The Effect of Increased Private Tax Disclosure on the Relevance of Reserves for Uncertain Tax Positions

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ABSTRACT

This study examines whether private disclosure to the tax authority improves the relevance of publicly disclosed reserves for uncertain tax positions. Schedule UTP increases private disclosure to the IRS about uncertain federal tax positions for which companies accrue and publicly disclose financial statement reserves. Prior to Schedule UTP, reserves for uncertain tax positions were overstated and lacked predictive ability for future tax cash flows. Schedule UTP increases regulatory scrutiny of tax positions underpinning the financial statement reserves and improves the IRS's detection of uncertain tax positions by providing the IRS with superior information relative to financial statements disclosures. Based on theory that managers improve financial reporting in anticipation of greater scrutiny, I predict and find that Schedule UTP improves the predictive ability of financial statement reserves for uncertain tax positions for future settlements with tax authorities. Although the objective of Schedule UTP is to improve IRS enforcement, my results are consistent with its implementation creating a positive externality in the form of more relevant accounting for uncertain tax positions. These findings have implications for the effect of private disclosure on managers' financial reporting behavior. As tax authorities continue to demand expanded private disclosures to improve tax compliance, this study provides timely evidence of how such disclosures affect accounting quality.

Keywords: relevance; tax uncertainty; FIN 48; Schedule UTP; private disclosure.

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I. INTRODUCTION

This study examines whether private disclosure to tax authorities improves the relevance of publicly disclosed reserves for uncertain tax positions.[1] The *Uncertain Tax Position Statement* (Schedule UTP) directly links private tax disclosures and public financial statement disclosures by requiring firms to privately disclose information to the Internal Revenue Service (IRS) about tax positions for which firms accrue and publicly disclose financial statement reserves. Prior to Schedule UTP, these reserves were overstated relative to eventual settlements with tax authorities and lacked predictive ability for future tax cash outflows (Robinson et al. 2016; Financial Accounting Foundation [FAF] 2012). Linking private Schedule UTP disclosures to publicly disclosed reserves for uncertain tax positions increases regulatory scrutiny of these reserves and may incentivize managers to improve the quality of publicly reported amounts (Ball et al. 2012). Thus, although the IRS intended Schedule UTP to enhance tax enforcement, a positive unintended consequence may be an improved relevance of financial accounting reserves. As tax authorities require more private disclosures about firms' tax avoidance, it is important to understand how such private tax disclosures influence the relevance of public financial statements tax reserves.

Uncertain tax positions involve ambiguity about whether a position is allowed or about the amount of the tax benefit the firm will retain upon audit (De Simone et al. 2014). For example, a firm can be certain that it qualifies for a tax credit but the amount of the credit to which it is entitled may be uncertain because of ambiguity in the computation. U.S. GAAP requires firms to account for such tax uncertainty following the rules of Financial Interpretation No. 48 (FIN 48/ASC 740-

[1] Relevance is a fundamental qualitative characteristic of useful information and relevant information has predictive value, confirmatory value, or both (Financial Accounting Standards Board [FASB] 2010). Financial information has predictive value if it is useful in predicting future outcomes. Therefore, I define the relevance of income tax accounting for uncertain tax positions as the ability of tax reserves to predict future settlements with tax authorities. I use "accounting relevance", "informativeness", and "quality" interchangeably.

10, *Accounting for Uncertainty in Income Taxes*). Prior to FIN 48, no set of rules guided accounting for uncertain income tax positions, which lead to diverse accounting practices and virtually no disclosure about uncertain tax positions (Gleason and Mills 2002; Blouin et al. 2010). The purpose of FIN 48 is to improve the comparability and relevance of income tax accruals and disclosures through specific recognition, measurement, and disclosure criteria (FASB 2006). However, studies find that managers retain significant discretion over uncertain tax position accruals and disclosures such that FIN 48 might not have improved comparability (De Simone et al. 2014; Cazier et al. 2015; Robinson and Schmidt 2013). Additionally, empirical evidence immediately following FIN 48 implementation suggests that FIN 48 measurement criteria coupled with managers' incentives to avoid negative surprises upon settlement with tax authorities led to reserves for uncertain tax positions that were overstated on average (Robinson et al. 2016; Gleason et al. 2018) and lacked predictive ability for future tax cash flows (FASB 2005; Tax Executives Institute [TEI] 2011; FAF 2012).

Although not intended to aid tax authority enforcement efforts, the adoption of FIN 48 led to concerns that new disclosure requirements would provide a "roadmap" for tax audits (Leone 2007; Jones 2009; Reinstein 2007). However, FIN 48 disclosures are highly aggregated across tax periods, positions, and jurisdictions. Thus, the reserves provide tax authorities with only a noisy signal about a firm's uncertain tax positions (Towery 2017).

Schedule UTP reduces noise in the signal that FIN 48 disclosures provide to the IRS because firms must disclose whether a portion of the reserve relates to federal positions. The IRS implemented Schedule UTP to improve the effectiveness of corporate tax examinations by requiring firms to provide a brief narrative description for each uncertain federal tax position claimed on the tax return (Shulman 2010; Harvey 2011). A unique feature of Schedule UTP is that

the private disclosure of a tax position to the IRS is contingent on whether a firm accrues and publicly discloses a reserve for the position in the financial statements. Therefore, only federal tax positions for which companies accrue financial statement reserves must be disclosed on Schedule UTP.[2] Consistent with Schedule UTP reducing the noise in FIN 48 disclosures, empirical and anecdotal evidence suggests that Schedule UTP provides the IRS with better information about uncertain tax positions than FIN 48 disclosures and is an effective audit tool (Katz 2014; Bozanic et al. 2017; Howard and Massel 2019; Treasury Inspector General for Tax Administration [TIGTA] 2018; Seidman et al. 2021).

Linking Schedule UTP to FIN 48 reserves increases tax authority scrutiny of the tax positions underpinning those reserves. Increasing *ex post* enforcement can improve *ex ante* reporting quality (Ball et al. 2012). Firms respond to an anticipated increase in *ex post* enforcement related to Schedule UTP disclosures by increasing the strength of uncertain tax positions through improved support and documentation in tax workpapers (Seidman et al. 2021). Improving the strength of a position should decrease firms' uncertainty about the range of possible outcomes if the position is audited, resulting in either (1) the company not accruing a reserve for the position (i.e., uncertainty is eliminated), or (2) the company accruing a lower, and more accurate, reserve for uncertain positions. In sum, linking Schedule UTP disclosure to FIN 48 reserves provides firms with an incentive to alter their financial reporting for uncertain tax positions to reduce IRS scrutiny (Harvey 2010) and should result in fewer excess reserves and more relevant financial reporting. Indeed, evidence suggests firms respond to Schedule UTP by reducing reserves for uncertain tax positions without changing the underlying level of tax avoidance (Towery 2017; Honaker and Sharma 2017). Therefore, I predict Schedule UTP implementation improves the relevance of

[2] Although rare, tax positions that are not reserved for because the firm intends to litigate the position must also be disclosed on Schedule UTP (Towery 2017).

reserves for uncertain tax positions. However, management may use their discretion and under-reserve for tax positions to avoid IRS scrutiny, which may lead to reserves that are less predictive of future settlements if those positions are eventually audited. Additionally, decreasing IRS enforcement resources may prohibit the IRS from utilizing Schedule UTP disclosures, which may result in no change, or possibly a decrease, in the predictive ability of reserves for future settlements. Thus, the effect of Schedule UTP on the relevance of accounting for uncertain tax positions is an empirical question.

To test my hypothesis, I exploit the IRS's staggered implementation of Schedule UTP from 2010 to 2014. I assess improvements in the relevance of reserves for uncertain tax positions in three ways. First, I construct a ratio of the proportion of reserves that unwind through future settlements with tax authorities, with the assumption that larger ratios (i.e., closer to one) are more relevant. Robinson et al. (2016) find that only between 24 and 48 percent of the reserve unwinds through settlements prior to Schedule UTP. I find that Schedule UTP implementation is associated with a larger percentage of tax reserves eventually leading to settlements, thereby increasing the relevance of tax reserves. This change is economically significant; the percentage of reserves unwinding through settlements increases by between 21 and 28 percent relative to the sample mean. Further analysis indicates that the improvement in relevance results from changes in financial reporting as opposed to higher collections by the tax authority upon audit. Additionally, consistent with Schedule UTP increasing *ex post* scrutiny of tax reserves, I find the improvement in relevance is concentrated among subsets of firms for which Schedule UTP is likely most informative to the IRS: multinational firms and firms with lower probabilities of being selected for IRS examination.

Evidence that a greater proportion of reserves unwind through settlements is consistent

with reserves being less overstated relative to settlements following Schedule UTP implementation. However, it does not rule out the possibility that changes in financial reporting for uncertain tax positions following Schedule UTP lead to reserves being *under*-stated, which may result in either no improvement or a decrease in relevance. Therefore, my second analysis tests for a reduction in overstated reserves following Schedule UTP. Releasing a reserve in excess of the settlement amount decreases tax expense. Using tax rate reconciliation data from Schwab et al. (2021), I estimate the unrecognized tax benefit (UTB) portion of the effective tax rate (ETR) as a function of tax settlements pre- and post-UTP. My findings suggest that following Schedule UTP implementation, reserves for uncertain tax positions are less overstated; changes in reporting behavior in response to Schedule UTP does not lead firms to subsequently be *under*-reserved for uncertain tax positions. These findings provide additional evidence that Schedule UTP improved the relevance of tax reserves.

Third, to assess the magnitude of the impact of Schedule UTP on the relevance of reserves for uncertain tax positions, I broaden my analysis and examine changes in the predictive ability of firms' total tax expense for future cash taxes paid. Reserves for uncertain tax positions are but one of several items that influence a firm's income tax expense. Therefore, it is not obvious that the greater proportion of reserves unwinding through settlements that I find following Schedule UTP implementation is of sufficient magnitude to improve the mapping between tax expense and future cash taxes paid. Following Gleason et al. (2018), I estimate future cash taxes paid as a function of current tax expense and find evidence that Schedule UTP improves the predictive ability of tax expense for one- and two-year ahead cash taxes paid. However, extending the analysis to three- to five-year ahead cash taxes paid reveals no statistically significant evidence of an improvement in relevance following Schedule UTP. These results suggest that the effect of Schedule UTP on the

relevance of tax expense for future cash taxes paid over a longer term is of insufficient magnitude to be detected through the noise inherent in GAAP tax expense.

This study makes several contributions. First, I document a positive externality of private disclosures to regulatory authorities. This finding should be of interest to regulators, policymakers, and financial statement users. Firms, practitioners, and investors generally have a negative reaction to increased disclosure to the tax authority. However, my findings suggest that when private tax disclosures are directly linked to financial statements disclosures, the increased scrutiny by tax authorities can have a positive spillover effect on the quality of public financial reporting. Given the FASB's recent reluctance to heed financial statement users' calls for greater transparency in *public* tax disclosures (FASB 2019), it is important to understand whether *private* disclosures to the tax authority improve the relevance of tax information currently provided in financial statements.

I also extend the literature examining the interaction between tax reporting and financial reporting (e.g., Boynton et al. 1992; Guenther 1994; Maydew 1997; Scholes et al. 1992; Guenther et al. 1997; Keating and Zimmerman 1999; Hanlon et al. 2014; Abernathy et al. 2013; Bozanic et al. 2017; Harding 2017). Although prior studies find firms alter financial reporting behavior in response to Schedule UTP (e.g., Towery 2017), this study examines the consequences of such changes. My findings demonstrate how a change in mandatory private disclosure to the tax authority can improve the relevance of public financial reporting. These results have implications for other settings in which external monitoring incorporates a review of private information that is linked to public financial statements.

Finally, I contribute to literature examining FIN 48. Although the FAF (2012) concludes that FIN 48 improved relevance, managers retain significant discretion over reported reserves (De

Simone et al. 2014; Cazier et al. 2015) and a significant disparity remains between reported reserves and eventual settlements (Robinson et al. 2016; Gleason et al. 2018). My results suggest that regulatory interaction (Bozanic et al. 2017) between public and private reporting can influence financial reporting and improve relevance. Therefore, I demonstrate how a financial accounting standard's effect on accounting quality can change over time in response to changes in external monitoring.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

This section discusses the accounting for uncertain tax positions under FIN 48, the implementation of and disclosure required by Schedule UTP, and develops hypotheses for the effect of Schedule UTP reporting on the relevance of accounting for uncertain tax positions.

2.1 Financial Accounting for Tax Uncertainty – FIN 48

Prior to FIN 48, no rules existed that specifically addressed accounting for uncertain tax positions, which led to diversity in accounting practices (FAF 2012). Some firms recognized a reserve only when it was probable that they had incurred a liability and the amount was reasonably estimable, whereas other firms did not recognize a reserve until the tax authority conducted an audit (Robinson et al. 2016). Additionally, substantial variation existed in how firms defined materiality, and few firms separately reported or disclosed reserves for contingent tax liabilities (Blouin and Robinson 2014; Gleason and Mills 2002; Blouin, Gleason, Mills, and Sikes 2010; Gupta, Laux, and Lynch 2016). In response to this diversity in practice, the FASB enacted FIN 48 to improve the relevance and comparability of financial reporting for income taxes and to enhance required disclosures in financial statements about income tax uncertainty (FASB 2006).

FIN 48 requires firms to separately identify and evaluate each uncertain tax position taken on the corporate tax return before recognizing any tax benefit in the financial statements. Firms

first evaluate whether a position is more likely than not to be sustained upon examination by the tax authority. Importantly, and somewhat controversially, FIN 48 does not allow firms to consider detection risk, requiring companies to assume the tax authority has knowledge of all relevant information and will detect and audit the position.[3] The entire benefit from any tax position that does not meet the "more likely than not" threshold is recorded as a liability (i.e., reserve) with a corresponding increase in tax expense. If a position meets the recognition threshold, firms then measure the benefit to be recognized as the largest amount that has a greater than 50 percent cumulative likelihood of being sustained upon examination. Such determination is made after evaluating the support and documentation for each position.

In addition to defining the process firms must follow to recognize and measure uncertain tax benefits, FIN 48 also prescribes several disclosures firms must provide in the financial statements. First, firms must provide a reconciliation of the beginning to ending balance of the reserve account, including increases and decreases associated with current and prior year positions as well as positions that are settled with the tax authority or lapse following the expiration of the statute of limitations. Firms must also disclose the dollar amount of reserves that could affect the ETR if recognized and any potential penalties and interest associated with uncertain positions. Finally, firms must disclose any changes in reserves expected over the next year and a description of open tax years subject to examination.

The introduction of FIN 48 led to immediate concern that the new disclosure requirements would function as a "roadmap" of companies' aggressive tax positions (Leone 2007; Jones 2009; Reinstein 2007; Spatt 2007). Consistent with these concerns, Bozanic et al. (2017) document a

[3] FIN 48 also prohibits firms from considering the ability to offset positions across jurisdictions (e.g., when settling transfer pricing issues) or within the same jurisdiction (e.g., when one position is conceded to retain the benefits from another position).

significant increase in the IRS's attention to firms' Form 10-K filings following the implementation of FIN 48. However, FIN 48 reserves are aggregated across all jurisdictions, including not only uncertain federal tax positions but state and foreign positions. Additionally, firms are not required to disclose the individual tax positions underlying the reserves. Thus, the disclosures provided under FIN 48 are at best a noisy signal to any single tax authority about a firm's aggressive or risky tax strategies (Towery 2017). Appendix A illustrates the highly aggregated nature of FIN 48 disclosures, as well as the limited detail that the disclosure provides about uncertain tax positions that would be actionable by a taxing authority. The noise of the signal provided by FIN 48 disclosures, combined with the IRS's then policy of restraint with respect to requesting tax accrual workpapers (IRS 2002; 2007) and judicial setbacks for the IRS concerning tax accrual workpaper requests (e.g., *United States v. Deloitte 2010,* see McCarthy 2011), suggested that FIN 48 disclosures may not have provided as clear a "roadmap" to the IRS as firms initially feared.

2.2 Income Tax Reporting for Tax Uncertainty – Schedule UTP

In January 2010, the IRS announced a new disclosure initiative (IRS 2010). In an effort to increase the efficiency and effectiveness of corporate tax audits by reducing the time spent by IRS examiners searching for tax issues and improving success when challenging tax positions, the IRS introduced Schedule UTP (Shulman 2010).[4] The initial Schedule UTP draft released for comment in April 2010 was poorly received by both practitioners and investors (Edwards, Koester, and Shevlin 2010; Mathers and Kmiecik 2015; Abernathy et al. 2012). Among the most controversial components of the draft Schedule UTP was the requirement to provide both a description of each position as well as the maximum tax adjustment for each position. Although the final version of

[4] At the time, despite the availability of other tax return disclosures targeted at revealing potentially aggressive positions, the IRS spent up to 25 percent of audit time searching for issues (Towery 2017).

Schedule UTP eliminated many of the most controversial features from the early draft, the new disclosure provides the IRS with additional information above and beyond public disclosures required under FIN 48. Additionally, Schedule UTP indicates to the IRS that at least a portion of financial statement reserves for uncertain tax positions relate to federal positions.

For each uncertain federal tax position taken on the corporate income tax return, Schedule UTP requires a firm to privately disclose to the IRS (1) a brief description of the position, (2) the applicable Internal Revenue Code section(s), (3) whether the position generates a permanent book-tax difference, a temporary difference, or both, (4) a ranking of the position relative to other positions, based on the dollar amount of U.S. federal income tax reserve recorded, and (5) whether the position is at least 10 percent of the total reserves for federal tax positions. Thus, although Schedule UTP does not provide the IRS with the dollar amount of the reserve for each position, it does provide the IRS with some indication of the magnitude of each position. Appendix B provides a copy of Schedule UTP and demonstrates the increased quantity, detail, and pertinence of information that that is provided to the IRS relative to the FIN 48 disclosure example in Appendix A.[5] A unique feature of Schedule UTP is that disclosure to the IRS is linked to how a firm accounts for uncertain tax positions in the financial statements. Specifically, except in the rare instance where a firm does not record a reserve for a tax position because it plans to litigate the position, the disclosure of uncertain tax positions on Schedule UTP is required only for those federal positions for which the firm accrues a reserve in its financial statements.[6] Schedule UTP became effective for 2010 tax years for firms with $100 million or more in assets, for 2012 tax years for

[5] Complete information about Schedule UTP, including links to current and prior forms and instructions, can be found at https://www.irs.gov/businesses/corporations/uncertain-tax-positions-schedule-utp.

[6] Bozanic et al. (2017) label this combination of the requirement to publicly disclose some information about uncertain tax positions and privately disclose similar, but distinct, information to the tax authority as "regulatory interaction."

firms with between $50 million and $100 million in assets, and for 2014 tax years for firms with between $10 million and $50 million in assets.

2.3 Hypothesis Development

Although the FASB intended FIN 48 to improve the relevance of accounting for uncertain tax positions, some components of the rules led to concerns that reported reserves would not accurately reflect a firm's judgement about the eventual outcome of an uncertain tax position taken on the return (FASB 2005). Chief among practitioner complaints was the inability to consider the risk of detection by tax authorities and the requirement to assume that the tax authority would have knowledge of all relevant information needed to detect and audit each position. Following the implementation of FIN 48, the Financial Accounting Foundation completed a post-implementation review to assess whether FIN 48 met its purpose of improving the relevance of financial reporting of income taxes. The FAF (2012, 1) concluded:

> Reported information … may not be predictive or confirmatory of future cash flows because FIN 48 employs a benefit-recognition approach, not a best-estimate approach for liabilities to be settled.

Studies examining the FAF's (2012) conclusions confirm the FAF's concerns about FIN 48's effect on the predictive ability of information about income tax uncertainties. Robinson et al. (2016) find no improvement, and in fact find a decline, in the ability of tax expense to predict future tax cash flows following FIN 48 implementation. Gleason et al. (2018) also find no evidence of an improvement in the accuracy of reserves following FIN 48. Additionally, Robinson et al. (2016) find that only 24 cents of every dollar of FIN 48 reserves unwinds via settlement, suggesting that reserves for uncertain tax positions are overstated in the FIN 48 reporting regime.[7]

[7] Ciconte et al. (2016) also find no improvement in the relation between tax reserves and cash taxes paid following FIN 48 implementation. However, their evidence does not suggest that reserves are overstated.

Improving the relevance of the accounting for uncertain tax positions requires tax reserves to more accurately reflect the amounts that will be settled with the tax authorities. Theory suggests that greater *ex post* scrutiny of management reporting may lead to improved *ex ante* reporting accuracy (Ball et al. 2012). Prior to Schedule UTP, the highly aggregated nature of FIN 48 tax reserves along with the limited detail in disclosures result in only a noisy signal to tax authorities about firms' uncertain tax strategies and provide any single tax authority with limited information with which to scrutinize firms' uncertain tax positions. As such, from a tax enforcement perspective, there were relatively low costs for firms to take advantage of the significant discretion in accounting for uncertain tax positions (De Simone et al. 2014) and the opportunity to carry excess reserves (Cazier et al. 2015). However, if Schedule UTP improves the signal to the IRS about firms' uncertain tax strategies, it should also increase the cost associated with maintaining overstated tax reserves, as they are subject to greater IRS scrutiny. Therefore, in anticipation of more a rigorous examination of reserves for uncertain tax positions by the tax authority, management may alter their financial reporting behavior and improve ex ante reporting quality.

Consistent with Schedule UTP leading to greater IRS scrutiny, empirical evidence suggests that Schedule UTP provides the IRS with more useful information than FIN 48 disclosures. Bozanic et al. (2017) examine IRS attention to public financial statements following the implementations of FIN 48 and Schedule UTP. Although IRS attention increases after FIN 48 disclosures are enacted, the authors document a subsequent decrease in IRS attention to public financial statement filings following Schedule UTP. This evidence is consistent with concerns raised by practitioners and suggests that the information provided with Schedule UTP disclosures is superior to the information provided with public disclosures of tax uncertainty under FIN 48.

Additionally, by requiring firms to list each uncertain tax position reserved for under FIN 48, Schedule UTP should increase the likelihood that the IRS will detect and audit firms' uncertain federal tax positions. This effect should help the IRS achieve the stated objectives of Schedule UTP.[8] Whereas FIN 48 disclosures do not provide the level of detail necessary to identify tax positions, the disclosures required by Schedule UTP lead to an expectation by corporate tax executives that any position disclosed on Schedule UTP will be audited (Seidman et al. 2021). Consistent with this expectation, IRS examiners report an increasing likelihood of Schedule UTP helping to identify tax positions to audit (TIGTA 2018). Howard and Massel (2019) find that fewer uncertain tax positions go unaudited following Schedule UTP reporting and conclude that Schedule UTP serves as an effective audit tool in identifying uncertain tax positions. In sum, substantial evidence points to Schedule UTP increasing *ex post* scrutiny of firms' reserves for uncertain tax positions.

In addition to evidence of greater scrutiny from the IRS, evidence from prior studies also suggests that in anticipation of Schedule UTP, firms alter their financial reporting behavior for uncertain tax positions. Because disclosure of uncertain tax positions and their relative magnitude on Schedule UTP is contingent on the incidence and size of reserves reported in the financial statements, firms have incentive to report lower reserves in response to Schedule UTP (Towery 2017). Studies find evidence that firms respond to this incentive by reducing reported reserves following the implementation of Schedule UTP (Abernathy et al. 2013; Towery 2017; Honaker and Sharma 2017). Moreover, studies conclude these lower reserves result from a change in financial reporting rather than a reduction in tax avoidance behavior (Towery 2017; Honaker and Sharma 2017).

[8] See remarks by IRS Commissioner Doug Shulman to the New York State Bar Association (https://www.irs.gov/pub/irs-news/ir-10-013.pdf).

Firms can reduce reserves for uncertain tax positions by taking advantage of the discretion inherent in determining FIN 48 reserves (Robinson and Schmidt 2013; De Simone et al. 2014;). Such discretion includes improving the documentation and support for positions, thereby reducing the level of uncertainty.[9,10] If a firm gains sufficient support to remove all uncertainty associated with a position, no reserve is required and therefore none will be reported on Schedule UTP. Alternatively, although increasing support for uncertain positions may not eliminate all uncertainty, it should reduce the range of expected outcomes and therefore reduce the level of uncertainty for a given position. Finally, FIN 48 allows firms to consider the administrative practices and precedents of the taxing authority in addition to the technical merits of a position when evaluating uncertainty. If Schedule UTP increases the likelihood that an uncertain tax position will be audited, firms and practitioners should in turn gain a better understanding about the IRS's administrative practice with respect to audited positions, leading to reduced uncertainty about the eventual outcome of the position.[11] In light of evidence that FIN 48 reserves were overstated prior to Schedule UTP, reducing the uncertainty associated with tax positions in response to Schedule UTP disclosure and the corresponding reduction in reported reserves suggests a potential improvement in the relevance of the accounting for uncertain tax positions if reserves become less overstated and closer to actual settlement amounts.

[9] Theory suggests that improving the signal to the government about tax uncertainty can result in higher expected benefits to the firm from uncertain tax positions with relatively strong support (Mills et al. 2010). Additionally, Seidman et al. (2021) document that corporate tax executives expect positions disclosed on Schedule UTP to be examined by the IRS and therefore increase analysis and documentation to support such positions.

[10] Similar actions are observed outside of a tax accounting context. For example, a survey of asset managers finds that in response to reporting requirements under FAS 157 that increase transparency in the valuation process, firms refine existing valuation methods used for both internal and external purposes (Deloitte 2008).

[11] For example, if all necessary documentation to substantiate a research and development credit is not strictly maintained, but the tax authority has demonstrated in prior examinations to accept a firm's level of recordkeeping, firms may rely on such administrative practice when determining reserves.

Given the potential effect Schedule UTP may have on the predictive value of income tax accounting due to increased tax authority scrutiny and the resulting change in firm's financial reporting for uncertain tax positions, I present my hypothesis stated in the alternative form:

Hypothesis: *The relevance of accounting for uncertain tax positions improves following the implementation of Schedule UTP.*

Although changes in financial reporting for uncertain tax positions and IRS enforcement behavior following Schedule UTP implementation offer reasons to expect an improvement in the relevance of accounting for uncertain tax positions, there are reasons to believe that there will not be an improvement. First, changes in firms' financial reporting of uncertain tax positions could lead to reserves for uncertain tax positions that are less predictive of future cash tax outflows. If, in an attempt to avoid IRS scrutiny of uncertain and aggressive tax positions, firms respond to Schedule UTP by reserving too little for positions that are eventually audited and settled with the IRS, such an outcome may not increase the predictive value of reserves for uncertain tax positions.

Second, although private Schedule UTP disclosures likely provide better information to the IRS about uncertain federal tax positions relative to public FIN 48 disclosures, the information provided in Schedule UTP could still be insufficient to improve the effectiveness of IRS examinations. This possibility is recognized in a report by the Treasury Inspector General for Tax Administration (2018), which finds that although a large majority of corporate taxpayers filing Schedule UTP comply with the reporting requirements, revenue agents believe Schedule UTP disclosures are insufficient to improve the IRS's success when challenging positions upon audit. Although Schedule UTP is useful for *identifying* uncertain tax positions, many of the originally proposed Schedule UTP disclosure requirements that would have been beneficial for *challenging* those positions were not included in the final version (TIGTA 2018).

Finally, Schedule UTP may not result in improved relevance of accounting for uncertain tax positions because of a lack of IRS resources for enforcement activities (Nessa, Schwab, Stomberg, and Towery 2017). While the IRS has seen a dramatic increase in its responsibilities in recent years, it has also experienced significant budget reductions, leading to a substantial reduction in its enforcement staff (Marr and Murray 2016). A lack of enforcement resources may prohibit the IRS from taking advantage of Schedule UTP disclosures about uncertain tax positions, which would lead to no change, or possibly a reduction, in the predictive ability of reserves for future settlements. Thus, whether Schedule UTP improves the relevance of the accounting for uncertain tax positions is an empirical question.

III. RESEARCH DESIGN AND SAMPLE

3.1 Research design

I test my hypothesis using three distinct approaches. Below, I articulate each of these tests and outline the sample selection process for each analysis.

3.1.1 Reserves unwinding through settlements

To examine whether Schedule UTP improves the relevance of financial reporting for uncertain tax positions, I begin with an analysis of how firms' FIN 48 reserves unwind prior to and following Schedule UTP. The most direct approach to address my research question is to examine how FIN 48 reserves unwind as a result of settlements with the tax authority, which firms record on the "settlements" line of the FIN 48 tabular roll-forward schedule in the tax footnote.[12] I compute *Settle Ratio* as cumulative tax settlements in years *t* through *t*+2 scaled by the ending uncertain tax benefit balance (*UTB_END*) in year *t*–1 to examine the proportion of the reserve

[12] According to PwC (2020), "only amounts paid, or tax attributes (e.g., net operating losses) used in lieu of payment, should be included" in the settlements line item of the FIN 48 tabular roll-forward schedule. Thus, reserves unwinding for unaudited positions and audited positions that do not lead to a settlement should not be included in the settlements line of the FIN 48 roll-forward schedule.

balance that unwinds through settlements over a three-year window. Using the one-year lag of *UTB_END* allows me to maximize the sample period by examining how the beginning balance in 2007, the year of FIN 48 adoption (i.e., the ending UTB balance in 2006), unwinds. Thus, I treat the UTB balance reported upon adoption of FIN 48 (i.e., the beginning UTB balance for 2007) as UTB_END_{t-1} for firm-years beginning in 2007. Consistent with Robinson et al. (2016), I also compute an alternative settlement ratio, *Settle Ratio Alt*, which scales tax settlements in years *t* through *t*+2 by the sum of *UTB_END* in year *t*-1 and the increase in UTBs related to prior period tax positions (*PY_ADD*) reported in year *t*. PY_ADD_t reflects changes associated with positions taken in prior periods. Therefore, *Settle Ratio Alt* better captures *total* reserves associated with positions taken prior to the end of year *t*-1.

I use a three-year window for settlements because the IRS has a three-year statute of limitations to assess a deficiency. However, Gleason and Mills (2011) find that IRS examinations take an average of 4.6 years to conclude. Thus, I extend the settlement window to four- and five-years as well. *Settle Ratio* captures the extent to which tax reserves map into settlements with the tax authority. Therefore, all else equal, a higher value of *Settle Ratio* indicates a larger proportion of reserves for uncertain tax positions leading to settlements with the tax authority.

I estimate the following OLS regression to examine whether Schedule UTP is associated with an improvement in the relevance of firms' of financial reporting for uncertain tax positions:

$$\begin{aligned} Settle\ Ratio = {} & \beta_0 + \beta_1 UTP_t + \beta_2 BTD_t + \beta_3 Leverage_t + \beta_4 Size_t + \beta_5 ROA_t + \beta_6 Foreign_t + \\ & \beta_7 R\&D_t + \beta_8 ETR_t + \beta_9 Equity\ Income_t + \beta_{10} MezzFin_t + \beta_{11} Big4_t + \\ & \beta_{12} Litigation_t + \beta_{13} NOL_t + \varepsilon \end{aligned} \quad (1)$$

The variable of interest, *UTP*, is an indicator equal to one for firm-year observations that are subject to Schedule UTP reporting (i.e., firm-years where total assets exceeds the Schedule UTP

reporting threshold and when Schedule UTP reporting is in effect), and zero otherwise.[13] Following Schedule UTP implementation, if reserves for uncertain tax positions are more likely to unwind via settlements with the tax authority, I expect $\beta_1 > 0$. In Appendix C I provide journal entries for the initial recognition of a reserve for an uncertain tax position and the future unwinding of that reserve through settlements with the tax authority.

Because tax reserves prior to Schedule UTP are overstated (i.e., *Settle Ratio* is less than one), a positive coefficient on *UTP* is consistent with a potential improvement in the relevance of firms' tax reserves. I follow Jennings, Lee, and Towery (2020) and include firm-level control variables related to future tax settlements. All variables are defined in Appendix D. Finally, I cluster standard errors by firm and include year and industry fixed effects. I measure industry fixed effects following Towery (2017) and use a modified Fama-French ten-industry classification. This enables me to group together firms with similar opportunities for claiming uncertain tax positions. In the modified Fama-French ten-industry classification, I separate Financial firms from the "Other" classification and combine Consumer Durables and Consumer Non-Durables into a single classification. However, following Robinson et al. (2016), I exclude Financial firms, thus creating nine industry groupings.

In addition to the regression model presented in equation (1), I also employ a difference-in-differences analysis to take advantage of the staggered implementation of Schedule UTP. For the difference-in-differences analysis, I modify equation (1) to include firm fixed effects as opposed to industry fixed effects. Using a difference-in-differences approach allows me to improve

[13] In untabulated analyses, I confirm that results continue to hold when *UTP* is set to one for the initial year that a firm is subject to Schedule UTP reporting and all subsequent years, as well as when eliminating firms where total assets dip below the Schedule UTP reporting threshold in a year subsequent to the firm's initial Schedule UTP required reporting year.

identification of Schedule UTP implementation as the causal mechanism driving any change in the relevance of reserves for uncertain tax positions.

3.1.2 The effect of Schedule UTP on excess reserves

The analysis described in Section 3.1.1 is the most direct approach to examine whether reserves are more likely to unwind via settlement following Schedule UTP implementation. However, a shortcoming of that analysis is that it does not allow me to ascertain whether Schedule UTP results in firms being under-reserved for uncertain tax positions. For example, a positive β_1 from equation (1) may be due to reserves being overstated by 75 cents prior to Schedule UTP and then understated by 75 cents following Schedule UTP, which is arguably a worse outcome for shareholders relying on tax reserves to assess a firm's tax risk. Therefore, in my second analysis I test the extent that firms' reserves are overstated or understated following Schedule UTP. *Ceteris paribus*, the difference between the reserve for an uncertain tax position and the settlement determines the effect that releasing a reserve has on a firm's tax expense, and therefore the ETR. For example, if a reserve is released due to a lapse in the statute of limitations, tax expense decreases for the full amount of the reserve. However, when a position is audited, the actual settlement may be less than, equal to, or greater than the associated reserve. Reserves that are greater (less) than the settlement will result in a decrease (increase) to tax expense.[14] Robinson et al. (2016) find that following FIN 48 reporting and prior to Schedule UTP, reserves unwinding through settlements decrease ETRs, indicating that firms are on average overreserved.

To estimate the extent that firms' reserves for uncertain tax positions are overstated or understated, I focus my analysis on the UTB component of a firm's ETR reconciliation schedule,

[14] Appendix C details the accounting for the release of reserves for uncertain tax positions through settlements and the impact on the effective tax rate. An in-depth discussion of the accounting for reserves for uncertain tax positions can be found in Appendix A from Robinson et al. (2016).

which explains why the ETR differs from the U.S. statutory tax rate. Schwab et al. (2021) analyze rate reconciling items from firms' tax footnotes and categorize items into groups, which include items related to accounting for uncertain tax positions.[15] To test my hypothesis that reserves for uncertain tax positions better map into future tax settlements following Schedule UTP, I estimate the following OLS regression:

$$RR\_UTP_t = \beta_0 + \beta_1 SettleIND_t + \beta_2 UTP_t + \beta_3 SettleIND_t * UTP_t + \beta_4 R\&D_t + \beta_5 Adv_t + \beta_6 SGA_t + \beta_7 Capex_t + \beta_8 Leverage_t + \beta_9 ForeignInd_t + \beta_{10} NOL_t + \beta_{11} Intangibles_t + \beta_{12} PP\&E_t + \beta_{13} PT\_ROS_t + \varepsilon \quad (2)$$

The dependent variable (*RR_UTP*) is the effect of UTB releases or accruals on the ETR in year *t*, where positive values imply an increase to the ETR (i.e., unfavorable adjustments due to under-reserved amounts) and negative values imply a decrease to the ETR (i.e., favorable adjustments due to over-reserved amounts). I set *SettleIND* equal to one if the firm settles a position in year *t*, and zero otherwise. I expect a negative coefficient on *SettleIND*, which would be consistent with the findings of Robinson et al. (2016) and imply that the reserve is greater than the settlement, whereas a positive coefficient implies that the reserve is lower than the tax settlement. *UTP* is set equal to one for firm-year observations that are subject to Schedule UTP reporting, and zero otherwise.

The coefficient of interest is β_3, which captures the differential effect of settlements on the UTB component of the ETR after Schedule UTP implementation relative to before Schedule UTP. Assuming a negative coefficient on *SettleIND*, if Schedule UTP increases the relevance of reserves for uncertain tax positions then I expect a positive coefficient on the interaction term, which would

[15] I am grateful to Schwab et al. (2021) for sharing their data for the effect on the ETR related to uncertain tax positions.

suggest a reduction in excess reserves following Schedule UTP implementation.[16] Importantly, I also test whether the magnitude of β_3 is greater than β_1 to assess whether reserves subsequently become understated following Schedule UTP, which may suggest no improvement or a decrease in relevance. I also include several control variables identified in prior literature (see Gupta and Newberry 1997; Mills, Erickson, and Maydew 1998; Rego 2003; and Dyreng, Hanlon, and Maydew 2010) measured as of year *t*. All control variables are defined in Appendix D. Finally, I include year and industry fixed effects, and cluster standard errors by firm.

3.1.3 Predictive ability of tax expense for tax cash flows

In my final test, I broaden the analysis to examine whether Schedule UTP not only improves the mapping of reserves into settlements, but whether there is also an improvement in the ability of tax expense to predict future cash tax outflows. Given the magnitude of FIN 48 reserves (Harding 2017), a change in the mapping between reserves and settlements may be sufficient to impact the relation between tax expense and future cash taxes paid. However, a significant number of items unrelated to reserves for uncertain tax positions are included in a firm's income tax expense account.[17] Therefore, due to the noise in this account, a change in the relation between tax expense and future taxes paid may not be detectable.

I follow Gleason, Markle, and Song (2018) to examine whether current-year tax expense better predicts future cash taxes paid following Schedule UTP implementation. I estimate the following OLS regression:

$$\begin{aligned} TaxesPaid_{t+k} = {} & \beta_0 + \beta_1 TaxExpense_t + \beta_2 UTP_t + \beta_3 TaxExpense_t * UTP_t + \beta_4 TaxesPaid_t + \\ & \beta_5 Size_t + \beta_6 R\&D_t + \beta_7 Adv_t + \beta_8 SGA_t + \beta_9 Capex_t + \beta_{10} Leverage_t + \beta_{11} ForeignInd_t \\ & + \beta_{12} NOL_t + \beta_{13} ROA_t + \beta_{14} Intangibles_t + \beta_{15} PP\&E_t + \varepsilon \end{aligned} \quad (3)$$

[16] The dependent variable (*RR_UTP*) captures all changes in the UTB balance (i.e., changes due to current and prior year positions, settlements, lapses in the statute of limitations, and other adjustments) that influence the ETR in year *t*. As such, this variable contains considerable noise. Therefore, prior to testing my hypothesis, I conduct two tests to validate the model. I discuss these tests in Section IV prior to discussing results from testing my hypothesis.

[17] See Choudhary, Koester, and Shevlin 2016 for a detailed description of items included in income tax expense.

The dependent variable, *TaxesPaid*, is cash taxes paid scaled by total assets. I measure *TaxesPaid* in years *t+1* through *t+5*. *TaxExpense* is total tax expense scaled by total assets and is measured, along with all other independent variables, as of year *t*. The variable of interest is the interaction term *TaxExpense*UTP*, which captures any change in the predictive ability of firms' tax expense for future cash taxes paid following Schedule UTP reporting. If Schedule UTP increases the ability of tax expense to predict future cash taxes paid, I expect $\beta_3 > 0$. I include several firm-level control variables to control for firms' tax planning opportunities. Appendix D provides definitions for all control variables. Finally, I include year and industry fixed effects and cluster standard errors by firm.

3.2 Sample selection

For each of the three analyses described in Section 3.1 I derive a distinct sample from Compustat. However, I first impose several sample criteria common across each sample before imposing additional criteria for each analysis. The sample period covers the implementation of Schedule UTP, which was staggered over three periods. Firms with at least $100 million in assets were subject to Schedule UTP reporting in years beginning on or after January 1, 2010, followed by firms with at least $50 million in assets in 2012, and finally firms with at least $10 million in assets in 2014.[18] To hold financial reporting for uncertain tax positions constant, the sample begins in 2007 after the effective date of FIN 48. Additionally, FIN 48 roll-forward data is available beginning in 2007. The sample ends in 2016 to avoid any impact of accounting for the

[18] Figure 1 provides a timeline of relevant events occurring during the sample period.

implementation of the Tax Cuts and Jobs Act of 2017 that would affect fiscal years beginning in 2017 (Chen et al. 2021).[19]

I exclude firm-year observations where the beginning balance of the FIN 48 reserve roll-forward adjusted for the reconciling items does not equal the ending balance.[20] I also exclude financial firms (SIC 6000-6999) as well as firms that change their fiscal year-end during the sample period. I limit the sample to U.S. incorporated firms and exclude all non-corporate entities to focus my analysis on firms that are potentially subject to Schedule UTP reporting. Finally, because the Schedule UTP reporting requirement is dependent on a firm's level of assets, I exclude observations with missing or non-positive total assets. These sample criteria provide an initial sample of 26,383 firm-years (4,455 firms) prior to imposing additional test-specific criteria for each individual sample.

From this initial sample I then impose analysis-specific sample criteria. First, I derive Sample 1 to examine whether Schedule UTP influences the portion of tax reserves that unwind through settlements. I exclude observations from the initial sample missing *Settle Ratio* for the three-year window, as well as observations missing data necessary to compute independent variables in equation (1). This leads to a sample of 13,574 firm-year observations (2,356 firms).[21]

Second, I derive Sample 2 to examine whether Schedule UTP effects how reserves unwinding through settlements influence the UTB component of the ETR. I remove from the initial

[19] The early years of my sample fall during the financial crisis. However, in all samples I exclude Financial firms, thus focusing my analyses on firms relatively less affected by the financial crisis. In addition, Samples 2 and 3 exclude firm-year observations with negative pretax income, which also limits my analysis to firms relatively less affected by the financial crisis. In untabulated analyses, I also exclude loss firms from tests using Sample 1 and find consistent results.

[20] Compustat reports a large number of missing values for FIN 48 reserve balances. Lisowsky, Robinson, and Schmidt (2013) find that up to 75 percent of observations for which Compustat reports a missing value have non-zero FIN 48 reserve balances. Therefore, I do not treat missing FIN 48 balances as zero.

[21] Extending the settlement window for *Settle Ratio* to four and five years reduces the sample to 12,674 and 10,657 firm-year observations, respectively.

sample observations with missing or negative pre-tax income (PI), tax expense (TXT), or cash taxes paid (TXPD), as well as observations where the ETR is less than zero or greater than one. I also exclude observations missing *RR_UTP* or data necessary to compute independent variables in equation (2). Because *RR_UTP* is available beginning in 2008, the sample begins in 2008 for tests examining how Schedule UTP influences the effect of settlements on the UTB component of the ETR. This leads to a sample of 10,249 firm-year observations (2,330 firms).

Finally, I derive Sample 3 to examine whether Schedule UTP improves the predictive ability of tax expense for future cash taxes paid. I exclude observations for years beginning in 2016 to avoid the impact of the TCJA on taxes paid in year t+1. I also remove observations with missing or negative pre-tax income (PI), tax expense (TXT), or cash taxes paid (TXPD) in year t or t-1, as well as observations missing $TaxesPaid_{t+1}$ or data necessary to compute independent variables in equation (3). This leads to a sample of 8,923 firm-year observations (2,051 firms). Table 1 details the selection process for each sample.

IV. RESULTS

4.1 Descriptive statistics

Table 2 presents several sets of descriptive statistics. Panel A provides descriptive statistics for individual line items from the FIN 48 tabular roll-forward schedules for Sample 1. I then extract a constant sample of 602 firms from Sample 1 and present an aggregate roll-forward of FIN 48 reserve balances from 2007 to 2016 in Panel B. In this constant sample of firms, yearly settlements range from roughly six to ten percent of the beginning UTB balance from 2007 to 2016. Panel C provides the relevant summary statistics for each sample. For Sample 1, the mean *Settle Ratio* using a settlement window of years t through t+2 is 21 percent and increases to 38 percent when extending the settlement window to year t+4. Consistent with Robinson et al. (2016), this suggests

that, on average, the majority of reserves for uncertain tax positions do not unwind over five years through settlements with the tax authority.

Figure 2, Panel A presents means by year for the current-year changes in various components of UTB balances for Sample 1. Consistent with Towery (2017), I document a substantial decrease in current-year additions to the reserve (*CY_ADD*) from 2009 to 2010 coinciding with the initial implementation of Schedule UTP. Additionally, Figure 2 Panel A reveals a substantial increase in reductions for prior-year positions (*PY_RED*) from 2009 to 2010. Observing an increase in *PY_RED* in 2010 suggests firms may be concerned that Schedule UTP disclosures in 2010 will be informative to the IRS about tax positions taken in prior years. Therefore, firms may use the discretion inherent in evaluating positions to release overstated reserves for prior years' tax positions. Alternatively, if firms strengthen the support for current year tax positions in response to Schedule UTP, to the extent that firms claim similar positions from year to year it is reasonable to expect that uncertainty is reduced for prior year positions, thereby enabling firms to release a portion of those reserves. Panel B presents aggregate values of current-year changes in UTB balances by year for the constant sample of firms from Sample 1. I document a similar pattern for changes in *CY_ADD* and *PY_RED* from 2009 to 2010 in this constant sample as in the full sample (Panel A). Blouin et al. (2010) find that between the enactment and adoption of FIN 48, firms increase settlements with tax authorities and release tax reserves more frequently. Their results suggest that firms alter their reporting behaviors in anticipation of increased *public* disclosure of uncertain tax positions. Patterns illustrated in Panels A and B of Figure 2 suggest that firms may engage in similar behaviors in anticipation of increased *private* disclosure of uncertain tax positions. Additionally, given that evidence prior to Schedule

UTP suggests reserves are overstated, these patterns may also provide evidence consistent with my predictions.

4.2 Regression analyses

4.2.1 Reserves unwinding through settlements

Table 3 presents results from estimating equation (1). In Panel A, the dependent variable is *Settle Ratio*, which uses a denominator of UTB_END_{t-1}. In column 1, I estimate a significant positive coefficient on *UTP*, which suggests that following Schedule UTP implementation, there is an improvement in reserves for uncertain tax positions mapping into future settlements with the tax authorities over the following three years. The positive and significant coefficient on *UTP* continues to hold in column 2 after including firm-level control variables related to tax settlements. This result is economically significant. After controlling for determinants of settlements in column 2, I find that Schedule UTP is associated with a 21 percent increase in the proportion of reserves that unwind through settlements over a three-year window, relative to the sample mean.[22]

I continue to find a positive and significant coefficient on *UTP* in columns 3 and 4 (columns 5 and 6) after extending the settlements window to four (five) years, which allows for additional time for the completion of examinations of uncertain tax positions. Additionally, the magnitude of *UTP* coefficients increase when moving from a 3-year settlement period to a 5-year settlement period. This pattern is consistent with expectations, as extending the settlement window allows for more time for the tax authority to complete an audit. Furthermore, I document an increase in the economic magnitude of the effect of Schedule UTP as I extend the settlement window to four (five) years in column 4 (6), with a 28 (25) percent increase in the proportion of reserves that unwind through settlements, relative to the sample mean.[23] In sum, results from Panel A of Table

[22] 0.044 ÷ 0.21 = 0.21
[23] 0.080 ÷ 0.29 = 0.28 (0.094 ÷ 0.38 = 0.25)

3 present evidence that Schedule UTP is associated with a better mapping between reserves and future settlements, suggesting an improvement in the relevance of reserves for uncertain tax positions.

In Panel B I repeat the analyses from Panel A using *Settle Ratio Alt* as the dependent variable. *Settle Ratio Alt* measures the denominator as the sum of UTB_END_{t-1} and PY_ADD_t to better capture *total* reserves associated with positions taken prior to the end of year *t*-1 (Robinson et al. 2016). Across three-, four-, and five-year settlement windows I continue to find a positive and significant coefficient on *UTP* when including PY_ADD_t in the denominator. Additionally, I continue to document increasing coefficient magnitudes when moving from three- to five-year settlement periods.

An alternative response firms may have to the implementation of Schedule UTP is to adjust their tax planning behavior. If management is concerned that disclosing an uncertain tax position on Schedule UTP increases their probability of being audited and the position being detected, firms may have a lower likelihood of claiming such positions on their tax return. However, prior studies find that while firms change their financial reporting behavior in response to Schedule UTP, there is no evidence that firms alter their tax avoidance behavior (i.e., claiming uncertain tax positions) (Honaker and Sharma 2017; Towery 2017). Nevertheless, in Panel C of Table 3 I repeat the analysis in Table 3, Panel A after including firms' cash ETR (*CETR*) to control for tax avoidance behavior and assuage concerns that results are attributable to firms claiming fewer uncertain tax positions in response to Schedule UTP. I continue to find a positive and significant coefficient on *UTP*.

To address concerns that transition-year effects documented in Figure 2 influence my results, I introduce an alternative indicator variable for Schedule UTP implementation, UTP_ALT_t,

which delays the first implementation of Schedule UTP (i.e., for firms with at least $100 million in assets) from 2010 to 2011. Additionally, because Towery (2017) finds that firms alter their financial reporting behavior for UTBs beginning in 2010 in response to Schedule UTP implementation, the change in reporting would be reflected in the ending UTB balance for 2010. Because I measure the denominator using *UTB_END* in year *t*-1, this suggests that 2011 is the first year to expect any change in the mapping of reserves into settlements due to Schedule UTP. Therefore, in Table 4, I estimate equation (1) after substituting *UTP* with *UTP_ALT*. In Panel A, using *Settle Ratio* as the dependent variable, I find a positive and significant coefficient on *UTP_ALT*. These results continue to hold in Panel B using *Settle Ratio Alt* as the dependent variable. In sum, analyses from Tables 3 and 4 provide evidence that reserves for uncertain tax positions are more likely to result in future settlements following the implementation of Schedule UTP. Consistent with my hypothesis, these results suggest that private disclosure to the tax authority about uncertain tax positions improves the relevance of income tax accruals by increasing the proportion of reserves that unwind through settlements with the tax authorities.

Difference-in-differences analysis

In Table 5 I perform a difference-in-differences analysis to examine the influence of Schedule UTP implementation on the relevance of reserves for uncertain tax positions. Taking advantage of the staggered implementation of Schedule UTP across three periods (i.e., 2010, 2012, and 2014), I substitute firm fixed effects for the industry fixed effects in equation (1), resulting in a two-way fixed effect regression model. Using this difference-in-differences specification, I continue to find a positive and significant coefficient on *UTP* across column's (1) through (3) in

Table 5.[24] These results provide additional support for my hypothesis that the implementation of Schedule UTP improves the relevance of reserves for uncertain tax positions.

Parallel trends assumption

The key assumption underlying the difference-in-differences analysis is the parallel trends assumption (Roberts and Whited 2013). The parallel trends assumption states that, although treatment and control firms may have different levels of the outcome in the pre-treatment period, trends of the outcomes in the period prior to treatment should be the same. To assess the parallel trends assumption for the outcome variable, I present trends in *Settle Ratio* in the periods surrounding the initial implementation of Schedule UTP.[25] In Figure 3, I plot the difference in *Settle Ratio* between treatment and control groups for sample years surrounding the initial implementation of Schedule UTP while including year fixed effects. For the difference-in-differences analysis, it is imperative that *Settle Ratio* follows a common trend for treatment (i.e., those firms with at least $100 million in assets) and control firms prior to the implementation of Schedule UTP. Figure 3 shows that *Settle Ratio* is similar across treatment and control firms in the period prior to Schedule UTP implementation and that following Schedule UTP implementation, treated firms have a greater *Settle Ratio* relative to firms not subject to Schedule UTP reporting. Evidence from Figure 3 provides comfort that the parallel trends assumption holds prior to the implementation of Schedule UTP.

[24] Recent studies examining difference-in-differences analysis when treatments are staggered across different time periods identify potential biases arising from heterogenous treatment effects (see Baker et al. 2022 and Barrios 2021 for an in-depth discussion). However, my sample is derived from Compustat, resulting in a large majority of firms being above the $100 million being subject to the initial implementation of Schedule UTP in 2010. Thus, the concern of heterogenous treatment effects biasing my results is diminished because the results are weighted heavily to a single treatment timing. Even so, I perform the analysis described by Goodman-Bacon (2021) to decompose the staggered difference-in-differences estimation into the individual 2×2 difference-in-difference estimates and confirm that my results are not biased by treatment effect heterogeneity.

[25] Because a large majority of the sample of firms have at least $100 million in total assets and are therefore subject to Schedule UTP reporting for the initial implementation, I focus on the initial implementation of Schedule UTP when evaluating the parallel trends assumption.

Decomposition of Settle Ratio

Although results from Tables 3, 4 and 5 provide evidence of a stronger relation between reserves for uncertain tax positions and eventual settlements with the tax authority following the implementation of Schedule UTP, they do not address whether the effect of Schedule UTP on *Settle Ratio* is driven by the numerator, the denominator, or both. Specifically, an improvement in the mapping between reserves and settlements following Schedule UTP implementation may be the result of larger settlements, lower reported reserves, or a combination of these two effects. Therefore, I perform an additional analysis to further examine the mechanism driving my results.

To assess whether the positive coefficient on *UTP* in Tables 3, 4, and 5 is due to increased settlements or lower reported reserves, I separately examine the numerator and denominator of *Settle Ratio* in Table 6. Specifically, I replace the dependent variable *Settle Ratio* in equation (1) with *Settlements* (*Ending UTBs*) scaled by ending assets to examine whether settlements (reserves) increase (decrease) following the implementation of Schedule UTP. In columns 1 through 3 of Table 6 I find no evidence of a change in cumulative settlements over a three- to five-year window following Schedule UTP. In column 4, I find evidence that ending UTB balances are significantly lower following Schedule UTP implementation. These results suggest that the increased relevance of reserves is driven by changes in financial reporting for uncertain tax positions, specifically lower reported reserves, as opposed to greater success in challenging and collecting on reserved positions by the tax authority. In sum, results from Table 6 support the conclusion that Schedule UTP implementation creates a positive externality in the form of more relevant accounting for uncertain tax positions.

Measuring the numerator of my dependent variable *Settle Ratio* over a three- to five-year window presents a potential concern due to co-mingling the pre- and post-Schedule UTP periods.

For example, the dependent variable for a 2008 firm-year observation would be measured using the ending UTB reserve balance for 2007 as the denominator and the sum of the 2008 through 2010 settlements as the numerator. Thus, the numerator includes both pre-Schedule UTP years (i.e., 2008 and 2009) as well as a post-Schedule UTP year (i.e., 2010). However, there are two reasons to believe this issue should not influence inferences from analyses. First, results from Table 6 indicate that Schedule UTP did not influence settlements with the tax authorities, but rather affected reported reserves for uncertain tax benefits. Second, if Schedule UTP were to have increased IRS success in challenging uncertain tax positions and thus increased settlements, such an effect would bias against the finding of a larger *Settle Ratio* following Schedule UTP implementation, as firm-year pre-Schedule UTP observations with co-mingled dependent variables would have larger numerators. Nonetheless, in untabulated analyses, I exclude pre-Schedule UTP observations where *Settle Ratio* is co-mingled between pre- and post-Schedule UTP settlements, and results are inferentially unchanged.

Cross-sectional analyses

To improve identification and better attribute the larger proportion of reserves unwinding through settlements to Schedule UTP, I perform two cross-sectional analyses examining variation in the influence of Schedule UTP on the relevance of tax reserves. First, Schedule UTP is more costly for multinational firms. FIN 48 reserves are aggregated across all jurisdictions, making it difficult for the IRS to determine whether reported reserves are attributable to its jurisdiction. U.S. multinational firms may have reserves for federal, state and local, and foreign tax positions, as opposed to only federal and state and local tax positions for U.S. domestic firms. Thus, FIN 48 disclosures are likely less informative to the IRS for U.S. multinational firms, thereby increasing the importance of Schedule UTP. Second, Schedule UTP is more costly for firms with a lower

probability of being audited by the IRS. When audit probability is high the IRS is more likely to examine a firm's return and the uncertain tax position, thus reducing or eliminating any incremental cost imposed by disclosure on Schedule UTP. As such, Schedule UTP disclosures are a more informative signal to the IRS for firms with an otherwise low probability of being audited. Therefore, I predict that improvement in the mapping between tax reserves and settlements is stronger among multinational firms and firms with a lower probability of IRS audit.

Results from cross-sectional analyses are presented in Table 7. In Panel A, I compare U.S. multinational firms (*MNC* = 1) to U.S. domestic firms (*MNC* = 0). I separately re-estimate equation (1) for multinational firms and for domestic firms and compare the coefficients on *UTP* across subsamples. Consistent with expectations, I find that the positive coefficient on *UTP* is stronger for multinational firms when using a four- or five-year settlement window. In Panel B, I compare firms with a low versus high probability of IRS audit. To measure IRS audit probability, I use data from the Transactional Records Access Clearinghouse (TRAC) at Syracuse University that captures yearly audit probabilities across several nominal asset levels (Hoopes et al. (2012); Hanlon et al. 2014; Mason and Williams 2020). I classify firms as having a low probability of IRS audit (*LowAP* = 1) if the audit probability in year *t* is below the median audit probability of all sample firms in year *t*. Across three-, four- and five-year settlement windows, I find that the improved mapping between reserves and settlements is stronger among firms with a lower audit probability. In sum, the results of Table 7 provide confirmatory evidence that Schedule UTP implementation leads to an improvement in the relevance of reserves for uncertain tax positions.

4.2.2 The effect of Schedule UTP on excess reserves

In Table 8, I report results from estimating equation (2). Before reporting results from the test of my hypothesis, I first validate the model in column 1 by showing that lapses in the statute

of limitations are associated with *RR_UTP* in expected ways. *RR_UTP* captures current year changes in the ETR, but with considerable noise.[26] Therefore, before estimating equation (2) I confirm that the test has sufficient power to detect an effect. *Ceteris paribus*, a lapse of the statute of limitations for a reserved position should reduce the ETR (i.e., *RR_UTP* should be negative) because the entire reserve for that position is eliminated through a reduction to tax expense. I set $LapseIND_t$ equal to one if the firm reports a non-zero amount as a lapse in its FIN 48 roll-forward schedule, and zero otherwise. Consistent with expectations, I estimate a negative coefficient on $LapseIND_t$, suggesting that the test has sufficient power to detect the effect of reserves on income tax expense for reserves that do not perfectly map into future tax cash payments.

Next, I examine how settlements with the tax authority for reserved tax positions influence the UTB component of the tax rate reconciliation. In column 2 of Table 8 I set $SettleIND_t$ equal to one if the firm reports a positive settlement amount in the FIN 48 roll-forward schedule, and zero otherwise. I estimate a negative coefficient on $SettleIND_t$, indicating that the *RR_UTP* is lower in the presence of settlement payments. This result is consistent with Robinson et al. (2016) and suggests that, on average, tax reserves for uncertain tax positions are overstated.

In column 3 of Table 8 I test my hypothesis and report results from estimating equation (2). I estimate a negative coefficient on $SettleIND_t$, suggesting that tax reserves are overstated during the FIN 48 era prior to Schedule UTP implementation. My coefficient of interest in equation (2) is from the interaction term $SettleIND_t*UTP_t$. I estimate a positive and significant coefficient (one-tailed p-value = 0.08) on $SettleIND_t*UTP_t$. In column 4, I repeat the analysis in column 3 after substituting UTP_t with UTP_ALT_t. I again estimate a positive and significant coefficient on

[26] *RR_UTP* only captures the effect of UTBs on the ETR that companies disclose. Therefore, undisclosed immaterial items will not be captured. Additionally, *RR_UTP* reflects all UTB accruals and releases, which may preclude detection of the effect of specific changes in the UTB balance (Schwab et al. 2021).

the interaction (one-tailed p-value = 0.06). The results from columns 3 and 4 provide evidence that private disclosure to the IRS on Schedule UTP improved the relevance of reserves for uncertain tax positions. Additionally, F-tests comparing the coefficients on *SettleIND* and *SettleIND*UTP* suggest that firms are less over-reserved following Schedule UTP implementation, but that changes in reporting behavior in response to Schedule UTP does not lead firms to be under-reserved.

Firms must also disclose the amount of reserves that could affect the effective tax rate if recognized. If only a small proportion of UTBs would influence the ETR if recognized, then the effect of reserves released due to settlements is likely to be attenuated. Therefore, in column 5, I estimate equation (2) on a sample of firms where the majority of UTBs in *t*-1, if released, will affect the ETR in year *t* (i.e., $PCTUTBETR_{t-1} > 0.50$).[27] Consistent with expectations, after limiting the sample to this subset of observations, I find a positive and significant (one-tailed p-value = 0.03) coefficient on $SettleIND_t*UTP_t$, and F-tests comparing *SettleIND* and *SettleIND*UTP* indicate that while reserves are less overstated following Schedule UTP, firms are not subsequently under-reserved. In sum, results from Table 8 provide additional support for findings presented in Section 4.2.1.

4.2.3 Predictive ability of tax expense for tax cash flows

In Table 9, I present analysis of the effect of Schedule UTP implementation on the relevance of reserves for uncertain tax positions by examining the relation between tax expense and future cash taxes paid. I estimate equation (3) using $TaxesPaid_{t+1}$ through $TaxesPaid_{t+5}$ as the

[27] Approximately 10 percent of the sample is missing $PCTUTBETR_{t-1}$. All observations missing $PCTUTBETR_{t-1}$ have a positive ending UTB balance. After manually checking the 10-K footnote for a random selection of these observations, I find that a large majority of the footnotes state that the full amount of the UTB balance would affect the ETR if recognized. Therefore, I set $PCTUTBETR_{t-1}$ equal to one for these observations. If the actual $PCTUTBETR_{t-1}$ is less than one, this design choice will bias against finding the expected result.

dependent variable across columns 1 through 5. In columns 1 and 2, I estimate a positive and significant coefficient on $TaxExp_t*UTP_t$ after including several firm-level control variables following Gleason et al. (2018). The results from columns 1 and 2 provide evidence that following Schedule UTP implementation there is a stronger relation between tax expense in year *t* and future cash taxes paid in years *t+1* and *t+2*, suggesting private disclosure of uncertain tax positions to the tax authority improves the relevance of tax expense in the short term.

However, when extending the analysis to taxes paid in years *t+3* through *t+5* in columns 3 through 5, I do not find a significant positive coefficient on the interaction term. Given the results from Table 3 that show a tighter mapping between tax reserves and future settlements over the following three to five years following Schedule UTP implementation, the insignificant coefficients on $TaxExp_t \times UTP_t$ for taxes paid in years *t+3* through *t+5* may suggest that the noise inherent in GAAP tax expense precludes finding a statistically significant improvement in the relevance of tax expense for future cash taxes paid in the longer term. Thus, Schedule UTP improves the mapping of reserves into settlements, but does not appear improve the predictive ability of current year tax expense for future tax cash flows.

V. CONCLUSION

I examine whether private disclosure improves the relevance of financial statement accruals. Implemented to improve tax enforcement, Schedule UTP requires firms to provide additional information to the IRS about uncertain tax positions for which reserves have been accrued in the financial statements. Private disclosure to the IRS on Schedule UTP increases regulatory scrutiny of uncertain tax positions underlying firms' publicly disclosure tax reserves. Therefore, I predict that Schedule UTP reporting acts as an *ex post* enforcement mechanism that will improve the *ex ante* accuracy of firms' reserves for uncertain tax positions.

Consistent with expectations, I find evidence that private disclosure to the tax authority improves the relevance of financial statement reserves for uncertain tax positions. Following the implementation of Schedule UTP, I document an increase in the proportion of tax reserves that unwind through settlements with the taxing authorities and a decrease in the amount by which firms are over-reserved for uncertain tax positions. Thus, Schedule UTP leads to a stronger link between the financial statement accruals and the eventual settlements. Additionally, I find that the improved mapping between tax reserves and tax settlements following Schedule UTP is driven by firms reducing reported reserves, as opposed to increased tax settlement collections by taxing authorities. This finding suggests that the improved relevance of reserves for uncertain tax positions is a result of changes in financial reporting behavior rather than improved tax authority enforcement.

My findings have implications for the effect of private disclosure on managers' financial reporting behavior and are, therefore, important to regulators, policymakers, and financial statement users. Financial statement users increasingly call for greater public tax disclosures to properly evaluate the risk associated with uncertain tax positions, but the FASBN has been reluctant to require additional public disclosure. Therefore, it is important for financial statement users to understand that a positive externality of current private disclosures to tax authorities is improved financial reporting quality. Additionally, this study contributes to literatures examining the effect of tax reporting on financial statement quality and the implications of FIN 48. My results demonstrate how a change in mandatory private disclosure to the tax authority can improve the relevance of financial reporting and how the effect of an accounting standard on the quality of accounting can change over time in response to changes in external monitoring.

APPENDIX A
Example of Financial Statement Disclosure of Uncertain Tax Positions Required by FIN 48

Hess Corporation (2008):

Below is a reconciliation of the beginning and ending amount of unrecognized tax benefits (millions of dollars):

	2008	2007
Balance at January 1	$ 165	$ 142
Additions based on tax positions taken in the current year	16	38
Additions based on tax positions of prior years	11	5
Reductions based on tax positions of prior years	(15)	-
Reductions due to settlements with taxing authorities	(2)	(20)
Balance at December 31	$ 175	$ 165

At December 31, 2008, the unrecognized tax benefits include $145 million which, if recognized, would affect the Corporation's effective income tax rate. Over the next 12 months, it is reasonably possible that the total amount of unrecognized tax benefits could decrease by up to $30 million due to settlements with taxing authorities.

The Corporation and its subsidiaries file income tax returns in the United States and various foreign jurisdictions. The Corporation is no longer subject to examinations by income tax authorities in most jurisdictions for years prior to 2003.

APPENDIX B
Excerpts from Schedule UTP

SCHEDULE UTP (Form 1120)

Department of the Treasury
Internal Revenue Service

Uncertain Tax Position Statement

► File with Form 1120, 1120-F, 1120-L, or 1120-PC.
► Information about Schedule UTP (Form 1120) and its separate instructions is at *www.irs.gov/scheduleutp.*

OMB No. 1545-0123

2012

Name of entity as shown on page 1 of tax return | EIN of entity

This Part I, Schedule UTP (Form 1120) is page _____ of _____ Part I pages.

Part I **Uncertain Tax Positions for the Current Tax Year.** See instructions for how to complete columns (a) through (g). Enter, in Part III, a description for each uncertain tax position (UTP).

Check this box if the corporation was unable to obtain information from related parties sufficient to determine whether a tax position is a UTP (see instructions) ► ☐

(a) UTP No.	(b) Primary IRC Sections (e.g., "61","108", "263A", etc.) / Primary IRC Subsections (e.g. (f)(2)(A)(ii))	(c) Timing Codes (check if Permanent, Temporary, or both)	(d) Pass-Through Entity EIN	(e) Major Tax Position	(f) Ranking of Tax Position	(g) Reserved for Future Use
C	( )( )( )( ) ( )( )( )( ) ( )( )( )( )	P T	-	☐		
C	( )( )( )( ) ( )( )( )( ) ( )( )( )( )	P T	-	☐		

Name of entity as shown on page 1 of tax return | EIN of entity

This Part II, Schedule UTP (Form 1120) is page _____ of _____ Part II pages.

Part II **Uncertain Tax Positions for Prior Tax Years.**
See instructions for how to complete columns (a) through (h). Enter, in Part III, a description for each uncertain tax position (UTP).

Check this box if the corporation was unable to obtain information from related parties sufficient to determine whether a tax position is a UTP (see instructions) ► ☐

(a) UTP No.	(b) Primary IRC Sections (e.g., "61", "108", "263A", etc.) / Primary IRC Subsections (e.g. (f)(2)(A)(ii))	(c) Timing Codes (check if Permanent, Temporary, or both)	(d) Pass-Through Entity EIN	(e) Major Tax Position	(f) Ranking of Tax Position	(g) Reserved for Future Use	(h) Year of Tax Position
P	( )( )( )( ) ( )( )( )( ) ( )( )( )( )	P T	-	☐			
P	( )( )( )( ) ( )( )( )( ) ( )( )( )( )	P T	-	☐			

Name of entity as shown on page 1 of tax return | EIN of entity

This Part III, Schedule UTP (Form 1120) is page _____ of _____ Part III pages.

Part III **Concise Descriptions of UTPs.** Indicate the corresponding UTP number from Part I, column (a) (e.g. C1) or Part II column (a) (e.g. P2). Use as many Part III pages as necessary (see instructions).

UTP No.	Concise Description of Uncertain Tax Position

APPENDIX C
Accounting for Uncertain Tax Positions

This appendix provides an example of journal entries made for the initial recognition of reserves for uncertain tax positions and the subsequent entries when such positions are settled with the tax authority.

Example

In Year 1, a firm establishes reserves for three uncertain tax positions A, B, and C. $30 is reserved for position A, $20 is reserved for position B, and $10 is reserved for position C. In Year 3, the firm settles positions A, B, and C for $20 each. The journal entries for Year 1 and for Year 3 are as follows (with tabular roll-forward classification in parentheses):

Year 1

Position A:

Debit Tax Expense	$30	
Credit UTB (CY_ADD)		$30

Position B:

Debit Tax Expense	$20	
Credit UTB (CY_ADD)		$20

Position C:

Debit Tax Expense	$10	
Credit UTP (CY_ADD)		$10

Year 3

Position A:

Debit UTB (PY_RED)	$10	
Credit Tax Expense		$10
Debit UTB (SETTLE)	$20	
Credit Cash		$20

Position B:

Debit UTB (SETTLE)	$20	
Credit Cash		$20

Position C:

Debit Tax Expense	$10	
Credit UTP (PY_ADD)		$10
Debit UTB (SETTLE)	$20	
Credit Cash		$20

Effects of unwinding tax positions through settlements in Year 3:

Position A: Reserve is overstated, leading to a reduction in tax expense of $10, which reduces the effective tax rate.

Position B: Reserve is equal to settlement, no effect on tax expense or effective tax rate.

Position C: Reserve is understated, leading to an increase in tax expense of $10, which increases the effective tax rate.

APPENDIX D
Variable Definitions

Variable	Description
Adv	Advertising expenses (set to 0 if missing), scaled by sales (XAD/SALE).
Audit Probability	The probability of being audited by the IRS in year *t* based on the firm's size (as measured by total assets), from the TRAC database.
Big4	Indicator = 1 if financial statement auditor [AU] is a Big 4 auditor, and 0 otherwise.
BTD	Book-tax differences, calculated as (PI – [(TXFED+TXFO)/0.35])/AT.
Capex	Capital expenditures (set to 0 if missing), scaled by gross property, plant, and equipment (CAPX/PPEGT).
CETR	Taxes paid scaled by pre-tax income (TXPD/[IB+TXT]).
CY_ADD	Additions to the FIN 48 reserve for positions taken in the current year [TXTUBPOSINC].
CY_OTHER	Other changes to the FIN 48 reserve [TXTUBADJUST].
CY_RED	Reductions to the FIN 48 reserve for positions taken in the current year [TXTUBPOSDEC].
Ending UTBs	Ending balance in the FIN 48 reserve [TXTUBEND] in year *t*, scaled by total assets in year *t*.
Equity Income	Indicator = 1 if equity earnings [ESUB] is greater than 0, and 0 otherwise.
ETR	Tax expense scaled by pre-tax income (TXT/[IB+TXT]).
Foreign	Foreign income, calculated as PIFO scaled by AT in year *t*-1.
ForeignInd	Indicator = 1 if the absolute value of pre-tax foreign income (PIFO) is positive, and 0 otherwise.
Intangibles	Intangible assets scaled by assets (INTAN/AT).

APPENDIX D
Variable Definitions

Variable	Description
LAPSE	Reductions in the FIN 48 reserve associated with positions for which the statute of limitations expires [TXTUBSOFLIMIT].
Leverage	Total debt scaled by assets ([DLC + DLTT]/AT).
Litigation	Indicator = 1 if pretax litigation settlement [SETP] or after-tax litigation settlement [SETA] are negative, and 0 otherwise.
LowAP	Indicator = 1 if *Audit Probability* in year *t* is above the median *Audit Probability* for sample firms in year *t*, and 0 otherwise.
MezzFin	Mezzanine financing, calculated as DCPSTK/AT.
MNC	Indicator = 1 if foreign pretax income (PIFO) is not equal to 0, and 0 otherwise; set to 0 if PIFO is missing.
NOL	Indicator = 1 if the firm reports positive tax net operating loss carryforwards (TLCF), and 0 otherwise.
PCTUTBETR	Proportion of the total tax reserve that would affect tax expense at the time of resolution (TXTUBTXTR/TXTUBEND).
PP&E	Gross property, plant, and equipment scaled by assets (PPEGT/AT).
PT_ROS	Pre-tax income scaled by sales ([IB+TXT]/SALE).
PY_ADD	Additions to the FIN 48 reserve for positions taken in a prior year [TXTUBPOSPINC].
PY_RED	Reductions to the FIN 48 reserve for positions taken in a prior year [TXTUBPOSPDEC].
R&D	Research and development expenditures (set to 0 if missing), scaled by sales (XRD/SALE).
ROA	Pre-tax income scaled by assets ([IB+TXT]/AT).

APPENDIX D
Variable Definitions

Variable	Description
RR_UTP	The effect of accounting for unrecognized tax benefits on the ETR, where positive values increase the ETR and negative values decrease the ETR. Data comes from the rate reconciliation in the tax footnote and is provided by Schwab et al. (2021).
SETTLE	Reductions in the FIN 48 reserve associated with positions that were settled with the tax authority [TXTUBSETTLE].
Settlements	The sum of *SETTTLE* in years *t* through *t*+*k*, scaled by total assets [AT] in year *t*.
Settle Ratio	The sum of *SETTLE* in years *t* through *t*+*k*, scaled by *UTB_END* in year *t*-1.
Settle Ratio Alt	The sum of *SETTLE* in years *t* through *t*+*k*, scaled by the sum of *UTB_END* in year *t*-1 and *PY_ADD* in year *t*.
SGA	Selling, general, and administrative expenses (set to 0 if missing), scaled by sales (XSGA/SALE).
Size	The natural log of one plus total market cap (ln[1+(PRCC_F*CSHO)]).
TaxesPaid	Cash taxes paid scaled by assets (TXPD/AT).
TaxExpense	Total tax expense scaled by assets (TXT/AT).
UTB_BEG	Beginning balance in the FIN 48 reserve [TXTUBBEGIN].
UTB_END	Ending balance in the FIN 48 reserve [TXTUBEND].
UTP	Indicator = 1 for firm-years subject to Schedule UTP reporting, and 0 otherwise. Firms with at least $100 million in assets [AT] are subject to Schedule UTP reporting in 2010, followed by firms with at least $50 million in 2012 and $10 million in 2014.
UTP_ALT	Alternative Schedule UTP indicator. Equals *UTP* for all firm-years except for years beginning in 2010, in which case *UTP_ALT* equals 0.

* All continuous variables are winsorized at the 1st and 99th percentiles. Compustat mnemonics are presented in parentheses or brackets. All data comes from Compustat unless otherwise noted.

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FIGURE 1
Sample Period Timeline of Events

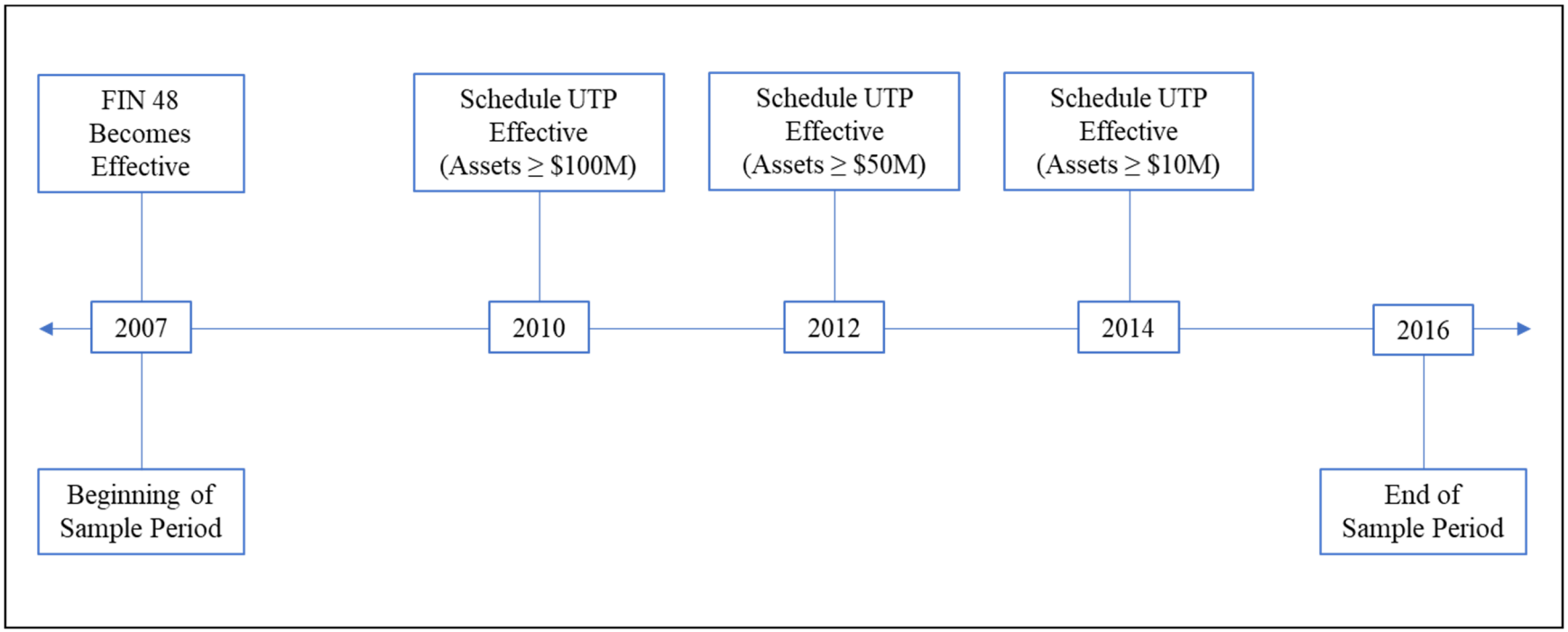
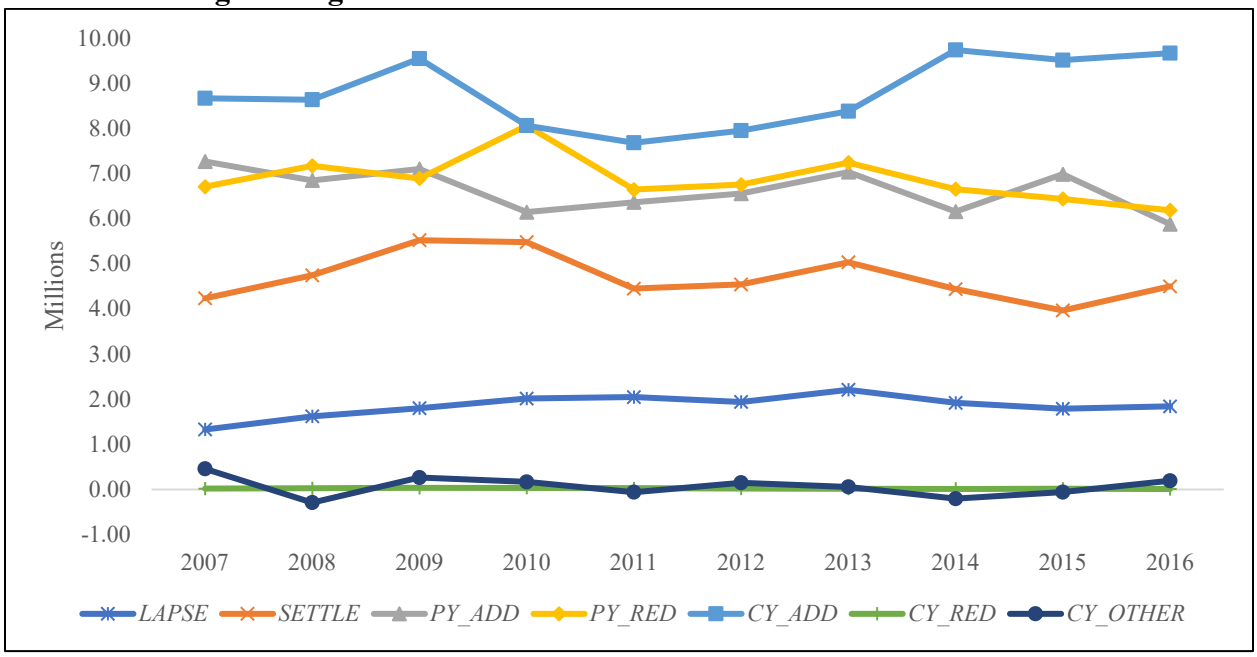


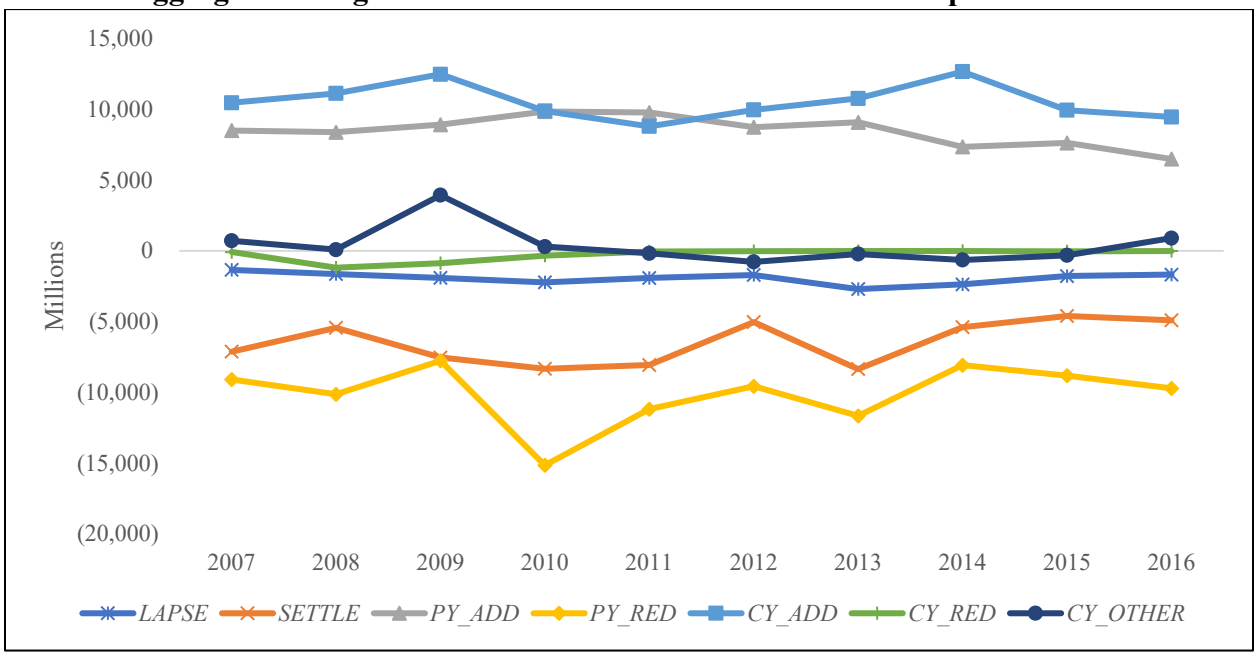
Figure 1 presents a timeline of events related to the public and private disclosures of information concerning reserves for uncertain tax positions during the sample period of 2007 to 2016.

FIGURE 2
Yearly Changes in FIN 48 Tax Reserves

Panel A: Average Changes in FIN 48 Tax Reserves



Panel B: Aggregate Changes in FIN 48 Tax Reserves – Constant Sample



Panel A of Figure 2 presents yearly averages, in millions, of changes in the FIN 48 tax reserve balance for the Sample 1. Panel B of Figure 2 presents the yearly aggregate, in millions, of changes in the FIN 48 tax reserve balance for a constant sample of 602 firms drawn from Sample 1. All variables are defined in Appendix D.

FIGURE 3
Trends Analysis

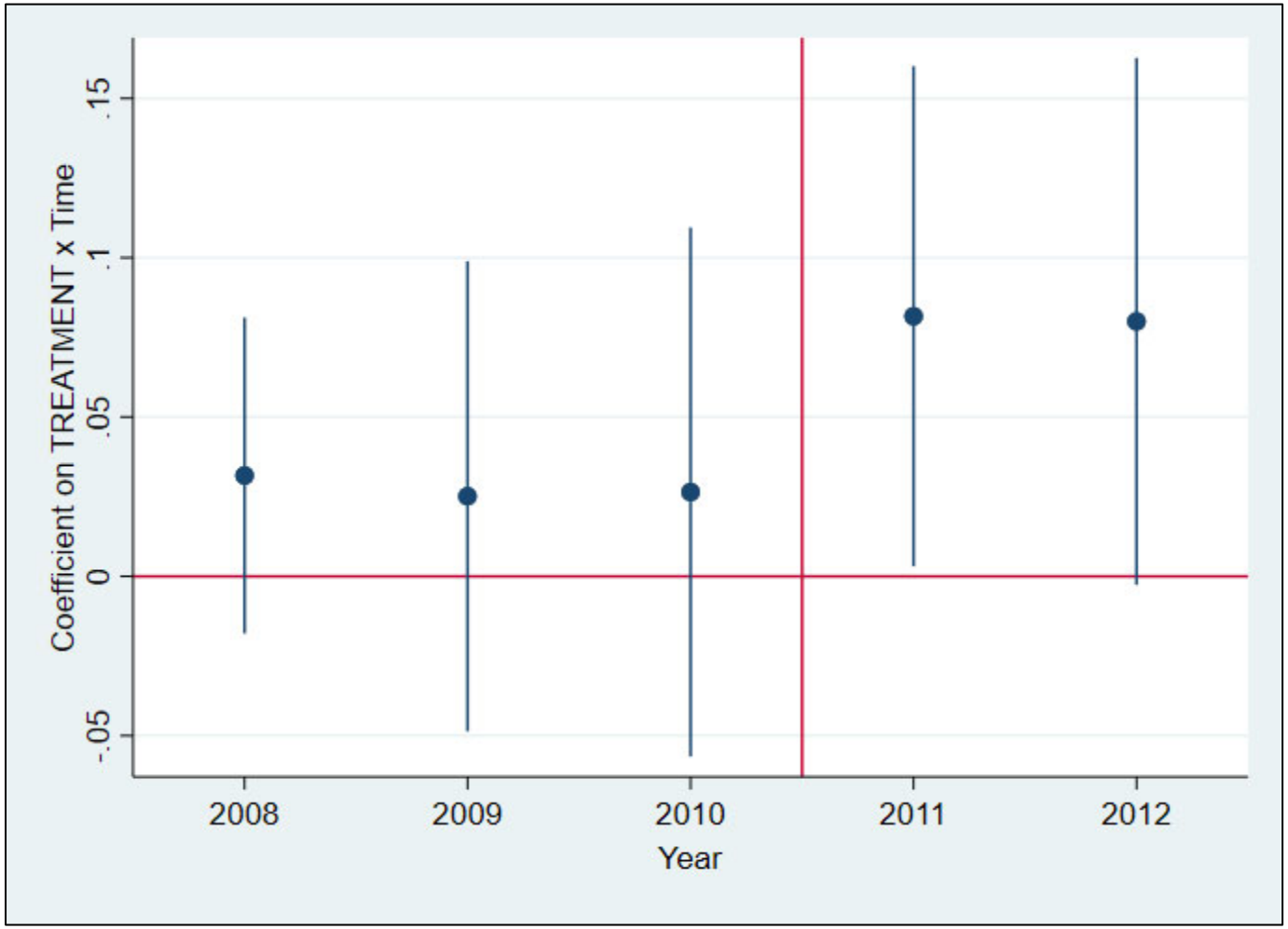


Figure 3 examines the trends in *Settle Ratio*$_{t-t+2}$ around the initial implementation of Schedule UTP. I estimate a regression with TREATMENT (i.e., firms with at least $100 million in total assets) interacted with year indicator variables and including year dummy variables for each sample year. I plot the coefficient on the interactions of TREATMENT and the separate year dummy variables as well as the 95 percent confidence intervals based on standard errors clustered by firm. The vertical line separates the pre- and post-UTP periods.

TABLE 1
Sample Selection

	Totals	
	Number of Firm-Years	Unique Firms
Non-financial firm-years between 2007 and 2016 with valid FIN 48 roll-forward data	29,594	
Less: non-US incorporated firms and non-corporate entities	(3,211)	
	26,383	4,455
Sample 1: Reserves unwinding through settlements	26,383	
Less: observations missing 3-year *Settle Ratio* or one or more controls	(12,809)	
	13,574	2,356
Sample 2: Excess reserves upon settlement	26,383	
Less: observations with missing or non-positive PI, TXT, or TXPD	(12,948)	
Less: observations with an effective tax rate < 0 or > 1	(334)	
Less: observations missing one or more control variables	(2,852)	
	10,249	2,330
Sample 3: Predictive ability of tax expense	26,383	
Less: 2016 observations	(2,756)	
Less: observations with missing or non-positive PI, TXT, or TXPD	(11,464)	
Less: observations with missing or non-positive lagged PI, TXT, or TXPD	(2,378)	
Less: observations missing one or more control variables	(862)	
	8,923	2,051

This table describes the sample selection process. Samples 1, 2, and 3 each start with the sample of 26,383 U.S. incorporated firm-years between 2007 and 2016 with valid FIN 48 roll-forward data in Compustat, and each then impose distinct data requirements. Compustat mnemonics are capitalized.

TABLE 2
Descriptive Statistics

Panel A: FIN 48 Tax Reserve Balances and Changes for Sample 1

Variable	N	Mean	S.D.	Q1	Median	Q3
UTB_BEG	13,574	67.73	229.35	1.44	6.42	31.00
LAPSE	13,574	1.87	5.62	0.00	0.03	1.00
SETTLE	13,574	4.70	19.95	0.00	0.00	0.62
PY_ADD	13,574	6.61	24.62	0.00	0.11	1.72
PY_RED	13,574	6.88	26.79	0.00	0.03	1.30
CY_ADD	13,574	8.76	32.95	0.00	0.45	3.12
CY_RED	13,574	0.02	0.15	0.00	0.00	0.00
CY_OTHER	13,574	0.06	2.63	0.00	0.00	0.00
UTB_END	13,574	68.96	237.99	1.42	6.46	31.10

Panel B: Aggregate Changes in FIN 48 Tax Reserve for Constant Sample of 602 Firms from Sample 1 (in $M)

n = 602	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
UTB_BEG	$78,086	$80,291	$79,930	$88,011	$81,945	$78,866	$80,323	$77,199	$80,478	$82,369
LAPSE	(1,343)	(1,639)	(1,912)	(2,229)	(1,919)	(1,707)	(2,697)	(2,369)	(1,785)	(1,684)
SETTLE	(7,123)	(5,441)	(7,534)	(8,331)	(8,066)	(5,030)	(8,353)	(5,393)	(4,601)	(4,906)
PY_ADD	8,494	8,378	8,909	9,839	9,767	8,731	9,079	7,344	7,619	6,483
PY_RED	(9,090)	(10,135)	(7,767)	(15,146)	(11,183)	(9,567)	(11,659)	(8,079)	(8,815)	(9,716)
CY_ADD	10,457	11,115	12,468	9,874	8,788	9,956	10,761	12,659	9,929	9,450
CY_RED	(88)	(1,184)	(874)	(344)	(48)	(26)	(21)	(15)	(43)	(15)
CY_OTHER	707	85	3,937	297	(179)	(775)	(228)	(645)	(322)	896
UTB_END	$80,096	$81,422	$87,282	$82,043	$79,023	$80,374	$76,991	$80,649	$82,380	$82,792

TABLE 2 (continued)
Descriptive Statistics

Panel C:
Sample 1

Variable	N	Mean	S.D.	Q1	Median	Q3
UTB_END$_{t-1}$	13,574	67.85	230.77	1.43	6.40	31.00
UTB_END$_{t-1}$ + PY_ADD$_t$	13,574	75.71	257.71	1.65	7.08	34.60
Settle Ratio$_{t \text{ through } t+2}$	13,574	0.21	0.37	0.00	0.03	0.26
Settle Ratio Alt$_{t \text{ through } t+2}$	13,574	0.17	0.28	0.00	0.03	0.23
Settle Ratio$_{t \text{ through } t+3}$	12,674	0.29	0.50	0.00	0.07	0.38
Settle Ratio Alt$_{t \text{ through } t+3}$	12,674	0.24	0.38	0.00	0.07	0.33
Settle Ratio$_{t \text{ through } t+4}$	10,657	0.38	0.67	0.00	0.13	0.50
Settle Ratio Alt$_{t \text{ through } t+4}$	10,657	0.32	0.50	0.00	0.12	0.44
UTP	13,574	0.70	0.46	0.00	1.00	1.00
UTP_ALT	13,574	0.60	0.49	0.00	1.00	1.00
BTD	13,574	-0.03	0.15	-0.03	0.01	0.03
Leverage	13,574	0.23	0.22	0.02	0.19	0.34
Size	13,574	7.00	1.95	5.72	7.00	8.28
ROA	13,574	0.02	0.18	-0.01	0.06	0.11
Foreign	13,574	0.02	0.04	0.00	0.00	0.03
R&D	13,574	0.16	0.70	0.00	0.01	0.08
ETR	13,574	0.19	0.53	0.05	0.29	0.37
Equity Income	13,574	0.18	0.38	0.00	0.00	0.00
MezzFin	13,574	0.02	0.07	0.00	0.00	0.00
Big4	13,574	0.85	0.36	1.00	1.00	1.00
Litigation	13,574	0.10	0.31	0.00	0.00	0.00
NOL	13,574	0.68	0.47	0.00	1.00	1.00
MNC	13,574	0.67	0.47	0.00	1.00	1.00
Audit Probability	13,574	0.27	0.17	0.16	0.25	0.30

TABLE 2 (continued)
Descriptive Statistics

Sample 2

Variable	N	Mean	S.D.	Q1	Median	Q3
RR_UTP	10,249	-0.003	0.026	0.000	0.000	0.000
SettleInd	10,249	0.388	0.487	0.000	0.000	1.000
UTP	10,249	0.772	0.420	1.000	1.000	1.000
UTP_ALT	10,249	0.662	0.473	0.000	1.000	1.000
R&D	10,249	0.035	0.061	0.000	0.002	0.040
Adv	10,249	0.012	0.028	0.000	0.000	0.010
SGA	10,249	0.237	0.163	0.111	0.211	0.332
Capex	10,249	0.110	0.076	0.059	0.089	0.139
Leverage	10,249	0.213	0.197	0.025	0.186	0.326
ForeignInd	10,249	0.662	0.473	0.000	1.000	1.000
NOL	10,249	0.618	0.486	0.000	1.000	1.000
Intangibles	10,249	0.230	0.210	0.041	0.179	0.373
PP&E	10,249	0.469	0.356	0.186	0.362	0.686
PT_ROS	10,249	0.115	0.092	0.050	0.091	0.151
PCTUTBETR	10,249	0.747	0.936	0.583	0.899	1.000

Sample 3

Variable	N	Mean	S.D.	Q1	Median	Q3
TaxExpense	8,923	0.036	0.028	0.017	0.029	0.047
TaxesPaid	8,923	0.031	0.028	0.012	0.024	0.042
UTP	8,923	0.683	0.465	0.000	1.000	1.000
Size	8,923	7.378	1.889	6.186	7.362	8.577
R&D	8,923	0.031	0.056	0.000	0.000	0.031
Adv	8,923	0.012	0.028	0.000	0.000	0.011
SGA	8,923	0.228	0.157	0.107	0.203	0.320
Capex	8,923	0.114	0.079	0.062	0.092	0.143
Leverage	8,923	0.207	0.189	0.027	0.184	0.315
ForeignInd	8,923	0.655	0.476	0.000	1.000	1.000
NOL	8,923	0.578	0.494	0.000	1.000	1.000
ROA	8,923	0.110	0.076	0.058	0.093	0.143
Intangibles	8,923	0.228	0.207	0.043	0.178	0.370
PP&E	8,923	0.472	0.349	0.193	0.368	0.690

This table presents descriptive statistics for variables used in analyses. Panel A presents line items from the FIN 48 roll-forward schedule for Sample 1. Panel B presents aggregate changes in FIN 48 tax reserves for a constant sample of 602 firms drawn from Sample 1. Panel C presents variables for Samples 1, 2, and 3. All variables are defined in Appendix D. All continuous variables are winsorized at the 1st and 99th percentiles.

TABLE 3
The Effect of Schedule UTP on Reserves Unwinding Through Settlements

Panel A: *Settle Ratio* using UTB_END_{t-1} as the denominator

Dep. Var.:		$Settle\ Ratio_{t-t+2}$		$Settle\ Ratio_{t-t+3}$		$Settle\ Ratio_{t-t+4}$	
	Pred.	(1)	(2)	(3)	(4)	(5)	(6)
UTP	+	0.137***	0.044***	0.212***	0.080***	0.274***	0.094***
		(0.017)	(0.017)	(0.020)	(0.022)	(0.028)	(0.028)
BTD			-0.103		-0.123		-0.169
			(0.077)		(0.113)		(0.158)
Leverage			-0.019		-0.036		-0.067
			(0.028)		(0.040)		(0.059)
Size			0.019***		0.028***		0.036***
			(0.004)		(0.005)		(0.008)
ROA			0.129*		0.172		0.279*
			(0.073)		(0.107)		(0.150)
Foreign			-0.013		-0.076		-0.257
			(0.120)		(0.173)		(0.259)
R&D			-0.021***		-0.026***		-0.032***
			(0.004)		(0.006)		(0.009)
ETR			0.007		0.008		0.003
			(0.006)		(0.009)		(0.015)
Equity Income			0.032**		0.049**		0.075**
			(0.016)		(0.024)		(0.036)
MezzFin			-0.109*		-0.164*		-0.187
			(0.061)		(0.085)		(0.124)
Big4			0.007		0.012		0.026
			(0.016)		(0.024)		(0.034)
Litigation			0.023*		0.016		0.022
			(0.012)		(0.016)		(0.025)
NOL			0.006		0.015		0.025
			(0.011)		(0.016)		(0.022)
N		13,574	13,574	12,674	12,674	10,657	10,657
R-squared		0.025	0.043	0.026	0.046	0.024	0.044

TABLE 3 (continued)
The Effect of Schedule UTP on Reserves Unwinding Through Settlements

Panel B: *Settle Ratio Alt* using ($UTB\_END_{t-1} + PY\_ADD_t$) as the denominator

Dep. Var.:		*Settle Ratio Alt*$_{t-t+2}$		*Settle Ratio Alt*$_{t-t+3}$		*Settle Ratio Alt*$_{t-t+4}$	
	Pred.	(1)	(2)	(3)	(4)	(5)	(6)
UTP	+	0.111***	0.032**	0.176***	0.063***	0.232***	0.081***
		(0.014)	(0.015)	(0.016)	(0.018)	(0.020)	(0.023)
BTD			-0.051		-0.060		-0.136
			(0.060)		(0.088)		(0.122)
Leverage			-0.019		-0.035		-0.061
			(0.021)		(0.030)		(0.043)
Size			0.017***		0.024***		0.032***
			(0.003)		(0.004)		(0.006)
ROA			0.073		0.100		0.200*
			(0.057)		(0.084)		(0.118)
Foreign			0.034		0.033		-0.020
			(0.098)		(0.138)		(0.202)
R&D			-0.016***		-0.021***		-0.028***
			(0.004)		(0.005)		(0.007)
ETR			0.008		0.009		0.009
			(0.005)		(0.006)		(0.010)
Equity Income			0.021*		0.033*		0.046*
			(0.012)		(0.018)		(0.026)
MezzFin			-0.103**		-0.146**		-0.157
			(0.048)		(0.068)		(0.097)
Big4			0.000		0.006		0.013
			(0.013)		(0.019)		(0.026)
Litigation			0.023**		0.020		0.023
			(0.010)		(0.013)		(0.019)
NOL			0.003		0.008		0.014
			(0.009)		(0.013)		(0.018)
N		13,574	13,574	12,674	12,674	10,657	10,657
R-squared		0.027	0.050	0.029	0.054	0.027	0.052

TABLE 3 (continued)
The Effect of Schedule UTP on Reserves Unwinding Through Settlements

Panel C: *Settle Ratio* using UTB_END_{t-1} as the denominator and controlling for tax avoidance

Dep. Var.:		$Settle\ Ratio_{t-t+2}$	$Settle\ Ratio_{t-t+3}$	$Settle\ Ratio_{t-t+4}$
	Pred.	(1)	(2)	(3)
UTP	+	0.047**	0.089***	0.101***
		(0.021)	(0.025)	(0.033)
CETR		0.002	0.002	0.022
		(0.009)	(0.011)	(0.016)
BTD		-0.100	-0.113	-0.140
		(0.080)	(0.117)	(0.163)
Leverage		-0.023	-0.047	-0.086
		(0.029)	(0.042)	(0.062)
Size		0.020***	0.029***	0.038***
		(0.004)	(0.006)	(0.008)
ROA		0.103	0.138	0.228
		(0.076)	(0.111)	(0.155)
Foreign		-0.021	-0.089	-0.279
		(0.124)	(0.177)	(0.264)
R&D		-0.027***	-0.036***	-0.044***
		(0.008)	(0.011)	(0.015)
ETR		0.007	0.008	-0.001
		(0.007)	(0.009)	(0.016)
Equity Income		0.031*	0.046*	0.069*
		(0.016)	(0.024)	(0.035)
MezzFin		-0.107	-0.159*	-0.178
		(0.070)	(0.097)	(0.138)
Big4		0.007	0.012	0.024
		(0.017)	(0.025)	(0.035)
Litigation		0.020	0.014	0.020
		(0.013)	(0.017)	(0.025)
NOL		0.006	0.015	0.029
		(0.012)	(0.016)	(0.023)
N		12,936	12,103	10,208
R-squared		0.035	0.038	0.038

This table reports the results of OLS regressions estimating the impact of Schedule UTP on reserves for uncertain tax positions unwinding through settlements. The dependent variable in Panels A and C is *Settle Ratio*, which scales the sum of *SETTLE* in years *t* through *t+k* by *UTB_END* in year *t*-1. The dependent variable in Panel B is *Settle Ratio Alt*, which scales the sum of *SETTLE* in years *t* through *t+k* by the sum of *UTB_END* in year *t*-1 and *PY_ADD* in year *t*. Panel C includes *CETR* to control for tax avoidance. All regression models include untabulated year and industry fixed effects. All variables are defined in Appendix D. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors, clustered by firm, are presented in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent levels, respectively (one-tailed for signed predictions, two-tailed otherwise).

TABLE 4
The Effect of Schedule UTP on Reserves Unwinding Through Settlements Using *UTP_ALT*

Panel A: *Settle Ratio* using UTB_END_{t-1} as the denominator

Dep. Var.:		$Settle\ Ratio_{t-t+2}$		$Settle\ Ratio_{t-t+3}$		$Settle\ Ratio_{t-t+4}$	
	Pred.	(1)	(2)	(3)	(4)	(5)	(6)
UTP_ALT	+	0.154***	0.056***	0.227***	0.083***	0.288***	0.093***
		(0.016)	(0.018)	(0.019)	(0.022)	(0.029)	(0.031)
BTD			-0.103		-0.119		-0.164
			(0.077)		(0.113)		(0.158)
Leverage			-0.019		-0.035		-0.066
			(0.028)		(0.040)		(0.059)
Size			0.019***		0.028***		0.036***
			(0.004)		(0.005)		(0.008)
ROA			0.129*		0.171		0.278*
			(0.073)		(0.107)		(0.150)
Foreign			-0.012		-0.076		-0.256
			(0.121)		(0.173)		(0.259)
R&D			-0.021***		-0.026***		-0.032***
			(0.004)		(0.006)		(0.009)
ETR			0.007		0.009		0.003
			(0.006)		(0.009)		(0.015)
Equity Income			0.033**		0.049**		0.075**
			(0.016)		(0.024)		(0.036)
MezzFin			-0.108*		-0.163*		-0.186
			(0.061)		(0.085)		(0.124)
Big4			0.007		0.013		0.028
			(0.017)		(0.024)		(0.034)
Litigation			0.023*		0.016		0.022
			(0.012)		(0.016)		(0.025)
NOL			0.007		0.015		0.026
			(0.011)		(0.016)		(0.022)
N		13,574	13,574	12,674	12,674	10,657	10,657
R-squared		0.024	0.044	0.025	0.046	0.023	0.044

TABLE 4 (continued)
The Effect of Schedule UTP on Reserves Unwinding Through Settlements Using *UTP_ALT*

Panel B: *Settle Ratio* using (UTB_END_{t-1} + PY_ADD_t) as the denominator

Dep. Var.:		*Settle Ratio Alt*$_{t-t+2}$		*Settle Ratio Alt*$_{t-t+3}$		*Settle Ratio Alt*$_{t-t+4}$	
	Pred.	(1)	(2)	(3)	(4)	(5)	(6)
UTP_ALT	+	0.123***	0.040***	0.183***	0.061***	0.234***	0.069***
		(0.015)	(0.016)	(0.017)	(0.019)	(0.023)	(0.025)
BTD			-0.051		-0.056		-0.130
			(0.060)		(0.088)		(0.122)
Leverage			-0.018		-0.034		-0.060
			(0.021)		(0.030)		(0.043)
Size			0.018***		0.025***		0.033***
			(0.003)		(0.004)		(0.006)
ROA			0.073		0.099		0.199*
			(0.057)		(0.084)		(0.118)
Foreign			0.035		0.032		-0.020
			(0.098)		(0.138)		(0.202)
R&D			-0.016***		-0.021***		-0.028***
			(0.004)		(0.005)		(0.007)
ETR			0.008		0.009		0.009
			(0.005)		(0.006)		(0.010)
Equity Income			0.022*		0.033*		0.046*
			(0.012)		(0.018)		(0.026)
MezzFin			-0.103**		-0.145**		-0.156
			(0.048)		(0.068)		(0.097)
Big4			0.000		0.007		0.015
			(0.013)		(0.019)		(0.026)
Litigation			0.023**		0.021		0.023
			(0.010)		(0.013)		(0.019)
NOL			0.004		0.009		0.014
			(0.009)		(0.013)		(0.018)
N		13,574	13,574	12,674	12,674	10,657	10,657
R-squared		0.026	0.050	0.027	0.054	0.025	0.052

This table reports the results of OLS regressions estimating the impact of Schedule UTP on reserves for uncertain tax positions unwinding through settlements using an alternative Schedule UTP indicator variable, *UTP_ALT*. The dependent variable in Panel A is *Settle Ratio*, which scales the sum of *SETTLE* in years *t* through *t+k* by *UTB_END* in year *t*-1. The dependent variable in Panel B is *Settle Ratio Alt*, which scales the sum of *SETTLE* in years *t* through *t+k* by the sum of *UTB_END* in year *t*-1 and *PY_ADD* in year *t*. All regression models include untabulated year and industry fixed effects. All variables are defined in Appendix D. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors, clustered by firm, are presented in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent levels, respectively (one-tailed for signed predictions, two-tailed otherwise).

TABLE 5
Difference-in-Differences Analysis of the Effect of Schedule UTP on Reserves Unwinding Through Settlements

Dep. Var.:	Pred.	*Settle Ratio*$_{t-t+2}$ (1)	*Settle Ratio*$_{t-t+3}$ (2)	*Settle Ratio*$_{t-t+4}$ (3)
UTP	+	0.025*	0.053**	0.049**
		(0.017)	(0.025)	(0.026)
BTD		-0.116	-0.061	-0.095
		(0.083)	(0.124)	(0.149)
Leverage		0.006	0.028	0.008
		(0.044)	(0.065)	(0.107)
Size		0.014	0.016	0.020
		(0.009)	(0.012)	(0.017)
ROA		0.105	0.073	0.114
		(0.086)	(0.128)	(0.158)
Foreign		-0.155	-0.231	-0.359
		(0.126)	(0.185)	(0.245)
R&D		0.002	0.001	-0.003
		(0.004)	(0.005)	(0.006)
ETR		-0.000	0.000	-0.004
		(0.005)	(0.007)	(0.014)
Equity Income		0.001	0.015	0.046
		(0.020)	(0.028)	(0.043)
MezzFin		0.054	0.029	0.005
		(0.075)	(0.097)	(0.134)
Big4		0.052*	0.076*	0.090*
		(0.029)	(0.039)	(0.054)
Litigation		0.019	0.008	0.022
		(0.012)	(0.015)	(0.023)
NOL		0.009	0.013	0.011
		(0.015)	(0.021)	(0.033)
N		13,574	12,674	10,657
R-squared		0.544	0.577	0.597

This table reports the results of OLS regressions estimating the impact of Schedule UTP on reserves for uncertain tax positions unwinding through settlements. The dependent variable is *Settle Ratio*, which scales the sum of *SETTLE* in years *t* through *t+k* by *UTB_END* in year *t*-1. Untabulated year and firm fixed effects are included in all columns. All variables are defined in Appendix D. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors, clustered by firm, are presented in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent levels, respectively (one-tailed for signed predictions, two-tailed otherwise).

TABLE 6
The Effect of Schedule UTP on Settlements vs. Reserves

Dep. Var.:	*Settlements*$_{t-t+2}$	*Settlements*$_{t-t+3}$	*Settlements*$_{t-t+4}$	*Ending UTBs*$_t$
	(1)	(2)	(3)	(4)
UTP	0.000	0.000	0.000	-0.016***
	(0.000)	(0.000)	(0.000)	(0.003)
BTD	0.000	0.000	-0.001	-0.022***
	(0.001)	(0.002)	(0.002)	(0.006)
Leverage	-0.000	-0.001	-0.001*	-0.002
	(0.000)	(0.000)	(0.001)	(0.002)
Size	0.000***	0.001***	0.001***	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
ROA	-0.002	-0.002	-0.003	-0.014***
	(0.001)	(0.001)	(0.002)	(0.005)
Foreign	0.009***	0.013***	0.016***	0.073***
	(0.002)	(0.003)	(0.004)	(0.010)
R&D	-0.000**	-0.000***	-0.001***	0.002***
	(0.000)	(0.000)	(0.000)	(0.001)
ETR	-0.000	-0.000*	-0.000	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
Equity Income	-0.000	-0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.001)
MezzFin	-0.001	-0.001	-0.001	0.021***
	(0.001)	(0.001)	(0.002)	(0.008)
Big4	-0.000	-0.000	-0.000	-0.002*
	(0.000)	(0.000)	(0.000)	(0.001)
Litigation	0.001***	0.001***	0.001***	0.002***
	(0.000)	(0.000)	(0.000)	(0.001)
NOL	0.000	0.000	0.000	0.002**
	(0.000)	(0.000)	(0.000)	(0.001)
N	13,574	12,674	10,657	13,574
R-squared	0.060	0.072	0.080	0.191

This table reports the results of OLS regressions estimating the impact of Schedule UTP on settlements of and reserves for uncertain tax positions. The dependent variable in columns 1 through 3 is the sum of *SETTLE* in years *t* through *t+k*, scaled by total assets in year *t*. The dependent variable in column 4 is *UTB_END* scaled by assets in year *t*. All regression models include untabulated year and industry fixed effects. All variables are defined in Appendix D. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors, clustered by firm, are presented in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent levels, respectively (two-tailed).

TABLE 7
Cross-Sectional Analyses of the Effect of Schedule UTP on Reserves Unwinding Through Settlements

Panel A: Multinational versus Domestic Firms

Dep. Var.:		*Settle Ratio*$_{t-t+2}$		*Settle Ratio*$_{t-t+3}$		*Settle Ratio*$_{t-t+4}$	
		MNC = 1	*MNC* = 0	*MNC* = 1	*MNC* = 0	*MNC* = 1	*MNC* = 0
	Pred.	(1)	(2)	(3)	(4)	(5)	(6)
UTP	+	0.057**	0.023	0.112***	0.044*	0.139***	0.046
		(0.028)	(0.024)	(0.032)	(0.030)	(0.041)	(0.040)
BTD		-0.120	-0.139	-0.169	-0.166	-0.265	-0.202
		(0.095)	(0.124)	(0.129)	(0.192)	(0.184)	(0.269)
Leverage		-0.012	-0.042	-0.027	-0.068	-0.058	-0.119
		(0.035)	(0.041)	(0.051)	(0.061)	(0.077)	(0.091)
Size		0.017***	0.018***	0.025***	0.026***	0.033***	0.031**
		(0.005)	(0.007)	(0.007)	(0.010)	(0.010)	(0.014)
ROA		0.125	0.167	0.201	0.204	0.349**	0.291
		(0.092)	(0.115)	(0.126)	(0.178)	(0.177)	(0.251)
R&D		-0.036***	-0.009*	-0.048***	-0.011	-0.077***	-0.008
		(0.010)	(0.005)	(0.014)	(0.007)	(0.024)	(0.010)
ETR		0.002	0.016	0.002	0.017	-0.012	0.020
		(0.007)	(0.011)	(0.010)	(0.015)	(0.020)	(0.021)
Equity Income		0.010	0.100**	0.015	0.156***	0.016	0.258***
		(0.016)	(0.040)	(0.024)	(0.059)	(0.034)	(0.094)
MezzFin		-0.146**	-0.042	-0.203*	-0.090	-0.251*	-0.045
		(0.074)	(0.105)	(0.104)	(0.148)	(0.149)	(0.226)
Big4		0.028	-0.028	0.043	-0.040	0.069	-0.047
		(0.020)	(0.026)	(0.028)	(0.039)	(0.042)	(0.056)
Litigation		0.007	0.066**	-0.003	0.062	-0.002	0.074
		(0.013)	(0.030)	(0.018)	(0.040)	(0.027)	(0.061)
NOL		0.008	0.002	0.013	0.017	0.024	0.028
		(0.013)	(0.020)	(0.019)	(0.029)	(0.026)	(0.040)
Test: $\beta_1 = \beta_1$		*p*-value = 0.184		*p*-value = 0.062		*p*-value = 0.049	
N		9,123	4,451	8,576	4,098	7,204	3,453
R-squared		0.036	0.069	0.037	0.075	0.034	0.082

TABLE 7 (Continued)
Cross-Sectional Analyses of the Effect of Schedule UTP on Reserves Unwinding Through Settlements

Panel B: Low versus High Audit Probability

Dep. Var.:		*Settle Ratio*$_{t-t+2}$		*Settle Ratio*$_{t-t+3}$		*Settle Ratio*$_{t-t+4}$	
		LowAP=1	*LowAP*=0	*LowAP*=1	*LowAP*=0	*LowAP*=1	*LowAP*=0
	Pred.	(1)	(2)	(3)	(4)	(5)	(6)
UTP	+	0.049***	-0.040	0.083***	-0.069	0.085***	0.020
		(0.018)	(0.045)	(0.023)	(0.055)	(0.030)	(0.074)
BTD		-0.073	-0.238*	-0.091	-0.279	-0.095	-0.466*
		(0.083)	(0.140)	(0.125)	(0.192)	(0.171)	(0.267)
Leverage		-0.028	-0.028	-0.043	-0.051	-0.089	-0.069
		(0.029)	(0.043)	(0.044)	(0.060)	(0.064)	(0.083)
Size		0.012***	0.023***	0.019***	0.033***	0.026***	0.039***
		(0.004)	(0.006)	(0.006)	(0.009)	(0.009)	(0.012)
ROA		0.132	0.138	0.183	0.170	0.279*	0.312
		(0.080)	(0.129)	(0.121)	(0.180)	(0.162)	(0.259)
Foreign		-0.080	0.049	-0.218	0.076	-0.568*	0.098
		(0.145)	(0.184)	(0.203)	(0.270)	(0.310)	(0.383)
R&D		-0.013***	-0.102*	-0.015***	-0.167*	-0.018**	-0.205
		(0.004)	(0.058)	(0.005)	(0.090)	(0.007)	(0.189)
ETR		0.018**	-0.010	0.023**	-0.015	0.020	-0.023
		(0.007)	(0.012)	(0.011)	(0.015)	(0.018)	(0.027)
Equity Income		0.028	0.031	0.032	0.057**	0.072	0.076*
		(0.021)	(0.019)	(0.030)	(0.028)	(0.045)	(0.040)
MezzFin		-0.059	-0.183	-0.112	-0.238	-0.135	-0.262
		(0.061)	(0.113)	(0.085)	(0.160)	(0.120)	(0.234)
Big4		0.009	0.021	0.017	0.020	0.036	0.006
		(0.017)	(0.035)	(0.025)	(0.048)	(0.035)	(0.064)
Litigation		0.036**	0.004	0.039*	-0.015	0.044	-0.012
		(0.017)	(0.016)	(0.023)	(0.021)	(0.034)	(0.032)
NOL		0.002	0.014	0.009	0.024	0.023	0.030
		(0.013)	(0.016)	(0.019)	(0.023)	(0.027)	(0.031)
Test: $\beta_1 = \beta_1$		*p*-value = 0.027		*p*-value = 0.004		*p*-value = 0.021	
N		7,940	5,634	7,327	5,347	6,203	4,454
R-squared		0.049	0.024	0.052	0.027	0.051	0.027

This table reports the results of cross-sectional OLS regressions estimating whether the impact of Schedule UTP on reserves for uncertain tax positions unwinding through settlements varies based on the informativeness of Schedule UTP to the IRS. The dependent variable, *Settle Ratio*, scales the sum of *SETTLE* in years *t* through *t*+*k* by *UTB_END* in year *t*-1. Panel A compares multinational firms (*MNC*=1) with domestic firms (*MNC*=0). Panel B compares low IRS audit probability firms (*LowAP*=1) with high IRS audit probability firms (*LowAP*=0). All regression models include untabulated year and industry fixed effects. All variables are defined in Appendix D. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors, clustered by firm, are presented in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent levels, respectively (one-tailed for signed predictions, two-tailed otherwise).

TABLE 8
The Effect of Schedule UTP on Excess Reserves Upon Settlement

Dep. Var.: *RR_UTP*	Pred.	(1)	(2)	(3)	*UTP = UTP_ALT* (4)	*PCTETRUTB* > 50% (5)
LapseInd	−	-0.005***				
		(0.001)				
SettleInd	−		-0.005***	-0.007***	-0.007***	-0.008***
			(0.001)	(0.001)	(0.001)	(0.001)
UTP				-0.001	-0.000	0.001
				(0.001)	(0.002)	(0.002)
SettleInd x UTP	+			0.002*	0.002*	0.003**
				(0.001)	(0.001)	(0.002)
R&D		-0.008	-0.007	-0.007	-0.007	-0.014
		(0.009)	(0.009)	(0.009)	(0.009)	(0.011)
Adv		0.002	0.008	0.008	0.008	0.012
		(0.017)	(0.017)	(0.017)	(0.017)	(0.019)
SGA		0.003	0.002	0.002	0.002	0.005
		(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Capex		0.006	0.006*	0.006*	0.006	0.006
		(0.004)	(0.004)	(0.004)	(0.004)	(0.005)
Leverage		-0.001	-0.001	-0.001	-0.001	-0.001
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ForeignInd		0.000	0.001	0.001	0.001	0.001
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
NOL		0.000	-0.000	0.000	0.000	0.000
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Intangibles		-0.002	-0.002	-0.002	-0.002	-0.003
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
PP&E		0.001	0.001	0.001	0.001	0.002*
		(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
PT_ROS		0.014***	0.015***	0.015***	0.015***	0.018***
		(0.003)	(0.003)	(0.003)	(0.003)	(0.004)
Test: $\beta_1 = \beta_3$						
p-value:				0.000	0.000	0.000
N		10,249	10,249	10,249	10,249	7,991
R-squared		0.016	0.016	0.017	0.017	0.019

This table reports the results of OLS regressions estimating the impact of Schedule UTP on the effect of tax reserve releases at settlement on the ETR. Columns 1 and 2 validate the model and column 3 presents the result. Column 4 uses an alternative Schedule UTP indicator variable, *UTP_ALT*. Column 5 limits the sample to those firms where *PCTUTBETR* is greater than 50 percent. All regression models include untabulated year and industry fixed effects. All variables are defined in Appendix D. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors, clustered by firm, are presented in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent levels, respectively (one-tailed for signed predictions, two-tailed otherwise).

TABLE 9
The Effect of Schedule UTP on Excess Reserves Upon Settlement

Dep. Var.:	Pred.	$TaxesPaid_{t+1}$ (1)	$TaxesPaid_{t+2}$ (2)	$TaxesPaid_{t+3}$ (3)	$TaxesPaid_{t+4}$ (4)	$TaxesPaid_{t+5}$ (5)
UTP		-0.002	0.000	0.003	0.005*	0.006**
		(0.002)	(0.002)	(0.002)	(0.003)	(0.003)
TaxExpense	+	0.368***	0.285***	0.275***	0.259***	0.235***
		(0.033)	(0.036)	(0.040)	(0.050)	(0.054)
TaxExpense x UTP	+	0.045**	0.082***	0.037	-0.018	-0.011
		(0.021)	(0.031)	(0.036)	(0.039)	(0.037)
TaxesPaid	+	0.268***	0.227***	0.186***	0.180***	0.134***
		(0.023)	(0.026)	(0.029)	(0.030)	(0.034)
Size		0.001***	0.001***	0.001***	0.002***	0.002***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R&D		-0.023***	-0.023***	-0.026**	-0.032**	-0.024
		(0.005)	(0.008)	(0.011)	(0.013)	(0.017)
Adv		0.003	0.008	0.006	-0.008	-0.001
		(0.010)	(0.015)	(0.019)	(0.024)	(0.029)
SGA		0.007***	0.008***	0.009***	0.011***	0.012**
		(0.002)	(0.003)	(0.003)	(0.004)	(0.005)
Capex		-0.024***	-0.025***	-0.027***	-0.027***	-0.024***
		(0.003)	(0.004)	(0.005)	(0.006)	(0.007)
Leverage		-0.003**	-0.004*	-0.006**	-0.006**	-0.007**
		(0.001)	(0.002)	(0.002)	(0.003)	(0.003)
ForeignInd		0.000	-0.000	-0.001	-0.001	-0.001
		(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
NOL		-0.002***	-0.003***	-0.003***	-0.003***	-0.004***
		(0.000)	(0.001)	(0.001)	(0.001)	(0.001)
ROA		0.037***	0.025***	0.031***	0.029*	0.032*
		(0.009)	(0.009)	(0.011)	(0.015)	(0.017)
Intangibles		0.000	0.001	0.001	0.001	0.003
		(0.001)	(0.002)	(0.002)	(0.003)	(0.003)
PP&E		-0.003***	-0.001	-0.000	0.001	0.002
		(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
N		8,923	7,589	6,259	5,044	3,904
R-squared		0.624	0.482	0.416	0.375	0.325

This table reports the results of OLS regressions estimating the impact of Schedule UTP on the predictive ability of tax expense in year *t* for taxes paid in year *t+k*. All regression models include untabulated year and industry fixed effects. All variables are defined in Appendix D. Continuous variables are winsorized at the 1st and 99th percentiles. Standard errors, clustered by firm, are presented in parentheses. ***, **, and * denote significance at the one-, five-, and ten-percent levels, respectively (one-tailed for signed predictions, two-tailed otherwise).