

**ARE TAX AND NON-TAX FACTORS ASSOCIATED
WITH FIN 48 DISCLOSURES?**

A Dissertation

by

JANET LEE MCDONALD

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

August 2010

Major Subject: Accounting

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ABSTRACT

Are Tax and Non-Tax Factors Associated with FIN 48 Disclosures? (August 2010)

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This study examines the determinants of tax aggressiveness. I utilize the unrecognized tax benefits (UTB) disclosed by the adoption of Financial Interpretation No. 48, “Accounting for Uncertainty in Income Taxes” (FIN 48) to proxy for firms’ tax aggressiveness. I hand collect UTB disclosures for 562 calendar year-end firms in the S&P 1500. Controlling for firms’ incentives and abilities to engage in aggressive tax positions (tax factors) and firms’ discretion over recognizing the financial reporting benefits of aggressive tax positions, I examine whether firms’ level of aggressive tax positions is influenced by (1) financial reporting aggressiveness, (2) choice of auditor, (3) analyst coverage, and (4) corporate governance quality.

Using ordinary least squares regression, I examine the determinants of firms total UTB and its permanent and temporary components. I find that UTB and its permanent component are positively associated with firm size, presence of foreign operations, research and development activity, selling, general and administrative activity, firm value, and the probability that the firm engages in tax shelter activity. However, the temporary component is only increasing in firm size. Also, I find that UTB and its permanent component are positively associated with firms engaging in financial

reporting aggressiveness and increasing auditor provided tax services, but negatively associated with analyst coverage, while the temporary component is only positively associated with financial reporting aggressiveness.

Finally, I split the sample based on firms' use of discretion over recognizing the tax benefits of aggressive tax positions prior to FIN 48 adoption. I find that firms which aggressively recognize tax benefits prior to FIN 48 adoption (i.e. firms that increased UTBs at FIN 48 adoption) have UTBs that are positive and significantly associated with (1) the probability that a firm engages in tax shelter activity, (2) auditor provided tax services, and (3) their record of using last chance earnings management to meet or beat analyst forecasts. These associations are not significant for firms that did not aggressively recognize tax benefits prior to FIN 48 adoption, suggesting that firms' financial reporting aggressiveness is positively associated with firms' level of tax aggression.

DEDICATION

This dissertation is dedicated to my parents and my sister. Thank you for your love and support throughout the numerous highs and lows of my doctoral studies. Your unwavering encouragement gave me the strength to follow my dream.

ACKNOWLEDGEMENTS

I thank my dissertation chair, Dr. Michael Kinney, for his support and encouragement throughout the dissertation process. I also thank the other members of my dissertation committee, Dr. Dennis Lassila, Dr. Michael Wilkins, and Dr. Dudley Poston, for their contributions and comments that generated future research ideas.

I thank Dr. James Benjamin and the Department of Accounting at Texas A&M University for the financial support throughout my doctoral studies and the opportunity to enhance my teaching skills by teaching a variety of courses.

I also thank Dr. Thomas Omer and Dr. Sean McGuire for their willingness to provide insight and feedback. I thank Dr. Annie McGowan, Dr. Sean McGuire, and Dr. Christopher Wolfe for their encouragement and friendship during the program and dissertation process.

Finally, I thank my fellow Ph.D. students for their insight and assistance with coursework and research. My dissertation has greatly benefited from conversations and advice from Kirsten Cook, Ryan Huston, and Anne Thompson. I am especially indebted to my cohort, Janell Blazovich, Kirsten Cook, Anup Srivastava, and Billy Strawser, and our adopted members, Michelle Diaz, Ryan Huston, and Tina Loraas. Our time together kept me sane and reminded me there is more to life than accounting research. I look forward to fostering the friendships that blossomed throughout our days in Aggieland.

NOMENCLATURE

CEA	Cumulative Effect Adjustment to Retained Earnings
ETR	Effective Tax Rate
FASB	Financial Accounting Standards Board
FIN	Financial Interpretation Number
IRS	Internal Revenue Service
S&P	Standard and Poors'
SFAS	Statement of Financial Accounting Standards
UTB	Unrecognized Tax Benefit

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CHAPTER I

INTRODUCTION

In their survey of empirical tax research, Shackelford and Shevlin (2001) suggest the need for research investigating the determinants of tax aggressiveness. Extant literature suggests that tax aggressiveness is associated with tax factors, and with non-tax factors, such as financial reporting aggressiveness (Frank et al. 2009; Lisowsky 2008). However, lack of disclosure on aggressive tax positions has hindered researchers from directly examining this relationship. Using adoption disclosures under Financial Interpretation No. 48, “Accounting for Uncertainty in Income Taxes” (FIN 48), I investigate whether firms’ level of aggressive tax positions is influenced by (1) financial reporting aggressiveness, (2) choice of auditor, (3) analyst coverage, and (4) corporate governance quality, controlling for firms’ incentives and abilities to engage in aggressive tax positions and firms’ discretion over recognizing the financial reporting benefits of aggressive tax positions. Consistent with Hanlon and Heitzman (2010), I define tax avoidance as a continuum of tax positions in which non-aggressive tax positions (e.g., municipal bond investments), are at one end and aggressive tax positions (like tax shelters) are at the other end (page 79).¹ Consequently, tax avoidance includes all tax positions taken by the firm to reduce or defer tax expense.² Furthermore, I define an

This dissertation follows the style of *The Accounting Review*.

¹ FIN 48 (2006) defines the term tax position as “a position in a previously filed tax return or a position expected to be taken in a future tax return that is reflected in measuring current or deferred income taxes and liabilities for interim or annual periods” (page 1).

² Although not examined in this paper, tax positions can be classified as non tax avoidance. Non tax avoidance positions are defined as tax positions taken by the firm to increase or accelerate tax expense. Such positions could be temporary or permanent, non-aggressive or aggressive. No matter the non tax

aggressive tax position (or uncertain tax position) as a tax position taken by the firm that may not pass scrutiny of the Internal Revenue Service (IRS).³

In June 2006, the Financial Accounting Standards Board (FASB) issued FIN 48 to harmonize accounting practices and to respond to the SEC's concern about lack of consistency in treatment of tax uncertainties. FIN 48 uses a two-step process (recognition and measurement) to promote comparability in accounting for benefits of aggressive tax positions. FIN 48 also requires firms to provide detailed disclosures of the tax reserve for unrecognized tax benefits. For most firms, the FIN 48 adoption disclosure is the first disclosure of aggressive tax positions (Zion and Varshney 2007; Blouin and Tuna 2007). The FIN 48 adoption disclosure creates two manager-assessed measures of aggressive tax positions: (1) the total amount reserved for unrecognized tax benefits (UTB), which includes both permanent and temporary aggressive tax positions, and (2) the amount reserved for permanent, unrecognized tax benefits (PermUTB), which is the amount of UTB that, if recognized, would influence the effective tax rate. Frischmann et al. (2008) state that "UTBs provide an excellent measure of a firm's tax aggressiveness because they represent management's beliefs about the tax positions most likely to be challenged" (page 263).

avoidance positions classification, they do not reduce taxes payable; consequently, they do not create "tax benefits." Moreover, firms do not record a tax reserve for such positions.

³ Aggressive tax positions that reduce taxes payable on tax returns generate "tax benefits." In the financial statements, these tax benefits are treated as either "recognized" or "unrecognized." Tax benefits of newly implemented aggressive tax positions are recognized in the financial statements when they reduce current tax expense. When firms record a contingent liability for uncertain tax positions, recognition of the tax benefits is deferred. Tax practitioners customarily refer to the contingent liability for unrecognized tax benefits as the tax contingency, tax cushion, or tax reserve.

Prior to FIN 48 implementation, aggressive tax positions were both meagerly and inconsistently disclosed (Gleason and Mills 2002, 2007; Lisowsky 2008). Most companies used Statement of Financial Accounting Standards (SFAS) 5, Accounting for Contingencies, as the authoritative guidance for reporting aggressive tax benefits, because SFAS 109, Accounting for Income Taxes, proffers no guidance for accounting for uncertainty about income tax assets and liabilities (FIN 48, Summary). SFAS 5 allowed firms discretion in disclosing the amount of tax reserve, and most firms provided little if any disclosure of their tax contingencies (Gleason and Mills 2002). SFAS 109 also does not require financial statement disclosure of proprietary details of tax positions taken by firms. Consequently, financial statement users are unable to distinguish firms with aggressive tax positions from those with non-aggressive tax positions. Because of this lack of disclosure, tax researchers have devised many measures to proxy for firms' tax avoidance, but have been unable to operationalize the concept of tax aggressiveness.

I hand collect the unrecognized tax benefit data from FIN 48 adoption disclosures in 2007 first quarter financial reports for a sample of 564 calendar year-end firms in the *Standard and Poors* (S&P) Composite 1500; I use the FIN 48 unrecognized tax benefit data to proxy for degree of aggression of firms' tax positions. I model firms' unrecognized tax benefits and their permanent and temporary components as a function of firms' (1) financial reporting aggressiveness, (2) choice of auditor, (3) analyst coverage, and (4) corporate governance, controlling for firms' incentives and abilities to

engage in aggressive tax positions and firms' discretion over recognizing the unrecognized tax benefits.

First, I examine whether my control variables for firms' incentives and abilities to engage in aggressive tax positions are also associated with firms' level of aggressive tax positions. Specifically, I examine whether firms' unrecognized tax benefits and their permanent and temporary components are related to firm size (Gupta and Newberry 1997; Wilson 2009), profitability (Frank et al. 2009; Gupta and Newberry 1997), leverage (Graham and Tucker 2006), presence of foreign operations (Rego 2003; Wilson 2009; Lisowsky 2008), research and development activity (Dyreng et al. 2008; Wilson 2009), investments in tax planning (Song and Tucker 2008; Dyreng et al. 2008; Cazier et al. 2009), firm value (Song and Tucker 2008), and growth opportunities (Dyreng et al. 2008; Song and Tucker 2008). Results suggest that firms' UTBs are positively associated with firm size, presence of foreign operations, research and development activity, selling, general and administrative activity, firm value, and the probability that the firm engages in tax shelter activity. Determinants of permanent unrecognized tax benefits (PermUTB) are largely consistent with those of UTB. However, determinants of temporary unrecognized tax benefits (TempUTB) differ greatly from those of UTB. TempUTB is only increasing in firm size.

Next I examine how firms' financial reporting aggressiveness is related to firms' level of aggressive tax positions. The extant literature suggests that the degree of aggressiveness in firms' tax strategies may be influenced by their financial reporting aggressiveness (Dhaliwal et al. 2004; Frank et al. 2009; Lisowsky 2008). Using

confidential IRS data, Lisowsky (2008) finds that the tax cushion is positively related to use of tax shelters and earnings management, suggesting that the tax cushion may be subject to both tax and financial reporting effects. Frank et al. (2009) find evidence that firms that are aggressive financial reporters are also tax avoiders. Following the extant literature, I posit that firms' degree of financial reporting aggressiveness is positively related to firms' level of aggressive tax positions. I use four proxies for financial reporting aggressiveness: (1) performance adjusted, modified Jones discretionary accruals, (2) firms' five-year record of meeting or beating analysts' forecasts, (3) firms' five-year record of using last chance earnings management to meet or beat analysts' forecasts, and (4) book effective tax rate (book ETR). I find that unrecognized tax benefits (UTB) and its permanent (PermUTB) and temporary (TempUTB) components are significantly and positively associated with firms' five-year record of using last chance earnings management to meet or beat analysts' forecasts. TempUTB is also positively associated with firms' five-year book effective tax rate.

Then, I investigate whether firms' choice of auditor influences the degree of firms' tax aggressiveness. To proxy for auditor quality, I employ a categorical variable indicating that the auditor is an industry specialist. McGuire et al. (2010) state that the ex ante relationship between auditor quality and tax avoidance activities is unclear. Auditor quality is negatively related to firms' level of aggressive tax positions if higher quality auditors constrain firms' ability to recognize tax benefits to the point of eliminating firms' incentives for taking aggressive tax positions. Auditor quality is positively related to firms' level of aggressive tax positions if the auditor's expertise

associated with tax avoidance strategies leads firms to take aggressive tax positions that have stronger facts. Consequently, I am unable to predict, *ex ante*, the direction of the association between auditor quality and firms' level of aggressive tax positions. I find that hiring an industry specialist auditor is not significantly related to unrecognized tax benefits (UTB) or its components.

I also investigate if auditor provided tax services influence the degree of firms' tax aggressiveness. I utilize a ratio of the tax fees paid to the auditor over total fees paid to the auditor (tax fee ratio) to proxy for auditor provided tax services. Prior literature suggests that firms' tax avoidance behavior is positively correlated with fees paid to the auditors for tax services (Mills et al. 1998; Cook et al. 2008). As the tax fee ratio increases, the audit firm is likely providing the client with more tax avoidance strategies, including aggressive tax positions. Consequently, I expect a positive association between auditor provided tax services and firms' level of aggressive tax positions. I find a significantly and positive relation between auditor provided tax services and both unrecognized tax benefits (UTB) and its permanent (PermUTB) component, but not temporary unrecognized tax benefits.

The number of analysts covering a firm may also influence firms' level of aggressive tax positions. Yu (2008) finds that firms engage in less earnings management as the number of analysts following the firm increases. Increased external monitoring may constrain the financial reporting benefits of aggressive tax positions; consequently, firms with greater analyst following may have less incentive to take aggressive tax positions. Frank et al. (2009) find a negative relationship between measures of tax

aggressiveness and the number of analysts tracking a firm. I posit that the number of analysts following a firm is negatively related to the firm's level of aggressive tax positions. I find that UTBs and the permanent UTBs (PermUTB) are negatively related to the number of analysts' covering a firm; however, temporary UTB (TempUTB) is not related to analyst coverage.

Then, I examine whether corporate governance influences firms' tax aggressiveness. The ex ante relationship between corporate governance quality and firms' level of aggressive tax positions is unclear. The extant literature has documented that stronger corporate governance is negatively associated with incidents of financial fraud and earnings manipulation (Klein 2002; Ahmed et al. 2008). Corporate governance quality is negatively related to firms' level of aggressive tax positions if stronger corporate governance constrains firms' abilities to recognize tax benefits to the point of eliminating firms' incentives for taking aggressive tax positions. However, extant literature also suggests that strong corporate governance is positively related to corporate risk taking (Hill and Snell 1988; Hansen and Hill 1991; Wright et al. 1996). Consequently, I am unable to predict, ex ante, the direction of the association between corporate governance quality and firms' level of aggressive tax positions. I employ three proxies for corporate governance quality: (1) board independence, (2) institutional ownership, and (3) a categorical variable indicating strong shareholders' rights, based on Gompers et al. (2003) index (G-index). I find that strong shareholders' rights are positively related to firms' UTBs, but the association is only marginally significant.

Finally, I split my sample based on firms' use of discretion over the financial reporting benefits of aggressive tax positions prior to FIN 48. I find firms that aggressively recognized tax benefits prior to FIN 48 adoption (i.e. firms that increased UTBs at FIN 48 adoption) have UTBs that are positive and significantly associated with the probability that a firm engages in tax shelter activity, auditor provided tax services, and firms' record of using last chance earnings management to meet or beat analyst forecasts; whereas these associations are not significant for firms that did not aggressively recognize tax benefits prior to FIN 48 adoption. This suggests that firms' financial reporting aggressiveness is positively associated with firms' level of tax aggression.

This study makes several contributions. First I extend the tax avoidance literature by using a measure that specifically measures firms' tax aggressiveness. Prior measures of tax avoidance capture a variety of tax positions that range from positions that are completely non-aggressive (e.g., investments in municipal bonds) to those of questionable legality (e.g., tax shelters). However, those measures are unable to determine the extent to which firms engage in tax positions with uncertain outcomes. In contrast, my measure captures managers' "best guess" of outcomes of aggressive tax positions taken by the firm.

Second I extend the emerging FIN 48 literature that investigates determinants of firms' level of aggressive tax positions. My large hand-collected sample is gathered from

the S&P 1500.⁴ Distinct from other FIN 48 studies, I include large-, mid-, and small-cap firms, which increases the generalizability of results. In addition to examining how unrecognized tax benefits are influenced by firms' tax-related objectives (Song and Tucker 2008; Cazier et al. 2009), I also examine a wide variety of non-tax factors that prior research suggests could influence firms' tax-related decisions (Frank et al. 2009; Lisowsky 2008). Consistent with this notion, my results suggest that financial reporting pressures, choice of auditor, and analyst coverage are each significantly associated with aggressive tax positions.

Third, I contribute to the literature examining the relationship between firms' financial reporting aggressiveness and tax aggressiveness. My study is the first to document a strong, positive relationship between financial reporting aggressiveness and tax aggression. By focusing on the uncertainty of the tax position and by including both the permanent and temporary uncertain tax positions, the tax aggression measures employed in this study are a refinement over the tax avoidance measure introduced by Frank, Lynch and Rego (2009).

Fourth, I extend the literature investigating the influence of analyst coverage and corporate governance on tax aggressiveness. I am the first to document the negative association between greater analyst coverage and level of permanent aggressive tax positions. This result suggests that external monitors focus only on the aggressive tax

⁴ To cover approximately 90% of the US market capitalization, the S&P 1500 index conjoins 500 large-cap, 400 mid-cap, and 600 small-cap firms from the S&P 500 index, the S&P MidCap 400 index, and the S&P SmallCap 600 index, respectively.

positions that affect earnings, as opposed to aggressive tax positions that do not affect earnings.

The balance of the paper is organized as follows: Chapter II provides a literature review and background on FIN 48. Chapter III develops hypotheses; Chapter IV introduces methodology, describes the sample selection, and presents the descriptive statistics and empirical results. Chapter V concludes.

CHAPTER II

BACKGROUND AND PRIOR RESEARCH

Evolution of Tax Avoidance Measures

Prior to FIN 48 implementation, most companies used SFAS 5, Accounting for Contingencies, as the authoritative guidance for unrecognized tax benefits. Corporations and their auditors utilized multifarious accounting methods to recognize and estimate tax reserves (Blouin et al. 2010). Because tax reserves were both scantily and inconsistently disclosed (Gleason and Mills 2002, 2007; Lisowsky 2008), financial statement users and researchers were unable to discern the risk associated with firms' tax positions; i.e., researchers could not distinguish between non-aggressive and aggressive tax positions.

The extant literature is replete with tax avoidance measures: traditional book ETR, cash effective tax rate (cash ETR), and variations of book-tax differences. Figure 1 depicts the evolution of tax avoidance measures. The sophistication of tax avoidance measures increased when tax researchers divided tax positions into their permanent and temporary components. However, none of the extant proxies are able to discern the riskiness (degree of uncertainty) associated with tax positions. Despite the extensive research on tax avoidance, the literature has been unable to reach a consensus on terminology and measures of tax aggressiveness.

When describing their measure of long-run corporate tax avoidance, Dyreng et al. (2008) avoid using the term "tax aggressiveness" because the term might imply wrongdoing by the firm. The authors define tax avoidance as anything that reduces the firm's cash ETR over a long horizon. They measure cash ETR as the ratio of all cash

taxes paid (domestic, foreign, state, and local) to worldwide pretax book income, accumulated over a five- or ten-year period. Dyreng et al. (2008) suggest several reasons why cash ETR offers major advantages over the traditional book ETR, specifically that it is a long-term measure rather than a single year, it includes the tax benefits of stock options, and it is not affected by changes in estimates such as the valuation allowance or tax contingency. Cash ETR captures a variety of tax avoidance strategies, which include both non-aggressive (non-risky) tax positions and aggressive (risky) tax positions.

Many studies suggest that book-tax differences can proxy for tax avoidance effects (Mills 1998; Desai 2003; Wilson 2009; Hanlon and Heitzman 2010). The book-tax differences (BTD) measure is typically computed as pre-tax book income, less minority interest and an estimate of taxable income. However, not all BTDs are reflective of aggressive tax behavior. Hanlon (2003) and Manzon and Plesko (2002) show that some determinants of BTDs are not necessarily reflective of tax aggressiveness. Tax researchers have split the BTDs measure into its components: temporary BTDs (Phillips et al. 2003; Hanlon 2005) and permanent BTD (Frank et al. 2009; Wilson 2009) in an attempt to parse the informational content of the total BTD.⁵ However, these attempts to refine the BTD measures fail to differentiate the non-aggressive (non-risky or certain) tax positions from the aggressive (risky or uncertain) tax positions.

⁵The permanent book tax difference measure developed by Frank et al. (2009) is called DTAX.

Pre-FIN 48 Tax Reserve Literature

The previous tax avoidance measures are intended to capture the effects of firms' aggressive tax positions, but are incapable of differentiating between non-aggressive (non-risky or certain) tax positions and the aggressive (risky or uncertain) tax positions. The tax contingency/tax cushion/tax reserve would be an ideal measure of aggressive tax positions; however, under SFAS 5, Contingent Liabilities, firms were not required to disclose the amount of the tax contingency or tax cushion (Zion and Varshney 2007) and prior to the adoption of FIN 48, most firms did not voluntarily provide details of their tax reserves in their financial statements (Gleason and Mills 2002; Blouin and Tuna 2007). Consequently, the pre-FIN 48 tax reserve literature is limited.

Gleason and Mills (2002) utilize confidential IRS audit data and financial footnotes to estimate firms' contingent tax liabilities. They estimate the tax cushion as the accumulated difference between U.S. current income tax expense reported in the financial statements and total tax on the income tax return for all years with unresolved tax claims. Following Hanlon and Shevlin (2002), Gleason and Mills (2007) modify their previous measure of tax cushion for the tax benefits of employee stock options. They find that firms using auditor-provided tax services record a higher tax reserve prior to IRS examination. Access to confidential IRS data allows Lisowsky (2008) to employ the same tax cushion calculation used by Gleason and Mills (2007). Lisowsky finds the tax cushion to be positively related to use of tax shelters and earnings management, suggesting that the tax cushion may be subject to both tax and financial reporting pressures.

Accounting researchers interested in studying tax cushion issues, but lacking access to confidential IRS data, developed alternate ways of examining firms' tax cushions. Gupta and Laux (2008) hand collect reported reversals of the tax cushion for a random sample of 100 *Fortune 500* companies for years 2003 through 2005. They find that firms appear to opportunistically use tax cushion reversals to meet or beat earnings benchmarks.

Blouin and Tuna (2007) construct a proxy for change in tax cushion by using available financial information. Their proxy for tax cushion is the net change in firms' contingent liability amount, calculated by taking current tax expense less cash taxes paid less any tax benefit from employee stock options and any change in income taxes payable. They find that the change in contingent liability is negatively associated with cash taxes paid and book tax differences, but positively associated with U.S. effective tax rate and cumulative deferred tax expense.

FIN 48 Provided Measures of Level of Aggressive Tax Positions

FIN 48 requires firms to disclose their tax contingency reserve, which FIN 48 renames as the "unrecognized tax benefit" or UTB. FIN 48 uses a two-step process (recognition and measurement) to promote comparability in accounting for benefits of aggressive tax positions. In the first step, the firm determines if any benefit of the aggressive tax position can be recognized in the financial statements. To be recognized, the tax position must satisfy the recognition threshold of "more likely than not" (MLTN) being sustained upon a tax audit, based only on technical merits. If the aggressive tax position does not meet the recognition threshold, the firm must book a tax reserve, an

unrecognized tax benefit (UTB), for the entire aggressive tax position. In the second step, the firm measures the amount of the tax benefit that can be recognized in the financial statements if the aggressive tax position initially clears the MLTN hurdle. The tax benefit recognized equals the largest amount of tax benefit that is cumulatively greater than 50 percent likely of being realized upon settlement. The tax reserve increases by the difference of the tax position taken on the tax return and the tax benefit recognized in the financial statements. FIN 48 also renames that tax reserve the “unrecognized tax benefit” or UTB.

FIN 48 applies to all entities issuing GAAP financial statements and is effective for fiscal years beginning after December 15, 2006. Calendar year-end firms adopt FIN 48 on January 1, 2007 and report the FIN 48 adoption effect in their first quarter 2007 Form 10-Q. FIN 48, paragraph 23, requires firms to report the cumulative effect of applying FIN 48 as an adjustment to beginning retained earnings and to disclose the following amounts as of the date of adoption: (1) the total amount of UTBs, (2) the total amount of UTBs that, if recognized, would affect the effective tax rate, (3) the total amount of accrued interest and penalties, (4) the treatment of interest and penalties, (5) UTBs that may significantly change within the next 12 months, and (6) information regarding open tax years by major jurisdictions.⁶

The UTB represents a firm’s potential future obligation to the taxing authority for a tax position that was not recognized (Zion and Varshney 2007). Cazier et al. (2009) state, “if firms follow the two step process outlined in FIN 48, then unrecognized

⁶ Both Blouin et al. (2007) and Dunbar et al. (2010) suggest that reported UTB is understated because interest and penalties may not be included.

tax benefits should reflect aggressive tax [positions] in which the firm engages” (page 11). The unrecognized tax benefits disclosed at FIN 48 adoption are superior measures of tax reserve and level of aggressive tax positions for several reasons. First, the unrecognized tax benefits unveiled at FIN 48 adoption are the first mandated manager-provided, publicly available estimate of aggressive tax positions taken by the firm. Second, tax cushions calculated using confidential IRS data reveal only uncertainty regarding U.S. tax positions (Gleason and Mills 2007; Lisowsky 2008); unrecognized tax benefits encompass firms’ aggressive tax positions globally. Third, the UTB includes both permanent and temporary aggressive tax positions whereas the PermUTB includes only the permanent aggressive tax positions taken by the firm.⁷ Disclosing both estimates of unrecognized tax benefits allows financial statement users to better understand the risk and types of aggressive tax positions taken by the firm, and thus the amount, timing, and likelihood of future cash flows (Nichols et al. 2007). Fourth, tax avoidance proxies are unable to discern the non-aggressive tax positions from the aggressive tax positions, whereas the FIN 48 provided measures focus specifically on the aggressive tax positions. Fifth, the plethora of book-tax difference measures are annual measures, whereas the UTB and PermUTB are cumulative measures of aggressive tax positions for all open tax years. Finally, UTB and PermUTB are stated in dollars, but other tax aggressiveness proxies are stated as percentages (book ETR, Cash ETR);

⁷ An example of a permanent uncertain tax position is a tax position contingent on whether a firm has nexus in a particular state. An example of a temporary uncertain tax positions is a tax position contingent on whether a firm correctly deducts self-constructed assets.

consequently, the FIN 48 provided proxies are easier to understand and to compare to other financial data.

However, despite all of the improvements over other measures of tax aggression, UTBs are not a clean measure of tax aggression (Hanlon and Heitzman 2010). Importantly, the unrecognized tax benefit disclosed at FIN 48 implementation is a function of two effects: firms' use of aggressive tax positions and managers' discretion over the amount of tax benefit that is recognized in the financial statements. The more aggressive tax positions taken by a firm should produce a larger UTB. Higher UTBs represent more uncertainty in tax positions taken by firm (i.e. more tax risk) (Hanlon and Heitzman 2010). If UTBs are only affected by firms' taking uncertain tax positions, then UTBs would be a clear measure of firms' tax aggression. However, because management is responsible for deciding how much of the aggressive tax positions' benefits will be recognized in tax expense, the UTBs become an accounting accrual that is subject to managerial discretion. For instance, if a firm takes an aggressive tax position and is conservative in recognizing the benefit (i.e. does not include the benefit in earnings), then the UTB should increase because the firm has recorded most or all of the tax benefit associated with the uncertain tax position as an accounting reserve. On the other hand, if a firm takes an aggressive tax position and is aggressive in recognizing the benefit (i.e. recognizing most or all of the benefit in earnings), then the UTB should not increase because the firm has recorded most, or all, of the tax benefit associated with the uncertain tax position as a decrease to tax expense. When the entire tax benefit is

included in earnings, the UTB would not capture firms' aggressive tax positions. Consequently, UTBs could understate firms' level of tax aggression.

Fledgling FIN 48 Disclosure Literature

The emergent literature exploring FIN 48 adoption is mostly descriptive and focuses on the magnitude of the cumulative effect adjustment (CEA) booked upon adopting this change in accounting principle and the UTB disclosed at adoption. Zion and Varshney (2007) examine 361 calendar year-end firms from the S&P 500. They decompose the reported total \$141 billion UTB by industry and use UTBs to create a tax risk Z-score calculated on an industry basis. They also discuss the possibility of the IRS using the FIN 48 disclosure as a roadmap to all aggressive tax positions. Nichols et al. (2007) examine disclosures of 130 calendar year-end firms from the largest 200 companies in the *Fortune* 500. They examine the size and direction of the CEA of FIN 48 adoption and compare it to the associated SAB 74 disclosure discussed in the 2006 10-K, describing the amounts of UTB reported and the amount of UTB that, if recognized, would affect ETR (PermUTB).

Blouin et al. (2007) hand collect FIN 48 adoption disclosures for the 100 largest and smallest calendar year-end, non-regulated and non-financial firms that are followed by at least five analysts examining disclosed changes in tax cushion in the quarters leading up to FIN 48 adoption; they document that the frequency of material decreases in tax cushion increased from 2005 to 2006. Finally, they construct an aggregate measure of UTB for the largest 100 firms after discussing the problem associated with reported interest and penalties.

Dunbar et al. (2010) provide examples of permanent and temporary tax benefits, along with the effect of changes in UTBs on retained earnings, deferred tax assets and liabilities, and goodwill, hand collecting FIN 48 adoption disclosures for 348 calendar year-end S&P 500 firms. They create a restated UTB, which incorporates the reported interest and penalties, finding that ranking firms on restated UTB levels could be misleading in evaluating the materiality of firms' unrecognized tax benefits, and that scaling restated UTBs by firm size provides a different view of firms' tax aggressiveness.

Subsequent literature exploring FIN 48 disclosures evolves from descriptive papers into theory testing. Frischmann et al. (2008) hand collect the FIN 48 adoption disclosures for 334 calendar year-end firms in the S&P 500. They use the initial UTB disclosures under FIN 48 to investigate the market reaction to news of tax aggressiveness. They find a significant positive association between cumulative abnormal returns surrounding the 10-Q filing date and UTBs; however, the association becomes insignificant after controlling for unexpected earnings.⁸ Their findings suggest that investors respond positively to news of corporate tax aggressiveness and/or to information forcing a downward revision of their estimates of firms' true tax burdens.

Song and Tucker (2008) investigate firm-specific factors that are correlated with the level of unrecognized tax benefits (UTBs reported at FIN 48 adoption). They hand collect the FIN 48 adoption disclosures for 273 calendar year-end, industrial firms in the

⁸ Frischmann et al. (2008) also decompose the UTB into its permanent (PermUTB) and temporary components (UTB less PermUTB) and rerun the market reaction test, controlling for unexpected earnings. They find a significant positive association between cumulative abnormal returns surrounding the 10-Q filing date and PermUTB.

S&P 500. Results show sample firms that are larger, more profitable, have more selling and administrative expenses, lower growth rates, and more research and development activity, have larger UTBs. Song and Tucker (2008) also explore how UTB influences firm value; finding that UTB is positively correlated with firm value, as measured by market to book ratio. However, Song and Tucker (2008) do not control for the managerial discretion associated with the UTB.

Cazier et al. (2009) examine the determinants of UTB and PermUTB as disclosed by firms in fiscal year 2007 10-Ks for 566 firms from the S&P 500 and S&P 400.⁹

Cazier et al. (2009) find that UTBs are positively related to firm size, profitability, more extensive foreign operations, research and development, leverage, and negatively related to growth. They also document that UTBs are negatively associated with financial reporting aggressiveness, contrary to other studies (Frank et al. 2009; Lisowsky 2008). They find that permanent aggressive tax positions (PermUTB) are positively related to profitability, more extensive foreign operations, higher research and development expenditures, and leverage. However, Cazier et al. (2009) do not control for the managerial discretion associated with UTB.

Paralleling Song and Tucker (2008) and Cazier et al. (2009), I examine whether firms' level of aggressive tax positions are associated with tax factors, by including proxies for firms' incentives and abilities to engage in aggressive tax positions. Moreover, I extend this literature by investigating whether non-tax factors are associated with firms' level of aggressive tax positions using a sample that incorporates large-,

⁹ The Cazier et al. (2009) sample includes financial and utility firms, whereas I exclude these firms.

mid-, and small-cap firms. Finally, I control for the influence of managerial discretion on UTB, allowing my hypotheses and interpretations of results to focus on the determinants of firms' level of aggressive tax positions, not the managerial discretion associated with the UTB.

CHAPTER III

HYPOTHESES DEVELOPMENT

Impact of Financial Reporting Aggressiveness on Level of Aggressive Tax Positions

Prior to FIN 48 implementation, the lack of transparency in accounting for income taxes enabled firms to use substantial discretion in reporting tax reserves. Dhaliwal et al. (2004) find evidence suggesting firms opportunistically adjust tax expense to meet or beat analysts' forecasts during the fourth quarter. The authors suggest that managers manipulate the undisclosed tax cushion to manage tax expense. Similarly, Blouin and Tuna (2007) suggest firms use their tax cushion to smooth earnings. Gupta and Laux (2008) provide evidence that firms use managerial discretion in reporting the tax cushion to meet analysts' forecasts. Alexander et al. (2009) find evidence that the cumulative effect adjustment at FIN 48 adoption is positively related to a firms' five-year record of meeting or beating analysts' annual forecasts. Although these papers suggest that firms' use discretion over the tax cushion to manipulate earnings, they had to take uncertain tax positions before manipulating the UTB accrual. Cook et al. (2008) suggest that the results documented in Dhaliwal et al. (2004) are caused by both managerial discretion over tax accruals and tax avoidance behavior.

Blouin and Tuna (2007) find that book ETR is positively and significantly related to changes in the tax cushion and interpret this result as evidence that firms recording more book tax expense undertake more aggressive tax planning. They also provide some evidence that the tax cushion is positively correlated with measures of discretionary accruals, suggesting that managers use them as complements. Lisowsky

(2008) separates the tax cushion into its possible drivers: tax aggressiveness (via tax shelters) and financial aggressiveness (via earnings management). He finds that both tax shelters and earnings management are positively related to the tax cushion, suggesting that the tax cushion may be subject to both tax and financial reporting pressures. Frank et al. (2009) examine whether firms' aggressive financial reporting is related to their tax avoidance, finding that their proxy for financial reporting aggressiveness is positively related to their measure of tax avoidance. Thus, the extant literature suggests that firms' financial reporting aggressiveness is positively related to firms' level of aggressive tax positions. Given that UTB disclosed at FIN 48 adoption provides a clearer measure of past aggressive tax positions taken by the firm, I expect that firms' financial reporting aggressiveness is positively associated with their level of aggressive tax positions. This leads to my first hypothesis, stated in alternative form:

H1: Ceteris paribus, firms' financial reporting aggressiveness is positively related to firms' level of aggressive tax positions.

Impact of Auditor Choice on Level of Aggressive Tax Positions

Next, I investigate effects of choice of auditor on firms' level of aggressive tax positions. Gupta and Laux (2008) state that it is the "role of the independent auditor to ensure the firm is providing a reasonable estimate" of the tax reserve (page 9). Extant literature suggests that industry specialist auditors perform higher quality audits than non-industry specialist auditors because industry specialists are able to develop more industry-specific knowledge and expertise (Mayhew and Wilkins 2003). Consequently, these auditors are better equipped to understand the client's business and audit risks (Craswell et al. 1995; Gramling and Stone 2001; Hogan and Jeter 1999; Solomon et al.

1999) and to provide higher quality audits. Balsam et al. (2003) find that firms employing industry specialist auditors have lower discretionary accruals and higher earnings response coefficients.¹⁰

Despite more rigid measurement requirements for unrecognized tax benefits under FIN 48, management still has considerable judgment over reporting the financial statement benefits of aggressive tax positions. Theory suggests that managerial opportunism diminishes as auditor quality increases (Becker et al. 1998; Francis et al. 1999; Balsam et al. 2003). Gleason and Mills (2007) suggest that audit procedures enable auditors to constrain the managerial discretion over reporting the financial benefits of aggressive tax positions. For example, if the auditor believes that an aggressive tax position taken by the firm will not withstand the scrutiny of the relevant tax authorities, the auditor may require the client to record an unrecognized tax benefit, reducing the financial statement benefit of taking the aggressive tax position (Maydew and Shackelford 2007). If that constrained managerial opportunism eliminates the financial reporting benefits of aggressive tax positions, managers' incentives to take aggressive tax positions are reduced. McGuire et al. (2010) posit that clients of an industry specialist auditor may engage in less tax avoidance because the auditor disallows recognition of all or part of the benefits of tax avoidance strategies on the financial statements. The same logic can apply to firms taking aggressive tax positions; hence, firms with higher quality auditors may take fewer aggressive tax positions

¹⁰ In this study, my time frame (fiscal 2006) includes only the Big N auditors remaining after Andersen's demise: 95% of my final sample is a Big 4 client. Consequently, I am unable to test whether the uncertain tax positions of Big 4 clients are different from the uncertain tax positions of non-Big 4 clients.

expecting that the auditor would not allow recognition of the financial statement benefits of the tax position.

However, McGuire et al. (2010) recognize that the ex ante relationship between auditor quality and tax avoidance activities is unclear. Consequently, they also posit that clients of an industry specialist auditor may engage in more tax avoidance behavior because the industry specialist auditor's "deep understanding of the nuances of tax avoidance strategies will lead them to recognize strategies that are not as aggressive and allow the clients to recognize all of the financial statement benefits associated with their tax avoidance strategies" (page 10). They find that firms engaging an external audit firm that is an industry expert have significantly lower book ETR, larger DTAX, and larger BTDS than firms that do not hire an external audit firm that is an industry expert. Their results suggest that clients of industry specialist auditors engage in more tax avoidance activities. If firms with higher quality auditors engage in more tax avoidance activities, they may also take more aggressive tax positions. With these opposing effects on aggressive tax positions, I am unable to predict a direction, ex ante, on the association between auditor quality and aggressive tax positions. My hypothesis stated in alternative form:

H2a: Ceteris paribus, an association exists between firms' auditor quality and firms' level of aggressive tax positions.

Next, I examine how firms' choice of using auditor provided tax services affects firms' level of aggressive tax positions. McGuire et al. (2010) state that external auditors directly affect a client's tax avoidance activities by providing tax consulting services. Mills et al. (1998) suggest that investments in tax planning lower firms' book

effective tax rate. They find that an additional \$1 investment in tax planning generates a \$4 reduction in tax liabilities, on average. Dhaliwal et al. (2004) find that firms lower book ETR in the fourth quarter to meet or beat analysts' forecasts. They suggest that firms' manage tax accruals to opportunistically lower book ETR. Cook et al. (2008) find that firms not only use managerial discretion over tax accruals to opportunistically manage book ETR in the fourth quarter, but also engage in tax avoidance activities to lower book ETR in the fourth quarter. Cook et al. use tax fees paid to the auditor as a proxy for tax avoidance behavior. Cook and Omer (2010) suggest that firms' exhibit less tax avoidance or tax aggression after they decrease the fees paid to their auditor for tax services or no longer use auditor provided tax services. My hypothesis stated in alternative form:

H2b: Ceteris paribus, firms' auditor provided tax services are positively related to firms' level of aggressive tax positions.

Impact of Analyst Coverage on Level of Aggressive Tax Positions

Next, I examine whether analyst coverage affects firms' level of aggressive tax positions. The literature views analyst coverage (i.e. the number of sell-side analysts following a firm) as a proxy for external monitoring (Jensen and Meckling 1976; Healy and Palepu 2001; Yu 2008). Yu (2008) investigates whether greater analyst coverage increases pressure on managers to manipulate earnings or, alternatively, whether analysts act as external monitors of managers, finding that firms with more analyst coverage engage in less earnings management relative to firms with less analyst coverage, suggesting that analysts serve as external monitors of managers. This result suggests the managerial opportunism associated with an aggressive tax position will

diminish as the number of analysts covering a firm increases. To the extent that constraining opportunism eliminates the financial reporting benefits of aggressive tax positions, managers' incentives to take aggressive tax positions will be reduced. If firms with a larger analyst following have less incentive to take risky tax positions, then I expect that analyst coverage is negatively related to aggressive tax positions.

My expectation is consistent with prior literature. Frank et al. (2009) find a significantly negative relationship between measures of tax avoidance (DTAX and book-tax differences) and sell-side analysts tracking a firm. Cazier et al. (2009) anticipate, but do not find within their sample, a negative relationship between firms' UTBs or PermUTBs and analyst coverage. Consequently, my hypothesis, stated in the alternative form:

H3: Ceteris paribus, firms' analyst coverage level is negatively related to firms' level of aggressive tax positions.

Impact of Corporate Governance Quality on Level of Aggressive Tax Positions

The extant literature has extensively examined the association between the quality of corporate governance and the quality of financial reporting, linking both board independence and corporate governance to increased firm performance (Brickley et al. 1994; Byrd and Hickman 1992; Weisbach 1988), lower discretionary accruals (Klein 2002), and lower incidence of financial fraud (Dechow and Skinner 1996; Beasley 1996). Chung et al. (2002) find that institutional ownership constrains earnings management. Institutional ownership is widely used in the literature as a corporate governance proxy for quality monitoring because institutional owners have stronger incentives and greater ability to aggressively monitor managerial performance than non-

institutional owners (Shleifer and Vishny 1986; Coffee 1991; Bhojraj and Sengupta 2003). As strong corporate governance constrains the firms' discretion over recognizing the financial reporting benefits of aggressive tax positions, managers' incentives to take aggressive tax positions decrease. Consequently, I expect there is a negative association between strong corporate governance and firms' level of aggressive tax positions.

However, prior literature shows institutional owners encourage firms to take corporate risks (Hill and Snell 1988; Hansen and Hill 1991; Wright et al. 1996). Wright et al. (1996) defines corporate risk taking as firms' analysis and selection of projects with uncertain expected outcomes and uncertain cash flows. To the extent that strong corporate governance is associated with risk-taking behavior, I expect that strong corporate governance is positively associated with firms' level of aggressive tax positions. With these opposing effects, I am unable to predict a direction, *ex ante*, on the association between strong corporate governance and firms' level of aggressive tax positions. This leads to my fourth hypothesis, stated in alternative form:

H4: Ceteris paribus, an association exists between firms' quality of corporate governance and firms' level of aggressive tax positions.

CHAPTER IV

METHODOLOGICAL APPROACH

Research Design

Control Variables for Firms' Discretion over Recognizing Benefits of Aggressive Tax Positions

Since the goal of this paper is to examine the determinants of aggressive tax positions, I start by controlling for firms' discretion over recognizing the financial reporting benefits of aggressive tax positions. FIN 48 adoption is considered a change in accounting principle from SFAS 5; consequently, firms are required to report a cumulative effect adjustment (CEA) for FIN 48 adoption. FIN 48 specifies that the CEA is measured as the difference between the liability for UTBs measured pre- and post-adoption and that this difference is recorded as an adjustment to retained earnings (Nichols et al. 2007). The CEA is the change to UTB associated with past managerial discretion over the financial reporting benefits of permanent aggressive tax positions ($\Delta PermUTB$). Some firms also report how FIN 48 adoption changed gross UTB, my proxy for $\Delta TotalUTB$.¹¹ I calculate the change to UTBs at FIN 48 adoption associated with temporary aggressive tax positions ($\Delta TempUTB$) is the difference between $\Delta TotalUTB$ and $\Delta PermUTB$. I collectively refer the changes in UTB and its permanent and temporary components at FIN 48 adoption as ΔUTB . Again, ΔUTB proxies for firms' discretion over reporting the financial benefits of past aggressive tax positions. Based on the various interpretations allowed under SFAS 5, the ΔUTB recorded by firms

¹¹ If a firm only reports the cumulative effect adjustment of adopting FIN 48, the $\Delta TotalUTB$ equals $\Delta PermUTB$.

could be positive, negative, or immaterial. Table 1 provides detailed variable definitions.

Control Variables for Firms' Incentives and Abilities to Engage in Aggressive Tax Positions

Next I identify which firm characteristics are associated with the level of unrecognized tax benefit (*UTB*), and both its permanent (*PermUTB*) and temporary (*TempUTB*) components. I regress each measure of unrecognized tax benefit on the nine firm characteristics shown in prior literature (Song and Tucker 2008; Cazier et al. 2009) to proxy for firms' incentives and abilities to engage in aggressive tax positions are also associated with firms' aggressive tax positions: (1) natural log of total assets (*Size*) proxies for firm size; (2) pre-tax return on assets (*PT_ROA*) proxies for firm profitability; (3) the ratio of total debt to total assets proxies for leverage (*Leverage*); (4) a categorical variable coded 1 when the sum of foreign pretax income for 2002-2006 is positive (*ForeignDum*) proxies for presence of foreign operations; (5) the ratio of research and development expenditures to net sales is summed over the five years prior to FIN 48 adoption (*R&DexpRatio*) as a proxy for research and development intensity; (6) selling, general, and administrative expenditures scaled by lagged total assets (*SG&A*) and the Dyreng et al. (2008) five-year Cash ETR (*CashETR5*) proxy for firms' investments in tax planning; (7) the market-to-book (*MTB*) ratio proxies for firm value; and (8) a three-year percentage change in sales (*Sales_GR*) proxies for growth.

Larger, more sophisticated firms have more opportunities to engage in tax planning (Gupta and Newberry 1997; Wilson 2009). Consequently, I expect firm size to

be positively associated with firms' level of aggressive tax positions. More profitable firms have a greater incentive (i.e. more income to offset) to establish aggressive tax positions (Gupta and Newberry 1997; Frank et al. 2009). I expect a positive association between profitability and level of aggressive tax positions. Graham and Tucker (2006) show that firms use less debt when they engage in tax sheltering, suggesting a substitution effect between tax sheltering and leverage. However, Song and Tucker (2008) suggest that a complementary effect exists between leverage and tax sheltering only when firms have high profitability. Cazier et al. (2009) find a positive relationship between leverage and UTBs. Because of these conflicting findings, I do not proffer an expectation on the association between leverage and aggressive tax positions.

Firms with foreign operations have more opportunities to engage in tax planning (Rego 2003; Lisowsky 2008; Wilson 2009). I expect that firms with foreign operations have more aggressive tax positions. Firms with more R&D activity have more opportunities to engage in tax planning activities (Dyregang et al. 2008; Wilson 2009) because R&D can generate tax credits. Although, not every R&D activity meets the tax credit criteria (Song and Tucker 2008). Consequently, firms may book reserves for those uncertain R&D expenditures. I expect that firms with more extensive R&D activity have more aggressive tax positions.

Firms that invest more in tax planning likely take more aggressive tax positions (Mills et al. 1998; Cook et al. 2008; Song and Tucker 2008). Song and Tucker (2008) suggest that firm value is positively related to UTBs; consequently, I expect firm value is positively related to level of aggressive tax positions. Growth firms have less need for

aggressive tax planning because they have ample tax deductions to offset taxable income (Dyreng et al. 2008; Song and Tucker 2008). Hence, I expect that firms with more growth have fewer aggressive tax positions. Finally, I also control for the probability that a firm engages in tax sheltering. Lisowsky (2010) constructs a probability score to determine whether firms engage in tax sheltering activities, which are the most aggressive tax positions. Lisowsky (2008) and Lisowsky et al. (2010) find that the tax shelter probability score is positively related to firms' level of tax aggressiveness. I employ the Wilson (2009) tax shelter probability score to determine the probability that a firm engages in tax shelters.¹² Based on the Wilson tax shelter probability score, I create an indicator variable splitting the sample into firms that have a high and low probability of engaging in a tax shelter. I expect firms with a higher tax shelter probability score to engage in more aggressive tax positions.

Next, I regress proxies for level of aggressive tax positions on financial reporting aggressiveness, auditor choice, analyst coverage and corporate governance, controlling for firms' managerial opportunism associated with the tax accrual and firms' incentives and abilities to engage in aggressive tax positions as discussed above. I use three measures of unrecognized tax benefits as proxies for level of aggressive tax positions: the UTB disclosed at FIN 48 adoption (*UTB*) and its permanent (*PermUTB*) and temporary (*TempUTB*) components. Both the *UTB* and *PermUTB* are disclosed by the firm at FIN 48 adoption. *TempUTB* is calculated as *UTB* less *PermUTB*. Ex ante, I

¹² Firm size and engaging a Big N auditor are two of the most important predictors of tax shelter behavior in the Lisowsky tax shelter probability score. Because my sample is based on the S&P 1500, which includes large firms that employ Big 4 auditors, Lisowsky's tax shelter probability score does not provide enough variance within my sample. Consequently, I employ the Wilson tax shelter probability score.

expect the explanatory variables to have similar effects on both the permanent and temporary components of *UTB*. Model (1) is as follows:

$$\begin{aligned}
 \text{Unrecognized Tax Benefit}_i = & \alpha_0 + \beta_1 \Delta UTB + \beta_2 \text{Size}_i + \beta_3 \text{PT_ROA}_i \\
 & + \beta_4 \text{Leverage}_i + \beta_5 \text{ForeignDum}_i + \beta_6 \text{R\&DexpRatio}_i + \beta_7 \text{SG\&A}_i \\
 & + \beta_8 \text{CashETR5}_i + \beta_9 \text{MTB}_i + \beta_{10} \text{Sales_GR}_i + \beta_{11} \text{TaxShelterDum}_i \\
 & + \beta_{12} \text{DA}_i + \beta_{13} \text{MB_Record}_i + \beta_{14} \text{LCEM_Record}_i + \beta_{15} \text{BookETR5}_i \\
 & + \beta_{16} \text{Ind_Specialist}_i + \beta_{17} \text{TaxFeeRatio}_i + \beta_{18} \text{Num_An}_i \\
 & + \beta_{19} \text{Bd_Ind\%}_i + \beta_{20} \text{IO\%}_i + \beta_{21} \text{StrongGscore}_i
 \end{aligned} \tag{1}$$

Variables for Firms' Financial Reporting Aggressiveness

To investigate whether firms' financial reporting aggressiveness is positively related to firms' level of aggressive tax positions (H1), I use four proxies of financial reporting aggressiveness. The financial reporting aggressiveness variables are calculated over a multi-year time period because the UTBs reflect aggressive tax positions over a multi-year period. The first proxy for financial reporting aggressiveness is pre-tax, performance adjusted, modified Jones discretionary accruals, summed over five years (*DA*). The literature has shown that tax reserve is positively related to discretionary accruals (Blouin and Tuna 2007; Lisowsky 2008; Frank et al. 2009). Consequently, I expect a positive association between *DA* and unrecognized tax benefits.

The second and third measures of financial reporting aggressiveness are firms' five-year records of meeting or beating analysts' forecasts (*MB_Record*) and firms' record of last chance earnings management to meet or beat analysts' forecasts (*LCEM_Record*). Blouin and Tuna (2007) find that firms use their tax cushions to smooth earnings. Gupta and Laux (2008) provide evidence that firms use managerial discretion in reporting the tax cushion to meet analysts' forecasts. I calculate *MB_Record* as the ratio of the number of times in the past five years that firms were able

to meet or beat annual analysts' forecasts divided by number of years of available data. Dhaliwal et al. (2004) find that firms use tax expense to meet or beat analysts' forecasts during the fourth quarter; the authors suggest that managers use their managerial discretion over the undisclosed tax cushion to manage tax expense opportunistically. Cook et al. (2008) suggest that firms use both managerial discretion over tax accruals and tax avoidance behavior to lower book ETR in the fourth quarter. I calculate *LCEM_Record* as the percentage of quarters the firm used last chance earnings management to meet or beat analysts' forecasts when the firms did meet or beat analysts' forecasts. I expect that both *MB_Record* and *LCEM_Record* are positively associated with UTBs.

The final proxy of financial reporting aggressiveness is book ETR, calculated as the five-year sum of tax expense over the five-year sum of pre-tax income less special items (*BookETR5*). Blouin and Tuna (2007) posit that book ETR could be capturing greater cushion activity for profitable firms. They find that book ETR is positively and significantly related to changes in tax cushion. They suggest that firms recording more GAAP tax expense undertake more aggressive tax planning. I expect that *BookETR5* and UTBs are positively related.

Variables for Firms' Choice of Auditor

Next, I examine auditor choice effects: industry specialist auditor and tax fee ratio. To test H2a, I employ an indicator variable for industry specialist auditors (*Ind_Specialist*) to proxy for auditor quality, consistent with Mayhew and Wilkins (2003). McGuire et al. (2010) state that the ex ante relationship between auditor quality

and tax avoidance activities is unclear, the same logic can be applied to the ex ante relationship between auditor quality and engaging in aggressive tax positions. If industry specialist auditors are able to constrain the managerial opportunism to the point of eliminating the financial reporting benefits of aggressive tax positions, then firms may engage in fewer aggressive tax positions. However, clients of an industry specialist auditor may engage in more aggressive tax positions because the industry specialist auditor's expertise associated with tax avoidance strategies leads them to take aggressive tax positions that have stronger facts, which enables the position to better withstand the scrutiny of relevant tax authorities. McGuire et al. (2010) find that clients of industry specialist auditors engage in more tax avoidance activities. Consequently, clients of industry specialist auditors may also engage in more aggressive tax positions. Thus, I am unable to predict a direction ex ante on the association between *Ind_Specialist* categorical variable and unrecognized tax benefits.

To test H2b, I focus on the tax fee ratio (*TaxFeeRatio*) as a proxy for auditor-provided tax services. As the tax fee ratio increases, the audit firm is likely providing the client with more tax avoidance strategies, including aggressive tax positions. The extant literature suggests that firms' tax avoidance behavior is positively correlated with fees paid to the auditors for tax services (Mills et al. 1998; Cook et al. 2008). Consequently, I expect a positive association between the *TaxFeeRatio* and unrecognized tax benefits.

Variable for Firms' Level of Analyst Coverage

To test whether firms' level of analyst coverage is negatively related to aggressive tax positions (H3), I calculate the number of sell-side analysts covering the firm at year-end 2006 and scale it by lagged total assets (*Num_An*). Frank et al. (2009) and Cazier et al. (2009) expect a negative relationship between firms' analyst coverage and firms' tax aggressiveness. If firms with greater analyst following have less incentive to take risky tax positions because the analyst coverage eliminates the financial reporting benefits of such positions, then I expect that analyst coverage is negatively related to UTBs.

Variables for Firms' Quality of Corporate Governance

To test the association between corporate governance quality and level of aggressive tax positions (H4), I examine three dimensions of corporate governance: board independence, institutional ownership, and shareholders' rights. I calculate the percentage of independent members on the board of directors during the 2006 fiscal year (*Bd_Indep%*). If more independent boards are able to constrain the managerial opportunism to the point of eliminating the financial reporting benefits of aggressive tax positions, then firms may engage in fewer aggressive tax positions. This would generate a negative association between board independence and UTBs. However, the association between board independence and UTBs may be positive if more independent boards encourage firms to take aggressive tax positions to increase firm value. Ex ante I am unable to predict an association between board independence and UTBs.

Next I examine how institutional ownership affects aggressive tax positions. I calculate the ratio of shares held by institutional owners to the number of shares outstanding at year-end 2006 (*IO%*). Extant literature shows that institutional owners inhibit managerially opportunistic financial reporting (Chung et al. 2002), which could reduce managers' incentives to take aggressive tax positions. This suggests a negative association between institutional owners and UTBs. However, prior literature shows that institutional owners encourage firms to engage in corporate risk taking activities (Hill and Snell 1988; Hansen and Hill 1991; Wright et al. 1996), suggesting a positive association between institutional owners and UTBs. Ex ante I am unable to predict an association between board independence and UTBs.

Finally I examine how shareholders' rights affect aggressive tax positions, I employ the Gompers et al. (2003) index (G-index) as a proxy for shareholders' rights.¹³ I set *StrongGscore* equal to one if the firms' G-indices are less than or equal to the sample mean; zero otherwise. Ex ante I am unable to predict an association between board independence and UTBs.

Sample Selection

Table 2, Panel A summarizes my sample selection process. The initial sample starts with the S&P 1500 firms as of December 29, 2006. I discard 26 firms not included in the Compustat annual file. Next, I restrict the sample to calendar year firms (1,023 firms), ensuring that all sample firms adopted FIN 48 on the same date, January 1, 2007.

¹³ The Gompers et al. (2003) index (G-index) measures managerial entrenchment. The G-index is a conglomeration of 24 different provisions, spanning five potential determinants of firm's takeover vulnerability: tactics for delaying hostile bidders, voting rights, director and officer protection, other takeover defenses, and state laws. The G-index ranges from 0 to 24, where low scores indicate higher quality corporate governance.

Then I remove all 39 firms classified as REITs (SIC code 6798) and 266 firms in regulated industries such as financial services (SIC code 60-69) and utilities (SIC code 49).¹⁴ Next, I hand collect the FIN 48 adoption disclosures for first quarter 2007 Form 10-Q reports filed with the SEC for the 718 remaining companies in the sample; 18 firms had not filed their first quarter 2007 Form 10-Q.

For each of the remaining 700 companies, I collect the following data from the tax footnote: 1) the gross UTB after adoption on January 1, 2007, (*UTB*) 2) the amount of UTB that, if recognized, would affect the firm's effective tax rate (*PermUTB*), 3) the change to the gross UTB at FIN 48 adoption ($\Delta TotalUTB$), and 4) the change to the gross UTB that affects shareholders' equity or retained earnings at FIN 48 adoption ($\Delta PermUTB$).¹⁵ I extract firm-level financial data from Compustat, analysts' forecasts from I/B/E/S, auditor and audit fee data from Audit Analytics, board of directors' data from Corporate Library, institutional ownership data from Thomson Reuters, and governance score from RiskMetrics. When possible, I hand collect missing data. Finally, I eliminate 136 firms lacking data required to compute one or more explanatory variables, leaving 564 firms in the sample.

Table 2, Panel B presents the industry breakdown of the S&P 1500 and the sample firms. Using two digit Standard Industrial Classifications (SIC) codes, the sample includes firms from 48 industries. However 44.32 percent of the sample is concentrated in only 5 industries: 11.17 percent from business services (SIC 73), 10.28

¹⁴ REITs are essentially pass-through entities; consequently, they have little or no corporate income tax liabilities. Firms in regulated industries are influenced by different reporting incentives and regulatory scrutiny.

¹⁵ I also collect the amount accrued for associated interest and penalties and the location of interest and penalties in the financial statements so I can adjust the UTBs for interest and penalties.

percent from chemicals (SIC 28), 8.33 percent from control and optical instruments (SIC 38), 7.45 percent from electronic equipment (SIC 36), and 7.09 percent from industrial machinery and computer equipment (SIC 35).

Venn diagrams in Figure 2 provide more detail about the composition of firms' unrecognized tax benefits. In the full hand-collected sample of 700 firms, 53 firms reported UTB as immaterial or zero.¹⁶ Of the 632 firms that reported permanent UTBs, 200 firms reported only permanent UTBs. Of the 447 firms that reported temporary UTBs, only 15 did not also report permanent UTBs. In the final sample of 564 firms, 36 firms reported a zero or immaterial amount of UTBs. Of the 517 firms that reported permanent UTBs, 162 firms reported only permanent UTBs. Of the 366 firms that reported temporary UTBs, 11 firms did not report permanent UTBs. Comparing the two Venn diagrams shows that 17 firms reported no UTBs, 38 firms reported only permanent UTBs, 4 firms reported only temporary UTBs, and 77 firms reporting both permanent and temporary UTBs were lost due to data constraints. The Venn diagrams depict variation among the types of aggressive tax positions taken by firms. I leave it to future research to investigate why firms choose a particular mix of aggressive tax positions (none, only permanent, only temporary, or a combination of permanent and temporary).

Descriptive Statistics and Correlations

Table 3, Panel A displays the descriptive statistics for the final sample. All variables are winsorized at the top and bottom five percent except indicator variables. The mean (median) unrecognized tax benefits disclosed by sample firms at FIN 48

¹⁶ I record a firm's UTB as immaterial when the firm explicitly states they have no unrecognized tax benefits or they have no significant or material unrecognized tax benefits.

adoption is 1.47 (1.04) percent of lagged assets. The mean (median) of the permanent and temporary components of unrecognized tax benefits disclosed by the sample firms at FIN 48 adoption is 1.10 (0.72) and 0.35 (0.13) percent of lagged assets, respectively. The sheer size of the *UTB* and *PermUTB* suggests that UTBs are economically significant to sample firms. These percentages are in line with those reported by Blouin et al. (2010), Song and Tucker (2008), and Dunbar et al. (2010).

The mean (median) change to unrecognized tax benefits disclosed by sample firms at FIN 48 adoption is 0.17 (0.00) percent of lagged assets. The mean (median) change to unrecognized tax benefits that does and does not affect retained earnings disclosed by sample firms at FIN 48 adoption is 0.10 (0.00) and 0.04 (0.00) percent of lagged assets, respectively. The positive skewness with the change to unrecognized tax benefit variables indicates that the effects of FIN 48 adoption are substantially larger for some firms.

The median sample firm has log of assets of 7.66, pre-tax return on assets of 10.72 percent, leverage of 20.53 percent of lagged assets, a market to book ratio of 2.65, and a three-year average sales growth of 13.98 percent. Table 3, Panel B provides the descriptive statistics of the S&P 1500 for the same time period as the sample firms. The median firm for the S&P 1500 has log of assets of 7.75, pre-tax return on assets of 8.42 percent, leverage of 20.33 percent of lagged assets, a market to book ratio of 2.45, and a three-year average sales growth of 13.70 percent. The similarities between my sample and the S&P 1500 suggest that my sample is representative of the larger firm population, which allows for more general extrapolation. Previous FIN 48 studies focus on only

large firms (Nichols et al. 2007; Blouin et al. 2007), the S&P 500 (Zion and Varshney 2007; Frischmann et al. 2008; Song and Tucker 2008; Dunbar et al. 2010), or the S&P 500 and S&P MidCap 400 (Cazier et al. 2009).

The descriptive statistics suggest that the mean (median) for the five-year record of meeting or beating analysts' forecasts (*MB_Record*) is 76 (80) percent. Although this seems high, these firms have the highest analyst coverage, perhaps increasing the importance of meeting earnings targets. Additionally, the mean (median) percentage of shares held by institutions (IO%) is 83.66 (84.93) percent. The composition of specific S&P index funds likely elevates the percentage of institutional ownership for this sample.

Panel A of Table 4 presents the correlations between the three proxies of aggressive tax positions and controls for firms' discretion in recognizing the financial statement benefits of aggressive tax positions and firms' incentives and abilities to engage in aggressive tax positions and tax shelters. For both Pearson and Spearman correlations, *UTB* and *PermUTB* are positively associated with $\Delta TotalUTB$ and $\Delta PermUTB$, while *TempUTB* is positively related to all three ΔUTB variables. Consistent with expectations, *UTB* and *PermUTB* are positively associated with *Size*, *ForeignDum*, *R&DExpRatio*, *SG&A*, *MTB* and *TaxShelterDum* for both Pearson and Spearman correlations. However, *TempUTB* is only positively associated with *Size*, *R&DExpRatio*, *TaxShelterDum* for both the Pearson and Spearman correlations.

Panel B of Table 4 exhibits the correlations between the three proxies of firms' level of aggressive tax positions and controls for firms' discretion in recognizing the

financial statement benefits of aggressive tax positions and proxies of firms' financial reporting aggressiveness, auditor quality, analyst coverage, and corporate governance. Only significant correlations in both Pearson and Spearman correlations are discussed. Among the financial reporting aggressiveness variables, *LCEM_Record* is positively correlated with all three measures of unrecognized tax benefits, while *MB_Record* is positively correlated with *UTB* and *PermUTB*. *TaxFeeRatio* is the only choice of auditor proxy that is significantly correlated with *UTB* and *PermUTB*. Neither analyst coverage nor the corporate governance proxies are significantly correlated with the three measures of unrecognized tax benefits. However, analyst coverage is positively correlated with all three ΔUTB variables. As with Panel A, Panel B shows a number of significant correlations between the explanatory variables, suggesting caution in interpreting bivariate results.

Multivariate Analysis

Controls for Firms' Incentives and Abilities to Engage in Aggressive Tax Positions

Table 5 displays the OLS results of regressing unrecognized tax benefits on the hypothesized variables, controlling for firms' discretion in recognizing the financial statement benefits of aggressive tax positions and firms' incentives and abilities to engage in aggressive tax positions and tax sheltering. Columns 1, 3, and 5 in Table 5 report the results of regressing the three proxies for unrecognized tax benefits on just the proxies for controlling for firms' discretion in recognizing the financial statement benefits of aggressive tax positions and firms' incentives and abilities to engage in aggressive tax positions and tax sheltering. Because these results are not significantly

different from the results reported for Model (1), I focus on the results of the full model. Table 5, column 2 suggests that *UTB* is positively and significantly related to ΔUTB ($\rho \leq 0.01$), *Size* ($\rho \leq 0.01$), *ForeignDum* ($\rho \leq 0.05$), *R&DexpRatio* ($\rho \leq 0.01$), *SG&A* ($\rho \leq 0.05$), *MTB* ($\rho \leq 0.01$), and *TaxShelterDum* ($\rho \leq 0.05$). These associations are in the expected direction and consistent with the findings of Song and Tucker (2008) and Cazier et al. (2009). Ex ante, I did not predict a signed association between leverage and unrecognized tax benefits; results suggest an insignificant association between *UTB* and *Leverage*. This result is also inconsistent with Cazier et al. (2009). These results suggest that firms that are larger, have foreign operations, spend more on research and development activities, spend more on selling, general, and administrative expenditures, have higher firm value, or are classified as a firm that engages in tax sheltering have more aggressive tax positions. Two-digit SIC industry indicator variables are included in all the models, but are not tabulated.

Next, I parse the *UTB* into its permanent (*PermUTB*) and temporary components (*TempUTB*); ex ante, my predicted associations between explanatory variables and *UTB* do not change when analyzing the permanent and temporary components. Table 5, column 4 presents regression results for Model (1) using *PermUTB* as the proxy for unrecognized tax benefits. The results are similar to those reported for *UTB*, except *PermUTB* has only a marginally significant, positive association *Size* ($\rho \leq 0.10$) and *SG&A* ($\rho \leq 0.10$). Unlike *UTB*, *PermUTB* has a marginally significant, positive association *PT_ROA* ($\rho \leq 0.10$), suggesting the firms with higher pre-tax return on assets take more permanent aggressive tax positions. Specifically, firms that are larger, more

profitable, have foreign operations, spend more on research and development activities, spend more on selling, general, and administrative expenditures, have higher firm value, or are classified as a firm that engages in tax sheltering take more permanent aggressive tax positions.

Table 5, column 6 displays the results for Model (1) when using *TempUTB* as the proxy for unrecognized tax benefits which, if recognized, will not affect the firm's effective tax rate. The results show that *TempUTB* is positively and significantly related to ΔUTB ($\rho \leq 0.01$) and *Size* ($\rho \leq 0.05$). The results suggest that firms that are larger engage in more temporary aggressive tax positions.

Association between Financial Reporting Aggressiveness and Level of Aggressive Tax Positions

To test H1, I focus on the four proxies for financial reporting aggressiveness: pre-tax performance adjusted, modified Jones discretionary accruals (*DA*), firms' five-year record of meeting or beating analysts' forecasts (*MBRecord*), firms' five-year record of using last chance earnings management to meet or beat analysts' forecasts (*LCEM_Record*), and a five-year measure of book ETR (*BookETR5*). I expect that financial reporting aggressiveness is positively related to aggressive tax positions. Table 5, columns 2 and 4 report that *UTB* and *PermUTB* are positively and significantly associated with one proxy of financial reporting aggressiveness, *LCEM_Record* ($\rho \leq 0.01$). This suggests that firms using decreases in fourth quarter ETR to meet or beat analysts' forecasts are engaging in more aggressive and permanent aggressive tax positions. *UTB* and *PermUTB* are not significantly associated to the other proxies of

financial reporting aggressiveness. Overall, this result shows some support for H1, which extends the findings of Lisowsky (2008) and Frank, Lynch and Rego (2009).

Table 5, column 6 reports that *TempUTB* is positively and significantly associated with *LCEM_Record* ($\rho \leq 0.05$), and *BookETR5* ($\rho \leq 0.05$); all associations are as predicted. However, *TempUTB* is not significantly associated with *DA* or *MB_Record*. Overall, I find that temporary unrecognized tax benefits are associated more with financial reporting incentives than tax-oriented measures; this result is consistent with the finding of Phillips et al. (2003) and Hanlon (2005) that temporary BTDs are reflective of earnings management activities.

Association between Choice of Auditor and Level of Aggressive Tax Positions

To test H2a, I use a categorical variable indicating that the auditor is an industry specialist (*Ind_Specialist*). A negative association suggests firms' likelihood of taking aggressive tax positions is mitigated by the auditor industry specialist constraining firms' discretion over reporting the benefits of aggressive tax positions. On the other hand, a positive association implies that the auditor's expertise about the industry leads firms to take more aggressive tax positions that have facts strong enough to withstand the scrutiny of any relevant taxing authority. Ex ante, I am unable to make a prediction about the association between auditor quality and firms' UTBs. Table 5 reports that *Ind_Specialist* is insignificantly associated with *UTB*, *PermUTB*, and *TempUTB*, suggesting that auditor quality as proxied by industry specialization has no impact on firms' taking aggressive tax positions. Consequently, there is no support for H2a.

Hypothesis 2b (H2b) predicts that auditor provided tax services are positively associated with aggressive tax positions. To test H2b, I use the tax fee ratio (*TaxFeeRatio*) to measure extent of auditor-provided tax services. Table 5, column 2 and column 4, reports that *UTB* and *PermUTB* are positively associated with *TaxFeeRatio* at ($\rho \leq 0.05$) and ($\rho \leq 0.10$), respectively. Column 6 reports that *TempUTB* is insignificantly associated with *TaxFeeRatio*. Taken together, these results suggest that firms take more permanent aggressive tax positions as fees paid to the auditor for tax services increase. Consequently, there is some support for H2b.

Association between Analyst Coverage and Level of Aggressive Tax Positions

Hypothesis 3 (H3) predicts that the number of analysts covering a firm is negatively associated with aggressive tax positions. Consistent with H3, Table 5, column 2 reports that the association between *UTB* and *Num_An* is negative, but only marginally significant ($\rho \leq 0.01$). Table 5, column 4 reports that *PermUTB* is negatively and significantly associated with *Num_An* ($\rho \leq 0.05$). These results suggest that firms with greater analyst coverage have less incentive to engage in aggressive tax positions, specifically permanent aggressive tax positions. These results are consistent with the Frank et al. (2009) finding that analyst coverage is negatively and significantly associated with tax reporting aggressiveness; however, the results differ from Cazier et al. (2009) who expect, but do not find, a negative relationship between analyst coverage and *UTB* or *PermUTB*. Whereas analyst coverage is significantly related to unrecognized tax benefits and permanent unrecognized tax benefits, Table 5, column 6 reports that *TempUTB* is not significantly associated with *Num_An*, suggesting that

analyst are interested only in permanent aggressive tax positions, which affect firms' earnings.

Association between Corporate Governance Quality and Level of Aggressive Tax Positions

Finally, Hypothesis 4 (H4) predicts an association between corporate governance quality and level of aggressive tax positions. I employ three proxies of corporate governance quality: board independence (*Bd_Ind%*), institutional ownership (*IO%*), and shareholders' rights (*StrongGscore*). Table 5, reports that firms' board independence percentage (*Bd_Ind%*) and institutional ownership percentage (*IO%*) are insignificantly associated with *UTB*, *PermUTB*, and *TempUTB*. However, Table 5, column 2 reports that *UTB* is positively and marginally significantly associated with *StrongGscore* ($\rho \leq 0.10$), suggesting that firms with strong shareholders' rights (*StrongGscore*) take more aggressive tax positions. Overall, there is minimal support for H4.

Multivariate Analyses with Sample Split by Changes to UTB at FIN 48 Adoption

Since the goal of this paper is to examine the determinants of aggressive tax positions, I control for firms' discretion over recognizing the financial benefits of aggressive tax positions by using the changes to UTB ($\Delta TotalUTB$) and the changes to its permanent ($\Delta PermUTB$) and temporary components ($\Delta TempUTB$) reported at FIN 48 adoption. The $\Delta PermUTB$ is the change to UTB that is recorded as a cumulative effect adjustment to retained earnings at FIN 48 adoption. Firms were required to report the $\Delta PermUTB$ because the adoption of FIN 48 is considered a change in accounting principle. Although not required, some firms also reported the change to gross UTB

reported by firms at FIN 48 adoption ($\Delta TotalUTB$). I calculate the $\Delta TempUTB$ as the difference between $\Delta TotalUTB$ and $\Delta PermUTB$. I collectively refer to the changes in UTB due to FIN 48 adoption as ΔUTB . Based on the various interpretations allowed under SFAS 5, the ΔUTB recorded by firms could be positive, negative, or immaterial.

An increase to UTB at FIN 48 adoption (i.e. positive ΔUTB) suggests that firms were recognizing more of the tax benefits associated with aggressive tax positions in earnings under the SFAS 5 regime than is allowed under the new FIN 48 requirements. Since the firms' aggressive tax positions are held constant at FIN 48 adoption, the increase in UTB is not due to firms taking additional aggressive tax positions, but solely due to a decrease in firms' discretion over the financial reporting benefits of aggressive tax positions. Hence, these firms were more aggressive in their reporting of the tax benefits prior to FIN 48 adoption.

A decrease to UTB at FIN 48 adoption (i.e. a negative ΔUTB) suggests that firms were recognizing fewer of the tax benefits associated with aggressive tax positions in earnings under the SFAS 5 regime than is required under the new FIN 48 requirements. These firms were more conservative in their reporting of the tax benefits prior to FIN 48 adoption. Another explanation for this conservative reporting behavior is that firms create a "cookie jar" for the financial reporting benefits at the time the aggressive tax position was taken. In other words, at the time the aggressive tax position was taken, firms had no need for recognizing the financial reporting benefits; consequently, they created a large tax accrual that could be decreased to improve earnings in future periods.

If a firm did not have a change to UTB at FIN 48 adoption (i.e. ΔUTB equals zero), one of two possibilities likely occurred: (1) the firm had an adequate reserve for any or all tax positions, or (2) no aggressive tax positions were taken. Moreover, the lack of change to the UTB suggests that firms were adequately reserved in the SFAS 5 regime for the FIN 48 requirements. I leave it to future research to explore the reasons firms report a positive, negative, or immaterial change to UTB at FIN 48 adoption. I suspect that the determinants of firms' level of aggressive tax positions may differ when firms are divided into three categories based on their change to UTB at FIN 48 adoption disclosures. Consequently, I divide my sample into subsamples based on the change to UTB at FIN 48 adoption. Splitting the sample creates homogenous groups of firms based on their past choices for recognizing the financial reporting benefits of aggressive tax positions. Then I analyze the determinants of firms' aggressive tax positions (*UTB*), permanent aggressive tax positions (*PermUTB*), and temporary aggressive tax positions (*TempUTB*), while holding firms' use of managerial discretion over the tax benefits of aggressive tax positions constant. Finally, comparing results across the groups allows me to draw conclusions on how firms' financial reporting aggressiveness is linked to firms' level of aggressive tax positions. To facilitate comparison between the full sample and the sub-groups, the results of Model (1) for *UTB* and *PermUTB* from Table 5 are restated in the first columns of Tables 6 and 7, respectively.

Results for Total Unrecognized Tax Benefits

The results for Model (1) using gross unrecognized tax benefits as the dependent variable are reported in Table 6. Column 1 reports the results for the full sample of 564

firms, as reported in Table 5, Column 2. The model generated with the full sample has an adjusted R-squared of 31.61%. Then I split the full sample into the sub-groups based on the change to UTB at FIN 48 adoption ($\Delta TotalUTB$). Table 6, Column 2 reports the results for the 168 firms reporting no change to total UTB at FIN 48 adoption ($\Delta TotalUTB = 0$). I do not include $\Delta TotalUTB$ in the model because it is zero for all firms. Compared to the full sample, the 18.87% adjusted R-squared of this model is a dramatic decrease. The results suggest that for firms adequately reserved for aggressive tax positions, *UTB* is positively associated with *Size* ($\rho \leq 0.05$), *SG&A* ($\rho \leq 0.10$), and *StrongGScore* ($\rho \leq 0.10$). This suggests that firms that are larger, spend more on selling, general, and administrative expenses, or have strong shareholder rights engage in taking more aggressive tax positions.

Table 6, Column 4 reports the results for the 281 firms that increased total UTB at FIN 48 adoption ($\Delta TotalUTB$ is positive). Although all the firms in this group increased total UTB at FIN 48 adoption, I include $\Delta TotalUTB$ in the model to control for the magnitude of the change to UTB at FIN 48 adoption. The model's adjusted R-squared is 39.29%. The results suggest that when firms aggressively recognized the benefits for aggressive tax positions, *UTB* is positively associated with $\Delta TotalUTB$ ($\rho \leq 0.01$), *ForeignDum* ($\rho \leq 0.05$), *MTB* ($\rho \leq 0.01$), *TaxShetlerDum* ($\rho \leq 0.01$), *LCEM_Record* ($\rho \leq 0.05$), and *BookETR5* ($\rho \leq 0.05$), and *TaxFeeRatio* ($\rho \leq 0.10$), and *UTB* is negatively associated with *Sales_GR* ($\rho \leq 0.01$).

Table 6, Column 5 reports the results for the 115 firms that decreased total UTB at FIN 48 adoption ($\Delta TotalUTB$ is negative). The results suggest that when firms were

conservatively recognizing or “cookie jarring” the benefits for aggressive tax positions, *UTB* is not significantly related to any of the independent variables. Also, the model has a significantly lower adjusted R-squared of 20.07%.

Comparing the results across the three sub-groups, a couple of inferences can be drawn. Firms that are aggressive in reporting the tax benefits of aggressive tax positions are also tax aggressive. Firms that aggressively recognize the benefits of aggressive tax positions (i.e. firms where $\Delta TotalUTB$ is positive), also show that the level of *UTB* is associated with tax aggression, as evidenced by the positive and significant coefficients on both *TaxFeeRatio* and *TaxShelterDum*; in contrast, these variables are not significantly associated with the level of *UTB* for firms that do not aggressively recognize the benefits of aggressive tax positions (i.e. firms where $\Delta TotalUTB$ is negative or zero). Also the level of *UTB* is positively and significantly associated with measures of overall firms’ financial reporting aggressiveness, for firms that are aggressive in reporting the tax benefits of aggressive tax positions (i.e. firms where $\Delta TotalUTB$ is positive), but not for firms that do not report tax benefits aggressively (i.e. firms where $\Delta TotalUTB$ is negative or zero). This validates the partitions based on the $\Delta TotalUTB$.

Results for Permanent Unrecognized Tax Benefits

The results for Model (1) using the permanent portion of unrecognized tax benefits (*PermUTB*) as the dependent variable are reported in Table 7. Column 1 reports the results for the full sample of 564 firms, as reported in Table 5, Column 4. Recall that firms that are larger, more profitable, have foreign operations, spend more on research

and development activities, spend more on selling, general, and administrative expenditures, have higher firm value, are classified as a tax sheltering firm, have a record of using last chance earnings management, pay more fees to auditors for tax services, and experience less analyst' coverage have more permanent aggressive tax positions. The model generated with the full sample has an adjusted R-squared of 32.76%.

Then I split the full sample into the sub-groups based on the change to UTB at FIN 48 adoption that affected retained earnings ($\Delta PermUTB$). Table 7, Column 2 reports the results for the 172 firms reporting no change to the permanent portion of UTB at FIN 48 adoption ($\Delta PermUTB = 0$). I do not include $\Delta PermUTB$ in the model because it is zero for all firms. Compared to the full sample, the 20.87% adjusted R-squared of this model is a dramatic decrease. The results suggest that for firms adequately reserved for permanent aggressive tax positions, $PermUTB$ is positively associated with $Size$ ($\rho \leq 0.05$), $SG\&A$ ($\rho \leq 0.10$), MTB ($\rho \leq 0.05$), and $StrongGScore$ ($\rho \leq 0.10$). This suggests that firms that are larger, more profitable, spend more on selling, general, and administrative expenses, have higher firm value, or have strong shareholder rights engage in taking more permanent aggressive tax positions.

Table 7, Column 4 reports the results for the 283 firms that increased permanent UTB at FIN 48 adoption ($\Delta PermUTB$ is positive). Although all the firms in this group had an increase to UTB that affected retained earnings at FIN 48 adoption, I include $\Delta PermUTB$ in the model to control for the magnitude of the change to UTB that affects retained earnings at FIN 48 adoption. The results suggest that when firms were

aggressively recognizing the benefits for permanent aggressive tax positions, *PermUTB* is positively associated with $\Delta PermUTB$ ($\rho \leq 0.01$), *PT_ROA* ($\rho \leq 0.10$), *ForeignDum* ($\rho \leq 0.05$), *R&DexpRatio* ($\rho \leq 0.01$), *MTB* ($\rho \leq 0.05$), *TaxShetlerDum* ($\rho \leq 0.05$), *LCEM_Record* ($\rho \leq 0.01$), and *BookETR5* ($\rho \leq 0.05$), and *PermUTB* is negatively associated with *Sales_GR* ($\rho \leq 0.01$). The model's adjusted R-squared is 43.68%.

Table 7, Column 5 reports the results of for the 109 firms that increased permanent UTB at FIN 48 adoption ($\Delta PermUTB$ is negative). The results suggest that when firms were conservatively recognizing or “cookie jarring” the benefits for aggressive tax positions, *PermUTB* is positively associated with *R&DexpRatio* ($\rho \leq 0.10$) and *MB_Record* ($\rho \leq 0.10$), but the associations are only marginally significant. The adjusted R-squared for the model has dropped to 18.86%.

Comparing the results across the three sub-groups, a couple of inferences can be drawn. Firms that are aggressive in reporting the tax benefits of permanent aggressive tax positions are also tax aggressive. Firms that aggressively recognize the benefits of permanent aggressive tax positions (i.e. firms where $\Delta PermUTB$ is positive), also show that the level of *PermUTB* is associated with tax aggression, as evidenced by the positive and significant coefficients on *TaxShelterDum*; in contrast, this variable is not significantly associated with the level of *PermUTB* for firms that do not aggressively recognize the benefits of permanent aggressive tax positions (i.e. firms where $\Delta PermUTB$ is negative or zero). Also the level of *PermUTB* is positively and significantly associated with measures of firms' overall financial reporting aggressiveness for firms that are aggressive in reporting the tax benefits of aggressive

tax positions (i.e. firms where $\Delta PermUTB$ is positive), but not for firms that do not report tax benefits aggressively (i.e. firms where $\Delta PermUTB$ is negative or zero). This validates partitioning the sample by $\Delta PermUTB$.

Results for Temporary Unrecognized Tax Benefits

I do not report the results for regressing ($TempUTB$) on Model (1), after splitting the sample into sub-groups based on $\Delta TempUTB$. Almost 80% of the firms have a $\Delta TempUTB$ that equals zero. This causes the other models (when $\Delta TempUTB$ is positive or negative) to be over-specified by the inclusion of industry fixed effects.

Consequently, I do not report these results.

CHAPTER V

CONCLUSION

Prior to FIN 48 implementation, financial statement users were unable to distinguish firms with aggressive tax positions from those with certain tax positions because aggressive tax positions were both scantily and inconsistently disclosed (Gleason and Mills 2002, 2007; Lisowsky 2008). Consequently, tax researchers have devised numerous measures to proxy for firms' degree of tax aggressiveness including cash effective tax rates (Dyreng et al. 2008) and total book-tax differences (Wilson 2009). Although researchers are able to separate the effects of tax avoidance into permanent and temporary tax positions, they are unable to isolate the uncertainty associated with the tax positions.

The implementation of FIN 48 creates two manager-assessed measures of aggressive tax positions: (1) the total amount reserved for unrecognized tax benefits (UTB), which includes both permanent and temporary aggressive tax positions, and (2) the amount reserved for permanent, unrecognized tax benefits (PermUTB), which is the total amount of UTB that, if recognized, would influence the effective tax rate. For most firms, the FIN 48 adoption disclosure is the first disclosure of aggressive tax positions (Zion and Varshney 2007; Blouin and Tuna 2007). Using the FIN 48 disclosures about unrecognized tax benefits to proxy for firms' level of aggressive tax positions, I investigate how firms' level of aggressive tax positions is influenced by financial reporting aggressiveness, choice of auditor, analyst coverage, and corporate governance, controlling for firms' incentives and abilities to engage in aggressive tax positions and

firms' discretion over reporting the financial benefits of aggressive tax positions. To date, lack of disclosure on aggressive tax positions has prevented researchers from directly examining these relationships.

Using 564 calendar year-end industrial firms in the S&P 1500, results suggests that firms' UTBs are positively associated with proxies for firms' incentives and abilities to engage in aggressive tax positions: firm size, presence of foreign operations, research and development activity, selling, general, and administrative expenditures, firm value, and the probability that the firm engages in tax shelter activity. The results for permanent unrecognized tax benefits (PermUTB) are largely consistent with those of UTB; however, firms' temporary unrecognized tax benefits are only increasing in firm size.

I also find that unrecognized tax benefits and their permanent and temporary components are positively associated with financial reporting aggressiveness. These findings support the extant literature's finding that firms' tax aggressiveness may be influenced by their financial reporting aggressiveness (Dhaliwal et al. 2004; Frank et al. 2009; Lisowsky 2008). Results also suggest that firms' use of auditor provided tax services have more total and permanent unrecognized tax benefits, but not temporary unrecognized tax benefits. I also document that unrecognized tax benefits and the permanent unrecognized tax benefits are negatively related to the number of analysts' covering a firm; however, temporary unrecognized tax benefits are not related to analyst coverage.

This study extends the accounting literature in four areas. First I extend the tax avoidance literature by using a more specific measure of firm tax aggression that directly captures managers' "best guess" of outcomes of aggressive tax positions taken by the firm. Second I extend the emerging FIN 48 literature that investigates determinants of firms' aggressive tax positions. Distinct from other FIN 48 studies my large hand-collected sample is gathered from the S&P 1500, which increases the generalizability of my results. Extant literature suggests that a wide variety of non-tax factors influence firms' tax-related decisions (Frank et al. 2009; Lisowsky 2008); however, the current FIN 48 studies focus on how unrecognized tax benefits are influenced by firms' tax-related objectives (Song and Tucker 2008; Cazier et al. 2009). Consistent with the notion that tax aggressiveness is associated with tax and non-tax factors, my results suggest that financial reporting pressures, analyst coverage, and choice of auditor are significantly associated with firms' level of aggressive tax positions.

Third, I contribute to the literature examining the relationship between firms' financial reporting aggressiveness and tax aggressiveness. My study is the first to document a strong, positive relationship between financial reporting aggressiveness and level of firms' level of aggressive tax positions. This result is consistent with the findings of Lisowsky (2008) and Frank, Lynch and Rego (2009), but extends their work by refining the tax avoidance measure to include only aggressive tax positions.

Fourth, I extend the literature investigating the influence of analyst coverage and corporate governance on tax aggressiveness. I document a negative association between greater analyst coverage and level of permanent aggressive tax positions, suggesting that

external monitors focus only on the aggressive tax positions that affect earnings, as opposed to aggressive tax positions that do not affect earnings. I also document that corporate governance quality is not a significant factor in determining firms' level of aggressive tax positions.

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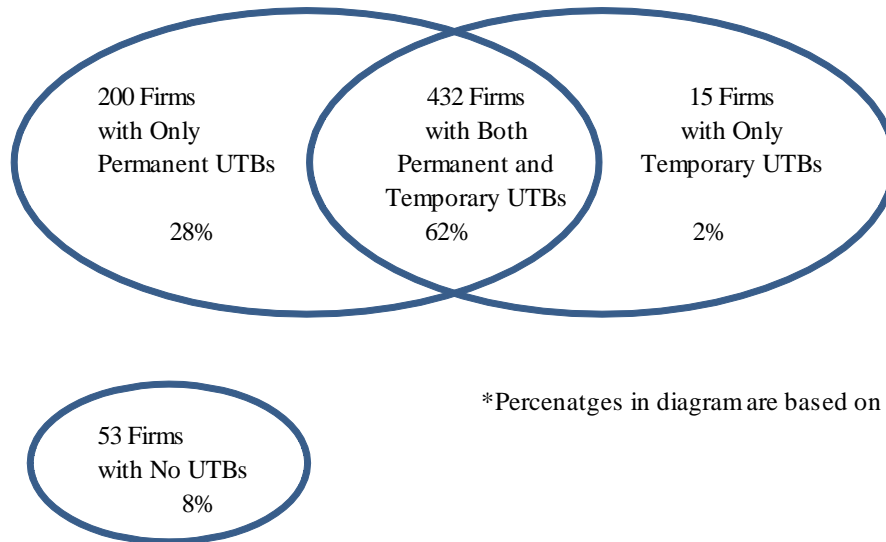
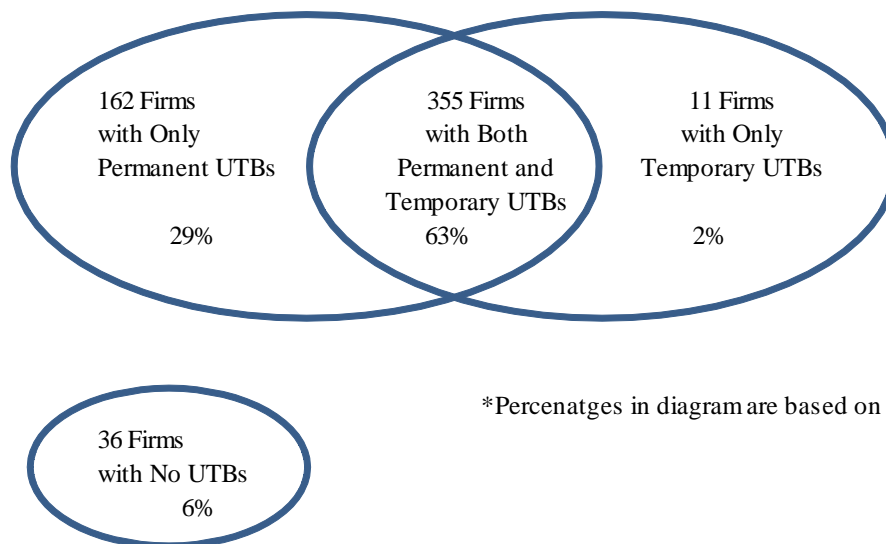
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APPENDIX A
FIGURES

FIGURE 2**Panel A: Venn diagram of 700 hand collected firms by type of unrecognized tax positions taken****Panel B: Venn diagram of 564 firms in final sample by type of unrecognized tax positions taken**

APPENDIX B**TABLES**

TABLE 1
Variable Definitions

(Compustat acronyms are capitalized, non-italic variables in parentheses)

Dependent Variables:

Variable Name	Definition
<i>Unrecognized Tax Benefit</i>	= <i>UTB</i> or <i>PermUTB</i> or <i>TempUTB</i>
<i>UTB</i>	= the gross amount of UTB disclosed at FIN 48 adoption, January 1, 2007, scaled by lagged total assets (AT). UTB is hand collected from fiscal 2007 first quarter 10Q.
<i>PermUTB</i>	= the gross amount of UTB disclosed at FIN 48 adoption that affects the firms' ETR, if recognized, scaled by lagged total assets (AT). PermUTB is hand collected from fiscal 2007 first quarter 10Q. Following Frischmann et al. (2008), if PermUTB is not disclosed, I assume that PermUTB equals gross UTB.
<i>TempUTB</i>	= Temporary Unrecognized Tax Benefits (TempUTB) are calculated as the gross amount of UTB less PermUTB disclosed at FIN 48 adoption, scaled by lagged total assets (AT). The Temporary UTB is the amount of disclosed UTB that will not affect firms' ETR, if recognized (Frischmann et al. 2008).

Independent Variables, in alphabetical order:

Variable Name	Definition
ΔUTB	= $\Delta TotalUTB$ or $\Delta PermUTB$ or $\Delta TempUTB$
$\Delta TotalUTB$	= the total change to UTB disclosed at FIN 48 adoption, scaled by lagged total assets (AT). This variable is hand collected from fiscal 2007 first quarter 10Q.
$\Delta PermUTB$	= the change to UTB that affects retained earnings disclosed at FIN 48 adoption (also called the "cumulative effect adjustment"), scaled by lagged total assets (AT). This variable is hand collected from fiscal 2007 first quarter 10Q.
$\Delta TempUTB$	= the difference between the total change to UTB and the change to UTB that affects stock holders' equity or retained earnings disclosed at FIN 48 adoption, scaled by lagged total assets (AT).
<i>Bd_Indep%</i>	= % of board members considered independent during the 2006 fiscal year. Collected using Risk Metrics data or Corporate Library data (if available); otherwise, hand collected using 10-K Wizard.
<i>BookETR5</i>	= Sum of Tax Expense (TXT) over past 5 years divided by sum of Pre-tax Income (PI) less Special Items (SPI) over past 5 years (2002 through 2006). I require firms to have at least 3 years of data. Following Dyreng et al. (2008), I require the sum of pre-tax income less special items to be greater than 0. Also, if Special Items (SPI) is missing, I set SPI equal to 0.

TABLE 1 (continued)

<i>CashETR5</i>	= Sum of Cash Tax Paid (TXPD) over past 5 years divided by sum of Pre-tax Income (PI) less Special Items (SPI) over past 5 years. I require firms to have at least 3 years of data. Following Dyreng et al. (2008), I require the sum of pre-tax income less special items to be greater than 0. Also, if Special Items (SPI) is missing, I set SPI equal to 0.
<i>DA</i>	<p>= 5 year sum of pre-tax discretionary accruals calculated using performance-adjusted modified Jones' model. First, I delete all firms in the Compustat universe with assets less than one million, then I run the following cross-sectional regression by 2-digit SIC industry and year.</p> $TACC_{it} = \alpha_0 1/AT_{it} + \alpha_1 SSA_{it} + \alpha_2 PPENT_{it} + \alpha_3 ROA_{it} + \varepsilon_{it}$ <p>$TACC_{it}$ = Total Accruals using the cash flow approach calculated as ((IBC+TXT) - ((OANCF +TXPD) - XIDOC)), scaled by lagged total assets (AT).</p> <p>SSA = Change in sales (SALE less lagged SALE) minus change in accounts receivable (RECCH), scaled by lagged total assets (AT).</p> <p>PPENT = Total net value of property, plant, and equipment (PPENT), scaled by lagged total assets (AT).</p> <p>PT_ROA = Pre-tax return on assets calculated as pre-tax income (PI), scaled by lagged total assets (AT).</p> <p>The, I use the estimated coefficients from the TACC regression above to calculate the expected accrual. The discretionary accrual is the actual accrual less the expected accrual. Finally, I sum the PAMJ discretionary accruals over 2002 through 2006.</p>
<i>ForeignDum</i>	= 1 if the sum of foreign pretax income (PIFO) for 2002-2006 is positive, 0 otherwise. Specification follows Rego (2003).
<i>Ind_Specialist</i>	= 1 if audit firm had the highest audit market share in the industry (two-digit SIC) during 2006 and if its market share was at least ten percentage points higher than the nearest competitor in that industry (Mayhew and Wilkins 2003).
<i>IO%</i>	= Institutional Ownership % is the ratio of shares held by institutional owners to the number of shares outstanding (CSHO) at the end of fiscal 2006.
<i>LCEM</i>	= Last Chance Earnings Management (<i>LCEM</i>) 1 when both the following are met: 1) firms Meet/Beat analysts' annual forecast for year (Meet/Beat=1) and 2) the I/B/E/S consensus forecast estimate less earnings absent tax expense management [pre-tax income (PI) * (1-ETRq3) divided by common shares to compute basic EPS (CHSPRI)], where ETRq3 is defined as year-to-date tax expense (TXTQ) divided by accumulated pre-tax income (PIQ).

TABLE1 (continued)

<i>LCEMRecord_MB</i>	= Ratio of number of years that a firm used last chance earnings management divided by number of years that firm meet/beat analysts' annual forecast, over 2002-2006. I require a firm to have at least 3 years of analysts' forecast data and 3 years of LCEM data to remain in the sample.
<i>Leverage</i>	= Long term debt (DLTT) + total debt in current liabilities (DLC), scaled by lagged total assets (AT). If (DLTT) or (DLC) is missing, then I replace them with 0. (Follows Cazier et al. (2009)).
<i>LisowskyCM2</i>	= Likelihood of a firm engaging in a tax shelter, from Lisowsky (2010), Table 4, Combined Model 2.
<i>MB_Record</i>	= Ratio of the number of annual earnings announcements that meet/beat analysts' annual earnings forecasts over total number of years firm followed by analysts during fiscal years 2002 through 2006. I require a firm to have at least 3 years of analysts' forecast data to remain in the sample.
<i>Meet/Beat</i>	= 1 when a firm's annual earnings meet/beat the analysts' annual earnings forecasts; 0 otherwise.
<i>MTB</i>	= Market to book ratio calculated as common shares outstanding (CSHO) times price closed at annual fiscal year-end (PRCC_F), scaled by total common equity (CEQ). (Follows Cazier et al. (2009)). .
<i>Number Analysts</i>	= Number of analysts covering the firm reported by I/B/E/S at fiscal 2006 year-end.
<i>Num_An</i>	= Number of analysts covering the firm reported by I/B/E/S at fiscal 2006 year-end, scaled by lagged total assets (AT).
<i>PT_ROA</i>	= Pretax income (PI), scaled by lagged total assets (AT).
<i>R&DexpRatio</i>	= Ratio of sum R&D expense to sum Net Sales, where I sum R&D expense (XRD) and net sales (SALE) over the years 2002-2006. (Follows Gleason and Mills (2007) and Song and Tucker (2008)).
<i>Sales_GR</i>	= Three-year average change in sales (SALE). (Follows Song and Tucker (2008) and Cazier et al. (2009)).
<i>SG&A</i>	= Selling General and Administrative Expense (XSGA), scaled by lagged total assets (AT). If (XSGA) is missing, then I set (XSGA) = 0. (Follows Cazier et al. (2009)). .
<i>Size</i>	= the natural log of total assets (AT).
<i>StrongGscore</i>	= 1 if Governance Index of the firm is less than or equal to the sample mean Governance Index (9); otherwise 0. Where the Governance Index is the Gompers, Ishii, and Metrick governance score collected from RiskMetrics (follows Rego and Wilson (2008)).

TABLE1 (continued)

<i>TaxFeeRatio</i>	=Ratio of tax fees paid to auditors divided by total fees paid to auditors. Collected from tax fee data through Audit Analytics; otherwise, hand collected using 10-K Wizard to search DEF 14A disclosures.
<i>TaxShelterDum</i>	= 1 when <i>Wilson</i> is greater than the median value; otherwise, 0.
<i>Wilson</i>	= Likelihood of a firm engaging in a tax shelter, from Wilson (2009), Table 5, column 3.

TABLE 2
Sample Selection and Industry Breakdown by 2-digit SIC

Panel A: Sample Selection

	All	Large	Mid	Small
Determination of Sample for Hand Collection				
S&P 1500 as of 12/29/2006	1500	500	400	600
Companies not on Compustat Annual	26	8	6	12
Companies with year end other than Dec	451	130	120	201
Companies classified as REITs (SIC 6798)	39	11	13	15
Companies classified Financials (SIC 60-69)	187	75	44	68
Companies classified Utilities (SIC 49)	79	36	28	15
No 10-Q1 2007 Available	18	3	2	13
Final Sample for Hand Collection	700	237	187	276
Breakdown of Hand collected sample				
Firms with immaterial UTB or UTB= 0	53	5	17	31
Firms with UTB disclosed at FIN 48 Adoption	647	232	170	245
Firms missing data for explanatory variables	136	34	32	70
Final Sample for UTB Regressions	564	203	155	206
Breakdown of UTB Sample				
Firms with immaterial UTB or UTB= 0	36	5	12	19
Firms with UTB disclosed at FIN 48 Adoption	528	198	143	187
Firm Size Breakdown for Firms with Perment UTBs	517	193	140	184
Firm Size Breakdown for Firms with Temporary UTBs	366	163	102	101

TABLE2 (continued)

Panel B: Industry breakdown of S&P 1500 as of 12/31/2006 and Final Sample

SIC2	S&P 1500 All Firms	S&P 1500 Non Year End Firms	S&P 1500 Year End Firms	Final Sample Year End Firms	% of Final Sample	SIC2 Description
1	1	1	0			Agricultural Production - Crops
7	1	0	1			Agricultural Services
10	3	0	3	2	0.35	Metal Mining
12	4	0	4	3	0.53	Coal Mining
13	41	4	37	31	5.50	Oil and Gas Extraction
14	4	0	4	4	0.71	Mining and Quarrying of Nonmetallic Minerals, Not Fuels
15	14	7	7	7	1.24	Building Cnstrctn - General Contractors & Operative Blders
16	5	2	3	3	0.53	Heavy Cnstrctn, Except Building Construction - Contractors
17	3	0	3	2	0.35	Construction - Special Trade Contractors
20	37	19	18	15	2.66	Food and Kindred Products
21	3	0	3			Tobacco Products
22	4	1	3	3	0.53	Textile Mill Products
23	12	9	3	3	0.53	Apparel, Finished Prdcts from Fabrics & Similar Materials
24	8	1	7	5	0.89	Lumber and Wood Products, Except Furniture
25	11	6	5	5	0.89	Furniture and Fixtures
26	25	2	23	15	2.66	Paper and Allied Products
27	22	7	15	13	2.30	Printing, Publishing and Allied Industries
28	98	25	73	58	10.28	Chemicals and Allied Products
29	13	2	11	10	1.77	Petroleum Refining and Related Industries
30	11	1	10	9	1.60	Rubber and Miscellaneous Plastic Products
31	8	3	5	4	0.71	Leather and Leather Products
32	6	3	3	2	0.35	Stone, Clay, Glass, and Concrete Products
33	22	6	16	14	2.48	Primary Metal Industries
34	19	7	12	10	1.77	Fabricated Metal Prdcts, Except Machinery & Transport Eq
35	80	30	50	40	7.09	Industrial and Commercial Machinery and Computer Eq
36	116	56	60	42	7.45	Electronic, Elctrcl Eqpmnt & Cmpnts, Excpt Computer Eq
37	37	12	25	20	3.55	Transportation Equipment
38	86	34	52	47	8.33	Mesr/Anlyz/Cntrl Instrmnts; Photo/Med/Opt Gds; Watches
39	14	6	8	7	1.24	Miscellaneous Manufacturing Industries
40	5	0	5	5	0.89	Railroad Transportation
42	11	0	11	8	1.42	Motor Freight Transportation
44	6	2	4	4	0.71	Water Transportation
45	9	4	5	5	0.89	Transportation by Air
47	7	0	7	4	0.71	Transportation Services
48	27	1	26	10	1.77	Communications
49	88	9	79			Electric, Gas and Sanitary Services
50	35	14	21	13	2.30	Wholesale Trade - Durable Goods
51	14	8	6	4	0.71	Wholesale Trade - Nondurable Goods
52	4	2	2			Building Matrials, Hrdwr, Garden Supply & Mobile Home Dlrs
53	16	15	1	1	0.18	General Merchandise Stores
54	6	5	1	1	0.18	Food Stores
55	10	5	5	5	0.89	Automotive Dealers and Gasoline Service Stations
56	27	27	0			Apparel and Accessory Stores
57	9	6	3	3	0.53	Home Furniture, Furnishings and Equipment Stores
58	24	9	15	13	2.30	Eating and Drinking Places
59	27	15	12	8	1.42	Miscellaneous Retail

TABLE 2 (continued)

Panel B (continued)

SIC2	S&P 1500 All Firms	S&P 1500 Non Year End Firms	S&P 1500 Year End Firms	Final Sample Year End Firms	% of Final Sample	SIC2 Description
60	92	3	89			Depository Institutions
61	12	3	9			Nondepository Credit Institutions
62	28	11	17			Security & Commodity Brokers, Dealers, Exchanges & Srvs
63	60	0	60			Insurance Carriers
64	7	0	7			Insurance Agents, Brokers and Service
65	3	0	3			Real Estate
67	40	0	40			Holding and Other Investment Offices
70	3	0	3	2	0.35	Hotels, Rooming Houses, Camps, and Other Lodging Places
72	5	5	0			Personal Services
73	129	47	82	63	11.17	Business Services
75	4	1	3	2	0.35	Automotive Repair, Services and Parking
78	2	2	0			Motion Pictures
79	8	2	6	3	0.53	Amusement and Recreation Services
80	27	3	24	20	3.55	Health Services
82	8	4	4	4	0.71	Educational Services
83	2	0	2			Social Services
87	22	7	15	10	1.77	Engineering, Accounting, Research, Management
99	4	1	3	2	0.35	Nonclassifiable Establishments
Totals	1489	455	1034	564	100%	

REITs are real estate investment trusts. UTB is unrecognized tax benefits.

TABLE 3
Descriptive Statistics

Panel A: Descriptive Statistics for Sample Firms

Variable	N	Mean	Std Dev	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
FIN 48 Unrecognized Tax Benefit Variables:								
<i>UTB</i>	564	0.0147	0.0133	0	0.0048	0.0104	0.0209	0.0501
<i>PermUTB</i>	564	0.0110	0.0113	0	0.0029	0.0072	0.0151	0.0416
<i>TempUTB</i>	564	0.0035	0.0047	0	0	0.0013	0.0052	0.0161
Controls for Firms' Discretion over Recognizing the Tax Benefits of Aggressive Tax Positions								
Δ <i>TotalUTB</i>	564	0.0017	0.0036	-0.0023	0	0	0.0023	0.0124
Δ <i>PermUTB</i>	564	0.0010	0.0025	-0.0023	0	0	0.0015	0.0082
Δ <i>TempUTB</i>	564	0.0004	0.0012	-0.0004	0	0	0	0.0050
Controls for Firms' Incentives and Abilities to Engage in Aggressive Tax Positions:								
<i>Size</i>	564	7.8053	1.4323	4.4414	6.6859	7.6597	8.7009	13.4549
<i>PT_ROA</i>	564	0.1181	0.0826	-0.0232	0.0644	0.1072	0.1629	0.3104
<i>Leverage</i>	564	0.2225	0.1655	0	0.0791	0.2053	0.3412	0.5634
<i>ForeignDum</i>	564	0.6188	0.4861	0	0	1	1	1
<i>R&DexpRatio</i>	564	0.0356	0.0588	0	0	0.0045	0.0381	0.2025
<i>SG&A</i>	564	0.2341	0.1700	0.0086	0.1022	0.2036	0.3243	0.6294
<i>CashETR5</i>	564	0.2235	0.1094	0.0187	0.1353	0.2359	0.3045	0.4089
<i>MTB</i>	564	3.1307	1.7528	1.2068	1.8451	2.6506	3.7634	7.9963
<i>Sales_GR</i>	564	0.1942	0.1785	-0.0087	0.0682	0.1398	0.2696	0.6869
Controls for Firms' Probability of Engaging in Tax Sheltering:								
<i>Wilson</i>	564	0.6606	0.2489	0.0051	0.5096	0.7104	0.8592	0.9969
<i>TaxShelterDum</i>	564	0.5	0.5004	0	0	0.5	1	1
<i>LisowskyCM2</i>	564	0.9712	0.1051	0.0177	0.9869	0.9981	0.9997	1.0000
Financial Reporting Aggressiveness Variables:								
<i>DA</i>	564	-0.2949	0.2647	-0.8491	-0.4446	-0.2500	-0.0969	0.0940
<i>MB_Record</i>	564	0.7629	0.2191	0.3333	0.6000	0.8000	1.0000	1.0000
<i>LCEM_Record</i>	564	0.3935	0.3353	0.0000	0.0000	0.3333	0.6000	1.0000
<i>BookETR5</i>	564	0.2832	0.1021	0.0286	0.2306	0.3076	0.3622	0.4290
Choice of Auditor Variables:								
<i>Big4Dum</i>	564	0.9521	0.2137	0	1	1	1	1
<i>Ind_Specialist</i>	564	0.1631	0.3698	0	0	0	0	1
<i>TaxAudit06Dum</i>	564	0.8280	0.3777	0	1	1	1	1
<i>TaxFeeRatio</i>	564	0.0862	0.0882	0	0.0104	0.0565	0.1389	0.2871
Analysts' Coverage Variables:								
<i>Number Analysts</i>	564	10.9823	6.6228	0	6	10	15	37
<i>Num_An</i>	564	0.0072	0.0078	0.0005	0.0017	0.0040	0.0100	0.0291

TABLE3 (Continued)

Panel A: Descriptive Statistics (continued)

Variable	N	Mean	Std Dev	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
<i>Corporate Governance Variables:</i>								
<i>BdInd%</i>	564	0.7270	0.1376	0.4545	0.6250	0.7500	0.8516	0.9091
<i>IO%</i>	564	0.8367	0.1289	0.5743	0.7449	0.8497	0.9509	1
<i>StrongGscore</i>	564	0.5745	0.4949	0	0	1	1	1

Panel B: Descriptive Statistics of S&P 1500 versus sample firms

Variable	N	Mean	Std Dev	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
<i>S&P 1500 Firms</i>								
<i>Size</i>	1474	7.9456	1.6730	3.8832	6.7154	7.7475	8.9579	14.4491
<i>PT_ROA</i>	1473	0.1006	0.0839	-0.0273	0.0379	0.0842	0.1523	0.2914
<i>Leverage</i>	1473	0.2241	0.1828	0.0000	0.0608	0.2033	0.3417	0.6220
<i>SG&A</i>	1473	0.2101	0.1914	0.0000	0.0305	0.1707	0.3262	0.6384
<i>MTB</i>	1471	2.9376	1.6591	1.1453	1.7100	2.4542	3.6148	7.4885
<i>Sales_GR</i>	1464	0.1826	0.1702	-0.0358	0.0643	0.1370	0.2635	0.6250
<i>Sample Firms</i>								
<i>Size</i>	564	7.8053	1.4323	4.4414	6.6859	7.6597	8.7009	13.4549
<i>PT_ROA</i>	564	0.1181	0.0826	-0.0232	0.0644	0.1072	0.1629	0.3104
<i>Leverage</i>	564	0.2225	0.1655	0.0000	0.0791	0.2053	0.3412	0.5634
<i>SG&A</i>	564	0.2341	0.1700	0.0086	0.1022	0.2036	0.3243	0.6294
<i>MTB</i>	564	3.1307	1.7528	1.2068	1.8451	2.6506	3.7634	7.9963
<i>Sales_GR</i>	564	0.1942	0.1785	-0.0087	0.0682	0.1398	0.2696	0.6869

See Table 2 for complete definition of variables.

All continuous variables are winsorized at the top and bottom five percent.

TABLE 4
Pearson/Spearman Correlation Matrix

Panel A: Correlations: Unrecognized tax benefits and control variables for firms' discretion over recognizing the benefits of aggressive tax positions and firms' incentives and abilities to engage in aggressive tax positions and tax sheltering.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 <i>UTB</i>		0.92	0.53	0.32	0.33	0.05	0.12	0.02	-0.03	0.22	0.33	0.12	-0.02	0.24	-0.02	0.13
2 <i>UTB_ETR</i>	0.90		0.20	0.29	0.34	-0.01	0.10	0.06	-0.07	0.23	0.34	0.14	-0.06	0.26	-0.03	0.11
3 <i>TempUTB</i>	0.52	0.21		0.25	0.16	0.19	0.14	-0.05	0.07	0.07	0.09	0.00	0.08	0.06	0.00	0.09
4 Δ <i>TotalUTB</i>	0.22	0.20	0.12		0.79	0.56	-0.16	0.00	0.04	0.05	0.09	0.12	0.01	0.05	0.07	-0.06
5 Δ <i>PermUTB</i>	0.22	0.23	0.10	0.89		0.06	-0.15	0.03	-0.04	0.09	0.05	0.09	0.04	0.06	0.04	-0.05
6 Δ <i>TempUTB</i>	0.05	-0.02	0.10	0.40	0.09		-0.05	-0.03	0.10	-0.04	0.10	0.07	-0.02	-0.02	0.10	-0.05
7 <i>Size</i>	0.13	0.10	0.21	-0.17	-0.15	-0.08		-0.01	0.27	0.20	-0.09	-0.36	0.01	0.04	-0.05	0.65
8 <i>PT_ROA</i>	0.04	0.05	-0.03	0.03	0.04	-0.02	-0.03		-0.29	0.04	-0.14	0.05	0.07	0.42	0.33	0.14
9 <i>Leverage</i>	0.00	-0.03	0.09	0.06	0.02	0.05	0.32	-0.30		-0.03	-0.17	-0.19	-0.02	-0.01	-0.02	0.09
10 <i>ForeignDum</i>	0.26	0.30	0.11	0.06	0.08	-0.10	0.19	0.06	-0.02		0.08	0.01	-0.03	0.10	-0.06	0.14
11 <i>R&DexpRatio</i>	0.40	0.42	0.13	0.02	0.02	0.05	-0.06	-0.09	-0.17	0.26		0.25	-0.20	0.08	0.09	-0.11
12 <i>SG&A</i>	0.21	0.23	0.04	0.10	0.09	0.06	-0.38	0.05	-0.21	0.05	0.31		0.06	0.18	-0.12	-0.31
13 <i>CashETR5</i>	-0.02	-0.04	0.08	0.01	0.01	-0.03	0.01	0.05	-0.01	-0.04	-0.21	0.06		-0.02	-0.26	0.02
14 <i>MTB</i>	0.26	0.28	0.10	0.04	0.04	0.04	0.04	0.47	-0.07	0.11	0.18	0.20	-0.04		0.00	0.06
15 <i>Sales_GR</i>	-0.03	-0.06	0.00	0.09	0.08	0.08	-0.06	0.37	-0.08	-0.04	0.06	-0.10	-0.25	0.05		-0.04
16 <i>TaxShelterDum</i>	0.13	0.10	0.15	-0.07	-0.04	-0.02	0.69	0.14	0.11	0.14	-0.04	-0.31	0.01	0.04	-0.04	

TABLE4 (continued)

Panel B: Correlations: *Unrecognized tax benefits and control variables for firms' discretion over recognizing the benefits of aggressive tax positions and variables of interest for financial reporting aggressiveness, auditor choice, analyst coverage and corporate governance.*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	1															
2 <i>UTB</i>		0.92	0.53	0.32	0.33	0.05	-0.18	0.11	0.26	-0.09	-0.05	0.15	-0.04	0.07	-0.04	0.06
3 <i>UTB_ETR</i>	0.90		0.20	0.29	0.34	-0.01	-0.21	0.11	0.24	-0.14	-0.07	0.13	-0.03	0.07	-0.06	0.06
4 <i>TempUTB</i>	0.52	0.21		0.25	0.16	0.19	-0.02	0.05	0.13	0.05	0.04	0.06	-0.07	0.03	-0.03	0.02
5 Δ TotalUTB	0.22	0.20	0.12		0.79	0.56	-0.04	-0.03	0.04	-0.06	0.00	-0.06	0.14	0.00	0.01	-0.03
6 Δ PermUTB	0.22	0.23	0.10	0.89		0.06	-0.02	-0.04	0.00	-0.05	0.00	-0.05	0.11	-0.05	-0.03	-0.02
7 Δ TempUTB	0.05	-0.02	0.10	0.40	0.09		-0.05	-0.01	0.06	-0.04	0.01	-0.04	0.08	0.00	0.05	0.00
8 <i>DA</i>	-0.19	-0.20	-0.03	0.00	-0.01	0.00		-0.11	-0.07	-0.05	0.08	-0.05	-0.20	-0.04	-0.02	-0.05
9 <i>MB_Record</i>	0.15	0.14	0.06	0.01	0.00	0.03	-0.12		0.01	0.03	-0.08	0.05	0.11	0.05	-0.04	-0.01
10 <i>LCEM_Record</i>	0.25	0.24	0.11	-0.05	-0.04	0.06	-0.07	0.04		-0.28	-0.05	0.06	-0.11	0.09	0.07	-0.03
11 <i>BookETR5</i>	-0.19	-0.22	0.02	-0.02	-0.04	0.02	0.01	-0.02	-0.30		0.00	-0.02	0.02	-0.13	0.06	0.01
12 <i>Ind_Specialist</i>	-0.03	-0.04	0.04	0.01	0.02	-0.02	0.09	-0.09	-0.06	0.02		0.05	-0.13	0.04	-0.10	-0.06
13 <i>TaxFeeRatio</i>	0.16	0.18	0.05	-0.07	-0.05	-0.03	-0.07	0.04	0.04	-0.07	0.05		-0.06	0.01	-0.04	0.00
14 <i>Num_An</i>	-0.08	-0.06	-0.15	0.17	0.15	0.10	-0.18	0.06	-0.07	0.10	-0.16	-0.07		-0.07	0.27	0.17
15 <i>BdInd%</i>	0.10	0.12	0.05	-0.03	-0.06	-0.02	-0.06	0.06	0.09	-0.16	0.03	0.03	-0.14		0.09	-0.12
16 <i>IO%</i>	-0.06	-0.08	-0.06	0.01	-0.01	0.03	-0.03	-0.06	0.06	0.08	-0.09	-0.07	0.34	0.06		0.12
<i>StrongGscore</i>	0.05	0.04	0.03	-0.02	-0.01	-0.03	-0.05	-0.01	-0.02	0.03	-0.06	-0.04	0.16	-0.12	0.14	

Panel A shows Pearson (upper diagonal) and Spearman (bottom diagonal) correlation coefficients for uncertain tax benefits and control variables
 Panel B shows Pearson (upper diagonal) and Spearman (bottom diagonal) correlation coefficients for uncertain tax benefits and variables of interest.
 See Table 2 for complete definition of variables.
 All continuous variables are winsorized at the top and bottom five percent.
 Bolded correlations are significant at the 0.05 level.

TABLE 5
Coefficients and t-Statistics for OLS Regression Results of Model 1

		Dependent Variable:					
		UTB		PermUTB		TempUTB	
Expectation		Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
<i>Intercept</i>	?	-0.0146 ### (-2.86)	-0.0188 ### (-2.28)	-0.0128 ### (-2.89)	-0.0129 # (-1.92)	-0.0030 (-1.55)	-0.0061 ## (-2.02)
Δ UTB	?	1.0887 ### (6.37)	1.1300 ### (6.69)	1.4965 ### (7.50)	1.5279 ### (7.70)	0.65447 ### (3.34)	0.65589 ### (3.42)
<i>Size</i>	+	0.0016 *** (3.17)	0.0012 ** (2.04)	0.0014 *** (2.96)	0.0008 * (1.59)	0.0005 ** (2.04)	0.0005 ** (2.01)
<i>PT_ROA</i>	+	-0.0006 (-0.07)	0.0059 (0.60)	0.0055 (0.69)	0.0125 * (1.47)	-0.0023 (-0.65)	-0.0031 (-0.78)
<i>Leverage</i>	?	0.0000 (0.01)	-0.0021 (-0.54)	0.0001 (0.02)	-0.0014 (-0.44)	0.0012 (0.83)	0.0009 (0.66)
<i>ForeignDum</i>	+	0.0024 ** (1.89)	0.0025 ** (1.90)	0.0024 ** (2.28)	0.0025 ** (2.27)	-0.0001 (-0.24)	0.0000 (-0.06)
<i>R&DexpRatio</i>	+	0.0420 *** (3.19)	0.0338 *** (2.43)	0.0453 *** (4.09)	0.0400 *** (3.34)	-0.0007 (-0.15)	-0.0038 (-0.74)
<i>SG&A</i>	+	0.0062 ** (1.70)	0.0068 ** (1.82)	0.0047 * (1.52)	0.005 * (1.57)	0.0015 (1.02)	0.00143 (0.94)
<i>CashETR5</i>	-	0.0036 (0.64)	0.0029 (0.47)	-0.0029 (-0.62)	-0.0014 (-0.27)	0.0047 (2.22)	0.0032 (1.45)
<i>MTB</i>	+	0.0013 *** (3.68)	0.0011 *** (3.07)	0.0011 *** (3.66)	0.0009 *** (2.92)	0.0001 (0.68)	0.0001 (0.57)
<i>Sales_GR</i>	-	-0.0001 (-0.033)	-0.0006 (-0.15)	-0.0024 (-0.76)	-0.0019 (-0.60)	0.0015 (1.11)	0.0011 (0.79)
<i>TaxShelterDum</i>	+	0.0035 *** (2.38)	0.0032 ** (2.23)	0.0023 ** (1.84)	0.0021 ** (1.73)	0.0008 * (1.33)	0.0008 (1.22)
<i>DA</i>	+		-0.0009 (-0.35)		-0.0021 (-0.92)		0.0001 (0.13)
<i>MB_Record</i>	+		-0.0001 (-0.04)		0.0001 (0.05)		-0.0002 (-0.23)
<i>LCEM_Record</i>	+		0.0055 *** (3.27)		0.0045 *** (3.19)		0.0013 ** (1.86)
<i>BookETR5</i>	+		0.0032 (0.46)		-0.0031 (-0.52)		0.0051 ** (2.08)
<i>Ind_Specialist</i>	?		-0.0013 (-0.89)		-0.0016 (-1.34)		0.0004 (0.57)
<i>TaxFeeRatio</i>	+		0.0121 ** (1.93)		0.0083 * (1.55)		0.0013 (0.54)
<i>Num_An</i>	-		-0.1486 * (-1.44)		-0.1771 ** (-2.03)		0.0330 (0.83)
<i>BdInd%</i>	?		-0.0004 (-0.11)		0.0000 (0.00)		0.0005 (0.31)
<i>IO%</i>	?		0.0037 (0.87)		0.0021 (0.61)		0.0003 (0.15)
<i>StrongGscore</i>	?		0.00178 # (1.89)		0.0011 (1.38)		0.0004 (1.00)
Number of Obs.		564	564	564	564	564	564
Adj R-Sq		29.63%	31.61%	30.69%	32.76%	8.92%	8.85%

TABLE 5 (continued)

***, **, and * indicate p-values less than 0.01, 0.05, and 0.10, respectively, one tailed.

###, ##, and # indicate p-values less than 0.01, 0.05, and 0.10, respectively, two tailed.

t-Statistics with White's heteroskedasticity-corrected standard error are reported in parentheses.

Fixed effects for 2-digit SIC codes are included in the regressions; however, they are not tabulated.

See Table 2 for complete definition of variables.

All continuous variables are windsorized at the top and bottom five percent.

TABLE 6
Coefficients and t-Statistics for OLS Regression Results of Model 1,
when sample is separated by the type of ΔUTB at FIN 48 adoption

<i>Dependent Variable: UTB</i>		<i>ΔUTB variable used: $\Delta TotalUTB$</i>				
		Full Sample	$\Delta UTB = 0$	$\Delta UTB \neq 0$	Pos. ΔUTB	Neg. ΔUTB
Expectation		<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>
<i>Intercept</i>	?	-0.0188 ### (-2.28)	-0.0300 (-1.64)	-0.0137 (-1.43)	-0.0241 ## (-2.18)	-0.0070 (-0.25)
<i>$\Delta TotalUTB$</i>	?	1.1300 ### (6.69)		1.0596 ### (5.92)	1.4616 ### (7.51)	-2.308 (-1.32)
<i>Size</i>	+	0.0012 ** (2.04)	0.0024 ** (1.88)	0.0008 (1.07)	0.00042 (0.51)	0.0020 (1.11)
<i>PT_ROA</i>	+	0.0059 (0.60)	0.00062 (0.03)	0.0081 (0.61)	0.00719 (0.52)	-0.0285 (-0.50)
<i>Leverage</i>	?	-0.0021 (-0.54)	-0.0067 (-1.04)	-0.0026 (-0.50)	-0.0036 (-0.63)	-0.0021 (-0.16)
<i>ForeignDum</i>	+	0.0025 ** (1.90)	0.00261 (0.83)	0.0030 ** (1.79)	0.00378 ** (1.94)	0.0003 (0.08)
<i>R&DexpRatio</i>	+	0.0338 *** (2.43)	0.02042 (0.76)	0.0395 ** (2.27)	0.01922 (0.91)	0.0327 (0.69)
<i>SG&A</i>	+	0.0068 ** (1.82)	0.01261 * (1.33)	0.0027 (0.56)	0.00552 (0.92)	-0.0033 (-0.30)
<i>CashETR5</i>	-	0.0029 (0.47)	0.00786 (0.63)	-0.0005 (-0.06)	0.00417 (0.45)	0.0036 (0.17)
<i>MTB</i>	+	0.0011 *** (3.07)	0.00121 (1.18)	0.0013 *** (2.87)	0.0012 *** (2.36)	0.0017 (1.21)
<i>Sales_GR</i>	-	-0.0006 (-0.15)	0.01461 (1.67)	-0.0082 ** (-1.99)	-0.0096 *** (-2.59)	-0.0083 (-0.61)
<i>TaxShelterDum</i>	+	0.0032 ** (2.23)	0.0020 (0.82)	0.00254 * (1.29)	0.00509 *** (2.38)	-0.0054 (-0.96)
<i>DA</i>	+	-0.0009 (-0.35)	0.0000 (0.00)	-0.001 (-0.44)	-0.0033 (-0.97)	0.001 (0.11)
<i>MB_Record</i>	+	-0.0001 (-0.04)	-0.0022 (-0.37)	0.0008 (0.27)	0.0010 (0.30)	0.0091 (1.34)
<i>LCEM_Record</i>	+	0.0055 *** (3.27)	0.0054 (1.26)	0.006 *** (2.90)	0.0058 ** (2.27)	0.002 (0.38)
<i>BookETR5</i>	+	0.0032 (0.46)	-0.0162 (-1.15)	0.0137 ** (1.56)	0.0149 ** (1.69)	0.0080 (0.42)
<i>Ind_Specialist</i>	?	-0.0013 (-0.89)	-0.0004 (-0.14)	-0.0005 (-0.26)	-0.0009 (-0.44)	0.0030 (0.73)
<i>TaxFeeRatio</i>	+	0.0121 ** (1.93)	0.0025 (0.17)	0.0082 (1.11)	0.0128 * (1.62)	0.0015 (0.08)
<i>Num_An</i>	-	-0.1486 * (-1.44)	-0.0670 (-0.31)	-0.1667 * (-1.35)	-0.0785 (-0.57)	0.0694 (0.17)
<i>BdInd%</i>	?	-0.0004 (-0.11)	-0.0076 (-0.82)	0.0008 (0.17)	0.0005 (0.09)	0.0049 (0.34)
<i>IO%</i>	?	0.0037 (0.87)	0.0081 (0.90)	0.0056 (1.09)	0.0087 (1.44)	-0.0098 (-0.62)
<i>StrongGscore</i>	?	0.0018 # (1.89)	0.00367 # (1.82)	0.0010 (0.81)	0.00061 (0.44)	0.0026 (0.88)
Number of Obs.		564	168	396	281	115
Adj R-Sq		31.61%	18.87%	29.36%	39.29%	20.07%

TABLE 6 (continued)

***, **, and * indicate p-values less than 0.01, 0.05, and 0.10, respectively, one tailed.

###, ##, and # indicate p-values less than 0.01, 0.05, and 0.10, respectively, two tailed.

t-Statistics with White's heteroskedasticity-corrected standard error are reported in parentheses.

Fixed effects for 2-digit SIC codes are included in the regressions; however, they are not tabulated.

See Table 2 for complete definition of variables.

All continuous variables are winsorized at the top and bottom five percent.

TABLE 7
Coefficients and t-Statistics OLS Regression Results of Model 1,
when sample is separated by the type of ΔUTB at FIN 48 adoption

<i>Dependent Variable: PermUTB</i>		<i>ΔUTB variable used: $\Delta PermUTB$</i>				
Expectation	Full Sample	$\Delta UTB = 0$	$\Delta UTB \neq 0$	Pos. ΔUTB	Neg. ΔUTB	
	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>	<i>Column 4</i>	<i>Column 5</i>	
<i>Intercept</i> ?	-0.0129 # (-1.92)	-0.0204 (-1.37)	-0.0086 (-1.06)	-0.0221 ### (-2.67)	0.0105 (0.46)	
$\Delta PermUTB$?	1.5279 ### (7.70)		1.4961 ### (7.23)	2.1264 ### (9.24)	-2.0405 (-1.03)	
<i>Size</i> +	0.0008 * (1.59)	0.0018 ** (1.66)	0.0004 (0.58)	0.00052 (0.76)	0.0011 (0.65)	
<i>PT_ROA</i> +	0.0125 * (1.47)	0.00299 (0.17)	0.0154 (1.37)	0.01509 * (1.31)	-0.0267 (-0.57)	
<i>Leverage</i> ?	-0.0014 (-0.44)	-0.007 (-1.48)	-0.0007 (-0.15)	0.00188 (0.38)	-0.0138 (-1.27)	
<i>ForeignDum</i> +	0.0025 ** (2.27)	0.0023 (0.88)	0.0030 ** (2.12)	0.00296 ** (1.96)	0.0038 (1.14)	
<i>R&DexpRatio</i> +	0.0400 *** (3.34)	0.02665 (1.10)	0.0451 *** (3.17)	0.03015 ** (1.74)	0.0562 * (1.54)	
<i>SG&A</i> +	0.0050 * (1.57)	0.01236 * (1.55)	0.0015 (0.37)	0.00567 (1.17)	-0.0106 (-1.04)	
<i>CashETR5</i> -	-0.0014 (-0.27)	0.00124 (0.12)	-0.0035 (-0.48)	-0.0061 (-0.84)	0.0035 (0.18)	
<i>MTB</i> +	0.0009 *** (2.92)	0.00147 ** (1.77)	0.0010 *** (2.58)	0.0009 ** (2.09)	0.0009 (0.84)	
<i>Sales_GR</i> -	-0.0019 (-0.60)	0.0104 (1.50)	-0.0083 *** (-2.41)	-0.0095 *** (-2.98)	-0.0089 (-0.70)	
<i>TaxShelterDum</i> +	0.0021 ** (1.73)	0.0023 (1.11)	0.0017 (1.03)	0.00309 ** (1.74)	-0.005 (-1.17)	
<i>DA</i> +	-0.0021 (-0.92)	0.0020 (0.37)	-0.003 (-1.14)	-0.0026 (-0.87)	-0.007 (-0.97)	
<i>MB_Record</i> +	0.0001 (0.05)	0.0001 (0.01)	0.0001 (0.03)	0.0007 (0.23)	0.0072 * (1.34)	
<i>LCEM_Record</i> +	0.0045 *** (3.19)	0.0050 (1.39)	0.004 *** (2.41)	0.0050 *** (2.34)	0.001 (0.17)	
<i>BookETR5</i> +	-0.0031 (-0.52)	-0.0201 (-1.81)	0.0055 (0.70)	0.0152 ** (2.23)	-0.0033 (-0.19)	
<i>Ind_Specialist</i> ?	-0.0016 (-1.34)	-0.0004 (-0.18)	-0.0016 (-1.04)	-0.0012 (-0.72)	0.0010 (0.27)	
<i>TaxFeeRatio</i> +	0.0083 * (1.55)	0.0067 (0.56)	0.0058 (0.90)	0.0085 (1.23)	0.0130 (0.88)	
<i>Num_An</i> -	-0.1771 ** (-2.03)	-0.1134 (-0.62)	-0.2215 ** (-2.09)	-0.0856 (-0.75)	0.0847 (0.22)	
<i>BdInd%</i> ?	0.0000 (0.00)	-0.0061 (-0.80)	0.0011 (0.26)	0.0000 (0.00)	-0.0065 (-0.53)	
<i>IO%</i> ?	0.0021 (0.61)	0.0054 (0.72)	0.0024 (0.58)	0.0077 (1.57)	-0.0170 (-1.42)	
<i>StrongGscore</i> ?	0.0011 (1.38)	0.0029 # (1.71)	0.0004 (0.36)	-0.0001 (-0.10)	0.0019 (0.72)	
Number of Obs.	564	172	392	283	109	
Adj R-Sq	32.76%	20.87%	30.87%	43.68%	18.86%	

TABLE 7 (continued)

***, **, and * indicate p-values less than 0.01, 0.05, and 0.10, respectively, one tailed.

###, ##, and # indicate p-values less than 0.01, 0.05, and 0.10, respectively, two tailed.

t-Statistics with White's heteroskedasticity-corrected standard error are reported in parentheses.

Fixed effects for 2-digit SIC codes are included in the regressions; however, they are not tabulated.

See Table 2 for complete definition of variables.

All continuous variables are winsorized at the top and bottom five percent.

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