

Financial Statement Aggressiveness Related to Tax Accounts and Tax-Related Accounting Misstatements

Hughlene A. Burton
Paul N. Tanyi

The University of North Carolina at Charlotte

ABSTRACT: In this study, we examine two questions: (1) whether financial statement aggressiveness related to tax accounts is associated with the likelihood of having tax-related misstatements in the financial statements, and (2) whether the disclosure of the need to restate prior years' financial statements for a tax-related reason influences tax-related financial statement aggressiveness related to tax accounts in the fiscal year of announcement. Recent evidence of an increase in the rate of tax-related accounting restatements motivates these questions. In this study, we find empirical evidence suggesting that tax-related financial statement aggressiveness is positively associated with the likelihood of having tax-related misstatements in the financial statements. We also find that in the year in which the need to restate prior years' financial statements is announced, companies with tax-related misstatements in their financial statements appear to be less tax-related financial statement aggressive compared to the control group.

Keywords: accounting for income taxes; tax-related financial statement aggressiveness; tax-related accounting restatements.

I. INTRODUCTION

Trends suggest corporations are facing an increased risk of tax-related accounting restatements in previously issued financial statements. A report published by Audit Analytics in 2016 shows that while the frequency of companies restating their financial

We are grateful to Gregory Martin (The University of North Carolina at Charlotte) for help with propensity score matching code.

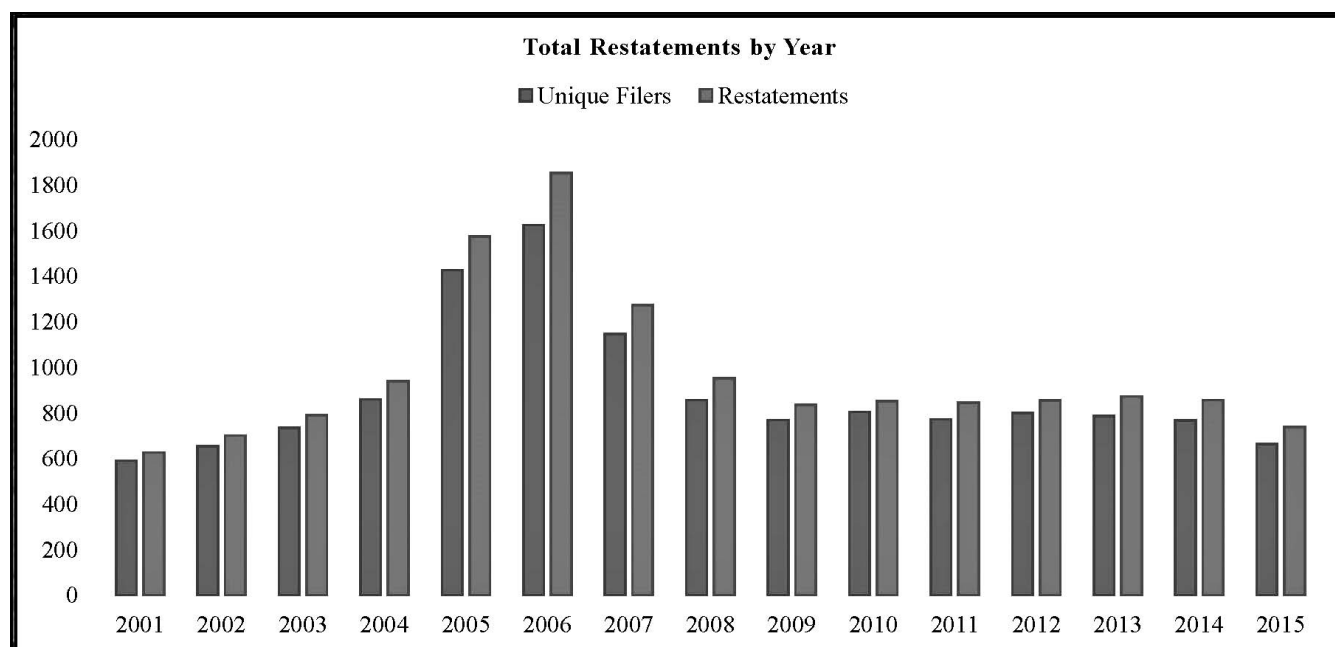
Editor's note: Accepted by Donna Bobek, under the Editorship of Pamela B. Roush.

Submitted: April 2018

Accepted: July 2019

Published Online: September 2019

FIGURE 1
The Number of Total Financial Restatements of U.S. Companies by Year^a



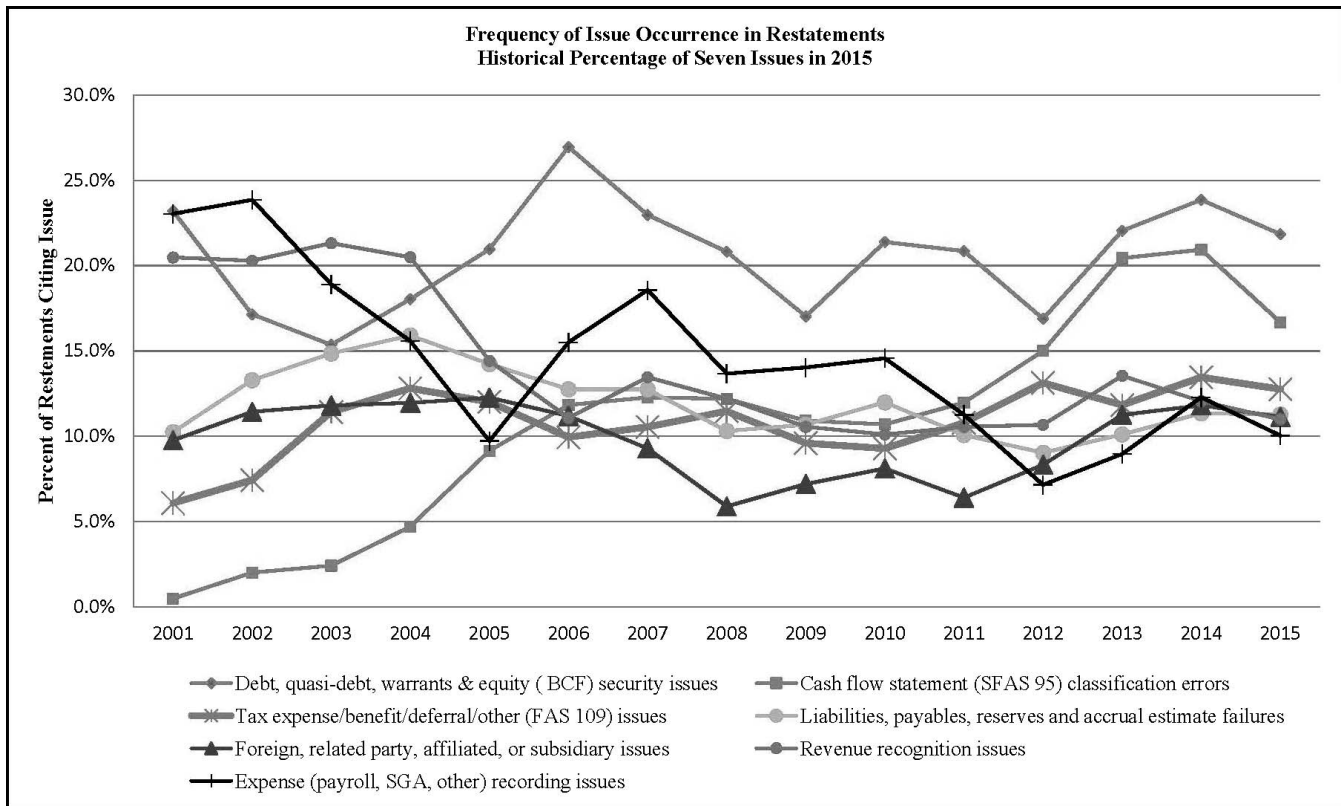
^a Chart is presented with permission from Audit Analytics. See Audit Analytics' 2015 Financial Restatements: A Fifteen Year Comparison. Page 5.

statements has declined significantly from a peak in 2006 (Audit Analytics 2016, see Figure 1),¹ the proportion of accounting restatements motivated by tax-related issues doubled from 6 percent in 2001 to approximately 12 percent in 2015. In terms of frequency of occurrence, the report also shows that accounting restatements initiated by failure to follow tax-related GAAP standards are among the top three reasons companies restate their earnings (see Figure 2). Given this trend, we examine whether financial statement aggressiveness related to tax accounts is associated with the likelihood of *having* tax-related accounting misstatements in the financial statements.

This research question is motivated by the fact that accounting misstatements in the financial statement in general can reflect a form of firm misconduct and misrepresentation that results from the intentional acts of management to deceive (Gomulya and Boeker 2014). In addition, tax-related accounting misstatements may specifically reflect the intention to understate or overstate tax expense and hence, influence reported after-tax net income. When a company restates its financial statements for any reason, that disclosure can be costly to the company and its shareholders. First, accounting restatements may reduce investor confidence in the reliability of the company's corporate disclosures (Stanley and DeZoort 2007; Scholz 2008; Kedia and Philippon 2009). Second, according to prior research, the market-adjusted return over a three-day window surrounding the announcement of a restatement is associated with a decline in market value. Palmrose, Richardson, and Scholz (2004) document an average abnormal return of approximately -9 percent over a two-day announcement window. Third, addressing the

¹ Except for the peak period between 2005 and 2007, the number of annual financial restatement announcements did not change significantly between 2001 and 2015.

FIGURE 2
Frequency of Accounting Restatements by Type^a



^a Chart is presented with permission from Audit Analytics. See Audit Analytics’ 2015 Financial Restatements: A Fifteen Year Comparison. Page 10.

challenges associated with restating previously issued financial statements can be a drawn-out process that may require management to communicate with a number of different stakeholders, including members of the board, the external auditor, and regulators. The complexity of managing the expectations of these various stakeholders may prove to be a challenging and time-consuming task that diverts the attention of management from the company’s day-to-day activities.

In a second research question, we examine how the disclosure of the need to restate previously issued financial statements because of a tax accounting issue affects the firm’s financial statement aggressiveness related to tax accounts in the fiscal year of disclosure. Although past studies (e.g., Frank, Lynch, and Rego 2009 and Lennox, Lisowsky, and Pittman 2013) have examined the association between effective tax rates and financial reporting quality, few have investigated the actions that firms take following the disclosure of financial reporting quality issues with a previously issued financial statement. Firms caught misrepresenting their financial statements with respect to accounting for their income taxes may be expected to take some action in response to this revelation, including actions that can influence a firm’s financial statement aggressiveness related to tax accounts in the year of disclosure. Is the potential scrutiny from investors, regulators, and tax authorities brought about by such disclosure sufficient to cause a restating firm to alter how it accounts for income taxes in the year of announcement?

Our analyses includes comparing firms with tax-related accounting misstatements to a control group of firms with no accounting misstatement at two different points in time—when the misstatement is *made* and when the misstatement is *disclosed*. In logistic regressions that control for firm-specific characteristics correlated with the likelihood of accounting misstatements, we find that tax-related financial statement aggressiveness is associated with a higher probability of *making* a tax-related accounting misstatement in the financial statements. However, we find that in the year of disclosure of the need to restate prior-year financial statements because of a tax accounting issue, restating firms report significantly higher effective tax rates consistent with lower tax-related financial statement aggressiveness when compared to the control group. This result persists even when we use the propensity score matching technique to address any potential selection bias. The evidence from this test is contrary to our earlier findings showing that these companies were more likely to engage in tax-related aggressive reporting in the period the tax-related misstatement took place. The announcement of a tax-related restatement and the attention associated with that announcement is apparently sufficient to induce a reform of a company's accounting for income taxes.

The findings in this study may be of interest to regulators in auditing, financial reporting, and taxation. As the proportion of financial statement restatements motivated by tax-related issues continues to increase despite the decrease in the number of annual financial restatements, we believe that it is important from a policy perspective to examine whether aggressive corporate tax reporting is one of the underlying drivers of the increase in tax-related restatements. Collectively, we find that the incidence of tax-related financial restatements is correlated with aggressive tax-related financial statement policies. We contribute to the tax literature by extending prior studies that examine the consequences of corporate tax avoidance (e.g., [Albring 2006, 2007](#); [Frank and Rego 2006](#); [Mock and Simon 2008](#); [Blouin and Krull 2009](#); [Schultz and Fogarty 2009](#); [Wunder 2009](#), [Blouin, Gleason, Mills, and Sikes 2010](#); [Shackelford, Slemrod, and Sallee 2011](#); and [Albring, Dhaliwal, Khurana, and Pereira 2011](#)). In addition, we show that it is important to separate the effect of the disclosure of a tax-related restatement on tax-related financial statement aggressiveness from that of the actual tax-related misstatement.

The remainder of this paper is organized as follows. Section II discusses the motivation and develops our hypotheses. Section III provides a discussion on the sample construction and empirical research designs. Section IV presents the results of our analysis. Section V presents additional robustness tests, and Section VI provides our conclusions.

II. MOTIVATION AND HYPOTHESIS DEVELOPMENT

It was not until the late 1990s that the frequency of restatements of previously issued financial statements by U.S. corporations became very common ([GAO 2002](#)). The number of accounting restatements grew rapidly in the early 2000s and peaked in 2006. However, following the peak in 2006, the number of accounting restatements has significantly declined in recent years. Despite this decline in the prevalence of accounting restatements from 2006 to 2015, the proportion of accounting restatements motivated by a tax-related issue has doubled from 6 to 12 percent. A study conducted by [Deloitte \(2012\)](#) shows that insufficient tax accounting expertise and insufficient review are the primary causes of tax-related accounting restatements. This study notes that the challenges faced by corporations in accounting for income taxes are numerous and include the need for both in-depth knowledge of financial accounting and technical tax rules. In addition, certain areas involving the application of tax-related GAAP standards are highly subjective, requiring the use of estimates and assumptions. Management can easily manipulate these estimates and assumptions to reduce a company's effective tax rate.

The prevalence of tax-motivated accounting restatements is also an issue of significant concern to the board and audit committee of most companies (Ernst and Young 2014). The restatement of prior-year financial statements can negatively affect the confidence of investors, as they will perceive the company's accounting reports to be less credible. According to Drake, Lusch, and Stekelberg (2017), while investors value tax avoidance on the company's tax return, tax risk moderates that value. Thus, the value of the tax avoidance on the corporate tax return must be greater than the detriment of the tax risk for investors.

In addition, a tax-motivated accounting restatement can alert regulators and the Internal Revenue Service (IRS) of potential deficiencies associated with a corporation's aggressive financial reporting related to the corporation's income tax liability (Fox and Wilson 2019). Since 2010, corporations have had to report unrecognized tax benefits reported in the financial statements on Schedule UTP. Corporations include Schedule UTP with their corporate tax return for the year the unrecognized tax benefit is first reported. The purpose of the schedule is to provide transparency and improve compliance with the federal tax law. According to Adams (2012), the IRS uses these Schedule UTPs in corporate tax audits. Even before Schedule UTP was introduced Palmrose and Scholz (2004) and Bonner, Palmrose, and Young (1998) showed that with added disclosure requirements, a corporation was potentially more likely to face a time-consuming tax audit or go through an expensive litigation process with the IRS at the expense of its shareholders. With the added requirement of including unrecognized tax benefits on Schedule UTP, there is greater potential for unwanted IRS attention. If this situation occurs, the benefit of an aggressive tax position on the tax return will have little to no value for investors.

Prior research has examined questions such as the determinants of financial statement aggressiveness related to tax accounts (e.g., Stickney and McGee 1982; Dyreng, Hanlon, and Maydew 2008, 2010; Wilson 2009; Rego and Wilson 2012; McGuire, Omer, and Wang 2012), the consequences of financial statement aggressiveness related to tax accounts on firm value (Desai and Dharmapala 2009; Kim, Li, and Zhang 2011), agency cost (e.g., Crocker and Slemrod 2005), and the incremental content of tax disclosures (e.g., Hanlon and Slemrod 2009). A number of other studies have examined whether financial statement aggressiveness related to tax accounts is associated with financial reporting quality (e.g., Maydew 1997; Mills 1998; Bauman et al. 2001; Phillips, Pincus, and Rego 2003; Dhaliwal, Gleason, and Mills 2004; Frank and Rego 2006; Christensen, Paik, and Stice 2008; Desai and Dharmapala 2009; Frank, Lynch, and Rego 2009; Blouin et al. 2010; Cazier, Rego, Tian, and Wilson 2015). However, the common thread among all of these studies is that they quantify aggressive financial reporting with traditional earnings management proxies, such as abnormal accruals and meeting or beating earnings benchmarks. While the use of abnormal accruals or meeting or beating earnings benchmarks enables corporations to achieve certain financial reporting objectives or incentives, these actions by themselves may not violate GAAP rules.

Two studies (Lennox, Lisowsky, and Pittman 2013 and Bauer 2016) come close to examining a similar question as the current study. Lennox et al. (2013) examine whether there is any association between a company's financial statement aggressiveness related to tax accounts and the likelihood of accounting fraud. Lennox et al. (2013) use Accounting and Auditing Enforcement Releases (AAERs) disclosed in the period between 1981 and 2001 as a proxy for accounting fraud. Overall, Lennox et al. (2013) find empirical evidence showing a significantly negative association between financial statement aggressiveness related to tax accounts and AAERs, i.e., companies that disclosed an AAER engaged in less financial

statement aggressiveness related to tax accounts.² AAERs are an alternative to abnormal accruals or earnings benchmarks as a proxy for accounting fraud. However, AAERs are typically reported in the year they are made public and may differ significantly from when the accounting fraud took place. A company may implement corrective actions in its corporate tax policies the year of the AAER disclosure, thereby leading to the observed association between financial statement aggressiveness related to tax accounts and AAER disclosures. The authors also tested their hypothesis using the year the fraud started and obtained similar results.

The current paper differs from [Lennox et al. \(2013\)](#) in several ways. First, we use Audit Analytics as our source of accounting restatements. Audit Analytics identifies both when an accounting restatement is reported and when the misstatement actually affected the financial statements. Therefore, we can separate the effect of the disclosure of the GAAP failure from the effect of intentionally having the tax-related GAAP failure in the financial statements. In addition, the study by [Lennox et al. \(2013\)](#) ended in 2001. In 2006, FIN 48 introduced more rigorous standards for reporting unrecognized tax benefits in the financial statements. The new standard should increase the quality of reporting of unrecognized tax positions. This study extends the examination of the relationship between financial statement aggressiveness related to tax accounts and misstatements in the financial statements to a period of time when FIN 48 applies. Finally, a key distinction between [Lennox et al. \(2013\)](#) and this study is that while they focus broadly on all AAERs, we examine whether aggressive tax reporting is specifically associated with tax-motivated GAAP failures.

A second study, [Bauer \(2016\)](#), examines the association between the disclosure of a tax-related material weakness in internal control over financial reporting (tax-ICW firms) and cash effective tax rate. This study finds that tax-ICW firms report higher cash effective tax rates compared to the control sample of observations with no tax-ICWs. Thus, tax-related internal control quality represents a proxy for one type of internal governance that aligns the interests of management and shareholders through better cash management (reducing the overpayment of cash to taxing authorities). However, if the same forces that lead to corporate tax avoidance subsequently lead to tax-related restatements, then shareholders may experience significant losses in the end.

Hypothesis Development

Consistent with prior tax research ([Maydew 1997](#); [Mills 1998](#); [Bauman et al. 2001](#); [Phillips et al. 2003](#); [Dhaliwal et al. 2004](#); [Frank and Rego 2006](#); [Christensen et al. 2008](#); [Desai and Dharmapala 2009](#); [Frank et al. 2009](#); [Blouin et al. 2010](#); [Cazier et al. 2015](#)) that examines the association between financial statement aggressiveness related to tax accounts and earnings management, we argue from an agency theory perspective that the same incentive that influences management to engage in financial statement aggressiveness related to tax accounts may also enable them to engage in behaviors that violate tax-related GAAP standards. In the late 1990s and early 2000s, numerous U.S. corporations that reported significant GAAP-related deficiencies had also implemented aggressive tax planning strategies to reduce their corporate tax liabilities ([Lennox et al. 2013](#)). This position is supported by [Frank et al. \(2009\)](#), who found that firms do not always engage in trade-offs between financial and tax decisions; rather, in certain situations, firms use areas of nonconformity between financial accounting and tax rules to manage book income

² This is contrary to our findings that show a significantly positive association between corporate tax aggressiveness and tax-related accounting misstatements.

upward and taxable income downward in the same period. Thus, financial statement aggressiveness related to tax accounts may lead to a need for a restatement of the financial statements.

H1: Financial statement aggressiveness related to tax accounts is positively associated with the likelihood of a tax-related misstatement.

In our second hypothesis, we examine how the announcement of a tax-related restatement affects the firm's financial statement aggressiveness related to tax accounts in the year of disclosure. Conventional wisdom may suggest that regulators or taxing authorities can consider tax-related accounting restatements as either evidence that a company's controls over financial reporting with respect to the accrual of tax liabilities have failed or that the company may have intentionally engaged in financial statement aggressiveness related to tax accounts.³ Either way, an accounting restatement announcement may be associated with scrutiny by the SEC and/or the IRS. [Kubick, Lynch, Mayberry, and Omer \(2016\)](#) examine the tax avoidance behavior of firms before and after the resolution of a tax-related SEC comment letter. These researchers find that firms that engaged in greater tax avoidance are more likely to receive a tax-related SEC comment letter. The researchers also find that firms that received a tax-related SEC comment letter decreased their tax avoidance behavior.

[Hoopes, Mescall, and Pittman \(2012\)](#) examine the impact of scrutiny by tax authorities, such as the IRS, on tax avoidance. They find that firms take less aggressive tax positions when tax enforcement is stricter. [Hanlon, Hoopes, and Shroff \(2014\)](#) examine the effect of IRS monitoring on financial reporting quality. The results show that higher tax enforcement has a positive relation to less tax aggressive financial reporting.

[Wilde \(2017\)](#) makes a similar argument. Wilde finds that whistleblower firms had a higher level of financial misreporting prior to any allegations of wrongdoing compared to non-whistleblower firms. However, after an allegation, whistleblower firms are more likely to decrease the incidence of accounting irregularities and financial statement aggressiveness related to tax accounts. Increased scrutiny can also lead to potential changes in external auditor monitoring, board oversight, and corporate governance policy ([Arthaud-Day, Certo, C. Dalton, and D. Dalton 2006](#); [Cheng and Farber 2008](#); [Mande and Son 2013](#)). Given the attention and potential changes brought about by the disclosure of a tax-related accounting restatement, a corporation may be forced to reform its corporate tax policies toward a less aggressive tax policy.

It is also plausible that other factors may exist such that a firm's corporate tax policy does not change following the disclosure of a tax-related accounting restatement ([Hageman, Arnold, and Sutton 2009](#)). Despite the attention an accounting restatement brings to a company, certain firms' incentives to engage in financial statement aggressiveness related to tax accounts may not change between the period the misstatement took place and the time when the restatement is disclosed. [Drake et al. \(2017\)](#) show that if the value of tax avoidance exceeds the cost of additional scrutiny, a firm may continue to employ aggressive tax positions. Such incentives include shareholder attitudes toward financial statement aggressiveness related to tax accounts, existing financial reporting rules, and tax loopholes. For example, [Desai and Dharmapala \(2009\)](#) find that while tax aggressiveness by itself does not increase the value of a firm, for firms with high quality

³ It is possible that a restatement is needed because of a mistake and not aggressive tax avoidance. There is no way to separate the reason for the restatement in the data from Audit Analytics. However, in many cases the effect of a mistake in the calculation of the tax provision would not cause the financial statements to be restated.

corporate governance, aggressive tax positions have a large impact on firm value. It is possible that firms' tax reporting strategies will remain unchanged in the period of disclosure of a tax-related accounting restatement. Thus, the announcement of a tax-related restatement may change a corporation's financial statement aggressiveness related to tax accounts.

H2: The disclosure of a tax-related accounting restatement is associated with financial statement aggressiveness related to tax accounts.

III. SAMPLE AND RESEARCH DESIGN

Sample

Table 1 summarizes the sample selection procedure for our empirical tests. Our initial sample includes 1,942 companies that disclosed the restatement of previously issued financial statements because of a tax-related reason between 2001 and 2017.⁴ We remove 191 observations where the original financial statements were issued prior to 2001. We remove 12 observations with material weakness in internal controls over financial reporting.⁵ We remove 758 observations with incomplete data to estimate our corporate effective tax rates.⁶ We remove 335 observations with incomplete financial statement data in Compustat. The final sample size is 646 observations with tax-related financial statement misstatements between 2001 and 2017.

Panel B of Table 1 reports the distribution of observations with tax-related accounting misstatements by year and industry. Most of the observations with tax-related accounting restatements are in manufacturing, services, and transportation. We match these observations (treatment sample) with a control sample of 646 observations that did not have any tax-related misstatements in the financial statements over the same period. The two samples are matched by industry, year, and closest pretax income. Everything else equal, two companies with the same pretax income should have approximately the same effective tax rates. For the sake of robustness, we also match the samples by industry, year, and closest total assets. When companies misstate their financial statements, sometimes more than one account is restated. Panel C shows that of the 646 tax-related accounting restatements, 451 firms misstated only the tax expense account and 195 firms misstated the tax expense account and at least one other non-tax-related account. We also report the measures of financial statement aggressiveness related to tax accounts based on these two types of misstatements and the control group of firms with no accounting misstatement. We find that the highest level of financial statement aggressiveness related to tax accounts is observed for the firms that misstated only the tax expense account and followed by the firms that misstated the tax expense account and at least one other non-tax-related account.

⁴ The beginning year in which the error was first made in the financial statements of the company and year in which the disclosure of misstatement was made must be between 2001 and 2017.

⁵ Bauer (2016) shows that the presence of material weakness (specifically tax-related material weaknesses) in the internal control of an entity can influence accrual of tax expenses partly due to lack of key personnel or the inexperience of the tax department.

⁶ The denominator of the equation to estimate GAAP and CASH effective tax rates is pretax income (Compustat item PI). We follow prior tax research (e.g., Zimmerman 1983; Omer, Molloy, and Ziebart 1993; S. Chen, X. Chen, Cheng, and Shevlin 2010; Lennox et al. 2013) and set the values of effective tax rates (ETRs) as missing when this denominator is negative, thus leading to a significant decrease in the number of observations with information to estimate the effective tax rates.

TABLE 1
Sample Construction and Distribution

Panel A: Sample Construction

Companies in Audit Analytics that announced a tax-related accounting misstatement between 2001 and 2017	1,942
Less observations where the misstatement actually occurred before 2001	191
Less observations with tax-related material weakness in internal controls	12
Less observations with incomplete data to estimate corporate effective tax rate	758 ^a
Less observations with incomplete financial statement in Compustat	335
Tax-related accounting misstatements sample with complete data	646

^a The denominator of the equation to estimate GAAP and CASH effective tax rates is pretax income (Compustat item PI). We follow prior tax research (e.g., Zimmerman 1983; Omer, Molloy, and Ziebart 1993; Chen et al. 2010; Lennox et al. 2013) and set the values of effective tax rates (ETRs) as missing when this denominator is negative. Thus, leading to a significant decrease in the number of observations with information to estimate the effective tax rates.

Panel B: Sample Distribution by Industry and Year

Industry	Frequency	Percent	Year	Frequency	Percent
Agriculture, Forestry, and Fishing	23	3.56%	2001	38	5.88%
Construction	18	2.79%	2002	42	6.50%
Manufacturing	288	44.58%	2003	63	9.75%
Mining	34	5.26%	2004	58	8.98%
Retail Trade	49	7.59%	2005	47	7.28%
Services	132	20.43%	2006	44	6.81%
Transportation	73	11.30%	2007	40	6.19%
Wholesale Trade	29	4.49%	2008	39	6.04%
Total	646	100%	2009	38	5.88%
			2010	41	6.35%
			2011	47	7.28%
			2012	37	5.73%
			2013	40	6.19%
			2014	31	4.80%
			2015	24	3.72%
			2016	15	2.32%
			2017	2	0.31%
			Total	646	100%

(continued on next page)

Measuring Aggressive Tax Reporting

Prior tax research relies on a firm's effective tax rates to measure financial statement aggressiveness related to tax accounts. While there are numerous effective tax rates measures, we follow the corporate tax avoidance proxies as outlined in [Dyreg, Hanlon, and Maydew \(2010\)](#);

TABLE 1 (continued)

Panel C: Mean Corporate Tax Aggressiveness by Restatement Type

	<i>n</i>	<i>gaap_etr_1</i>	<i>gaap_etr_2</i>	<i>cash_etr</i>
Companies with financial statement restatement involving only tax expense account	451	0.2609	0.2572	0.2367
Companies with financial statement restatement involving tax expense account and at least one other account	195	0.2781	0.2658	0.2473
Control sample of companies with no tax-related financial statement restatement	646	0.2881	0.2734	0.2540

Lennox et al. (2013); and Cheng, Huang, Li, and Stanfield (2012). We compute two GAAP effective tax rate measures for each observation in the sample as follows:⁷

$$gaap_etr_1 = \frac{\text{total tax expense}}{(\text{pretax income} - \text{special items})} \\ \{ \text{Compustat}[(\text{TXT})]/(\text{PI} - \text{SPI}) \}$$

$$gaap_etr_2 = \frac{(\text{total tax expense} - \text{total deferred taxes})}{(\text{pretax income} - \text{special items})} \\ \{ \text{Compustat}[(\text{TXT} - \text{TXDI})]/(\text{PI} - \text{SPI}) \}$$

Due to the limitations associated with using GAAP effective tax rates, we also included a CASH effective tax rate measure based on Dyreng et al. (2008).

$$cash_etr = \frac{(\text{cash taxes paid})}{(\text{pretax income}(PI) - \text{special items}(SPI))}$$

We follow prior tax research (e.g., Zimmerman 1983; Omer, Molloy, and Ziebart 1993; Chen et al. 2010; Lennox et al. 2013) and set the values of effective tax rates (ETRs) as missing when the denominator is negative. We also winsorized the value of *gaap_etr_1*, *gaap_etr_2*, and *cash_etr* to be within the range of 0 and 1.

Empirical Models

Financial Statement Aggressiveness Related to Tax Accounts and Tax-Related Accounting Misstatements (H1)

We examine the prediction in hypothesis H1 that financial statement aggressiveness related to tax accounts is associated with the likelihood of a tax-related accounting misstatement in the financial statements. We follow prior research (e.g., Efendi, Srivastava, and Swanson 2007; Lobo and Zhao 2013; Boland, Bronson, and Hogan 2015) on the determinants of financial misstatements and estimate the following logistic regression with year and industry fixed effects:

$$\text{Prob}(\text{tax_misstate}) = \alpha_0 + \alpha_1 \text{gaap_etr_1 or gaap_etr_2 or cash_etr} + \alpha_2 \text{accrq} + \alpha_3 \ln(\text{at}) \\ + \alpha_4 \text{btm} + \alpha_5 \text{foreign} + \alpha_6 \text{leverage} + \alpha_7 \text{ocf_at} + \alpha_8 \text{roa} + \alpha_9 \text{loss} \\ + \alpha_{10} \text{revgrowth} + \alpha_{11} \text{merger} + \alpha_{12} \text{xtraord} + \alpha_{13} \text{special} + \alpha_{14} \ln(\text{tenure}) \\ + \alpha_{15} \text{big4} + \text{year} + \text{industry} \quad (1)$$

⁷ If the special items reported by a company is missing, we give it a value of 0.

The dependent variable, *tax_misstate*, equals 1 for the first year of tax-related misstatement in the financial statement of the client, and 0 otherwise. Our main independent variables of interest in Equation (1) are *gaap_etr_1*, *gaap_etr_2*, and *cash_etr*. These variables represent our proxies for tax-related financial statement aggressiveness.⁸ We test each of the three independent variables separately. We control for a number of firm-specific characteristics that may be correlated with the likelihood of having tax-related accounting misstatements. First, we control for aggressive financial reporting by including the estimated level of abnormal accruals in the model (*accrq*).⁹ We expect a positive association between *accrq* and the likelihood of having a tax-related accounting misstatement in the financial statements.

We control for firm size by including the natural logarithm of total assets (*at*). Larger firms are more likely to be subjected to closer scrutiny by regulators and taxing authorities (Blouin, Gleason, Mills, and Sikes 2007). Firms trading at considerable multiples of book value per share can feel significant market pressure to manipulate their earnings to maintain these high multiples (Richardson, Tuna, and Wu 2002). We control for book value to market price per share (*btm*). We expect a negative association between *btm* and tax-related accounting misstatements in the financial statements.

Companies with high outstanding levels of debt and companies potentially close to violating debt covenants have an incentive to manipulate their accounting disclosures (DeFond and Jiambalvo 1994). We control for financial leverage (*leverage*) in our model. We control for accounting performance and liquidity of a company by including firm profitability (*roa*), loss reporting (*loss*), and cash-flow from operations (*ocf_at*). Companies with high accounting performance and a good liquidity position have fewer incentives to manipulate their accounting disclosures (Ferguson, Seow, and Young 2004). We expect *roa* and *ocf_at* to be negatively associated with the likelihood of having a tax-related accounting misstatement in the financial statements and *loss* to be positively associated with the likelihood of having a tax-related accounting misstatement in the financial statements.

We control for a firm's revenue growth (*revgrowth*). High growth companies are less likely to devote resources to strengthening the quality of their internal controls. This omission may impair the ability of a company's internal control structure and accounting system to properly account for the company's transactions (Beasley 1996). We predict a positive relation between *revgrowth* and the incidence of tax-related accounting misstatements. We also control for the complexity of the company operations by including indicator variables for foreign operations (*foreign*) and mergers and acquisitions (*merger*). Companies with complex operations are more likely to have accounting misstatements (Palmrose and Scholz 2004). We control for the disclosure of transitory items in the financial statements such as extraordinary (*xtraord*) and special items

⁸ Effective tax rates are a measure of tax aggressiveness that includes both tax return aggressiveness and financial statement aggressiveness. With these measures we cannot perfectly disentangle the effect of tax return aggressiveness from financial statement aggressiveness. Thus, we do not know if the company is being more or less aggressive on their tax return or on their financial statements or both.

⁹ Following prior research in the earnings management literature (Becker, DeFond, Jiambalvo, and Subramanyam 1998; DeFond and Subramanyam 1998), accrual quality is estimated using the following modified cross-sectional Jones model: $tacc = 1/lagged_at + (\delta revt - \delta rect)/lagged_at + ppe/lagged_at + roa$ where *tacc* = change in current assets – change in current liabilities – change in cash and cash equivalents + change in the current portion of long-term debt – depreciation and amortization expense, all scaled by lagged total assets; *lagged_at* = total assets at the beginning of the fiscal year; $\delta revt$ = change in sales revenues from year *t*–1 to year *t*; $\delta rect$ = change in accounts receivable balance from year *t*–1 to year *t*; *ppe* = total gross property, plant, and equipment; and *roa* = income before extraordinary items scaled by total assets at the beginning of the year.

(*special*) as these disclosures can be correlated with accounting irregularities (Bonner et al. 1998).

Lastly, we control for certain characteristics (auditor tenure and auditor size) of a company's external auditor shown in prior research (e.g., Krishnan 2003; Stanley and DeZoort 2007) being correlated with the quality of the company's accounting disclosures. Prior research finds that larger audit firms (*big4*) provide higher quality audits because of more specialized training and the use of more sophisticated technologies to aid in the detection of errors in corporate accounting disclosures (Becker, DeFond, Jiambalvo, and Subramanyam 1998; Krishnan 2003). The length of time an audit firm maintains a client (*tenure*) can either have a positive or negative effect on the quality of accounting disclosures. Extremely long auditor-client relationships can impair auditor independence and negatively affect auditor quality (Geiger and Raghunandan 2002). However, client-specific knowledge and understanding develops with time. Thus, the quality of an audit engagement can be impaired by a lack of client-specific knowledge (Ghosh and Moon 2005).

We estimate Equation (1) using random effects logistic models to control for unobservable time-invariant firm characteristics. The primary superiority of the random effects logistic model over a simple logistic model is that the random effects model controls for unobservable time-invariant firm characteristics. These unobservable time-invariant firm characteristics are assumed to be normally distributed with mean 0 and constant variance.

Disclosure of Tax-Related Misstatement and Financial Statement Aggressiveness Related to Tax Accounts (H2)

We examine the prediction in hypothesis H2 on whether the disclosure of a tax-related accounting misstatement is associated with financial statement aggressiveness related to tax accounts. We follow prior tax research (Gupta and Newberry 1997; Mills 1998; Rego 2003; Dyreng et al. 2008; Frank et al. 2009; Wilson 2009; Chen et al. 2010; Lennox et al. 2013; Bauer 2016) and estimate the following OLS regression with year- and industry-fixed effects:

$$\begin{aligned} etr = & \alpha_0 + \alpha_1 tax_restate + \alpha_2 accrq + \alpha_3 \ln(at) + \alpha_4 btm + \alpha_5 foreign + \alpha_6 leverage + \alpha_7 sa_index \\ & + \alpha_8 roa + \alpha_9 nol + \alpha_{10} revgrowth + \alpha_{11} merger + \alpha_{12} xtraord + \alpha_{13} special + \alpha_{14} \ln(tenure) \\ & + \alpha_{15} big4 + \alpha_{16} sga_at + \alpha_{17} xrd_at + \alpha_{18} intan_at + year + industry \end{aligned} \quad (2)$$

Appendix A includes the definitions of the variables in this model. The dependent variable *etr* represents the three measures of financial statement aggressiveness related to tax accounts *gaap_etr_1*, *gaap_etr_2*, and *cash_etr*. The independent variable of interest, *tax_restate*, is an indicator variable that takes the value 1 for the year the company discloses the restatement of a previously issued financial statement to the SEC for a tax-motivated reason, and 0 otherwise.

Consistent with prior studies on corporate tax avoidance, we control for firm size (*at*), profitability (*roa*), financial leverage (*leverage*), foreign operations (*foreign*), tax loss planning (*nol*), firm stability (*revgrowth* and *btm*) and investment in research and development and intellectual property (*xrd_at* and *intan_at*). These variables in prior research are typically associated with corporate tax avoidance.

We control for the characteristics of the company's external auditor (*tenure* and *big4*) following McGuire et al. (2012). Likewise, we include a proxy for financial and capital constraints (*sa_index*) based on Hadlock and Pierce (2010). This index reflects size and age as potential predictors for the availability of external capital to the company.

TABLE 2
Descriptive Statistics and Univariate Analysis:
Tax-Related Accounting Misstatement (H1)

Panel A: Matched on Industry, Year and Pretax Income

	<i>tax_misstate</i> = 0 n = 646		<i>tax_misstate</i> = 1 n = 646		Test of Mean t-value	Test of Median Wilcoxon Z
	Mean	Median	Mean	Median		
<i>gaap_etr_1</i>	0.2881	0.3202	0.2661	0.3077	2.25**	1.68*
<i>gaap_etr_2</i>	0.2734	0.2512	0.2598	0.2271	2.48**	2.66***
<i>cash_etr</i>	0.2540	0.2083	0.2399	0.1849	2.08**	2.33**
<i>accrq</i>	0.0021	0.0001	0.0045	0.0041	2.54**	2.46**
<i>at</i> (\$ million)	3,376.10	490.26	3,337.33	661.37	0.06	0.91
<i>btm</i>	0.5210	0.4569	0.5764	0.4817	1.01	0.96
<i>foreign</i>	0.5938	1.0000	0.6458	1.0000	1.82*	NA
<i>leverage</i>	0.1714	0.1150	0.1941	0.1420	1.79*	2.20**
<i>ocf_at</i>	0.1124	0.1016	0.0975	0.0906	2.93***	3.11***
<i>roa</i>	0.0817	0.0620	0.0760	0.0554	1.47	2.07**
<i>loss</i>	0.0174	0.0000	0.0382	0.0000	2.15**	NA
<i>revgrowth</i>	0.2184	0.0992	0.2573	0.0935	0.79	0.48
<i>merger</i>	0.1632	0.0000	0.2135	0.0000	2.19**	NA
<i>xtraord</i>	0.0330	0.0000	0.0694	0.0000	2.81***	NA
<i>special</i>	0.3958	0.0000	0.3073	0.0000	3.16***	NA
<i>tenure</i>	10.4427	8.0000	11.0625	8.0000	1.19	0.94
<i>big4</i>	0.7378	1.0000	0.7604	1.0000	0.88	NA

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test. All continuous variables have been winsorized at the 1 and 99 percentiles. The variable *tax_misstate* is 1 for the retrospective year the tax-related misstatement affected the company's financial statements, and 0 otherwise. All other variables are defined in Appendix A.

(continued on next page)

IV. RESULTS

Financial Statement Aggressiveness Related to Tax Accounts and Tax-Related Accounting Misstatements (H1)

Descriptive Statistics and Univariate Analysis

Panel A of Table 2 presents the descriptive statistics and univariate analyses on the variables in the model to estimate the likelihood of a tax-related accounting misstatement. We matched the treatment and control observations in this sample on year, industry, and closest pretax income. We also present a two-tailed test of mean and median differences of the variables in the model between the treatment sample of firms with tax-related accounting misstatements and the control sample of firms with no tax-related accounting misstatements. The mean and median of *gaap_etr* and *cash_etr* are significantly lower for the observations with tax-related misstatements compared to the control group. This preliminary evidence from the univariate analysis suggests firms

TABLE 2 (continued)

Panel B: Matched on Industry, Year, and Total Assets (H1)

	<i>tax_misstate</i> = 0 n = 646		<i>tax_misstate</i> = 1 n = 646		Test of Mean t-value	Test of Median Wilcoxon Z
	Mean	Median	Mean	Median		
<i>gaap_etr_1</i>	0.2882	0.3052	0.2613	0.2775	2.66***	2.60***
<i>gaap_etr_2</i>	0.2796	0.2497	0.2598	0.2271	2.31**	2.12**
<i>cash_etr</i>	0.2506	0.2065	0.2299	0.1749	2.00**	2.40**
<i>accrq</i>	0.0023	0.0020	0.0047	0.0039	2.05**	2.31**
<i>at</i> (\$ million)	3,289.10	668.97	3,337.33	661.37	0.10	0.16
<i>btm</i>	0.5454	0.4474	0.5764	0.4817	0.84	1.31
<i>foreign</i>	0.6354	1.0000	0.6458	1.0000	0.37	NA
<i>leverage</i>	0.1744	0.1389	0.1941	0.1420	1.65*	1.11
<i>ocf_at</i>	0.1107	0.0988	0.0975	0.0906	2.61***	3.04***
<i>roa</i>	0.0796	0.0645	0.0760	0.0554	0.94	1.82*
<i>loss</i>	0.0174	0.0000	0.0382	0.0000	2.15**	NA
<i>revgrowth</i>	0.1641	0.0898	0.2573	0.0935	2.14**	0.59
<i>merger</i>	0.1424	0.0000	0.2135	0.0000	3.17***	NA
<i>xtraord</i>	0.0365	0.0000	0.0694	0.0000	2.50**	NA
<i>special</i>	0.4184	0.0000	0.3073	0.0000	3.94***	NA
<i>tenure</i>	10.3559	7.0000	11.0625	8.0000	1.32	1.82*
<i>big4</i>	0.7326	1.0000	0.7604	1.0000	1.08	NA

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test. All continuous variables have been winsorized at the 1 and 99 percentiles. The variable *tax_misstate* is 1 for the retrospective year the tax-related misstatement affected the company's financial statements, and 0 otherwise. All other variables are defined in Appendix A.

engaging in aggressive corporate tax avoidance are also more likely to engage in aggressive financial reporting practices by departing from tax-related GAAP accounting standards.

In addition, based on the univariate analysis, we find that companies with tax-related accounting misstatements are more likely to have lower cash flow from operations (*ocf_at*) and report fewer special items (*special*) compared to the control group even after matching on year, industry, and closest pretax income. Companies with tax-related accounting misstatements are more likely to report a loss, engage in more merger activities (*merger*), and report more extraordinary items (*xtraord*) compared to the control group.

Panel B of Table 2 presents the descriptive statistics and univariate analyses on the variables in the model matched on year, industry, and closest total assets. We find that observations with tax-related accounting misstatements have lower corporate effective tax rates. This result is consistent with the descriptive statistics and univariate analysis in Panel A.

Regression Analysis

Panel A of Table 3 presents the results for the logistic regression to test H1 for the sample of observations matched on year, industry, and closest pretax income. The dependent variable is *tax_misstate*. The three independent variables of interest, *gaap_etr_1*, *gaap_etr_2*, and *cash_etr*, represent our proxies of corporate tax aggressiveness.

In the first column of Panel A, the dependent variable is *gaap_etr_1*. The logistic regression model is significant at the 1 percent level. The coefficient on *gaap_etr_1* (coefficient = -0.7536,

TABLE 3
Logistic Regression Analysis: Tax-Related Accounting Misstatement

Panel A: Matched on Industry, Year, and Pretax Income

	<i>tax_misstate</i>					
	Coeff	Wald Chi-sq.	Coeff	Wald Chi-sq.	Coeff	Wald Chi-sq.
Constant	0.0453	5.30**	-0.2500	5.56**	-0.3312	6.98**
<i>gaap_etr_1</i>	-0.7536	4.44**				
<i>gaap_etr_2</i>			-0.6830	5.17**		
<i>cash_etr</i>					-0.4311	6.64***
<i>accrq</i>	0.0360	0.15	0.1018	0.01	0.1227	0.02
<i>ln(at)</i>	0.0062	0.02	0.0085	0.04	0.0080	0.03
<i>btm</i>	0.1024	1.24	0.1068	1.30	0.1103	1.38
<i>foreign</i>	0.2151	1.93	0.2145	1.92	0.2038	1.73
<i>leverage</i>	0.5553	2.42	0.5936	2.73*	0.6258	3.06*
<i>ocf_at</i>	-1.7258	3.62*	-1.8935	4.38**	-1.8659	4.25**
<i>roa</i>	0.1076	0.01	0.7331	0.38	0.9476	0.65
<i>loss</i>	1.3025	6.90***	0.8313	3.76*	0.7277	2.87*
<i>revgrowth</i>	0.0820	1.05	0.0887	1.23	0.0929	1.34
<i>merger</i>	0.2477	1.81	0.2375	1.67	0.2292	1.55
<i>xtraord</i>	0.7977	6.32**	0.7851	6.14**	0.7890	6.19**
<i>special</i>	-0.2926	3.94**	-0.2989	4.12**	-0.2986	4.11**
<i>tenure</i>	0.0051	0.44	0.0052	0.46	0.0053	0.48
<i>big4</i>	-0.0673	0.14	-0.0593	0.11	-0.0682	0.14
<i>year effect</i>		Yes		Yes		Yes
<i>industry effect</i>		Yes		Yes		Yes
Chi-sq.		343.94***		340.55***		341.18***
n		1,292		1,292		1,292

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test. This panel presents logistic regressions (H1) to examine the association between aggressive tax reporting and the likelihood of having tax-related misstatements in their financial statements (*tax_misstate*) for the sub-sample of observations matched on industry, year, and pretax income. All continuous variables have been winsorized at the 1 and 99 percentiles. The model is estimated with clustered standard errors. The variable *tax_misstate* is 1 for the retrospective year the tax-related misstatement affected the company's financial statements, and 0 otherwise.

All other variables are defined in Appendix A.

(continued on next page)

Chi-square = 4.44) is negative and significant. In the second column of Panel A, the coefficient on *gaap_etr_2* (coefficient = -0.6830, Chi-square = 5.17) is equally negative and significant. Lastly, in the third column of Panel A, the coefficient on *cash_etr* (coefficient = -0.4311, Chi-square = 6.64) is negative and significant.

Panel B of Table 3 presents the results for the logistic regression to test H1 for the sample of observations matched on year, industry, and closest total assets. The coefficient on *gaap_etr_1* (coefficient = -0.3510, Chi-square = 4.01) is negative and significant. In the second column of Panel B, coefficients on *gaap_etr_2* (coefficient = -0.2317, Chi-square = 4.20) are equally negative and significant. Lastly, in the third column of Panel B, the coefficient on *cash_etr* (coefficient = -0.3844,

TABLE 3 (continued)

Panel B: Matched on Industry, Year, and Total Assets

	<i>tax_misstate</i>					
	Coeff	Wald Chi-sq.	Coeff	Wald Chi-sq.	Coeff	Wald Chi-sq.
Constant	0.2433	5.45**	0.2697	6.59***	0.1289	5.14**
<i>gaap_etr_1</i>	-0.3510	4.01**				
<i>gaap_etr_2</i>			-0.2317	4.20**		
<i>cash_etr</i>					-0.3844	4.85**
<i>accrq</i>	0.6355	0.41	0.6590	0.44	0.6691	0.45
$\ln(at)$	-0.0800	3.08*	-0.0793	3.02*	-0.0821	3.23*
<i>btm</i>	0.1317	1.33	0.1306	1.31	0.1316	1.32
<i>foreign</i>	-0.0093	0.01	-0.0052	0.01	-0.0167	0.01
<i>leverage</i>	0.4568	1.54	0.4487	1.48	0.4804	1.70
<i>ocf_at</i>	-2.2387	5.96**	-2.2465	6.03**	-2.1916	5.73**
<i>roa</i>	0.8149	0.43	0.7401	0.36	1.1487	0.88
<i>loss</i>	0.7699	2.51	0.7899	3.36*	0.6019	1.91
<i>revgrowth</i>	0.2453	4.69**	0.2447	4.66**	0.2509	4.82**
<i>merger</i>	0.4538	5.77**	0.4529	5.75**	0.4486	5.63**
<i>xtraord</i>	0.7293	5.57**	0.7264	5.52**	0.7369	5.69**
<i>special</i>	-0.4562	9.47***	-0.4565	9.50***	-0.4556	9.45***
<i>tenure</i>	0.0093	1.56	0.0093	1.55	0.0090	1.47
<i>big4</i>	0.1989	1.17	0.1975	1.16	0.2007	1.19
<i>year effect</i>		Yes		Yes		Yes
<i>industry effect</i>		Yes		Yes		Yes
Chi-sq.		354.50***		354.69***		356.35***
n		1,292		1,292		1,292

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test. This panel presents logistic regressions (H1) to examine the association between aggressive tax reporting and the likelihood of having tax-related misstatements in their financial statements (*tax_misstate*) for the sub-sample of observations matched on industry, year, and total assets. All continuous variables have been winsorized at the 1 and 99 percentiles. The model is estimated with clustered standard errors. The variable *tax_misstate* is 1 for the retrospective year the tax-related misstatement affected the company's financial statements, and 0 otherwise. All other variables are defined in Appendix A.

Chi-square = 4.85) is negative and significant. The findings in Table 3 are consistent with higher levels of financial statement aggressiveness related to tax accounts being associated with an increased likelihood of tax-related accounting misstatements in the financial statement.

While the primary focus of our analyses is to examine whether aggressive tax reporting is associated with the likelihood of having tax-related accounting misstatements, in an additional analysis, we examine whether aggressive tax reporting is also associated with non-tax-related accounting misstatements. It is possible that the same environment that influences management to engage in aggressive tax reporting that leads to tax-related accounting misstatements will also be associated with other types of accounting misstatements. Alternatively, it is possible that aggressive tax reporting is only associated with tax-related accounting misstatement.

We estimate Equation (1) where the dependent variable *non_tax_misstate* is an indicator variable that takes the value 1 if a company announces a non-tax-related accounting restatement,

TABLE 4
Descriptive Statistics and Univariate Analysis:
Disclosure of a Tax-Related Restatement (H2)

Panel A: Matched on Industry, Year, and Pretax Income

	<i>tax_restate</i> = 0 n = 646		<i>tax_restate</i> = 1 n = 646		Test of Mean t-value	Test of Median Wilcoxon Z
	Mean	Median	Mean	Median		
<i>gaap_etr_1</i>	0.2856	0.3155	0.3397	0.3314	5.24***	4.28***
<i>gaap_etr_2</i>	0.2519	0.2430	0.3025	0.2562	3.69***	2.34**
<i>cash_etr</i>	0.2256	0.1917	0.2835	0.2638	4.02***	2.69***
<i>accrq</i>	0.0050	0.0039	0.0012	0.0000	1.09	1.14
<i>at</i> (\$ million)	6.2965	6.3041	6.5709	6.5531	2.46**	2.40**
<i>btm</i>	0.5321	0.4562	0.5306	0.4447	0.04	0.03
<i>foreign</i>	0.5975	1.0000	0.6734	1.0000	2.84***	NA
<i>leverage</i>	0.1800	0.1344	0.2008	0.1583	1.83*	2.32**
<i>sa_index</i>	-3.5406	-3.4673	-3.7207	-3.5983	4.01***	3.78***
<i>roa</i>	0.0765	0.0603	0.0598	0.0427	4.91***	6.28***
<i>nol</i>	0.5046	1.0000	0.5573	1.0000	1.90*	NA
<i>revgrowth</i>	0.2749	0.0933	0.1407	0.0684	2.90***	3.23***
<i>merger</i>	0.1950	0.0000	0.1950	0.0000	0.00	NA
<i>xtraord</i>	0.0279	0.0000	0.0294	0.0000	0.17	NA
<i>special</i>	0.3576	0.0000	0.2740	0.0000	3.24***	NA
<i>tenure</i>	9.7136	7.0000	10.9241	8.0000	2.44**	0.72
<i>big4</i>	0.7322	1.0000	0.7817	1.0000	2.08**	NA
<i>sga_at</i>	0.2449	0.1832	0.2524	0.1826	0.49	0.40
<i>xrd_at</i>	0.0295	0.0000	0.0247	0.0000	1.18	0.71
<i>intan_at</i>	0.2251	0.1410	0.2177	0.1448	0.51	0.29

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test. All continuous variables have been winsorized at the 1 and 99 percentiles. The variable *tax_restate* is 1 for the year of disclosure of the need to restate previously issued financial statements because of a tax-related reason, 0 otherwise. All other variables are defined in Appendix A.

(continued on next page)

and 0 otherwise. In untabulated results, we find that the coefficients on the corporate tax avoidance measures are not significant, suggesting there is no association between corporate tax aggressiveness and non-tax-related accounting misstatements.

Announcement of a Tax-Related Restatement and Financial Statement Aggressiveness Related to Tax Accounts (H2)

Descriptive Statistics

Panel A of Table 4 presents the descriptive statistics for the characteristics of the treatment firms in the year that they announce a tax-related accounting restatement and the control firms matched on year, industry, and pretax income. We also present two-tailed tests of differences in the mean and median between the two groups using t-tests and Wilcoxon Z tests, respectively. The mean and median GAAP and CASH effective tax rates are significantly higher for the

TABLE 4 (continued)

Panel B: Matched on Industry, Year, and Total Assets (H2)

	<i>tax_restate</i> = 0 n = 646		<i>tax_restate</i> = 1 n = 646		Test of Mean t-value	Test of Median Wilcoxon Z
	Mean	Median	Mean	Median		
<i>gaap_etr_1</i>	0.2890	0.3081	0.3397	0.3314	5.05***	4.04***
<i>gaap_etr_2</i>	0.2741	0.2594	0.3025	0.2862	2.80***	2.24**
<i>cash_etr</i>	0.2365	0.2158	0.2835	0.2638	3.28***	2.47**
<i>accrq</i>	0.0070	0.0034	0.0012	0.0000	1.68*	1.73*
<i>at</i> (\$ million)	6.5363	6.5383	6.5709	6.5531	0.31	0.27
<i>btm</i>	0.4676	0.4156	0.5306	0.4447	1.48	1.35
<i>foreign</i>	0.6548	1.0000	0.6734	1.0000	0.71	NA
<i>leverage</i>	0.1890	0.1307	0.2008	0.1583	0.98	1.90*
<i>sa_index</i>	-3.6615	-3.5726	-3.7207	-3.5983	1.32	1.12
<i>roa</i>	0.0776	0.0616	0.0598	0.0427	5.20***	6.24***
<i>nol</i>	0.5372	1.0000	0.5573	1.0000	0.73	NA
<i>revgrowth</i>	0.2067	0.0884	0.1407	0.0684	2.13**	2.94***
<i>merger</i>	0.1950	0.0000	0.1950	0.0000	0.00	NA
<i>xtraord</i>	0.0155	0.0000	0.0294	0.0000	1.69*	NA
<i>special</i>	0.3638	0.0000	0.2740	0.0000	3.48***	NA
<i>tenure</i>	10.5960	8.0000	10.9241	8.0000	0.65	1.11
<i>big4</i>	0.7632	1.0000	0.7817	1.0000	0.80	NA
<i>sga_at</i>	0.2386	0.1857	0.2524	0.1826	0.94	0.48
<i>xrd_at</i>	0.0259	0.0000	0.0247	0.0000	0.44	0.61
<i>intan_at</i>	0.2170	0.1245	0.2177	0.1448	0.05	1.19

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test. All continuous variables have been winsorized at the 1 and 99 percentiles. The variable *tax_restate* is 1 for the year of disclosure of the need to restate previously issued financial statements because of a tax-related reason, 0 otherwise. All other variables are defined in Appendix A.

treatment group compared to the control sample of observations that announced the need to restate their financial statements because of a tax-related reason.

Panel B of Table 4 presents the descriptive statistics for the characteristics of the treatment firms in the year that they announce a tax-related accounting restatement and the control firms matched on year, industry, and total assets. We also show that the mean and median GAAP and CASH effective tax rates are significantly lower for the control observations compared to the treatment sample of observations that announced the need to restate their financial statements because of a tax-related reason. The initial evidence from Panels A and B suggests that companies are more likely to engage in less financial statement aggressiveness related to tax accounts in the year that they disclose a significant tax-related GAAP departure from a prior period has caused them to restate previously issued financial statements.

Regression Analysis

In Table 5, we report the results of estimating Equation (2) examining the association between the announcement of a tax-related accounting restatement and corporate tax aggressiveness. The dependent variables in this model are the three measures of corporate tax aggressiveness, *gaap_etr_1*, *gaap_etr_2*, and *cash_etr*. The independent variable of interest, *tax_restate*, is an indicator

TABLE 5
The Disclosure of a Tax-Related Restatement and Aggressive Corporate Tax Reporting

Panel A: Matched by Industry, Year, and Pretax Income

	<i>gaap_etr_1</i>		<i>gaap_etr_2</i>		<i>cash_etr</i>	
	Coeff	t-value	Coeff	t-value	Coeff	t-value
Constant	0.1209	3.62***	0.1320	3.33***	-0.2606	3.58***
<i>tax_restate</i>	0.0294	3.10***	0.0193	2.58***	0.0230	2.74***
<i>accrq</i>	-0.1381	1.77*	-0.2202	2.19**	-0.1426	1.31
<i>ln(at)</i>	-0.0026	0.63	0.0030	0.56	-0.0059	1.01
<i>btm</i>	-0.0064	0.70	-0.0165	1.39	0.0104	0.81
<i>foreign</i>	-0.0173	1.45	0.0434	2.82***	0.0304	1.83*
<i>leverage</i>	-0.0521	1.79*	-0.1450	3.86***	-0.0815	2.01**
<i>sa_index</i>	-0.0260	2.78***	-0.0184	1.52	-0.0401	3.08***
<i>roa</i>	-0.6249	6.66***	-0.8097	6.69***	-0.7796	5.97***
<i>nol</i>	0.5980	23.92***	0.3706	11.50***	0.3270	9.39**
<i>revgrowth</i>	-0.0049	0.83	-0.0071	0.93	-0.0065	0.78
<i>merger</i>	0.0181	1.27	0.0149	0.81	0.0366	1.84*
<i>xtraord</i>	0.0461	1.47	0.0492	1.22	0.0504	1.16
<i>special</i>	0.0126	1.09	0.0244	1.64	0.0104	0.64
<i>tenure</i>	-0.0008	1.25	-0.0020	2.35**	-0.0001	0.13
<i>big4</i>	-0.0167	1.22	0.0035	0.20	0.0353	1.85*
<i>sga_at</i>	0.0424	2.01**	0.0508	1.86*	0.1042	3.54***
<i>xrd_at</i>	-0.1915	2.66***	-0.1610	1.73*	-0.1947	1.94*
<i>intan_at</i>	0.0604	2.84***	0.0466	1.70*	0.0592	2.00**
<i>year effect</i>		Yes		Yes		Yes
<i>industry effect</i>		Yes		Yes		Yes
Adj. R ²		0.475		0.300		0.361
F-value		11.99***		5.68***		4.68***
n		1,292		1,292		1,292

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

This panel presents OLS regressions (H2) to examine the association between the disclosure of tax-related accounting restatements (*tax_restate*) and aggressive tax reporting for the sub-sample of observations matched on industry, year, and pretax income. All continuous variables have been winsorized at the 1 and 99 percentiles. The model is estimated with clustered standard errors. The variable *tax_restate* is 1 for the year of disclosure of the need to restate previously issued financial statements because of a tax-related reason, 0 otherwise.

All variables are defined in Appendix A.

(continued on next page)

TABLE 5 (continued)

Panel B: Matched by Industry, Year, and Total Assets

	gaap_etr_1		gaap_etr_2		cash_etr	
	Coeff	t-value	Coeff	t-value	Coeff	t-value
Constant	0.1917	2.50***	0.2612	3.03***	0.2967	3.28***
tax_restate	0.0255	2.66***	0.0115	1.93*	0.0188	2.43**
accrq	-0.1037	1.30	-0.0658	0.64	-0.2521	2.31**
ln(at)	-0.0067	1.56	0.0023	0.41	-0.0045	0.76
btm	-0.0032	0.42	-0.0113	1.16	0.0060	0.58
foreign	-0.0134	1.08	0.0515	3.21***	0.0339	2.00**
leverage	-0.0741	2.68***	-0.1584	4.43***	-0.0901	2.38**
sa_index	-0.0200	2.06**	-0.0075	0.60	-0.0173	1.31
roa	-0.6394	6.79***	-0.7291	6.00***	-0.7932	6.15***
nol	0.5698	22.57***	0.3601	11.04***	0.2885	8.34***
revgrowth	0.0050	0.53	-0.0019	0.15	-0.0196	1.52
merger	0.0230	1.58	0.0023	0.12	-0.0018	0.09
xtraord	0.0737	2.14**	0.0283	0.64	-0.0023	0.05
special	0.0081	0.69	0.0106	0.69	0.0096	0.59
tenure	-0.0006	0.93	-0.0009	1.08	0.0007	0.74
big4	0.0153	1.05	0.0390	2.08**	0.0662	3.32***
sga_at	0.0500	2.24**	0.0500	1.73*	0.1108	3.63***
xrd_at	-0.3121	2.58***	-0.1656	1.06	-0.4180	2.53**
intan_at	0.0405	1.94*	0.0381	1.41	0.0607	2.12**
year effect		Yes		Yes		Yes
industry effect		Yes		Yes		Yes
Adj. R ²		0.443		0.377		0.356
F-value		10.50***		5.09***		4.55***
n		1,292		1,292		1,292

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

This panel presents OLS regressions (H2) to examine the association between the disclosure of tax-related accounting restatements (tax_restate) and aggressive tax reporting for the sub-sample of observations matched on industry, year, and total assets. All continuous variables have been winsorized at the 1 and 99 percentiles. The model is estimated with clustered standard errors. The variable tax_restate is 1 for the year of disclosure of the need to restate previously issued financial statements because of a tax-related reason, 0 otherwise.

All other variables are defined in Appendix A.

(continued on next page)

TABLE 5 (continued)

Panel C: Matched by Propensity Scores

	gaap_etr_1		gaap_etr_2		cash_etr	
	Coeff	t-value	Coeff	t-value	Coeff	t-value
Constant	0.1236	2.61***	0.1684	2.17***	0.1937	2.90***
tax_restate	0.0132	2.31**	0.0069	2.54**	0.0263	1.92*
accrq	-0.2087	2.42**	-0.1768	1.63	-0.3231	2.76***
ln(at)	-0.0051	1.22	0.0048	0.91	0.0008	0.14
btm	-0.0050	1.04	-0.0096	1.59	-0.0078	1.19
foreign	0.0200	1.52	0.0568	3.42***	0.0571	3.19***
leverage	-0.0584	2.04**	-0.1076	2.98***	-0.0726	1.87*
sa_index	-0.0098	1.03	-0.0018	0.15	-0.0183	1.42
roa	-0.7793	7.78***	-0.8867	7.01***	-1.0880	7.99***
nol	0.5712	23.47***	0.3388	11.03***	0.2168	6.56***
revgrowth	0.0005	0.04	-0.0074	0.55	-0.0294	2.02**
merger	0.0120	0.78	-0.0111	0.58	0.0168	0.81
xtraord	0.0819	2.39**	0.0875	2.03**	0.0628	1.35
special	0.0221	1.70*	0.0168	1.03	0.0129	0.73
tenure	-0.0004	0.67	-0.0015	1.80*	-0.0005	0.60
big4	0.0097	0.62	0.0201	1.02	0.0424	2.01**
sga_at	0.0326	1.35	0.0210	0.69	0.0988	3.00***
xrd_at	-0.4075	3.17***	-0.4442	2.74***	-0.5626	3.22***
intan_at	0.0357	1.52	-0.0068	0.23	0.0241	0.76
year effect		Yes		Yes		Yes
industry effect		Yes		Yes		Yes
Adj. R ²		0.459		0.387		0.237
F-value		11.21***		5.33***		4.11***
n		1,292		1,292		1,292

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

This panel presents OLS regressions (H2) to examine the association between the disclosure of tax-related accounting restatements (tax_restate) and aggressive tax reporting for the sub-sample of observations matched on propensity scores. All continuous variables have been winsorized at the 1 and 99 percentiles. The model is estimated with clustered standard errors. The variable tax_restate is 1 for the year of disclosure of the need to restate previously issued financial statements because of a tax-related reason, 0 otherwise.

All other variables are defined in Appendix A.

(continued on next page)

TABLE 5 (continued)

Panel D: Misstatement Year versus Disclosure of Restatement Year

	gaap_etr_1		gaap_etr_2		cash_etr	
	Coeff	t-value	Coeff	t-value	Coeff	t-value
Constant	0.3150	3.68***	0.1584	3.36***	0.1405	3.11***
tax_restate	0.0248	2.36**	0.0129	2.21**	0.0183	2.55**
accrq	-0.0801	1.11	-0.1063	1.09	-0.2706	2.61***
ln(at)	-0.0083	1.88*	0.0015	0.25	-0.0103	1.63
btm	-0.0218	2.19**	-0.0256	1.90*	0.0037	0.26
foreign	-0.0036	0.28	0.0420	2.38**	0.0412	2.20**
leverage	-0.0532	1.82*	-0.1459	3.68***	-0.0983	2.35**
sa_index	-0.0041	0.41	0.0066	0.50	-0.0395	2.80***
roa	-0.8633	9.58***	-0.9275	7.60***	-1.0858	8.41***
nol	0.6126	25.28***	0.3457	10.52***	0.3157	9.09***
revgrowth	0.0024	0.01	0.0017	0.20	-0.0023	0.26
merger	0.0026	0.18	-0.0044	0.22	0.0151	0.72
xtraord	0.0320	1.29	0.0412	1.23	0.0075	0.21
special	0.0110	0.91	0.0172	1.04	0.0033	0.19
tenure	-0.0009	1.40	-0.0017	1.92*	-0.0016	1.78*
big4	-0.0032	0.21	0.0140	0.68	0.0528	2.42**
sga_at	0.0019	0.12	0.0062	0.28	0.0590	2.53***
xrd_at	-0.0919	0.67	0.0651	0.35	-0.2741	1.40
intan_at	0.0110	0.59	0.0011	0.04	0.0242	0.91
year effect		Yes		Yes		Yes
industry effect		Yes		Yes		Yes
Adj. R ²		0.515		0.385		0.283
F-value		13.36***		5.00***		4.96***
n		1,292		1,292		1,292

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test.

This panel presents OLS regressions (H2) to examine the association between the disclosure of tax-related accounting restatements (tax_restate) and aggressive tax reporting only for the sub-sample with tax-related accounting restatements. We compare the year the misstatement took place to the year of announcement of restatement. All continuous variables have been winsorized at the 1 and 99 percentiles. The model is estimated with clustered standard errors. The variable tax_restate is 1 for the year of disclosure of the need to restate previously issued financial statements because of a tax-related reason, 0 otherwise. All other variables are defined in Appendix A.

(continued on next page)

TABLE 5 (continued)
Panel E: Corporate Tax Aggressiveness Before and After Disclosure of Restatement

	<i>gaap_etr_1</i>			<i>gaap_etr_2</i>			<i>cash_etr</i>			
	<i>t-1</i>	<i>t+1</i>	<i>t-1</i>	<i>t-1</i>	<i>t+1</i>	<i>t-1</i>	<i>t-1</i>	<i>t+1</i>	<i>t+1</i>	
	Coeff	t-value	Coeff	t-value	Coeff	t-value	Coeff	t-value	Coeff	t-value
Constant	0.2503	3.09***	0.1732	1.99**	0.1033	2.99***	0.1372	2.18**	0.1196	3.07***
<i>tax_restate</i>	-0.0034	0.31	0.0217	2.23**	-0.0163	1.26	0.0151	3.16***	-0.0131	0.95
<i>accrq</i>	0.0421	0.52	-0.1108	1.23	0.0323	0.31	-0.1143	0.95	0.2447	2.20**
<i>ln(at)</i>	-0.0050	1.15	-0.0107	2.61***	0.0020	0.35	-0.0027	0.49	-0.0122	2.03**
<i>btm</i>	-0.0260	2.25**	-0.0104	0.77	-0.0131	0.88	-0.0146	0.81	-0.0120	0.75
<i>foreign</i>	-0.0197	1.55	-0.0153	1.22	0.0131	0.81	0.0381	2.28**	0.0050	0.29
<i>leverage</i>	-0.0802	2.58***	-0.0487	1.61	-0.1436	3.60***	-0.1163	2.88***	-0.0608	1.42
<i>sa_index</i>	-0.0191	1.95*	-0.0224	2.38**	-0.0195	1.55	-0.0166	1.32	-0.0465	3.45***
<i>roa</i>	-0.8129	9.87***	-0.6774	7.48***	-0.6439	6.09***	-0.5014	4.14***	-0.6890	6.07***
<i>nol</i>	0.6203	18.85***	0.5926	16.63***	0.4084	9.66***	0.3091	6.50***	0.3304	7.29***
<i>revgrowth</i>	-0.0335	2.21**	-0.0217	1.43	-0.0199	1.02	0.0150	0.74	-0.0433	2.07**
<i>merger</i>	-0.0183	1.16	0.0081	0.56	0.0145	0.72	0.0042	0.22	0.0022	0.10
<i>xtraord</i>	-0.0167	0.62	-0.0061	0.17	-0.0058	0.17	0.0272	0.58	0.0202	0.54
<i>special</i>	0.0100	0.84	0.0103	0.85	0.0198	1.30	0.0010	0.06	0.0015	0.09
<i>tenure</i>	-0.0011	1.61	-0.0007	1.04	-0.0010	1.15	-0.0003	0.37	-0.0001	0.15
<i>big4</i>	0.0190	1.25	0.0041	0.28	0.0332	1.70*	-0.0028	0.14	0.0210	1.01
<i>sga_at</i>	0.0475	2.27**	0.0754	3.03***	0.0424	1.57	0.1122	3.38***	0.0382	1.32
<i>xrd_at</i>	-0.2418	2.32**	-0.3589	3.29***	0.0223	0.17	-0.4219	2.90***	-0.1221	0.85
<i>intan_at</i>	0.0385	1.66*	0.0282	1.19	0.0334	1.12	0.0855	2.70***	0.0295	0.92
<i>year effect</i>		Yes		Yes		Yes		Yes		Yes
<i>industry effect</i>		Yes		Yes		Yes		Yes		Yes
Adj. R ²		0.457		0.427		0.260		0.249		0.242
F-value		8.74***		7.29***		3.66***		3.25***		3.32***
n		1,028		958		1,028		958		1,028
										958

***, **, * Represent statistical difference at the 1 percent, 5 percent, and 10 percent levels, respectively, using a two-tailed test. This panel presents the OLS regressions to examine the association between corporate tax avoidance and the disclosure of a tax-related misstatement (*tax_restate*). All continuous variables have been winsorized at the 1 and 99 percentiles. The model is estimated with clustered standard errors. All variables are defined in Appendix A.

variable that takes the value of 1 if a company announces a tax-related restatement and 0 otherwise.

Panel A of Table 5 presents the results of the regression analyses for the treatment and control samples matched on year, industry, and pretax income. The coefficients on *tax_restate* in all three regressions are positive and statistically significant at the 1 percent level. This result suggests that in the year of restatement disclosure, observations in the treatment sample (*tax_restate* = 1) report a significantly higher effective tax rate compared to the control sample. This finding is consistent with less financial statement aggressiveness related to tax accounts following the disclosure of the restatement. In Panel B, we present the results of the regression analyses for the treatment and control samples matched on year, industry, and total assets. The coefficients on *tax_restate* in all three regressions are also positive and statistically significant at the 10 percent level. This finding is consistent with that in Panel A.

Propensity Score Analysis (PSM)

Prior research (e.g., Palmrose and Scholz 2004; Files, Swanson, and Tse 2009; Badertscher, and Burks 2011; and Badertscher, Hribar, and Jenkins 2011) suggests a company's decision to announce the need to restate previously issued financial statements is intentional rather than random and is thus endogenously determined. This intentional determination introduces a potential self-selection bias in examining the association between the announcement of a tax-related accounting restatement and aggressive tax reporting. To address this potential self-selection bias problem, we implement the propensity score matching (PSM) procedure that matches the tax-related restatement announcement observations to a matched control sample of non-tax-related restatement announcement observations (*tax_restate*) based on predictor variables.

We implement the PSM analysis in two steps. First, we estimate a logistic regression model of a tax-related accounting restatement announcement (*tax_restate*) similar to Equation (1), except the model does not include the corporate tax aggressiveness variables (*gaap_etr_1*, *gaap_etr_2*, and *cash_etr*). In this case, the dependent variable is now *tax_restate*:

$$\begin{aligned} \text{Prob}(\text{tax_restate}) = & \alpha_0 + \alpha_1 \text{accrq} + \alpha_2 \ln(\text{at}) + \alpha_3 \text{btm} + \alpha_4 \text{foreign} + \alpha_5 \text{leverage} + \alpha_6 \text{ocf_at} \\ & + \alpha_7 \text{roa} + \alpha_8 \text{loss} + \alpha_9 \text{revgrowth} + \alpha_{10} \text{merger} + \alpha_{11} \text{xtraord} + \alpha_{12} \text{special} \\ & + \alpha_{13} \ln(\text{tenure}) + \alpha_{14} \text{big4} + \text{year} + \text{industry} + \varepsilon \end{aligned} \quad (3)$$

The coefficients of each variable obtained from estimating Equation (3) are used to generate tax-related propensity scores for every observation in the sample. In the second stage, we match each treatment firm to a control firm based on the closest propensity scores. Panel C of Table 5 presents the results of the OLS regression for the sample involving firms that announce a tax-related accounting restatement and the control firms matched using the PCM procedure. We find a significantly positive association between the disclosure of a tax-related accounting restatement and effective tax rate after matching the treatment firms to control firms using propensity scores.

V. ROBUSTNESS ANALYSIS

Misstatement Year versus Disclosure of Restatement Year

For each company in the sample, we compare tax-related financial statement aggressiveness in the first year of the tax-related misstatement to the year the restatement is disclosed. This

comparison is considered a “within-firm” design with each observation serving as its own control. We present the results of this analysis in Panel D of Table 5. The independent variable, *tax_restate*, is 1 for the year of disclosure of a restatement and 0 for the first year of tax misstatement. In all three columns, the coefficients of the variable *tax_restate* are positive and significant. This finding suggests that companies tend to reduce their level of aggressive corporate tax reporting in the year they disclose a tax-related misstatement compared to the year of the tax-related misstatement.

Financial Statement Aggressiveness Related to Tax Accounts around the Year of Disclosure of Tax-Related Restatement

It is possible that in the year before the company discovers the need to restate previously issued financial statements, the underlying economics of a firm may have changed, leading to both discovery of the misstatement and an increase in the effective tax rates. To determine whether the change in tax policy occurred prior to the announcement of the restatement instead of in the year the restatement was announced, we examine aggressive tax reporting the year before the restatement announcement (See Panel E of Table 5). For the year prior to the restatement announcement the coefficient of *tax_restate* is not significant.¹⁰

We also investigate whether the restatement created a change in tax reporting that was more than a one-year correction. To test this idea, we examine the aggressive tax reporting in the year after the restatement announcement (see Panel E in Table 5). In this case, the coefficient of *tax_restate* is positive and significant. Based on these two tests, it appears that the announcement of the restatement has an impact on corporate tax policy for more than one year.

Corporate Governance Controls

A number of prior studies on accounting restatements have included firm-specific controls for corporate governance structures (e.g., [Abbott, Parker, and Peters 2004](#) and [Agrawal and Chadha 2005](#)). However, including controls for governance characteristics can lead to heavy attrition that would significantly reduce our sample of firms with tax-related misstatements; therefore, in one of our robustness tests, we control for CEO influence (CEO tenure, duality, and compensation), board characteristics (proportion of independent directors, audit committee financial experts), and governance index (*gindex* metric following [Gompers, Ishii, and Metrick 2003](#)). In this analysis, the number of observations in the treatment sample of firms that had tax-related misstatements decreased to 112. Although we still find a significantly positive relation between tax-related financial statement aggressiveness and tax-related misstatements in untabulated results, it is a marginally significant association.

Other Measures of Financial Statement Aggressiveness Related to Tax Accounts

Given that there are multiple measures of corporate tax aggressiveness from prior accounting research, with each measure having its own advantages and disadvantages ([Omer et al. 1993](#); [Hanlon and Heitzman 2010](#)), it is essential that we evaluate whether our results are sensitive to other proxies of corporate tax aggressiveness. In an additional robustness test, we estimate a number of other corporate tax aggressiveness proxies, including book-tax difference measures

¹⁰ We would like to thank one of the reviewers for making this suggestion during the review process.

based on Frank et al. (2009).¹¹ While the sample of firms that had tax-related misstatements decreases significantly because of missing observations using these corporate tax aggressiveness proxies, we find consistent evidence in untabulated results.

VI. CONCLUSIONS

Although there is empirical evidence from prior taxation research suggesting that corporations can use their tax accounts to engage in some form of earnings management, there is scarce evidence on the role that financial statement aggressiveness related to tax accounts plays in financial misreporting and even scarcer evidence on the role that financial statement aggressiveness related to tax accounts specifically plays in tax-related financial misreporting. This relationship is of particular importance given the documented rise in the number of tax-motivated accounting restatements (AA 2016).

Using a sample of corporations with data to estimate financial statement aggressiveness related to tax accounts over the years 2001 to 2017, we first examine whether financial statement aggressiveness related to tax accounts is associated with the likelihood of having tax-related accounting misstatements. Second, we examine whether the announcement of the need to restate prior financial statements due to a tax-related reason and the accompanying attention that such an announcement brings may force a corporation to curb its financial statement aggressiveness related to tax accounts in the year of the announcement. We show that financial statement aggressiveness related to tax accounts is positively associated with the likelihood of having tax-related accounting misstatements. Thus, companies that engage in financial statement aggressiveness related to tax accounts to reduce their effective tax rate are more likely to have tax-related misstatements. However, we find that in the year of an announcement of the need to restate prior-year financial statements due to a tax-related misstatement, corporations engage in less financial statement aggressiveness related to tax accounts compared to the control group. These results suggest that the potential for increased scrutiny appears to be a powerful incentive in motivating companies that announce the need to restate prior-year financial statements because of a tax-related matter to reduce their financial statement aggressiveness related to tax accounts in that year. It also appears that the announcement of the restatement creates a change in financial statement aggressiveness related to tax accounts and that the change was not simply a one-year correction.

REFERENCES

- Abbott, L. J., S. Parker, and G. F. Peters. 2004. Audit committee characteristics and restatements. *Auditing: A Journal of Practice & Theory* 23 (1): 69–87. <https://doi.org/10.2308/aud.2004.23.1.69>
- Adams, R. D. 2012. Schedule UTP: IRS findings. *The Tax Adviser*. 43 (10).
- Agrawal, A., and S. Chadha. 2005. Corporate governance and accounting scandals. *The Journal of Law & Economics* 48 (2): 371–406. <https://doi.org/10.1086/430808>
- Albring, S. 2006. The effects of the cost of foreign internal funds on the probability that a firm issues domestic debt. *The Journal of the American Taxation Association* 28 (1): 25–41. <https://doi.org/10.2308/jata.2006.28.1.25>
- Albring, S. 2007. Discussion of examining investor expectations concerning tax savings on the repatriations of foreign earnings under the American Jobs Creation Act of 2004. *The Journal of the American Taxation Association* 29 (2): 57–62. <https://doi.org/10.2308/jata.2007.29.2.57>

¹¹ $BTD_1 = \text{pretax income} - ((\text{Current federal tax expense} + \text{foreign tax expense}) / \text{statutory marginal tax rate})$.
 $BTD_2 = BTD_1 - (\text{Total deferred tax expense} / \text{statutory marginal tax rate})$.

- Albring, S., D. Dhaliwal, I. Khurana, and R. Pereira. 2011. Short-term incentive effects of a reduction in the NOL carryback period. *The Journal of the American Taxation Association* 33 (2): 67–88. <https://doi.org/10.2308/atax-10138>
- Arthaud-Day, M. L., S. T. Certo, C. M. Dalton, and D. R. Dalton. 2006. A changing of the guard: Executive and director turnover following corporate financial restatements. *Academy of Management Journal* 49 (6): 1119–1136. <https://doi.org/10.5465/amj.2006.23478165>
- Audit Analytics (AA). 2016. *2015 Financial Restatements: A Fifteen Year Comparison*. Available at: <https://www.auditanalytics.com/0002/view-custom-reports.php?report=d4ccd95113d5a4602d855b5d5fa94a2a>
- Badertscher, B. A., and J. J. Burks. 2011. Accounting restatements and the timeliness of disclosures. *Accounting Horizons* 25 (4): 609–629. <https://doi.org/10.2308/acch-50026>
- Badertscher, B. A., S. P. Hribar, and N. T. Jenkins. 2011. Informed trading and the market reaction to accounting restatements. *The Accounting Review* 86 (5): 1519–1547. <https://doi.org/10.2308/accr-10093>
- Bauer, A. M. 2016. Tax avoidance and the implications for weak internal controls. *Contemporary Accounting Research* 33 (2): 449–486. <https://doi.org/10.1111/1911-3846.12151>
- Bauman, C., M. Bauman, and R. Halsey. 2001. Do firms use the deferred tax asset valuation allowance to manage earnings? *The Journal of the American Taxation Association* 23 (s-1 Suppl): 27–48. <https://doi.org/10.2308/jata.2001.23.s-1.27>
- Beasley, M. S. 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review* 71 (4): 443–465.
- Becker, C. L., M. L. DeFond, J. Jiambalvo, and K. R. Subramanyam. 1998. The effect of audit quality on earnings management. *Contemporary Accounting Research* 15 (1): 1–24. <https://doi.org/10.1111/j.1911-3846.1998.tb00547.x>
- Blouin, J., and L. Krull. 2009. Bringing it home: A study of the incentives surrounding the repatriation of foreign earnings under the American Jobs Creation Act of 2004. *Journal of Accounting Research* 47 (4): 1027–1059. <https://doi.org/10.1111/j.1475-679X.2009.00342.x>
- Blouin, J., C. Gleason, L. Mills, and S. Sikes. 2007. What can we learn about uncertain tax benefits from FIN 48? *National Tax Journal* 60 (3): 521–535. <https://doi.org/10.17310/ntj.2007.3.11>
- Blouin, J., C. Gleason, L. Mills, and S. Sikes. 2010. Pre-empting disclosures? Firms' decisions prior to FIN No. 48. *The Accounting Review* 85 (3): 791–815. <https://doi.org/10.2308/accr.2010.85.3.791>
- Boland, C. M., S. N. Bronson, and C. E. Hogan. 2015. Accelerated filing deadlines, internal controls, and financial statement quality: The case of originating misstatements. *Accounting Horizons* 29 (3): 551–575. <https://doi.org/10.2308/acch-51075>
- Bonner, S. E., Z.-V. Palmrose, and S. M. Young. 1998. Fraud type and auditor litigation: An analysis of SEC accounting and auditing enforcement releases. *The Accounting Review* 73 (4): 503–532.
- Cazier, R., S. Rego, X. Tian, and R. Wilson. 2015. The impact of increased disclosure requirements and the standardization of accounting practices on earnings management through the reserve for income taxes. *Review of Accounting Studies* 20 (1): 436–469. <https://doi.org/10.1007/s11142-014-9302-y>
- Chen, S., X. Chen, Q. Cheng, and T. Shevlin. 2010. Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics* 95 (1): 41–61. <https://doi.org/10.1016/j.jfineco.2009.02.003>
- Cheng, Q., and D. B. Farber. 2008. Earnings restatements, changes in CEO compensation, and firm performance. *The Accounting Review* 83 (5): 1217–1250. <https://doi.org/10.2308/accr.2008.83.5.1217>
- Cheng, C. S., H. H. Huang, Y. Li, and J. Stanfield. 2012. The effect of hedge fund activism on corporate tax avoidance. *The Accounting Review* 87 (5): 1493–1526. <https://doi.org/10.2308/accr-50195>
- Christensen, T. E., Paik, G. H., and Stice, E. K. 2008. Creating a bigger bath using the deferred tax valuation allowance. *Journal of Business Finance & Accounting*, 35 (5-6): 601–625.
- Crocker, K. J., and J. Slemrod. 2005. Corporate tax evasion with agency costs. *Journal of Public Economics* 89 (9-10): 1593–1610. <https://doi.org/10.1016/j.jpubeco.2004.08.003>
- DeFond, M. L., and J. Jiambalvo. 1994. Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics* 17 (1–2): 145–176. [https://doi.org/10.1016/0165-4101\(94\)90008-6](https://doi.org/10.1016/0165-4101(94)90008-6)
- DeFond, M. L., and K. R. Subramanyam. 1998. Auditor changes and discretionary accruals. *Journal of Accounting and Economics* 25 (1): 35–67. [https://doi.org/10.1016/S0165-4101\(98\)00018-4](https://doi.org/10.1016/S0165-4101(98)00018-4)
- Deloitte. 2012. *Accounting roundup—Special edition: Changes in the tax landscape*. Available at: <https://deloitte.wsj.com/cfo/files/2012/06/DFPORH2012011200001.pdf>
- Desai, M. A., and D. Dharmapala. 2009. Corporate tax avoidance and firm value. *The Review of Economics and Statistics* 91 (3): 537–546. <https://doi.org/10.1162/rest.91.3.537>

- Dhaliwal, D. S., C. A. Gleason, and L. F. Mills. 2004. Last-chance earnings management: Using the tax expense to meet analysts' forecasts. *Contemporary Accounting Research* 21 (2): 431–460. <https://doi.org/10.1506/TFVV-UYT1-NNYT-1YFH>
- Drake, K. D., S. J. Lusch, and J. Stekelberg. 2017. Does tax risk affect investor valuation of tax avoidance? *Journal of Accounting, Auditing & Finance* 34 (1): 151–176. <https://doi.org/10.1177/0148558X17692674>
- Dyreng, S. D., M. Hanlon, and E. L. Maydew. 2008. Long-run corporate tax avoidance. *The Accounting Review* 83 (1): 61–82. <https://doi.org/10.2308/accr.2008.83.1.61>
- Dyreng, S. D., M. Hanlon, and E. L. Maydew. 2010. The effects of executives on corporate tax avoidance. *The Accounting Review* 85 (4): 1163–1189. <https://doi.org/10.2308/accr.2010.85.4.1163>
- Efendi, J., A. Srivastava, and E. P. Swanson. 2007. Why do corporate managers misstate financial statements? The role of option compensation and other factors. *Journal of Financial Economics* 85 (3): 667–708. <https://doi.org/10.1016/j.jfineco.2006.05.009>
- Ernst and Young. 2014. *Income tax accounting challenges can lead to errors - How the board and audit committee can help*. Available at: <https://www.ey.com/accountinglink/publications-library/boardmatters-quarterly> (last accessed March 23, 2017).
- Ferguson, M. J., G. S. Seow, and D. Young. 2004. Nonaudit services and earnings management: UK evidence. *Contemporary Accounting Research* 21 (4): 813–841. <https://doi.org/10.1506/MFV5-9T3Q-H5RK-VC20>
- Files, R., E. P. Swanson, and S. Tse. 2009. Stealth disclosure of accounting restatements. *The Accounting Review* 84 (5): 1495–1520. <https://doi.org/10.2308/accr.2009.84.5.1495>
- Fox, Z.D. and R. Wilson. 2019. *Double trouble: An analysis of IRS attention and financial reporting*. Working paper, University of Oregon. <https://doi.org/10.2139/ssrn.3317839>
- Frank, M., and S. Rego. 2006. Do managers use the valuation allowance account to manage earnings around certain earnings targets? *The Journal of the American Taxation Association* 28 (1): 43–65. <https://doi.org/10.2308/jata.2006.28.1.43>
- Frank, M. M., L. Lynch, and S. Rego. 2009. Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review* 84 (2): 467–496. <https://doi.org/10.2308/accr.2009.84.2.467>
- Geiger, M. A., and K. Raghunandan. 2002. Auditor tenure and audit reporting failures. *Auditing: A Journal of Practice & Theory* 21 (1): 67–78. <https://doi.org/10.2308/aud.2002.21.1.67>
- Ghosh, A., and D. Moon. 2005. Auditor tenure and perceptions of audit quality. *The Accounting Review* 80 (2): 585–612. <https://doi.org/10.2308/accr.2005.80.2.585>
- Gompers, P., J. Ishii, and A. Metrick. 2003. Corporation governance and equity prices. *The Quarterly Journal of Economics* 118 (1): 107–156. <https://doi.org/10.1162/00335530360535162>
- Gomulya, D., and W. Boeker. 2014. How firms respond to financial restatement: CEO successors and external reactions. *Academy of Management Journal* 57 (6): 1759–1785. <https://doi.org/10.5465/amj.2012.0491>
- Government Accountability Office (GAO). 2002. *Financial statement restatements: Trends, market impacts, regulatory responses, and remaining challenges*. Report to the Chairman, Committee on Banking, Housing, and Urban Affairs. Available at: <https://www.gao.gov/products/GAO-03-138>
- Gupta, S., and K. Newberry. 1997. Determinants of the variability in corporate effective tax rates: Evidence from longitudinal data. *Journal of Accounting and Public Policy* 16 (1): 1–34. [https://doi.org/10.1016/S0278-4254\(96\)00055-5](https://doi.org/10.1016/S0278-4254(96)00055-5)
- Hadlock, C. J., and J. R. Pierce. 2010. New evidence on measuring financial constraints: Moving beyond the KZ index. *Review of Financial Studies* 23 (5): 1909–1940. <https://doi.org/10.1093/rfs/hhq009>
- Hageman, A., V. Arnold, and S. G. Sutton. 2009. Starving the beast: Using tax policy and governmental budgeting to drive social policy. *Accounting and the Public Interest* 9 (1): 10–38. <https://doi.org/10.2308/api.2009.9.1.10>
- Hanlon, M., and S. Heitzman. 2010. A review of tax research. *Journal of Accounting and Economics* 50 (2-3): 127–178. <https://doi.org/10.1016/j.jacceco.2010.09.002>
- Hanlon, M., and J. Slemrod. 2009. What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public Economics* 93 (1): 126–141. <https://doi.org/10.1016/j.jpubeco.2008.09.004>
- Hanlon, M., J. Hoopes, and N. Shroff. 2014. The effect of tax authority monitoring and enforcement on financial reporting quality. *The Journal of the American Taxation Association* 36 (2): 137–170. <https://doi.org/10.2308/atax-50820>
- Hoopes, J., D. Mescall, and J. Pittman. 2012. Do IRS audits deter corporate tax avoidance? *The Accounting Review* 87 (5): 1603–1639. <https://doi.org/10.2308/accr-50187>

- Kedia, S., and T. Philippon. 2009. The economics of fraudulent accounting. *Review of Financial Studies* 22 (6): 2169–2199. <https://doi.org/10.1093/rfs/hhm016>
- Kim, J.-B., Y. Li, and L. Zhang. 2011. Corporate tax avoidance and stock price crash risk: Firm-level analysis. *Journal of Financial Economics* 100 (3): 639–662. <https://doi.org/10.1016/j.jfineco.2010.07.007>
- Krishnan, G. V. 2003. Audit quality and the pricing of discretionary accruals. *Auditing: A Journal of Practice & Theory* 22 (1): 109–126. <https://doi.org/10.2308/aud.2003.22.1.109>
- Kubick, T. R., D. P. Lynch, M. A. Mayberry, and T. C. Omer. 2016. The effects of regulatory scrutiny on tax avoidance: An examination of SEC comment letters. *The Accounting Review* 91 (6): 1751–1780. <https://doi.org/10.2308/accr-51433>
- Lennox, C., P. Lisowsky, and J. Pittman. 2013. Tax aggressiveness and accounting fraud. *Journal of Accounting Research* 51 (4): 739–778. <https://doi.org/10.1111/joar.12002>
- Lobo, G. J., and Y. Zhao. 2013. Relation between audit effort and financial report misstatements: Evidence from quarterly and annual restatements. *The Accounting Review* 88 (4): 1385–1412. <https://doi.org/10.2308/accr-50440>
- Mande, V., and M. Son. 2013. Do financial restatements lead to auditor changes? *Auditing: A Journal of Practice & Theory* 32 (2): 119–145. <https://doi.org/10.2308/ajpt-50362>
- Maydew, E. L. 1997. Tax-induced earnings management by firms with net operating losses. *Journal of Accounting Research* 35 (1): 83–96. <https://doi.org/10.2307/2491468>
- McGuire, S. T., T. C. Omer, and D. Wang. 2012. Tax avoidance: Does tax-specific industry expertise make a difference? *The Accounting Review* 87 (3): 975–1003. <https://doi.org/10.2308/accr-10215>
- Mills, L. F. 1998. Book-tax differences and Internal Revenue Service adjustments. *Journal of Accounting Research* 36 (2): 343–356. <https://doi.org/10.2307/2491481>
- Mock, R., and Simon, A. 2008. Permanently reinvested earnings: priceless. *Tax Notes* 121 (7).
- Omer, T., K. Molloy, and D. Ziebart. 1993. An investigation of the firm size–effective tax rate relation in the 1980s. *Journal of Accounting, Auditing & Finance* 8 (2): 167–182. <https://doi.org/10.1177/0148558X9300800206>
- Palmrose, Z.-V., and S. Scholz. 2004. The circumstances and legal consequences of non-GAAP reporting: Evidence from restatements. *Contemporary Accounting Research* 21 (1): 139–190. <https://doi.org/10.1506/WBF9-Y69X-L4DX-JMV1>
- Palmrose, Z.-V., V. J. Richardson, and S. Scholz. 2004. Determinants of market reactions to restatement announcements. *Journal of Accounting and Economics* 37 (1): 59–89. <https://doi.org/10.1016/j.jacceco.2003.06.003>
- Phillips, J., M. Pincus, and S. O. Rego. 2003. Earnings management: New evidence based on deferred tax expense. *The Accounting Review* 78 (2): 491–521. <https://doi.org/10.2308/accr.2003.78.2.491>
- Rego, S. 2003. Tax avoidance activities of U.S. multinational corporations. *Contemporary Accounting Research* 20 (4): 805–833. <https://doi.org/10.1506/VANN-B7UB-GMFA-9E6W>
- Rego, S. O., and R. Wilson. 2012. Equity risk incentives and corporate tax aggressiveness. *Journal of Accounting Research* 50 (3): 775–810. <https://doi.org/10.1111/j.1475-679X.2012.00438.x>
- Richardson, S. A., Tuna, I. and Wu, M. 2002. *Predicting earnings management: The case of earnings restatements*. Available at: <https://ssrn.com/abstract=338681>.
- Scholz, S. 2008. *The Changing Nature and Consequences of Public Company Financial Restatements*. Washington, DC: The US Department of the Treasury.
- Schultz, T., and T. Fogarty. 2009. The fleeting nature of permanent reinvestment: Accounting for the undistributed earnings of foreign subsidiaries. *Advances in Accounting* 25 (1): 112–123. <https://doi.org/10.1016/j.adiac.2009.02.009>
- Shackelford, D., J. Slemrod, and J. Sallee. 2011. Financial reporting, taxes, and real decisions: Toward a unifying framework. *International Tax and Public Finance* 18 (4): 461–494. <https://doi.org/10.1007/s10797-011-9176-x>
- Stanley, J. D., and F. T. DeZoort. 2007. Audit firm tenure and financial restatements: An analysis of industry specialization and fee effects. *Journal of Accounting and Public Policy* 26 (2): 131–159. <https://doi.org/10.1016/j.jaccpubpol.2007.02.003>
- Stickney, C. P., and V. E. McGee. 1982. Effective corporate tax rates the effect of size, capital intensity, leverage, and other factors. *Journal of Accounting and Public Policy* 1 (2): 125–152. [https://doi.org/10.1016/S0278-4254\(82\)80004-5](https://doi.org/10.1016/S0278-4254(82)80004-5)
- Wilde, J. H. 2017. The deterrent effect of employee whistleblowing on firms' financial misreporting and tax aggressiveness. *The Accounting Review* 92 (5): 247–280. <https://doi.org/10.2308/accr-51661>

- Wilson, R. J. 2009. An examination of corporate tax shelter participants. *The Accounting Review* 84 (3): 969–999. <https://doi.org/10.2308/accr.2009.84.3.969>
- Wunder, H., 2009. The scope and distribution of permanently reinvested earnings. *Tax Notes* (October 5): 89–99.
- Zimmerman, J. 1983. Taxes and firm size. *Journal of Accounting and Economics* 5 (2): 119–149. [https://doi.org/10.1016/0165-4101\(83\)90008-3](https://doi.org/10.1016/0165-4101(83)90008-3)

APPENDIX A

Variable Names and Definitions

Variable	Definition
<i>tax_misstate</i>	1 for the retrospective year the tax-related misstatement affected the company's financial statements, 0 otherwise {Audit Analytics Restatement File—Tax expense/deferral/other (FAS 109) issues};
<i>tax_restate</i>	1 for the year of disclosure of the need to restate previously issued financial statements because of a tax-related, 0 otherwise {Audit Analytics Restatement File—Tax expense/deferral/other (FAS 109) issues};
<i>gaap_etr_1</i>	$total\ tax\ expense / (pretax\ income - special\ items) [(TXT) / (PI - SPI) \{Compustat\};$
<i>gaap_etr_2</i>	$(total\ tax\ expense - total\ deferred\ taxes) / (pretax\ income - special\ items) [(TXT - TXDI) / (PI - SPI) \{Compustat\};$
<i>cash_etr</i>	$cash\ taxes\ paid\ (TXPD) / (pretax\ income - special\ items) [(TXPD) / (PI - SPI) \{Compustat\};$
Control Variables	
<i>accrq</i>	Discretionary accruals estimated using the cross-sectional modified Jones Model adjusted for firm performance;
<i>at</i> (\$ million)	Total assets at the end of the fiscal year {Compustat AT};
<i>btm</i>	Book value per share scaled by market price per share at the close of the fiscal year {Compustat BKVLP/PRCC_F};
<i>foreign</i>	1 if the company reported any foreign tax expense, deferred tax expense, or foreign currency translation gains, 0 otherwise {Compustat TXFO, TXDF, or FCA respectively};
<i>leverage</i>	Total long-term debt (DLTT) scaled by total assets (AT) {Compustat DLTT/AT};
<i>ocf_at</i>	Cash-flow from operations scaled by total assets {Compustat OANCF/AT};
<i>sa_index</i>	Firm's cash need estimated as $[-0.737 * \ln(at)] + [0.043 * \ln(at) * \ln(at)] - [0.040 * \text{firm's age}]$;
<i>roa</i>	Income before extraordinary items (IB) scaled by total assets (AT) {Compustat PI/AT};
<i>loss</i>	1 if income before extraordinary items (IB) is less than 0, 0 otherwise;
<i>nol</i>	1 if the company had any tax loss carryforward, 0 otherwise {Compustat TLCF};
<i>revgrowth</i>	Change in total revenue from year $t-1$ to year t {Compustat REVT};
<i>merger</i>	1 if the company reported any merger and acquisition expenses, 0 otherwise {Compustat AQP};
<i>xtraord</i>	1 if the company reported any extraordinary items, 0 otherwise {Compustat XI};
<i>special</i>	1 if the company reported any special items in the income statement, 0 otherwise {Compustat SPI};
<i>tenure</i>	The tenure of the external auditor with the company;
<i>big4</i>	1 if the external auditor is a Big 4 or Big 5 auditor, 0 otherwise;
<i>sga_at</i>	Selling, general, and administrative expenses scaled by lagged total assets {Compustat XSGA/AT};
<i>xrd_at</i>	Research and development expenses scaled by lagged total assets {Compustat XRD/AT}; and
<i>intan_at</i>	Intangible assets expense scaled by lagged total assets {Compustat XRD/AT}.

Copyright of Accounting & the Public Interest is the property of American Accounting Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.