INVESTING IN THE CORPORATE TAX FUNCTION: THE EFFECTS OF REMEDIATING MATERIAL WEAKNESSES IN INTERNAL CONTROL ON TAX AVOIDANCE

By

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A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

Business Administration – Doctor of Philosophy

2014

ABSTRACT

INVESTING IN THE CORPORATE TAX FUNCTION: THE EFFECTS OF REMEDIATING MATERIAL WEAKNESSES IN INTERNAL CONTROL ON TAX AVOIDANCE

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This study investigates the effect of increases in firm-level investments in the corporate tax function to address financial reporting concerns on the magnitude and timing of firm's tax avoidance. I exploit the novel setting of the remediation of tax-related material weaknesses in internal control (MWs) as a shock that motivates firms to increase investments in the corporate tax function. I examine the impact of increases in these investments on the magnitude and timing of future payoffs in the form of increased tax avoidance. I find no evidence of increases in tax function investments contemporaneously impacting tax avoidance. However, I do find that investments in the income tax function are associated with greater levels of future tax avoidance. Specifically, I find firms making investments in year *t* have 4-8 percentage point lower 3-year cash and GAAP effective tax rates (ETR) measured at time *t+1* to *t+3* compared to their industry peers. Descriptive results suggest the primary drivers of this increase in future tax avoidance are lower foreign and state tax expense. I also hand-collect internal control disclosures to investigate how firms remediate tax-related MWs. The results suggest the most common types of investments are in outside consulting and new personnel, including hiring a new tax director. I find that both external and internal tax function investments are positively associated with future tax avoidance, with no differential impact on future ETRs. Results also indicate that risk, complexity, and a lack of resources are predictors of engaging an external service provider. These results demonstrate the magnitude and timing lag of payoffs on tax function investments

and illustrate how strengthening internal controls can improve firm performance via increased tax avoidance.

ACKNOWLEDGMENTS

This dissertation has been the culmination of a five year journey at Michigan State University. There have been many people who have worked so hard to train and support me throughout this process. I want to thank my dissertation chair and advisor Professor Sanjay Gupta, who provided the continuous support and guidance that I needed throughout the Ph.D. program. He challenged me to be the best academic I can be, and I am forever grateful for his trust, support and guidance. In addition to Sanjay, I am very fortunate and thankful to have Professors Ed Outslay and Kathy Petroni serving on my dissertation committee. Their comments and guidance throughout the various stages of the PhD program and especially the dissertation process were invaluable. Furthermore, I appreciate how they took interest in my career at an early stage and appreciate having been able to work with them in co-authored projects. I am also thankful to Professor Charlie Hadlock from the finance department for serving on my committee and providing feedback and thoughtful outside perspective that greatly benefited this dissertation.

I want to thank several special people who have had a major impact on my academic career. First, Professor Charlie Bokemeier for inspiring me to become an accounting major as an undergraduate at MSU and for shaping me as teacher. I will be forever indebted to him for allowing me to serve as a student assistant in his course and encouraging me to pursue my PhD. I want to thank my parents, Alfred and Bozena Lynch, for instilling in me at an early age a strong work ethic and a passion for school. They are two of the hardest working people I know, and I am so grateful to them for everything they have done for me.

Last, but certainly not least, I want to thank my wonderful wife Laura and our daughter Eleonora. Laura was the first person to suggest that I return to school and pursue a PhD. I am eternally grateful for her recognizing that academia would be a great fit for me. She has been so supportive and was always there during the stressful times even while pursuing and completing her own PhD program. I appreciate all of the dinner table conversations about statistical analyses and look forward to the many conversations to come. I am especially thankful for our daughter Elli who was born during the program, and forever changed my outlook on life and my perspective of what truly matters. I am so lucky to have so many amazing people in my life, and I look forward to a long and prosperous career in the years to come.

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CHAPTER 1: INTRODUCTION

The Internal Revenue Service (IRS) estimates that corporate taxpayers spend over $25 billion dollars annually to prepare and file federal corporate income tax returns (Contos et al. 2012). In addition, firms face costs related to tax filings in foreign and state jurisdictions, tax planning, and complying with financial reporting requirements related to the income tax provision. I define the sum of all internal and external firm resources devoted to these activities (i.e., preparation, filing, compliance, planning, and financial reporting) as a firm's investment in the corporate tax function. Despite the magnitude of these investments and the materiality of income tax expense for most companies, we know surprisingly little about how they influence tax avoidance behavior.

I use a novel setting in which I observe a firm's investment in its tax function made to address a financial reporting concern to examine the impact of *increases* in these investments on both the magnitude and timing of future payoffs in the form of increased tax avoidance. Specifically, I exploit disclosures about the remediation of tax-related material weaknesses in internal control (MW) under the Sarbanes Oxley Act of 2002 (SOX) as a setting in which firms increase investments in the corporate tax function. Hand-collected tax-related MW remediation disclosures provide information on the specific types of investments being made (e.g., hiring new personnel/tax director, engaging an outside consultant, and changing procedures). Similar to research using the SOX-mandated disclosures to directly test the causal link between financial reporting quality and investment efficiency (Cheng et al. 2013), I use the disclosure of a tax-related MW and its subsequent remediation as a strong setting to test the effects of increases in investments in the tax function on tax avoidance. Additionally, using data on the different types

of investments being made, I investigate why firms engage an external service provider versus investing internally and examine the impact of this choice on tax avoidance.

Because a primary goal of internal control is to provide assurance regarding the effectiveness of operations (COSO 2011), a firm's disclosure of a tax-related MW is indicative of insufficient internal control systems in place to provide assurance about the effectiveness of the tax function, which is often evaluated on its ability to avoid taxes (Armstrong et al. 2012). Due to the complexity of the tax accounts and some firms' apparent lack of resources/expertise in the area, tax-related MWs are the most common type of MW disclosed (Deloitte 2011).[1] Remediation of tax-related MWs therefore requires a firm to make an investment in the tax function if it chooses to address the disclosed MW. Thus, I use the remediation of tax-related MWs as a setting in which firms increase their tax function investment to provide evidence on the how these investments impact tax avoidance. Additionally, by examining the impact of the remediation of MWs on tax avoidance I add to literature examining the impact of internal control improvements due to SOX on firm performance (Feng et al. 2013; Cheng et al. 2013).

Bauer (2013) finds the *disclosure* of a tax-related MW is negatively associated with the level of contemporaneous and prior tax avoidance. This result is consistent with deficiencies in tax-related internal controls indicating reduced tax function effectiveness and suggests investments in the corporate tax function to remediate MWs could increase tax avoidance. Further, because it is likely that these investments go beyond simply addressing internal control deficiencies related to accounting for income taxes, I hypothesize a spillover effect of these investments onto a firm's tax avoidance activities. Specifically, I conjecture that the improved information environment following a tax function investment to address internal control issues

[1]Additionally, SOX independence rules led many firms to disclose a tax-related MW due to their reliance on their independent auditor for tax provision services. http://www.nysscpa.org/printversions/cpaj/2006/706/p38.htm

will facilitate greater tax planning. However, such investments might not yield tax avoidance benefits if the remediation of a tax-related MW simply corrects issues related to the financial reporting of the income tax provision. Additionally, given the complex nature of most tax planning, investments in the income tax function may not allow a firm to contemporaneously realize the benefits of a tax planning spillover effect.

Financial statement disclosures indicate that the most common types of tax function investments are engaging an external advisor (58.1%), hiring additional internal personnel (55.2%), and hiring a new tax director (34.3%). These disclosures suggest the majority of remediation investments go beyond simply changing procedures to address accounting for the income tax issue(s) that led to the disclosed tax-related MW, supporting a spillover effect onto tax avoidance. However, because it could take time for new consultants, personnel, and tax directors to learn the business and correct internal control issues before being able to increase tax avoidance, these investments likely will not yield an immediate payoff. I therefore predict that any tax avoidance benefits lag tax function investments.

Prior literature documents a positive association between the level of tax planning expenditures and tax avoidance (Mills et al. 1998; Omer et al. 2006).[2] Additionally, Cheng et al. (2012) examine the impact of hedge fund activism, which presumably is accompanied by an increased tax function investment, on corporate tax avoidance. The results suggest increases in hedge fund ownership are positively associated with contemporaneous tax avoidance. Although I cannot directly observe tax function expenditures, I use the disclosure of a tax-related MW and subsequent remediation as a shock that provides an observable setting in which to test the effects

[2] Mills et al. (1998) uses survey data from 1991 on the level of tax planning expenditures to examine the association with effective tax rates. Omer et al. (2006) uses the level of purchased auditor provided tax services at time t as a proxy for tax planning expenditures to examine the impact on effective/marginal tax rates at time t+1.

of increases in investments in the tax function on tax avoidance. Hand-collected tax-related MW remediation disclosures provide information on the specific types of tax function investments (e.g., hiring a tax director, engaging an outside consultant, and changing procedures). By using data on the different types of investments being made, I also investigate the impact of external investments versus internal investments on tax avoidance and the determinants of external investments.

To account for the specialized setting of the tax function investments examined in this study (i.e., the remediation of a tax-related MW) and to control for industry, year, firm size, and other characteristics that impact the opportunities to engage in tax avoidance, I measure tax avoidance using mean-adjusted cash and GAAP effective tax rates (ETR) (Balakrishnan et al. 2012). These relative measures allow for a comparison of each firm's ETR to its year and size-adjusted industry mean to examine the effects of investments in the tax function on how a firm's tax avoidance compares to its competitors. I define these tax avoidance measures as each firm's relative ETR.

The results using a sample of 105 firm-year observations remediating tax-related MW and over 7,000 control firm-years during the period 2005- 2009, and after controlling for the presence of other types of MWs and their remediation, indicate tax function investments in year t are negatively associated with 3-year relative ETRs measured from time t+1 to t+3. Specifically, firms that invest in the corporate income tax function in year t have 3-year future cash (GAAP) ETRs that are 8.1 percentage points (4.3 percentage points) lower than their industry peers. Additional analyses suggest that this result implies a decrease of between $43.4 and $104.2 million in cash taxes paid (between $29.0 and $57.9 million in total tax expense) over the three

year period.[3] In contrast, I find no evidence that tax function investments in year t are associated with contemporaneous tax avoidance.

I also hand-collect MD&A and tax footnote data for firms with the largest increases in future tax avoidance to investigate how firms increase their tax avoidance subsequent to remediating a tax-related MW.[4] Results suggest the largest increases in tax avoidance following a tax function investment are associated with the use of foreign (58%) and state (29%) tax planning strategies. Other disclosed factors include changes in tax accruals, increased research and development credits, and tax-advantaged mergers and acquisitions.[5] These descriptive statistics suggest firms engage in more sophisticated tax planning strategies following an increased investment in the corporate tax function.

I also document a positive association between both external and internal tax function investments and future tax avoidance. Additionally, I find no evidence of differential tax avoidance payoffs on external versus internal tax function investments. Finally, results for the determinants of external tax function investments suggest resource constraints and risk/complexity are positively associated with the decision to engage an external service provider.

To address sample selection and endogeneity concerns related to the type of firm that discloses and remediates tax-related MWs, I employ several alternative research design

[3] Prior literature estimates the costs of complying with SOX to be 0.06% of revenues (Jeffrey and Lourens 2008). Mean revenues of $1.75 billion in the tax function investment sample indicates total SOX compliance costs of $1.05 million, on average. Although I cannot estimate a return on investment as most firms do not disclose the dollar amount spent on remediation of MWs, the coefficient estimates imply economically significant returns in comparison to SOX compliance costs.

[4] Specifically, I examine the top quintile of cash ETR changes following a tax function investment (n = 24).

[5] I examine the discussion of the GAAP ETR in the MD&A and tax footnotes for the three years following an increase in a tax function investment for explanations of why the GAAP ETR decreased during that period and then code (1/0 indicator) for the disclosure of certain reasons (e.g., lower foreign tax expense due to a better geographic mix of income).

approaches. First, I confirm the results using a matched sample design. Second, I employ simulation analyses to randomly assign the tax function investment indicator variable to alternative years of firms that have a MW during my sample period. The results using this simulation test suggest my primary findings are not driven by chance or other characteristics of firms that disclose a MW. Finally, I use various sub-samples of firms including: 1) large firms (S&P 1500), 2) firms that disclose any MW at some point in the sample period, 3) firms that disclose only a tax-related MW at some point in the sample period, and 4) firms that disclose and remediate a tax-related MW at some point in the sample period. Results are qualitatively similar using these sub-samples, reinforcing the main results that increases in tax function investments are associated with higher future tax avoidance. These alternative sub-sample specifications help alleviate concerns that the results are driven by characteristics unique to firms that disclose MWs or a time trend in tax avoidance

Research surrounding the implementation of SOX suggests that disclosing MWs provides information about prior firm actions and is positively associated with poor accounting quality (Ashbaugh-Skaife et al. 2008), restatements (Doyle et al. 2007a; Ashbaugh-Skaife et al. 2007), audit delays (Ettredge et al. 2006), and rent extraction (Skaife et al. 2013). Recent literature suggests that the remediation of MWs not only improves financial reporting quality (Ashbaugh-Skaife et al. 2008), but also increases firm performance by improving inventory management (Feng et al. 2013) and investment efficiency (Cheng et al. 2013). By examining tax avoidance following remediation of tax-related MWs, I provide evidence on how improvements in internal control under SOX can improve firm performance via increased tax avoidance.

This study also contributes to our understanding of the magnitude and timing of tax avoidance payoffs on tax function investments. By documenting an economically significant

future payoff on investments in the income tax function, I provide insights for managers and practitioners regarding tax function investment decisions. Omer et al. (2006) find that the positive association between investments in auditor-provided tax services and tax avoidance is mitigated following the passage of SOX. In contrast, I document significant future tax avoidance payoffs on tax function investments during the post-SOX era illustrating that certain firms are able to realize tax avoidance payoffs on their investments during this time period.

The remainder of the study is organized as follows. Chapter 2 provides a discussion of related literature and develops the hypotheses. Chapter 3 discusses the research design and sample selection. Chapter 4 presents the empirical results of the main analysis. Chapter 5 provides the results of additional analyses and sensitivity tests to provide further perspective about the main findings reported in Chapter 4. Chapter 6 provides concluding remarks about the dissertation.

CHAPTER 2: LITERATURE REVIEW AND HYPOTHESES

I begin this chapter by discussing the literature that explores the consequences of the disclosure and remediation of internal control weaknesses. I follow this by examining the literature on tax avoidance determinants. I then discuss the prior literature on the impact of investments in the tax function on tax avoidance. Finally, I review the literature on the determinants of outsourcing and how these studies apply to the decision regarding the outsourcing of tax function investments.

2.1. Disclosure and Remediation of Internal Control Weaknesses

Following the corporate accounting failures of Enron and WorldCom, Congress enacted SOX in 2002 with the goal of protecting investors through multiple internal control and financial reporting requirements, as well as establishing the Public Company Accounting Oversight Board (PCAOB) (SOX: Section 101). SOX requires firms' management (Section 404(a)) and auditors (Section 404(b)) subject to its provisions to annually test internal controls over financial reporting, report on control effectiveness, and disclose any unremediated MW at year-end in the annual financial report (10-K).[6]

An extensive literature examines the consequences of the disclosure of internal control weaknesses under SOX. Beneish et al. (2008) and Hammersley et al. (2008) document a negative market reaction to the initial disclosure of internal control weaknesses (ICWs) under Section

[6] Section 302 of SOX requires quarterly reporting by management of accelerated filers on the effectiveness of financial reporting controls. In this study I focus on only Section 404(b) disclosed MWs and their remediation because the dependent variable of interest is tax avoidance measured on an annual basis due to quarterly data limitations.

302, suggesting these disclosures contain value-relevant information.[7] ICWs also are associated with lower accruals quality (Ashbaugh-Skaife et al. 2008; Doyle et al. 2007b), restatements (Ashbaugh-Skaife et al. 2007), less accurate management forecasts (Feng et al. 2009) and earnings management (Chan et al. 2008; Gleason et al. 2013). Additional consequences include increased audit fees (Hogan and Wilkins 2008; Hoag and Hollingsworth 2011); auditor changes (Ettredge et al. 2011); financial reporting lags (Ettredge et al. 2006), credit rating downgrades (Dhaliwal et al. 2011) and an increased cost of equity (Ashbaugh-Skaife et al. 2009). Several shareholder lawsuits also have been triggered by the disclosure of an ICW.[8] Overall, these results suggest that the disclosure of an ICW has significant economic consequences to a firm.

Regulators claim that the presence of ICWs reduces investor confidence in reported financial results and that the remediation of such weaknesses will lead to improved financial reporting quality (Niemeier 2004; Countryman 2005; Pickard 2005). Hamerserley et al. (2012) document that firms that do not remediate ICWs pay higher audit fees, have a greater likelihood of an adverse audit opinion, experience filing delays, and incur higher interest rates, suggesting there are economic consequences to not remediating ICWs. Additionally, evidence suggests the remediation of ICWs, in general, is associated with improved accounting quality (Ashbaugh-Skaife et al. 2008), a reduction in the cost of equity capital (Ashbaugh-Skaife et al. 2009), and improved investment efficiency (Cheng et al. 2013). Taken together, the results on the

[7] Prior studies define ICWs as any MW disclosed under Section 404, Section 302 of SOX, significant deficiencies, other control weaknesses or some subset of these categories. I use the term ICW to describe internal control issues examined by these studies. I use the term MW only for annually disclosed MW under Section 404 of SOX.
[8] See http://news.cnet.com/8301-1023_3-57411560-93/new-shareholder-lawsuit-targets-groupon-execs/ for a discussion of Groupon Inc.'s disclosed ICW leading to a shareholder lawsuit. Also, see http://www3.cfo.com/article.cfm/3396587/c_2984303/ for a more general discussion.

consequences of remediating versus not remediating ICWs suggest that firms have an economic incentive to remediate.[9]

Literature examining the consequences of remediating specific types of ICWs is less prevalent. With the exception of classifying ICWs based on severity and account-level versus entity-level issues, this research tends to focus on all ICWs rather than on specific account types of ICWs (Bedard et al. 2011).[10] An exception is Feng et al. (2013), who find that the remediation of inventory-related MWs is positively associated with improved gross margin, sales, and inventory turnover. These results suggest that investments to remediate MWs go beyond addressing financial reporting quality and have a spillover effect on firm performance.

Initial disclosures under SOX show tax-related issues are the most common source of MWs.[11] Although the number of disclosed MWs has recently declined, tax-related issues continue to be the leading cause of MW disclosures (Deloitte 2011). Gleason et al. (2013) find that the disclosure (remediation) of tax-related ICWs is positively (negatively) associated with upward earnings management via the tax expense account. These results suggest that investments to remediate tax-related MWs constrain management's ability to use the tax expense account to meet earnings targets.

[9] I acknowledge that a firm has an incentive to remediate ICWs only to the extent the benefits of remediating exceed the costs of taking such actions. Literature on the decision to remediate ICWs suggests that firms with enhanced corporate governance (Goh 2009; Johnstone et al. 2011), stronger CFOs (Li et al. 2010) or CFOs with public accounting experience are more likely to remediate. In addition, firms are less likely to remediate when the weakness disclosed is at the entity-level and when firm-level operations are more complex (Jonas 2005; Hammersley et al. 2012).

[10] Entity-level weaknesses are the most severe type of MW and relate to the overall control environment (Hammersley et al. 2012). For a MW to be classified as an entity-level weakness it must include a weakness in one or more of the five components of the COSO control framework. The five components are control environment, risk assessment, control activities, information and communication, and monitoring (COSO 1994).

[11] Approximately one third of the initial MW disclosures for 2004 listed tax as a contributing factor http://www.cfo.com/article.cfm/5077959 . Also, see Ge and McVay (2005) for statistics on the number of initial disclosed weaknesses that are tax-related.

Bedard and Graham (2011) use a proprietary dataset of internal control disclosures (including significant deficiencies and MWs) and find that resource constraints are associated with the disclosure of tax-related ICWs. Additionally, Bauer (2013) finds that the disclosure of tax-related MWs can be predicted by lower levels of tax avoidance. This result is consistent with firms that disclose a tax-related MW choosing not to invest significant resources into their income tax function. I build on this prior literature by examining the association between the remediation of tax-related MWs and both current and future tax avoidance. Additionally, I examine how firms increase future tax avoidance and whether payoffs (in terms of increases in future tax avoidance) on external investments are greater than those on internal investments.

2.2. Tax Avoidance Determinants

Tax avoidance can be defined as the reduction of all explicit taxes (Hanlon and Heitzman 2010). Tax avoidance is a broad term that captures activities that range from low-risk tax planning such as investing in tax-free municipal bonds or depreciating assets, to more aggressive activities such as tax sheltering or even tax evasion (Dyreng et al. 2008). Research in accounting and economics has documented a large array of firm characteristics that are associated with corporate tax avoidance (Gupta and Newberry 1997). For example, leverage, profitability, size, capital expenditures, research and development expenditures and foreign operations are documented determinants of tax avoidance (Gupta and Newberry 1997; Rego 2003).

Ownership structure is another important determinant of tax avoidance. Chen et al. (2010) find that concentrated ownership in family firms leads to reduced tax avoidance presumably to avoid negative reputation effects and suspicions of rent extraction via the tax accounts. Khurana and Moser (2011) document a positive association between short term

institutional ownership and corporate tax avoidance. Finally, Cheng et al. (2012) find that an increase in ownership by activist hedge funds is associated with increased tax avoidance.

2.3. Investments in the Tax Function

Prior literature examining the impact of investments in the tax function on tax avoidance is sparse and typically focuses on tax planning investments. The most common proxy for tax planning investments is the purchase of auditor-provided tax services (APTS). Using this proxy, Omer et al. (2006) document an association between the level of APTS in year t and reductions in ETRs in year t+1 prior to SOX. Additionally, APTS are correlated with decreases in ETRs from the third to fourth quarter (Cook et al. 2008).[12] Finally, Donohoe and Knechel (2013) find that prior to FIN 48, the provision of APTS reduces the documented audit fee premium for tax aggressive firms.

One exception to using APTS as a proxy for tax planning investments is Mills et al. (1998). Based on confidential survey data on the level of tax department expenditures during 1991 for a sample of large firms, the authors find a significant positive association between these expenditures and the level of tax avoidance measured as the 3-year GAAP ETR for the years 1990-1992. These results suggest that for every $1 spent on tax planning (internal and external payments combined) a firm can expect a $4 reduction in federal tax liabilities.[13] Importantly, due to the single year of data, the authors are unable to completely rule out potential correlated omitted variables or generalize their results to alternative time periods and tax regimes.

[12] In a multivariate framework, auditor-provided tax services are only associated with third to fourth quarter decreases in ETRs when interacted with an indicator variable for whether the firm would have met the consensus forecasts absent the decrease in ETR. This is consistent with earnings management incentives playing a role.
[13] Using the same data set Gupta and Mills (2002) document a $160 reduction in state tax liabilities for each additional dollar spent on tax planning.

Additionally, Mills et al. (1998) cannot examine the timing of returns on these expenditures, because they lack a time series of tax planning expenditures and thus cannot identify changes in such expenditures.

Another exception to using the APTS for an investment in the tax function is Cheng et al. (2012). In this study the authors examine the impact of hedge fund activism on corporate tax avoidance. After controlling for alternative explanations via a matched sample design, they find that firms targeted by hedge fund activists have lower levels of tax avoidance prior to being targeted and subsequently increase tax avoidance in the year of a hedge fund activist event. Additionally, results are stronger for hedge funds that have a history of implementing tax related changes at firms they have targeted in the past. Although the authors do not discuss how the change in ownership structure during one of these events impacts tax function investments, it is reasonable to assume that these firms increase their tax function investment in response to these changes.[14] This leads to the conclusion that increases in tax function investments due to hedge fund activism are positively associated with contemporaneous tax avoidance and additional evidence suggests this effect persists into future tax avoidance activities.[15]

In contrast to Cheng et al. (2012), I operationalize increases in tax function investments by examining the response to a regulatory event rather than a change in ownership structure. Specifically, I use the remediation of a disclosed tax-related MW under Section 404(b) of SOX as a setting to observe increases in tax function investments.[16] Internal control is defined as a

[14] Hedge fund activist events are most likely endogenous to other firm characteristics and changes in those characteristics make it difficult to rule out alternative explanations and establish temporal precedence which reduces the ability to make causal inferences (Campbell and Cook 1979).
[15] A potential explanation for the documented contemporaneous association is that hedge fund activists demand immediate improvement in tax avoidance activities and therefore, tax function investments are directly targeted at improving tax planning. In contrast, the setting used in this study examines an investment in the tax function to address financial reporting issues and hypothesizes a spillover effect onto tax avoidance as further described below.
[16] Although I cannot distinguish between management discovered versus auditor discovered MWs, Bedard and Graham (2011) find that over 80% of tax-related ICWs were auditor identified.

process that is designed to provide assurance regarding the achievement of 1) effectiveness and efficiency of operations; 2) reliability of financial reporting; and 3) compliance with applicable laws (COSO 2011). A primary measure of a corporate tax function's effectiveness is the level of tax avoidance achieved (Armstrong et al. 2012). Prior to SOX, many firms engaged audit and tax personnel from their independent audit firm to assist in the preparation of the tax provision for financial reporting purposes.[17] However, following the passage of SOX, auditor independence rules now make it much more difficult to engage the independent auditor for these types of services.[18] Additionally, in a recent survey, over 50 percent of tax executives list financial reporting risks as an important factor in tax planning implementation decisions (Graham et al. 2013). Firms disclosing a tax-related MW therefore likely do not have sufficient internal control systems in place to provide assurance and aid in complying with applicable financial reporting standards, tax regulations, and achieving the effectiveness objective from a tax avoidance perspective.

Bauer (2013) finds the disclosure of a MW is associated with a lack of managerial control and resource constraints consistent with potential underinvestment. The disclosure of a tax-related MW under SOX is a shock that incentives a firm to make an investment in its income tax function if it chooses to remediate the deficiency. Given the substantial costs associated with the disclosure and non-remediation of MWs demonstrated in the prior literature, there are significant incentives to make these investments to address the internal control issue that caused the MW. I argue that these investments have spillover effects that impact the resources devoted to and the effectiveness of the firm's tax function.

[17] http://www.nysscpa.org/printversions/cpaj/2006/706/p38.htm
[18] Specifically, Section 201 precludes auditors from providing bookkeeping services once they have audited a public business.

2.4. Determinants of Outsourcing

Coase (1937) conjectures that a firm is a nexus of contracts and argues that the reason why firms exist is because the benefits to having these contracts organized within a firm rather than just having contracts on an open market place exceed the marginal costs. Transaction cost economics (TCE) theory suggests that firms will seek to minimize transaction costs and predicts that as these costs increase a firm is more likely to vertically integrate (i.e., in-source) (Coase 1937; Williamson 1975). Transaction costs are defined as the costs of contracting and the opportunity costs of inefficient contracts, as well as, any computational costs (Williamson 1975). Specifically, TCE predicts as the asset specificity, uncertainty, and frequency of transactions increases firms will be less likely to contract with an external party and more likely to develop the good in-house.

Another theory of outsourcing is the resource-based view of the firm (RBV). RBV views a firm as a collection of resources and capabilities (Grant 1991; Espino-Robriguez and Padron-Robaina 2006). RBV takes a strategic prospective and examines how the decision to procure something in-house is related to a firm's competitive advantage. By devoting scarce resources to an activity that is not part of a firm's core strategy a firm reduces the resources that are allocated to core business units (Quelin and Duhamel 2003). Thus, there is an incentive to out-source activities that are not a part of the firm's core business strategy. When a firm faces significant resource constraints it is even more likely to outsource these support-type activities (Espino-Rodriguez and Padron-Robaina 2006).

Empirical research examining the decision to outsource accounting services is limited and uses TCE theory to focus on the decision to outsource internal auditing activities. Widener and Selto (1999) use survey data to document a negatively association between asset specificity

and frequency of transactions with outsourcing internal audit activities. Caplan and Kirschenheiter (2000) find that the incentive to outsource internal audit activities increases in various measures of risk including the risk that an internal control weakness exists.

2.5. Hypothesis Development

2.5.1. Tax Function Investments and Tax Avoidance

A firm's tax strategy is a form of investment (McGuire et al. 2011). To compute the net present value of a tax project investment it is important to determine the magnitude and timing of payoffs on capital outlays (Brealey and Myers 2002). As expected payoffs take longer to realize, the uncertainty surrounding those payoffs also increases (Busby and Pitts 1997). Thus, determining if tax function investments have a substantial and immediate impact on tax avoidance is an important empirical question.

Prior literature suggests the remediation of MWs has an immediate impact on firm performance. Feng et al. (2013) document that the remediation of inventory-related MWs has an immediate impact on inventory management efficiency Additionally, Cheng et al. (2013) finds that the remediation of MWs increases investment efficiency in the year of remediation, as well as future years. Thus, prior research suggests that remediating MWs has an immediate impact on firm performance.

Related to this study, there are several reasons why an investment in the tax function would not be contemporaneously associated with higher levels of tax avoidance. First, if the investment simply addresses internal control issues related to the income tax provision and has no impact on tax function resources or effectiveness, there should not be an impact on the tax avoidance activities of a firm at any point in time. Second, if the tax function investments enable

tax planning activities that can only be realized in future taxable years, there would be no contemporaneous association. Third, the internal control disclosures used to identify tax function investments are based on year-end assessments (e.g., as of December 31st for a calendar year firm). Thus, the remediation of an MW can occur at any time during the year. If the investment is not made until late in the reporting period, it may not have an immediate impact on tax avoidance.

In contrast, tax function investments can affect future levels of tax avoidance for several reasons. First, many tax avoidance activities involve significant uncertainty (Rego and Wilson 2012) and provide tax avoidance "annuities" that are recognized over future taxable years. Several tax planning activities require significant changes to firm structure or operations and take time to implement. For example, creating a foreign subsidiary in a favorable taxing jurisdiction and transferring or co-developing intellectual property to or with that subsidiary takes time and resources. Furthermore, benefits recognized from transfer pricing strategies that allow income to be shifted to a low-taxed foreign subsidiary require future taxable income streams over multiple periods.

Second, any effects on tax avoidance likely would be due to spillover effects.[19] MWs are indicative of poor internal controls which can reduce the amount and quality of information available to managers (Feng et al. 2009). An important piece of information for tax planning is an accurate and reliable estimate of future taxable income (Kubick et al. 2014). Consistent with this conjecture, Mayberry et al. (2013) finds that firms with more persistent or smooth earnings are better able to realize the benefits of tax planning. Therefore, one possible effect of a tax

[19] Prior literature documents spillover effects of investing in tax planning via auditor-provided tax services on financial reporting quality (Larcker and Richardson 2004; De Simone, Ege, Stomberg 2013). However, to my knowledge no prior study examines the timing of these spillover effects or how an investment to improve financial reporting quality impacts tax avoidance.

function investment that addresses internal control issues is an improvement in the information available to managers regarding the tax accounts. This information will then allow managers to improve their forecasts of taxable income enabling increased tax planning opportunities.

The most common investments being made in my sample are engaging an external advisor (58.1%) and hiring additional personnel (55.2%).[20] A firm that engages an external advisor would prefer an immediate payoff on its investment. However, some remediation disclosures state that these advisors are engaged to remediate the internal control issue that led to the MW. Thus, any spillover effects onto tax avoidance may occur predominantly in future periods as the firm's immediate attention, as well as that of the firm's advisors, is on remediating the MW.

A similar argument can be made for an investment in new personnel. In the short-run the attention of new personnel likely is devoted to internal control issues as opposed to tax avoidance. Additionally, human resource investments may not be immediately recognized due to the time needed for new employees to familiarize themselves with the company's operations, procedures, and to receive training (Huselid 1995). Given the complex nature of tax planning activities, new employees within the tax department are likely to require significant time to assess a firm's current tax situation before implementing new tax planning initiatives. Because prior literature documents a positive association between tax planning investments and tax avoidance (Mills et al. 1998; Omer et al. 2006), I expect that investments in the tax function will increase the level of tax avoidance. However, the above arguments suggest a lag between the initial investment and tax planning activities. Thus, I offer the following hypothesis in the alternative form:

[20] See Table 3 for a break-down of the different types of investments.

H1: Increases in investments in the corporate tax function are positively associated with future tax avoidance.

2.5.2. Internal Versus External Investments and Future Tax Avoidance

Mills et al. (1998) bifurcate tax planning expenditures into external and internal components and provide some evidence that external tax planning expenditures result in larger tax avoidance payoffs when compared to internal investments.[21] This finding suggests that different types of tax function investments could have different impacts on a firm's level of tax avoidance. This finding also is consistent with an external investment being more substantial than an internal investment. In addition to potentially being more substantial, external investments could result in larger increases in tax avoidance if the external advisors are engaged to and evaluated on their ability to increase tax avoidance. If external advisors have an expertise and knowledge advantage over potential additional internal personnel, I would expect a higher payoff on external investments. These arguments lead to the prediction of external investments resulting in higher future tax avoidance payoffs.

However, if the external advisors are engaged and evaluated only on their ability to remediate the internal control issue, the payoff (if any) on external investments may not be as high. Additionally, investing internally in new personnel and/or a new tax director could result in larger payoffs to long-run tax avoidance if these types of investment allow for a greater propensity to recognize benefits over multiple years as compared to a potentially short-term payoff for an external investment. Finally, if each firm invests optimally, an external investment

[21] Specifically, external investments are associated with lower ETRs but internal investments are not. However, when total assets are used as the ETR denominator rather than pre-tax income internal investments are associated with increased tax avoidance (Mills et al. 1998).

could yield a similar payoff when compared to another firm that has certain characteristics that make an internal investment the economically rational choice. Consistent with external investments leading to higher tax avoidance payoffs I state H2 in the alternative form:

H2: Increases in external tax function investments are associated with higher levels of future tax avoidance when compared to increases in internal tax function investments.

2.5.3. Determinants of External Tax Function Investments

Tax provision preparation and tax planning are a service good that a firm must internally invest in, outsource to an external party, or procure through a combination of both internal and external investments. Firms face resource constraints when determining what activities to perform internally (Laios and Moschuris 1999). Firms facing significant resource constraints likely have fewer internal resources available to devote to support activities. RBV predicts that firms will be more likely to outsource non-core competency activities and that this effect will be intensified in the presence of greater resource constraints (Espino-Rodriguez and Padron-Robaina 2006).

Additionally, a firm facing resource constraints (i.e., a firm in a loss position) could potentially need to reassure investors that significant resources are being devoted to addressing the internal control issue. The engagement of an external service provider could provide a signal to investors that the company is taking the issue seriously, thereby increasing the probability that it will be remediated quickly. Given these arguments, I offer the following hypothesis in the alternative form:

H3a: Resource constrained firms are more likely to outsource investments in their income tax function.

Tax planning and preparation of the tax provision can be complex and risky processes (Hanlon and Heitzman 2010). The supply chain management and RBV literature suggests that as the complexity of a support task increases, a firm is more likely to outsource that activity (Laios and Moschuris 1999; Espino-Rodriguez and Padron-Robaina 2006). The tax function is a support activity, suggesting that as the complexity of a firm's tax function increases a firm is more likely to outsource investments. Additionally, as complexity and risk increase, a firm could be forced to provide a signal to shareholders that they are engaging external help. The disclosure of a tax-related MW is an admission that the firm does not have adequate tax accounting expertise and thus disclosing an internal investment may not provide as much confidence to investors when compared to disclosing an external investment.

TCE theory suggests that as the contracting costs increase a firm is more likely to vertically integrate (i.e., invest internally) (Williamson 1975; Tadelis 2002; Barthelemy and Quelin 2006). TCE theory conjectures that contracting costs increase as uncertainty regarding the future/external party's actions and the specificity of assets used in production increases (Williamson 1975). Consistent with this theory, the internal audit literature finds a negative relation between outsourcing the internal audit function and firm complexity (Widener Selto 1999).

Applied to the tax function, TCE predicts that as the complexity of a firm's tax function increases so does the uncertainty/risk and the specificity of assets required to perform that

function; leading to a greater propensity to invest internally. In contrast, in this setting it could be relatively easy to observe the external party's action, thereby reducing contracting costs and allowing a firm to use high powered incentives. Specifically, a firm could write a contract with an external service provider that only remits payment on remediation of the disclosed MW. Consistent with this argument, Caplan and Kirschenheiter (2000) find that the risk of the presence of an internal control weakness leads to more internal audit outsourcing suggesting the specific type of risk examined in my study leads to an increase in out-sourcing. Given the competing theories I offer the following hypothesis in the null form.

H3b: The tax complexity and risk of a firm is not associated with the decision to outsource investments in its income tax function.

CHAPTER 3: RESEARCH DESIGN AND SAMPLE SELECTION

Chapter 3 discusses the research design and sample selection. I begin by presenting details on the tax avoidance measures, the tax function investment proxy, and control measures followed by a discussion of the empirical model used to test H1, which predicts a positive association between tax function investments and future tax avoidance. I then discuss the model used to examine H2, which investigates tax avoidance payoffs on external versus internal investments. Finally, I discuss the model for the determinants of external investment. I follow with a description of the sample and data.

3.1. Measures

3.1.1. Measure of Tax Avoidance (Dependent Variable)

Hanlon and Heitzman (2010) describe and discuss various measures of tax avoidance and conclude that many of the measures capture different forms of tax planning activities. In this study, I do not distinguish between the different types of tax planning activities. Rather, the tax avoidance proxies I employ capture tax planning activities that vary across the aggressiveness spectrum.

Two commonly used measures of tax avoidance are the GAAP and cash ETRs. GAAP ETRs are computed using total reported income tax expense and reflect tax avoidance activities and tax accruals that generate permanent book tax differences (BTDs), thereby affecting reported accounting earnings. However, the GAAP ETR does not reflect deferral strategies that generate temporary BTDs. In contrast, the cash ETR measures taxes paid to the revenue authorities during

that period and captures tax planning activities that generate most permanent and temporary BTDs.[22]

Private conversations with several Big Four professionals and a review of the practitioner literature reveals that firms benchmark their effective tax rate measures against industry competitors to infer information regarding tax function performance.[23] Additionally, opportunities for tax planning activities differ across industries. For example, an international intellectual property-intensive software company has access to transfer pricing tax planning strategies that a domestic capital-intensive manufacturing company does not. Using ETR measures without adjusting for these factors could lead to incorrect inferences.

To address this concern, I follow Balakrishnan et al. (2012) and adapt the GAAP and cash ETR measures by computing and subtracting the mean industry-year ETR for a firm's given asset quintile. This measure adjusts for opportunities to engage in tax planning activities afforded to certain industries and implicitly controls for macro-economic shocks (e.g., 2007-2010 economic recession) that could impact tax avoidance activities. Additionally, by comparing each firm's deviation from a relevant benchmark I am able to focus on the tax avoidance measure to which firms most likely are devoting resources.[24]

3.1.2. Measure of Tax Function Investment

Following Ashbaugh-Skaife et al. (2008) and Bauer (2013), I include indicator variables for the presence of a tax-related (non-tax related) MW in the current or prior year, *WEAK_TAX*

[22] The cash ETR will usually not reflect changes in the tax accrual such as the valuation allowance account or the unrecognized tax benefits account (UTB). One exception is the settlement of a tax position that results in a cash payment/refund and an adjustment in the portion of UTB that impacts earnings.
[23] http://www.pwc.com/us/en/industrial-products/publications/tax-rate-benchmarking-study.jhtml
[24] I confirm results are robust to using traditional mean unadjusted tax avoidance measures in the supplemental analyses section.

(*WEAK_OTHER*).[25] My primary variable of interest, *TAX_FIXED*, is equal to one if a firm remediates a previously disclosed tax-related MW in the current year. By construction, *TAX_FIXED* is essentially an interaction term between *WEAK_TAX* and another indicator equal to one for firms that remediate tax-related MW in the current year. Thus, *WEAK_TAX* captures the tax avoidance of firms that disclose a tax-related MW but fail to remediate. I expect a positive coefficient on *WEAK_TAX* consistent with the disclosure of a tax-related MW being associated with lower levels of tax avoidance (Bauer 2013). The coefficient on *TAX_FIXED* captures the incremental tax avoidance of a firm that invests in its tax function to remediate a tax-related MW relative to a firm that does not remediate (*WEAK_TAX*).

A negative coefficient on *TAX_FIXED* when *CurrentCash1yrETR* or *CurrentGAAP1yrETR* are used as the dependent variable would suggest investments in the tax function are contemporaneously associated with greater levels of tax avoidance. A negative coefficient on *TAX_FIXED* when $FutureCash3yrETR_{i,t+1\text{-}t+3}$, or $FutureGAAP3yrETR_{i,t+1\text{-}t+3}$ are employed would provide evidence consistent with investments in the tax function being associated with greater levels of future tax avoidance Finally, I include *OTHER_FIXED*, which is equal to one if a firm remediates a previously disclosed non-tax MW.

3.1.3. Control Variables for Tax Avoidance

Additional previously documented determinants of tax avoidance are included as control variables and are defined in Appendix B. Pre-tax return on assets (*ROA*) is included to control for the positive association between tax avoidance and profitability (Gupta and Newberry 1997; Rego 2003). I control for leverage (*LEV*), foreign income (*FORINC*), and include a tax haven

[25] *WEAK_TAX* and *WEAK_OTHER* are mutually exclusive so a firm that discloses a tax-related MW will be coded one for *WEAK_TAX* and zero for *WEAK_OTHER*. Inferences are unchanged if this restriction is not imposed.

indicator variable set to one for firms that disclose a subsidiary in a known tax haven (*TAXHAVEN*) (Dyreng and Lindsey 2009). I also include controls for intangibles (*INTAN*), firm size (*SIZE*), the presence of a net operating loss (*NOL*), research and development intensity (*RD*), and lagged book-to-market ratio (*BM*).

Prior literature finds that resource constraints are positively associated with the disclosure of ICWs (Krishnan 2005; Doyle et al. 2007b). Bauer (2013) shows that the negative association between the disclosure of a tax-related MW and the level of tax avoidance is stronger for resource constrained firms. Thus, to control for resource constraints, I include *AGGR_LOSS*, which is equal to one for firms with aggregate earnings before extraordinary items for the current and prior year less than zero, and zero otherwise. Additionally, I include *CONSTR_CF*, which is equal to one minus operating cash flows.[26] I also include industry (two-digit NAICS level) and year fixed effects and use robust standard errors clustered at the firm-level in all model specifications. Industry fixed effects control for time-invariant industry characteristics, which could impact tax planning opportunities. Year fixed effects control for macro-economic shocks and potential trends in tax avoidance levels. Finally, by clustering standard errors at the firm level I address serial correlation concerns which could impact the estimation of standard errors and increase the risk of incorrectly detecting statistically significant associations.

3.2. Research Design

3.2.1 Tax Function Investments and Tax Avoidance

To examine the impact of tax function investments on tax avoidance, I adapt a recently developed measure of a firm's ETR relative to those of its industry peers as my tax avoidance

[26] Inferences remain unchanged if *CONSTR_CF* is scaled by total sales or total assets.

proxy. Following Balakrishnan et al. (2012) I rank all firms by asset quintiles for each year and Fama French industry classification (48 industries). I then compute the mean effective tax rate measure for each industry-year asset quintile and subtract that value from each firm's effective tax rate measure.

To examine the contemporaneous association between increases in tax function investments and tax avoidance, I employ the 1-year cash and GAAP relative ETR measures, *CurrentCash1yrETR* and *CurrentGAAP1yrETR*, respectively. To investigate the impact of tax function investments on future tax avoidance, I use $FutureCash3yrETR_{i,t+1\text{-}t+3}$, ($FutureGAAP3yrETR_{i,t+1\text{-}t+3}$), which are the 3 year cash (GAAP) relative ETRs, respectively. I compute these two measures by summing cash taxes paid (total tax expense) over years t+1, t+2, and t+3 following the tax function investment and dividing that total by the sum of pretax income less special items over that same period. I then subtract the mean industry-year size-adjusted value as described above. Lower values of these tax avoidance measures can be viewed as a firm disclosing ETRs below their industry peers, consistent with greater tax avoidance. Following prior research, all of the ETR measures are winsorized between the [0,1] interval (Dyreng et al. 2008). I estimate the following OLS regression model where $TAX_{i,}$ is defined as one of the four tax avoidance proxies.

$$\begin{aligned} TAX_{i,} = \quad & \beta_0 + \beta_1 TAX\_FIXED_{i,t} + \beta_2 WEAK\_TAX_{i,t} + \beta_3 WEAK\_OTHER_{i,t} + \\ & \beta_4 OTHER\_FIXED_{i,t} + \beta_5 ROA_{i,t} + \beta_6 LEV_{i,t} + \beta_7 FORINC_{i,t} + \\ & \beta_8 TAXHAVEN_{i,t} + \beta_9 INTAN_{i,t} + \beta_{10} SIZE_{i,t} + \beta_{11} NOL_{i,t} + \beta_{12} RD_{i,t} + \\ & \beta_{13} BM_{i,t-1} + \beta_{14} AGGR\_LOSS_{i,t} + \beta_{15} CONSTR\_CF_{i,t} + \\ & industry\ fixed\ effects + year\ fixed\ effects + \varepsilon_{i,t} \end{aligned} \tag{1}$$

3.2.2 Tax Avoidance Payoffs on External Versus Internal Investments

To examine H2 and investigate whether external investments yield higher tax avoidance payoffs when compared to internal tax function investments, I modify equation (1) bifurcating the variable *TAX_FIXED* into firms that disclose an external investment (*EXTERNAL_FIX*: n=61) versus firms that only invest internally (*INTERNAL_FIX*: n=54). A negative and significant coefficient on these variables suggests that the type of tax function investment being examined is positively associated with future tax avoidance. An F-test of the null hypothesis that $\beta_2 > \beta_3$ provides evidence on whether external tax function investments lead to higher tax avoidance payoffs when compared to internal investments. Finally, I also focus on the impact of tax function investments on future tax avoidance given the hypothesized relationship. $FutureTAX3yr_{i,t+1\text{-}t+3}$ is defined as either $FutureCash3yrETR_{i,t+1\text{-}t+3}$, or $FutureGAAP3yrETR_{i,t+1t+3}$, respectively.

$$\begin{aligned} FutureTAX3yr_{i,t+1\text{-}t+3} = \; & \beta_0 + \beta_1 WEAK\_TAX_{i,t} + \beta_2 EXTERNAL\_FIX_{i,t} + \beta_3 INTERNAL\_FIX_{i,t} + \\ & \beta_4 WEAK\_OTHER_{i,t} + \beta_5 OTHER\_FIXED_{i,t} + \beta_6 ROA_{i,t} + \beta_7 LEV_{i,t} + \\ & \beta_8 FORINC_{i,t} + \beta_9 TAXHAVEN_{i,t} + \beta_{10} INTAN_{i,t} + \beta_{11} SIZE_{i,t} + \beta_{12} NOL_{i,t} + \\ & \beta_{13} RD_{i,t} + \beta_{14} BM_{i,t-1} + \beta_{15} AGGR\_LOSS_{i,t} + \beta_{16} CONSTR\_CF_{i,t} + \\ & industry\ fixed\ effects + year\ fixed\ effects + \varepsilon_{i,t} \end{aligned} \quad (2)$$

3.2.3 Determinants of External Tax Function Investments

To investigate the determinants of making an external investment I estimate the following logistic regression model for the primary sample of firms identified as making a tax function investment (105 firm-years).

$$External_{i,t} = \beta_0 + \beta_1 RESTATEMENT_{i,t} + \beta_2 FOROPS_{i,t} + \beta_3 ROA_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LOSS_{i,t} + \beta_6 LEV_{i,t} + \beta_7 RD_{i,t} + \beta_8 BM_{i,t-1} + \beta_9 INVENTORY_{i,t} + year\ fixed\ effects + \varepsilon_{i,t} \quad (3)$$

External is equal to 1 if a firm discloses the investment in an external service provider related to the remediation of the tax-related MW and zero otherwise. As detailed in Table 3, 61 firms of the 105 observations disclose engaging an external service provider.

To examine the effects of resource constraints on investing in an external service provider I include *ROA*, *SIZE*, and *LOSS*. With the exception of *LOSS*, that is equal to 1 for firms reporting negative income before extraordinary items in the current year, zero otherwise, all variables are as previously defined. A negative and significant coefficient on *ROA* and *SIZE* would be consistent with less profitable and smaller firms that most likely have fewer resources, choosing to invest externally. A positive and significant coefficient on *LOSS* would suggest firms with negative income choose to invest externally.

To examine the impact of risk and complexity on the decision to engage an external provider, I include two variables, *RESTATEMENT* and *FOROPS*. *RESTATEMENT* is an indicator variable equal to 1 for tax-related MWs that led to a restatement, and zero otherwise. This variable captures the severity of the disclosed accounting issue. A positive coefficient

would be consistent with risk and complexity being positively associated with the decision to invest in an external service provider. *FOROPS* is an indicator variable equal to 1 for all firms with non-zero values of pre-tax foreign income, and zero otherwise. Firms with foreign operations have more complex tax issues to consider due to multiple jurisdictions and transfer pricing rules. Thus, a positive coefficient on *FOROPS* would provide evidence of firms with more complex tax situations being more likely to engage an external service provider.

I include leverage (*LEV*), research and development intensity (RD), lagged to book to market (*BM*) and inventory (*INVENTORY*) as other control variables[27] Mills et al. (1998) find the level of internal investments in tax planning to be negatively correlated with the level of inventory; thus I control for this potential explanatory factor.

3.3. Sample Selection and Data

Table 1 provides summary statistics on the typical time to remediate for all MWs disclosed in Audit Analytics from 2004 to 2011 bifurcated between the tax and other typologies. Panel A provides a break-down by year and the number of years to remediate. Although the frequency of all other MWs combined is larger than tax-related MWs, tax-related MWs still are the leading cause of MWs. Examining the Table it appears the majority of the timing of remediation is similar across the different types. Panel B summarizes the number of MWs by year during the sample period employed in this study (2004-2009). The majority of both tax and other MWs are remediated in the year following disclosure with other MWs having a slightly greater probability of being remediated within the 1 year post-disclosure window.

[27] *Inventory* is equal to total inventories scaled by total assets.

Table 2 details sample selection procedures for the observations used in the primary tests of the effects of tax function investments on future tax avoidance. To operationalize tax function investments I use *Audit Analytics* to identify firms that disclose a new tax-related MW during the 2004-2008 time period.[28] I then manually examine each firm's 10-K to confirm the presence of the tax-related MW and determine if the tax-related MW was remediated. This results in a sample of 303 disclosed tax-related MWs, before removing observations that have missing required Compustat and Audit Analytics data (128 firms) or have a negative sum of pretax income for years t+1 through t+3 following remediation (70 firms). My final sample of tax function investments is 105 firm-years.

For this sample of firms I then classify the disclosed type of investment made to remediate the MW into the following categories 1) Hiring additional personnel (non-tax director); 2) Hiring a tax director; 3) Engaging an external provider; and 4) Only investing in new procedures. Appendix A provides examples of the different types of investments. In example 1, H&R Block Inc. discloses a tax-related MW related to "non-routine and complex" tax transactions and ETR/deferred tax reconciliations and balances. The firm goes on to describe remediation steps including hiring additional personnel, changing procedures, and engaging an external service provider. Example 2 describes Symantec Corp.'s tax-related MW related to an acquisition and the subsequent missed election and extension filing due date. The firm subsequently hired a new tax director. Example 3 details Netflix Holdings Inc.'s MW disclosure, which discusses a lack of management review. The only remediation step discussed and implemented was a change in internal procedures. Finally, example 4 is PAR Pharmaceuticals Companies, which disclosed a tax-related MW that led to a restatement. Remediation procedures

[28] I limit my sample to pre-2009 observations to allow for the computation of future effective tax rates following remediation from t+1 to t+3 (i.e., 2010-2012 for a 2008 disclosed tax-related MW that is remediated in 2009).

included hiring additional personnel, changing procedures, and engaging an external service provider.

These examples illustrate the diversity in the different types of investments being made in the tax function. The aggregated results of my classifications are displayed in Table 3. In addition, to the categories listed above, I include an additional designation for firms that only made an internal tax function investment and did not disclose the involvement of any third parties in remediating the MW. Panel A displays the results for all remediated tax MWs in Audit Analytics. Panel B presents the results for the 105 firm sample used in the multivariate tests. The results show that for the 105 firms, the most common forms of investment are engaging an external party (58.1%) and hiring additional personnel (non-tax director) (55.2%). Just over 40% percent of firms examined chose to only invest internally. Examining time trends in the type of investment, reveals that firms initially relied more heavily on internal rather than external investments (i.e., 2005 versus subsequent years).

CHAPTER 4: MAIN RESULTS

In Chapter 4, I begin by providing descriptive statistics on the firms that made tax function investments compared to various control groups. I then discuss univariate results for impact of tax function investments on tax avoidance. These results are followed by a detailed discussion of the main empirical results testing H1, H2, H3a, and H3b, respectively.

4.1. Descriptive Statistics and Univariate Results

4.1.1. Descriptive Statistics

Table 4 Panel A displays descriptive statistics for the primary sample of firm-years used to estimate equation (1). Column 1 describes the variables for firms that make a tax function investment at some point during the sample period (i.e., *TAX_FIXED* = 1 in at least one year). Column 2 offers descriptives of all other firm-years. Univariate tests of means and medians suggest firms that make tax function investments have higher ETRs throughout the sample period. Importantly, this test does not examine the effect of tax function investments on tax avoidance as column 1 includes firm-years both before and after remediation. Tax function investing firms have higher levels of foreign income and are more likely to have a tax haven subsidiary. Finally, these firms also are less profitable, smaller, and more likely to be in a loss position consistent with prior research on the disclosure of MWs (Doyle et al. 2007b). The significant differences in the type of firms making tax function investments versus the control firms make it important to include these variables as independent variables in my multivariate models.

4.1.2. Univariate Results

Panel B of Table 4 displays descriptive statistics for all firm-years of the tax function investment firms bifurcated in observations prior to the investment (column 3) and observations in the year of and following the investment (column 4). Consistent with Bauer (2013), tax function investment firms exhibit future 3-year cash (GAAP) ETRs measures that are 7.7 percentage points (6.4 percentage points) higher than their industry peers prior to the tax function investment. In the year of and following a tax function investment these firms display future 3-year cash (GAAP) ETRs measures that are 1.8 percentage points (2.9 percentage points) higher than their industry peers. The 3-year cash (GAAP) ETRs measures are significantly lower in the year of and following a tax function investment than firm-years prior to the investment (i.e., $FutureCash3yrETR_{t+1-t+3}$ is 5.9% lower; p-value <0.01 and $FutureGAAP3yrETR_{t+1-t+3}$ is 3.5% lower; p-value = 0.084) supporting a positive association between tax function investments and future tax avoidance.

Additionally, to address endogeneity concerns I use a matched sample design where I match each tax function investment firm-year (i.e., 105 firm-years) to a control firm based on two-digit NAICS industry code, year, asset size, and pre-tax income. Descriptive statistics for tax function investment firm-years and the matched sample firm-years are displayed in Panel C of Table 4. Univariate tests of differences suggest a relatively accurate match on firm characteristics.[29] Importantly there are no significant differences across the contemporaneous tax avoidance measures suggesting the firms have a similar starting point in terms of tax avoidance

[29] Exceptions include firm-years that disclose a tax function investment are more likely to be in a net operating loss position and have lower profitability (i.e., *ROA* median is significantly lower). I include the net operating loss indicator variable and *ROA* in all regression specifications to control for this potential issue.

behavior prior to tax function investments.[30] This helps alleviate concerns that the tax function investment firms have systematically different tax avoidance behavior prior to the investment when compared to the control firms, which could impact the ability to change tax avoidance behavior.

Given that I have matched the tax function investment firms to firms with similar characteristics including tax avoidance behavior prior to the investment, I now examine the impact of tax function investments on tax avoidance. Univariate results that examine the relation between tax function investments and tax avoidance for the tax function investment firm-years and the matched sample firm-years are also displayed in Panel C of Table 4. Specifically, when examining the contemporaneous association the mean of $CurrentCash1yrETR_t$ ($CurrentGAAP1yrETR_t$) in tax function investment firm-years are 3.1% (4.9%), respectively. However, comparing these observations to the matched firm-years does not yield statistically different mean cash (0.004%; p-value = 0.47) or GAAP (6.9%; p-value = 0.55) relative ETRs, respectively. These univariate results suggest that an investment in the tax function is not contemporaneously associated with tax avoidance.

Examining the means of $FutureCash3yrETR_{t+1-t+3}$ and $FutureGAAP3yrETR_{t+1-t+3}$ of tax function investment firm-years and the matched sample firm-years allows for a univariate test of the impact of increases in tax function investments in year t on future tax avoidance levels, measured as 3-year relative ETRs from years t+1 to t+3. Firms making a tax function investment have future 3-year cash (GAAP) ETRs that are 0.008 percentage points (2.1 percentage points)

[30]In untabulated analyses I confirm that the 3-year tax avoidance measures measured from t-3 to t-1 are not significantly different.

higher than their industry peers.[31] The matched sample firm-years exhibit future 3-year cash relative ETRs that are significantly higher (8.2%; p-value <0.01), while the future 3-year relative GAAP ETR measures do not (5.0%; p-value = 0.36). These results combined with those presented in Panel B provide some evidence that tax function investments in year t are associated with higher levels of tax avoidance in years t+1 to t+3.

4.2. Multivariate Results

4.2.1. Tax Function Investments and Tax Avoidance

Table 5 displays results from estimating model (1), which examines the contemporaneous association between tax function investments and 1-year relative ETRs (columns 1 & 2) and the association between increases in current period tax function investments and future 3-year relative ETRs (columns 3 through 6). Consistent with prior research, the coefficient on $WEAK\_TAX_t$ is positive and significant at the 5% level (two-tailed) in all specifications suggesting that lower levels of tax avoidance are associated with the disclosure of a tax-related MW (Bauer 2013). Specifically, a firm that discloses and does not remediate a tax-related MW in year t has, on average, 6.3 percentage point (6.2 percentage point) higher 3-year future cash (GAAP) ETRs, when compared to its industry peers (p-values < 0.01).

In the contemporaneous model, the coefficient on the primary variable of interest, *TAX_FIXED*, is not statistically significant (column 1 coefficient = 0.005, p-value =0.88; column 2 coefficient = -0.012, p-value = 0.64). This result is consistent with tax function investments at

[31] A t-test of whether the $FutureCash3yrETR_{t+1-t+3}$ and $FutureGAAP3yrETR_{t+1-t+3}$ are significantly different from zero in the year of the tax function investment fail to reject the null (p-value>0.30). This suggests tax function investment firms exhibit future tax avoidance equal to the mean level of their competitors in years following a tax function investment.

time t not leading to increased or decreased tax avoidance during that same time period.[32] However, the coefficient on $OTHER\_FIXED_t$ is negative and significant when the cash ETR is employed as the dependent variable, suggesting the remediation of non-tax-related MW may have spillover effects on tax avoidance in the current period.[33]

In the future tax avoidance specification, the primary variable of interest, *TAX_FIXED*, is negative and significant across all four specifications (Columns 3 through 6). The coefficient estimate when the future 3-year relative ETRs are employed shows that firms that make a tax function investment in year t have 8.1 percentage point (4.3 percentage point) lower cash (GAAP) relative ETRs measured across t+1 to t+3 (*FutureCash3yrETR*: p-value < 0.01; *FutureGAAP3yrETR*: p-value < 0.10). These results support H1 that current period increases in tax function investments are positively associated with future tax avoidance. To assess economic significance I re-estimate model (1) using unadjusted 3-year tax avoidance measures. The coefficient on *TAX_FIXED* continues to be negative and significant (*Cash3yrETRUnadjusted*: -0.072, p-value <0.001; *GAAP3yrETRUnadjusted*: -0.040, p-value < 0.10). Interpreted at the mean pre-tax income level, these coefficient estimates imply a reduction of $104.2 ($57.9) million of cash taxes paid (total tax expense) over the 3-year period for the mean firm.[34]

To address concerns regarding the relatively small proportion of observations making tax function investments (i.e., 105 firm-years of 7,687 observations), I re-estimate model (1) using a matched sample design employing all firm-years of the firms obtained through the matching

[32] These results should be interpreted with caution as one year ETRs are noisy proxies for tax avoidance (Dyreng et al. 2008).
[33] Another potential explanation is that firms remediating other types of MWs could be reducing current or prior earnings due to a restatement that leads to an amended tax filing and subsequent tax refund.
[34] Univariate tests of changes in unadjusted 3-year tax avoidance measures following a tax function investment imply reductions of $57.9 million in cash taxes paid and $29.0 in total tax expense, respectively, for the mean firm.

procedure.[35] Additionally, as the matching criteria for the sample include industry, year, size, and profitability, I do not adjust the tax avoidance measures using the mean peer group measure.[36] Results are displayed in Columns 5 and 6 of Table 5. The coefficient on *TAX_FIXED* confirms the prior results for both the *FutureCash3yrETR* (Column 5 coefficient = -0.075, p-value < 0.01) and *FutureGAAP3yrETR* (Column 6 coefficient = -0.044; p-value <0.10), respectively.

4.2.2. How Firms Increase Future Tax Avoidance

Given the observed association between tax function investments and future tax avoidance, it begs the question of what types of tax planning strategies firms are engaging in to increase future tax avoidance. To address this issue, I hand-collect MD&A and tax footnote disclosures for tax function investment firms in the largest quintile of decreases in relative cash ETRs in years t+1 to t+3 (24 firm-years). I then categorize these disclosures based on the factors for why the ETR decreased.[37] Examples 5 and 6 in Appendix A illustrate the analyzed disclosures.

In example 5, Shaw Group Inc. discloses a tax-related MW for the year ended 8/31/2008 due to insufficient numbers of tax professionals with income tax accounting expertise. Remediation efforts included hiring a tax director and engaging external tax resources. The discussion of the ETR in the 2010 10-K shows a dramatic decrease in the amount of tax expense from 2008 to 2009 and 2010. The cited reasons for this decrease in income tax expense are due

[35] Inferences are qualitatively similar if the sample is limited to 210 firm-years rather than all firm-year observations from the matched sample firms.
[36] Inferences are qualitatively similar if relative ETR measures are employed.
[37] The disclosed factors usually relate to GAAP ETRs, but I choose to examine the largest cash ETR changes as this is the most robust result. Additionally, the factors are not mutually exclusive. For example, many firms cite both foreign and state tax planning as reasons why the ETR decreased.

to a beneficial earnings mix between domestic and foreign operations (i.e., larger amounts of income in low-tax rate countries).[38] Additional disclosed factors include beneficial adjustments to the tax contingency account and R&D tax credits. This observation would be coded as having three disclosed reasons in my classification schema, 1) foreign taxes; 2) unrecognized tax benefits account; and 3) other- R&D.

In example 6, True Religion Apparel Inc. discloses a tax-related MW in its 2007 10-K related to the federal and state income tax consequences of their executive compensation plans. Remediation efforts included hiring new internal and external personnel, as well as, changing procedures. The 2009 10-K disclosures indicate substantial decreases in the reported ETR citing changes in filing status in certain states. This observation is coded as a state tax expense disclosure in my classification.

The results of these classifications are presented in Table 6 and suggest, for the firms with the largest increases in future tax avoidance following a tax function investment, that the most commonly disclosed factor for the decrease in the ETR is a reduction in foreign tax expense (58.3%). State tax planning is also frequently disclosed as a factor (29.2%). The valuation allowance account is mentioned 20.8% of the time and the unrecognized tax benefits account is disclosed as a factor in 16.7% of the observations. Other issues such as research and development tax credits, the domestic producer's deduction (Section 199), tax-favored mergers and acquisitions, etc. are mentioned in 29.2% of the observations. These results suggest firms are undertaking potentially sophisticated tax planning strategies to increase future tax avoidance.

[38] Examining exhibit 21 of the 10-K it appears that Shaw Group Inc. did not set up any new foreign subsidiaries during this time period. This suggests the decrease in foreign tax expense was due to more profits being allocated to lower tax rate jurisdictions where subsidiaries existed prior to the tax-related MW.

4.2.3. External versus Internal Tax Function Investments and Future Tax Avoidance

The results from estimating model (2), which examines the impact of external versus internal tax function investments on future tax avoidance, are presented in Table 7. The coefficient on *EXTERNAL_FIX* in Column (1) results where *FutureCash3yrETR* is used as the dependent variable suggest that firms making some type of external investment in year t have 7.9 percentage point lower future cash ETRs relative to their industry peers (p-value < 0.01). The coefficient on *INTERNAL_FIX* suggests firms that choose to only internally invest in their tax function have 8.5 percentage point lower future cash ETRs relative to their industry peers (p-value < 0.05). An F-test of whether the coefficient estimate on *EXTERNAL_FIX* equals the coefficient estimate on *INTERNAL_FIX* fails to reject the null, (p-value = 0.892).

Column (2) displays results for when *FutureGAAP3yrETR* is used as the dependent variable. Consistent with the cash ETR results, firms making an external investment have 6.0 percentage point lower future GAAP ETRs relative to their industry peers (p-value < 0.05). The coefficient estimate on internal tax function investments suggests internal investments result in 5.3 percentage point lower future GAAP ETRs relative to their industry peers, but is not significant (p-value = 0.113). Although the external investment coefficient is higher, an F-test of equality of the coefficients fails to reject the null that the external and internal investment coefficients are equal (p-value = 0.848). These results are confirmed using the matched sample design in Columns 3 and 4.[39] In summary, I find evidence consistent with both external and internal current period tax function investments being positively associated with future tax

[39] Results for the GAAP ETR are not statistically significant (Columns (2) and (4)). This could be attributed to the limited sample size. An F-test of the equality of coefficients on external and internal tax function investments fails to reject the null, providing no evidence of a differential impact of investments on future tax avoidance.

avoidance. However, I find no evidence of external investments resulting in higher future tax avoidance payoffs when compared to internal investments.

4.2.4. Determinants of External Tax Function Investments

Results from estimating the logistic regression of the determinants of external investments in the tax function are presented in Table 8. Consistent with H3a, firms facing resource constraints due to being in a loss position are more likely to invest externally (*LOSS* coefficient estimate = 1.376; p-value <0.05). Examining H3b, I find that risk and complexity are positively associated with the decision to invest externally. Specifically, the coefficient on the *RESTATEMENT* indicator is positive and significant (p-value <0.10). However, I find no evidence of the complexity added by foreign operations contributing to the decision to engage an external service provider. Finally, there is a time trend in the decision to engage an external service provider. The results suggest that in 2007 firms were more likely to engage an external service provider than in 2005 (p-value < 0.10). Model diagnostics suggest a reasonably good fit with a pseudo r-squared of 13.2% and area under the ROC curve of 0.74.[40]

[40] Given the small sample size, I also investigate the potential impact of multicollinearity on the ability to detect statistically significant determinants. All variance inflation factors (VIF) are below 4 with the exception of *SIZE*, which has a VIF of 9.87, which could explain the lack of significance on some variables.

CHAPTER 5: SUPPLEMENTAL ANALYSES AND SENSITIVITY TESTS

In Chapter 5, I discuss several additional analyses to provide further perspective about the main findings reported in Chapter 4. I begin by focusing on the potential endogeneity issue of a certain type of firm disclosing tax-related MWs. I next examine additional specifications to examine the specific timing of future tax avoidance payoffs. I then examine the impact of additional control variables which are shown to be correlated with either the dependent variable or the primary variables of interest. I conclude by re-estimating the main models using unadjusted tax avoidance measures.

5.1. Tax Function Investment Firm Characteristics

One possible explanation for the primary results is the sample of firms making tax function investments have certain characteristics which are correlated with the likelihood of increasing future tax avoidance. This section presents the results of alternative tests, which seek to alleviate concerns regarding sample selection, time trends in tax avoidance, and endogeneity.

To address concerns that my results are driven by characteristics unique to firms that disclose MWs or a time trend in tax avoidance, I employ a simulation technique that randomly assigns the tax function investment indicator to other firm-years within the sample of firms that disclose at least one MW during my sample period. I then estimate model (1) employing *FutureCash3yrETR* as the dependent variable and using these alternative assignments. I repeat this procedure for 10,000 iterations and obtain coefficient and standard error estimates for each of these simulations. The mean coefficient estimate on *TAX_FIXED* using the simulation technique is -0.001 (t-stat = -0.152; p-value = 0.879). Additionally, only 35 of the 10,000

simulations have a negative and significant coefficient estimate on the *TAX_FIXED* indicator variable equal to the magnitude of my primary result.[41] This implies there is a 0.35% chance of obtaining my results by randomly assigning the tax function investment indicator variable to alternative years in the sample period, alleviating concerns that the primary result is driven by chance or a systematic increase in tax avoidance across time. These tests also help rule out the possibility that my results are driven by other characteristics of firms which disclose MWs. Specifically, if the characteristics of tax function investment firms lead to constantly increasing tax avoidance I would expect to find a significant association between the randomly assigned tax function investment indicator and future tax avoidance.

To further address the issue endogeneity I employ two alternative econometric specifications including 1) a changes model including lagged 3-year cash ETR measures a time t, t+1, and t+2 as additional controls and 2) a model including firm fixed effects. A changes model which includes lagged measures of the level of tax avoidance controls for the starting level of tax avoidance prior to the investment. Employing a changes specification also improves the ability to make causal inferences by controlling for alternative explanatory factors and establishing temporal precedence (Campbell and Cook 1979). The firm fixed effects model subtracts the mean value of each firm's tax avoidance across the sample period, transforming the model to explain deviations of each firm's tax avoidance from its mean level over the sample period. This specification controls for all time-invariant firm characteristics providing a strong test of the impact of tax function investments on tax avoidance. Results are tabulated in Table 9. Inferences are qualitatively similar for the cash ETR specifications, but I am unable to confirm the GAAP ETR results using these alternative models.

[41] Results are also confirmed if a simulation test is run for 10,000 iterations on only firms that disclose an MW during the sample period.

Finally to address sample selection concerns I adjust the control group of firms by confirming my results using various subsamples. These subsamples include all firm-years consisting of 1) only firms that disclose a MW during the sample period; 2) only firms that disclose a tax-related MW during the sample period; and 3) only firms that disclose and remediate a tax-related MW during the sample period. Results are presented in Table 10. The cash ETR results are also robust to the smaller subsamples described in 1), 2) and 3); however, the GAAP ETR specifications do not yield statistically significant coefficient estimates on the tax function investment indicators using these subsamples.[42]

5.2. Timing of Payoffs on Tax Function Investments

The main results suggest a tax function investment at time t is associated with higher levels of tax avoidance measured across times t+1 to t+3. To more precisely determine the timing of the impact of tax function investments on future tax avoidance I re-estimate model (1) replacing the dependent variable with the 1-year relative cash ETR measured at time t+1, t+2, and t+3, respectively, and report in Table 11. The coefficient estimate on *TAX_FIXED* employing tax avoidance at time t+1 as the dependent variable is negative and insignificant (coefficient = -0.048, p-value = 0.105). Tax function investments in year t appear to result in 5.1 percentage point lower 1-year relative cash ETRs in period t+2 (p-value < 0.05), consistent with a two-year time lag between tax function investment and payoffs via increased tax avoidance. However, the coefficient estimate when the 1-year relative cash ETR at time t+3 is examined is positive and marginally significant (coefficient = 0.054, p-value = 0.068). These results suggest that the timing of payoffs on tax function investments examined in this study is approximately

[42] Results for the $FutureCash3yrETR_{t+1-t+3}$ and $FutureGAAP3yrETR_{t+1-t+3}$ are corroborated using a subsample of large firms (S&P 1500) following Bauer (2013).

two years. This result provides useful information for managers evaluating tax function investment decisions.

5.3. Additional Control Variables

Prior research documents a number of variables that are correlated with tax avoidance or the disclosure of MWs. If these variables are correlated with both tax avoidance and the remediation of MWs there is a significant threat to the internal validity of this study. In this section I discuss the additional control variables I include to address these concerns. First, to control for the possibility that shareholder monitoring impacts the level of tax avoidance and the likelihood of disclosing a tax-related MW, I include institutional ownership (Khurana and Moser 2013). Second, I include an indicator variable for the presence of a restatement linked to the disclosed MW to control for the severity of accounting issues leading to the MW. Finally, I include a measure of firm governance, which has been shown to moderate the association between ICWs and CFO compensation (Hoitash et al. 2012) . Specifically, I use the g-index from Gompers et al. (2003) as a control variable in my primary model. Results from the alternative specifications which include all three of these additional control variables are tabulated in Table 12. Due to a lack of data for these variables for many of the sample firms, I lose roughly 30 percent of the tax investment observations. Even with this reduced sample size, however, I continue to find a positive and significant association between tax function investments and future tax avoidance using cash ETRs. However, the GAAP ETR results are not confirmed using this truncated sample.

5.4. Alternative Measures of Tax Avoidance

I replicate model (1) using unadjusted cash and GAAP ETRs to illustrate that the findings are not driven by the industry-year size adjusting procedure. I also modify model (1) by using average values for the control variables measured across t+1 to t+3. Given that the dependent variable is measured across that same period, this alternative specification controls for alternative factors over that same measurement period. Results for these additional tests are presented in Table 13. Results for both the cash and GAAP ETR specifications are confirmed using these alternative research designs.

Overall, these sensitivity tests confirm the primary findings that tax function investments are positively associated with higher levels of cash tax avoidance, and in certain circumstances, GAAP tax avoidance. These results suggest the timing of payoffs is approximately two years. The alternative tests alleviate concerns that the observed association is driven by the sample of tax function investment firms or other potentially endogenous factors.

CHAPTER 6: CONCLUDING REMARKS

This study uses the disclosed remediation of tax-related MW to identify firms that increase tax function investments to provide evidence on the magnitude and timing of payoffs on such investments. Results are consistent with increases in current period tax function investments being positively associated with future tax avoidance measured over time t+1 to t+3. To control for sample selection issues related to the tax function investment firms and other endogeneity concerns these results are confirmed using several alternative economic specifications including a changes specification, firm fixed effects, and various subsamples. Descriptive evidence suggests firms engaged in foreign and state tax planning activities to increase tax avoidance consistent with these tax function investments enabling firms to implement potentially sophisticated tax planning activities. Supplemental analyses suggest the timing lag between investments and tax avoidance payoffs is approximately two years. I provide evidence that both external and internal tax function investments are associated with higher levels of future tax avoidance, but find no evidence that external investments yield higher tax avoidance payoffs. Results indicate that resource constraints and the complexity and risk of the disclosed MW are positively associated with the decision to engage an external advisor to assist in remediating a MW.

This study contributes to the literature that examines the impact of improvements in internal control due to SOX on firm performance (Feng et al. 2013; Cheng et al. 2013). By documenting significant tax avoidance payoffs, this study demonstrates how internal control improvements can have spillover effects onto other aspects of firm operations. This study also enhances our understanding of tax avoidance payoffs on investments in tax planning. Due to the

time value of money, determining the magnitude and timing of payoffs on capital outlays is an important part of evaluating investment alternatives (Brealey and Myers 2002; Busby and Pitts 1997). These findings further our understanding of the economic payoffs on increases in tax function investments providing useful information for managers and practitioners.

This study is subject to limitations. The specialized setting used to operationalize tax function investments (i.e., remediation of tax-related MWs) could limit external validity. Results using simulation analyses and various subsamples alleviate concerns regarding endogeneity and spurious correlation, but I cannot rule out the possibility that other types of tax function investments in an alternative sample of firms could impact tax avoidance in a different manner.

APPENDICES

APPENDIX A

Tax-Related MW Disclosures

1. H&R Block, Inc. 2005/2006 10-K

Description of Weakness

Based on our assessment, management determined that a material weakness existed in the Company's internal controls over accounting for income taxes as of April 30, 2005. Specifically, the Company did not maintain sufficient resources in the corporate tax function to accurately identify, evaluate and report, in a timely manner, non-routine and complex transactions. In addition, the Company had not completed the requisite historical analysis and related reconciliations to ensure tax balances were appropriately stated prior to the completion of the Company's internal control activities. These deficiencies resulted in errors in the Company's accounting for income taxes. These errors were corrected prior to issuance of the consolidated financial statements as of and for the year ended April 30, 2005. In the aggregate, these deficiencies represent a material weakness in internal control over financial reporting on the basis that there is a more than remote likelihood that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected by its internal control over financial reporting. Because of this material weakness in internal control over financial reporting, management concluded that, as of April 30, 2005, the Company's internal control over financial reporting was not effective based on the criteria set forth by COSO.

Remediation steps-2005 10K

We have dedicated substantial resources to the review of our control processes and procedures specifically related to accounting for income taxes. Based on the results of this review, during the fourth quarter, management completed numerous enhancements to improve our internal controls over financial reporting, specifically those related to accounting for income taxes, including the following actions:

- Implemented a comprehensive set of policies and procedures related to accounting for income taxes.
- Filled senior-level positions in the corporate tax department with experienced individuals focusing on corporate tax, state/local tax, and mortgage accounting.
- Engaged a qualified third-party firm to provide supplementary assistance, REMIC transaction tax expertise, and to assess the tax implications of select historical and future securitizations and the adequacy of the model used by Mortgage Services to track the related book/tax basis adjustments.
- Increased the formality and rigor around the operation of key controls.

Other than the changes outlined above, there were no changes that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

In order to remediate the material weakness identified by management as of April 30, 2005, and continuing thereafter, management completed the requisite historical analysis including creation of the necessary tax basis balance sheets and current and deferred reconciliations required and related internal control testing to ensure propriety of all tax related financial statement account balances as of this Form 10-K filing date. The Company believes it has established appropriate controls and procedures and created the appropriate tax account analysis and support subsequent to April 30, 2005. In addition to the above actions, management will conduct a comprehensive evaluation of the corporate tax function, including resource requirements, during the current fiscal year to identify and implement additional improvements to ensure compliance with the controls and procedures that have been put in place to remediate deficiencies previously identified.

Remediation steps-2006 10K

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING –

During the fourth quarter of fiscal year 2006, we completed remediation efforts relating to a material weakness in our controls over accounting for income taxes that was reported as of April 30, 2005. In addition to control enhancements identified in our previously filed reports on Form 10-Q, management implemented additional improvements to controls in the state income tax rate calculation process to incorporate the use of current period pro forma federal and state taxable income calculations and the use of current and projected state apportionment factors, among other data inputs.

Other than the changes outlined above, there were no changes that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

2. Symantec Corporation 2005/2006 10-K

Description of Weakness

Based on its evaluation, our management has identified a material weakness in internal control over financial reporting related to accounting for income taxes as of March 31, 2006…

Management has determined that we had insufficient personnel resources with adequate expertise to properly manage the increased volume and complexity of income tax matters associated with the acquisition of Veritas Software Corporation. This lack of resources resulted in inadequate levels of supervision and review related to the our IRS filings and our accounting for income taxes. This material weakness resulted in our failure to follow established policies and procedures designed to ensure timely income tax filings. Specifically, we did not complete the timely filing of an extension request with the IRS for the final pre-acquisition income tax return for Veritas and, accordingly, did not secure certain income tax related elections. In addition, this material weakness resulted in errors in our annual accounting for income taxes. These errors in accounting were corrected prior to the issuance of our 2006 consolidated financial statements. The aforementioned material weakness results in more than a remote likelihood that a material misstatement of our annual or interim financial statements, due to a failure to complete income tax filings consistent with management's intentions, and due to errors in accounting for income taxes, would not be prevented or detected.

Remediation steps-2005 10K

At the end of February 2006, we hired a new Vice President of Tax and Treasury to help manage the increased complexity of our income tax matters. During the quarter ended March 31, 2006, there were no other changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Since April 1, 2006, we have implemented additional controls in our internal control over financial reporting that serve to remediate the material weakness described above, including the addition of resources dedicated to financial reporting for income taxes and the implementation of processes to identify and calendar all incremental tax compliance and financial accounting for income tax requirements arising from acquisitions. In addition, we intend to automate key elements of our processes to enhance the analysis and calculation of the income tax provision and the reconciliation of the tax accounts.

Remediation steps-2006 10K

Our annual report on Form 10-K for the fiscal year ended March 31, 2006 disclosed a material weakness relating to accounting for income taxes. In order to remediate this material weakness, during the first three quarters of fiscal 2007, we:

- Completed our restructuring of personnel dedicated to financial reporting for income taxes;

- More specifically defined existing key controls, and developed additional controls, applicable to our interim accounting for income taxes;
- Automated certain elements of our processes to enhance the analysis and calculation of the income tax provision and the reconciliation of the tax accounts;
- Enhanced the documentation regarding conclusions reached in the implementation of generally accepted accounting principles; and
- Added additional levels of review by qualified personnel of the application of each key control.

As a result of these actions, management has concluded that Symantec has remediated the material weakness as of March 31, 2007. Although certain steps were taken in the fourth quarter of fiscal 2007 to address the material weakness relating to accounting for income taxes, there were no changes in Symantec's internal control over financial reporting during the quarter ended March 31, 2007 that have materially affected, or are reasonably likely to materially affect, Symantec's internal control over financial reporting.

3. Netflix Holdings Inc. 2005/2006 10-K

Description of Weakness

Management identified a material weakness in our internal control over financial reporting as of December 31, 2005 related to our accounting for income taxes. Specifically, our policies and procedures do not include adequate management review of the calculations and related supporting documentation to ensure that its accounting for income taxes is in accordance with generally accepted accounting principles. This material weakness resulted in a material error in the Company's consolidated financial statements related to the understatement of Deferred Tax Assets in the consolidated balance sheet and the understatement of the Benefit from Income Taxes in the consolidated statement of income. This error was corrected prior to the filing of our 2005 consolidated financial statements included in Item 8 of this Form 10-K.

Remediation steps-2005 10K

We are taking the following action to remediate the material weakness described above: implementing additional review procedures to ensure complete supporting documentation is available to ensure compliance with generally accepted accounting principles; this action will be in place in connection with the preparation of our financial statements for the first quarter of 2006.

Remediation steps-2006 10K

Remediation of Material Weakness

In the first quarter of 2006, we implemented additional review procedures to ensure complete supporting documentation is available to ensure that our accounting for income taxes is in accordance with generally accepted accounting principles; this action was in place in connection with the preparation of our financial statements for the first quarter of 2006. As such, we believe that the remediation initiative outlined above was sufficient to eliminate the material weakness in internal control over financial reporting as discussed above.

4. PAR Pharmaceutical Companies 2007/2008 10-K

Description of Weakness

The Company's management has concluded that the Company did not maintain effective internal controls over financial reporting as of December 31, 2007 due to the restatement of the consolidated financial statements for the years ended December 31, 2006 and 2005 to properly determine the income tax benefits from discontinued operations and related interest expense, as a result of a material weakness that existed at that time. The Company lacked a formal process to identify, analyze and communicate non-routine tax matters and lacked sufficient oversight by management for non-routine tax matters.

Remediation steps-2007 10K

The Company has taken the following steps to remediate the weakness mentioned above: 1) replaced members of senior management and managers responsible for the oversight of income tax matters, 2) formalized a policy and procedure for the communication and review of non-routine tax matters by senior management, and 3) as appropriate the Company will engage external tax advisors for advice with respect to non-routine tax matters.

Remediation steps-2008 10K

As of the date of the filing of our 2007 Annual Report on Form 10-K, Par did not maintain effective controls due to the restatement of the consolidated financial statements for the years ended December 31, 2006 and 2005 to properly determine the income tax benefits from discontinued operations and related interest expense, as a result of a material weakness that existed at that time. Par lacked a formal process to identify, analyze and communicate non-routine tax matters and lacked sufficient oversight by management for non-routine tax matters

The following measures have been taken to address the 2007 material weaknesses mentioned above:

 Par had replaced members of senior management subsequent to the identification of the transaction that gave rise to the material weakness as of the filing of the 2007 Annual Report on Form 10-K.

 Formalized a policy and procedure for the communication and review of non-routine tax matters by senior management.

 As appropriate Par will engage external tax advisors for advice with respect to non-routine tax matter

5. Shaw Group Inc. 2008/2009 10-K

Description of Weakness

We identified the following material weaknesses in internal controls over financial reporting that continued to exist as of August 31, 2008:

(2) Accounting for Income Taxes

We did not maintain a sufficient number of tax professionals with adequate experience in the application of Financial Accounting Standards Board Statement No. 109, *Accounting for Income Taxes* (FAS 109). As a result, our policies and procedures for the identification and analysis of the appropriate accounting treatment of routine and non-routine income tax matters were not effective to ensure that the our income tax accounting was consistent with generally accepted accounting principles. These control deficiencies give rise to a reasonable possibility of a material misstatement in our annual or interim financial reporting not being prevented or detected on a timely basis. This material weakness resulted in errors in the accounting for both our current and deferred income tax amounts and related disclosures, which were corrected prior to issuance of this Form 10-K.

Remediation steps-2008 10K

Our planned remedial measures related to the material weaknesses identified above include:

For remedial measures related to Accounting for Income Taxes, we recently hired a new Vice President of Tax to lead our global tax function who will be developing a plan to ensure we have an adequate number of experienced tax accounting professionals. We will further enhance our policies and procedures related to the application of FAS 109. We will continue to engage external tax resources as necessary to assist us until the remedial measures can be designed, implemented and tested.

In light of the material weaknesses described above, we performed additional procedures that provided us with reasonable assurance regarding the reliability of: (1) our financial reporting and (2) the preparation of the consolidated financial statements contained in this Form 10-K. Accordingly, management believes that the consolidated financial statements included in this Form 10-K fairly present, in all material respects, our financial position, results of operations and cash flows for the periods presented.

We are committed to finalizing our remediation action plans and implementing the necessary enhancements to remediate the material weaknesses described above. These material weaknesses will not be considered remediated until (1) the new processes are designed, appropriately controlled and implemented for a sufficient period of time and (2) we have sufficient evidence that the new processes and related controls are operating effectively.

Remediation steps-2009 10K

During the three months ended August 31, 2009, we completed testing of the control improvements that were implemented in fiscal 2009 to remediate our material weaknesses that existed as of August 31, 2008. Based on the results of our testing of the remedial actions taken during fiscal 2009, we believe the following material weaknesses no longer existed as of August 31, 2009:

2) Accounting for Income Taxes

As previously reported, we did not maintain a sufficient number for tax professionals with adequate experience in the application of Financial Accounting Standards Board No. 109, *Accounting for Income* Taxes (FAS 109) as of August 31, 2008. As a result, our policies and procedures for the identification and analysis of the appropriate accounting treatment of routine and non-routine income tax matters were not effective to ensure that our income tax accounting was consistent with generally accepted accounting principles. Based upon the remediation actions we took during the first, second and third quarters of fiscal 2009 and our testing that was completed in the fourth quarter of fiscal 2009 on the control improvements implemented during the year, we believe this material weakness no longer existed as of August 31, 2009.

Discussion of Effective Tax Rate Changes in MDA-2010 10K

Consolidated Provision for Income Taxes:

Consolidated effective tax rate for fiscal year 2010 was 30% as compared to 37% for fiscal year 2009. The decrease in our effective tax rate was primarily due to the mix of earnings between our domestic and foreign operations, and a lower provision for uncertain tax positions in fiscal year 2010 as compared to fiscal year 2009. The consolidated effective tax rate for fiscal year 2010 also includes a benefit of research and experimentation tax credits in submitted claims or filed returns that were included in the provision for uncertain tax positions. See Note 10 — Income Taxes to our consolidated financial statements for a reconciliation of the federal statutory rate to the consolidated effective tax rate.

6. True Religion Apparel Inc. 2007/2008 10-K

Description of Weakness

Based on the COSO criteria, management identified control deficiencies that constitute material weaknesses. A "material weakness" is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is more than a reasonable possibility that a material misstatement of the Company's financial statements will not be prevented or detected on a timely basis. The following material weaknesses were identified:

> • *Accounting for income taxes:* we did not properly determine the federal and state income tax consequences of our executive compensation because our relevant controls were not designed or operating effectively. These deficiencies resulted in errors that were material to our interim and annual financial statements;

Remediation steps-2007 10K

We have taken actions that are intended to remediate our material weaknesses in internal control over financial reporting, including the following:

> (1) Hired finance and accounting department management that is more experienced in selecting the correct accounting policies for, and establishing policies, procedures and controls to record and report, the Company's business transactions;
> (2) Implemented formal procedures and controls to record and report all material business transactions timely (this effort is on-going);
> (3) Hired additional accounting department personnel;
> (4)Engaged new income tax and internal-control-over-financial-reporting advisors.

Remediation steps-2008 10K

No mention of prior year weakness or remediation.

Discussion of Effective Tax Rate Changes in MDA-2009 10K

Provision for Income Taxes- 2009 vs. 2008

The effective tax rate was 39.1% for 2009 compared to 36.6% in 2008. In 2008, we implemented a tax planning strategy that retroactively changed our filing status in certain states, which reduced our cumulative tax provision by $1.5 million. We also finalized our 2007 tax returns during the 2008 period, which included additional analysis of our federal and state tax obligations; as a result of this analysis, we reduced our income tax provision in 2008 by $0.6 million. These factors were the primary drivers resulting in a lower effective tax rate of 36.6% in 2008.

Provision for Income Taxes- 2008 vs. 2007

The effective tax rate was 36.6% for 2008 compared to 43.1% in 2007. The 2007 effective tax rate was higher than the 2008 rate because in 2008 we implemented a tax planning strategy that retroactively changed our filing status in certain states, which reduced our tax provision by $1.6 million and increased our diluted earnings per share by $0.07. Additionally, in 2007 a larger portion of our executive compensation was nondeductible for income tax purposes resulting in a higher effective income tax rate.

APPENDIX B

Variable Definitions

Variable	Definition
Dependent Variables	
CurrentCash1yrETR$_t$	Firm-level deviation from the year industry-size adjusted 1-year mean of the cash ETR: Computed as (*txpd*/*pi-spi*) winsorized between 0 and 1, less the mean (*txpd*/*pi-spi*) for all firms in the same two digit SIC industry asset quintile for the given year where each observation to compute the mean is winsorized between 0 and 1. All negative values of *pi-spi* are set to missing (Balakrishnan et al. 2012).
CurrentGAAP1yrETR$_t$	Firm-level deviation from the year industry-size adjusted 1-year mean of the GAAP ETR: Computed as (*txt*/*pi-spi*) winsorized between 0 and 1, less the mean (*txt*/*pi-spi*) for all firms in the same two digit SIC industry asset quintile for the given year where each observation to compute the mean is winsorized between 0 and 1. All negative values of *pi-spi* are set to missing (Balakrishnan et al. 2012).
FutureCash3yrETR$_{t+1-t+3}$	Firm-level deviation from the year industry-size adjusted 3-year mean of the cash ETR centered on year t+2: Computed as $\Sigma txpd_{t+1-t+3}$/ ($\Sigma pi\text{-}spi_{t+1-t+3}$) winsorized between 0 and 1, less the mean $\Sigma txpd_{t+1-t+3}$/ ($\Sigma pi\text{-}spi_{t+1-t+3}$) for all firms in the same two digit SIC industry asset quintile for the given year where each observation to compute the mean is winsorized between 0 and 1. All negative values of $\Sigma pi\text{-}spi_{t+1-t+3}$ are set to missing (Balakrishnan et al. 2012).
FutureGAAP3yrETR $_{t+1-t+3}$	Firm-level deviation from the year industry-size adjusted 3-year mean of the GAAP ETR centered on year t+2: Computed as $\Sigma txt_{t+1-t+3}$/ ($\Sigma pi\text{-}spi_{t+1-t+3}$) winsorized between 0 and 1, less the mean $\Sigma txt_{t+1-t+3}$/ ($\Sigma pi\text{-}spi_{t+1-t+3}$) for all firms in the same two digit SIC industry asset quintile for the given year where each observation to compute the mean is winsorized between 0 and 1. All negative values of $\Sigma pi\text{-}spi_{t+1-t+3}$ are set to missing (Balakrishnan et al. 2012).
Internal Control Variables	
WEAK_TAX$_t$	Indicator variable for the presence of a tax-related MW: set to 1 if a firm discloses a tax-related MW in the current or prior year, zero otherwise (Ashbaugh-Skaife et al. 2008).
TAX_FIXED$_t$	Indicator variable for the remediation of a tax-related MW: set to 1 if a firm discloses a tax-related MW in the prior year but not the current year, zero otherwise (Ashbaugh-Skaife et al. 2008).
WEAK_OTHER$_t$	Indicator variable for any other type of MW: set to 1 if a firm has an MW in the current or prior year and *WEAK_TAX*$_t$ is equal to zero, zero otherwise (Ashbaugh-Skaife et al. 2008).

$OTHER\_FIXED_t$	Indicator variable for the remediation of any other type of MW: set to 1 if a firm discloses a non-tax-related MW in the prior year but not the current year and $WEAK\_OTHER_t$ is equal to zero, zero otherwise (Ashbaugh-Skaife et al. 2008).
Control Variables	
ROA_t	Return on assets: pi/at_{t-1}
LEV_t	Leverage: $dltt/at_{t-1}$
$FORINC_t$	Foreign income: *pifo/pi*, missing values of *pifo* set to zero.
$TAXHAVEN_t$	Tax haven indicator: set to 1 if a firm discloses material operations in a tax haven country on Exhibit 21 of Form 10-K (source: Dyreng and Lindsey 2009).
$INTAN_t$	Intangibles: *intan/at,* missing values of *intan* set to zero.
$SIZE_t$	Natural log of assets: ln(*at*)
NOL_t	Net operating loss indicator: set to 1 if *tlcf* is greater than zero, missing values of *tlcf* are set to zero.
RD_t	Research and development intensity: *xrd*/*revt,* missing values of *xrd* set to zero.
BM_{t-1}	Lagged book to market: $ceq_{t-1}/(prcc\_f_{t-1}*csho_{t-1})$.
$AGGR\_LOSS_t$	Indicator variable for consecutive losses: set to 1 if the sum of earnings before extraordinary items for the prior year and current year are less than zero. ($ib_{t-1} + ib_t < 0$).
$CONSTR\_CF_t$	Cash flow constraints: Equal to 1 minus operating cash flows (*oancf*).

APPENDIX C

Tables

TABLE 1
MWs Disclosed by Year and Time to Remediate

Panel A: Number of Tax MWs and Other MWs by Year

	2004	2005	2006	2007	2008	2009	2010	2011	Total
Tax MWs	69	92	64	38	18	22	12	17	332
Remediated following year	36	67	33	24	10	13	7	N/A	190
Remediated in 2 years	11	11	14	7	1	2	0	N/A	46
Remediated in 3 years +	7	1	6	0	0	0	N/A	N/A	14
Unremediated or missing	12	13	11	7	7	7	N/A	N/A	57
Other MWs	136	161	135	109	78	50	40	60	769
Remediated following year	99	118	86	72	42	31	22	N/A	470
Remediated in 2 years	9	12	16	10	6	4	2	N/A	59
Remediated in 3 years +	3	2	3	0	1	0	N/A	N/A	9
Unremediated or missing	25	29	30	27	29	15	N/A	N/A	155

Panel B: Remediation of Tax MWs and Other MWs during sample period

Tax MWs	2004	2005	2006	2007	2008	2009	Total
Tax MWs	69	92	64	38	18	22	303
# Tax MW remediated next year	36	67	33	24	10	13	183
% of Tax MWs remediated next year	52.2%	72.8%	51.6%	63.2%	55.6%	59.1%	61.4%
Other MWs	2004	2005	2006	2007	2008	2009	Total
Other MWs	136	161	135	109	78	50	669
# Other MW remediated next year	99	113	93	85	51	36	477
% of Other MWs remediated next year	72.8%	70.2%	68.9%	78.0%	65.4%	72.0%	71.3%

Note: Table 1 provides descriptive statistics for the number and time to remediate both tax and non-tax MWs. Panel A provides statistics on all ICWs in Audit Analytics from 2004-2009. Panel B provides descriptive statistics on the MWs during my sample period of 2004-2009.

TABLE 2
Sample Selection

Audit Analytics Opinion File with Auditor IC Opinion firm years from 2004 to 2008	16,718
Less: Observations missing Compustat data to compute variables	(7,526)
Less: Observations with negative pretax income less special items t+1 to t+3	(1,505)
Observations available for t+1 to t+3 3-year Cash ETR analysis	7,687
Firm years that disclose a new tax-related MW from 2004 to 2008	303
Less: Observations missing Compustat/Audit Analytics data to compute variables	(128)
Less: Observations with negative pretax income less special items t+1 to t+3	(70)
Tax-related MW remediation observations available for t+1 to t+3 3-year Cash ETR analysis	105

TABLE 3
Descriptive Statistics Type of Investment by Year

Panel A: All Remediated Tax MWs

	2005	2006	2007	2008	2009	2010	2011	Total
Total Remediated Tax MWs	36	68	46	35	19	17	9	230
Type of Tax Function Investment								
Hiring additional personnel	30	42	31	20	11	9	6	149
	83.3%	61.8%	67.4%	57.1%	57.9%	52.9%	66.7%	64.8%
Hiring new tax director	19	45	27	11	8	9	2	121
	52.8%	66.2%	58.7%	31.4%	42.1%	52.9%	22.2%	52.6%
Engaging outside consultant	22	39	26	22	16	12	5	142
	61.1%	57.4%	56.5%	62.9%	84.2%	70.6%	55.6%	61.7%
Engaging auditor tax services	8	22	26	21	11	13	5	106
	22.2%	32.4%	56.5%	60.0%	57.9%	76.5%	55.6%	46.1%
Only additional procedures/review	6	14	12	6	3	4	2	47
	16.7%	20.6%	26.1%	17.1%	8.6%	23.5%	22.2%	20.4%

TABLE 3 (cont'd)

Panel B: All Remediated Tax-related MWs in Sample

	2005	2006	2007	2008	2009	Total
Total Remediated Tax-related MWs	16	36	22	25	6	105
Type of Tax Function Investment						
Hiring additional personnel	6	18	16	14	4	58
	37.5%	50.0%	72.7%	56.0%	66.7%	55.2%
Hiring new tax director	9	11	6	9	1	36
	56.3%	30.6%	27.3%	36.0%	16.7%	34.3%
Internal Investment Only	10	12	8	12	2	44
	62.5%	33.3%	36.4%	48.0%	33.3%	41.9%
Engaging External Party	6	24	14	13	4	61
	37.5%	66.7%	63.6%	52.0%	66.7%	58.1%
External Investment Only	1	15	8	6	1	31
	6.3%	41.7%	36.4%	24.0%	16.7%	29.5%
Only additional procedures/review	5	9	4	6	0	24
	31.3%	25.0%	18.2%	24.0%	0.0%	22.9%

Note: Table 3 provides descriptive statistics for the number of remediated tax-related MWs and the tax function investment made. With the exception of "only additional procedures/review" each investment is not mutually exclusive. For example, a firm could disclose the hiring of additional personnel and the engagement of an outside consultant. Panel A provides descriptive statistics for all remediated tax-related MWs in Audit Analytics (2004-2011). Panel B provides descriptive statistics for remediated tax-related MWs that are used in the multivariate analyses where the dependent variable is $FutureCash3yrETR_{t+1-t+3}$.

TABLE 4
Descriptive Statistics Main and Matched Samples

Panel A: Full Sample n = 7,687

	Column 1: Tax Function Investment Firms						Column 2: Control Firms					
Dependent Variables	**n**	**Mean**	**25%**	**Median**	**75%**	**SD**	**n**	**Mean**	**25%**	**Median**	**75%**	**SD**
CurrentCash1yrETR$_t$	473	0.006	-0.161	-0.067***	0.108	0.248	7214	0.012	-0.117	-0.019	0.097	0.197
CurrentGAAP1yrETR$_t$	473	0.046***	-0.130	0.044	0.144	0.238	7214	0.024	-0.068	0.032	0.098	0.165
FutureCash3yrETR$_{t+1-t+3}$	473	0.049**	-0.104	0.011	0.129	0.234	7214	0.026	-0.115	0.000	0.098	0.194
FutureGAAP3yrETR $_{t+1-t+3}$	473	0.048***	-0.086	0.041***	0.124	0.222	7214	0.018	-0.096	0.022	0.097	0.175
Control Variables												
ROA	473	0.056***	0.000	0.043***	0.114	0.131	7214	0.074	0.017	0.059	0.132	0.148
LEV	473	0.179	0.000	0.092	0.265	0.244	7214	0.193	0.018	0.127	0.288	0.247
FORINC	473	0.021**	0.000	0.003***	0.034	0.048	7214	0.016	0.000	0.000	0.013	0.047
TAXHAVEN	473	0.581***	0.000	1.000***	1.000	0.494	7214	0.396	0.000	0.000	1.000	0.489
INTAN	473	0.000	0.000	0.000***	0.000	0.001	7214	0.000	0.000	0.000	0.000	0.003
SIZE	473	6.716***	5.494	6.529***	7.836	1.602	7214	7.224	6.043	7.114	8.308	1.813
NOL	473	0.507***	0.000	1.000***	1.000	0.500	7214	0.34	0.000	0.000	1.000	0.474
RD	473	0.052	0.000	0.009***	0.079	0.077	7214	0.046	0.000	0.000	0.015	0.373
BM	473	0.431**	0.221	0.396***	0.598	0.378	7214	0.462	0.268	0.434	0.616	0.310
AGGR_LOSS	473	0.271***	0.000	0.000***	1.000	0.445	7214	0.128	0.000	0.000	0.000	0.335
CONSTR_CF	473	0.898	0.862	0.919	0.966	0.126	7214	0.904	0.856	0.919	0.975	0.203

Note: Table 4 Panel A provides descriptive statistics for the dependent, independent and control variables used in the primary analyses where the dependent variable is *FutureCash3yrETR$_{t+1-t+3}$* for all firm-years of the 105 tax function investment firms (Column 1) and all other firm-years in the primary sample (column 2). All variables are defined in Appendix B. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed) for t-tests and Wilcoxon rank-sum test across columns 1 and 2.

TABLE 4 (cont'd)

Panel B: Tax Function Investment Firms Pre- and Post-Investment n =473

	Column 3: Pre-Investment						Column 4: Year of and Post-Investment					
Dependent Variables	**N**	**Mean**	**25%**	**Median**	**75%**	**SD**	**N**	**Mean**	**25%**	**Median**	**75%**	**SD**
CurrentCash1yrETR$_t$	248	-0.006	-0.167	-0.080	0.094	0.232	225	0.020	-0.155	-0.053	0.113	0.265
CurrentGAAP1yrETR$_t$	248	0.037	-0.174	0.033	0.156	0.252	225	0.056	-0.074	0.049	0.133	0.220
FutureCash3yrETR$_{t+1-t+3}$	248	0.077***	-0.096	0.020**	0.153	0.254	225	0.018	-0.115	0.000	0.106	0.206
FutureGAAP3yrETR $_{t+1-t+3}$	248	0.064*	-0.092	0.051	0.141	0.246	225	0.029	-0.082	0.031	0.102	0.191
Control Variables												
ROA	248	0.057	0.004	0.040	0.102	0.122	225	0.054	-0.003	0.045	0.122	0.140
LEV	248	0.176	0.000	0.100	0.262	0.264	225	0.183	0.000	0.081	0.285	0.220
FORINC	248	0.018	0.000	0.004	0.037	0.046	225	0.023	0.000	0.002	0.030	0.049
TAXHAVEN	248	0.605	0.000	1.000	1.000	0.490	225	0.556	0.000	1.000	1.000	0.498
INTAN	248	0.000	0.000	0.000*	0.000	0.001	225	0.000	0.000	0.000	0.000	0.001
SIZE	248	6.686	5.438	6.465	7.837	1.587	225	6.748	5.605	6.586	7.821	1.622
NOL	248	0.512	0.000	1.000	1.000	0.501	225	0.502	0.000	1.000	1.000	0.501
RD	248	0.057	0.000	0.014	0.099	0.081	225	0.047	0.000	0.006	0.070	0.072
BM	248	0.429	0.225	0.374	0.583	0.385	225	0.433	0.219	0.420	0.625	0.370
AGGR_LOSS	248	0.266	0.000	0.000	1.000	0.443	225	0.276	0.000	0.000	1.000	0.448
CONSTR_CF	248	0.894	0.869	0.920	0.964	0.133	225	0.901	0.858	0.917	0.968	0.119

Note: Table 4 Panel B provides descriptive statistics for the dependent, independent and control variables used in the primary analyses where the dependent variable is *FutureCash3yrETR$_{t+1-t+3}$* for all firm-years of the 105 tax function investment firms. Column 3 provides descriptives for all firm-years prior to the tax function investment. Column 4 provides descriptives for all firm-years post-investment (including the year of investment). All variables are defined in Appendix B. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed) for t-tests and Wilcoxon rank-sum test across columns 3 and 4.

TABLE 4 (cont'd)

Panel C: Matched Sample n = 210

	Column 5: *TAX_FIXED* = 1						Column 6: *TAX_FIXED* = 0					
Dependent Variables	**N**	**Mean**	**25%**	**Median**	**75%**	**SD**	**N**	**Mean**	**25%**	**Median**	**75%**	**SD**
CurrentCash1yrETR$_t$	105	0.031	-0.186	-0.074	0.126	0.310	105	0.004	-0.131	-0.047	0.115	0.215
CurrentGAAP1yrETR$_t$	105	0.049	-0.098	0.049	0.116	0.235	105	0.069	-0.074	0.034	0.127	0.238
FutureCash3yrETR$_{t+1\text{-}t+3}$	105	0.008***	-0.143	0.000*	0.118	0.197	105	0.082	-0.078	0.025	0.170	0.242
FutureGAAP3yrETR $_{t+1\text{-}t+3}$	105	0.021	-0.127	0.024	0.102	0.207	105	0.050	-0.124	0.029	0.123	0.245
Control Variables												
ROA	105	0.038	-0.017	0.030**	0.087	0.136	105	0.062	0.011	0.049	0.119	0.153
LEV	105	0.187	0.000	0.075	0.276	0.234	105	0.155	0.000	0.087	0.253	0.188
FORINC	105	0.017	0.000	0.002	0.025	0.038	105	0.009	0.000	0.000	0.021	0.061
TAXHAVEN	105	0.543	0.000	1.000	1.000	0.501	105	0.457	0.000	0.000	1.000	0.501
INTAN	105	0.001	0.000	0.000	0.001	0.001	105	0.000	0.000	0.000	0.000	0.001
SIZE	105	6.615	5.486	6.408	7.564	1.531	105	6.695	5.652	6.672	7.774	1.672
NOL	105	0.505**	0.000	1.000**	1.000	0.502	105	0.343	0.000	0.000	1.000	0.477
RD	105	0.052	0.000	0.008*	0.089	0.078	105	0.055	0.000	0.000	0.028	0.194
BM	105	0.455	0.236	0.416	0.628	0.402	105	0.415	0.226	0.387	0.564	0.239
AGGR_LOSS	105	0.324	0.000	0.000	1.000	0.470	105	0.229	0.000	0.000	0.000	0.422
CONSTR_CF	105	0.904	0.863	0.919	0.966	0.118	105	0.909	0.857	0.922	0.985	0.130

Note: Table 4 Panel C provides descriptive statistics for the dependent, independent and control variables used in the primary analyses where the dependent variable is *FutureCash3yrETR*$_{t+1\text{-}t+3}$ for the 105 tax function investment firm-years (column 5) and the matched sample firm-years (column 6). All variables are defined in Appendix B. *** p<0.01, ** p<0.05, * p<0.1 (two-tailed) for t-tests and Wilcoxon rank-sum test across columns 5 and 6.

TABLE 5
OLS ETR Regressions Main Analysis

	Contemporaneous Tax Avoidance at t Full Sample		**Future Tax Avoidance at t+1 to t+3 Full Sample**		**Future Tax Avoidance at t+1 to t+3 Matched Sample**	
VARIABLES	(1) *Current Cash1yrETR* (t)	(2) *Current GAAP1yrETR* (t)	(3) *Future Cash3yrETR* (t+1 to t+3)	(4) *Future GAAP3yrETR* (t+1 to t+3)	(5) *Future Cash3yrETR Unadjusted* (t+1 to t+3)	(6) *Future GAAP3yrETR Unadjusted* (t+1 to t+3)
$WEAK\_TAX_t$	0.040**	0.042**	0.063***	0.062***	0.017	0.025
	(2.009)	(2.102)	(2.936)	(3.179)	(0.573)	(0.905)
TAX_FIXED_t	0.005	-0.012	-0.081***	-0.043*	-0.075***	-0.044*
	(0.157)	(-0.464)	(-3.499)	(-1.732)	(-2.975)	(-1.672)
$WEAK\_OTHER_t$	0.037***	0.004	-0.012	-0.007	-0.048	0.020
	(2.782)	(0.366)	(-0.899)	(-0.540)	(-1.283)	(0.521)
$OTHER\_FIXED_t$	-0.068***	0.001	0.001	0.020	0.080	-0.035
	(-4.052)	(0.100)	(0.034)	(1.144)	(1.517)	(-0.885)
ROA_t	0.061**	0.159***	0.193***	0.181***	0.164	0.310**
	(2.057)	(6.389)	(7.141)	(9.166)	(1.647)	(2.509)
LEV_t	-0.024*	-0.012	-0.050***	-0.035***	-0.045	-0.059
	(-1.926)	(-1.115)	(-3.355)	(-3.073)	(-0.659)	(-0.905)
$FORINC_t$	-0.032	-0.209***	0.006	-0.220**	0.140	-0.337*
	(-0.422)	(-3.054)	(0.062)	(-2.377)	(0.643)	(-1.823)
$TAXHAVEN_t$	0.012**	-0.000	-0.001	-0.001	0.010	-0.003
	(2.207)	(-0.088)	(-0.176)	(-0.108)	(0.385)	(-0.121)
$INTAN_t$	13.037***	13.813***	0.392	0.674*	-24.246***	-15.041*
	(3.492)	(3.757)	(1.046)	(1.708)	(-2.603)	(-1.655)
$SIZE_t$	-0.007***	-0.005***	-0.001	-0.007***	-0.008	-0.004
	(-3.902)	(-3.621)	(-0.527)	(-3.601)	(-0.695)	(-0.352)
NOL_t	-0.014***	0.005	-0.013*	0.010	-0.020	0.005
	(-2.624)	(1.038)	(-1.916)	(1.637)	(-0.785)	(0.189)
RD_t	-0.173***	-0.046*	-0.007*	0.003*	-0.220**	-0.240*
	(-4.646)	(-1.745)	(-1.825)	(1.856)	(-2.052)	(-1.783)
BM_{t-1}	-0.005	0.003	-0.011	-0.022**	0.061	0.001
	(-0.705)	(0.470)	(-0.957)	(-2.223)	(1.366)	(0.038)

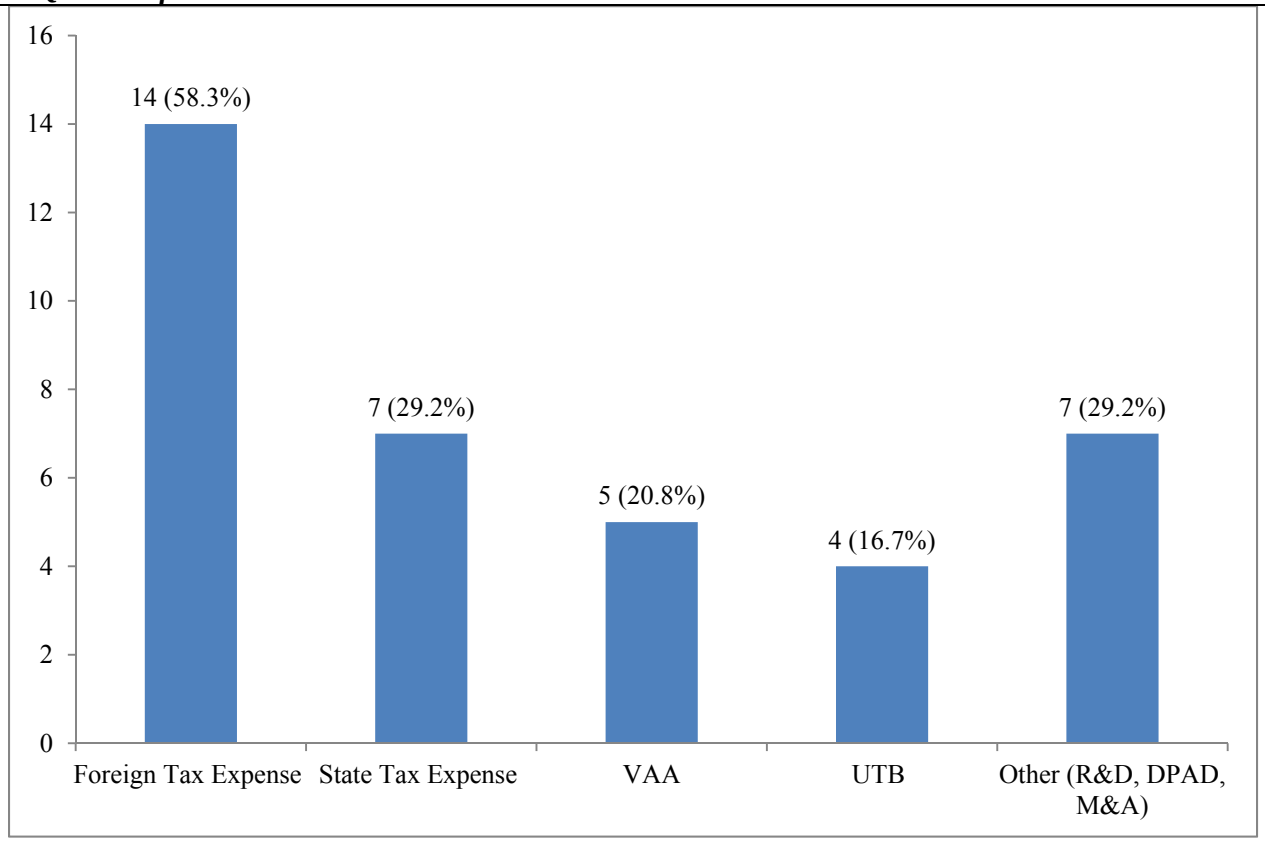
TABLE 5 (cont'd)

AGGR_LOSS$_t$	-0.061***	-0.014*	0.006	-0.021**	0.041	0.009
	(-6.468)	(-1.698)	(0.522)	(-2.061)	(0.914)	(0.215)
CONSTR_CF$_t$	0.016	-0.016	0.072***	0.004	0.117***	0.118***
	(0.642)	(-0.720)	(3.606)	(1.128)	(5.693)	(4.867)
INTERCEPT	-0.117*	-0.072	-0.115	-0.074	0.084	0.182
	(-1.670)	(-1.133)	(-1.121)	(-0.840)	(0.764)	(1.539)
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes
# *TAX_FIXED* = 1	139	142	105	109	105	105
# *OTHER_FIXED* = 1	277	287	186	195	28	28
Observations	14,399	14,932	7,687	8,211	707	710
R-squared	0.048	0.052	0.053	0.065	0.131	0.148

Note: Table 5 displays results from the estimation of the OLS regression model (1) for the full sample of firms (columns 1-4) and the matched sample of firms (columns 5-6). The primary variable of interest is *TAX_FIXED*. Robust t-statistics in parentheses. Standard errors are clustered by firm. All variables are defined in Appendix B. *** p<0.01, ** p<0.05, *p<0.10 (two-tailed).

TABLE 6
Disclosed Factors for Increase in Tax Avoidance

Largest Quintile of Increases in Future Tax Avoidance: N = 24



Note: Table 6 provides descriptive statistics for the tax function investment firms in the largest quintile of decreases in *FutureCash3yrETR*$_{t+1\text{-}t+3,}$. Disclosed factors for these decreases are hand-collected from each firm's 10-Ks from time t+1, t+2, and t+3, respectively. A disclosed reason is coded as present if management discloses the factor either in the MDA or tax footnote as being a factor leading to the decrease in ETR in any of those years. Valuation allowance account is abbreviated as VAA. Unrecognized tax benefit account is abbreviated as UTB. The Other category includes research and development credits (R&D), domestic producer's activities deduction (DPAD), and mergers and acquisitions (M&A).Disclosed factors are not mutually exclusive.

TABLE 7
OLS 3-year ETR Regressions External and Internal Investments

	3-year Cash ETRs Full Sample		3-year Cash & GAAP ETRs Matched Sample	
VARIABLES	(1) *Future Cash3yrETR* (t+1 to t+3)	(2) *Future GAAP3yrETR* (t+1 to t+3)	(3) *Future Cash3yrETR Unadjusted* (t+1 to t+3)	(4) *Future GAAP3yrETR Unadjusted* (t+1 to t+3)
β_1*WEAK_TAX*$_t$	0.063***	0.066***	0.017	0.025
	(2.936)	(3.368)	(0.570)	(0.902)
β_2*EXTERNAL_FIX*$_t$	-0.079***	-0.060**	-0.084***	-0.057*
	(-2.783)	(-2.080)	(-3.018)	(-1.767)
β_3*INTERNAL_FIX*$_t$	-0.085**	-0.053	-0.064*	-0.027
	(-2.527)	(-1.587)	(-1.681)	(-0.863)
β_4*WEAK_OTHER*$_t$	-0.012	-0.007	-0.049	0.020
	(-0.898)	(-0.524)	(-1.293)	(0.503)
β_5*OTHER_FIXED*$_t$	0.001	0.020	0.081	-0.035
	(0.034)	(1.113)	(1.521)	(-0.876)
Controls	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes
F-test: $\beta_2 > \beta_3$	0.02	0.04	0.23	0.66
Prob > F =	0.892	0.848	0.630	0.418
# *TAX_FIXED* = 1	105	109	105	105
Observations	7,687	8,211	707	710
R-squared	0.053	0.065	0.133	0.149

Note: Table 7 displays results from the estimation of the OLS regression model (1) for the full sample of firms (columns 1 & 2) and the estimation of the OLS regression model (1) using unadjusted future 3-year cash/GAAP ETRs as the dependent variable for the matched sample (columns 3 & 4). The primary variables of interest are *EXTERNAL_FIX* and *INTERNAL_FIX*. *EXTERNAL_FIX* is equal to 1 if a firm discloses using an external advisor to assist in the remediation of the disclosed tax-related MW, zero otherwise. *INTERNAL_FIX* is equal to one of a firm discloses only investing internally to remediate the disclosed tax-related MW, zero otherwise. Robust t-statistics in parentheses. Standard errors are clustered by firm. All variables are defined in Appendix B. *** p<0.01, ** p<0.05, *p<0.10 (two-tailed). An f-test is also performed to test for differential payoffs on external versus internal tax function investments (i.e., $\beta_2 > \beta_3$) (Prob: F > 0: two-tailed).

Table 8
Logistic Regression:
Determinants of External Investments

VARIABLES	*External*$_t$	Marginal Effects
RESTATEMENT$_t$	1.178*	28.2%*
	(1.87)	
FOROPS$_t$	0.738	17.7%
	(1.31)	
ROA$_t$	3.224	77.2%
	(1.58)	
SIZE$_t$	-0.010	-0.02%
	(-0.06)	
LOSS$_t$	1.376**	33.0%**
	(2.17)	
LEV$_t$	-0.799	-19.1%
	(-0.72)	
RD$_t$	-3.382	-81.0%
	(-1.13)	
BM$_{t-1}$	0.424	10.2%
	(0.68)	
INVENTORY	-2.393	-57.3%
	(-0.95)	
2006	1.006	24.5%
	(1.38)	
2007	1.355*	31.8%
	(1.72)	
2008	0.259	6.4%
	(0.36)	
2009	0.945	23.1%
	(0.97)	
CONSTANT	-1.247	
	(-0.86)	
Year Effects	Yes	
Observations	105	
Pseudo R-squared	0.132	
ROC Curve:	0.74	

Note: Table 8 displays results from the estimation of the logistic regression model (2) using *External_FIX* as the dependent variable for the subsample of firms which are making a tax function investment. *External_FIX* is equal to 1 for firms which engage an external service provider to remediate their tax-related MWIC, zero otherwise. Robust t-statistics in parentheses. Standard errors are clustered by firm. All variables are defined in Appendix B and the text of the manuscript. *** p<0.01, ** p<0.05, *p<0.10 (two-tailed). Marginal effects are calculated for a one unit change of the variable of interest holding all other variables constant at their respective means.

TABLE 9
OLS Changes and Firm Fixed Effects Specifications

	Changes Analysis		Firm Fixed Effects	
VARIABLES	(1) *Change Future Cash3yrETR* (t+1 to t+3)	(2) *Change Future GAAP3yrETR* (t+1 to t+3)	(3) *Future Cash3yrETR* (t+1 to t+3)	(4) *Future GAAP3yrETR* (t+1 to t+3)
$WEAK\_TAX_t$	0.033*	0.021	0.028	0.012
	(1.656)	(1.236)	(0.859)	(0.465)
TAX_FIXED_t	-0.064**	-0.031	-0.053**	-0.021
	(-2.488)	(-1.215)	(-2.033)	(-0.753)
$WEAK\_OTHER_t$	-0.003	-0.010	-0.011	-0.023
	(-0.262)	(-0.833)	(-0.566)	(-1.084)
$OTHER\_FIXED_t$	-0.018	0.017	-0.002	0.020
	(-1.041)	(0.949)	(-0.080)	(0.944)
$Cash3yrETR_{t+2}$	0.546***			
	(20.835)			
$Cash3yrETR_{t+1}$	0.085***			
	(2.932)			
$Cash3yrETR_t$	-1.017***			
	(-53.171)			
$GAAP3yrETR_{t+2}$		0.460***		
		(18.663)		
$GAAP3yrETR_{t+1}$		0.099***		
		(4.565)		
$GAAP3yrETR_t$		-1.012***		
		(-53.648)		
Controls	Yes	Yes	Yes	Yes
Firm Fixed Effects	No	No	Yes	Yes
Industry Fixed Effects	Yes	Yes	No	No
Year Fixed Effects	Yes	Yes	Yes	Yes
# *TAX_FIXED* = 1	95	107	105	109
Observations	6,741	7,994	7,687	8,211
R-squared	0.528	0.530	0.663	0.685

Note: Table 9 displays results from the estimation of the OLS regression model (1) replacing the dependent variable with the change in ETR computed as the difference in 3 year ETR from (t-2 to t) to the 3 year ETR from (t+1 to t+3) and including lagged measures of 3 year ETRs (columns 1 & 2) and employing firm fixed effects (columns 3 & 4). The primary variable of interest is *TAX_FIXED*. Robust t-statistics in parentheses. Standard errors are clustered by firm. All variables are defined in Appendix B. *** p<0.01, ** p<0.05, *p<0.10 (two-tailed).

TABLE 10
OLS 3-year ETR Regressions-Additional Controls

VARIABLES	(1) *Future Cash3yrETR* (t+1 to t+3)	(2) *Future GAAP3yrETR* (t+1 to t+3)
$WEAK\_TAX_t$	0.089***	0.082***
	(3.463)	(3.073)
TAX_FIXED_t	-0.084***	-0.042
	(-2.795)	(-1.146)
$WEAK\_OTHER_t$	-0.005	-0.005
	(-0.265)	(-0.288)
$OTHER\_FIXED_t$	-0.025	0.002
	(-1.409)	(0.111)
GINDEX	-0.001	-0.002
	(-0.558)	(-1.449)
IO	-0.040**	-0.035**
	(-2.112)	(-2.106)
RESTATEMENT	-0.003	-0.012
	(-0.239)	(-1.551)
CONSTANT	-0.062	-0.142
	(-0.485)	(-1.525)
Controls	Yes	Yes
Year Effects	Yes	Yes
Industry Effects	Yes	Yes
# *TAX_FIXED* = 1	52	55
Observations	3,690	3,772
R-squared	0.065	0.079

Note: Table 10 displays results from the estimation of the OLS regression model (1) including additional controls for governance (*GINDEX:* G-index score for year t (Gompers et al. 2003)), institutional ownership (*IO:* equal to percent of firm owned by institutional owners in year t), and *RESTATEMENT* as previously defined. The primary variable of interest is *TAX_FIXED*. Robust t-statistics in parentheses. Standard errors are clustered by firm. All variables are defined in Appendix B. *** p<0.01, ** p<0.05, *p<0.10 (two-tailed).

TABLE 11
OLS 3-year ETR Regressions MW Subsamples

	Firms with any type of MW		Firms with a tax MW		Firms who remediate a tax MW	
VARIABLES	(1) *Future Cash3yrETR* (t+1 to t+3)	(2) *Future GAAP3yrETR* (t+1 to t+3)	(3) *Future Cash3yrETR* (t+1 to t+3)	(4) *Future GAAP3yrETR* (t+1 to t+3)	(5) *Future Cash3yrETR* (t+1 to t+3)	(6) *Future GAAP3yrETR* (t+1 to t+3)
$WEAK\_TAX_t$	0.041*	0.048**	0.036	0.026	0.067*	0.026
	(1.803)	(2.461)	(1.223)	(1.132)	(1.971)	(0.930)
TAX_FIXED_t	-0.084***	-0.041	-0.080***	-0.032	-0.102***	-0.037
	(-3.548)	(-1.629)	(-3.135)	(-1.256)	(-3.456)	(-1.301)
$WEAK\_OTHER_t$	-0.020	-0.010	-0.027	0.002	-0.053	-0.006
	(-1.206)	(-0.597)	(-0.804)	(0.050)	(-1.634)	(-0.142)
$OTHER\_FIXED_t$	-0.001	0.018	-0.047*	-0.002	-0.033	-0.001
	(-0.082)	(1.000)	(-1.703)	(-0.047)	(-1.000)	(-0.028)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes	Yes	Yes	Yes
# *TAX_FIXED* = 1	105	109	105	109	105	109
# *OTHER_FIXED* = 1	186	195	41	42	33	34
Observations	1,432	1,514	598	623	473	493
R-squared	0.114	0.088	0.142	0.142	0.171	0.155

Note: Table 11 displays results from the estimation of the OLS regression model (1) for firms which disclose any type of MW during the sample period (columns 1 & 2), for firms which disclose a tax-related MW during the sample period (columns 3 & 4), and for firms which disclose and remediate a tax-related MW during the sample period (columns 5 & 6). Primary variable of interest is *TAX_FIXED*. Robust t-statistics in parentheses. Standard errors are clustered by firm. All variables are defined in Appendix B. *** p<0.01, ** p<0.05, *p<0.10 (two-tailed).

Table 12
OLS 1-year ETR Regressions (t+1,t+2,t+3)

Panel A: All tax function investments

VARIABLES	(1) *Cash1yrETR* (t+1)	(2) *Cash1yrETR* (t+2)	(3) *Cash1yrETR* (t+3)
WEAK_TAX$_t$	0.048**	0.027	-0.013
	(2.009)	(1.368)	(-0.730)
TAX_FIXED$_t$	-0.048	-0.051**	0.054*
	(-1.625)	(-1.957)	(1.829)
WEAK_OTHER$_t$	-0.024*	0.001	-0.005
	(-1.851)	(0.051)	(-0.320)
OTHER_FIXED$_t$	0.033	0.033	-0.002
	(1.566)	(1.549)	(-0.088)
Controls	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes
# *Tax_Fixed* = 1	105	105	105
Observations	7,687	7,687	7,687
R-squared	0.058	0.047	0.044

TABLE 12 (cont'd)

Panel B:External versus Internal Tax Function Investments

VARIABLES	(1) *Cash1yrETR* (t+1)	(2) *Cash1yrETR* (t+2)	(3) *Cash1yrETR* (t+3)
$\beta_1 WEAK\_TAX_t$	0.048**	0.027	-0.013
	(2.009)	(1.368)	(-0.730)
$\beta_2 EXTERNAL\_FIX_t$	-0.028	-0.045	0.056
	(-0.823)	(-1.355)	(1.411)
$\beta_3 INTERNAL\_FIX_t$	-0.076**	-0.059*	0.052
	(-2.041)	(-1.902)	(1.267)
$\beta_4 WEAK\_OTHER_t$	-0.024*	0.001	-0.005
	(-1.849)	(0.051)	(-0.319)
$\beta_5 OTHER\_FIXED_t$	0.033	0.033	-0.002
	(1.566)	(1.548)	(-0.088)
Controls	Yes	Yes	Yes
Year Effects	Yes	Yes	Yes
Industry Effects	Yes	Yes	Yes
F-test: $\beta_2 = \beta_3$	1.40	0.13	0.01
Prob > F =	0.236	0.716	0.942
# *Tax_Fixed* = 1	105	105	105
Observations	7,687	7,687	7,687
R-squared	0.058	0.047	0.044

Note: Table 12 Panels A and B displays results from the estimation of the OLS regression model (1) for the full sample of firms where the dependent variable is the 1-year industry adjusted ETR measured at time t+1(column 1), t+2(column 2), or t+3(column 3), respectively. In Panel B an f-test is also performed to test for differential returns on external versus internal tax function investments ($\beta_2 = \beta_3$) (Prob > F: two-tailed).Robust t-statistics in parentheses. Standard errors are clustered by firm.

TABLE 13
OLS 3-year ETR Regressions-Unadjusted Tax Avoidance Mean Controls

VARIABLES	(1) *Future Unadjusted Cash3yrETR* (t+1 to t+3)	(2) *Future Unadjusted GAAP3yrETR* (t+1 to t+3)
$WEAK\_TAX_t$	0.064***	0.070***
	(2.905)	(3.537)
TAX_FIXED_t	-0.070***	-0.040*
	(-3.148)	(-1.670)
$WEAK\_OTHER_t$	-0.021	-0.006
	(-1.507)	(-0.469)
$OTHER\_FIXED_t$	0.013	0.030*
	(0.785)	(1.687)
$AVGROA_{t\ to\ t+3}$	0.236***	0.323***
	(4.551)	(11.101)
$AVGLEV_{t\ to\ t+3}$	-0.040	-0.037**
	(-1.232)	(-2.239)
$AVGFORINC_{t\ to\ t+3}$	0.105	-0.221*
	(0.808)	(-1.801)
$TAXHAVEN_t$	-0.004	-0.006
	(-0.498)	(-0.828)
$AVGINTAN_{t\ to\ t+3}$	-1.566	0.882
	(-1.571)	(1.478)
$AVGSIZE_{t\ to\ t+3}$	0.001	0.002
	(0.253)	(0.889)
NOL_t	-0.019***	0.011*
	(-2.692)	(1.784)
$AVGRD_{t\ to\ t+3}$	-0.030***	-0.001
	(-3.158)	(-0.262)
$AVGBM_{t\text{-}1to\ t+2}$	0.039***	-0.002
	(2.907)	(-0.215)
$AGGR\_LOSS_t$	-0.031***	-0.041***
	(-2.908)	(-4.002)
$AVGCONSTR\_CF_{t\ to\ t+3}$	0.116**	0.008
	(2.147)	(1.189)
INTERCEPT	0.157	0.113
	(1.209)	(1.142)
Year Effects	Yes	Yes
Industry Effects	Yes	Yes
# *TAX_FIXED* = 1	107	112
Observations	7,845	8,387
R-squared	0.120	0.148

Note: Table 13 displays results from the estimation of the OLS regression model (1) including unadjusted tax avoidance measures and average control variables over the period in each subscript (e.g., t to t+3). The primary variable of interest is *TAX_FIXED*. Robust t-statistics in parentheses. Standard errors are clustered by firm. All variables are defined in Appendix B. *** p<0.01, ** p<0.05, *p<0.10 (two-tailed).

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