable to collect data related to length of tenure at the firm from The Tax directory.

A significant positive (negative) coefficient on *ETRVOL* implies that tax director *TURNOVER* is more (less) likely to occur when the firm's ETR is volatile.

6. Results

6.1 Univariate Results

Table 3, Panel A contains descriptive statistics for variables used in testing H1 and H2. I list details for the full sample, firm-years with turnover=1 and the firm-years with turnover=0. The variable of interest for H1 is *INDDEV*. The full sample mean and median *INDDEV* are positive which would suggest that turnover is more likely when a firm's ETR is above the industry median ETR. Also the variables of interest for H2, *ETRCHANGE* and *ETRVOL,* full sample mean and median values are all positive indicating the ETR is volatile on average. The short-term volatility measure *ETRCHANGE* is more pronounced for the turnover sample (mean 0.22) compared to the no-turnover sample (mean 0.00). Interestingly the univariate results show the long term positive volatility as seen in the *ETRVOL* variable is more pronounced for the no-turnover sample (mean 1.61) compared to the turnover sample (mean .85). This result leads me to apply further restrictions on the sample used in the multivariate analysis. Further I find significant differences between the means and medians of *INDDEV* and *ETRVOL* of firms with no-turnover (turnover=0) and firms with turnover (turnover=1). These univariate results suggest a negative (positive) association between *INDDEV* (*ETRCHANGE/ETRVOL*) and tax director *TURNOVER*.

Regarding the control variables, *CEOTURNOVER* and *CFOTURNOVER,* both the turnover and the no-turnover groups have median turnover of 0 suggesting that CEOs and CFOs do not face turnover, on average. Also the means of the *SIZE* and *PERFORMANCE* control

variables are significantly different between the two groups while the means of the *PROFITABILITY* control variable are not different. These univariate results suggest that firm-years with tax director are larger in size to those without tax director turnover. Also the performance of the turnover=1 firm-years is higher than that of the turnover=0 firm-years which suggests that performance is not driving the difference between the firms.

Panel B contains Spearman and Pearson (above and below respectively) correlation coefficients for all variables in equation (1) as well as the GAAP and CASH ETRs. An asterisk next to the coefficients indicated a p-value of .05 or less. GAAP and CASH ETRs are very highlight correlated as would be expected. As in Panel A, INDEV is positively and significantly correlated with TUROVER (Spearman: 0.0383 and Pearson: 0.0346). As in Panel A, ETRCHANGE is positively although not significantly correlated with TURNOVER. As this is the case I further restricted my model to non-loss firms as loss- firms can make the coefficients difficult to interpret. Finally, ETRVOL is negatively although not significantly correlated with TURNOVER. As with ETRCHANGE this could be due to having loss firms in the sample and so in my multivariate analysis I further limit the sample to include only non-loss firms for the entire 5 year period utilized in calculating the ETR variable.

6.2 Multivariate Results for H1

Table 4 presents results of estimating equation (1) where the dependent variable is tax director *TURNOVER* and the variable of interest is *INDDEV*. In columns 1 and 4, I estimate equation (1) while controlling for *SIZE, PROFITABILITY* and *PERFORMANCE* while in columns 2, 3, 5 and 6, I also control for *CEOTURNOVER* and *CFOTURNOVER*; I do this because CFO data is not listed on Execucomp for 2/3 of the sample and so the sample size is

greatly reduced. Further, in columns 3 and 6 I limit the sample to firms with no losses as prior papers cite that interpreting coefficients from firm-years with losses is difficult. I estimate equation (1) utilizing GAAPETR in columns 1, 2 and 3 and using CASHETR in columns 4, 5 and 6.

In column 1 the coefficient of interest, *INDDEV*, is significantly positive at the 5% level (coef: 0.38 and p-value: 0.026). Even after adding *CEOTURNOVER* and *CFOTURNOVER*, in column 2 and limiting the sample to non-loss firms in column 3, the results show a positive and significant coefficient. Overall, the results from columns 1, 2 and 3 show that there is a positive association between the industry median ETR and tax director turnover. This result is economically significant with a one standard deviation increase in INDDEV leading to an increase in the likelihood of tax director turnover by 3.33 percentage points. This finding suggests that the tax director is more likely to turnover when her firm's ETR is above its industry's median ETR and less likely to turnover when her firm's ETR is below its industry's median ETR.

Results of estimating logistic model (1) using CASHETR can be found in columns 4, 5 and 6. The coefficients on the variable of interest, *INDDEV* have insignificant positive coefficients in columns 4, 5 and 6 suggesting that deviating from the industry median CASHETR is not associated with tax director turnover. This finding is consistent with findings in Armstrong et al. (2012) that compensation of tax directors has little relationship with CASHETR, which they interpret as meaning that tax directors are compensated based on how they can reduce the tax expense through the GAAPETR and not through the CASHETR. Further, CASHETR may have components of taxes paid related to prior year activities and as such may not be a good measure to use to test for an association between tax director turnover

and tax avoidance decisions.

6.3 Multivariate Results for H2

Table 5 presents results of estimating equation (1) where the dependent variable is tax director *TURNOVER* and the variable of interest is *ETRCHANGE*. In columns 1 and 4, I estimate equation (1) while controlling for *SIZE, PROFITABILITY* and *PERFORMANCE* while in columns 2 and 5 I also control for *CEOTURNOVER* and *CFOTURNOVER*. Further, in columns 3 and 6 I limit the sample to firms with no losses for the two years used to calculate *ETRCHANGE* as prior papers cite that interpreting coefficients from firm-years with losses is difficult. I estimate equation (1) utilizing GAAPETR to calculate *ETRCHANGE* in columns 1, 2 and 3 and using CASHETR to calculate *ETRCHANGE* in columns 4, 5 and 6.

In column 1 the coefficient of interest, *ETRCHANGE*, is significantly positive at the 5% level (coef: 0.04 and p-value: 0.019) indicating that the more volatile the GAAPETR the more likely tax director *TURNOVER* will occur. Even after adding *CEOTURNOVER* and *CFOTURNOVER*, in column 2 and limiting the sample to non-loss firm-years, in column 3, *ETRCHANGE* has statistically significant positive coefficients. Overall, the results in Table 5 suggest that when the GAAP ETR is higher than it was the year before the more likely the tax director will face a consequence in the form of turnover.

Results of estimating logistic models (1) using CASHETR to generate *ETRCHANGE* can be found in columns 4, 5 and 6. The coefficients on the variable of interest, *ETRCHANGE,* have insignificant negative coefficients suggesting that CASHETR is not associated with tax director turnover which is in line with prior literature as mentioned in Section 6.2.

Table 6 presents results of estimating equation (1) where the dependent variable is tax director *TURNOVER* and the variable of interest is *ETRVOL*. Due to the long term nature of the *ETRVOL* variable I limit the sample used to firm-years where there were no losses for the whole five year period used to calculate *ETRVOL*. I remove firm-years with losses in any of the previous five years as prior papers cite that interpreting coefficients from firm-years with losses is difficult. In columns 1 and 4, I estimate equation (1) while controlling for*, SIZE, PROFITABILITY* and *PERFORMANCE,* while in columns 2 and 5 I also control for *CEOTURNOVER* and *CFOTURNOVER*. Additionally, in columns 3 and 6, I limit the sample to firm-years with no tax director turnover during the 5 year period to remove confounding effects of prior tax director not being able to keep the ETR stable. I estimate equation (1) utilizing GAAPETR to calculate *ETRVOL* in columns 1, 2 and 3 and using CASHETR to calculate *ETRVOL* in columns 4, 5 and 6.

In column 1 the coefficient of interest, *ETRVOL*, is positive although insignificant. In column 2 when *CEOTURNOVER* and *CFOTURNOVER* are added as controls the *ETRVOL* coefficient becomes significantly positive at the 10% level indicating that the more volatile the GAAPETR the more likely tax director *TURNOVER* will occur. After removing firm-years in which there was tax director turnover in the previous five years, the coefficient of interest, *ETRVOL* is significantly positive at the 5% level (coef: 0.08 and p-value: 0.043). Overall, the results in Table 6 suggest that that the more volatile the GAAPETR the more likely the tax director will face a consequence in the form of turnover.

Results of estimating logistic models (1) using CASHETR to generate *ETRVOL* can be found in columns 4, 5 and 6. The coefficients on the variable of interest, *ETRVOL,* have negative although insignificant coefficients suggesting that CASHETR is not associated with tax director

turnover which is in line with prior literature as mentioned in Section 6.1.

Overall the results in Tables 4, 5 and 6 taken together, suggest that tax directors will face turnover as a result of making tax avoidance decisions which result in higher GAAP ETRs than the GAAP ETRs of peer firms. Further, tax directors will face turnover as a result of making tax avoidance decisions which are less certain and thus lead to a more volatile GAAP ETR. These results suggest that, on average, firms prefer sustainable tax avoidance decisions that keeping the GAAP ETR comparable to peers in their industry.

7. Supplemental Analysis

I perform additional analysis in this section. In section 7.1, I perform various robustness tests on my main regressions. While tax directors may or may not be fired as a consequence of their overall tax avoidance decisions there are certain decisions that result in egregious outcomes for which one would expect to see the tax director turnover. Therefore, in sections 7.2 – 7.4, I examine three decisions that may impact tax director turnover: engaging in aggressive tax shelters, having a tax-related financial statement restatement and having tax-related internal control weakness. Finally, in section 7.5, I examine whether tax director turnover is associated with the inability to manage earnings through the tax accounts.

7.1 Robustness Tests

I perform robustness tests on my main tests in the following section. First, as domestic and multinational firms have different tax avoidance opportunities I estimate equation 1 for all three variables of interest separately for multinational and domestic firms. I identify firms as being domestic if they have 0 foreign income (pifo is 0 or missing) and multinational if they have foreign income (pifo has a value). I find (Table 8, Panel A) that the INDDEV variable is only

significantly positive for domestic firms and not for multinational firms. For the ETRCHANGE and ETRVOL variables I find no difference between domestic and multinational firms. I interpret this as meaning that for domestic firms varying from their industry peers is a mechanism used in making turnover decision for the Tax Director. Next, as the financial crisis led to increased levels of turnover in general, in order to rule this out I estimation equation (1) excluding those firm-years from 2008. I find (Table 8, Panel B) that there is no change in significance for the INDDEV or ETRCHANGE variables but for some models significance declines for ETRVOL. The drop in significance for the ETRVOL may be due to the measure requiring five years of ETR information so it is more difficult to remove the impact of the 2008 financial crisis. Third, as Armstrong et al. (2012) find that only the compensation contract of the Tax Director is tied to the GAPP ETR and not the CEO or CFO, I examine whether this holds for my sample. In order to do this, I estimated equation (1) with CEO turnover and CFO turnover separately as the dependent variables instead of Tax director turnover and utilize the same right hand side variables. I find (Table 8, Panel C) that none of the variables of interest, INDDEV, ETRCHANGE or ETRVOL are significantly associated with CEO or CFO turnover. Therefore I conclude that the decision to fire a CEO or CFO is not based on the tax avoidance decisions I identify. This finding is in line with the Armstrong et al. (2012) paper as they find no association between compensation of the CEO and CFO and tax avoidance. Finally, I estimate equation (1) utilizing various timeframes for CEO and CFO turnover to rule out timing concerns that I am not capturing the correct time period for CEO or CFO turnover. When I control for CEO and CFO Turnover at t-2 I find no change in my main results (Table 8, Panel D).

7.2 Tax Aggressiveness and Tax Director Turnover

While my main tests examine tax avoidance which falls in the middle to right part of the tax avoidance continuum, in this section I examine tax aggressiveness, which falls in the far right part of the tax avoidance continuum. In a recent paper, Gallemore et al. (2014) find that CEOs and CFOs of shelter firms do not face higher rates of turnover compared to those of control firms and they conclude that top executives do not bare consequences from aggressive tax avoidance. However, they point out that the results found for CEO/CFO may not apply to the tax director and they conclude the paper by stating that it would be interesting to examine whether "lower-level executives, such as those in the tax department, do suffer turnover" (Gallemore et al, 2014, pg. 1129). Therefore, I examine whether tax directors face turnover after engaging in a tax shelter which is an aggressive tax avoidance decision.

In order to compare my results to prior literature I utilize the same sample of shelter firms as used by Gallemore et al (2014). Their sample consists of shelters as revealed between 1995 and 2004 and is made up of firm-year shelters from prior literature as well as newly identified shelters. The sample consists of 44 firm-year shelter observations as documented in Graham and Tucker (2006), 107 firm-year shelter observations as documented in Hanlon and Slemrod (2009), 33 firm-year shelter observations as documented in Wilson (2009), and an additional 61 shelter firm-years as identified by Gallemore et al. (2014) for a total of 245 firm-year shelter observations. After removing duplicates, foreign firms, firms with ambiguous or missing revelation date, revelations before 1993, and firm-years with insufficient data for matching Gallemore et al. (2014) have 118 firms with 128 tax shelter firm-year observations. Out of the sample of 118 shelter firms, Gallemore et al. (2014) are able to gather CEO Turnover data for 107 firms. I use the 128 total revelations as the basis for my test. As with my main tests, I utilize

The Tax Directory to identify members of the tax department for both treatment (shelter firm-years) and control firm-years for a period of five years surrounding the revelation of a shelter in order to code the TURNOVER variable. I exclude CFOs[15], even if they are listed first, and chose the next person listed as the first person listed. Further, I require that the treatment sample and the control sample be listed in The Tax Directory[16] which reduces the shelter observations to 87 firm-years which I match to 87 control firm-years. Finally, in order to utilize the difference-in-differences technique I require that there is sufficient data for all variables used in estimating equation (2) for a five year period around the revelation year. I collect financial data from Compustat for each firm-year for both control and treatment firms. I use the ExecuComp database to collect CEO and CFO names to create the *CEOTURNOVER* and *CFOTURNOVER* control variables.

To test whether tax directors that engage in tax shelters are more likely to turnover compared to a matched firm, I utilize a difference-in-differences design following Gallemore et al. (2014) and estimate the following logistic model[17]:

$$TURNOVER_{i,t+1} = \beta_0 + \beta_1 SHELTERFIRM_i + \beta_2 REVEALYEAR_{i,t} + \beta_3 SHELTERFIRM_i * REVEALYEAR_{i,t} + \beta_4 CEOTURNOVER_{i,t}$$

[15] I exclude CFOs as I rather control for them in the main regressions so as to not confuse turnover of the CFO with turnover of a member of the tax department.

[16] As the name listed on Compustat is the current company name I search the EDGAR online filings on sec.gov for prior company names to make sure that I search The Tax Directory for all possible names used by the firm.

[17] *TURNOVER*= measure of tax director turnover as defined in equation (1), refer to Appendix A; *SHELTERFIRM*= 1 for firms that engaged in a tax shelter, control firm is coded zero; *REVEALYEAR* = one for both the shelter and control firm in the year during and after the shelter was revealed, zero otherwise; *SHELTERFIRM *REVEALYEAR* = interaction term that represents the likelihood of turnover for the shelterfirm after the shelter was revealed. *CEOTURNOVER*, *CFOTURNOVER*, *SIZE*, *PROFITABILITY* and *PERFORMANCE* are coded as in equation (1), refer to Appendix A.

$$+ \beta_5 CFOTURNOVER_{i,t} + \beta_6 SIZE_{i,t} + \beta_7 PROFITABILITY_{i,t}$$

$$+ \beta_8 PERFORMANCE_{i,t} + \varepsilon_{i,t} \quad (2)$$

Following Gallemore et al. (2014) I utilize the difference-in-differences methodology in order to isolate the effect of revelation of a shelter on tax director turnover separate from other confounding factors that could create differences between the control and treatment group. To do this, I match each shelter firm-year (treatment) to a control firm-year in the same industry that is closest in size (total assets) in the year before the shelter is revealed. Specifically, I utilize the Fama-French 17 industry classifications to assign possible control firms to an industry (Fame and French, 1997). If the matched firm is not listed in The Tax Directory I choose the firm that is the next closest in total assets to the treatment firm as a control firm. I cluster the standard errors at the control-treatment match level by creating a match id that assigns each control/treatment match a number from 1 to 87.

I also control for *CEOTURNOVER*, *CFOTURNOVER*, *SIZE*, *PROFITABILITY* and *PERFORMANC*[18].

A significant positive coefficient on the variable of interest, *SHELTERFIRM*REVEALYEAR*, implies a greater likelihood of tax director turnover after revelation of tax shelter relative to a matched control firm.

7.2.1 Multivariate results

Table 7 presents results of estimating equation (2) where the dependent variable is

[18] Gallemore et al. (2014) also control for CEO RETIRE which is an indicator variable set equal to one when the CEO is 64 years or over. As my interest is tax director turnover, I do not include this as a control in my main tests but rather control for CEO and CFO Turnover as they could impact tax director turnover. Gallemore et al (2014) also control for ABNORMAL RETURNS and LEVERAGE which I do not include in my regression as I try to stay consistent with controls in equation 1.

TURNOVER and the variable of interest is the interaction term *SHELTERFIRM*REVEALYEAR*. In column 1, I estimate equation (2) while controlling for *SIZE, PROFITABILITY* and *PERFORMANCE* while in columns 2 I also control for *CEOTURNOVER* and *CFOTURNOVER* as controlling for them results in a greatly reduced sample size. I require that each shelter/control match have complete data for all variables in order to estimate equation (2) which reduced the number of firm-years

In columns 1 and 2 the results indicate a positive although insignificant coefficient of .183 and .068 which remains insignificant when *CEOTURNOVER* and *CFOTURNOVER* are controlled for. Overall, the results in Table 7 suggest that tax directors do not face consequences, in as far as turnover, from engaging in aggressive tax decisions, as measured by tax shelter revelations, compared to matched control firms.

7.3 Tax-related Financial Statement Restatements and Tax Director Turnover

Along with engaging in tax shelters, tax directors could also make GAAP violations that result in a tax-related restatement which may lead to turnover. Prior literature have found mixed results as to whether turnover is more likely for those managers whose firm engage in GAAP violations. Firstly, Beneish (1999) finds that turnover is no more likely for those managers whose firms are revealed to have engaged in corporate fraud or GAAP violations. On the other hand, Desai, et al. (2006) examine whether top managers (those listed in the proxy statements) face turnover after announcing an earnings restatement. Desai et al. (2006) find that at least one of the top five managers listed in the proxy statements face turnover within 24 months of making a financial statement restatement. Specific to tax, I examine whether tax directors face turnover following revelation of a tax-related financial statement restatement as the tax director is

responsible for the tax department.

In order to test whether tax directors face turnover after a tax-related restatement, I utilize audit analytics to identify 1,294 tax-related restatement firm-years from 1996 to 2012[19]. I then merge the 1,294 restatement firm-years to the 6,054 firm-years for which I have sufficient tax director turnover info (the sample I used in my main tests). After merging I found an initial sample of 57 firm-years. I then follow Desai et al. (2006) and match the 57 sample firm-years to control firm-years who have no turnover. I match one-to-one on year, two digit sic code and total assets. I was only able to match 42 tax-related restatement firm-years as the other 15 control sample firm-years had no tax director info listed in the tax directory.

I then estimated equation (1) from my main tests but substituted β1 with an indicator variable for whether the firm had a tax related restatement or not. I set the indicator variable *TAXRESTATE* =1 for the 42 treatment firm-years that had a tax-related restatement and *TAXRESTATE* =0 for the 42 control firm-years.

Results (not presented) of estimating the regression reveal no association between having a tax related restatement and the tax director turning over. These results indicate that although restatements in general are seen as egregious offenses tax-related restatements may not be the responsibility of the tax director. Further the lack of results may also be due to the lack of data availability as I was only able to test 42 out of a possible 1,294 firm-years with tax-related restatements.

7.4 Tax-related Internal Control Weaknesses and Tax Director Turnover

One final tax-related violation that a tax director may turnover for is the presence of tax-

[19] Tax- related restatements have the following field value in audit analytics RES_ACC_RES_FKEY_LIST = "18".

related internal control weaknesses. Other fields have examined whether internal control weaknesses lead to turnover of the CEO/CFO. Specifically, Haislip, Masli, Richardson and Sanchez (2014) examine internal control weaknesses related to information technology (IT) and find that firms with material weaknesses related to IT face higher turnover of CEOs and CFOs than those without. In a tax setting, Bauer (2015) states that tax-related internal control weaknesses reflect a manager's discretion over tax planning. In line with this, Bauer (2015) finds that firms with tax-related internal control weaknesses have higher ETRs than those without tax-related internal control weaknesses. Although Bauer (2015) noted an association between tax-related internal control weaknesses and tax planning, no one has looked at whether managers face consequences from a tax-related internal control weakness. Therefore, I examine whether tax directors face turnover following revelation of a tax-related internal control weakness.

In order to test whether tax directors face turnover after a tax-related internal control weaknesses, following Bauer (2015), I utilize audit analytics to identify 1,142 tax-related internal control weakness firm-years from years 2004 to 2012[2021]. I then merge the 1,142 restatement firm-years to the 6,054 firm-years for which I have sufficient tax director turnover info (the sample I used in my main tests). After merging I found an initial sample of 46 firm-years. I then follow Desai et al. (2006) and match the 46 sample firm-years to control firm-years who have no turnover. I match one-to-one on year, two digit sic code and total assets. I was able to match 39 tax-related internal control weakness firm-years as the other 7 control sample firm-years had no tax director info listed in the tax directory.

[20] Tax- related internal control weaknesses have the following field value in audit analytics NOTEFF_ACC_REAS_KEYS = "41".

[21] The sample period starts in 2004 as it is the first year for which Audit Analytics collects internal control weaknesses following enactment of Sarbanes Oxley.

I then estimated equation (1) from my main tests but substituted β1 with an indicator variable for whether the firm had a tax related internal control weakness or not. I set the indicator variable *TAXICW*=1 for the 39 treatment firm-years that had a tax-related internal control weakness and *TAXICW*=0 for the 39 control firm-years.

Results (not presented) of estimating the regression reveal no association between having a tax related internal control weakness and the tax director turning over. These results indicate that internal control weakness may not be used in evaluating a tax director. Further the lack of results may also be due to the lack of data availability as I was only able to test 39 out of a possible 1,142 firm-years with tax-related internal control weaknesses.

7.5 Missing Analyst Forecast utilizing tax expense management and Tax Director Turnover

One final benchmark that I explore is whether a firm was able to meet or beat analyst forecasts in the fourth quarter by engaging in tax avoidance. Puffer and Weintrop (1991) suggest that analysts perform an important monitoring function in which they establish performance benchmarks that managers are expected to meet. As analysts are in contact with CEOs and other top executives at firms it has been shown that analyst forecasts may reflect the CEO's performance expectations. When it comes to turnover and analyst forecasts, prior literature has looked at the relationship between analyst forecast errors and the likelihood of CEO turnover. Puffer and Weintrop (1991) and Farrell and Whidbee (2003) both show that the deviation of real earnings from expected earnings could provide information about how CEO performance deviates from board expectations. Further, Farrell and Whidbee (2003) examine whether certain parts of analyst forecasts impact the turnover decision. Taken together, their results suggest that

meeting/beating analysts' forecasts are an important metric used by boards to determine whether managers are meeting firm expectations.

Within the tax literature, research has found that tax directors can use the complexity in the tax accounts and the discretion in GAAP to manipulate ETRs to meet or beat forecasts (Dhaliwal et al., 2004). Dhaliwal et al. (2004) explain that because the tax expense is the final account closed, it is one of the final tools that tax directors have at their disposal to achieve earnings targets. In fact, prior literature finds evidence that some firms do opportunistically manage the ETR downward to beat analyst expectations (Dhaliwal et al., 2004; Comprix et al., 2006). Moreover, McGuire (2008) finds that firms that reduce their ETR to meet or beat analyst expectations are less likely to provide an explanation for a decrease in ETR, which is consistent with the tax director trying to mask earnings management. I examine whether tax directors who engage in downward earnings management through the tax expense to meet/beat analyst forecasts but who end up missing the forecast face turnover.

Utilizing the same sample as in my main tests, I estimated equation (1) but substituted β1 with an indicator variable for whether the firm missed the analyst forecast while simultaneously decreasing the ETR from the 3rd quarter to the 4th quarter. I also do not control for CEO Turnover as prior literature focuses on the CFO as the person responsible for earnings management. I set the indicator variable *MISSANDDEC*=1 if the forecast was missed (actual <medest[22]) and if the ETR was managed (ETR decrease from Q3[23] to Q4). I set *MISSANDDEC*=0 if the forecast was

[22] Median forecast come from the I/B/E/S summary file. I use the median forecast that is closest to the announcement date of actual EPS.

[23] ETRQ3 is calculated using the Compustat quarterly file as tax expense (Compustat TXTY) divided by pre-tax income (Compustat PIY) less special items (Compustat SPIY) Following Gupta and Newberry (1997) I bound the ETRQ3 to be between 0 and 1.

missed (actual <medest) and if the ETR was not managed (no ETR decrease from Q3 to Q4). This model allows me to isolate the firm-years that missed the forecast but tried to manage earnings through the tax account. Further, I remove all firm-years with missing actual forecasts, negative pre-tax income, negative tax expense and negative $GAAP_{ETR}$ as it has been shown difficult to interpret findings of loss firms. I then also estimate equation (1) by limiting samples to only firms that were within 5 cents of missing the forecast as Dhaliwal et al. (2004) point out that those firms are most sensitive to earnings management per Brown (2001). Finally, I further limit the sample to include only non-loss firms as prior literature contends that it is hard to interpret the coefficients of loss-firms. A significant positive coefficient on *MISSANDDEC* implies that tax director *TURNOVER* is more likely to occur when the firm opportunistically manages the ETR downward while simultaneously missing the forecast.

7.5.1 Multivariate Results

Table 9 presents results of estimating equation (1) where the dependent variable is tax director *TURNOVER* and the variable of interest is *MISSANDDEC*. In column 1, I estimate equation (1) while controlling for *SIZE, PROFITABILITY* and *PERFORMANCE* and *CFOTURNOVER*. In column 2 I further limit the sample to firms that were within 5 cents of missing the forecast and then additionally in column 3 I remove loss firms as prior papers cite that interpreting coefficients from firm-years with losses is difficult.

In column 1 the coefficient of interest, *MISSANDDEC*, is significantly positive at the 5% level (coef: 0.91 and p-value: 0.045). Even after limiting to missing within 5 cents, in column 2 and limiting the sample to non-loss firms in column 3, the results show a positive and significant coefficient. Overall, the results from columns 1, 2 and 3 show that there is a positive

association between failing to meet analyst forecasts utilizing tax accounts and tax director turnover.

8. Conclusion

In this paper I investigate whether tax directors face consequences from their tax avoidance decisions. Prior literature utilizes publically available data (proxy statement data) to test for a relation between tax avoidance and CEO/CFO turnover but fails to examine the person that is directly responsible for tax planning at a firm. I utilize a new dataset which allows me to go beyond proxy data and examine the tax director who has the greatest impact on the tax expense. Further, while prior literature has concluded that compensation of tax directors is linked to the GAAP ETR no one has looked at turnover as a consequence. I find that when a firm's GAAP ETR is above (below) its industry median GAAP ETR the tax director is more (less) likely to turnover. I also find that the more volatile the GAAPETR the more likely tax director turnover. Further, these results do not hold when I use CASHETR to calculate my variables of interest in my tax avoidance tests. This finding is consistent with prior literature that find that tax directors are evaluated based on how they can impact the tax expense and not cash taxes paid.

In supplemental analysis I find that tax directors face turnover when they try to manage earnings utilizing the tax expense account but fail to meet analyst forecasts. In addition, I examine samples of firms that engaged in aggressive tax avoidance, had tax-related restatements and had tax-related internal control weaknesses. For these three tests, I do not find evidence that tax directors face consequences, as measured by turnover, compared to a set of matched tax directors.

There is a caveat regarding my findings that is worth noting. I identify proxies for tax

director decision that prior literature and anecdotal evidence has used to evaluate executives although I note that this is not exhaustive and that tax directors may be evaluated based on other factors. Overall this paper provides a better understanding of who makes tax decisions at a firm as well as a better understanding of potential consequences faced by tax directors as they make tax avoidance decisions.

Appendix A: Variable Definitions

Variable	Description
TURNOVER	= one if the Tax Director or First Person Listed in the Tax Directory listed in year t+1 is different than who is listed in year t and zero otherwise.
TAXAVOID	= measure of tax avoidance using *INDDEV, ETRCHANGE and ETRVOL*
INDDEV	= one if Firm's ETR> Industry Median ETR = zero if Firm's ETR< Industry Median ETR
ETRCHANGE	= ETR(t) - ETR(t-1)
ETRVOL	= the standard deviation of annual ETRs scaled by the absolute value of the annual mean ETRs over the same five year period (from t-4 to t)
CEOTURONOVER	= one if the CEO listed in year t is different than the CEO listed in year t-1 and zero otherwise.
CFOTURNOVER	= one if the CFO listed in year t is different than the CFO listed in year t-1 and zero otherwise.
SIZE	= natural log of total assets for year *t*;
PROFITABILTY	= the ratio of pre-tax income at year *t* to total assets at the beginning of the year (also known as ROA) at *t*
PERFORMANCE	= earnings before interest and taxes (EBIT) in year *t* divided by sales in year *t*;
GAAP ETR	= tax expense/ (pretax income - special items)
CASH ETR	= cash taxes paid/ (pretax income - special items)

Table 1: Sample Selection Steps

Initial sample firm-years from 1996-2013	8,211
Exclude firm-years missing a tax director in the previous year	(1,237)
Exclude foreign incorporated firms (FIC !="USA" in Compustat)	(438)
Exclude subsidiaries (STKO=1 and 2 in Compustat)	(300)
Exclude firm-years with missing pre-tax income or tax expense	(182)
Total Firm- year observations	***6,054***

Table 2: Sample classification by turnover, industry and year

Panel A: Turnover Details

	N	%
Firm-years without tax director turnover	5789	95.6%
Firm-years with tax director turnover	265	4.4%
Total Sample	6054	100.0%

Notes: *This table shows the breakdown of the sample of 6,054 firm-years into tax director turnover versus no tax director turnover.*

Panel B: Industry Classification based on Fama and French 17 Industries

		Compustat		Sample	
Industry Classification Number	**Industry Classification Title**	**Number**	**Frequency (%)**	**Number**	**Frequency (%)**
1	Food	4056	2%	206	3%
2	Mining and Materials	3154	2%	79	1%
3	Oil and Petroleum Products	6692	3%	173	3%
4	Textiles, Apparel and Footwear	2121	1%	157	3%
5	Consumer Durables	3300	2%	127	2%
6	Chemicals	2787	1%	189	3%
7	Drugs, Soap, Perfumes, Tobacco	6286	3%	235	4%
8	Construction and Construction Materials	3965	2%	288	5%
9	Steel Works Etc.	1778	1%	124	2%
10	Fabricated Products	903	0%	56	1%
11	Machinery and Business Equipment	17036	8%	807	13%
12	Automobiles	1895	1%	134	2%
13	Transportation	5076	3%	320	5%
14	Utilities	5611	3%	294	5%
15	Retail Stores	7338	4%	488	8%
16	Financial Industry	69712	35%	896	15%
17	Other	59638	30%	1481	24%
Total		***201,348***	**100%**	***6,054***	**100%**

Notes*: This table shows the breakdown of the 6,054 firm-years by industry and compared to the Compustat Universe. The industry classification is based on the 17 industries identified by Fama and French (1997).*

Table 2 continued: Sample classification by turnover, industry, year and compared to Compustat

Panel C: Sample Details by Year

Year	Turnover =0	Turnover=1	Total	Total /6054
1996	221	30	251	4%
1997	355	7	362	6%
1998	374	9	383	6%
1999	412	12	424	7%
2000	420	6	426	7%
2001	304	37	341	6%
2002	152	12	164	3%
2003	213	3	216	4%
2004	240	1	241	4%
2005	243	2	245	4%
2006	247	3	250	4%
2007	241	13	254	4%
2008	286	6	292	5%
2009	308	6	314	5%
2010	580	15	595	10%
2011	562	20	582	10%
2012	289	21	310	5%
2013	342	62	404	7%
Total	***5789***	***265***	**6054**	***100%***

Notes: *This table shows the breakdown of the sample of 6054 by year including a breakdown of the sample by year when turnover =0 and turnover =1.*

Panel D: Comparison of Median Total Assets, GAAP ETR and CASH ETR

	Compustat	Sample
Total Assets	$318 Million	$3,127 Million
GAAP ETR	30.91%	31.19%
CASH ETR	20.81%	21.57%

Notes: *This table shows the breakdown of the sample compared to the Compustat universe of firms based on Total Assets, GAAP ETR and CASH ETR.*

Table 3: Univariate Results

Panel A: Descriptive Statistics

	Full Sample						Turnover =0			Turnover =1			P-value for difference in means between turnover = 1 and turnover = 0
Variable	**N**	**Mean**	**Median**	**Std. Dev**	**25th %**	**75th %**	**N**	**Mean**	**Median**	**N**	**Mean**	**Median**	
GAAPETR	6054	0.22	0.31	1.78	0.18	0.37	5789	0.22	0.31	265	0.32	0.32	0.35
CASHETR	5766	0.23	0.21	2.12	0.07	0.33	5519	0.23	0.21	247	0.18	0.23	0.73
INDDEV^	5898	0.67	1	0.47	0	1	5639	0.66	1.00	259	0.74	1.00	**0.01*** **
ETRCHANGE^	5925	0.01	0	2.60	-0.06	0.05	5667	0.00	0.00	258	0.22	0.00	0.18
ETRVOL^	5948	1.57	0.31	4.20	0.10	1.31	5687	1.61	0.32	261	0.85	0.25	**0.01*** **
CEOTURNOVER	4937	0.01	0	0.12	0	0	4698	0.01	0	239	0.02	0	0.36
CFOTURNOVER	2273	0.10	0	0.20	0	0	2140	0.10	0	133	0.12	0	0.38
SIZE^	6054	8.11	7.97	1.62	6.94	9.19	5788	8.08	7.94	265	8.72	8.72	**0.00*** **
PROFITABILITY^	6028	0.07	0.06	0.11	0.02	0.13	5763	0.07	0.06	265	0.08	0.06	0.20
PERFORMANCE^	6034	0.12	0.10	0.13	0.05	0.17	5771	0.12	0.10	263	0.13	0.12	**0.06***

Notes: *This table shows the mean, median, standard deviations, 25th percentile and 75th percentile for the full sample and then by whether a firm experienced turnover or not in a firm-year. Ttest is used to test for the difference in the means. The test of means for all variables. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to Appendix A for a description of the variables.*

^ *Variables have been winsorized at the 1% and 99% tails.*

Table 3: Univariate Results (Continued)

Panel B: Correlation Matrix

	Variable	1	2	3	4	5	6	7	8	9	10	11
1	TURNOVER		0.0383*	0.0023	-0.0159	-0.0206	0.0153	0.0773*	-0.0061	0.0068	0.0137	0.0265
2	INDDEV	0.0346*		0.2916*	-0.3184*	0.0057	-0.0140	-0.0482*	0.2011*	0.3399*	0.1660*	0.1817*
3	ETRCHANGE	0.0180	0.1038*		0.0185	-0.0036	-0.0117	-0.0174	-0.0161	0.0881*	0.0542	0.0632*
4	ETRVOL	-0.0361	-0.1536*	-0.0011		0.0386	-0.0505*	-0.1291*	-0.2710*	-0.4907*	-0.2283*	-0.2462*
5	CEOTURNOVER	0.0131	0.0117	0.0099	0.0067		0.2460*	-0.0585*	-0.0028	0.0171	-0.0152	-0.0215
6	CFOTURNOVER	0.0192	-0.0115	0.0217	-0.0045	0.2499*		-0.0321	0.0109	0.0747*	-0.0040	0.0590*
7	SIZE	0.0801*	-0.0116	-0.0078	-0.1267*	-0.0859*	-0.0293		0.3140*	-0.0929*	-0.0341	-0.0567*
8	PERFORMANCE	0.0234	0.1396*	0.0127	-0.1431*	0.0007	0.0277	0.3754*		0.4102*	0.0339	0.0187
9	PROFITABILITY	0.0151	0.3293*	0.0262*	-0.1871*	0.0415*	0.0581*	0.0098	0.4542*		0.1972*	0.2961*
10	GAAP ETR	-0.0002	-0.0020	-0.0288*	0.0019	-0.0025	0.0029	0.0001	-0.0167	-0.0124		0.4555*
11	CASH ETR	-0.0027	0.0168	0.0867*	0.0002	-0.0030	0.0108	0.0005	-0.0095	-0.0059	0.7096*	

Notes: *This table contains spearman (above) and pearson (below) correlations for variables used in estimating equation (2). * indicates p-value of .05 or less. Please refer to Appendix A for a description of the variables.*

Table 4: Logit analysis of tax director turnover regressed on Industry Deviation, CEOTurnover, CFOTurnover and control variables.

Explanatory Variables	**$GAAP_{ETR}$**	**$GAAP_{ETR}$**	**$GAAP_{ETR}$**	**$CASH_{ETR}$**	**$CASH_{ETR}$**	**$CASH_{ETR}$**
	(1)	(2)	(3)	(4)	(5)	(6)
INDDEV	**0.38****	**0.58****	**0.66****	**0.10**	**0.15**	**-0.05**
	(0.026)	**(0.020)**	**(0.024)**	**(0.574)**	**(0.660)**	**(0.912)**
CEOTURNOVER		-16.15	-16.86		-15.45	-16.46
		(0.997)	(0.998)		(0.995)	(0.998)
CFOTURNOVER		2.58***	2.91**		2.54***	2.86**
		(0.005)	(0.015)		(0.006)	(0.017)
SIZE	0.28***	0.30***	0.31***	0.28***	0.30***	0.30***
	(0.000)	(0.000)	0.000	(0.000)	(0.000)	(0.001)
PROFITABILITY	1.65**	0.65	0.75	2.09***	1.58	1.81
	(0.040)	(0.646)	(0.685)	(0.007)	(0.251)	(0.310)
PERFORMANCE	-2.03***	-1.86*	-3.10**	-2.04***	-2.20**	-3.26**
	(0.005)	(0.093)	(0.051)	(0.005)	(0.047)	(0.038)
YEAR & INDUSTRY FE	Yes	Yes	Yes	Yes	Yes	Yes
NON-LOSS FIRMS ONLY	No	No	Yes	No	No	Yes
N	5583	2209	1859	5568	2268	1914
Pseudo R^2	0.1446	0.1881	0.1980	0.1423	0.1788	0.1889

Notes: *This table shows the logistic regression results of estimating equation (1) with robust standard errors where the dependent variable is tax director turnover and the independent variable is Industry Deviation. Models 1, 2 and 3 run equation (1) GAAP ETR while Models 4, 5, 6 use CASH ETR. Models 2 and 4 additionally add CEOTURNOVER and CFOTURNOVER as controls. Models 3 and 6 additionally limit the sample to only non-loss firms. P-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to* ***Appendix A*** *for a description of the variables.*

Table 5: Logit analysis of tax director turnover regressed on One Year ETR Change, CEOTurnover, CFOTurnover and firm level control variables.

Explanatory Variables	**$GAAP_{ETR}$**	**$GAAP_{ETR}$**	**$GAAP_{ETR}$**	**$CASH_{ETR}$**	**$CASH_{ETR}$**	**$CASH_{ETR}$**
	(1)	(2)	(3)	(4)	(5)	(6)
ETRCHANGE	**0.04****	**0.05***	**0.05****	**-0.01**	**-0.01**	**-0.04**
	(0.019)	**(0.074)**	**(0.044)**	**(0.724)**	**(0.955)**	**(0.701)**
CEOTURNOVER		-16.20	-16.10		-14.77	-16.81
		(0.997)	(0.997)		(0.993)	(0.999)
CFOTURNOVER		2.48***	2.36*		2.46***	2.36*
		(0.007)	(0.062)		(0.007)	(0.063)
SIZE	0.27***	0.29***	0.06 ***	0.28***	0.30***	0.29***
	(0.000)	(0.000)	(0.002)	(0.000)	(0.000)	(0.003)
PROFITABILITY	2.36***	1.79	2.74	2.63***	1.75	2.67
	(0.002)	(0.190)	(0.155)	(0.001)	(0.206)	(0.170)
PERFORMANCE	-1.80***	-2.16**	-3.11*	-2.46***	-2.31**	-3.48*
	(0.008)	(0.049)	(0.080)	(0.002)	(0.037)	(0.055)
YEAR & INDUSTRY FE	Yes	Yes	Yes	Yes	Yes	Yes
NON-LOSS FIRMS ONLY	No	No	Yes	No	No	Yes
N	5634	2242	1720	5343	2189	1685
Pseudo R^2	0.1425	0.1795	0.2026	0.1460	0.1830	0.2095

Notes: *This table shows the logistic regression results of estimating equation (1) where the dependent variable is tax director turnover and the independent variable is 1 Year ETR Change. Models 1, 2 and 3 run equation (1) GAAP ETR while Models 4, 5 and 6 use CASH ETR. Models 2 and 5 additionally add CEOTURNOVER and CFOTURNOVER as controls. Models 3 and 6 additionally limit the sample to only non-loss firms for both years used to calculate ETRCHANGE. P-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to* ***Appendix A*** *for a description of the variables.*

Table 6: Logit analysis of tax director turnover regressed on ETR Volatility, CEOTurnover, CFOTurnover and firm level control variables.

Explanatory Variables	$GAAP_{ETR}$	$GAAP_{ETR}$	$GAAP_{ETR}$	$CASH_{ETR}$	$CASH_{ETR}$	$CASH_{ETR}$
	(1)	(2)	(3)	(4)	(5)	(6)
ETRVOL	**0.05**	**0.06***	**0.08****	**-0.06**	**-0.08**	**-0.07**
	(0.123)	**(0.096)**	**(0.043)**	**(0.212)**	**(0.465)**	**(0.490)**
CEOTURNOVER		-14.00	-14.19		-13.91	-14.08
		(0.992)	(0.992)		(0.992)	(0.992)
CFOTURNOVER		2.41*	2.32*		2.37*	2.28*
		(0.054)	(0.065)		(0.058)	(0.070)
SIZE	0.27***	0.24***	0.23**	0.27***	0.25***	0.24**
	(0.000)	(0.006)	(0.014)	(0.000)	(0.006)	(0.012)
PROFITABILITY	0.70	0.16	0.10	1.13	-0.28	-0.40
	(0.542)	(0.928)	(0.960)	(0.363)	(0.878)	(0.842)
PERFORMANCE	-1.62	-2.15	-1.40	-2.48*	-2.47	-1.78
	(0.131)	(0.151)	(0.377)	(0.078)	(0.110)	(0.275)
YEAR & INDUSTRY FE	Yes	Yes	Yes	Yes	Yes	Yes
NO LOSS IN 5 YR PERIOD	Yes	Yes	Yes	Yes	Yes	Yes
NO TURNOVER IN 5 YR PERIOD	No	No	Yes	No	No	Yes
N	3762	1452	1338	3592	1434	1325
Pseudo R^2	0.1229	0.1332	0.1416	0.1246	0.1329	0.1393

Notes: *This table shows the logistic regression results of estimating equation (1) where the dependent variable is tax director turnover and the independent variable is 1 Year ETR Volatility. Models 1, 2 and 3 run equation (1) GAAP ETR while Models 4, 5 and 6 use CASH ETR. Models 2 and 5 additionally add CEOTURNOVER and CFOTURNOVER as controls. The sample is limited to firm-years with no losses during the 5 year period used to calculate ETRVOL. Models 3 and 6 additionally limit the sample to firm years with no tax director turnover during the 5 year period to remove confounding effects. P-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to* ***Appendix A*** *for a description of the variables.*

Table 7: Logit analysis of tax director turnover regressed on Shelter Firm, Reveal Year, Interaction term, CFOTurnover, CFOTurnover and control variables.

Explanatory Variables	**Tax Director Turnover**	
	(1)	(2)
SHELTERFIRM	-0.22	-0.50
	(0.46)	(0.340)
REVEALYEAR	-0.59**	-0.26
	(0.046)	(0.578)
SHELTERFIRM*REVEALYEAR	**0.183**	**0.068**
	(0.661)	**(0.919)**
CEOTURNOVER		0.33
		(0.492)
CFOTURNOVER		0.425
		(0.434)
SIZE	-0.09	-0.27
	(0.310)	(0.121)
PROFITABILITY	-1.10	-1.85
	(0.303)	(0.410)
PERFORMANCE	0.72	1.21
	(0.363)	(0.457)
N	822	325
Pseudo R^2	0.0132	0.0283

Notes: *This table shows the logistic regression results of estimating equation (2) where the dependent variable is Tax Director Turnover. The independent variables are measures of shelter firms and reveal year and interaction term. Model 2 additionally controls for CEO and CFO Turnover. Coefficients are reported based on clustered standard errors. P-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to* ***Appendix A*** *for a description of the variables.*

Table 8: Robustness Tests

Panel A: Logit analysis of Tax Director turnover regressed on IndDev, ETRChange and ETRVol, CEOTurnover, CFOTurnover and control variables separately for Multinational and Domestic Firms.

Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
	Multinational	Domestic	Multinational	Domestic	Multinational	Domestic
INDDEV	**0.55**	**1.66*** **				
	(0.143)	**(0.009)**				
ETRCHANGE			**0.23**	**0.06**		
			(0.732)	**(0.216)**		
ETRVOL					**0.06**	**0.31**
					(0.284)	**(0.182)**
CEOTurnover	-15.46	-16.96	-14.40	-13.84	-14.42	-16.46
	(0.997)	(0.998)	(0.996)	(0.998)	(0.997)	(0.997)
CFOTurnover	2.79**	-0.31	2.19*	-0.45	1.98	0.97
	(0.023)	(0.584)	(0.094)	(0.410)	(0.122)	(0.620)
Size	0.33***	0.34	0.27**	0.25	0.388***	0.06
	(0.002)	(0.124)	(0.019)	(0.250)	(0.002)	(0.711)
Profitability	2.91	-13.57*	2.85	-5.48	3.49	-2.72
	(0.237)	(0.063)	(0.255)	(0.424)	(0.174)	(0.572)
Performance	-6.34**	0.18	-4.97**	-0.72	-6.41**	1.20
	(0.010)	(0.962)	(0.050)	(0.822)	0.024	(0.628)
Year & Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Non-Loss Firms	Yes	Yes	Yes	Yes	Yes	Yes
N	1,207	652	1,083	300	818	480
Adjusted R^2	0.2245	0.4937	0.2217	0.3420	0.1525	0.3437

Notes: *This table shows the logistic regression results of estimating equation (1) where the dependent variable is tax director turnover and the independent variable is Industry Deviation (columns 1 and 2), ETR Change (Columns 3 and 4) and ETR Volatility (Columns 5 and 6). Models 1, 3 and 5 run equation (1) for multinational firms only while Models 2, 4 and 6 use domestic firms only. For columns 5 and 6 the sample is limited to firm-years with no losses or tax director turnover during the 5 year period used to calculate ETRVOL . p-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to* ***Appendix*** *A for a description of the variables.*

Table 8: Robustness Tests

Panel B: Logit analysis of Tax Director turnover regressed on IndDev, ETRChange and ETRVol, CEOTurnover, CFOTurnover and control variables excluding firm-years from 2008.

Explanatory Variables	(1)	(2)	(3)
INDDEV	**0.73****		
	(0.015)		
ETRCHANGE		**0.05***	
		(0.055)	
ETRVOL			**0.06**
			(0.12)
CEOTurnover	-18.48	-16.31	-15.15
	(0.997)	(0.997)	(0.998)
CFOTurnover	1.21**	0.82	1.08
	(0.048)	(0.531)	(0.998)
Size	0.31***	0.28***	0.26***
	(0.001)	(0.003)	(0.009)
Profitability	1.03	2.95	0.77
	(0.585)	(0.133)	(0.706)
Performance	-3.02*	-3.16*	-2.17
	(0.064)	(0.087)	(0.191)
Year & Industry Fixed Effects	Yes	Yes	Yes
Non-Loss Firms	Yes	Yes	Yes
N	1,654	1,477	1,147
Adjusted R^2	0.1915	0.2005	0.1327

Notes: *This table shows the logistic regression results of estimating equation (1) where the dependent variable is tax director turnover and the independent variable is Industry Deviation (column 1), ETR Change (Column 2) and ETR Volatility (Column 3) excluding firm-years from 2008 . p-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to* ***Appendix*** *A for a description of the variables.*

Table 8: Robustness Tests

Panel C: Logit analysis of CEO and CFO turnover regressed on IndDev, ETRChange and ETRVol and control variables.

Explanatory Variables	(1)	(2)	(3)	(4)	(5)	(6)
	CEO	CFO	CEO	CFO	CEO	CFO
INDDEV	**1.86**	**-0.39**				
	(0.302)	**(0.535)**				
ETRCHANGE			**2.44**	**1.01**		
			(0.564)	**(0.590)**		
ETRVOL					**-1.05**	**-1.21**
					(0.873)	**(0.259)**
CEOTurnover		69.61		84.95		39.96
		(0.995)		(0.998)		(0.998)
CFOTurnover	67.44		188.46		80.27	
	(0.995)		(0.896)		(0.998)	
Size	-1.01*	0.21	-0.88*	0.14	-5.01**	0.01
	(0.078)	(0.299)	(0.100)	(0.512)	(0.031)	(0.941)
Profitability	11.13	0.33	12.89	-0.56	26.37	-3.23
	(0.262)	(0.933)	(0.228)	(0.893)	(0.142)	(0.472)
Performance	-15.42	1.67	-16.58	2.16	-58.55*	2.26
	(0.199)	(0.662)	(0.159)	(0.596)	(0.074)	(0.510)
Year & Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Non-Loss Firms	Yes	Yes	Yes	Yes	Yes	Yes
N	1,859	1,859	1,668	1,668	1,298	1,298
Adjusted R^2	0.786	0.9035	0.7811	0.9021	0.8659	0.8753

Notes: *This table shows the logistic regression results of estimating equation (1) but replacing CEO and CFO Turnover for Tax director Turnover. In columns 1, 3 and 5 the dependent variable is CEOTurnover and in columns 2, 4 and 6 the dependent variable is CFO turnover. The independent variable is Industry Deviation (columns 1 and 1), ETR Change (Columns 3 and 4) and ETR Volatility (Columns 5 and 6). p-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to* ***Appendix*** *A for a description of the variables.*

Table 8: Robustness Tests

Panel D: Logit analysis of Tax Director turnover regressed on IndDev, ETRChange and ETRVol and CEO and CFO Turnover at t-2 and controls.

Explanatory Variables			
	(1)	(2)	(3)
INDDEV	**0.60***		
	(0.061)		
ETRCHANGE		**-0.01**	
		(0.914)	
ETRVOL			**0.08***
			(0.067)
CEOTurnover	-14.59	-14.17	-24.92
	(0.996)	(0.995)	(0.991)
CFOTurnover	-0.11	-0.15	14.95
	(0.925)	(0.898)	(0.991)
Size	0.31***	0.29***	0.33***
	(0.001)	(0.004)	(0.002)
Profitability	2.20	3.68*	-3.84
	(0.256)	(0.074)	(0.303)
Performance	-3.89**	-4.13**	2.20**
	(0.025)	(0.039)	(0.050)
Year & Industry Fixed Effects	Yes	Yes	Yes
Non-Loss Firms	Yes	Yes	Yes
N	1,669	1,485	1,159
Adjusted R^2	0.2234	0.2306	0.176

Notes: *This table shows the logistic regression results of estimating equation (1) but replacing CEO and CFO Turnover in year t-2 as controls. The independent variable is Industry Deviation (column 1 , ETR Change (Column 2) and ETR Volatility (Column 3) . p-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to* ***Appendix*** *A for a description of the variables.*

Table 9: Logit analysis of tax director turnover regressed on Miss and Decrease, CEO Turnover, CFO Turnover and control variables.

Explanatory Variables			
	(1)	(2)	(3)
MISSANDDEC	**0.91****	**2.08***	**3.30***
	(0.045)	**(0.093)**	**(0.054)**
CFOTURNOVER	16.624	0.01	-0.36
	(0.991)	(0.991)	(0.761)
SIZE	0.22	-0.41	-0.27
	(0.176)	(0.207)	(0.388)
PROFITABILITY	5.36*	-4.31	-2.52
	(0.099)	(0.549)	(0.731)
PERFORMANCE	-2.76	2.18	3.75
	(0.396)	(0.590)	(0.598)
YEAR & INDUSTRY FE	Yes	Yes	Yes
MISSED WITHIN 5 CENTS	No	Yes	Yes
NON-LOSS FIRMS ONLY	No	No	Yes
N	488	46	41
Pseudo R^2	0.1727	0.1578	0.2384

Notes: *This table shows the logistic regression results of estimating equation (1) with robust standard errors where the dependent variable is tax director turnover and the independent variable is Missed and Decreased ETR. Model 2 additionally limits the sample to those firm-years where the miss amount was 5 cents or less. Model 3 additionally limits the sample to only non-loss firms. P-values are reported in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. Please refer to* ***Appendix A*** *for a description of the control variables.*

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