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## Tax Indemnification and the Association Between Unrecognized Tax Benefit Reserves and Future Tax Cash Outflows

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Tax Indemnification and the Association Between Unrecognized Tax Benefit Reserves and  
Future Tax Cash Outflows

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy in Business Administration

by

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This dissertation is approved for recommendation to the Graduate Council.

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## **Abstract**

Tax indemnification transfers from a firm to an outside party the risk of potential cash settlements associated with uncertain tax positions taken in prior years. The current accounting treatment of tax indemnification under Accounting Standards Codification (ASC) 805 and the required disclosures for uncertain tax positions under ASC 740 provide little or no information regarding this risk transfer in the financial statements or notes. I examine merger and acquisition (M&A) contracts from 2008 through 2013 and find that tax indemnification is commonly present in M&A transactions. I then provide evidence that the association between current uncertain tax benefit reserves and future tax cash outflows is positive for firms that do not have indemnified tax positions but is not significant for firms that do have indemnified tax positions. Because the use of tax indemnification and tax insurance is becoming more common among U.S. firms and this trend is expected to continue, my results suggest that changes in the accounting treatment of uncertain tax positions and/or additional financial statement disclosures may be necessary to allow financial statement users to adequately assess the impact of uncertain tax positions when tax indemnification or tax insurance is present.

## **Acknowledgements**

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Lastly, I would like to thank my family and wife for their support. Without their encouragement through life and through this process, there is no telling where I would be today.

## **Dedication**

I would like to dedicate this dissertation in the loving memory of my father, Albert Hopkins, Jr. After serving his country in the U.S. Air Force, his Maker as a Southern Baptist minister, and his family as a faithful husband and loving father, he succumbed to cancer while I attended the University of Arkansas. Near the end, he apologized to me that he would not be able to attend my graduation. Though he was not physically there, I know he was there with me spiritually at commencement. Love you dad.

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## 1. INTRODUCTION

I discuss the accounting standards for tax indemnification under Accounting Standards Codification (ASC) 805 – Business Combinations and examine whether these accounting standards provide sufficient information to financial statement users to assess the impact of tax indemnification on future tax cash outflows for firms completing mergers and acquisitions (M&As). Specifically, I examine whether the presence of tax indemnification moderates the association between unrecognized tax benefit (UTB) reserves and future tax cash outflows among M&A firms. Tax indemnification transfers from a taxpayer to an outside party the risk of potential cash settlements associated with uncertain tax positions taken. Though tax indemnification transfers the responsibility of these contingencies to an outside party, ASC 805 coupled with ASC 740 require that the acquirer continue to reflect indemnified tax positions in UTB reserves after the M&A is completed. Moreover, ASC 805 and guidance under Securities and Exchange Commission (SEC) Federal Regulations part 210 do not allow firms to reverse the *mirror accounting* entries originally used to record the indemnified tax positions when adjusting these positions later due to the expiration of their tax statutes of limitations.<sup>1</sup> Therefore, the required accounting and lack of disclosure may hinder a financial statement user’s ability to adequately assess the potential future consequences of indemnified tax positions within UTB reserves.<sup>2</sup>

Traditionally, tax indemnification was primarily provided by contract clauses to facilitate M&As. However, over the past few decades, it has become increasingly common for tax

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<sup>1</sup> *Mirror accounting* refers to journal entries in which a liability is recorded with an identical corresponding asset (or vice versa) resulting in no effect to overall equity; i.e., the UTB reserve for an indemnified tax position and the corresponding tax indemnification asset are the *reflected* accounts when recording an indemnified tax position.

<sup>2</sup> Practitioners share this concern. See §10.6.1 of the Price Waterhouse Cooper Guide to Income Taxes at <https://www.pwc.com/us/en/cfodirect/assets/pdf/accounting-guides/pwc-income-taxes-guide.pdf>.

indemnification to be provided by third-party insurers (Logue, 2005; Wolfe, 2011). The development of these insurance markets has led to tax indemnification being present in other aspects of business; for example, companies utilize tax indemnification insurance to facilitate raising capital and protect against operating risk (Wolfe, 2011). Therefore, it is important to understand how the required accounting and lack of required disclosures for tax indemnification impact a financial statement user's ability to assess tax information provided in the financial statements when tax indemnification is present.

To explore tax indemnification and the related accounting issues for firms with M&As, I obtain a sample of 355 M&A contracts filed with the SEC's Electronic Data Gathering, Analysis, and Retrieval (EDGAR) system from 2008 through 2013, inclusive. I review the tax matters and indemnification sections to identify which M&A contracts include tax indemnification clauses. I find that tax indemnification clauses are present in approximately 80 percent of my contract sample. Using a modified model from Hanlon, Maydew, and Saavedra (2018) and seemingly unrelated estimations, I further document that the association between current UTB reserves and future tax cash outflows varies significantly in the presence of tax indemnification for firms acquiring uncertain tax positions in M&A transactions. Specifically, I find a positive association between current UTB reserves and future tax cash outflows for firms acquiring tax positions *without* tax indemnification but find no significant association for firms acquiring tax positions *with* tax indemnification. These results suggest that tax indemnification may moderate the association between UTB reserves and future tax cash outflows for firms completing M&A transactions. Moreover, these results are robust to changes in my design choices, such as using interaction models instead of seemingly unrelated estimations, using a shorter sample period, and using different control variables.



Furthermore, I compare observations without M&As to various subsamples within the M&A contract sample to ensure results are applicable to a larger set of firms not engaging in M&As and to provide some confidence that earlier results are likely due to the presence of indemnified tax positions. I document that observations without M&As and observations with M&As but without indemnification exhibit similar associations; specifically, both exhibit significant positive associations between UTB reserves and future tax cash outflows. Furthermore, I document that observations with M&As but with indemnification do not exhibit this positive association. These results are consistent with tax indemnification reducing the association between UTB reserves and future tax cash outflows and are not solely attributable to engaging in an M&A.

Next, I attempt to identify a proxy for the presence of tax indemnification to aid financial statement users in assessing the association between UTB reserves and future tax cash outflows when M&A contracts are not available. I begin by testing whether the presence of M&As can proxy for tax indemnification since tax indemnification is present in 80 percent of the contracts I examined. Using a sample of 8,567 firm-year observations from 2,237 firms, I find that both firms without and with M&As exhibit a positive association between UTB reserves and future tax cash outflows generally. However, when the sample is restricted to firms that report an increase in prior year UTB reserves and completed an M&A this association is not significant. In addition, I explore whether the presence of non-public targets, M&A deals with consideration of less than \$1 billion, and non-merger M&A contracts may be used as proxies for tax indemnification due to systematic differences documented in the descriptive statistics. I find that, while the association between UTB reserves and future tax cash outflows varies when firms are separated based on the presence of non-public targets and the amount of consideration paid for

M&As, there is no readily available information that adequately proxies for indemnified tax positions. For this reason, I conclude that financial statement users would benefit from having access to more specific disclosures about tax indemnification to properly evaluate various tax accounts.

Lastly, I document that tax indemnification may influence a firm's ETRs as well as the association between deferred tax assets (liabilities) and future tax cash outflows. Specifically, I document that firms reporting indemnified tax positions have lower future mean and median generally accepted accounting principles (GAAP) ETRs and higher future mean and median cash ETRs than firms without indemnified tax positions. The potential distortion of these commonly used financial measures may have a significant impact on financial statements users' decisions. In additional tests, my results suggest that indemnification may also moderate the association between deferred tax assets (liabilities) and future tax cash outflows. However, further research is necessary to explore these findings.

To my knowledge, this is the first academic study to discuss the accounting and disclosure issues arising from tax indemnification and to empirically test whether tax indemnification moderates the association between UTB reserves and future tax cash outflows. My findings suggest that investors in firms which report indemnified uncertain tax positions within their UTB reserves would benefit from disclosures of those positions separately so that they can adequately assess the expected impact of uncertain tax positions on future tax cash outflows. These findings may be useful to standard setters if and when they consider making changes to ASC 740 and ASC 805.

Furthermore, interviews with M&A consultants suggest that markets for tax indemnification insurance are growing.<sup>3</sup> The growth of tax indemnification insurance markets has led to tax indemnification being present in settings not related to M&As. Firms which purchase tax indemnification insurance for uncertain tax positions related to other types of transactions are susceptible to similar accounting issues experienced by firms obtaining tax indemnification from M&A contract clauses. Unlike the M&A setting, it is highly unlikely that additional disclosures about the presence of tax indemnification, such as those in M&A contracts, would be available in a non-M&A setting for outside financial statement users to examine. Due to the expanding tax indemnification insurance market, it is important for researchers and investors alike to understand potential issues with reporting indemnified tax positions.

Moreover, my study answers the call of Hanlon and Heitzman (2010) for research on how acquirers deal with targets' prior uncertain tax positions. My results suggest that tax indemnification clauses within M&A contracts are often used by acquirers to protect themselves from uncertainties surrounding a targets' prior tax positions. However, anecdotal evidence provided during interviews with key M&A consultants suggests that tax indemnification insurance is becoming more commonly used to facilitate M&As. Due to confidentiality agreements and the lack of disclosure requirements regarding tax indemnification insurance, empirical data is not readily available to explore these markets. Further research is required to specifically explore the impact of tax indemnification insurance on the usefulness of tax information in the financial statements.

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<sup>3</sup> Several high-level consultants were interviewed through phone conversations about tax indemnification, tax indemnification insurance, and M&As. However, all the interviewees requested anonymity. Therefore, the interviewees' names, associated companies and titles are not disclosed for purposes of this study.

This study further contributes to the ongoing literature stream on UTB reserves. In 2007, UTB reporting was standardized under Financial Accounting Standards Board (FASB) Interpretation No. 48 (FIN 48) with the goal of increasing comparability and relevance of tax reserves.<sup>4</sup> Though past studies generally conclude that FIN 48 did result in more consistent disclosures of uncertain tax positions, these same studies question the informativeness of these disclosures (Gleason, Mills, and Nessa, 2018; FAF, 2012). Prior researchers have suggested that the informativeness of these disclosures are diminished because of managers' efforts to obfuscate tax strategies (Robinson and Schmidt, 2013) and because provisions within FIN 48 generally result in an overstatement of future tax cash outflows (Robinson et al., 2016). I document a diminished association between UTB reserves and future tax cash outflows in the presence of indemnified tax positions which suggests tax indemnification may partially explain the findings from prior studies. Moreover, my study readdresses and expands on the examination of UTB reserves from earlier studies. Many of the extant UTB reserve studies were performed around the initial implementation of FIN 48 with narrow time windows. Now that the FIN 48 regime has been in effect for more than a decade, Blouin and Robinson (2014) suggest that enough time has passed to readdress some of the issues examined in these early studies. This study contributes to the literature examining the long-standing effects of FIN 48.

The remainder of my paper proceeds as follows. In Section 2, I present background information, review prior literature and develop my hypothesis. Section 3 discusses my research methodology and results. I present additional analyses in Section 4. Section 5 concludes.

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<sup>4</sup> The FIN 48 guidance is now codified within ASC 740.

## **2. BACKGROUND AND HYPOTHESIS DEVELOPMENT**

### **Tax Indemnification Insurance and Tax Indemnification Clauses**

Tax indemnification protects taxpayers from potential adverse outcomes of challenged tax positions. It is mainly provided in two forms: as an insurance product or as a clause within an M&A contract. Tax indemnification insurance has two main types: protection against the known (i.e., representations and warranties insurance) and protection against the unknown (i.e., tax indemnity insurance). Over the past decade, tax indemnification insurance has become more prevalent within the business world. AIG reports that it currently provides representations and warranties insurance for M&A deals valuing at least \$700 billion and tax-related items are the second most common issue for which they pay claims.<sup>5</sup> As for tax indemnity insurance, anecdotal evidence provided by phone interviews with key M&A consultants suggests that numerous providers have entered the market in the past decade causing a decline in premiums for these insurance products. The entry of new market participants and the decline of premiums have led to tax indemnification insurance being present more frequently in other aspects of business, such as facilitating capital raising and mitigating operating risk. Aon Transaction Solutions reports that coverage provided by their tax indemnification insurance product increased 500 percent over a span of three years; specifically, their coverage increased from \$2.1 billion in 2013 to \$12.6 billion in 2016 (Rosen and Blitz, 2017). The growing demand for tax indemnification insurance is expected to continue, which highlights the importance of understanding the implications of tax indemnification.

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<sup>5</sup> Per anecdotal evidence provided by interviews with key M&A consultants, they estimate that 50 to 60 percent of M&A deals have some form of representations and warranties insurance. See <https://www.aig.com/content/dam/aig/america-canada/us/documents/insights/aig-manda-claimsintelligence-2018-r-and-w.pdf>.

M&As contain many risks and are extremely complex (Karlinsky and Burton, 2011). In order to facilitate M&A deals, sellers frequently offer indemnification to protect acquirers from various risks associated with the target, including risks associated with prior tax positions (Logue, 2005). Though a clause differs from insurance in the sense that one is a contractual obligation and the other a product, both provide protection from uncertainties surrounding tax positions. Furthermore, outside parties can determine whether tax indemnification clauses are present if they have access to the M&A contracts. Tax indemnification is described in various ways in M&A contracts (i.e., it can be described as the indemnification of representations about tax matters, as holding the buyer harmless for taxes associated with pre-transaction periods or as holding the buyer harmless for “excluded liabilities” which may include taxes associated with pre-transaction periods).<sup>6</sup> Though tax indemnification is described in many different ways, the end result is the same; the transfer of a contingent tax liability to an outside party.

After the completion of an M&A, financial statement users should exercise caution in evaluating the acquirer’s UTB reserves when assuming tax indemnification is present. First, if a financial statement user establishes that tax indemnification is provided by the M&A contract, then it does not necessarily mean that the acquirer will report any uncertain tax positions associated with the M&A. In other words, an acquirer may be offered indemnification even though they are not acquiring any tax positions for which the target firm has recorded UTB reserves. Second, if an acquirer does report uncertain tax positions associated with the M&A, then it does not necessarily mean they are acquired tax positions. They may be tax positions generated as part of the M&A transaction itself and therefore not subject to indemnification.

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<sup>6</sup> Refer to Appendix B for specific examples of contract language.

These potential issues highlight the importance of requiring the separate disclosure of the components of acquisition-related UTB reserves.

### **Tax Indemnification Accounting Under ASC 805 – Business Combinations**

In 2007, the FASB issued Statement of Financial Accounting Standards No. 141 (R), Business Combinations (which is now codified as ASC 805). ASC 805 addresses various aspects of business combinations, including how to record indemnified tax position liabilities. Within the context of business combinations, indemnified tax position liabilities are acquired contingent tax liabilities in which the seller has agreed to hold the acquirer harmless. ASC 805 requires *mirror accounting* for indemnified liabilities; specifically, ASC 805 states “the acquirer shall recognize an indemnification asset at the same time that it recognizes the indemnified item”.<sup>7</sup> For an illustrative example, consider the accounting for a \$100,000,000 indemnified tax position under ASC 805. Firm A acquires Subsidiary T from Firm S. Prior to the acquisition, Subsidiary T maintains a \$100,000,000 UTB reserve for uncertain tax positions which are currently susceptible to authoritative challenges. To sweeten the deal, Firm S has agreed to indemnify Firm A for all taxes, interest and penalties associated with successful challenges to Subsidiary T’s uncertain tax positions. Though Firm S is contractually responsible for the uncertain tax positions, Firm A is still required, under ASC 805, to reflect Subsidiary T’s uncertain tax positions in its consolidated financial statements.<sup>8</sup> Therefore, Firm A will account for the M&A as follows:

(1) Other M&A Assets	\$ ###,###,###
Tax Indemnification Asset	\$ 100,000,000
UTB Reserve	\$ 100,000,000
Other M&A Liabilities	\$ ###,###,###
Consideration Paid for M&A	\$ ###,###,###

<sup>7</sup> See ASC 805-20-25-27.

<sup>8</sup> ASC 805-740-25-2 states “the acquirer ... shall account for ... any income tax uncertainties of an acquiree that exist at the acquisition date, or that arise as a result of the acquisition in, accordance with ... [FIN 48]”.

Though the recognition of these indemnified tax positions increases Firm A’s assets and liabilities, Firm A will not experience any net effect to equity or income.

When the tax position is successfully challenged and a tax payment is due or when the statute of limitations expires for the tax position, the tax indemnification asset and UTB reserve associated with that position must be eliminated. Payouts for tax indemnification can occur in one of two ways. First, the indemnifying party may settle an indemnified tax position directly with the challenging tax authority. Second, the indemnifying party may reimburse the indemnified party for settlements paid to the challenging tax authority. In either case, the payment would result in a decrease to the indemnification asset and related liability. Let us return to the earlier example. Subsidiary T loses a challenge from a tax authority on the indemnified tax position. Firm A pays the settlement on behalf of Subsidiary T and submits a reimbursement request per the terms of the indemnification agreement with Firm S. Firm S approves the reimbursement request and submits the payment to Firm A. The entries are as follows:

(2) UTB Reserve	\$ 100,000,000
Cash	\$ 100,000,000
(3) Cash	\$ 100,000,000
Tax Indemnification Asset	\$ 100,000,000

These entries result in the removal of the asset and liability representing the indemnified tax position without affecting Firm A’s equity or income. Though the utilization of tax indemnification results in no net effect to the acquirer’s net income when the settlement amount equals the UTB reserve, the same cannot be said about adjustments to tax indemnification accounts when there is no settlement or when the settlement does not equal the UTB reserve booked at acquisition.

The tax indemnification accounts may need to be adjusted without any actual cash flows



due to the expiration of statutes of limitations associated with indemnified positions or due to specific provisions within the M&A contract. Unlike other possible indemnified liabilities, the adjustment of indemnified tax liabilities results in changes to both pre-tax income and tax expense. When tax statutes expire, ASC 740 standards coupled with SEC regulations result in the recognition of a tax benefit without the ability to offset the recognized tax benefit with the reversal of the tax indemnification asset.<sup>9</sup> Therefore, the tax indemnification asset must be adjusted through a pre-tax account while the UTB reserve must be adjusted through tax expense. In other words, the reversal of the original *mirror accounting* entry is not allowed. Now, return to the earlier example and assume the position was never challenged. After three years, the statute of limitations expires on the uncertain tax position taken by Subsidiary T. In response, Firm A removes the tax indemnification asset and associated UTB reserve from their financial records. Their entries are as follows:

(4) UTB Reserve	\$ 100,000,000
Tax Benefit	\$ 100,000,000
(5) Other Expense	\$ 100,000,000
Tax Indemnification Asset	\$ 100,000,000

These entries result in the removal of the asset and liability representing the indemnified tax position without affecting Firm A's equity or overall income. However, the above accounting does influence pre-tax income and tax expense, creating a permanent book-tax difference.<sup>10</sup> This permanent book-tax difference is not required to be separately disclosed in the reconciliation to

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<sup>9</sup> ASC 740-10-25-8 requires the recognition of a benefit when the statute expires, while SEC Code of Federal Regulations §210.5 – 03 allows only “taxes based on income tax” to be reported under income tax expense.

<sup>10</sup> A similar difference is created if the firm has a settlement that is more or less than the booked UTB reserve. If the firm settled for more than the reserve and it was fully indemnified, the firm would record increases to the UTB reserve and a tax indemnification asset in the period in which it becomes evident that the reserve is not adequate per ASC 740-10-25-15. Per SEC regulations, mirror accounting is not allowed to adjust the reserve. Therefore, firms would record an increase to other income (to increase the indemnification asset) and tax expense (to record the higher settlement).

the statutory tax rate or elsewhere in the tax footnote, which is problematic for investors and researchers alike when evaluating the tax information in the financial statements.

### **Potential Issues with Indemnification Disclosure and Accounting**

Under ASC 805, the accounting for the payment of an indemnified tax position results in no net effect on overall net income or equity for the indemnified acquirer. However, the inclusion of indemnified tax positions in the acquirer's UTB reserves may reduce the informativeness of these reserves. Consider that ASC 740 requires UTB reserve liabilities to be separately disclosed and discussed, but neither ASC 740 nor ASC 805 require that the presence of indemnification be disclosed or discussed. Therefore, financial statement users may be unable to differentiate indemnified liabilities from "normal" liabilities.<sup>11</sup>

Furthermore, there are disclosure issues when adjusting indemnified tax positions for fulfillment. Specifically, neither ASC 740 nor ASC 805 address how tax cash outflows associated with fulfillments should be disclosed in cash taxes paid on the cash flow statement, which results in two different disclosure scenarios. In scenario one, the indemnified party nets out the effect of taxes paid reflecting that the indemnified party did not pay the taxes. In scenario two, the indemnified party reflects the payment to the taxing authority in cash taxes paid. Both scenarios have issues. In scenario one, the exclusion of the payment from cash taxes paid reduces the informativeness of UTB reserves; specifically, the UTB reserve is not informative about future cash outflows surrounding the indemnified uncertain tax position. In scenario two, the reflection of taxes paid by an outside party distorts tax cash outflows and cash ETRs; specifically, cash taxes paid are overstated which results in the cash ETR being overstated. In other words, current disclosure requirements (or lack thereof) may hinder ASC 740's original

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<sup>11</sup> The disclosure of indemnified tax positions is allowable and therefore a firm may choose to voluntarily disclose this information. Per my review of income tax disclosures, the norm is not to disclose this information.

purpose of UTB reserves providing information about potential future tax cash outflows.

In addition, the accounting guidance for adjusting indemnified tax positions when there is no equivalent cash settlement also potentially results in a distortion of a firm's GAAP and cash ETRs. Specifically, any adjustments to the UTB reserve must be adjusted through tax expense while any adjustments to the tax indemnification asset must be adjusted through a pre-tax account. Therefore, the adjustment of indemnified tax positions results in GAAP ETRs being understated and cash ETRs being overstated. Let us return to the earlier example of Firm A removing their expired indemnified tax position. Prior to removing the UTB reserves associated with the indemnified tax position, Firm A's consolidated financial statements reflected pretax book income of \$2,500 million, GAAP tax expense of \$525 million, and cash taxes paid of \$525 million, which results in GAAP and cash ETRs of 21.00 percent. By removing the \$100 million UTB reserve and the \$100 million tax indemnification asset, Firm A's consolidated financial statements reflect GAAP tax expense of \$425 million (decreased), cash outflows related to income tax of \$525 million (unchanged) and pretax book income of \$2,400 (decreased), which results in a GAAP ETR of 17.71 percent and a cash ETR of 21.88 percent. Therefore, the GAAP ETR is understated and the cash ETR is overstated.

### **Prior Research on Tax Indemnification**

To my knowledge, no prior studies have examined the impact of tax indemnification on the informativeness of UTB reserves. However, two papers have discussed the tax indemnification insurance market (Logue, 2005; Wolfe, 2011). Logue (2005) discusses the emergence of the market for tax indemnification insurance and potential hazards of these emerging markets. Specifically, Logue discusses the possibility of tax indemnification insurance for legal uncertainty becoming insurance for detection uncertainty. If tax indemnification

insurance becomes synonymous with detection insurance, then Logue warns that tax authorities may see a rise in tax sheltering. However, various insurance providers, such as AON Transaction Solutions, state that tax shelters are uninsurable.<sup>12</sup> Wolfe (2011) discusses the many uses of tax indemnification insurance. For instance, Wolfe points out that firms are increasingly using tax indemnification insurance to facilitate capital raising and lower operating risk in addition to its traditional use of facilitating M&As. Furthermore, he discusses the complexities of determining the deductibility and taxability of payments sent and received under tax indemnification insurance policies. He suggests that there is not one clear path to make these determinations and that all facts must be considered. As for this study, contracts normally specify that the receipt of any indemnification payments under an indemnification clause will be accounted for as an adjustment to the M&A purchase price and/or the basis of the acquired assets for tax purposes.

Tax indemnification insurance is similar to tax indemnification clauses in that both transfer tax risk to a third party. In both cases, the indemnified party would be required to report the indemnified tax positions as liabilities under ASC 740 with a corresponding asset on the balance sheet. A key difference is that tax indemnification insurance would have a purchase price from a third-party insurer, while tax indemnification clauses would be valued into the contract price. To my knowledge, there are no empirical studies on tax indemnification insurance or tax indemnification clauses. Hanlon and Heitzman (2010) recognized this gap in the literature and called for research on tax indemnification insurance; specifically, they call for research into the frequency of tax indemnification insurance and how this insurance is priced. My study is a first step toward filling this gap in the literature.

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<sup>12</sup> See <https://www.aon.com/attachments/risk-services/afs/FIN-48-FAQs.pdf>.

## **Prior Research on Tax Reserves**

In 2007, the FASB issued FIN 48 (later codified under ASC 740) to facilitate the comparability of financial statements and standardize tax reserve reporting. Prior to standardization, the need for a tax reserve was evaluated as a contingent loss under FASB's Statement of Financial Accounting Standards, No 5. The contingency-based approach required the recognition of possible tax liabilities when they were likely to be challenged and when they could be reasonably estimated; both conditions were subject to significant amounts of managerial discretion.

Studies of the pre-FIN 48 era conclude that disclosures about tax reserves were often inadequate for assessing tax uncertainties (Gleason and Mills, 2002; Dhaliwal, Gleason, and Mills, 2004; Gupta, Laux, and Lynch, 2016). Gleason and Mills (2002) find that a significant number of firms did not report contingent tax liabilities even when the Internal Revenue Service (IRS) indicated that material claims against the company were pending. Firms tended to wait until the claims were near absolute before recording them, which suggests tax reserves were often materially understated. Dhaliwal et al. (2004) investigate firms that regularly reported tax reserves prior to FIN 48. Utilizing tax return data, they find evidence that tax expense was used to manage earnings when pre-tax manipulation options were not enough to meet earnings expectations, which suggests these firms maintained overstated tax reserves, commonly referred to as "cookie jar" tax reserves. Gleason and Mills (2008) and Gupta et al. (2016) document that investors do not punish firms for manipulating tax reserves to meet expectations as much as they punish firms that miss earnings expectations. Therefore, firms are incentivized to manipulate tax reserves to meet analyst expectations. Collectively, these academic findings suggest that there was minimal consistency in tax reserve reporting prior to FIN 48, which hindered the

informativeness of tax disclosures.

The SEC noticed these diverse reporting practices and informed the FASB of their discovery (FASB, 2012). What followed was an intense debate between the public (i.e., tax directors, tax attorneys, and certified public accounting firms) and the FASB on the standardization of tax reserve reporting. The public voiced concerns that authorities would utilize standardized tax reserve reporting to identify and subsequently punish firms for tax avoidance (Leone, 2007). However, the FASB argued that, without standards, financial statement users would struggle with assessing future tax cash outflows amongst companies. In the end, the FASB issued standards on the reporting of uncertain tax positions described within FIN 48. Under FIN 48, firms assess the likelihood of successfully defending authoritative challenges of uncertain tax positions. In determining this likelihood, they assume that positions will be challenged and that the challenging authority will have access to all private information regarding the positions. If the firm determines that an uncertain tax position will “more-likely-than-not” be successfully defended, then they assess the associated benefits using a benefit-recognition approach. Any benefits that are associated with positions failing to meet the “more-likely-than-not” threshold are recorded as contingent liabilities.

Blouin, Gleason, Mills and Sikes (2010) document that firms substantially decreased their tax reserves in the quarters leading up to FIN 48’s implementation. They suggest that these firms may have underreported or settled weak uncertain tax positions to minimize external scrutiny of these positions. However, the Financial Accounting Foundation (FAF) later reported that the average firm made minimal, if any, changes to tax strategies. Blouin et al. (2010) also suggest that firms may have engaged in earnings management to get an immediate earnings benefit. Firms with “cookie jar” tax reserves would have forfeited earnings benefits associated

with tax reserves after the implementation of FIN 48.<sup>13</sup> Therefore, firms had incentives to utilize their “cookie jar” tax reserves prior to the implementation of FIN 48.

In 2012, the FAF utilized the implementation of FIN 48 to perform an initial test run of their Post-Implementation Review (PIR) process (Blouin and Robinson, 2014). The primary objectives of the FAF’s PIR was “(1) to determine whether FIN 48 is accomplishing its stated purpose, (2) to evaluate FIN 48’s implementation and continuing compliance costs and related benefits, and (3) to provide recommendations to improve the FASB’s standard-setting process” (FAF 2012, p. 1). The FAF concluded that more information is being disclosed under FIN 48, but FIN 48 may not have improved the comparability or predictive value of said information. Moreover, the FAF’s PIR report indicates that “preparers and practitioners generally do not believe that FIN 48 resolves the issues underlying the need for the standard. Therefore, generally, they do not believe the costs of applying FIN 48 are reasonable compared to its benefits” (FAF 2012, p. 9). Even with these concerns, the FAF concluded that the benefits of FIN 48 outweighed the compliance costs. The FASB agreed that firms are providing more information about uncertain tax positions but largely ignored the remainder of the FAF’s findings (FASB, 2012). The FASB’s response to the FAF’s report stated: “because the findings in the Report indicate that overall, FIN 48 has improved the consistency, comparability and relevance of information about uncertain tax positions, and that those benefits outweigh the related costs, the FASB does not plan to undertake a separate project to review FIN 48 at this time” (FASB 2012, p. 2). Although the FASB and the FAF concur that FIN 48 improved the consistency of tax reserve reporting, their conclusions differ regarding increased comparability

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<sup>13</sup> Lowering UTB reserves to actual levels prior to FIN 48 resulted in increases to earnings. If firms waited until FIN 48’s implementation date and properly recorded UTBs, lowering UTB reserves would have resulted in changes to equity.

and relevance. The FASB suggests that by providing more information about tax positions, the relevance and comparability of tax disclosures increased, while the FAF question these conclusions. In addition, Gupta et al. (2016) suggest that the removal of management discretion under FIN 48 curtailed some earnings management within tax reserves.<sup>14</sup>

Though the FAF appears to be a proponent of FIN 48, they suggest that the valuation approach required by FIN 48 may hinder its ability to increase the comparability and relevance of tax disclosures. In addition, Robinson et al. (2016) and Cazier, Rego, Tian and Wilson (2015) both suggest that certain provisions within FIN 48 hinder its ability to increase the comparability and relevance of UTB reserves; specifically, they refer to provisions removing the ability to consider detection risk and offset varying tax positions. Other academics suggest that the reporting discretion allowed under FIN 48 can create substantial variation in reporting similar positions, which further hinders its ability to increase informativeness (Robinson and Schmidt, 2013; De Simone, Robinson and Stomberg, 2014). Robinson and Schmidt (2013) suggest that the ambiguity of FIN 48 may lead to differences in uncertain tax position reporting even when given the same criteria. To illustrate this point, they demonstrate how a properly identified UTB reserve can be correctly reported 14 different ways under FIN 48. In line with this illustration, De Simone et al. (2014) document that UTB reserves are not uniformly reported by firms within the same industry for similar uncertain tax positions. Specifically, they document substantial variation amongst 19 paper companies in the reporting of a refundable excise tax.

The purpose of FIN 48 was to improve the comparability and relevance of tax reserve disclosures to improve capital allocation within the market, i.e., to aid investors in decision-

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<sup>14</sup> It is important to note that FIN 48 did remove some managerial discretion from the UTB recognition and derecognition processes. However, FIN 48 did not remove all managerial discretion, nor did it make the application of tax law simpler. These aspects of FIN 48 may contribute to the lack of uniformity in tax reporting. As Dhaliwal et al. (2004) suggests, it is difficult to disentangle earnings management from tax complexities.



making. Contrary to expectations, academics suggest that investors tend to reward firms for low disclosure quality of uncertain tax positions. Robinson and Schmidt (2013) document substantial variation in the implementation of FIN 48; specifically, they find that approximately 40 percent of firms did not disclose forward looking information and compliant firms tended to use ambiguous language. They suggest that disclosing unchallenged, aggressive tax positions can hurt a company's competitive advantage and investors reward firms for obfuscating such strategies, especially when proprietary costs are high. Due to the discretion, variation and obfuscation associated with FIN 48, it is unclear whether FIN 48 could curtail the use of tax reserves to manage earnings. In fact, Cazier et al. (2015) and Gleason et al. (2018) document earnings management within tax reserves in the post-FIN 48 era.

In addition to the above concerns about FIN 48, many tax managers feared that authorities would use these disclosures to target tax-aggressive firms. Supporting this view, Bozanic, Hoopes, Thornock and Williams (2017) document that the IRS responded to FIN 48 by significantly increasing its downloads of 10-ks and that this increased attention from the IRS was greater for firms that reported larger UTB reserves. They suggest this increased attention by the IRS indicates that the IRS used these disclosures to identify tax-aggressive firms and justify the Schedule UTP requirement.

The IRS introduced Schedule UTP in 2010 to obtain more information regarding uncertain tax positions reported for financial purposes; specifically, Schedule UTP requires the disclosure of uncertain tax positions taken on U.S. federal tax returns which require a UTB reserve or would have required a reserve but the reporting firm did not record the reserve due to expectations of future litigation. Furthermore, the reporting firm must rank these positions by size and describe the positions taken (Internal Revenue Service, 2018). The IRS justified the

additional disclosure by referencing current FIN 48 disclosure requirements and stating that more precise information “would aid the Service in focusing its examination resources”.<sup>15</sup> In the wake of these new requirements, several academic studies examined company responses to the implementation of Schedule UTP (Honaker and Sharma, 2017; Gleason et al., 2018; Bozanic et al., 2017). Honaker and Sharma (2017) find that firms reduced UTB reserves after the implementation of schedule UTP while maintaining consistent cash ETRs. They interpret their results as firms reducing disclosures without changing their tax avoidance strategies to reduce IRS scrutiny. Gleason et al. (2018) document that the implementation of Schedule UTP did not on average have a noticeable effect on accrual quality but did increase UTB reserve comparability of firms utilizing similar levels of auditor-provided tax services. Lastly, Bozanic et al. (2017) find that the IRS shifted their use of public FIN 48 disclosures to private Schedule UTP disclosures.

Most relevant to my study, various academic studies have explored whether UTB reserves are informative about future tax outcomes (Guenther et al., 2017; Robinson et al., 2016; Hanlon et al., 2018; Ciconte et al., 2016; Nesbitt, 2014). Guenther et al. (2017) find that UTB reserves, predicted using Rego and Wilson’s (2012) UTB reserve model, are not associated with the volatility of future cash ETRs. Robinson et al. (2016) find that FIN 48 reduced the ability of tax accounts to predict future tax cash outflows. In contrast, Hanlon et al. (2018), Ciconte et al. (2016) and Nesbitt (2014) suggest that UTB reserves are informative about future tax cash outflows. Hanlon et al. (2018) and Ciconte et al. (2016) find that UTB reserves are positively associated with future tax cash outflows. Nesbitt (2014) finds that the non-discretionary portion of UTB reserves is positively associated with future taxes paid but the discretionary portion has

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<sup>15</sup> See IRS ANN 2010-09, released on January 26, 2010.

no association with future taxes paid.

Academics have suggested that reporting risk preferences (Lisowsky, Robinson, and Schmidt, 2013; Gleason et al., 2018), incentives to obfuscate tax strategies (FAF, 2012; Bozanic et al., 2017), variations in managerial discretion (FAF, 2012; Abernathy, Beyer, Gross, and Rapley, 2017) and complexities in tax law may lead to substantial variation in the informativeness of UTB reserves (FAF, 2012). I examine whether the presence of indemnified tax positions also hinders the informativeness of UTB reserves.<sup>16</sup> I fill a gap in prior literature by specifically addressing the impact of tax indemnification on the association between UTB reserves and future tax cash outflows.

### **Development of Hypothesis**

UTB reserves are reserves for uncertain tax positions that may result in future tax cash outflows. These uncertain tax positions do not meet the more-likely-than-not standard, meaning there is a significant probability that they will not be upheld if the firm is audited by the relevant tax authorities. Tax authorities have access to the firm's financial statements, including uncertain tax position disclosures, which may influence their decision to audit the firm. Consistent with this reasoning, Bozanic et al. (2017) document that the level of UTB reserves is positively associated with the amount of attention paid to SEC filings by tax authorities.<sup>17</sup> Thus, firms with higher UTB reserves are more likely to be audited by tax authorities and those authorities are likely to focus on uncertain tax positions underlying UTB reserves. As tax audits for the current

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<sup>16</sup> It is important to note that of these prior studies, only the Hanlon et al. (2018) study considers M&A activity in their models. However, they use acquisition costs only as a predictor of cash holdings and do not consider whether M&As impact the association between current UTB reserves and future tax cash outflows.

<sup>17</sup> This increase in authoritative attention is highlighted by prepared remarks of Steven T. Miller, IRS Deputy Commissioner, on March 12, 2012. "And we continue to see the possibility of compliance risk in the large taxpayer community. According to SEC data, LB&I *taxpayers are reporting large reserves due to uncertain positions as Unrealized Tax Benefits*. Although we can't tell whether these reserves relate to federal, foreign or state tax uncertainties, *we need to pay attention to them*".

and prior years are settled in the future, the firm is likely to pay more in taxes, interest, and penalties. Therefore, current UTB reserves should be useful for estimating future tax cash outflows. Consistent with this reasoning, Robinson et al. (2016) document that a portion of these reserves result in cash outflows; specifically, they document that 24 (48) cents of every dollar reserved for uncertain tax positions results in tax cash outflows within three (five) years. In addition, Hanlon et al. (2018), Ciconte et al. (2016) and Nesbitt (2014) document that UTB reserves are positively associated with future tax cash outflows. In line with these prior studies, I expect UTB reserves to be positively associated with future tax cash outflows when firms' uncertain tax positions are not indemnified.

However, the presence of uncertain tax positions that have been indemnified may moderate the positive association between current UTB reserves and future tax cash outflows. An indemnified tax position that is successfully challenged results in a net cash outflow for the indemnifier. However, the indemnified party, which reflects the indemnified uncertain tax position, would experience minimal, if any, cash outflows. Therefore, financial statement users should consider the presence of indemnified tax positions when assessing UTB reserves.

The practice of offering indemnification to acquirers is commonly used by sellers to facilitate M&As. Though the indemnified tax position is not the responsibility of the acquirer, the acquirer in an M&A is responsible under ASC 805-740-25-2 to report uncertain tax positions associated with the transaction. In line with this standard, Lisowsky et al. (2013) document a positive association between the presence of M&As and levels of UTB reserves. Furthermore, using confidential IRS data, Towery (2017) analyzes the composition of items reported by U.S. firms on the 2010 Schedule UTP. She reports that a significant component of uncertain tax positions relates to M&As. Therefore, the mere presence of an M&A may significantly increase

the level of UTB reserves. However, the presence of an indemnification clause would effectively transfer the responsibility of the contingency to the indemnifier. This transfer of responsibility would reduce the usefulness of the acquirer’s UTB reserves for assessing future tax cash outflows, especially if the acquirer records indemnified tax positions within their UTB reserves. For this reason, I expect that the association between current UTB reserves and future tax cash outflows to vary between firms which report indemnified tax positions and those that do not. In line with this reasoning, my hypothesis is formally stated as follows:

**H1: For firms engaging in an M&A transaction, the association between UTB reserves and future tax cash outflows is less positive for firms that have indemnified uncertain tax positions than for those that do not.**

### 3. EMPIRICAL METHOD AND RESULTS

#### Methodology

The focus of this study is whether the association between current UTB reserves and future tax cash outflows varies in the presence of indemnified tax positions. To explore whether this variation exists amongst firms obtaining uncertain tax positions from M&As, I perform seemingly unrelated estimations to test for differences in the coefficients of the following models for firms without indemnification and those with indemnification:<sup>18</sup>

*M&A Firm-Years Without Indemnification:*

$$\begin{aligned}
 FUT\_TXPD_{t+4} = & \beta_0 + \beta_1 UTB_t + \beta_2 CONS_t + \beta_3 NOLCF_t + \beta_4 TXPD_t \\
 & + \beta_5 \Delta\_TXPD_t + \beta_6 \Delta\_PTBI_t + \beta_7 DTX_t + \varepsilon_t
 \end{aligned}
 \tag{1a}$$

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<sup>18</sup> Univariate tests indicate that the correlations between the control variables and the dependent variable differs across the two subsamples of contracts; therefore, these variables should be allowed to vary across the subsamples. When controls need to vary across subsamples, the use of interaction models or seemingly unrelated estimations can accomplish this and test for differences. Both methods may be interpreted similarly. However, seemingly unrelated estimations allow for simpler modeling. For instance, an interaction model in my case would require a total of 15 variables, while seemingly unrelated estimations require only 7 variables which is ideal when dealing with small samples. To provide comfort that the main conclusions are not a product of design choice, I later perform robustness tests using an interaction model approach and find similar inferences.

*M&A Firm-Years With Indemnification:*

$$FUT\_TXPD_{t+4} = \alpha_0 + \alpha_1 UTB_t + \alpha_2 CONS_t + \alpha_3 NOLCF_t + \alpha_4 TXPD_t + \alpha_5 \Delta\_TXPD_t + \alpha_6 \Delta\_PTBI_t + \alpha_7 DTX_t + \gamma_t \quad (1b)$$

Beta,  $\beta$ , represents coefficients for firms without indemnification and alpha,  $\alpha$ , represents coefficients for firms with indemnification.  $FUT\_TXPD_{t+4}$  represents my measure of future tax cash outflows; specifically, it is the log of the ratio of cumulative tax cash outflows over years t+1 through t+4 to ending total assets in year t.<sup>19</sup>  $UTB_t$  is my variable of interest and represents UTB reserves scaled by ending total assets in year t. In line with prior research, I expect that  $UTB_t$  will have a positive association with  $FUT\_TXPD_{t+4}$  ( $\beta_1 > 0$ ) for firms without indemnified tax positions. However, I expect that firms with indemnified tax positions will have a lower association or no association between  $UTB_t$  and  $FUT\_TXPD_{t+4}$  ( $\beta_1 > \alpha_1$ ).  $CONS_t$  is the ratio of total M&A consideration value reported within the observation's 10-k to ending total assets in year t.<sup>20</sup> Consideration paid during an M&A can provide substantial future tax benefits to the acquiror through additional cost recovery deductions. As consideration paid becomes a larger component of ending assets, acquirors should experience larger immediate reductions in future tax cash outflows. Therefore, I predict a negative association between  $CONS_t$  and future tax cash outflows.

$NOLCF_t$  is the ratio of net operating loss (NOL) carryforwards scaled by ending total assets in year t. NOL carryforwards can offset future taxable income and should result in reductions to future tax cash outflows. Therefore,  $NOLCF_t$  is predicted to have a negative

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<sup>19</sup> A plot of the residuals from an unlogged dependent variable regression indicated that the residuals were not random which is a violation of ordinary least squares assumptions. This lack of randomness is likely due to the unlogged dependent variable being constrained at zero. To address this issue, I logged the dependent variable then reperform the regression. A plot of the error terms after this transformation indicates that the residuals are now random.

<sup>20</sup> I hand-collected the consideration paid amount from the observation's associated 10-k disclosures.

association with future tax cash outflows.  $TXPD_t$  is the ratio of taxes paid to ending total assets in year t, while  $\Delta\_TXPD_t$  is the difference in taxes paid in year t-1 to year t, scaled by ending total assets in year t. Consistent with prior research, I expect a positive coefficient for  $TXPD_t$  and a negative coefficient for  $\Delta\_TXPD_t$ .  $\Delta\_PTBI_t$  is the difference in pretax book income in year t-1 to year t, scaled by ending total assets in year t. Due to the stickiness of earnings, increases in taxable income should result in persistent increases to future tax cash outflows. Therefore, I predict a positive association between changes in pretax book income and future tax cash outflows.  $DTX_t$  is the ratio of net deferred taxes scaled by ending total assets in year t. Specifically, it is net deferred tax assets (liabilities) reduced by the portion of UTB reserves related to timing uncertainties or temporary book tax differences.<sup>21</sup> Deferred tax assets (liabilities) should be indicative of reductions (additions) to future tax cash outflows and therefore should have a negative association with future tax cash outflows. The definitions of all variables are summarized in Appendix A. All models cluster errors by firm and include year fixed effects.

Models (1a) and (1b) are similar to the model used in Hanlon et al. (2018) with two modifications. I utilize a four-year window for the dependent variable,  $FUT\_TXPD_t$ , instead of the five-year window utilized in Hanlon et al. (2018) for two reasons. The first reason is that the statute of limitations for U.S. federal income tax returns is generally three years beginning on the date the return is filed. Therefore, a position taken in year t is generally subject to scrutiny for up to four years, the year of filing, year t+1, through the expiration of the statute, year t+4. In addition, using only four years prevents a significant reduction in my sample size. I also include

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<sup>21</sup> The adjustment to deferred tax assets is consistent with Hanlon et al. (2018). To ensure that results are not due to this design choice, I later perform a robustness test with an unadjusted deferred tax assets (liabilities) control and find similar inferences.

an additional control variable,  $CONS_t$ , because future taxes paid may be reduced for future tax deductions that are increasing with the consideration paid in an M&A, as discussed above.

### **Sample Selection**

To explore the implications of reporting indemnified tax positions, I begin by identifying a pool of firm-year observations for which M&A contracts may be available on the SEC's Edgar database. Specifically, I merge all firm-years available in the *Compustat* North America database from the years 2008 thru 2013 that have more than \$1,000,000 in total assets with data from the *Thomson SDC Platinum Mergers and Acquisitions* database, which results in 46,447 firm-year observations from 10,954 public firms.<sup>22</sup> I remove observations with total assets less than a \$1,000,000 to avoid issues with small denominators in my calculations. Due to differences in taxation and accounting standards, I remove all real estate investment trusts (REITs) and foreign filers from my potential contract sample which results in 31,242 firm-year observations from 7,244 firms. In line with Hanlon et al. (2018), I remove all observations with negative total assets and negative total sales which results in 31,217 firm-year observations from 7,241 firms. I remove observations that do not have all necessary data items available to compute the model variables, which results in 8,567 firm-year observations from 2,237 firms.

I then remove all observations which did not complete an M&A during the observation firm-year which results in 2,630 firm-year observations from 1,065 firms. To reduce the confounding effects of multiple M&A contracts with varying terms during the same fiscal year, I remove all observations with more than one completed M&A during the observation firm-year. The final pool of observations for which M&A contracts may be available consists of 1,320 firm-

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<sup>22</sup> Blouin et al. (2010) document preemptive removal and reestablishment of tax reserves around the implementation of FIN 48, effectively contaminating UTB reserves in 2006 and 2007. Therefore, I begin my study in 2008 to avoid any contamination from this documented behavior. Though the period of interest ends in 2013, I obtain data through 2017 to calculate four years of cumulative future tax cash outflows.



year observations from 846 firms.

Using this pool of firm-years, I attempt to locate the M&A contract associated with the completed M&A by manually searching 8-Ks, 10-Qs, and 10-Ks filed by the firm and by using Seek INF, an EDGAR search tool provided by Seek EDGAR. Of the 1,320 firm-year observations, 326 firms filed 375 M&A contracts (28.41 percent of potential contracts were located). Many contracts are not available because the firm determines a contract is not material under SEC Regulation S-K and, therefore, the firm is not required to file the contract or the firm may request that a filed contract remain confidential. However even if a contract is not required to be filed, management may choose to voluntarily file the contract with the SEC. After reviewing the

**Table 1: Sample Selection**

	<b>Firms</b>	<b>Observations</b>
Total public company observations with more than \$1,000,000 in total assets from 2008 thru 2013	10,954	46,447
Less observations from REITs and foreign filers	(3,710)	(15,205)
Less observations with negative total assets or sales	(3)	(25)
Less observations without all model variables	(5,004)	(22,650)
<b><i>Full Sample with model variables</i></b>	<b><i>2,237</i></b>	<b><i>8,567</i></b>
Less observations without current-year M&As	(1,172)	(5,937)
Less observations with multiple current-year M&As	(219)	(1,310)
<b><i>Potential Contract Pool</i></b>	<b><i>846</i></b>	<b><i>1,320</i></b>
Less observations without filed M&A contracts	(520)	(945)
Less observations without necessary contract detail	(19)	(20)
<b><i>Final Contract Sample</i></b>	<b><i>307</i></b>	<b><i>355</i></b>
Less observations without disclosures that UTB reserves were added due to M&As	(260)	(304)
<b><i>Reduced Contract Sample</i></b>	<b><i>47</i></b>	<b><i>51</i></b>

available M&A contracts, I remove 20 contracts from 19 firms because the contracts do not disclose the seller's representations about the target or whether indemnification was provided by the seller. The final sample of M&A contracts consists of 355 firm-year observations (contracts) from 307 firms.

In addition to tests which utilize this final sample, tests are performed using various subsamples within this final sample. These subsamples include 223 observations from 202 firms which report increases to UTB reserves due to M&As and prior tax positions, 168 observations from 155 firms which report increases to UTB reserves due to M&As and prior tax positions but omitting firms with asset purchase contracts, and 51 observations from 47 firms which specifically report increases to UTB reserves due to M&As. The smallest subsample used in these regressions is referred to as the reduced sample in Table 1 and represents firms which generated or acquired uncertain tax positions due to an M&A and reported it separately in their note disclosure for income taxes.

### **Indemnification Language in M&A Contracts**

Indemnification and tax matters sections of obtained M&A contracts were examined carefully to identify tax indemnification clauses. A thorough search of these contracts revealed that tax indemnification is described in various ways. For instance, refer to the language included in Appendix B for the stock purchase agreement between Forward Air Corporation, TQI Holdings, Inc., and various sellers. The sellers disclose within the tax matters section that "Each Entity has filed ... all ... material Tax Returns ... All such Tax Returns were correct and complete in all material respects. All Taxes owed by the Entities ... have been paid". In other words, the seller represents that all taxes associated with the target were done properly and paid. Later in the tax matters section, the sellers agree that "the Sellers shall ... indemnify the Entities

and Buyer ... against, and protect, save and hold harmless each Indemnified Taxpayer from, any and all [Losses] resulting from: (i) except to the extent reflected in the calculation of Closing Date Working Capital, any Taxes of any Entity allocable to any period ending on or prior to the Closing Date ... (iv) any misrepresentation or breach of any representation, warranty or obligation set forth in this [section]”. Simply put, if the sellers misrepresented something to the buyer and it results in a loss, then the sellers would make the buyer whole again.

Comparing the above stock purchase agreement language to the asset purchase agreement language between Depomed and Xanodyne Pharmaceuticals, little overlap exists between the languages used in these two contracts. However, both contracts provide tax indemnification to the buyer. Furthermore, the asset purchase agreement specifically addresses taxes associated with pre-closing periods (very straightforward language) and excluded liabilities (ambiguous language). Further investigation of this language shows that excluded liabilities in the context of this contract include all tax liabilities associated with pre-closing periods. The separation of this language is common among asset purchase contracts and requires that outside users determine what the language is referring to.

Of the 355 contracts, 215 included separate discussions of indemnification which specifically address taxes. Per interviews with key M&A consultants, the indemnification of tax representations normally protects the buyer against all tax losses associated with past positions including complex issues such as transfer pricing. Therefore, I concentrate on the indemnification of tax representations instead of specific tax indemnification clauses.

Contracts which do not provide indemnification can be easy or very difficult to identify. In an easy case, the contract will specify that any representations about the target will not survive the closing. For instance, refer to the agreement and plan of merger between Visa and

Cybersource. Cybersource states within the “General Provisions” section that “The representations and warranties of the Company, Parent and Merger Sub contained in this Agreement... shall terminate at the Effective Time [of the M&A]”. In other words, any misrepresentation of the target which results in a loss for Visa will not be reimbursed by Cybersource, unless Cybersource was fraudulent in their representations or a separate agreement exists within the contract which bypasses this language. When this language is not present, an outside party would have to review a significant portion of the contract to determine whether indemnification is present. Refer to Appendix B for contract excerpts.

### **Descriptive Statistics**

Table 2 presents various descriptive statistics on the presence of indemnification clauses within the 355 hand-collected contracts. The contracts consist of 121 merger contracts, 105 asset purchase contracts, and 129 interest purchase contracts.<sup>23</sup> Of the 355 contracts, 282 contracts provide tax indemnification to the acquirer through the indemnification of tax representations provided by the seller about the target; specifically, 79.43 percent of the buyers in the contract sample are indemnified by the seller from losses associated with tax misrepresentations. Furthermore, 162 of those 282 contracts require escrow accounts to be maintained to secure possible indemnification claims.

Of the three types of contracts, 52.89 percent of merger contracts, 92.38 percent of asset purchase contracts, and 93.80 percent of interest purchase contracts provide tax indemnification. Furthermore, Table 2 reflects that as M&A deals become larger, it is less likely for tax indemnification to be present; specifically, 88.65 percent of M&A deals valued at less than \$100 million have tax indemnification clauses, while 37.14 percent of M&A deals valued at over \$1

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<sup>23</sup> Interest purchase contracts refer to stock purchase contracts, partnership interest purchase contracts, and equity interest purchase contracts.

billion have tax indemnification clauses. Lastly, descriptive statistics suggest that approximately 93.88 percent of M&A deals in which the target is a subsidiary or a private company have tax indemnification. However, it appears that when one public company absorbs another public company, tax indemnification is normally not present; specifically, none of the public target contracts in my sample provide tax indemnification.<sup>24</sup>

**Table 2: Contract Indemnification Composition**

This table presents the indemnification characteristics of hand-collected M&A contracts.

	Yes	No	Total Contracts	% Yes
Indemnification	282	73	355	79.43 %
Escrow	162	120	282	57.45 %

Type	Indemnification	No Indemnification	Total Contracts	% with Indemnification
Merger	64	57	121	52.89 %
Asset Purchase	97	8	105	92.38 %
Interest Purchase	121	8	129	93.80 %
	282	73	355	79.43 %

Consideration (in Millions)	Indemnification	No Indemnification	Total Contracts	% with Indemnification
0 < \$ < 100	164	21	185	88.65 %
100 ≤ \$ < 250	58	10	68	85.29 %
250 ≤ \$ < 500	29	7	36	80.56 %
500 ≤ \$ < 1,000	18	13	31	58.06 %
1,000 ≤ \$	13	22	35	37.14 %
	282	73	355	79.43 %

Target Status	Indemnification	No Indemnification	Total Contracts	% with Indemnification
Publicly-Held	0	54	54	0.00 %
Subsidiary	131	8	139	94.24 %
Privately-Held	145	10	155	93.55 %
Joint Venture	6	1	7	85.71 %
	282	73	355	79.43 %

<sup>24</sup> This finding is supported by anecdotal evidence obtained from interviews with key M&A consultants, who suggest tax indemnification clauses are almost never present in public-to-public mergers.

**Table 2: Contract Indemnification Composition (Cont.)**

Fama-French 48 Industry	Indemnification	No Indemnification	Total Contracts	% with Indemnification
Business Services	36	14	50	72.00 %
Electronic Equipment	27	9	36	75.00 %
Computers	16	3	19	84.21 %
Medical Equipment	14	3	17	82.35 %
Retail	11	6	17	64.71 %
Pharmaceutical Products	7	9	16	43.75 %
Wholesale	16	0	16	100.00 %
Trading	13	1	14	92.86 %
Measuring and Control Equip.	12	1	13	92.31 %
Communication	10	2	12	83.33 %
Automobiles and Trucks	9	1	10	90.00 %
Business Supplies	8	2	10	80.00 %
Machinery	10	0	10	100.00 %
Chemicals	6	3	9	66.67 %
Steel Works	9	0	9	100.00 %
Consumer Goods	6	1	7	85.71 %
Electrical Equipment	7	0	7	100.00 %
Entertainment	7	0	7	100.00 %
Petroleum and Natural Gas	4	3	7	57.14 %
Food Products	6	0	6	100.00 %
Apparel	5	0	5	100.00 %
Construction Materials	5	0	5	100.00 %
Healthcare	4	1	5	80.00 %
Other	2	3	5	40.00 %
Restaurants, Hotels, Motels	5	0	5	100.00 %
Transportation	4	1	5	80.00 %
Construction	4	0	4	100.00 %
Personal Services	2	2	4	50.00 %
Rubber and Plastic Products	4	0	4	100.00 %
Textiles	2	2	4	50.00 %
Banking	3	0	3	100.00 %
Insurance	1	2	3	33.33 %
Aircraft	1	1	2	50.00 %
Printing and Publishing	1	1	2	50.00 %
Recreation	2	0	2	100.00 %
Shipbuilding, Railroad Equip.	2	0	2	100.00 %
Fabricated Products	1	0	1	100.00 %
Tobacco Products	0	1	1	0.00 %
Utilities	0	1	1	0.00 %
	282	73	355	79.43 %

Of the potential 48 Fama-French industry classifications, 39 industries are present in my contract sample.<sup>25</sup> Approximately 30 percent of my contract sample are from the business service, electronic equipment, and computer industries, while less than one percent of my contract sample are from the fabricated product, tobacco product, and utility industries. The business service, electronic equipment, and computer industries have indemnification frequencies of 72.00 percent, 75.00 percent, and 84.21 percent, respectively. While focusing on industries which are represented in my sample by more than 10 contracts, I find that the wholesale industry has the highest frequency of tax indemnification clauses (100.00 percent), while the pharmaceutical product industry has the lowest frequency of tax indemnification clauses (43.75 percent).

Table 3, Panel A presents descriptive statistics for my entire contract sample. Firms included in my sample are primarily large firms with an even split between multinational firms and domestic-only firms; specifically, average (median) year-end assets are approximately \$2.5240 (\$0.7641) billion and 49.90 percent of the firm-years have multinational operations. The average firm-year observation experiences tax cash outflows of approximately 8.54 percent of year-end assets over the subsequent four years and has UTB reserves equal to 1.31 percent of ending total assets. These reserves are economically significant and comparable to Hanlon et al.'s (2018) UTB reserve percentage of one percent.

Table 3, Panels B and C present descriptive statistics for the subsamples of observations without indemnification and those with indemnification. Firms which do not obtain indemnification tend to be larger (mean of \$4.8640 billion versus \$1.9180 billion; t-stat = 4.6407; p-value < 0.01) and more highly levered (mean of 42.50 percent versus 23.70 percent; t-

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<sup>25</sup> See [https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data\\_library.html](https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html) for classification detail.

stat = 4.9293; p-value < 0.01) than firms which do obtain indemnification; this may be due to a higher concentration of public-to-public M&As, which tend to be larger firms, within the subsample of firms without indemnification. Moreover, the concentration of public-to-public M&As may explain the higher consideration as a percentage of last year assets (mean of 25.90 percent versus 14.00 percent; t-stat = 7.0732; p-value < 0.01) paid to complete M&As within the no indemnification subsample. Furthermore, the lower UTB reserves as a percentage of ending total assets (mean of 1.84 percent versus 1.17 percent; t-stat = 2.5536; p-value < 0.01) and lower NOL carryforwards as a percentage of beginning assets (mean of 47.10 percent versus 20.60 percent; t-stat = 2.8427; p-value < 0.01) may be the result of more private companies being represented by the subsample of firms with tax indemnification. Specifically, these smaller ratios may be due to some private company targets being flow-through tax entities with no UTB reserves or NOL carryforwards on their financial statements.

Table 3, Panel D presents descriptive statistics for the no M&A subsample and is presented for comparative purposes. When comparing the no M&A subsample to the M&A subsamples, only changes in pre-tax book income is significantly smaller for M&A firms in both subsamples (t-statistics = 1.9032 and 2.214; p-values < 0.05 for M&A firms without and with indemnification). These reductions to pre-tax book income are likely due to the acquisition of depreciable assets, the acquisition of unprofitable targets, and/or the costs associated with the acquisition process. Several differences exist when comparing the no M&A subsample to the M&A without indemnification subsample. Firms engaging in M&As without indemnification are more highly levered (t-statistic = -5.4939; p-value < 0.01) and report higher levels of UTB reserves (t-statistic = -3.4377; p-value < 0.01). These higher levels are likely due to the concentration of larger, more complex public-to-public M&As in the no indemnification



subsample. Furthermore, M&As without indemnification report larger net operating loss carryforwards (t-statistic = -2.0932; p-value < 0.05) and lower levels of current and future taxes paid (t-statistics = 1.3704 and 2.2918; p-values < 0.10 and 0.05). However, lower current and future taxes paid are likely the result of having larger NOL carryforwards. Firms engaging in M&As with indemnification do not exhibit these same differences and tend to be smaller firms (t-statistic = 3.6343; p-value < 0.01). The differences documented between the no M&A subsample and M&A subsamples highlight the importance of allowing coefficients to vary across subsamples in later tests.

Table 4, Panel A presents Pearson (bottom) and Spearman (top) correlations for all model variables for the full contract sample, while Panels B and C present Pearson (bottom) and Spearman (top) correlations for firms without indemnification and those with indemnification, respectively. Correlations which are highly significant (p-value < 0.01) are bolded. As expected, the correlation between future cash taxes paid and current UTB reserves is significant; however, contrary to expectations, this correlation is negative. This may occur because the UTB reserves are positively associated with the amount of NOL carryforwards. NOL carryforwards provide significant reductions to future cash taxes paid by reducing future taxable income. Therefore, firms can utilize NOL carryforwards to offset increases to tax cash outflows resulting from successfully challenged uncertain tax positions, which reinforces the need to include this control variable in multivariate tests. Furthermore, the presence of a highly significant correlation between UTB reserves and future tax cash outflows for firms without indemnification and the lack of a highly significant correlation for firms with indemnification provides univariate evidence that this association may be impacted by the presence of indemnification. This difference and others between the subsamples suggest that the coefficients on the control

variables should be allowed to vary across the two subsamples. Remaining correlations are not discussed for brevity.

## Results

### Full Contract Sample

Table 5, Panel A presents the results from tests using the full sample of M&A contract firm-years. As predicted, I find that future tax cash outflows are positively associated with current period UTB reserves for firms that do not have tax indemnification ( $\beta_1 = 12.7209$ ; p-

**Table 3: Descriptive Statistics**

This table presents descriptive statistics on the full contract sample, the subsample of contracts without indemnification, the subsample of contracts with indemnification, and the subsample of firms without M&As in Panels A, B, C, and D respectively. Bolded means and medians indicate significant differences at the 1% level between Panels B and C. All continuous variables are winsorized at the 1% and 99% levels, Panel D is winsorized by year. All variables are defined in Appendix A.

<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>P(25)</b>	<b>Median</b>	<b>P(75)</b>
Panel A: Full Contract Sample						
Total Assets (in Billions)	355	<b>2.5240</b>	4.9720	0.2945	<b>0.7641</b>	2.0340
Pretax Return on Assets	355	0.0430	0.1590	-0.0131	0.0647	0.1250
Leverage Ratio	355	<b>0.2760</b>	0.3000	0.0249	<b>0.1810</b>	0.4170
Book to Market Ratio	355	0.6410	0.6140	0.3280	0.5370	0.7980
Multinational	355	0.4990	0.5010	0.0000	0.0000	1.0000
Unlogged $FUT\_TXPD_{t+4}$	355	0.0854	0.0939	0.0191	0.0518	0.1230
$FUT\_TXPD_{t+4}$	355	-3.2360	1.5570	-3.9600	-2.9610	-2.0950
$UTB_t$	355	<b>0.0131</b>	0.0201	0.0017	0.0057	0.0145
$INDEMN_t$	355	0.7943	0.4050	1.0000	1.0000	1.0000
$CONS_t$	355	<b>0.1640</b>	0.1370	0.0664	<b>0.1190</b>	0.2260
$NOLCF_t$	355	<b>0.2610</b>	0.7170	0.0000	0.0155	0.1910
$TXPD_t$	355	0.0183	0.0224	0.0020	0.0102	0.0296
$\Delta\_TXPD_t$	355	0.0004	0.0178	-0.0047	0.0005	0.0073
$\Delta\_PTBI_t$	355	-0.0082	0.1290	-0.0351	0.0008	0.0278
$DTX_t$	355	-0.0020	0.0620	-0.0340	-0.0004	0.0197

**Table 3: Descriptive Statistics (Cont.)**

<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>P(25)</b>	<b>Median</b>	<b>P(75)</b>
Panel B: No Indemnification Subsample ( $INDEMN_t = 0$ )						
Total Assets (in Billions)	73	<b>4.8640</b>	7.2240	0.5003	<b>1.5450</b>	4.8750
Pretax Return on Assets	73	0.0287	0.1760	-0.0200	0.0587	0.1090
Leverage Ratio	73	<b>0.4250</b>	0.3880	0.1380	<b>0.3290</b>	0.6740
Book to Market Ratio	73	0.5390	0.3590	0.2850	0.5010	0.7350
Multinational	73	0.4520	0.5010	0.0000	0.0000	1.0000
Unlogged $FUT\_TXPD_{t+4}$	73	0.0683	0.0788	0.0145	0.0388	0.1000
$FUT\_TXPD_{t+4}$	73	-3.5990	1.7560	-4.2320	-3.2500	-2.3020
$UTB_t$	73	<b>0.0184</b>	0.0255	0.0020	0.0080	0.0232
$CONS_t$	73	<b>0.2590</b>	0.1640	0.1170	<b>0.2470</b>	0.3790
$NOLCF_t$	73	<b>0.4710</b>	1.1570	0.0000	0.0591	0.2500
$TXPD_t$	73	0.0165	0.0208	0.0020	0.0093	0.0259
$\Delta\_TXPD_t$	73	0.0016	0.0177	-0.0021	0.0004	0.0060
$\Delta\_PTBI_t$	73	-0.0164	0.1260	-0.0441	-0.0062	0.0182
$DTX_t$	73	-0.0127	0.0712	-0.0564	-0.0081	0.0129
Panel C: Indemnification Subsample ( $INDEMN_t = 1$ )						
Total Assets (in Billions)	282	<b>1.9180</b>	3.9980	0.2734	<b>0.6271</b>	1.7340
Pretax Return on Assets	282	0.0467	0.1550	-0.0079	0.0687	0.1260
Leverage Ratio	282	<b>0.2370</b>	0.2600	0.0190	<b>0.1540</b>	0.3630
Book to Market Ratio	282	0.6680	0.6620	0.3390	0.5460	0.8110
Multinational	282	0.5110	0.5010	0.0000	1.0000	1.0000
Unlogged $FUT\_TXPD_{t+4}$	282	0.0898	0.0971	0.0207	0.0565	0.1310
$FUT\_TXPD_{t+4}$	282	-3.1430	1.4900	-3.8790	-2.8740	-2.0350
$UTB_t$	282	<b>0.0117</b>	0.0182	0.0017	0.0054	0.0138
$CONS_t$	282	<b>0.1400</b>	0.1180	0.0572	<b>0.1050</b>	0.1770
$NOLCF_t$	282	<b>0.2060</b>	0.5390	0.0000	0.0129	0.1510
$TXPD_t$	282	0.0187	0.0228	0.0021	0.0109	0.0297
$\Delta\_TXPD_t$	282	0.0001	0.0179	-0.0049	0.0006	0.0073
$\Delta\_PTBI_t$	282	-0.0061	0.1300	-0.0332	0.0024	0.0291
$DTX_t$	282	0.0008	0.0593	-0.0302	0.0000	0.0207

**Table 3: Descriptive Statistics (Cont.)**

<b>Variable</b>	<b>N</b>	<b>Mean</b>	<b>Standard Deviation</b>	<b>P(25)</b>	<b>Median</b>	<b>P(75)</b>
Panel D: No M&A Subsample						
Total Assets (in Billions)	5,937	6.1620	19.2830	0.2675	0.9010	3.4280
Pretax Return on Assets	5,937	0.0551	0.1580	0.0027	0.0591	0.1250
Leverage Ratio	5,904	0.2490	0.2770	0.0136	0.1800	0.3690
Book to Market Ratio	5,486	0.5810	0.7030	0.2680	0.4970	0.8190
Multinational	5,937	0.4580	0.4980	0.0000	0.0000	1.0000
Unlogged $FUT\_TXPD_{t+4}$	5,937	0.1040	0.1270	0.0167	0.0599	0.1390
$FUT\_TXPD_{t+4}$	5,937	-3.1480	1.6200	-4.0930	-2.8150	-1.9750
$UTB_t$	5,937	0.0111	0.0175	0.0011	0.0050	0.0134
$NOLCF_t$	5,937	0.2440	0.7400	0.0000	0.0065	0.1310
$TXPD_t$	5,937	0.0207	0.0285	0.0018	0.0109	0.0295
$\Delta\_TXPD_t$	5,937	0.0012	0.0195	-0.0046	0.0002	0.0069
$\Delta\_PTBI_t$	5,937	0.0116	0.1390	-0.0231	0.0082	0.0426
$DTX_t$	5,937	-0.0029	0.0645	-0.0321	0.0000	0.0263

value < 0.05). Moreover, there is no significant association between current period UTB reserves and future tax cash outflows for firms that do have tax indemnification ( $\alpha_1 = 0.1310$ ; p-value = 0.50). However, the associations are not significantly different from each other ( $\beta_1 - \alpha_1 = 12.5899$ ; p-value = 0.20). The lack of a significant difference between the  $UTB_t$  coefficients may be due to the fact that not all firms acquire UTB reserves as part of the M&A, that UTB reserves acquired may not be a significant portion of overall UTB reserves, or that the statistical power is low due to the small sample size.

Contrary to my prediction, there is no significant association between  $CONS_t$  and future tax cash outflows for firms without indemnification ( $\beta_2 = -0.3781$ ; p-value = 0.30) or for firms with indemnification ( $\alpha_2 = 0.1055$ ; p-value = 0.44). The inability to document a significant association between the consideration paid for the target and future tax cash outflows of the

**Table 4: Correlations**

All variables are defined in Appendix A. This table presents Pearson's (Bottom) and Spearman's (Top) correlation coefficients for the sample (N=355, 73, and 282 in Panels A, B, and C respectively). Bold indicates significance at the 1% level. All continuous variables are winsorized at the 1% and 99% levels.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Full Contract Sample									
(1) $FUT\_TXPD_{t+4}$	1.0000	-0.0627	0.1007	-0.0301	<b>-0.4316</b>	<b>0.6756</b>	0.1324	<b>0.2146</b>	0.0482
(2) $UTB_t$	<b>-0.2022</b>	1.0000	-0.1098	0.0963	<b>0.1898</b>	-0.0076	0.0484	0.0035	0.0441
(3) $INDEMN_t$	0.1186	-0.1347	1.0000	<b>-0.3238</b>	-0.0874	0.0468	-0.0212	0.0645	0.1039
(4) $CONS_t$	-0.0810	0.0893	<b>-0.3523</b>	1.0000	0.0520	-0.0114	-0.0217	<b>-0.1469</b>	-0.1009
(5) $NOLCF_t$	<b>-0.4285</b>	<b>0.4890</b>	<b>-0.1496</b>	0.0574	1.0000	<b>-0.3828</b>	-0.0102	-0.0856	0.0712
(6) $TXPD_t$	<b>0.5545</b>	-0.1320	0.0410	-0.0833	<b>-0.2153</b>	1.0000	<b>0.3381</b>	<b>0.1480</b>	0.0712
(7) $\Delta TXPD_t$	0.0863	-0.0172	-0.0335	-0.0526	-0.0419	<b>0.3340</b>	1.0000	<b>0.3429</b>	0.0244
(8) $\Delta PTBI_t$	0.0939	0.0256	0.0322	-0.0782	0.0273	0.0472	<b>0.1793</b>	1.0000	-0.0644
(9) $DTX_t$	-0.0051	-0.0188	0.0878	-0.0965	-0.0137	0.0076	-0.0269	0.0154	1.0000
Panel B: No Indemnification Subsample ( $INDEMN_t = 0$ )									
(1) $FUT\_TXPD_{t+4}$	1.0000	-0.1501	-0.1434	<b>-0.4834</b>	<b>0.6911</b>	0.1386	0.1814	-0.0101	
(2) $UTB_t$	<b>-0.3492</b>	1.0000	0.2636	<b>0.3501</b>	-0.0888	-0.1492	-0.1885	0.1242	
(3) $CONS_t$	-0.1190	0.1316	1.0000	0.1698	-0.0746	-0.1557	-0.1469	-0.1304	
(4) $NOLCF_t$	<b>-0.6416</b>	<b>0.6258</b>	0.0224	1.0000	<b>-0.3756</b>	-0.1462	-0.2657	0.0650	
(5) $TXPD_t$	<b>0.5416</b>	-0.2808	-0.1948	-0.2579	1.0000	<b>0.5575</b>	0.2677	0.1037	
(6) $\Delta TXPD_t$	0.2392	-0.2266	-0.1613	-0.1334	<b>0.6138</b>	1.0000	<b>0.4011</b>	-0.0302	
(7) $\Delta PTBI_t$	0.1084	0.1114	-0.0303	0.1194	0.1723	<b>0.3044</b>	1.0000	-0.0483	
(8) $DTX_t$	-0.0744	0.1817	-0.1012	0.0302	0.0559	-0.0596	0.0802	1.0000	

**Table 4: Correlations (Cont.)**

All variables are defined in Appendix A. This table presents Pearson's (Bottom) and Spearman's (Top) correlation coefficients for the sample (N=355, 73, and 282 in Panels A, B, and C respectively). Bold indicates significance at the 1% level. All continuous variables are winsorized at the 1% and 99% levels.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel C: Indemnification Subsample ( $INDEMN_t = 1$ )									
(1) $FUT\_TXPD_{t+4}$	1.0000	-0.0347	0.0571	<b>-0.4122</b>	<b>0.6750</b>	0.1348	<b>0.2231</b>	0.0426	
(2) $UTB_t$	-0.1227	1.0000	0.0108	0.1311	0.0099	0.0917	0.0641	0.0393	
(3) $CONS_t$	-0.0100	0.0020	1.0000	-0.0278	0.0341	0.0005	-0.1266	-0.0631	
(4) $NOLCF_t$	<b>-0.3036</b>	<b>0.3845</b>	-0.0081	1.0000	<b>-0.3866</b>	0.0211	-0.0359	0.0902	
(5) $TXPD_t$	<b>0.5615</b>	-0.0808	-0.0358	<b>-0.2151</b>	1.0000	<b>0.2810</b>	0.1143	0.0455	
(6) $\Delta\_TXPD_t$	0.0467	0.0505	-0.0371	-0.0056	<b>0.2717</b>	1.0000	<b>0.3296</b>	0.0369	
(7) $\Delta\_PTBI_t$	0.0861	0.0027	-0.0869	-0.0100	0.0174	0.1501	1.0000	-0.0878	
(8) $DTX_t$	0.0056	-0.0884	-0.0573	-0.0209	-0.0104	-0.0132	-0.0075	1.0000	

acquirer may be due to acquisitions providing a new source of income for the acquirer while also providing substantial tax breaks for the acquirer. Other than for  $CONS_t$ , the results for the other control variables are in line with my predictions. Specifically,  $NOLCF_t$  has a highly significant, negative association with future tax cash outflows for both firms without indemnification ( $\beta_3 = -1.0699$ ; p-value  $< 0.01$ ) and firms with indemnification ( $\alpha_3 = -0.5176$ ; p-value  $< 0.01$ ). These highly significant, negative coefficients are consistent with NOL carryforwards providing significant reductions in future taxable income when present.  $TXPD_t$  has highly significant, positive associations with future tax cash outflows for firms without indemnification ( $\beta_4 = 38.7797$ ; p-value  $< 0.01$ ) and firms with indemnification ( $\alpha_4 = 36.2790$ ; p-value  $< 0.01$ ). These highly significant, positive coefficients suggest that levels of taxes paid in the current year are persistent in future years.  $\Delta\_TXPD_t$  has significant, negative associations with future tax cash outflows for firms without indemnification ( $\beta_5 = -14.4587$ ; p-value  $< 0.05$ ) and firms with indemnification ( $\alpha_5 = -10.6401$ ; p-value  $< 0.05$ ). These significant negative associations suggest that current changes in taxes paid which are not explained by changes in taxable income are mean reverting and not persistent, likely due to spikes or dips in taxes paid from tax authority settlements or utilization of one-time tax assets (i.e., the utilization of NOL carryforwards or credits).  $\Delta\_PTBI_t$  has significant, positive associations with future tax cash outflows for firms without indemnification ( $\beta_6 = 1.6896$ ; p-value  $< 0.10$ ) and firms with indemnification ( $\alpha_6 = 1.2270$ ; p-value  $< 0.05$ ). These significant positive associations are in line with prior studies which suggest earnings changes are persistent. Therefore, an increase in pre-tax book income today results in more future taxable income and, thus, higher future cash taxes paid. Lastly, I document a significant, negative coefficient between  $DTX_t$  and future tax cash outflows for firms without indemnification ( $\beta_7 = -3.3799$ ; p-value  $< 0.05$ ) but fail to document a significant

association for firms with indemnification ( $\alpha_7 = 0.3782$ ; p-value = 0.75). This significant, negative coefficient suggests that for firms without indemnification, having more deferred tax assets (liabilities) today results in less (more) future tax cash outflows and vice versa. The lack of an association for firms with indemnification may be due to the utilization of DTAs offsetting indemnified tax payments for successful challenges of tax positions and/or the indemnification of deferred tax liabilities associated with uncertain tax positions. This possibility is further explored in later additional analyses.

### **Subsamples of Contract Firms**

The lack of a significant difference in the association between  $UTB_t$  and future tax cash outflows amongst firms with and without indemnification may be due to firms obtaining indemnification from the M&A contract but not obtaining any uncertain tax positions subject to indemnification from the target. To further explore this possibility, I attempt to proxy for firms obtaining indemnified uncertain tax positions from the target in three different ways: as firms which report increases to UTB reserves due to M&As and prior tax positions, as firms which report increases to UTB reserves due to M&As and prior tax positions but omitting firms with asset purchase contracts, and as firms which specifically report increases to UTB reserves due to M&As.<sup>26</sup>

As discussed earlier, the FASB standardized the accounting for acquired tax positions, but it has not standardized the required disclosures about these positions. For this reason, companies can choose to disclose or not disclose the amounts of uncertain tax positions that were acquired in an M&A. I examine all 10-k acquisition and income tax disclosures associated with located M&A contracts and identify all observations which disclose the acquisition of uncertain

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<sup>26</sup> For these tests, I hand-collect UTB reserve reconciliation data from the observation's associated 10-K filed with the SEC's EDGAR system.



tax positions. My review suggests that most firms engaging in M&As do not separately disclose acquired uncertain tax positions in the reserve reconciliation or within the income tax footnote disclosures. Specifically, I find that only 51 observations disclose the amount of uncertain tax positions, whether generated or acquired, that are associated with the M&A in the UTB reserve reconciliation or income tax footnote disclosures; only one observation separated the indemnified portion of these uncertain tax positions from the generated portion. Most of the firms that disclose acquired uncertain tax positions report them separately in the UTB reserve reconciliation. However, some firms disclose this information in the income tax footnote disclosures and report the positions as increases to prior year tax positions in the UTB reserve reconciliation.

Due to the low rate/lack of disclosure of indemnified tax positions, I attempt to proxy for firms acquiring indemnified uncertain tax positions. First, I limit my sample only to observations that report increases to UTB reserves due to *either* prior tax positions or acquisitions, which yields 223 observations, 48 without indemnification and 175 with indemnification. Table 5, Panel B presents the results of estimating Models (1a) and (1b) for this subsample. Consistent with the full contract sample, I document that future tax cash outflows are positively associated with current  $UTB_t$  ( $\beta_1 = 38.0058$ ; p-value < 0.01) for firms without indemnification but not significantly associated with current  $UTB_t$  ( $\alpha_1 = 2.4239$ ; p-value = 0.25) for firms with indemnification. Moreover, the association between UTB reserves and future tax cash outflows for firms without indemnification is significantly more positive ( $\beta_1 - \alpha_1 = 35.5819$ ; p-value < 0.01) than for firms with indemnification, which supports H<sub>1</sub>. These results suggest that UTB reserves are less useful for predicting future tax cash outflows in the presence of indemnified tax

positions and that increases to prior year UTB reserves in the year of an M&A may be an appropriate proxy for identifying firms which acquire uncertain tax positions.

To further isolate a subset of firms which are directly affected by the accounting for uncertain tax positions required under ASC 805 and ASC 740, I remove all asset purchase contracts for my second proxy test. Unless substantially all of a target's assets are acquired, it is possible that the acquisition of a target's assets by means of an asset purchase contract may not result in an ASC 805 requirement to record indemnified tax positions of the target. Therefore, I remove all observations with asset purchase contracts which yields 168 observations, 45 without indemnification and 123 with indemnification. Results of Models (1a) and (1b) for this subsample are shown in Table 5, Panel C. For this subsample, the association between future tax cash outflows and  $UTB_t$  is positive for firms without indemnification ( $\beta_1 = 39.9744$ ; p-value < 0.01) but not significant for firms with indemnification ( $\alpha_1 = -2.4674$ ; p-value = 0.34). Moreover, I continue to document in Panel C a significant difference between firms with and without indemnification ( $\beta_1 - \alpha_1 = 42.4418$ ; p-value < 0.01); this result continues to suggest that the presence of indemnified tax positions within UTB reserves may explain the diminished association.

Lastly, I identify firms which did follow ASC 805 to account for their M&A; specifically, I identify firms which reported increases to UTB reserves that were due to M&A activity. I expect that this further isolation will result in the most likely subsample of firms affected by the accounting required under ASC 805 for acquired uncertain tax positions. Table 5, Panel D presents the results of testing the subsample of 51 firm-year observations in which increases to UTB reserves due to M&A activity were reported, 25 observations without indemnification and 26 observations with indemnification. By recording an increase to UTB reserves due to M&A

activity, a firm would be following business combination guidance under ASC 805 thereby ensuring the firm is required to record acquired indemnified tax positions. However, it is possible that the UTB reserve increase associated with the M&A may be generated from tax positions taken during the M&A and therefore not indemnified. I find that, while the association between future tax cash outflows and  $UTB_t$  is positive for firms without indemnification ( $\beta_1 = 12.4658$ ; p-value = 0.25) and negative for firms with indemnification ( $\alpha_1 = -1.1034$ ; p-value = 0.46), neither of these associations is significant and the difference between the two is also not statistically significant ( $\beta_1 - \alpha_1 = 13.5692$ ; p-value = 0.52). This is a surprising result and may be due to the lack of statistical power provided by the extremely small sample size.

Results from the full contract sample and for the subsamples shown in Table 5 provide evidence that the association between UTB reserves and future tax cash outflows is lower when UTB reserves contain indemnified tax positions. Moreover, the results are most likely stronger in Panels B and C due to the isolation of firms that may have acquired uncertain tax positions as part of an M&A in the current year. My results suggest that financial statement users would benefit from more information about acquired uncertain tax positions and the impact that tax indemnification has on these positions in the financial statements to facilitate their evaluation of a firm's tax positions and development of expectations of a firm's future tax cash outflows.

### **Comparison to Observations without M&As**

Next, I compare the subsamples of observations from within the contract sample to a sample of observations without M&As to determine how the association between UTB reserves and future tax cash outflows for firms without M&As compares to the M&A firms with and without indemnification. Specifically, I compare the observations without current-year M&As as described in Table 1 to subsamples of observations without indemnification, observations with

**Table 5: UTB Reserves' Association with Future Tax Cash Outflows**

This table presents the results of performing seemingly unrelated estimations to test differences between without indemnification and with indemnification. Panel A presents the results of Model (1a) and Model (1b) for all firms in which contracts were obtained regardless of increases to UTB reserves, Panel B presents the results of Model (1a) and Model (1b) for firms which report increases to UTB reserves due to M&As and prior tax positions, Panel C presents the results of Model (1a) and Model (1b) for firms which report increases to UTB reserves due to M&As and prior tax positions but omits asset purchase contracts, and Panel D presents the results of Model (1a) and Model (1b) for firms which report increases to UTB reserves due to M&As filed. The dependent variable in all Panels is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

VARIABLES	(+, -)	Panel A: Full Contract Sample		Panel B: UTB increases due to M&As and prior tax positions	
		Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\beta_1)/(\alpha_1)$	+	<b>12.7209**</b> (1.810)	<b>0.1310</b> (0.020)	<b>38.0058***</b> (4.570)	<b>2.4239</b> (0.690)
$CONS_t(\beta_2)/(\alpha_2)$	-	-0.3781 (-0.530)	0.1055 (0.160)	-0.1326 (-0.210)	0.1297 (0.180)
$NOLCF_t(\beta_3)/(\alpha_3)$	-	-1.0699*** (-10.550)	-0.5176*** (-2.760)	-1.2241*** (-6.590)	-0.6535*** (-2.980)
$TXPD_t(\beta_4)/(\alpha_4)$	+	38.7797*** (6.110)	36.2790*** (9.640)	48.1541*** (7.570)	30.2294*** (6.500)
$\Delta\_TXPD_t(\beta_5)/(\alpha_5)$	-	-14.4587** (-1.850)	-10.6401** (-1.990)	-51.0361*** (-4.880)	-9.0089* (-1.330)
$\Delta\_PTBI_t(\beta_6)/(\alpha_6)$	+	1.6896* (1.440)	1.2270** (1.710)	5.7881*** (3.590)	0.8195* (1.450)
$DTX_t(\beta_7)/(\alpha_7)$	-	-3.3799** (-2.190)	0.3782 (0.320)	-7.3916*** (-4.380)	-0.2470 (-0.210)
CONSTANT ( $\beta_0$ )/( $\alpha_0$ )		-4.4206*** (-5.910)	-3.5565*** (-14.680)	-4.4076*** (-7.300)	-3.3520*** (-10.890)
Observations		73	282	48	175
Adjusted R-squared		0.598	0.350	0.642	0.334
Year Fixed Effects		YES	YES	YES	YES
Industry Fixed Effects		NO	NO	NO	NO
Test of differences					
$UTB_t(\beta_1 = \alpha_1)$		<b>12.5899</b> [1.66]		<b>35.5819***</b> [16.05]	

**Table 5: UTB Reserves' Association with Future Tax Cash Outflows (Cont.)**

This table presents the results of performing seemingly unrelated estimations to test differences between without indemnification and with indemnification. Panel A presents the results of Model (1a) and Model (1b) for all firms in which contracts were obtained regardless of increases to UTB reserves, Panel B presents the results of Model (1a) and Model (1b) for firms which report increases to UTB reserves due to M&As and prior tax positions, Panel C presents the results of Model (1a) and Model (1b) for firms which report increases to UTB reserves due to M&As and prior tax positions but omits asset purchase contracts, and Panel D presents the results of Model (1a) and Model (1b) for firms which report increases to UTB reserves due to M&As filed. The dependent variable in all Panels is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

VARIABLES	(+, -)	Panel C: UTB increases due to M&As and prior tax positions, asset purchase contracts omitted		Panel D: UTB increases due to M&As	
		Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\beta_1)/(\alpha_1)$	+	<b>39.9744***</b> (4.560)	<b>-2.4674</b> (-0.420)	<b>12.4658</b> (0.690)	<b>-1.1034</b> (-0.090)
$CONS_t(\beta_2)/(\alpha_2)$	-	-0.3007 (-0.450)	0.0250 (0.030)	0.5822 (0.470)	-2.5068** (-1.950)
$NOLCF_t(\beta_3)/(\alpha_3)$	-	<b>-1.2344***</b> (-5.540)	<b>-0.4677**</b> (-2.210)	<b>-1.1788***</b> (-5.140)	<b>-2.4191**</b> (-2.280)
$TXPD_t(\beta_4)/(\alpha_4)$	+	<b>47.2792***</b> (7.350)	<b>33.1034***</b> (5.510)	<b>43.1095***</b> (2.790)	<b>21.9606**</b> (2.100)
$\Delta\_TXPD_t(\beta_5)/(\alpha_5)$	-	<b>-50.5012***</b> (-4.550)	<b>-17.4651***</b> (-3.250)	<b>-35.6478**</b> (-2.190)	<b>-9.1872</b> (-1.210)
$\Delta\_PTBI_t(\beta_6)/(\alpha_6)$	+	<b>5.9898***</b> (3.100)	1.1787 (1.160)	0.6910 (0.120)	<b>-0.3291</b> (-0.180)
$DTX_t(\beta_7)/(\alpha_7)$	-	<b>-7.8561***</b> (-4.440)	<b>-0.3669</b> (-0.270)	<b>-5.3212**</b> (-1.960)	1.9832 (0.810)
CONSTANT ( $\beta_0$ )/( $\alpha_0$ )		<b>-4.3811***</b> (-6.840)	<b>-3.5541***</b> (-8.230)	<b>-4.1790***</b> (-6.680)	<b>-3.2041***</b> (-3.520)
Observations		45	123	25	26
Adjusted R-squared		0.623	0.289	0.413	0.321
Year Fixed Effects		YES	YES	YES	YES
Industry Fixed Effects		NO	NO	NO	NO
Test of differences					
$UTB_t(\beta_1 = a_1)$		<b>42.4418***</b> [17.11]		<b>13.5692</b> [0.42]	

indemnification, merger contract observations without indemnification, merger contract observations with indemnification, asset purchase contract observations with indemnification, and interest purchase contract observations with indemnification. Due to earlier results from Table 5, Panel B, I repeat these comparisons in subsequent tests after removing all observations not reporting increases to prior uncertain tax positions to better identify observations which may have acquired indemnified tax positions. My sample for initial tests consists of 6,292 firm-year observations from 2,049 firms (5,937 observations from observations without M&As and 355 observations from the contract sample), while the sample for subsequent tests consists of 3,184 firm-year observations from 1,248 firms (2,959 observations from observations without M&As and 225 observations from the contract sample). However, total sample sizes vary depending on the subsample utilized in the test.

To begin this comparison, I remove the variable  $CONS_t$  from Model (1) due to consideration amounts not being available for firms not engaging in M&As.<sup>27</sup> Using seemingly unrelated estimations, the models are as follows:

*No M&A Firm-Years:*

$$FUT\_TXPD_{t+4} = \delta_0 + \delta_1 UTB_t + \delta_2 NOLCF_t + \delta_3 TXPD_t + \delta_4 \Delta TXPD_t + \delta_5 \Delta PTBI_t + \delta_6 DTX_{t+1} + \varepsilon_t \quad (2a)$$

*M&A Firm-Years Without Indemnification:*

$$FUT\_TXPD_{t+4} = \beta_0 + \beta_1 UTB_t + \beta_2 NOLCF_t + \beta_3 TXPD_t + \beta_4 \Delta TXPD_t + \beta_5 \Delta PTBI_t + \beta_6 DTX_{t+1} + \varepsilon_t \quad (2b)$$

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<sup>27</sup>  $CONS_t$  is dropped due to systematic differences within this variable that exist amongst the comparison groups. Specifically, firms not engaging in current-year M&As results in all observations having a value of zero for  $CONS_t$  in the no M&A subsample. Furthermore, earlier analyses show that  $CONS_t$  was only significant in the 51-observation subsample which suggests it may not be a necessary control. Also, it is important to note that in order to allow a comparison to firms without M&As these tests utilize the Compustat item TXTUBPOSPINC to identify firms reporting increases to prior tax positions.

*M&A Firm-Years With Indemnification:*

$$FUT\_TXPD_{t+4} = \alpha_0 + \alpha_1 UTB_t + \alpha_2 NOLCF_t + \alpha_3 TXPD_t + \alpha_4 \Delta TXPD_t + \alpha_5 \Delta PTBI_t + \alpha_6 DTX_{t+1} + \varepsilon_t \quad (2c)$$

I utilize the sample of observations without M&As as a base group and test for differences in the association of interest between the subsamples described above. In these tests, I expect that firms without M&As and subsamples without indemnification will exhibit positive associations between UTB reserves and future tax cash outflows, while firms with indemnification will not exhibit a significant association.

Table 6, Panel A presents the results of comparing the no M&A sample to the full contract sample, while Panel B presents a similar test but only uses observations with increases to prior uncertain tax positions. In line with expectations, I document in Panels A and B that observations without M&As ( $\delta_1 = 4.2554$  and  $3.0560$ ; p-values  $< 0.01$  and  $< 0.05$ ) exhibit significant positive coefficients on the association of interest. However, I only document a significant positive coefficient on  $UTB_t$  for M&A firms without indemnification ( $\beta_1 = 8.9118$ ; p-value  $< 0.10$ ) in Panel A. The lack of significance on  $UTB_t$  for M&A firms without indemnification ( $\beta_1 = 16.2796$ ; p-value =  $0.12$ ) in Panel B may be due to the substantial drop in statistical power from losing a third of the observations which did not report increases to prior uncertain tax positions. Furthermore, I document in Panels A and B that M&A firms with indemnification do not exhibit this significant association ( $\alpha_1 = -0.1560$  and  $1.9997$ ; p-values =  $0.49$  and  $0.32$ ). These findings suggest that not only does the association of interest vary amongst firms engaging in M&As but the association also varies when comparing M&A firms with indemnification to firms not engaging in M&As. Therefore, when an M&A is present with indemnification, financial statement users should be wary of using UTB reserves in developing expectations about future tax cash outflows.

Table 6, Panel C compares the no M&A sample to the merger contract subsample, while Panel D presents a similar comparison but only uses observations with increases to prior uncertain tax positions. I document that, when indemnification is not present, firms without and with M&As exhibit similar associations between UTB reserves and future tax cash outflows ( $\delta_1 - \beta_1 = 1.3762$  and  $-9.9312$ ; p-values = 0.82 and 0.48). On the other hand, when indemnification is present, I find that the association of interest varies significantly amongst firms without and with M&As ( $\delta_1 - \alpha_1 = 12.2307$  and  $14.5078$ ; p-values  $< 0.10$ ). Moreover, I document that UTB reserves may not be informative of future tax cash outflows ( $\alpha_1 = -7.9753$ ; p-value = 0.11) or they may exhibit a negative association with future tax cash outflows ( $\alpha_1 = -11.4518$ ; p-value  $< 0.10$ ) in the presence of indemnification.

Table 6, Panel E compares the no M&A sample to the asset and interest purchase subsamples with indemnification, while Panel F presents a similar comparison but only uses observations with increases to prior uncertain tax positions. The results in Panels E and F are generally consistent with prior Panels. Specifically, I document that UTB reserves may not be informative of future tax cash outflows when indemnification is present. However, I document a significant positive coefficient ( $\alpha_1 = 13.1018$ ; p-value  $< 0.10$ ) for M&A firms engaging in interest purchase contracts with indemnification. The positive coefficient documented for M&A firms engaging in interest purchase contracts may be due to positions generated from the M&A which are not indemnified but results in increased authoritative scrutiny. However, these conclusions will continue to be left to speculation without the additional disclosure of which UTB reserves are indemnified and which are not. Overall these results are consistent with  $H_1$  and suggest that financial statement users should be cautious when evaluating the future tax cash outflows of



**Table 6: UTB Reserves' Association with Future Tax Cash Outflows: No M&As vs Contract Subsample Tests**

This table presents the results of performing seemingly unrelated estimations using Model (2a), Model (2b), and Model (2c) to test differences between observations without M&As and various subsamples within the contract sample. Specifically, observations without M&As are compared to the full contract sample with and without indemnification, the merger contract sample with and without indemnification, asset purchase contract observations with indemnification, and interest purchase contract observations with indemnification in Panels A, C, and E, while similar tests omitting firms not reporting increases to prior uncertain tax positions are reported in Panels B, D, and F. The dependent variable in all Panels is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

Panel A: No M&As vs Full Contract Sample, All Observations				
VARIABLES	(+, -)	(1)	(2)	(3)
		No M&As $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\beta_1)/(\alpha_1)$	+	<b>4.2554***</b> (2.470)	<b>8.9118*</b> (1.310)	<b>-0.1560</b> (-0.020)
$NOLCF_t(\delta_2)/(\beta_2)/(\alpha_2)$	-	-0.3076*** (-6.910)	-1.1762*** (-12.430)	-0.5906*** (-3.030)
$TXPD_t(\delta_3)/(\beta_3)/(\alpha_3)$	+	34.3860*** (30.360)	39.3805*** (6.340)	33.9822*** (8.730)
$\Delta\_TXPD_t(\delta_4)/(\beta_4)/(\alpha_4)$	-	-10.7753*** (-10.340)	-16.8400*** (-2.990)	-9.5896** (-1.780)
$\Delta\_PTBI_t(\delta_5)/(\beta_5)/(\alpha_5)$	+	0.5699*** (4.010)	0.8118 (0.980)	1.2354** (1.860)
$DTX_t(\delta_6)/(\beta_6)/(\alpha_6)$	-	0.4662 (1.150)	-3.1609** (-2.180)	0.2757 (0.230)
CONSTANT ( $\delta_0)/(\beta_0)/(\alpha_0)$		-3.9925*** (-61.220)	-4.4484 (-7.860)	-3.4611*** (-16.130)
Observations		5,937	73	282
Adjusted R-squared		0.375	0.617	0.345
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		NO	NO	NO
Test of differences				
$UTB_t(\delta_1 = \beta_1)/(\delta_1 = \alpha_1)$			<b>-4.6564</b> [0.45]	<b>4.4114</b> [0.30]

**Table 6: UTB Reserves' Association with Future Tax Cash Outflows: No M&As vs Contract Subsample Tests (Cont.)**

This table presents the results of performing seemingly unrelated estimations using Model (2a), Model (2b), and Model (2c) to test differences between observations without M&As and various subsamples within the contract sample. Specifically, observations without M&As are compared to the full contract sample with and without indemnification, the merger contract sample with and without indemnification, asset purchase contract observations with indemnification, and interest purchase contract observations with indemnification in Panels A, C, and E, while similar tests omitting firms not reporting increases to prior uncertain tax positions are reported in Panels B, D, and F. The dependent variable in all Panels is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

Panel B: No M&As vs Full Contract Sample, Observations with Increases to Prior Tax Positions				
VARIABLES	(+, -)	(1)	(2)	(3)
		No M&As $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\beta_1)/(\alpha_1)$	+	<b>3.0560**</b> (1.790)	<b>16.2796</b> (1.170)	<b>1.9997</b> (0.480)
$NOLCF_t(\delta_2)/(\beta_2)/(\alpha_2)$	-	-0.5214*** (-5.640)	-1.1593*** (-6.260)	-0.7147*** (-3.150)
$TXPD_t(\delta_3)/(\beta_3)/(\alpha_3)$	+	30.1662*** (21.480)	45.2637*** (6.570)	28.1098*** (5.980)
$\Delta\_TXPD_t(\delta_4)/(\beta_4)/(\alpha_4)$	-	-10.4425*** (-7.940)	-45.3460*** (-3.320)	-9.3502* (-1.440)
$\Delta\_PTBI_t(\delta_5)/(\beta_5)/(\alpha_5)$	+	0.7484*** (3.850)	1.7096 (0.610)	0.6793* (1.300)
$DTX_t(\delta_6)/(\beta_6)/(\alpha_6)$	-	0.9869** (2.190)	-5.4072** (-2.290)	-0.3683 (-0.310)
CONSTANT $(\delta_0)/(\beta_0)/(\alpha_0)$		-3.6486*** (-43.680)	-4.4650*** (-8.560)	-3.2576*** (-11.420)
Observations		2,959	50	175
Adjusted R-squared		0.408	0.551	0.333
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		NO	NO	NO
Test of differences				
$UTB_t(\delta_1 = \beta_1)/(\delta_1 = \alpha_1)$			<b>-13.2236</b> [0.90]	<b>1.0563</b> [0.06]

**Table 6: UTB Reserves' Association with Future Tax Cash Outflows: No M&As vs Contract Subsample Tests (Cont.)**

This table presents the results of performing seemingly unrelated estimations using Model (2a), Model (2b), and Model (2c) to test differences between observations without M&As and various subsamples within the contract sample. Specifically, observations without M&As are compared to the full contract sample with and without indemnification, the merger contract sample with and without indemnification, asset purchase contract observations with indemnification, and interest purchase contract observations with indemnification in Panels A, C, and E, while similar tests omitting firms not reporting increases to prior uncertain tax positions are reported in Panels B, D, and F. The dependent variable in all Panels is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

Panel C: No M&As vs Merger Contract Sample, All Observations				
VARIABLES	(+, -)	(1)	(2)	(3)
		No M&As $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\beta_1)/(\alpha_1)$	+	<b>4.2554***</b> (2.470)	<b>2.8792</b> (0.490)	<b>-7.9753</b> (-1.220)
$NOLCF_t(\delta_2)/(\beta_2)/(\alpha_2)$	-	-0.3076*** (-6.910)	-1.1391*** (-12.080)	-0.3752*** (-2.820)
$TXPD_t(\delta_3)/(\beta_3)/(\alpha_3)$	+	34.3860*** (30.360)	33.1409*** (5.480)	37.8482*** (6.830)
$\Delta\_TXPD_t(\delta_4)/(\beta_4)/(\alpha_4)$	-	-10.7753*** (-10.340)	-16.9404** (-1.960)	-15.5935*** (-2.810)
$\Delta\_PTBI_t(\delta_5)/(\beta_5)/(\alpha_5)$	+	0.5699*** (4.010)	0.9437* (1.630)	0.5091 (0.570)
$DTX_t(\delta_6)/(\beta_6)/(\alpha_6)$	-	0.4662 (1.150)	-3.7284*** (-2.720)	1.6270 (0.880)
CONSTANT ( $\delta_0)/(\beta_0)/(\alpha_0)$		-3.9925*** (-61.220)	-3.8882*** (-12.360)	-3.6369*** (-11.200)
Observations		5,937	57	64
Adjusted R-squared		0.375	0.702	0.399
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		NO	NO	NO
Test of differences				
$UTB_t(\delta_1 = \beta_1)/(\delta_1 = \alpha_1)$			<b>1.3762</b> [0.05]	<b>12.2307*</b> [3.35]

**Table 6: UTB Reserves' Association with Future Tax Cash Outflows: No M&As vs Contract Subsample Tests (Cont.)**

This table presents the results of performing seemingly unrelated estimations using Model (2a), Model (2b), and Model (2c) to test differences between observations without M&As and various subsamples within the contract sample. Specifically, observations without M&As are compared to the full contract sample with and without indemnification, the merger contract sample with and without indemnification, asset purchase contract observations with indemnification, and interest purchase contract observations with indemnification in Panels A, C, and E, while similar tests omitting firms not reporting increases to prior uncertain tax positions are reported in Panels B, D, and F. The dependent variable in all Panels is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

Panel D: No M&As vs Merger Contract Sample, Observations with Increases to Prior Tax Positions				
VARIABLES	(+, -)	(1)	(2)	(3)
		No M&As $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\beta_1)/(\alpha_1)$	+	<b>3.0560**</b> (1.790)	<b>12.9872</b> (0.940)	<b>-11.4518*</b> (-1.450)
$NOLCF_t(\delta_2)/(\beta_2)/(\alpha_2)$	-	-0.5214*** (-5.640)	-1.1698*** (-6.460)	-0.2739** (-2.000)
$TXPD_t(\delta_3)/(\beta_3)/(\alpha_3)$	+	30.1662*** (21.480)	41.5880*** (6.410)	33.9294*** (4.720)
$\Delta\_TXPD_t(\delta_4)/(\beta_4)/(\alpha_4)$	-	-10.4425*** (-7.940)	-40.1029*** (-2.740)	-18.5910*** (-2.810)
$\Delta\_PTBI_t(\delta_5)/(\beta_5)/(\alpha_5)$	+	0.7484*** (3.850)	0.8301 (0.240)	-0.0451 (-0.050)
$DTX_t(\delta_6)/(\beta_6)/(\alpha_6)$	-	0.9869** (2.190)	-5.9246*** (-2.600)	4.0074* (1.610)
CONSTANT $(\delta_0)/(\beta_0)/(\alpha_0)$		-3.6486*** (-43.680)	-4.3619*** (-8.440)	-3.6502*** (-7.620)
Observations		2,959	43	42
Adjusted R-squared		0.408	0.546	0.469
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		NO	NO	NO
Test of differences				
$UTB_t(\delta_1 = \beta_1)/(\delta_1 = \alpha_1)$			<b>-9.9312</b> [0.51]	<b>14.5078*</b> [3.35]

**Table 6: UTB Reserves' Association with Future Tax Cash Outflows: No M&As vs Contract Subsample Tests (Cont.)**

This table presents the results of performing seemingly unrelated estimations using Model (2a), Model (2b), and Model (2c) to test differences between observations without M&As and various subsamples within the contract sample. Specifically, observations without M&As are compared to the full contract sample with and without indemnification, the merger contract sample with and without indemnification, asset purchase contract observations with indemnification, and interest purchase contract observations with indemnification in Panels A, C, and E, while similar tests omitting firms not reporting increases to prior uncertain tax positions are reported in Panels B, D, and F. The dependent variable in all Panels is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

Panel E: No M&As vs Other Subsamples with Indemnification, All Observations				
VARIABLES	(+, -)	(1)	(2)	(3)
		No M&As $FUT\_TXPD_{t+4}$	Asset Contracts $FUT\_TXPD_{t+4}$	Interest Contracts $FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\alpha_1)/(\alpha_1)$	+	<b>4.2554***</b> (2.470)	<b>1.6835</b> (0.170)	<b>-6.9853</b> (-0.550)
$NOLCF_t(\delta_2)/(\alpha_2)/(\alpha_2)$	-	-0.3076*** (-6.910)	-0.6477*** (-2.590)	-0.5739* (-1.560)
$TXPD_t(\delta_3)/(\alpha_3)/(\alpha_3)$	+	34.3860*** (30.360)	38.9081*** (6.800)	33.1574*** (5.920)
$\Delta\_TXPD_t(\delta_4)/(\alpha_4)/(\alpha_4)$	-	-10.7753*** (-10.340)	3.3822 (0.340)	-21.5546*** (-2.620)
$\Delta\_PTBI_t(\delta_5)/(\alpha_5)/(\alpha_5)$	+	0.5699*** (4.010)	0.2954 (0.430)	4.6757*** (3.230)
$DTX_t(\delta_6)/(\alpha_6)/(\alpha_6)$	-	0.4662 (1.150)	1.5055 (0.810)	-1.2317 (-0.810)
CONSTANT $(\delta_0)/(\alpha_0)/(\alpha_0)$		-3.9925*** (-61.220)	-3.2670*** (-10.160)	-3.3403*** (-9.830)
Observations		5,937	96	121
Adjusted R-squared		0.375	0.399	0.349
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		NO	NO	NO
Test of differences				
$UTB_t(\delta_1 = \alpha_1)/(\delta_1 = \alpha_1)$			<b>2.5719</b> [0.06]	<b>11.2407</b> [0.77]

**Table 6: UTB Reserves' Association with Future Tax Cash Outflows: No M&As vs Contract Subsample Tests (Cont.)**

This table presents the results of performing seemingly unrelated estimations using Model (2a), Model (2b), and Model (2c) to test differences between observations without M&As and various subsamples within the contract sample. Specifically, observations without M&As are compared to the full contract sample with and without indemnification, the merger contract sample with and without indemnification, asset purchase contract observations with indemnification, and interest purchase contract observations with indemnification in Panels A, C, and E, while similar tests omitting firms not reporting increases to prior uncertain tax positions are reported in Panels B, D, and F. The dependent variable in all Panels is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

Panel F: No M&As vs Other Subsamples with Indemnification, Observations with Increases to Prior Tax Positions				
VARIABLES	(+, -)	(1)	(2)	(3)
		No M&As $FUT\_TXPD_{t+4}$	Asset Contracts $FUT\_TXPD_{t+4}$	Interest Contracts $FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\alpha_1)/(\alpha_1)$	+	<b>3.0560**</b> (1.790)	<b>3.0655</b> (0.570)	<b>13.1018*</b> (1.630)
$NOLCF_t(\delta_2)/(\alpha_2)/(\alpha_2)$	-	-0.5214*** (-5.640)	-1.4377*** (-4.390)	-0.8746*** (-2.510)
$TXPD_t(\delta_3)/(\alpha_3)/(\alpha_3)$	+	30.1662*** (21.480)	23.6846*** (3.390)	30.8758*** (4.070)
$\Delta\_TXPD_t(\delta_4)/(\alpha_4)/(\alpha_4)$	-	-10.4425*** (-7.940)	10.1317 (0.560)	-19.6471** (-2.210)
$\Delta\_PTBI_t(\delta_5)/(\alpha_5)/(\alpha_5)$	+	0.7484*** (3.850)	0.9613** (2.380)	2.2777 (1.070)
$DTX_t(\delta_6)/(\alpha_6)/(\alpha_6)$	-	0.9869** (2.190)	0.5664 (0.270)	-2.2399 (-1.150)
CONSTANT $(\delta_0)/(\alpha_0)/(\alpha_0)$		-3.6486*** (-43.680)	-2.6957*** (-6.510)	-3.5573*** (-6.410)
Observations		2,959	52	80
Adjusted R-squared		0.408	0.459	0.228
Year Fixed Effects		YES	YES	YES
Industry Fixed Effects		NO	NO	NO
Test of differences				
$UTB_t(\delta_1 = \alpha_1)/(\delta_1 = \alpha_1)$			<b>-0.0095</b> [0.00]	<b>-10.0458</b> [1.52]

firms from UTB reserves, especially in the presence of M&A activity. Controls are generally consistent with earlier results and therefore not discussed for brevity.

### **Proxies for Tax Indemnification**

Earlier results suggest that the identification of contracts with tax indemnification may benefit financial statement users. However, M&A contracts are not filed often; specifically, I was only able to locate 26.89 percent of the contracts from my potential contract pool. Therefore, I attempt to identify a proxy for the presence of tax indemnification to aid financial statement users in assessing the association between UTB reserves and future tax cash outflows when M&A contracts are not available. My examination of available M&A contracts suggests that approximately 80 percent of all M&A contracts contain tax indemnification clauses. Due to this high frequency, the presence of an M&A may proxy for the presence of tax indemnification clauses in a larger sample of firms. To test this possibility, I follow earlier sample selection techniques but only remove observations from foreign filers and REITs, observations without all necessary data items available to compute my model variables and observations with negative sales or negative assets. My final sample for the M&A proxy tests consists of 8,567 firm-year observations (5,937 without a current year M&A and 2,630 with a current year M&A) from 2,237 firms. With this sample, I perform seemingly unrelated estimations to test for differences in the association between UTB reserves and future tax cash outflows using Model (2a) for firms without M&As (without indemnification) and Model (2c) for firms with M&As (with indemnification).

Table 7, Panel A presents results using the presence of an M&A as a proxy for indemnification, while Panel B presents similar tests but omits observations not reporting increases to prior uncertain tax positions. Consistent with tests using the full contract sample, I

find that firms without M&As have a positive association between UTB reserves and future tax cash outflows ( $\delta_1 = 4.2554$  and  $3.0560$ ; p-values  $< 0.01$  and  $0.05$ ). However, the association in Panel A between UTB reserves and future cash outflows for firms with M&As is positive ( $\alpha_1 = 3.1370$ ; p-value  $< 0.10$ ) when not attempting to isolate M&As that may have acquired tax positions. When attempting to isolate M&As which may have acquired tax positions in Panel B, I find an insignificant negative association on the variable of interest ( $\alpha_1 = -1.0872$ ; p-value =  $0.32$ ), which is in line with expectations. However, it is not significantly different than the association documented in the sample of firms without M&As ( $\delta_1 - \alpha_1 = 4.1432$ ; p-value =  $0.12$ ). These results suggest that the presence of an M&A is not by itself an adequate proxy for tax indemnification. However, identifying firms with M&As that also report increases to prior uncertain tax positions comes closer to results in Table 5, where the indemnification status is known, but still does not fully isolate those firms with indemnification.

Descriptive statistics in Table 2 document that approximately 93.69 percent of non-public M&As, 84.06 percent of M&As with less than \$1 billion in consideration paid, and 93.16 percent of non-merger M&As in my sample have indemnification. Due to these high frequencies, it is possible that this readily available information may proxy for the presence of indemnification when contracts are not available. To test this possibility, I utilize the M&A proxy test sample but remove all observations with more than one M&A during the year.<sup>28</sup> This sample consists of 7,257 firm-year observations from 2,157 firms.

I then perform seemingly unrelated estimations to test for differences in the association between UTB reserves and future tax cash outflows for public targets versus non-public targets,

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<sup>28</sup> Firms can have multiple M&As of varying characteristics in a given year which can complicate interpreting results; for instance, an observation can have a merger contract for a private target and an asset purchase contract for a public target within the same year. Therefore, I remove all observations with more than one M&A to ease modeling and interpreting these proxy tests.



**Table 7: UTB Reserves' Association with Future Tax Cash Outflows when using Various Identifiers to Proxy for Indemnification**

This table presents the results of utilizing M&As, non-public targets, M&A deals with consideration less than one billion, and non-Merger M&A deals as proxies for tax indemnification, while subsequent tests consider only firms reporting increases to prior uncertain tax positions. Specifically, this table presents the results of performing seemingly unrelated estimations to test differences between without M&As and with M&As subsamples. The dependent variable is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

VARIABLES	(+, -)	Panel A: All Observations		Panel B: Observations with Increases to Prior Tax Positions	
		Without M&As $FUT\_TXPD_{t+4}$	With M&As $FUT\_TXPD_{t+4}$	Without M&As $FUT\_TXPD_{t+4}$	With M&As $FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\alpha_1)$	+	<b>4.2554***</b> (2.470)	<b>3.1370*</b> (1.350)	<b>3.0560**</b> (1.790)	<b>-1.0872</b> (-0.480)
$NOLCF_t(\delta_2)/(\alpha_2)$	-	-0.3076*** (-6.910)	-0.5576*** (-3.050)	-0.5214*** (-5.640)	-0.4124** (-1.850)
$TXPD_t(\delta_3)/(\alpha_3)$	+	34.3860*** (30.360)	36.5031*** (23.130)	30.1662*** (21.480)	33.5430*** (19.620)
$\Delta\_TXPD_t(\delta_4)/(\alpha_4)$	-	-10.7753*** (-10.340)	-13.0946*** (-8.270)	-10.4425*** (-7.940)	-13.2482*** (-7.100)
$\Delta\_PTBI_t(\delta_5)/(\alpha_5)$	+	0.5699*** (4.010)	1.2033*** (5.050)	0.7484*** (3.850)	0.9361*** (2.780)
$DTX_t(\delta_6)/(\alpha_6)$	-	0.4662 (1.150)	0.0638 (0.140)	0.9869** (2.190)	0.3852 (0.810)
CONSTANT ( $\delta_0)/(\alpha_0)$		-3.9925*** (-61.220)	-3.7985*** (-46.970)	-3.6486*** (-43.680)	-3.6350*** (-38.340)
Observations		5,937	2,630	2,959	1,713
Adjusted R-squared		0.375	0.416	0.408	0.412
Year Fixed Effects		YES	YES	YES	YES
Industry Fixed Effects		NO	NO	NO	NO
Test of differences					
$UTB_t(\delta_1 = \alpha_1)$		<b>1.1184</b> [0.16]		<b>4.1432</b> [2.45]	

**Table 7: UTB Reserves' Association with Future Tax Cash Outflows when using Various Identifiers to Proxy for Indemnification (Cont.)**

This table presents the results of utilizing M&As, non-public targets, M&A deals with consideration less than one billion, and non-Merger M&A deals as proxies for tax indemnification, while subsequent tests consider only firms reporting increases to prior uncertain tax positions. Specifically, this table presents the results of performing seemingly unrelated estimations to test differences between without M&As and with M&As subsamples. The dependent variable is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

VARIABLES	(+, -)	Panel C: Non-Public Targets, All Observations		Panel D: Non-Public Targets, Observations with Increases to Prior Tax Positions	
		Without M&As and M&As of Public Targets $FUT\_TXPD_{t+4}$	M&As of Non-public Targets $FUT\_TXPD_{t+4}$	Without M&As and M&As of Public Targets $FUT\_TXPD_{t+4}$	M&As of Non-public Targets $FUT\_TXPD_{t+4}$
$UTB_t(\beta_1)/(\alpha_1)$	+	<b>4.0411***</b> (2.350)	<b>4.3225*</b> (1.370)	<b>3.0148**</b> (1.780)	<b>1.4075</b> (0.510)
$NOLCF_t(\beta_2)/(\alpha_2)$	-	-0.3195*** (-6.990)	-0.6042*** (-4.520)	-0.5204*** (-5.650)	-0.6086*** (-3.240)
$TXPD_t(\beta_3)/(\alpha_3)$	+	34.4940*** (30.510)	34.3892*** (19.170)	30.2559*** (21.570)	32.7311*** (16.290)
$\Delta\_TXPD_t(\beta_4)/(\alpha_4)$	-	-10.8081*** (-10.420)	-13.1572*** (-5.400)	-10.4915*** (-8.030)	-14.5268*** (-4.880)
$\Delta\_PTBI_t(\beta_5)/(\alpha_5)$	+	0.5664*** (4.060)	1.8157*** (5.530)	0.7158*** (3.810)	1.5444*** (3.480)
$DTX_t(\beta_6)/(\alpha_6)$	-	0.3962 (0.980)	0.4655 (0.750)	0.9115** (2.060)	0.6289 (0.990)
CONSTANT ( $\beta_0$ )/( $\alpha_0$ )		-3.9959*** (-61.730)	-3.7539*** (-33.610)	-3.6511*** (-43.940)	-3.6779*** (-25.250)
Observations		6,035	1,222	3,016	758
Adjusted R-squared		0.376	0.409	0.406	0.435
Year Fixed Effects		YES	YES	YES	YES
Industry Fixed Effects		NO	NO	NO	NO
Test of differences					
$UTB_t(\beta_1 = \alpha_1)$		<b>-0.2814</b> [0.01]		<b>1.6073</b> [0.28]	

**Table 7: UTB Reserves' Association with Future Tax Cash Outflows when using Various Identifiers to Proxy for Indemnification (Cont.)**

This table presents the results of utilizing M&As, non-public targets, M&A deals with consideration less than one billion, and non-Merger M&A deals as proxies for tax indemnification, while subsequent tests consider only firms reporting increases to prior uncertain tax positions. Specifically, this table presents the results of performing seemingly unrelated estimations to test differences between without M&As and with M&As subsamples. The dependent variable is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

VARIABLES	(+, -)	Panel E: M&As with Consideration Less Than \$1 Billion, All Observations		Panel F: M&As with Consideration Less Than \$1 Billion, Observations with Increases to Prior Tax Positions	
		Without M&As, M&As = ? and M&As > \$1 billion	M&As < \$1 billion	Without M&As, M&As = ? and M&As > \$1 billion	M&As < \$1 billion
$UTB_t(\beta_1)/(\alpha_1)$	+	<b>4.3192***</b> (2.610)	<b>2.6927</b> (0.710)	<b>2.6635**</b> (1.660)	<b>3.2697</b> (0.910)
$NOLCF_t(\beta_2)/(\alpha_2)$	-	-0.3172*** (-7.180)	-0.7392*** (-5.390)	-0.5120*** (-5.680)	-0.7212*** (-4.490)
$TXPD_t(\beta_3)/(\alpha_3)$	+	34.3501*** (31.740)	37.8007*** (13.740)	30.5360*** (23.380)	33.3368*** (9.300)
$\Delta\_TXPD_t(\beta_4)/(\alpha_4)$	-	-10.8875*** (-10.920)	-15.8937*** (-4.130)	-10.8325*** (-8.800)	-16.5947*** (-3.250)
$\Delta\_PTBI_t(\beta_5)/(\alpha_5)$	+	0.6737*** (4.970)	1.3598*** (3.040)	0.8305*** (4.660)	1.3237** (1.810)
$DTX_t(\beta_6)/(\alpha_6)$	-	0.4444 (1.150)	0.1568 (0.180)	0.8323** (2.000)	0.9556 (1.000)
CONSTANT ( $\beta_0$ )/( $\alpha_0$ )		-3.9812*** (-64.350)	-3.7818*** (-24.770)	-3.6523*** (-46.650)	-3.7234*** (-17.740)
Observations		6,581	676	3,388	386
Adjusted R-squared		0.380	0.401	0.414	0.377
Year Fixed Effects		YES	YES	YES	YES
Industry Fixed Effects		NO	NO	NO	NO
Test of differences					
$UTB_t(\beta_1 = \alpha_1)$		<b>1.6265</b> [0.17]		<b>-0.6062</b> [0.03]	

**Table 7: UTB Reserves' Association with Future Tax Cash Outflows when using Various Identifiers to Proxy for Indemnification (Cont.)**

This table presents the results of utilizing M&As, non-public targets, M&A deals with consideration less than one billion, and non-Merger M&A deals as proxies for tax indemnification, while subsequent tests consider only firms reporting increases to prior uncertain tax positions. Specifically, this table presents the results of performing seemingly unrelated estimations to test differences between without M&As and with M&As subsamples. The dependent variable is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels by year. Cluster (company) robust z-statistics are presented in parentheses,  $\chi^2$ -statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

VARIABLES	(+, -)	Panel G: Merger M&As, All Observations		Panel H: Non-merger M&As, Observations with Increases to Prior Tax Positions	
		Without M&As and Merger M&As $FUT\_TXPD_{t+4}$	Non-merger M&As $FUT\_TXPD_{t+4}$	Without M&As and Merger M&As $FUT\_TXPD_{t+4}$	Non-merger M&As $FUT\_TXPD_{t+4}$
$UTB_t(\beta_1)/(\alpha_1)$	+	<b>3.8189**</b> (2.240)	<b>5.5290*</b> (1.610)	<b>2.7263*</b> (1.640)	<b>2.6269</b> (0.880)
$NOLCF_t(\beta_2)/(\alpha_2)$	-	-0.3276*** (-7.090)	-0.5273*** (-3.550)	-0.5255*** (-5.770)	-0.5623*** (-2.680)
$TXPD_t(\beta_3)/(\alpha_3)$	+	34.5173*** (30.730)	34.4074*** (17.600)	30.3705*** (21.870)	32.5034*** (14.730)
$\Delta\_TXPD_t(\beta_4)/(\alpha_4)$	-	-10.9635*** (-10.680)	-12.4118*** (-4.690)	-10.7925*** (-8.360)	-13.2052*** (-3.990)
$\Delta\_PTBI_t(\beta_5)/(\alpha_5)$	+	0.5801*** (4.170)	1.7686*** (5.230)	0.7431*** (3.950)	1.4529*** (3.100)
$DTX_t(\beta_6)/(\alpha_6)$	-	0.4506 (1.140)	0.1879 (0.280)	0.9350** (2.150)	0.4863 (0.730)
CONSTANT ( $\beta_0$ )/( $\alpha_0$ )		-3.9787*** (-62.120)	-3.8424*** (-31.730)	-3.6348*** (-44.400)	-3.7690*** (-24.320)
Observations		6,203	1,054	3,125	649
Adjusted R-squared		0.377	0.394	0.408	0.423
Year Fixed Effects		YES	YES	YES	YES
Industry Fixed Effects		NO	NO	NO	NO
Test of differences					
$UTB_t(\beta_1 = \alpha_1)$		<b>-1.7101</b> [0.21]		<b>0.0994</b> [0.00]	

M&A deals with consideration of \$1 billion or greater versus M&A deals with consideration of less than \$1 billion, and merger M&A contracts versus non-merger M&A contracts (no indemnification proxy vs indemnification proxy, respectively) using Models (2b) and (2c). Table 7, Panels C, E, and G present these results using the described sample, while Panels D, F, and H repeat analyses using a sample of observations which report increases to prior uncertain tax positions. Similar to earlier results, I document in Table 7, Panels D, E, F, and H results consistent with a significant positive association between UTB reserves and future cash taxes paid for firms deemed to have no indemnification and no significant association for firms deemed to have indemnification using each of the proxies for indemnification. However, coefficients on the association of interest in Panels F and H are similar or higher for the indemnification proxy sample in comparison with the no indemnification sample, which is not consistent with expectations. Therefore, researchers may include controls for firms which report increases to prior uncertain tax positions and acquire non-public targets and controls for firms that acquire targets for less than \$1 billion in consideration as proxies for indemnification in studies examining the association between UTB reserves and future tax cash outflows. However, none of these proxies adequately identify firms with indemnification. Therefore, users of these proxies should exercise caution when interpreting results which rely on these proxies.

### **Robustness Analyses**

Descriptive statistics suggest that variables within Model (1) should be allowed to vary between firms with indemnification and those without. Two approaches can be utilized to allow these associations to vary and test for differences across the subsamples. These approaches include seemingly unrelated estimations and interaction models. Both methods should provide

similar inferences. To provide comfort that earlier results were not due to a statistical method choice, I reperform tests from Table 5 using the following interaction model:

$$FUT\_TXPD_{t+4} = \beta_0 + \beta_1 INDEMN_t + \beta_2 UTB_t + \beta_3 INDEMN_t * UTB_t + \beta_k CONTROL_k + \beta_j INDEMN_t * CONTROL_k + \varepsilon_t \quad (3)$$

$UTB_t$  is expected to be positive ( $\beta_2 > 0$ ) and reflects the association between UTB reserves and future tax cash outflows for the subsample of firms not obtaining indemnification from the M&A contract. The joint effect of interest is expected to be lower than the association documented on  $UTB_t$  ( $\beta_2 + \beta_3$ ) and reflects the association between UTB reserves and future tax cash outflows for the subsample of firms obtaining indemnification from M&A contracts. The interaction alone between  $INDEMN_t$  and  $UTB_t$  is expected to be negative ( $\beta_3 < 0$ ) and tests whether the association of interest varies between the two subsamples. Expectations for control variables are similar to earlier predictions and not discussed for brevity.

Results are presented in Table 8 from utilizing the interaction model approach.  $UTB_t$  has significant, positive coefficients in Columns 1, 2, and 3 ( $\beta_2 = 14.3851, 23.2326, \text{ and } 25.0185$ ; p-values  $< 0.05, 0.01, \text{ and } 0.01$ ) while the joint effects are not significant in all four Columns ( $\beta_2 + \beta_3 = 0.0612, 1.9230, -3.3561, \text{ and } 0.6979$ ; p-values =  $0.99, 0.62, 0.59, \text{ and } 0.97$ ). Furthermore, I document in Columns 1, 2, and 3 that the association of interest is significantly lower when comparing observations with indemnification to firms without indemnification ( $\beta_3 = -14.3239, -21.3096, \text{ and } -28.3746$ ; p-values  $< 0.10, 0.05, \text{ and } 0.01$ ). These results suggest that the variation documented in the presence of indemnification is not due to the earlier design choice of using seemingly unrelated estimations rather than the fully interacted model.

**Table 8: Interaction Model of UTB Reserves' Association with Future Tax Cash Outflows**

This table presents the results of utilizing interaction models to test differences between without indemnification and with indemnification. Column (1) presents the results of Model (3) for all firms in which contracts were obtained regardless of increases to UTB reserves, Column (2) presents the results of Model (3) for firms which report increases to UTB reserves due to M&As and prior tax positions, Column (3) presents the results of Model (3) for firms which report increases to UTB reserves due to M&As and prior tax positions but omits asset purchase contracts, and Column (4) presents the results of Model (3) for firms which report increases to UTB reserves due to M&As filed. The dependent variable in all Panels is  $FUT\_TXPD_{t+4}$ . All variables are defined in the Appendix A and all continuous variables are winsorized at the 1% and 99% levels. Cluster (company) robust t-statistics are presented in parentheses, f-statistics are presented in brackets. \*, \*\*, and \*\*\* indicate significance at the 0.10, 0.05, and 0.01 levels, respectively (based on one-tailed tests when a direction is predicted, two-tailed otherwise).

VARIABLES	(+, -)	(1)	(2)	(3)	(4)
		Full $FUT\_TXPD_{t+4}$	Increases in UTBs $FUT\_TXPD_{t+4}$	Increases in UTBs - No Asset Purc. $FUT\_TXPD_{t+4}$	Acquired UTBs Reported $FUT\_TXPD_{t+4}$
INDEMN <sub>t</sub> ( $\beta_1$ )	?	0.1508 (0.362)	0.4098 (1.044)	0.4810 (0.985)	1.1979 (1.353)
UTB <sub>t</sub> ( $\beta_2$ )	+	<b>14.3851**</b> (1.912)	<b>23.2326***</b> (2.618)	<b>25.0185***</b> (2.655)	<b>3.5951</b> (0.121)
INDEMN <sub>t</sub> * UTB <sub>t</sub> ( $\beta_3$ )	-	<b>-14.3239*</b> (-1.350)	<b>-21.3096**</b> (-2.269)	<b>-28.3746***</b> (-2.637)	<b>-2.8972</b> (-0.086)
$\beta_2 + \beta_3$		<b>0.0612</b> [0.00]	<b>1.9230</b> [0.25]	<b>-3.3561</b> [0.29]	<b>0.6979</b> [0.00]
Controls		YES	YES	YES	YES
Interactions		YES	YES	YES	YES
Observations		355	223	168	51
Adjusted R-squared		0.415	0.366	0.340	0.310
Year Fixed Effects		YES	YES	YES	YES
Industry Fixed Effects		NO	NO	NO	NO

Though my sample runs from 2008 through 2013, I require data through 2017 to calculate my dependent variable,  $FUT\_TXPD_{t+4}$ . In 2017, the Tax Cuts and Jobs Act of 2017 was implemented and required firms to treat post-1986 untaxed foreign earnings as if they had

been repatriated; this tax was referred to as a transition tax. Due to the substantial transition tax liability that firms were facing under this new law, Congress allowed this tax to be paid over eight years starting in 2017. This transition tax may create significant spikes in cash taxes paid in 2017, possibly influencing the empirical tests. To address this potential issue, I exclude observations which require 2017 data (year  $t$  is 2013) and reperform earlier analyses. Earlier inferences from Tables 5 through 7 remain unchanged.

As in any small sample analysis, it is possible that a few influential observations could completely change the inferences of the regression. To explore this possibility, I calculate DF betas for all samples listed in Table 5, remove any observations where their DF betas exceed  $\frac{2}{\sqrt{n}}$  (where  $n$  represents to total number of observations prior to removing DF betas), and reperform Table 5 analyses. The removal of influential observations in Panels A, B, C, and D from Table 5 results in new sample sizes of 333, 208, 157, and 48, respectfully. With the removal of these influential observations, inferences from Table 5 regressions remain unchanged.

Though financial statement users may not be able to determine accurate predictions of future income, the associations documented in Table 5 may be due to differences in future income provided by M&As. I address this potential issue by controlling for cumulative future pretax book income over four years scaled by current ending total assets and rerun Table 5 tests. In general, inferences from Table 5 remain the same. Specifically, I continue to document significant, positive coefficients on UTB reserves for firms without indemnification (except for the reduced sample), and I continue to document significantly lower UTB reserve coefficients for the two subsamples proxying for acquiring indemnified tax positions. However, the insignificant coefficient on UTB reserves documented for indemnified firms which report increases to prior tax positions becomes weakly significant ( $p\text{-value} < 0.10$ ). Furthermore, the inclusion of future



pretax income subsumes a significant portion of the explanatory power from other control variables. These results suggest that earlier documented results are not solely the product of income generated from the M&A.

#### **4. ADDITIONAL ANALYSES**

##### **Indemnified Tax Positions and ETRs**

As discussed in section 2, adjustments to indemnified uncertain tax positions in future years under ASC 805 and SEC guidance potentially result in understated GAAP ETRs and overstated cash ETRs in future years. However, the understatement and overstatement may not be severe if the indemnified firm receives reimbursements under the indemnification agreement that are close to the initial amount recorded for the indemnified tax positions or if these initial positions were immaterial in comparison to overall tax expense. To explore the severity of this issue, I present in Table 9 future GAAP and cash ETR averages, means and tests of differences between those statistics for the subsamples used in Table 5; specifically, Table 9 presents the subsequent four-year cumulative GAAP ETRs,  $GETR_{t+4}$ , and the subsequent four-year cumulative cash ETRs,  $CETR_{t+4}$  for observations without indemnification, observations with indemnification, and observations without M&As.

Results indicate that when M&As are not present, future GAAP and cash ETRs are similar (t-statistic = 0.2525; p-value = 0.80). However, firms engaging in M&As experience a gap between their GAAP and cash ETRs; this gap is significant in Panels B, C, and D for observations without indemnification (t-statistic = 2.2564, 2.1105, and 1.7566; p-values < 0.05). This gap may be due to non-indemnified M&A firms having larger beginning NOL carryforwards than both no M&A firms and indemnified firms (47.10 percent versus 24.40

**Table 9: GAAP and Cash ETR Test of Differences**

The variables of interest are future ETRs,  $GETR_{t+4}$  and  $CETR_{t+4}$ , in all Panels. Means and medians are presented for observations without indemnification (columns titled “Without”) and observations with indemnification (columns titled “With”). T-statistics and z-statistics are presented for tests of differences in means and means between firms with and without indemnification. All continuous variables are winsorized at the 1% and 99% levels. \* and \*\* indicate significance at the 0.10 and 0.05 levels, respectively.

## Panel A: Full contract sample

Variables	N	Means		Medians		Test Statistics	
		Without	With	Without	With	t-Stat	z-Stat
$GETR_{t+4}$	355	0.1581	0.2195	0.2646	0.2993	0.7712	0.3300
$CETR_{t+4}$	355	0.1061	0.2279	0.1713	0.2419	1.8164**	1.6780*
Test Statistics		0.6911	0.2136				

## Panel B: UTB increases due to M&amp;As and prior tax positions

Variables	N	Means		Medians		Test Statistics	
		Without	With	Without	With	t-Stat	z-Stat
$GETR_{t+4}$	223	0.3303	0.2293	0.2794	0.2841	1.0663	0.7980
$CETR_{t+4}$	223	0.1649	0.2282	0.2324	0.2623	0.7199	0.7500
Test Statistics		2.2564**	0.0195				

## Panel C: UTB increases due to M&amp;As and prior tax positions, Asset Purchase Contracts Omitted

Variables	N	Means		Medians		Test Statistics	
		Without	With	Without	With	t-Stat	z-Stat
$GETR_{t+4}$	168	0.3380	0.2405	0.2780	0.2838	1.0465	0.8290
$CETR_{t+4}$	168	0.1735	0.2358	0.2356	0.2501	0.6623	0.2060
Test Statistics		2.1105**	0.0711				

## Panel D: UTB increases due to M&amp;As

Variables	N	Means		Medians		Test Statistics	
		Without	With	Without	With	t-Stat	z-Stat
$GETR_{t+4}$	51	0.3159	0.1412	0.2933	0.2368	1.6938*	1.5830
$CETR_{t+4}$	51	0.2172	0.3270	0.2690	0.2695	0.8608	0.3200
Test Statistics		1.7566**	1.4112*				

## Panel E: No M&amp;As

Variables	N	Means		Medians	
		Without	With	Without	With
$GETR_{t+4}$	5,937	0.2024		0.2881	
$CETR_{t+4}$	5,937	0.2043		0.2200	
Test Statistic		0.2525			

percent and 20.60 percent of beginning assets). Future GAAP ETR means for firms with indemnification are lower than the future GAAP ETR means for firms without indemnification in the years following an M&A in Panels B, C, and D; however, the difference is only statistically significant in Panel D ( $0.3159 > 0.1412$ , t-statistic = 1.6938, p-value < 0.10). Furthermore, future cash ETR means for firms with indemnification are higher than the future cash ETR means for firms without indemnification in the years following an M&A in all four panels; however, the difference is only statistically significant in Panel A ( $0.1061 < 0.2279$ , t-statistic = 1.8164, p-value < 0.05). These results are suggestive that the accounting for the removal of expired indemnified tax positions may distort both GAAP and cash ETRs, but these univariate tests have limited statistical power and further research is necessary to adequately explore this issue.

### **Deferred Tax Assets and Liabilities**

Deferred tax assets should be indicative of reductions to future taxable income, while deferred tax liabilities should be indicative of additions to future taxable income. For this reason,  $DTX_t$  is expected to have a negative association with future tax cash outflows. However, I document in Tables 5 and 6, Panels A through D, that this association is generally negative for M&A firms without indemnification but not significant for M&A firms with indemnification across all six panels. However, the Table 6 results indicate that this association varies from being insignificant to significantly positive for firms without M&As depending on the sample used, which is a surprising result. It is possible that these results may be due to the design choice

**Table 10: Replacement of  $DTX_t$** 

These panels present the results of reperforming main analyses from Table 5 through Table 6, Panel B after replacing  $DTX_t$  with  $DT_t$ . Refer to cross-referenced Tables for additional information.

VARIABLES	(+, -)	Table 5, Panel A		Table 5, Panel B	
		Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\beta_1)/(\alpha_1)$	+	<b>14.3848**</b> (2.010)	<b>-0.0233</b> (0.000)	<b>37.8330***</b> (4.400)	<b>2.4376</b> (0.700)
$DT_t(\beta_7)/(\alpha_7)$	-	-3.6561** (-2.160)	0.1685 (0.150)	-7.2920*** (-4.190)	0.0466 (0.040)
Other Controls		YES	YES	YES	YES
Observations		73	282	48	175
Adjusted R-squared		0.598	0.350	0.638	0.334
Year Fixed Effects		YES	YES	YES	YES
Test of differences					
$UTB_t(\beta_1 = \alpha_1)$		<b>14.4081</b> [2.05]		<b>35.3954***</b> [14.93]	
$DT_t(\beta_7 = \alpha_7)$		-3.8246* [3.65]		-7.3386*** [12.03]	
VARIABLES	(+, -)	Table 5, Panel C		Table 5, Panel D	
		Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\beta_1)/(\alpha_1)$	+	<b>39.7601***</b> (4.420)	<b>-2.4685</b> (-0.430)	<b>13.0945</b> (0.760)	<b>-1.8211</b> (-0.150)
$DT_t(\beta_7)/(\alpha_7)$	-	-7.7236*** (-4.300)	-0.1702 (-0.120)	-5.7044** (-2.180)	2.1237 (0.850)
Other Controls		YES	YES	YES	YES
Observations		45	123	25	26
Adjusted R-squared		0.624	0.289	0.422	0.324
Year Fixed Effects		YES	YES	YES	YES
Test of differences					
$UTB_t(\beta_1 = \alpha_1)$		<b>42.2286***</b> [16.27]		<b>14.9156</b> [0.54]	
$DT_t(\beta_7 = \alpha_7)$		-7.5534*** [11.14]		-7.8281** [4.69]	

**Table 10: Replacement of  $DTX_t$  (Cont.)**

These panels present the results of reperforming main analyses from Table 5 through Table 6, Panel B after replacing  $DTX_t$  with  $DT_t$ . Refer to cross-referenced Tables for additional information.

Table 6, Panel A		(1)	(2)	(3)
		No M&As	Without	With
VARIABLES	(+,-)	$FUT\_TXPD_{t+4}$	$FUT\_TXPD_{t+4}$	$FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\beta_1)/(\alpha_1)$	+	<b>4.1661***</b> (2.370)	<b>10.5572*</b> (1.520)	<b>-0.2697</b> (-0.030)
$DT_t(\delta_6)/(\beta_6)/(\alpha_6)$	-	0.2213 (0.530)	-3.5734** (-2.200)	0.1194 (0.110)
Other Controls		YES	YES	YES
Observations		5,937	73	282
Adjusted R-squared		0.375	0.618	0.345
Year Fixed Effects		YES	YES	YES
Test of differences				
$UTB_t(\delta_1 = \beta_1)/(\delta_1 = \alpha_1)$			<b>-6.3911</b> [0.81]	<b>4.4358</b> [0.29]
$DT_t(\delta_6 = \beta_6)/(\delta_6 = \alpha_6)$			3.7947** [5.23]	0.1019 [0.01]

  

Table 6, Panel B		(1)	(2)	(3)
		No M&As	Without	With
VARIABLES	(+,-)	$FUT\_TXPD_{t+4}$	$FUT\_TXPD_{t+4}$	$FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\beta_1)/(\alpha_1)$	+	<b>2.8168*</b> (1.610)	<b>20.4873*</b> (1.560)	<b>2.0233</b> (0.490)
$DT_t(\delta_6)/(\beta_6)/(\alpha_6)$	-	0.7858** (1.690)	-6.4944*** (-2.870)	0.0125 (0.010)
Other Controls		YES	YES	YES
Observations		2,959	50	175
Adjusted R-squared		0.407	0.579	0.332
Year Fixed Effects		YES	YES	YES
Test of differences				
$UTB_t(\delta_1 = \beta_1)/(\delta_1 = \alpha_1)$			<b>-4.6564</b> [0.45]	<b>0.7935</b> [0.03]
$DT_t(\delta_6 = \beta_6)/(\delta_6 = \alpha_6)$			7.2802*** [9.92]	0.7733 [0.39]

of adjusting net deferred tax assets (liabilities) for temporary uncertain tax positions. To explore this possibility, I remove the adjustment to  $DTX_t$  and reperform all tests from Table 5 through Table 6, Panel B.  $DT_t$  reflects the unadjusted net deferred tax asset (liability) scaled by year-end total assets. Expectations for this variable remain the same and results of these tests are presented in Table 10. Comparing Table 10 to Tables 5 and 6, I find that the inferences remain the same for the associations between future tax cash outflows and both UTB reserves and net deferred tax assets (liabilities), indicating that my findings are generally not impacted by the inclusion of UTB reserves related to timing differences in  $DTX_t$ .

I further explore whether firms with net deferred tax assets differ from firms with net deferred liabilities in terms of the associations between net deferred items and future tax cash outflows and whether these associations differ in the presence of indemnification. To explore this possibility, I split  $DT_t$  into two variables:  $DT\_A_t$  and  $DT\_L_t$ . If gross deferred tax assets exceed the valuation allowance (which represents management's expectations of the firm's ability to generate income to utilize the assets) and any deferred tax liabilities, then  $DT\_A_t$  reflects the amount of net deferred tax assets as a positive number and zero otherwise. If gross deferred tax liabilities exceed gross deferred tax assets less the valuation allowance, then  $DT\_L_t$  reflects the net deferred tax liabilities as a negative number and zero otherwise.

Table 11 presents the results of testing for differences in the coefficients of  $DT\_A_t$  and  $DT\_L_t$  between the subsamples described in Table 5 and Table 6, Panels A and B. When the coefficient on deferred tax items is allowed to vary for firms with net deferred tax assets versus net deferred tax liabilities, results and inferences on the association between  $UTB_t$  and future tax cash outflows are similar to the results using the original models except that the positive

association reported for firms with M&As but without indemnification becomes significant in Table 6, Panel B.

Consistent with the results in Tables 5 and 6, I find that the associations between future tax cash outflows and net deferred taxes for firms with net deferred tax liabilities are significantly negative for firms with M&As but without indemnification across all six panels but are insignificant for firms with M&As and indemnification. However, the coefficients across M&A firms with and without indemnification are not significantly different from each other. These deferred tax liabilities may be intertwined with uncertain tax positions; for instance, a decision to accelerate the cost recovery of an intangible asset in a scenario where tax law is unclear about the acceleration may result in a deferred tax liability for a portion of the tax benefit and an uncertain tax benefit reserve for the remainder of the tax benefit. Therefore, it is possible that the indemnification of uncertain tax positions may also result in the indemnification of net deferred tax liabilities, resulting in no association with future tax cash outflows for M&A firms with indemnification. These tests further indicate that the association between net deferred tax liabilities and future tax cash outflows is significantly negative for firms without M&As (the Table 6, Panel A model) but is not significant when the sample is limited to firms with increased UTB reserves due to prior year positions (the Table 6, Panel B model). Moreover, this association is significantly different for no M&A firms and M&A firms without indemnification for this reduced sample of firms. It is not clear why this difference arises, however, overall, these results provide weak evidence that net deferred tax liabilities may also be covered by tax indemnification clauses.

In contrast to the net deferred tax liability results, I find that the associations between deferred taxes and future tax cash outflows are more inconsistent for firms that report net DTAs

across the panels of Table 11 and when compared to Tables 5 and 6 results. Specifically, I document in two panels a negative association between  $DT\_A_t$  and  $FUT\_TXPD_t$  for firms engaging in M&As without indemnification and that these associations are significantly different from the associations documented for firms engaging in M&As with indemnification. Furthermore, I document a *positive* association between  $DT\_A_t$  and  $FUT\_TXPD_t$  for firms not engaging in an M&A. Recall that  $DT_t$  was expected to have a negative association with future tax cash outflows and both  $DT\_A_t$  and  $DT\_L_t$  were expected to have a negative association. I offer two potential explanations for these results. First, a net deferred tax asset may signal management's expectations regarding future income increases. Managers are required to record a valuation allowance to reduce deferred tax assets if it is not more-likely-than not that they will generate sufficient income to utilize the assets. Therefore, it is possible any remaining positive amounts may be indicative of future increases in taxable income for the firm. Second, as discussed above, if an uncertain tax position is successfully challenged for a firm with an M&A net deferred tax assets and future tax cash outflows. Further research is needed to fully understand why the association between deferred taxes and future tax cash outflows differ for firms with net deferred tax assets versus firms with net deferred tax liabilities, regardless of whether the firms have M&As with indemnification.

Overall, these results are consistent with tax indemnification influencing the association between net deferred tax assets (liabilities) and future tax cash outflows. Therefore, financial statement users should exercise caution when utilizing deferred tax assets and liabilities to develop expectations of future tax cash outflows in the presence of tax indemnification.



**Table 11: Comparison of Net Deferred Tax Assets and Liabilities Across Subsamples**

These panels present the results of reperforming main analyses from Table 5 through Table 6, Panel B after replacing  $DT_t$  with  $DT\_A_t$  and  $DT\_L_t$ . Refer to cross-referenced Tables for additional information.

VARIABLES	(+, -)	Table 5, Panel A		Table 5, Panel B	
		Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\beta_1)/(\alpha_1)$	+	<b>14.0513**</b> <b>(2.040)</b>	<b>0.0090</b> <b>(0.000)</b>	<b>41.2550***</b> <b>(3.970)</b>	<b>2.6560</b> <b>(0.750)</b>
$DT\_A_t(\beta_7)/(\alpha_7)$	-	-1.8157 (-0.710)	0.2419 (0.150)	-9.8694** (-2.100)	0.9323 (0.500)
$DT\_L_t(\beta_8)/(\alpha_8)$	-	-5.6413** (-2.180)	0.0495 (0.020)	-6.4851*** (-3.190)	-1.7958 (-0.640)
Other Controls		YES	YES	YES	YES
Observations		73	282	48	175
Adjusted R-squared		0.594	0.347	0.630	0.331
Year Fixed Effects		YES	YES	YES	YES
Test of differences					
$UTB_t(\beta_1 = \alpha_1)$		<b>14.0423</b> <b>[2.02]</b>		<b>38.5990***</b> <b>[12.52]</b>	
$DT\_A_t(\beta_7 = \alpha_7)$		-2.0576 [0.50]		-10.8017** [4.61]	
$DT\_L_t(\beta_8 = \alpha_8)$		-5.6908 [2.62]		-4.6893 [1.85]	

## 5. CONCLUSION

Answering the call of Hanlon and Heitzman (2010) for research on how acquirers deal with targets' uncertain tax positions, I find that tax indemnification is commonly present in M&A contracts to minimize the acquirer's exposure to the targets' tax uncertainties. The indemnification of uncertain tax positions results in several accounting issues. First, the reflection of third-party contingencies within UTB reserves may decrease the usefulness of these reserves for estimating future tax cash outflows. Second, the adjustment of indemnified tax

**Table 11: Comparison of Net Deferred Tax Assets and Liabilities Across Subsamples (Cont.)**

These panels present the results of reperforming main analyses from Table 5 through Table 6, Panel B after replacing  $DT_t$  with  $DT\_A_t$  and  $DT\_L_t$ . Refer to cross-referenced Tables for additional information.

VARIABLES	(+, -)	Table 5, Panel C		Table 5, Panel D	
		Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$	Without Indemnification $FUT\_TXPD_{t+4}$	With Indemnification $FUT\_TXPD_{t+4}$
$UTB_t(\beta_1)/(\alpha_1)$	+	<b>42.4440***</b> (3.950)	<b>-2.3809</b> (-0.420)	<b>8.8304</b> (0.380)	<b>-3.3295</b> (-0.280)
$DT\_A_t(\beta_7)/(\alpha_7)$	-	-9.7545** (-2.100)	1.2103 (0.540)	-1.3744 (-0.120)	3.5696 (0.820)
$DT\_L_t(\beta_8)/(\alpha_8)$	-	-7.0960*** (-3.400)	-2.8162 (-0.920)	-6.0040** (-2.250)	0.0878 (0.010)
Other Controls		YES	YES	YES	YES
Observations		45	123	25	26
Adjusted R-squared		0.614	0.286	0.374	0.271
Year Fixed Effects		YES	YES	YES	YES
Test of differences					
$UTB_t(\beta_1 = \alpha_1)$		<b>44.8249***</b> [13.82]		<b>12.1599</b> [0.22]	
$DT\_A_t(\beta_7 = \alpha_7)$		-10.9648** [4.60]		-4.9440 [0.16]	
$DT\_L_t(\beta_8 = \alpha_8)$		-4.2798 [1.35]		-6.0918 [0.69]	

positions may distort both GAAP and cash ETRs. Third, the presence of indemnification may distort the associations between net deferred tax assets (liabilities) and future tax cash outflows. Because of the significant impact that tax indemnification has on UTB reserves, ETRs and net deferred tax assets (liabilities), researchers, auditors and investors should consider the potential impact of tax indemnification when developing tax risk and expectation models. Furthermore, my findings suggest that additional studies may be warranted to further explore the pricing, ETRs, net deferred tax assets (liabilities) and accrual quality-related issues when tax

**Table 11: Comparison of Net Deferred Tax Assets and Liabilities Across Subsamples (Cont.)**

These panels present the results of reperforming main analyses from Table 5 through Table 6, Panel B after replacing  $DT_t$  with  $DT\_A_t$  and  $DT\_L_t$ . Refer to cross-referenced Tables for additional information.

Table 6, Panel A		(1)	(2)	(3)
		No M&As	Without	With
VARIABLES	(+,-)	$FUT\_TXPD_{t+4}$	$FUT\_TXPD_{t+4}$	$FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\beta_1)/(\alpha_1)$	+	<b>4.2015***</b> <b>(2.420)</b>	<b>10.1280*</b> <b>(1.520)</b>	<b>-0.2543</b> <b>(-0.030)</b>
$DT\_A_t(\delta_6)/(\beta_6)/(\alpha_6)$	-	1.9281*** (2.790)	-2.1090 (-0.860)	0.1554 (0.090)
$DT\_L_t(\delta_7)/(\beta_7)/(\alpha_7)$	-	-1.6196** (-2.170)	-4.9973** (-2.090)	0.0628 (0.030)
Other Controls		YES	YES	YES
Observations		5,937	73	282
Adjusted R-squared		0.377	0.614	0.343
Year Fixed Effects		YES	YES	YES
Test of differences				
$UTB_t(\delta_1 = \beta_1)/(\delta_1 = \alpha_1)$			<b>-5.9265</b> <b>[0.74]</b>	<b>4.4558</b> <b>[0.29]</b>
$DT\_A_t(\delta_6 = \beta_6)/(\delta_6 = \alpha_6)$			4.0371 [2.56]	1.7727 [1.08]
$DT\_L_t(\delta_7 = \beta_7)/(\delta_7 = \alpha_7)$			3.3777 [1.88]	-1.6824 [0.46]

indemnification is present. However, additional analyses suggest that the presence of M&As and other readily available information about M&As is not an adequate proxy for indemnification.

Therefore, researchers should rely on filed M&A contracts when examining the potential impact of tax indemnification on prior research and when designing future research on UTB reserves.

To minimize accounting issues related to tax indemnification, the FASB could consider the following five recommendations: implement guidance that allows the reversing of *mirror*

**Table 11: Comparison of Net Deferred Tax Assets and Liabilities Across Subsamples (Cont.)**

These panels present the results of reperforming main analyses from Table 5 through Table 6, Panel B after replacing  $DT_t$  with  $DT\_A_t$  and  $DT\_L_t$ . Refer to cross-referenced Tables for additional information.

Table 6, Panel B		(1)	(2)	(3)
		No M&As	Without	With
VARIABLES	(+,-)	$FUT\_TXPD_{t+4}$	$FUT\_TXPD_{t+4}$	$FUT\_TXPD_{t+4}$
$UTB_t(\delta_1)/(\beta_1)/(\alpha_1)$	+	<b>2.7784*</b> <b>(1.600)</b>	<b>20.8612*</b> <b>(1.360)</b>	<b>2.1846</b> <b>(0.520)</b>
$DT\_A_t(\delta_6)/(\beta_6)/(\alpha_6)$	-	1.4933** (1.900)	-6.9755 (-1.100)	0.8060 (0.430)
$DT\_L_t(\delta_7)/(\beta_7)/(\alpha_7)$	-	0.0663 (0.080)	-6.2864*** (-2.970)	-1.5654 (-0.550)
Other Controls		YES	YES	YES
Observations		2,959	50	175
Adjusted R-squared		0.407	0.579	0.329
Year Fixed Effects		YES	YES	YES
Test of differences				
$UTB_t(\delta_1 = \beta_1)/(\delta_1 = \alpha_1)$			<b>-18.0828</b> <b>[1.38]</b>	<b>0.5938</b> <b>[0.02]</b>
$DT\_A_t(\delta_6 = \beta_6)/(\delta_6 = \alpha_6)$			8.4688 [1.75]	0.6873 [0.13]
$DT\_L_t(\delta_7 = \beta_7)/(\delta_7 = \alpha_7)$			6.3527** [7.92]	1.6317 [0.31]

*accounting* entries originally used to record the indemnified position, standardize the disclosure of tax cash outflows associated with indemnified tax positions to ensure consistency of these disclosures, require the disclosure of indemnification assets, require the disclosure of acquired uncertain tax positions and require the disclosure of uncertain positions which have been indemnified or insured.

The documented results and conclusions are subject to several caveats. First, I am only able to obtain contracts for M&As which the reporting firm chose to file. Performing regressions

on the full population of M&A contracts may result in different conclusions. Second, firms often do not file the supporting schedules for M&A contracts. These supporting schedules may disclose specific tax positions or limits to the indemnification which could significantly impact indemnification coverage. Third, M&A parties may obtain or provide third-party insurance instead of offering indemnification. By providing insurance, some contracts may indicate no indemnification is present, but the acquirer may be protected through insurance. However, per discussions with insurance providers, representations and warranties insurance is often provided in addition to indemnification clauses and insurance for specific tax positions is rarely present.

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## 7. APPENDICES

### Appendix A: Variable Descriptions

Variable	Definition
<i>CETR</i>	The sum of future tax cash outflows (TXPD) over the next four years to the sum of net pretax income (PI – SPI) over the next four years.
<i>CONS</i>	The ratio of merger consideration to ending total assets in year t (AT).
<i>DT</i>	The ratio of net deferred taxes (TXNDB) to ending total assets in year t (AT).
<i>DT_A</i>	If net deferred taxes (TXNDB) is greater than zero, the ratio of net deferred taxes to ending total assets in year t (AT), zero otherwise.
<i>DT_L</i>	If net deferred taxes (TXNDB) is less than zero, the ratio of net deferred taxes to ending total assets in year t (AT), zero otherwise.
<i>DTX</i>	The ratio of net deferred taxes adjusted for UTBs that relate to temporary book-tax differences (TXNDB-(TXTUBEND-TXTUBTXTR)) to ending total assets in year t (AT).
<i>INDEMN</i>	Indicator variable equal to one if the observation obtained indemnification through M&A contract, zero otherwise.
<i>FUT_TXPD</i>	The log of the sum of future tax cash outflows (TXPD) over the next four years to ending total assets in year t (AT).
<i>GETR</i>	The sum of future tax expense (TXT) over the next four years to the sum of net pretax income (PI – SPI) over the next four years.
<i>NOLCF</i>	The ratio of net operating loss carryforwards (NOLCF) to beginning total assets (AT) in year t.
$\Delta\_PTBI$	The difference in pretax book income in year t and pretax book income in year t-1, scaled by ending total assets in year t (AT).
<i>UTB</i>	The ratio of reported unrecognized tax benefits (TXTUBEND) to ending total assets (AT) in year t.
<i>TXPD</i>	The ratio of taxes paid (TXPD) to ending total assets in year t (AT).
$\Delta\_TXPD$	The difference between taxes paid in year t and taxes paid in year t-1, scaled by ending total assets in year t (AT).

## Appendix B: Excerpts from M&A Contracts on Indemnification

### EXAMPLES OF INDEMNIFICATION

#### Stock Purchase Agreement between Forward Air Corporation, TQI Holdings, Inc., and the “Sellers” named herein (Dated March 4, 2013)

##### Tax Matters:

- 8.1 Representations and Obligations Regarding Taxes. The Company hereby represents and warrants to and agree with Buyer that, except as set forth on Schedule 8.1 hereto: (a) Each Entity has filed all federal income and all other material Tax Returns that it has been required to file. All such Tax Returns were correct and complete in all material respects. All Taxes owed by the Entities (whether or not shown on any Tax Return and whether or not any Tax Return was required) have been paid. Since March 7, 2008, no claim has been made by a taxing authority in a jurisdiction where any Entity does not file Tax Returns that such Entity is subject to taxation by that jurisdiction.
- 8.2 Indemnification for Taxes. (a) From and after the Closing, the Sellers shall severally (in accordance with each Seller's Proportionate Share) indemnify the Entities and Buyer (each herein sometimes referred to as an "Indemnified Taxpayer") against, and protect, save and hold harmless each Indemnified Taxpayer from, any and all out-of-pocket damages, deficiencies, losses and reasonable expenses, including, without limitation, reasonable attorneys', accountants' and experts' fees and disbursements (all herein referred to as "Losses") resulting from: (i) except to the extent reflected in the calculation of Closing Date Working Capital, any Taxes of any Entity allocable to any period ending on or prior to the Closing Date or, as provided in Section 8.3(c) hereof, allocable to any period that begins before and ends after the Closing Date; (ii) any Tax of any Person other than an Entity for periods ending on or before the Closing Date imposed upon any Entity as a result of the Entity being included prior to the Closing Date in a combined, consolidated or unitary Tax group under Treasury Regulation Section 1.1502-6 (or any similar provision of the applicable law of any Governmental Authority) or, as a transferee or successor, by contract or otherwise, except for a Contract the principal purpose of which is not to indemnify or pay the Taxes of another person; (iii) the failure to pay state income Taxes or state franchise Taxes in any state other than the State of Michigan prior to the Closing Date but not thereafter (the “Potential State Tax Matters”); (iv) any misrepresentation or breach of any representation, warranty or obligation set forth in this Article VIII; or (v) any real property transfer, recordation or similar tax imposed by the State of Michigan with reference to real property owned by QSX.

**Asset Purchase Agreement between Depomed, Inc. and Xanodyne Pharmaceuticals, Inc.  
(Dated June 21, 2012):**

Representations and Warranties of the Seller:

2.3 Taxes.

- (a) The Seller has timely filed all material Tax Returns that it has been required to file, and all such Tax Returns were true, correct and complete in all material respects. The Seller has paid on a timely basis all Taxes that have been due from and payable by the Seller. For purposes of this Agreement, (i) "Taxes" means (A) all taxes, charges, fees, duties, levies or other similar assessments or liabilities in the nature of a tax, including income, excess profits, gross receipts, net proceeds, alternative or add-on minimum, ad valorem, premium, value-added, excise, real property, personal property (tangible and intangible), inventory, stamp, capital stock, sales, use, service, transfer, withholding, employment, social security, unemployment, disability, payroll, occupational, severance, estimated and franchise taxes imposed by any Taxing Authority and (B) any interest, fines, penalties, assessments or additions to tax resulting from, attributable to or incurred in connection with any tax described in clause (A) or any contest or dispute thereof, (ii) "Tax Returns" means all reports, returns, declarations, statements or other information required to be supplied to any Taxing Authority in connection with Taxes (including any attachments thereto or amendments thereof), (iii) "Taxing Authority" means any U.S. or non-U.S. federal, state, municipal or local government, court, tribunal, agency, commission, regulatory authority or instrumentality or any other entity or person exercising executive, legislative, judicial, regulatory or administrative authority to impose, levy or assess any Tax, and (iv) "Tax Law" means any U.S. or non-U.S. federal, state, provincial, municipal or local law, statute, ordinance, treaty, common law, rule, regulation, standard, judgment, order, writ, injunction, decree, arbitration award, agency requirement, license or permit of any Taxing Authority. The Seller has complied in all material respects with all applicable Tax Laws relating to the filing of Tax Returns and the payment and withholding of Taxes, and all Taxes that the Seller has been required by Tax Law to withhold or collect have been duly withheld or collected and, to the full extent required, have been properly paid to the appropriate Taxing Authorities.

Indemnification:

- 5.1 Indemnification by the Seller. Subject to the terms and conditions of this Article V, from and after the Closing, the Seller shall indemnify, defend and hold harmless the Buyer and the Buyer's directors, officers and employees from and against any and all losses, damages, obligations, liabilities, claims, fines, fees, penalties, interest, awards, judgments and claims of any kind, including reasonable attorneys' and consultants' fees and expenses and other reasonable legal costs and expenses incurred in prosecution, investigation, remediation, defense or settlement (collectively, "Damages") resulting from, based on, arising out of, in connection with or constituting:

- (a) the inaccuracy or any breach of any of the representations or warranties of the Seller contained in this Agreement or any agreement or certificate required to be delivered by the Seller pursuant to this Agreement;
- (b) any breach or failure to perform by the Seller of any covenant or agreement contained in this Agreement;
- (c) any non-compliance with applicable bulk sales laws;
- (d) any claims brought by employees, independent contractors or consultants of the Seller, including, but not limited to, those who were or are terminated prior to or as of the Closing Date; (e) Transaction Fees incurred by the Seller;
- (f) any Excluded Liabilities;
- (g) any Excluded Assets; or
- (h) one half (1/2) of any Damages incurred by the Buyer in connection with the matters set forth in Schedules 2.4(a), 2.4(d) and 2.4(e) of the Seller Disclosure Schedule.

#### **EXAMPLE OF NO INDEMNIFICATION**

##### **Agreement and Plan of Merger between Visa, Inc. and Cybersource, Corp. (Dated April 20, 2010):**

Representations and Warranties of the Company:

##### 2.6 Taxes.

- (b) Taxes, Tax Returns and Audits.
  - (i) The Company and each of its Subsidiaries have (A) duly and timely filed or caused to be filed all Tax Returns and such Tax Returns are true, correct, and complete in all material respects, (B) duly and timely paid or withheld (and timely paid over any withheld amounts to the appropriate Governmental Entity) all Taxes required to be paid or withheld whether or not shown as due on any Tax Return, and (C) established reserves in accordance with GAAP that are adequate for the payment of all Taxes not yet due and payable with respect to the assets and operations of the Company and each Subsidiary through the date of this Agreement.
  - (ii) Neither the Company nor any of its Subsidiaries has any liability for unpaid Taxes which have not been accrued or reserved on the Company Financials, whether asserted or unasserted, contingent or otherwise, and neither the Company nor any of its Subsidiaries has incurred any liability for Taxes since the date of the Company Balance Sheet other than in the ordinary course of business.

General Provisions:

- 8.1 Non-Survival of Representations and Warranties. The representations and warranties of the Company, Parent and Merger Sub contained in this Agreement, or any instrument delivered pursuant to this Agreement, shall terminate at the Effective Time, and only the covenants that by their terms survive the Effective Time and this Article VIII shall survive the Effective Time.