

# Tax Aggressiveness and Auditor Reporting

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## **Abstract**

*This paper investigates whether a firm's tax aggressiveness is associated with receiving a modified audit opinion from its external auditor. I hypothesize that, relative to a firm with less aggressive tax strategies, a tax-aggressive firm is more likely to receive a modified audit opinion because aggressive tax activities increase financial reporting risk and firm complexity which, in turn, increase audit and engagement risk. Firms' aggressive tax policies increase financial reporting risk and client complexity because managers can use tax accounts to manage earnings. Auditing complex tax accounts involves a high risk of making errors that can create litigation, regulatory, and reputational costs to auditors, thereby increasing audit and engagement risks. When audit and engagement risks are higher, auditors can decrease their threshold for rendering a modified opinion to lesson such risks. Thus, when clients engage in aggressive tax activities, external auditors are more likely to issue modified opinions to protect against such risks. The main analysis confirms the hypothesis. Additional analyses such as utilizing alternative measures of the independent variable of interest and the dependent variable, using an alternative sample, and conducting a propensity score matched pair approach support the main findings. Overall, the findings suggest that auditors perceive their clients' aggressive tax activities in a negative light when rendering audit reports.*

Keywords: audit opinion; auditors; tax aggressiveness; FIN 48

JEL Classification: M41; M42

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## **1. Introduction**

The purpose of this study is to examine whether a firm's tax aggressiveness is associated with receiving a modified audit opinion from its external auditor. Modified audit opinions are issued by external auditors when they have concerns about the reliability of their clients' financial information or the incapability to collect adequate and appropriate information. Auditors render unqualified/clean opinions when they conclude that their clients' financial statements are prepared in accordance with generally accepted accounting principles (GAAP). Issuing audit opinions on whether their clients' financial statements follow GAAP is one of the most vital responsibilities of external auditors. For this reason, prior studies examine client characteristics that affect the incidence of modified audit opinions. Prior studies find that the issuance of a modified audit opinion is influenced by client characteristics such as information asymmetry, accruals quality, conservative accounting, managerial ability, internal control quality, and business strategy (Gunn

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et al., 2017; Sengupta and Shen, 2007; DeFond et al., 2016; Krishnan and Wang, 2015; Goh et al., 2013; Chen et al., 2017).

While prior studies investigate several client characteristics that influence the frequency of receiving a modified audit opinion, little is known about whether clients' aggressive tax activities are related to the frequency of receiving a modified audit opinion. The current paper attempts to fill this gap by examining whether a client's tax aggressiveness is associated with the likelihood of receiving a modified audit opinion. Corporate tax aggressiveness refers to companies' intent to decrease their tax liabilities payable to tax authorities. The main benefit of tax aggressiveness is that firms might be able to save cash. The potential costs of tax aggressiveness include back taxes, penalties, and interests that firms have to pay if tax authorities disapprove their tax positions. Furthermore, firms violating tax regulations can suffer from reputation costs (Chi et al., 2014). Prior studies empirically examine the effects of corporate tax aggressiveness and document that tax aggressiveness has impact on firms' corporate transparency, audit production, investment, and the cost of capital (Desai et al., 2007; Goldman, 2016; Donohoe and Knechel, 2014; Goh et al., 2013; Goh et al., 2016; Abernathy et al., 2017; Shevlin et al., 2013).

I posit that a firm's tax aggressiveness is positively associated with the likelihood of receiving a modified audit opinion because aggressive tax activities increase financial reporting risk and firm complexity which, in turn, increase audit and engagement risk. Firms' aggressive tax policies increase financial reporting risk and client complexity because managers can use tax accounts to manage earnings (Donohoe and Knechel, 2014). Furthermore, aggressive tax strategies require the bifurcation of legal structures into separate business activities, alter capital flows within a firm, and create entities for multi-state tax planning, net operating loss monetization, and capital loss utilization, thereby increasing financial reporting risk and client complexity (Balakrishnan et al., 2017). Information asymmetry problems caused by tax aggressiveness increase audit and engagement risks. Auditing complex tax accounts involves a high risk of making errors that can create litigation, regulatory, and reputational costs to auditors (Lisowsky, 2010). Thus, when clients engage in aggressive tax activities, external auditors are more likely to issue modified opinions to protect against such risks.

Using firms covered in Compustat database, I empirically examine an association between corporate tax aggressiveness and the likelihood of receiving modified audit opinions. Consistent with my prediction, the findings suggest that tax-aggressive firms are more likely to be flagged with modified audit opinions than firms with less aggressive tax strategies. I conduct several additional analyses. First, I use an alternative measure of the independent variable of interest (i.e., tax aggressiveness). Second, an alternative measure of the dependent variable (i.e., the likelihood of receiving a modified audit opinion) is used. Third, I use an alternative sample that includes only financially distressed firm-years. Fourth, I use a propensity score matched pair approach to control for the potential endogeneity problems since the determinants of tax aggressiveness and the issuance of modified audit opinions may be related.

The paper makes several contributions by linking the tax aggressiveness literature and the auditing literature. First, it contributes to the tax aggressiveness literature. Little is known about whether and how external auditors consider firms' aggressive tax activities when making their audit reporting decisions. This paper complements the existing literature by reporting how corporate tax aggressiveness is perceived by crucial stakeholders, auditors. Second, this study contributes to the literature on audit opinions. Although prior studies show that auditors issue modified opinions to clients with high audit and engagement risks, few studies have identified corporate tax aggressiveness as a factor associated with the issuance of modified audit opinions.

While prior studies examine client risk factors such as information environment and business strategy, the current study documents an association between tax aggressiveness and modified audit opinions.

The paper proceeds as follows. The next section discusses literature review as well as hypothesis development. Section 3 describes sample data and research design and Section 4 shows empirical results. Section 5 includes additional analyses and Section 6 concludes.

## **2. Literature review and hypothesis development**

### **2.1 Literature review**

Two streams of research are relevant to this study. The first examines the effects of corporate tax aggressiveness and the second consists of studies investigating the determinants of audit opinions. Corporate tax aggressiveness describes firms' intention to lower their tax liabilities. It involves potential costs even though firms might be able to save cash. They will have to pay back taxes, penalties, and interests if tax authorities disapprove their tax positions and, in these situations, they can suffer from reputation costs (Chi et al., 2014). Moreover, firms incur the implementation costs such as information system costs and agency costs such as rent extraction (Chen et al., 2010).

The effects of corporate tax aggressiveness have been empirically investigated by prior studies. Some studies explore the relationship between tax aggressiveness and audit production. Donohoe and Knechel (2014) examine whether corporate tax aggressiveness affects audit production. They conjecture and document a positive relationship between tax aggressiveness and external audit fees. Firms can utilize tax accounts to engage in earnings management, producing information asymmetry among managers, investors, and auditors. Furthermore, auditors can have high litigation and reputational costs because of their clients' aggressive tax positions. The study shows that audit risk is higher for firms with aggressive tax policies. Abernathy et al. (2017) also investigate how auditors respond to their clients' tax risk. They predict and find a positive relation between audit fees and tax risk incremental to fee premiums caused by tax aggressiveness. Tax risk increases audit complexity and engagement risk. Hence, in the presence of tax complexity, auditors increase their effort to analyze clients' tax accounts, thereby increasing audit fees as well.

Goh et al. (2013) analyze whether clients' aggressive tax behaviors are associated with auditors' resignation decision. The agency view of tax aggressiveness implies that clients' aggressive tax policies can increase litigation and reputational risk to auditors. In line with this agency view, they document that clients' tax aggressiveness is positively related to the probability that auditors resign from audit engagements.

Other studies show that corporate tax aggressiveness damages firms' information environment. Desai et al. (2007) claim that firms with aggressive tax positions have less transparent financial reporting. In line with this argument, Balakrishnan et al. (2017) document tax-aggressive firms have lower corporate transparency. Specifically, they find that tax-aggressive firms have a higher level of information asymmetry, larger analysts' forecast errors, greater analysts' forecast dispersion, and lower accruals quality. They reason that aggressive tax planning increases the financial complexity of the firm. Transparency problems can occur if greater financial complexity cannot be communicated effectively to external organizations such as investors.

Furthermore, aggressive tax planning results in economic consequences through its impact on firms' information environment. For instance, Goldman (2016) finds that tax aggressiveness is related to overinvestment. Because tax aggressiveness leads to cash savings and information asymmetry, it creates higher agency costs of free cash flows which, in turn, influence corporate investment decisions.

How capital market participants view corporate tax aggressiveness has also been studied. For example, in stock markets, Goh et al. (2016) document an inverse relationship between tax avoidance and a cost of equity. In debt markets, Shevlin et al. (2013) find a positive association between tax avoidance and bond yields.

The second strand of research that relates to the current study consists of studies investigating the determinants of audit opinions. Reporting audit opinions is one of the most crucial responsibilities of external auditors. Auditors issue independent opinions on whether their client firms' financial statements follow GAAP. In rendering audit reports, auditors evaluate the reliability of firms' financial reporting. Auditors issue unqualified opinions when they conclude firms' financial statements are prepared in accordance with GAAP. Conversely, auditors issue modified opinions if they have concerns about the credibility of firms' financial information or the incapability to collect adequate and appropriate information. The different types of modified opinions are available for auditors to issue: qualified opinions, adverse opinions, disclaimers of opinion, and unqualified opinions with explanatory language (e.g., ability to continue as a going concern).

Client characteristics that affect the incidence of modified audit opinions have been empirically examined. One such a characteristic that relates to this study is clients' information environment. For example, Gunn et al. (2017) study whether firms' information asymmetry influences the issuance of modified opinions by their auditors. They find that client firms' information asymmetry problems increase the auditors' propensity to issue going concern modified opinions. In the presence of information asymmetry, agency cost problems can arise because managers may attempt to engage in earnings management to disguise firm performance (Irani and Oesch 2013). Thus, auditors may view information asymmetry as audit risk. When audit risk is higher, auditors become more conservative and render going concern modified opinions to protect against litigation risk (Kaplan and Williams 2013).

Sengupta and Shen (2007) examine whether firms' accruals quality is associated with auditors' decisions. They predict and find a negative relationship between firms' accruals quality and a probability of receiving modified audit opinions because low accruals quality indicates information risk. Information risk is defined as the probability that firm-specific information relevant to investor pricing decisions is of low quality (Francis et al., 2005). Additionally, DeFond et al. (2015) examine whether a firm's conservative accounting is related to a propensity that auditors issue going concern modified opinions. They find that firms with more conservative accounting receive fewer modified audit opinions because conservative accounting decreases information asymmetry between an auditor and management as well as auditor's engagement risk.

Prior studies also have found that certain client characteristics influence the issuance of modified audit opinions through their impact on clients' financial information quality. For example, Krishnan and Wang (2014) investigate the association between managerial ability (i.e., ability to produce revenues from corporate resources) and a frequency of receiving going concern modified opinions. They hypothesize a negative association because greater managerial ability is likely to lower auditors' engagement risk. More capable managers decrease auditors' engagement risk because they improve earnings quality. Consistent with their prediction, their findings show that managerial ability is negatively related to the frequency of receiving modified audit opinions.

Goh et al. (2011) evaluate whether an issuance of an internal control material weakness opinion is related to an incidence of a going concern modified opinion. The internal control material weakness opinion implies uncertainty about the potential reliability of a firm's financial information. Consequently, auditors are more likely to issue modified opinions to their clients who

receive internal control material weakness opinions, responding to uncertainties and litigation risk. Using a sample of financially stressed companies, they find that firms receiving internal control material weakness opinions are more likely to receive going concern modified opinions. Other studies also find that auditors are more likely to issue going concern modified opinions to client firms with material internal control weaknesses because auditors intend to manage clients' internal control risk and audit risk by becoming more conservative and rendering modified opinions to firms with ineffective internal controls (Elder et al., 2008; Jiang et al., 2010).

Other client characteristics such as a business strategy also affect auditors' propensity to issue modified opinions. Chen et al. (2017) investigate whether a company's business strategy affects auditor reporting. They find that firms pursuing an innovative strategy are more likely to receive going concern modified opinions from their auditors, compared to firms pursuing a cost-leadership strategy. They reason that an innovative strategy is riskier than a cost-leadership strategy. Because of client business risks, auditors tend to be more conservative, issuing going concern modified opinions to innovative firms.

## **2.2 Hypothesis development**

One cost of tax aggressiveness is its impact on overall corporate information environments. Firms with aggressive tax strategies display lower corporate transparency. Balakrishnan et al. (2017) argue that corporate tax aggressiveness increases firms' financial and organizational complexities because aggressive tax planning requires the bifurcation of legal structures into separate business activities, alters capital flows within a firm, and creates entities for multi-state tax planning, net operating loss monetization, and capital loss utilization. They further argue that if greater financial complexity induced by aggressive tax planning is not effectively communicated to external users of financial information such as investors and analysts, such outside parties will have a difficulty of analyzing the source and persistence of firms' earnings and cash flows. Confirming their reasoning, Balakrishnan et al. (2017) find that tax-aggressive firms have a higher level of information asymmetry, larger analysts' forecast errors, greater analysts' forecast dispersion, and lower accruals quality.

In addition to Balakrishnan et al. (2017), Donohoe and Knechel (2014) argue that aggressive tax avoidance can increase financial reporting risks and client complexities because managers can use tax accounts to manage earnings. Accounting for income taxes involves complex tax expense computation as well as managers' discretion in estimating tax accruals (Graham et al., 2012). Thus, tax accounts produce information asymmetry among firms, owners, and auditors, thereby leading to potential earnings management (Dhaliwal et al., 2004). Because firms can take advantage of tax contingency reserves, estimates of accrued taxes, or valuation allowances to manipulate earnings, firms with aggressive tax policies are more likely to engage in misstatements and restatements (Hanlon and Heitzman, 2010).

Information asymmetry problems caused by tax aggressiveness increase audit and engagement risks. Audit risk refers to the risk that auditors render inappropriate opinions on their clients' financial statements and engagement risk is an auditor's business risk caused by engaging a particular client. Engagement risk is the risk of economic damage due to litigation, financial penalties, and/or reputation loss that can arise in the presence of alleged audit failures (Krishnan and Wang, 2014). Audit failure refers to a failure to issue a modified audit opinion when one is warranted.

Although auditors have to understand clients' tax positions in order to accurately assess accrued taxes and any contingencies for uncertain tax benefits, it is difficult for auditors to fully comprehend the tax positions of tax-aggressive clients because of the opacity related to tax-

avoidance activities (Donohoe and Knechel, 2014). Clients and shareholders might try to litigate against auditors for tax-related deficiencies in the financial statements and regulators can enforce penalties for inaccurate reporting of tax accounts (Donohoe and Knechel, 2014). The regulatory scrutiny can expose auditors to negative publicity as well (Donohoe and Knechel, 2014). Auditing complex tax accounts involves a high risk of making errors that can create litigation, regulatory, and reputational costs to auditors (Lisowsky, 2010).

If a client's tax aggressiveness influences an auditor's audit and engagement risks, it should also influence the approaches an auditor uses to alleviate these risks. Auditors can lesson risks by decreasing their threshold for rendering a modified opinion. When audit and engagement risks are higher, auditors are more likely to issue modified audit opinions to protect against such risks (Kaplan and Williams, 2013). Thus, I predict that auditors are likely to act more conservatively and decrease the threshold for rendering modified opinions in order to minimize potential litigation risks and protect reputation capital when their clients have aggressive tax policies, thereby expecting a positive association between corporate tax aggressiveness and a firm's likelihood of receiving a modified audit opinion from its external auditor. Therefore, I test the following hypothesis.

*H1: A firm's tax aggressiveness is positively associated with the likelihood of receiving a modified audit opinion.*

### 3. Methods and data

#### 3.1 Sample and empirical specification

I use Compustat to obtain an initial sample for the period of 2007 through 2013. The sample period starts in 2007 when the FIN 48, which is used to measure tax aggressiveness, first became effective. Firm-year observations with a missing tax aggressiveness measure (i.e., the FIN 48 uncertain tax benefit) are deleted and utilities (SIC codes 4900–4949) and financial firms (SIC codes 6000–6999) are also deleted from the sample. After the sample selection process, the main sample includes the firm-year observations of 20,263.

The model used to test the hypothesis is the regression below (the firm subscripts are omitted for brevity). The logit regression is used because of a binary dependent variable.

$$\begin{aligned} MO = & \beta_0 + \beta_1 \text{LnUTB} + \beta_2 \text{ZSCORE} + \beta_3 \text{LnTA} + \beta_4 \text{LOSS} + \beta_5 \text{LEV} + \beta_6 \text{INVEST} \\ & + \beta_7 \text{OCF} + \beta_8 \text{BigFour} + \beta_9 \text{ROA} + \beta_{10} \text{ISSUE} + \beta_{11} \text{ICW} + \varepsilon \end{aligned} \quad (1)$$

The dependent variable, MO, is set to 1 if an auditor issues a modified "unclean" opinion and 0 if an auditor issues a clean opinion (Bradshaw et al., 2001; Elder et al., 2008). Compustat classifies an audit opinion into five codes – unqualified/clean opinion (#1), qualified opinion (#2), no opinion (#3), unqualified opinion with explanatory language (#4), and adverse opinion (#5). Because only the unqualified opinion (#1) is a clean opinion, the MO variable is set to 1 for #2, #3, #4, and #5 and 0 for #1. Thus, it measures a firm's probability of receiving a modified audit opinion.

The variable of primary interest is LnUTB which measures corporate tax aggressiveness (Rego and Wilson, 2012; De Waegenare et al., 2015; Klassen et al., 2016). A natural log of a current year increase in the FIN 48 tax reserve balance is used to measure corporate tax aggressiveness. In 2006, the Financial Accounting Standards Board (FASB) issued FASB Interpretation No. 48 (FIN 48), Accounting for Uncertainty in Income Taxes. The FIN 48 aims to improve relevance and comparability in computing income taxes by establishing clear criteria used to recognize uncertain tax benefits (Cazier et al., 2009). The FIN 48 uncertain tax benefits (UTBs) describe tax benefits that might not be sustained if challenged by tax regulators and could become

taxes payable to tax authorities upon audit. Auditors can evaluate their clients' UTB as it is a greatly observable aggregation of clients' various tax positions. Firms with higher UTBs are considered to have more aggressive tax activities. Therefore, the hypothesis that a firm's tax aggressiveness is positively associated with the likelihood of receiving a modified audit opinion implies a positive association between MO and LnUTB. Consequently, a positive coefficient ( $\beta_1 > 0$ ) is expected.

Following prior literature, I use several control variables that are shown to affect audit report modifications (Goh et al., 2011; Anantharaman et al., 2016). I control for bankruptcy risk (ZSCORE); firm size (LnTA); an incidence of losses (LOSS); proximity to debt covenant violations (LEV); liquidity (INVEST); cash flows from operations (OCF); auditor choice (BigFour); operating performance (ROA); new issuance of equity (ISSUE); and control risk (ICW). The definitions of all the variables are included in Appendix A. In order to mitigate the effects of outliers, I winsorize the variables at the 1% and 99% level. Industry and year fixed effects are included in the regression and standard errors at the firm level are clustered.

### 3.2 Descriptive statistics

Table 1 displays descriptive statistics of the main and control variables, listing mean, standard deviation, first quartile, median, and third quartile. The mean and median values of MO are 0.34 and 0, respectively. The mean and median values of LnUTB are 0.61 and 0.04, respectively.

**Table 1: Descriptive Statistics of Regression Variables**

<i>Variable</i>	<i>Mean</i>	<i>Std Dev</i>	<i>First Quartile</i>	<i>Median</i>	<i>Third Quartile</i>
MO	0.34	0.47	0	0	1
LnUTB	0.61	0.99	0	0.04	0.84
ZSCORE	-5.42	37.04	-0.33	1.14	2.19
LnTA	5.97	2.57	4.49	6.19	7.68
LOSS	0.4	0.49	0	0	1
LEV	0.32	0.72	0.01	0.17	0.37
INVEST	0.26	0.26	0.06	0.17	0.39
OCF	-0.08	0.67	0	0.07	0.13
BigFour	0.73	0.44	0	1	1
ROA	-0.28	1.58	-0.09	0.03	0.1
ISSUE	0.75	0.43	0	1	1
ICW	0.03	0.16	0	0	0

Table 2 shows Pearson correlation among variables. Presenting preliminary support for H<sub>1</sub>, the table illustrates a positively significant relationship between aggressive tax behaviors and the issuance of modified audit opinions at the 1% significance level. Additionally, although the overall magnitude of the correlations between the independent variable of interest (i.e., LnUTB) and the control variables is small, a variance inflation factor (VIF) test is conducted to ensure that multicollinearity is not a significant concern in the empirical test (untabulated). The mean VIF is 2.52, which is less than the threshold of 10 recommended by Kennedy (2008).

**Table 2: Pearson Correlations among Variables**

	1	2	3	4	5	6	7	8	9	10	11	12
1.MO	1											
2.LnUTB	<b>0.07</b>	1										
3.ZSCORE	<b>-0.18</b>	<b>0.11</b>	1									
4.LnTA	<b>-0.08</b>	<b>0.59</b>	<b>0.47</b>	1								
5.LOSS	<b>0.1</b>	<b>-0.25</b>	<b>-0.2</b>	<b>-0.43</b>	1							
6.LEV	<b>0.17</b>	<b>-0.05</b>	<b>-0.7</b>	<b>-0.27</b>	<b>0.16</b>	1						
7.INVEST	-0.01	<b>-0.13</b>	<b>-0.1</b>	<b>-0.37</b>	<b>0.24</b>	<b>-0.06</b>	1					
8.OCF	<b>-0.2</b>	<b>0.16</b>	<b>0.78</b>	<b>0.545</b>	<b>-0.33</b>	<b>-0.56</b>	<b>-0.22</b>	1				
9.BigFour	-0.01	<b>0.32</b>	<b>0.25</b>	<b>0.586</b>	<b>-0.23</b>	<b>-0.14</b>	<b>-0.08</b>	<b>0.27</b>	1			
10.ROA	<b>-0.2</b>	<b>0.13</b>	<b>0.84</b>	<b>0.501</b>	<b>-0.3</b>	<b>-0.61</b>	<b>-0.14</b>	<b>0.86</b>	<b>0.26</b>	1		
11.ISSUE	0.01	<b>0.07</b>	<b>0.06</b>	<b>0.06</b>	<b>-0.07</b>	<b>-0.13</b>	<b>0.12</b>	0.02	<b>0.13</b>	<b>0.03</b>	1	
12.ICW	<b>0.06</b>	-0.01	<b>0.02</b>	0.016	<b>0.04</b>	<b>-0.02</b>	<b>-0.02</b>	0.02	0.01	0.02	0	1

\*Correlation coefficients in bold are significant at 1% level.

#### 4. Results and discussion

Table 3 shows the findings obtained from estimating the logit regression (1). The regression tests the hypothesis that firms' aggressive tax policies are positively related to the likelihood of receiving modified audit opinions. Such a positive association is expected because firms' aggressive tax activities are likely to increase information asymmetry, audit risks, and engagement risks. The dependent variable is an indicator variable set to 1 if a firm receives a modified audit opinion and 0 if a firm receives an unqualified opinion. Thus, it measures a firm's probability of receiving a modified audit opinion.

**Table 3: Tax Aggressiveness and Modified Audit Opinions**

Dependent variable: the likelihood of receiving modified audit opinions (MO)

	<i>Coef.</i>	<i>p-value</i>
LnUTB	0.299	0.000
ZSCORE	-0.005	0.078
LnTA	-0.054	0.009
LOSS	0.159	0.003
LEV	0.314	0.000
INVEST	-0.704	0.000
OCF	-0.678	0.000
BigFour	0.322	0.000
ROA	-0.268	0.001
ISSUE	0.029	0.601
ICW	0.720	0.000
Year		Yes
Industry		Yes
N		20,263
R <sup>2</sup>		0.230

Confirming the H<sub>1</sub>, the variable of interest, LnUTB, shows a positive coefficient which is statistically significant at the 1 percent level, implying that auditors of clients with more aggressive tax policies are more likely to render modified opinions to their clients. This finding is consistent with prior studies that show firms' aggressive tax activities increase audit and engagement risks (Donohoe and Knechel, 2014; Abernathy et al., 2017; Goh et al., 2013). In sum, the findings imply that auditors seem to view corporate tax aggressiveness as a factor to increase audit and engagement risks. As a result, auditors seem to be more conservative in their audit decisions,



issuing a modified audit opinion more frequently when their clients engage in aggressive tax strategies.

In general, control variables in the regression are signed similarly as in previous studies. Firms size (LnTA) is negatively related to the likelihood of receiving a modified audit opinion because bigger firms are less likely to file for bankruptcy (Reynolds and Francis, 2001). Bigger firms have more negotiating power and resources when they're in financial distress (McKeown et al. 1991), lowering engagement risks for auditors. Firms with loss (LOSS), higher leverage (LEV), lower profitability (ROA), or lower operating cash flows (OCF) are more likely to receive modified audit opinions as these variables measure firms' financial distress (Chen et al., 2017). Firms with higher investment (INVEST) are negatively related to the likelihood of receiving modified audit opinions because such firms have better ability to promptly raise cash in the presence of financial distress, lowering engagement risks for auditors (Jiang et al., 2010). Big 4 auditors (i.e., Ernst & Young, Deloitte, KPMG, and PricewaterhouseCoopers) are more conservative in their audit reporting decisions because they are likely to suffer more from losing in the litigation, compared to non-Big 4 auditors. The presence of internal control weaknesses (ICW) is positively related to the issuance of modified audit opinions because it indicates greater control risks, increasing audit risks (Jiang et al., 2010).

### 5. Additional analyses

I conduct four additional analyses. First, I use an alternative measure of the independent variable of interest (Table 4). Instead of using a natural log of an increase in uncertain tax benefits due to current year positions, I use a natural log of an ending balance of uncertain tax benefits (Lisowsky et al., 2013).

**Table 4: Alternative Measure of the Independent Variable of Interest**

Dependent variable: the likelihood of receiving modified audit opinions (MO)		
	<i>Coef.</i>	<i>p-value</i>
LnBalUTB	0.255	0.000
ZSCORE	-0.004	0.196
LnTA	-0.137	0.000
LOSS	0.137	0.009
LEV	0.307	0.000
INVEST	-0.747	0.000
OCF	-0.645	0.000
BigFour	0.324	0.000
ROA	-0.253	0.001
ISSUE	0.033	0.543
ICW	0.724	0.000
Year		Yes
Industry		Yes
N		20,263
R <sup>2</sup>		0.234

Second, I use an alternative measure of the dependent variable (Table 5). Following Anantharaman et al. (2016), I use an alternative outcome variable, AltMO, that is set to 1 for unqualified opinion with explanatory language (i.e., code 4 on Compustat) and 0 for unqualified opinion (i.e., code 1 on Compustat). Using either an alternative measure of the independent variable of interest or an alternative measure of the dependent variable yields similar results to the main regression results.

**Table 5: Alternative Measure of the Dependent Variable**

Dependent variable: the likelihood of receiving modified audit opinions (AltMO)

	<i>Coef.</i>	<i>p-value</i>
LnUTB	0.298	0.000
ZSCORE	-0.005	0.077
LnTA	-0.054	0.009
LOSS	0.160	0.002
LEV	0.314	0.000
INVEST	-0.705	0.000
OCF	-0.678	0.000
BigFour	0.321	0.000
ROA	-0.268	0.001
ISSUE	0.031	0.570
ICW	0.721	0.000
Year		Yes
Industry		Yes
N		20,263
R <sup>2</sup>		0.231

Third, I use an alternative sample that includes only financially distressed firm-years (Table 6). Auditors are required to render an opinion on whether there is a substantial doubt about their clients' ability to continue as a going concern for a period not exceeding one year after the balance sheet date (Statement of Auditing Standard No. 59). If auditors conclude that there is a substantial doubt regarding their client's ability to continue as a going concern, they are required to modify an audit report by adding a paragraph to their opinion. Going concern uncertainties make up almost half of all modified opinions on Compustat and other modifications represent consistency issues such as accounting policy changes (Butler et al., 2004). Although some studies that focus on going concern modified opinions use a sample of all available observations (DeFond et al., 2002; Sengupta et al., 2007), some other studies use a sub-sample of financially distressed firms (Chen et al., 2017). Following these latter studies, I use an alternative sample that includes only financially distressed firm-years which are defined as the firm-years that have both negative net income and negative operating cash flows (Chen et al., 2017). Using an alternative sample confirms the main results.

Fourth, I use a propensity score matched pair approach to control for potential endogeneity problems (Table 7). The determinants of tax aggressiveness and the issuance of modified audit opinions may be related. For instance, a firm size has been found to be related to both tax aggressiveness and modified audit opinions (Bradshaw et al., 2001; Klassen et al., 2016). To mitigate a potential endogeneity concern and avoid making erroneous inferences caused by it, I construct a matched sample of treatment and control sample firm-years. Using this propensity matched sample, I reestimate the main regression. I choose to use a propensity score matched pair approach because the propensity score matched pairs of firm-year observations share similar dimensions except the level of tax aggressiveness. Hence, the outcome (i.e., the issuance of modified audit opinions) can be attributed to the treatment (i.e., tax aggressiveness) rather than to other factors. The propensity score matching produces a matched sample, using disparities in the treatment whereas a traditional matched pair design matches pairs of firm-years on disparities in the outcome (Balsam et al., 2014). Using the propensity score matching confirms the main results.

**Table 6: Alternative Sample**

Dependent variable: the likelihood of receiving modified audit opinions (MO)

	<i>Coef.</i>	<i>p-value</i>
LnUTB	0.321	0.001
ZSCORE	0.001	0.693
LnTA	-0.288	0.000
LEV	0.407	0.000
INVEST	-1.005	0.000
OCF	-0.349	0.003
BigFour	0.168	0.134
ROA	-0.129	0.022
ISSUE	0.071	0.501
ICW	0.868	0.000
Year		Yes
Industry		Yes
N		4,342
R <sup>2</sup>		0.233

**Table 7: Propensity Score Matching**

Dependent variable: the likelihood of receiving modified audit opinions (MO)

	<i>Coef.</i>	<i>p-value</i>
LnUTB	0.141	0.002
ZSCORE	-0.053	0.002
LnTA	0.107	0.007
LOSS	-0.053	0.648
LEV	-0.227	0.217
INVEST	-0.700	0.014
OCF	-1.011	0.121
BigFour	0.317	0.064
ROA	0.524	0.140
ISSUE	-0.066	0.591
ICW	1.276	0.000
Year		Yes
Industry		Yes
N		10,343
R <sup>2</sup>		0.307

## 6. Conclusion

In this study, I study whether auditors of tax-aggressive clients are more likely to issue modified audit opinions to such clients. Using the FIN 48 tax reserve measure of tax aggressiveness, I find that a firm with a higher level of tax aggressiveness is more likely to receive a modified audit opinion. Overall, the evidence in this paper suggests that auditors perceive firms' aggressive tax activities in a negative light when rendering audit reports. The findings can be of interest to academics, audit committees, tax regulators who are motivated to recognize firms with abusive tax activities, and auditors who assess clients' audit risks.

## 7. Appendix A. Variable definitions

MO = 1 if the auditor issues a modified opinion (qualified opinion, no opinion, unqualified opinion with explanatory language, or adverse opinion) and 0 if the auditor issues an unqualified opinion.

LnUTB = natural log of (1+ increase in uncertain tax benefits (UTB) due to current year positions)

ZSCORE = 1.2 (working capital/total assets) + 1.4 (retained earnings/total assets) + 3.3 (EBIT/total assets) + 0.6 (market value of equity/book value of total liabilities) + (sales/total assets)

LnTA = natural logarithm of total assets

LOSS = 1 if earnings before extraordinary items in years  $t$  and  $t-1$  sum to less than 0 and 0 otherwise

LEV = total debt/total assets

INVEST = short term and long-term investment securities including cash and cash equivalents / total assets

OCF = operating cash flow / total assets

BigFour = 1 if an auditor is a Big 4 and 0 otherwise

ROA = pretax income/total assets

ISSUE = 1 if the company issues new shares in the current year and 0 otherwise

ICW = 1 if the firm reports internal control weaknesses in year  $t$  and 0 otherwise

LnBalUTB = natural log of (1+ ending balance of UTB account)

AltMO = 1 if the auditor issues an unqualified opinion with explanatory language and 0 if the auditor issues an unqualified opinion.

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