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ABSTRACT

This paper examines the effect of targets' participation in tax shelters on takeover premiums in mergers and acquisitions. Using a novel dataset in which targets disclose that they have not participated in tax shelters, we find that targets that make this statement in their merger filings are associated with 4.6 percent higher takeover premiums, on average. This relation is consistent with acquirers being are concerned about the potential future liabilities when targets have engaged in tax sheltering. Consistent with this interpretation, the positive association between targets' non-sheltering disclosure and acquisition premiums is stronger for less tax aggressive acquirers. This paper demonstrates the importance of targets' aggressive tax positions in the determination of premiums offered to targets' shareholders.

1. Introduction

Tax shelters are financial arrangements that aim to reduce income tax liability by exploiting loopholes in the tax law (U.S. Department of the Treasury 1999). Representing the most aggressive form of tax planning, tax shelters generate substantial tax savings for firms. For example, Graham and Tucker (2006) find that the median tax deduction associated with using tax shelters is more than $1 billion per firm per year, or 9 percent of total assets, for the 24 sample firms disclosing an amount. Despite the economic significance of these tax benefits to firms, few empirical studies specifically address investors' assessment of tax sheltering. The reason for this lack of research is the difficulty in directly identifying tax shelter participation from firms' financial statements (Hanlon 2003; McGill and Outslay 2004). As a result, extant research has generally relied on data from Tax Court records (Graham and Tucker 2006; Wilson 2009), press releases of tax authority disputes (Brown 2011; Hanlon and Slemrod 2009), and IRS tax shelter disclosures (Lisowsky 2010; Lisowsky, Robinson, and Schmidt 2013).[1]

Understanding how investors assess firms' tax shelter participation is different from other general tax planning transactions because with tax shelters, "it is almost always ambiguous whether the transaction is permissible or not" (Hanlon and Heitzman 2010, p. 137). While previous studies have shown that, on average, market participants do not view aggressive tax planning to be value-enhancing or destroying (Desai and Dharmapala 2009; Wilson 2009),[2] no prior research has examined the question of how investors view tax shelters from a large sample of firms' disclosures.

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[1] For example, Graham and Tucker (2006, p. 565) note that information about tax sheltering is "notoriously hard to find" because firms rarely disclose their use of tax shelters publicly. The use of data on tax court records or press releases results in a relatively small sample, and the IRS tax shelter disclosures data is confidential.

[2] These studies assume that investors understand firms' tax strategies and therefore all the risks and rewards of tax avoidance (Hanlon and Heitzman 2010). We argue below that firms have strong incentives to showcase the benefits derived from aggressive tax planning but obfuscate the negative consequences. Consistent with our argument, research documents that firms with tax shelters have larger book-tax differences (Lisowsky 2010; Wilson 2009) and do not voluntarily disclose their participation in publicly available sources.

In this paper, we use a novel dataset in which firms' non-participation in tax shelters is directly disclosed during a merger and acquisition (M&A) transaction. Specifically, the research design exploits targets' statements of not participating in tax shelters in the Form 8-K – Agreement and Plan of Merger. We assume that targets that state they have not participated in tax shelters in their merger agreements are non-sheltering targets. While these disclosures are voluntary, we expect that they are made truthfully and that there is little incentive to avoid the disclosure if it can be made, as described more fully below. We infer that firms not making this disclosure have engaged in tax shelters. These disclosures allow researchers to better identify targets that have not participated in tax shelters and therefore classify targets' tax shelter involvements prior to M&A. We study investors' views of tax sheltering by examining the effect of targets' tax shelter non-participation disclosures on takeover premiums.

M&A provides a strong setting to examine how specific investors perceive the risk-reward tradeoff of tax sheltering from an informed investors' viewpoint. During M&A, acquirers are able to obtain private information regarding the target's tax planning through due diligence, creating an information advantage about the target's tax sheltering history.[3] Thus, relative to the targets' outside investors, acquirers are more apt to better price the risks and rewards of the target's tax planning activities. In the context of this study, acquirers will have a much better gauge on the target's IRS audit and penalty risks (Mills 1998; Mills and Sansing 2000), information risk (Balakrishnan, Blouin, and Guay 2013; Frank, Lynch, and Rego 2009; Kim, Li, and Zhang 2011) and managerial-diversion risk (Desai, Dyck, and Zingales 2007; Desai and Dharmapala 2006) associated with the target's tax sheltering history.

We hand-collect each target's representation concerning its non-participation in tax shelters and use this disclosure to empirically classify their non-sheltering status. Assuming

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[3] This is consistent with the notion of Crocker and Slemrod's (2005) model that the CFO is assumed to possess private information regarding the underlying tax structures and positions, such as the level of permissible legal reduction in taxable income.

truthful and complete reporting, our results indicate that acquisitions of targets that have not used tax shelters are associated with higher takeover premiums, suggesting that acquirers price the potential future liabilities related to targets' past tax shelters. We include common measures of tax aggressiveness as additional controls in our regression and find that the five-year cash ETR is also associated with takeover premiums, while the Wilson (2009) tax shelter proxy and UTB are not. Furthermore, we analyze whether the positive association between targets' non-participation in tax shelters and premium differs across acquirers. Our results indicate that the positive association between disclosed non-participation in tax shelters and the takeover premium is significantly stronger for less tax aggressive acquirers whose managers may be less familiar with, or potentially more opposed to, tax shelters.

To ensure the robustness of our results, we conduct several additional analyses. First, we employ procedures to account for the potential endogeneity associated with the decision to disclose the lack of tax sheltering: an endogenous treatment-effects regression and instrumental variable regressions. We model the decision to disclose non-participation in tax shelters as a function of target characteristics and also use these determinants as instrumental variables. The results fail to reveal evidence of endogeneity biasing our estimates. Second, to test the sensitivity of our results to possible misreporting by targets, we calculate the targets' estimated tax shelter probability based on Wilson (2009). We find similar results when excluding observations with disclosures that are not in line with the probability of participation.

This study makes two contributions to the literature. First, it contributes to the stream of literature on the role that taxes play in the pricing and structure of M&A (e.g., Hayn 1989; Erickson 1998; Erickson and Wang 2000, 2007; Ayers, Lefanowicz, and Robinson 2003, 2004; Devos, Kadapakkam, and Krishnamurthy 2009; Martin, Wang and Zou 2013; Mescall and Klassen 2014). The focus of this literature has been on taxes arising within, or opportunities resulting from, the M&A transaction. The question of whether aggressive tax planning affects M&A has only

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recently been explored.[4] In their comprehensive review, Hanlon and Heitzman (2010) observe this

void in the literature, and call for more research on whether targets' aggressive tax positions affect

acquisition prices. This paper contributes to the literature on the effects of targets' tax attributes on

M&A by showing that targets' tax shelter participation is negatively related to takeover premiums.

Second, this study employs a new measure of tax aggressiveness to capture tax shelter

participation. There are at least three distinct advantages of using our measure relative to using

existing measures of tax aggressiveness. The first advantage of our non-sheltering measure is that

the target's non-sheltering status is the private knowledge of the target and is only observable to

the acquirer prior to the announcement of the deal.[5] This important feature fits nicely with the

notion that acquirers have both the incentive and ability to ensure that the offer price is appropriate

by assessing private information of the target's tax planning, such as its tax sheltering history,

through comprehensive due diligence.[6] Further, the private nature of the information revealed

prior to the acquisition allows the takeover premium to reflect this new information. Because the

choice of tax aggressiveness proxies has important implications for the strength of inferences that

can be made (Hanlon and Heitzman 2010), we believe that, relative to existing tax aggressiveness

proxies, our proxy allows us to draw significantly stronger inferences on the question of how

acquirers price targets' risks related to tax shelter participation.

The second advantage of our non-sheltering measure is that it allows the research

question to focus on tax plans that are at the most aggressive end of the tax avoidance

continuum—tax sheltering. Moreover, although firms can use tax indemnity insurance to insure

against penalties associated with disallowed tax positions in M&A, neither the target nor the

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[4] Concurrent work by Martin et al. (2013), described in the following section, and Mescall and Klassen (2014) focus on broad proxies for tax aggressiveness and international transfer pricing risk, respectively.
[5] Hanlon (2003) and McGill and Outslay (2004) suggest that public data poorly informs outside investors on the *specifics* of firms' tax plans.
[6] Hasan, Hoi, Wu, and Zhang (2013) study a different setting (debt contracting) where private information about tax planning activities is used. They find that more tax aggressive firms incur higher private bank debt costs—higher loan spreads and more stringent non-price loan terms—when obtaining bank loans. The results of Hasan et al. (2013) suggest that banks perceive aggressive tax planning as risk-engendering activities.

acquirer can purchase tax indemnity insurance against tax shelter participation. If tax shelter participation were insurable, we may not observe a significant association between targets' non-sheltering status and takeover premiums. Tax indemnity insurance can be underwritten for a wide range of federal, state, and foreign tax matters including complex issues such as transfer pricing. In terms of research design, the availability of tax insurance for other tax issues mitigates concerns that the identified premium effect is related to other forms of tax planning that may be employed by the target. Thus, if targets' tax aggressiveness has any effect on takeover premiums, focusing on targets' tax shelter participation would likely improve the power to detect such an effect.

The third advantage of our non-sheltering measure is that it allows an empirical examination of the effect of targets' use of a specific class of tax shelters, reportable transactions on takeover premiums, adding to the growing literature that examines specific tax transactions undertaken by firms (e.g., Brown 2011; Engel, Erickson, and Maydew 1999; Lisowsky 2010; Dyreng, Lindsey, and Thornock 2013).

The remainder of this paper is organized as follows. Section 2 reviews related literature and develops our two hypotheses. Section 3 proposes the research design and describes the sample selection. Section 4 presents the main results. Section 5 presents results of robustness checks and additional analyses, and Section 6 concludes.

2. Background and hypothesis development

Background on tax shelters

Tax shelters cost the U.S. Treasury tens of billions of dollars in potential tax revenue between 1993 and 2003 (U.S. Government Accountability Office 2003). Recognizing the impact and proliferation of corporate tax shelters, the Treasury Department and the Internal Revenue Service (IRS) have made an extraordinary effort over the last two decades to combat the use of tax shelters. Such efforts include extensive audits of tax shelter transactions; new tax shelter disclosure initiatives and regulations; and enforcement actions against tax shelter promoters such

as banks, law firms, and accounting firms.[7] Recognizing that disclosure is an important

mechanism to combat the growth of tax shelters, the IRS issued final Regulation Section 1.6011-4

– Requirement of Statement Disclosing Participation in Certain Transactions by Taxpayers on

February 28, 2003.

Regulation Section 1.6011 requires taxpayers to disclose to the IRS their participation in

"reportable transactions" on Form 8886 – Reportable Transaction Disclosure Statement. This form

is part of a firm's tax return; it is not publicly available. Reportable transactions, as defined by the

law, are transactions that the IRS considers potentially abusive.[8] Currently, there are five major

categories of reportable transactions: listed transactions, confidential transactions, transactions

with contractual protection, loss transactions, and transactions of interest. Most of the tax shelters

examined in recent literature (e.g., Graham and Tucker 2006; Hanlon and Slemrod 2009; Wilson

2009) are listed transactions. Failure to disclose the use of reportable transactions to the IRS

results in severe penalties.

This study chooses reportable transactions to represent tax shelters because the use of

these extreme forms of tax planning is not uncommon and the related tax savings can be very

large. Using confidential reportable transaction disclosure data from the IRS Office of Tax Shelter

Analysis, Lisowsky et al. (2013) find that 338 firm-years, or 10 percent of their sample, involve at

least one reportable transaction between 2006 and 2009.[9] In terms of the economic significance of

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[7] In 2005, KPMG admitted that it was involved in tax shelters that generated at least $11 billion in tax losses, costing the U.S. government at least $2.5 billion in revenue. KPMG's actions resulted in a penalty of $456 million and a criminal indictment of several former KPMG tax partners. In 2010, Deutsche Bank settled with the IRS for $554 million for fraudulent tax shelters that generated $29 billion in disallowed tax losses. In June 2012, BDO reached a settlement with the IRS and paid a $50 million penalty for engaging in tax shelters that resulted in $1.3 billion of lost taxes.

[8] Internal Revenue Code (IRC) Section 6707A(e) requires taxpayers who file Form 10-K to disclose the imposition of penalties in Item 3 (Legal Proceedings) of Form 10-K. IRC Section 6707A(c) defines a reportable transaction as a type of transaction which the Secretary of the Treasury determines as having a potential for tax avoidance or evasion. Listed transactions, ones specifically identified by the Secretary include Lease in Lease Out, Sale in Lease Out, Fast Pay or Step-Down Preferred Transactions, and Contested Liability Acceleration Strategy.

[9] When Lisowsky et al. (2013) identify firms that have a reportable transaction in the year or in the prior two years, the number of firm-years satisfying this condition is 680, or 21 percent of the sample.

the tax savings, Boynton et al. (2011) report that the reportable transactions of 250 firms lowered their taxable income by $29.5 billion (2.8 percent) in 2006 and $21.4 billion (2.1 percent) in 2007. Lisowsky et al. (2013) also document that 48 firms used reportable transactions to reduce taxable income by a total of $10.7 billion (7.5 percent) in 2007.

Hypothesis development

In a negotiated takeover, the acquirer performs due diligence on the target and negotiates the price and terms of the acquisition before signing an acquisition agreement. During the due diligence period, the acquirer garners and verifies private information about the target, including the specifics of the target's tax planning by assessing the target's tax returns, working papers, and other related statutory filings. Participation in tax shelters would be revealed at this point. Our research question is posed to determine whether acquirers' knowledge of a target's non-participation in tax shelters affects the level of takeover premiums offered to target shareholders. In this section, we review related literature and develop our hypotheses.

Benefits and costs of tax planning

Firms must trade-off current tax benefits, future tax costs and non-tax costs in deciding whether to participate in a particular tax structure or plan (Scholes, Wolfson, Erickson, Hanlon, Maydew, and Shevlin 2014). To the firm, the benefits of avoiding taxes usually take the form of a lower ETR reported on the financial statements and/or an increased after-tax cash flow. These benefits do not come without costs. Direct costs of aggressive tax planning include costs of implementing tax plans such as in-house tax department salaries and external tax service fees (Mills et al. 1998). If the tax authority disallows the tax treatment, firms may incur additional taxes, penalties, and interest charges, and the firms' financial statements may need to be restated (Graham et al. 2014). In addition to the direct costs, potential penalties, and the financial restatement risk, prior studies have documented a number of consequences of being aggressive for tax purposes, including closer scrutiny from the tax authority (Mills 1998; Mills and Sansing 2000), potential reputational

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damage (Graham et al. 2014; Hanlon and Slemrod 2009), deteriorated external information environment (Balakrishnan et al. 2013; Frank et al. 2009; Kim et al. 2011), agency risk (Desai and Dharmapala 2009; Wilson 2009), and higher private bank loan spreads and more restrictive non-price (covenants and collateral) loan terms (Hasan et al. 2014).

Consistent with these studies, the survey evidence presented in Graham et al. (2014) indicates that tax executives consider the lack of economic substance in tax transactions, reputational concerns, the possibility of IRS challenge, and the financial restatement risk to be important factors in their own firm's decision not to implement aggressive tax plans marketed by accounting firms or investment banks.

Investor valuation of tax planning

Following Scholes and Wolfson's (1992) framework, we assume that, on average, managers engage in the efficient tax planning using the optimal blend of tax planning strategies. Prior research on investor valuation of tax planning suggests that investors positively value aggressive tax planning only for firms with low managerial-diversion risk. For example, Desai and Dharmapala (2009) find a positive association between aggressive tax planning (abnormal book-tax differences) and Tobin's q for firms with strong corporate governance. Similarly, Wilson (2009) shows that tax shelter firms with strong governance earn positive abnormal returns during the period of active sheltering and the two years following. For firms with weak governance, these studies find no significant association between aggressive tax planning, and firm value or abnormal returns. Outside investors do not perceive a net benefit when managers' aggressive tax planning is used to conceal rent-diverting activities such as earnings manipulation, insider trading, and bad news hoarding (Desai et al. 2007; Kim et al. 2011).[10] Armstrong, Blouin, Jagolinzer, and

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[10] Consistent with this idea, Chen et al. (2010) show that family-owned firms engage in less aggressive tax planning, a result they attribute to family firms' concerns over outside shareholders' fears about wealth diversion. Blaylock (2011) examines whether tax avoidance is associated with managerial rent extraction

Larcker (2015) argue that agency problems may cause managers to engage in more or less tax avoidance than the shareholders prefer and suggest that governance mechanisms may be structured to align managers' preference for tax avoidance with those of the shareholders. Armstrong et al. (2015) document evidence that suggests corporate governance mitigates both over- and under-investment in tax avoidance.

While firms have incentives to showcase the benefits derived from aggressive tax planning on their financial statements (Graham et al. 2014), firms also have strong incentives to reduce exposure to the negative consequences of aggressive tax planning by limiting disclosures to tax authorities and to the public. In the U.S., firms are not required to publicly disclose information about the specifics of their tax planning.[11] Extant research finds that, on average, tax-sheltering firms have larger book-tax differences (Lisowsky 2010; Wilson 2009), but they do not disclose their tax shelter participation in any publicly available sources. Therefore, outside investors infer the level of benefits of tax planning from firms' financial statements, but the *specifics* of firms' tax activities remain hidden (Hanlon 2003; McGill and Outslay 2004). In addition, firms that engage in aggressive tax planning may also be involved in aggressive financial reporting (Frank et al. 2009), making less transparent disclosures (Hope, Ma, and Thomas 2013; Akamah, Hope, and Thomas 2014) and creating a more opaque external information environment (Balakrishnan et al. 2013; Kim et al. 2011). This increased opacity of the external information environment helps mask tax avoidance behavior, lowering the costs of tax avoidance (Akamah et al. 2014; Beck, Lin, and Ma 2014; Kerr 2013). Thus, tax shelters are typically characterized by secrecy and the firms' adoption of tax shelters is unlikely to be detected by outsiders.

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with a focus on U.S. firms. He fails to find evidence that managers of U.S. firms extract rents through aggressive tax transactions.

[11] Financial statements do not reflect the firm's tax status for reasons including accounting treatments (Hanlon and Shevlin 2002), tax and financial reporting incentives (Erickson, Hanlon, and Maydew 2004; Frank et al. 2009), and management judgment (De Simone, Robinson, and Stomberg 2014). One exception to the secret nature of firms' tax shelter adoption is that some firms openly disclose their participation in Corporate-Owned Life Insurance (COLI) shelters (Brown 2011). Our M&A sample does not include firms that disclose the adoption of COLI shelters.

Unlike outside investors, acquirers can obtain private information of the target's tax planning through the due diligence process. Acquirers have strong incentives to know the details of the target's tax positions when determining the offer price because the target's potential tax liabilities are usually assumed by acquirers after M&A transactions. Therefore, we assert that, to acquirers, the private knowledge about the target's tax sheltering (i.e., involvement in reportable or listed transactions) contains price-relevant information beyond that revealed in the target's financial statements.[12] Since the potential future costs of past tax shelters are expected to be significantly larger than those of other tax-motivated transactions, we argue that the private information about the target's tax sheltering status would lead to a lower premium paid to a tax-sheltering target relative to a non-sheltering target. Thus, stated formally in alternative form below, our first hypothesis predicts a positive effect of the targets' non-sheltering status on takeover premiums:[13]

> HYPOTHESIS 1. *Targets' non-sheltering status is positively associated with takeover*
>
> *premiums.*

Hypothesis 1 is not without tension for several reasons. First, evidence from extant research suggests that targets might have appropriately reserved for the potential future liabilities inherent in their tax shelter positions. For example, Gleason and Mills (2002) find that firms' accruals for contingent tax liabilities reflect the amount and materiality of the expected loss. Blouin, Gleason, Mills, and Sikes (2010) report that, in their sample of 100 largest nonfinancial

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[12] If the knowledge of the target's tax shelter participation is made public prior to the deal, for example, via media mentions or tax court records (Graham and Tucker 2006; Brown 2011; Gallemore et al. 2014; Hanlon and Slemrod 2009; Wilson 2009), we expect that our measure of targets' non-sheltering status will be less useful to acquirers.

[13] The first hypothesis is also consistent with Martin et al. (2013) who document a negative association between targets' tax aggressiveness and takeover premiums. This study differs from Martin et al.'s (2013) in at least three dimensions: (1) our research design employs a unique tax aggressiveness proxy – the target's non-sheltering status that is the private knowledge of the target and is only observable to the acquirer prior to the announcement of the deal, (2) with the new proxy, this study focuses on a specific yet extreme form of tax avoidance, IRS reportable transactions, and (3) our results highlight the important role that acquirers' tax aggressiveness plays in the association between targets' non-sheltering status and takeover premiums, as described below.

and unregulated public firms covered by analysts, nearly as many firms had excess reserves (39 percent) as had insufficient reserves (41percent) at FIN 48 adoption. Moreover, Lisowsky et al. (2013) show that the firms' participation in reportable and listed transactions is, on average, adequately reflected on their tax reserves.[14] Hence, to the extent that targets have properly reserved the potential future liabilities related to their tax shelters, we may not observe a significant effect of targets' non-sheltering status on takeover premiums.

Second, contrary to the hypothesis, there may be a negative association if the tax shelter participation increases the firm's valuation uncertainty. Prior research documents a negative association between targets' financial information quality and takeover premiums, a result that is consistent with their prediction that acquirers overpay for targets that are characterized by high valuation uncertainty (McNichols and Stubben 2015; Raman, Shivakumar, and Tamayo2013; Skaife and Wangerin, 2013). Similarly, Stomberg (2013) shows that targets' tax uncertainty, as measured by the coefficients of variation of tax rates, is positively associated with takeover premiums. To the extent that sheltering targets have higher information risk (Balakrishnan et al. 2013; Desai et al. 2007; Frank et al. 2009; Kim et al. 2011), and therefore are more difficult to value, acquirers will be more likely to overpay for sheltering targets. In this case, the observed association between targets' non-sheltering status and takeover premiums would be negative. This negative association, however, is less likely if sheltering targets are able to maintain a high quality internal information environment (Gallemore and Labro 2015).

The role of acquirers' tax aggressiveness

The difficulty of post-merger cultural integration, or culture clash, is a major cause for deal failure (e.g., Weber and Camerer 2003; Van den Steen 2010). In an experimental setting, Weber and

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[14] Lisowsky et al. (2013, p. 604) acknowledge the limitation to their findings that "we do not know the economic significance of uncertain tax positions reflected in the UTB that are not characterized as tax sheltering." Thus, when drawing inferences from Lisowsky et al. (2013), we are cautious and acknowledge that we cannot rule out the possibility that tax shelter firms also engage in other uncertain, non-sheltering activities.

Camerer (2003) demonstrate that differences in culture between two laboratory firms lead to decreased post-merger performance for both of them. Prior studies also suggest that a firm's aggressive tax planning is a feature of the firm's corporate culture and leadership style. For example, Higgins, Omer, and Phillips (2014) find that a firm's business strategy has significant influence on its tax aggressiveness, such that more innovative and risk seeking firms undertake more aggressive and less sustainable tax positions.[15] Dyreng et al. (2010) track the movements of over 900 executives and show that there is a considerable variation in CEOs' propensities to engage in aggressive tax planning. Because a firm's corporate culture, in the sense of shared beliefs and values regarding the "right" behavior or action, can affect its policy choices for a broad range of business decisions (Cronqvist, Low, and Nilsson 2009), we argue that more tax aggressive acquirers, relative to less tax aggressive acquirers, will be more accepting of targets' participation in tax shelters. That is, more aggressive acquirers will not be willing to pay as high a premium for targets that abstain from tax shelters. Empirically, we expect to observe a less positive (or more negative) association between targets' non-sheltering status and takeover premiums for acquirers that are more tax aggressive. Our second hypothesis is stated in alternative form as follows:

> HYPOTHESIS 2. *The association between targets' non-sheltering status and takeover premiums is less positive for acquirers that are tax aggressive than for acquirers that are not tax aggressive.*

Despite the theory of corporate integration, it is possible that the observed interaction of acquirers' and targets' tax aggressiveness is opposite to our expectation. Cai and Sevilir (2012) find that acquirers pay significantly lower takeover premiums for targets in transactions where the acquirer and target are connected via board ties. Previous studies on tax avoidance also show that

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[15] Executives of tax aggressive acquirers are also more likely to be compensated to undertake aggressive tax planning and therefore may benefit from the targets' tax shelter participation (Armstrong et al. 2012; Dyreng, Hanlon, and Maydew 2010; Gaertner 2014; Rego and Wilson 2012).

the adoption of tax shelters can spread across firms via network ties such as board interlock (Brown 2011) and that connected firms share similar tax profiles (Brown and Drake 2014). Our second hypothesis is motivated by less aggressive acquirers paying more for less aggressive targets. To the extent that this shared strategy reduces, rather than increases, the takeover premium, we will observe a finding opposite to our hypothesis.

3. Research design

Measure of targets' non-participation in tax shelters

We hand-collect the non-sheltering status information from each target's Representations and Warranties in its Form 8-K. Examples of targets' non-sheltering representation statements are shown in Appendix 1. The length and style of the statements vary slightly, but they are very consistent in terms of the content. In particular, all of the statements provide two pieces of important information: (i) the parties involved (the target firm only or both the acquirer and the target, including any subsidiaries), and (ii) the tax shelter transactions (reportable transactions, listed transactions, or both, with reference to the relevant regulation sections). The representation statements generally refer to non-participation in tax shelters for a target's entire history up to the merger agreement signing date and do not contain forward-looking information regarding future tax shelter participation. Moreover, in some transactions, it is explicitly stated that neither the target nor the acquirer will participate or engage in any reportable or listed transaction pending the closing of the deal.[16]

We use a target's representation concerning its non-participation in tax shelters as a measure of the target's actual non-sheltering status. We discuss the validity of this assumption in the following section. Note that none of the targets in our sample state that they have participated in tax shelters in their representations.

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[16] There are 11 targets (2.5 percent) claiming non-participation in tax shelters for a specified period of time (see Robbins & Myers Inc.'s representation in Appendix 1). Because of the small sample size, separate analysis is not feasible. However, eliminating the 11 targets from the analysis does not change the results.

Construct validity of the non-sheltering measure

Whether the non-sheltering representation reliably captures the target's underlying non-sheltering status depends on two conditions: (i) sheltering targets will not misrepresent themselves by claiming non-participation in tax shelters in their Form 8-Ks, and (ii) non-sheltering targets will not withhold this information from acquirers. Violation of either condition (i) or (ii) would contaminate our non-sheltering measure. This section discusses the validity of the two conditions.

In support of condition (i), participants in a reportable transaction must disclose information for each reportable transaction on their tax returns. Therefore, it is easy for an acquirer to verify the target's non-sheltering representation via due diligence prior to determining the takeover premium. Also, because of the complicated nature of reportable transactions, firms usually receive professional advice from tax shelter promoters and other tax advisors before participating in tax plans. So, it is expected that the target knows whether its tax plans constitute reportable transactions under the law. Equally important, because the Form 8-K is filed with the SEC, all information released on the Form 8-K will be subject to antifraud provisions of the federal securities laws. For these reasons, it is not likely that any sheltering targets will misrepresent themselves by claiming non-participation in tax shelters in their Form 8-Ks. Hence, condition (i) is likely to be satisfied.

Condition (ii) holds if non-sheltering targets do not withhold information from acquirers. First, the non-sheltering representation is made in the Agreement and Plan of Merger under the target's Representation and Warranties section. This section allows the acquirer to obtain information about the target before signing the merger agreement, and provides a basis for the acquirer to terminate the transaction after the merger agreement has been signed. Therefore, it is in the acquirer's best interests to have the target state its non-sheltering status in the Representation and Warranties section to protect against subsequent risk of uncovering the target's tax shelters after the merger agreement is signed. Second, from the target's viewpoint, a non-sheltering target

would be willing to make a non-sheltering representation because doing so would likely facilitate the deal. Moreover, prior research suggests that non-sheltering targets have little incentive to withhold their non-sheltering status (Hanlon and Slemrod 2009). Hence, condition (ii) is also likely to be satisfied.

To empirically support the validity of the non-sheltering measure, in the following section, we compare our classification of sheltering and non-sheltering targets against measures of tax shelter use employed in prior research and examine correlations between our non-sheltering status measure and the existing measures of tax aggressiveness.

Regression specifications

To test our Hypothesis 1, we run the following regression model:

$$PREM = \alpha + \beta_1 \, NONSHELTER_{tar} + \sum_k \beta_k \, CONTROL^k + \varepsilon \qquad (1)$$

The dependent variable for (1), *PREM*, is the ratio of offer price to the target's trading price one week or four weeks prior to the merger announcement date, minus one. The hypothesis focus on how the acquirer's knowledge of the target's tax shelter participation, informed through the M&A due diligence, affects the target's value. Because the takeover premium represents the opinion difference between the target's shareholders and the acquirer's management over the target's firm value, it is well suited to test the hypotheses. Other common measures, such as the acquisition announcement abnormal stock returns for the acquirer or the target, reflect the acquirer's and target's shareholders' opinions, respectively, on the profitability of the deal and are less well suited to our research question.

Our main independent variable, $NONSHELTER_{tar}$ is an indicator variable that equals one if a target's non-sheltering representation is made in the merger agreement, and zero otherwise. A positive estimate of β_1 in (1) would reject the null form of Hypothesis 1 and suggest that targets' non-sheltering status is associated with takeover premiums. Because of data requirements, all

deals are friendly takeovers. Control variables, as discussed below, are firm-specific and deal-specific observable determinants of acquisition gains.

Following the prior literature on M&A (e.g. Bradley et al. 1988; Moeller, Schlingemann, and Stulz 2004; Officer 2003), we control for a number of target, acquirer, and deal-level determinants of takeover premiums in (1). For targets' and acquirers' characteristics, we control for firm size ($SIZE$), Tobin's q ($TOBINSQ$), profitability (ROA), and leverage (LEV). We also include the absolute value of targets' discretionary accruals ($DACC_{tar}$), estimated from the modified performance-matched cross-sectional Jones model of Kothari et al. (2005), to control for the potential effect of targets' financial information quality on takeover premiums (McNichols and Stubben 2015; Raman et al. 2013; Skaife and Wangerin, 2013). To control for variation in the tax planning of the targets, we also include targets' book-tax difference (BTD_{tar}), net operating losses (NOL_{tar}), income from foreign operations ($FOREIGN_{tar}$), research and development expenditures ($R\&D_{tar}$), and industry fixed effects. All firm-level characteristics are measured at the fiscal year end prior to the merger announcement.

We include deal characteristics, including whether the merger agreement contains a termination fee payable by the target ($TERMFEE_{tar}$) or the acquirer ($TERMFEE_{acq}$); the fraction of the target's common stock owned by the acquirer on the merger announcement date ($TOEHOLD$); the number of competing bidders (N_BIDDER); the relative deal size ($DEALRATIO$); and whether the deal is a tender offer ($TENDER$), a stock-financed transaction ($ALLSTOCK$),[17] a within-industry merger ($INDMATCH$), and a merger of high-technology firms ($HIGHTECH$).

Finally, to address the concern that the targets' non-sheltering representations incorporate disclosure incentives in addition to tax shelter use, we include controls for disclosure propensity. In particular, we include targets' frequency of management forecast ($FORECAST_{tar}$) and their bid-

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[17] The dummy variable $ALLSTOCK$ indicates transactions that are 100 percent financed with stock and controls for the potential effect of tax-free acquisitions on takeover premiums (Ayers et al. 2003). The results remain unchanged when we use an alternative definition of $ALLSTOCK$ (i.e., at least 80 percent of the consideration is stock-based.)

ask spread (*SPREAD_{tar}*) as additional controls for the firms' voluntary disclosure behavior and

information environment (Welker 1995), respectively. We also control for factors that may

influence acquirers' propensities to include targets' non-sheltering representations in merger

agreements. Gleason and Mills (2002) show that the likelihood of a tax deficiency disclosure

increases as the materiality of the related IRS tax claims increases. In M&A, acquirers that are less

aggressive in their own tax planning may be more concerned about targets' potential use of tax

shelters and thus prefer having targets' non-sheltering representations in merger agreements. As

such, we include the acquirer's tax aggressiveness (BTD_{acq} or $PSHELTER_{acq}$) and litigation

payouts ($LITIGATION_{acq}$) to control for the acquirer's preference to include targets' non-sheltering

representations. We further control for the effect of the acquirer's auditor choice ($BIG4_{acq}$) because

Louis (2005) finds that non-Big 4 auditors have a comparative advantage in assisting their client

firms in M&A deals. Definitions of all variables are given in Appendix 2.

To test our Hypothesis 2, we estimate the following regression model:

$$PREM = \alpha + \beta_1\,NONSHELTER_{tar} + \beta_2\,TOP\_TAX\_AGG_{acq} \qquad\qquad (2)$$
$$+ \beta_3\,NONSHELTER_{tar} \times TOP\_TAX\_AGG_{acq} + \sum_{k} \beta_k\,CONTROL^k + \varepsilon$$

$TOP\_TAX\_AGG_{acq}$ is an indicator variable that equals one if the acquirer is in the top quintile of

the tax aggressive measures, and zero otherwise. Because our study focuses on tax sheltering, we

use the acquirer's total book-tax difference (*BTD*) as our main empirical measure of tax

aggressiveness. Among the various measures of tax aggressiveness, total BTD is strongly

correlated with tax shelter participation (Wilson 2009; Lisowsky 2010). In addition, Wilson (2009)

develops a prediction model of tax shelter use that has been used to estimate the shelter probability

(*PSHELTER*).[18] We use the acquirer's *PSHELTER* estimate as a second measure of tax

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[18] Lisowsky et al. (2013) show that firms' tax reserves or uncertain tax benefits (UTB) are useful in detecting
tax shelter use. We choose not to use UTB to measure tax aggressiveness because the use of UTB data results
in a significant reduction in sample size. For a similar reason, we choose not to use the tax shelter prediction

aggressiveness. Consistent with our directional prediction in Hypothesis 2, we expect β_3 to be negative.

Sample selection

We draw the sample from the SDC Platinum Mergers & Acquisitions database and obtain all completed M&A transactions involving publicly traded U.S. target and acquiring firms announced between January 1, 2005 and December 31, 2010.[19] The sample is restricted to public firms because our research design requires both targets' and acquirers' financial statement data, which are obtained from the COMPUSTAT database. To ensure that our sample only includes transactions that result in changes in control, we include only deals in which the acquirer owns less than 50 percent of the target's shares prior to the merger announcement and more than 50 percent of the shares after the acquisition.[20] We exclude transactions with deal values under $1 million.

Table 1 presents details of the sample selection process. The initial sample begins with 975 M&A transactions involving U.S. public acquirers and U.S. public targets listed on the SDC database for our sample period. We exclude 344 transactions that involve firms in the financial sector (SIC 6000-6999) because of the regulatory environment and data requirements. Because we hand-collect targets' non-sheltering information from merger agreements included in the Form 8-K filings, we further exclude 102 transactions that are hostile or unsolicited deals because these transactions do not have a merger agreement. After imposing the above restrictions and excluding observations with missing data in computing the dependent and control variables, our final sample contains 447 M&A deals.

[Insert TABLE 1 here]

model developed by Lisowsky (2010) because it imposes greater data requirements than the model by Wilson (2009).

[19] The sample period begins in 2005, shortly after the enactment of the American Jobs Creation Act of 2004, because very few targets make the non-sheltering representation in deals announced prior to 2005.

[20] In our final sample of 447 transactions, 433 acquirers own 100 percent of the target's shares, 12 acquirers own between 80-97 percent of the target's shares, and 2 acquirers own between 72-78 percent of the target's shares after the deal.

Table 2 reports the percentage of sample transactions that contain a target's non-sheltering representation by announcement year. Of the 447 transactions in our sample, 341 merger agreements (76 percent) contain a target's non-sheltering representation, and the remaining 106 merger agreements (24 percent) do not contain such a representation.[21] The percentage of transactions with a non-sheltering representation increases significantly over the sample period from slightly less than 69 percent in 2005 to over 87 percent in 2010. We include year fixed effects to control for this trend.[22] Across the sample, the mean difference in premium between the NONSHELTER subsamples differs by approximately 10 percent. While targets with the non-shelter disclosure consistently demand a higher premium, the difference in average premium fluctuates from year to year, ranging a difference of just over 1 percent in 2005 to almost 20 percent in 2010.[23]

[Insert TABLE 2 here]

4. Empirical results

Descriptive statistics

Table 3 reports descriptive statistics on target, acquirer, and deal characteristics of the full sample, as well as mean and median comparisons between the subsamples of non-sheltering ($NONSHELTER_{tar}$=1) and sheltering targets ($NONSHELTER_{tar}$=0). For target characteristics, tests of the differences in means indicate that, relative to sheltering targets, non-sheltering targets report lower equity-method earnings, have more volatile stock returns, have larger book-tax differences, have higher UTB balances, and use more tax havens. These differences are consistent with the

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[21] This proportion is similar to Lisowsky et al. (2013) when they determine firms' involved in reportable transactions over a three-year period. The disclosures we observe are for firms' involvement over their history.

[22] If we include a *TREND* variable, rather than, or in addition to, the year indicators, inferences are unchanged. We also note that any trend in acquisition premiums by targets not making the disclosure is much less evident, consistent with our hypothesized relation.

[23] Using the sample variance, a difference in excess of 3.1 is statistically significant at the 5 percent level (one-tailed test). All years except 2005 exceed this threshold.

characteristics of the samples of tax shelter firms employed in previous studies (e.g., Wilson 2009; Lisowsky 2010; Lisowsky et al. 2013).

[Insert TABLE 3 here]

All acquirer characteristics are similar with the exception of the firm size. Firms that acquire a non-sheltering target tend to be larger than those that acquire a sheltering target. In terms of deal characteristics, deals involving a sheltering target are not likely to be tender offers and are usually large in relative deal size.

Reported in Table 4 Panel A, the Pearson correlations show that $NONSHELTER_{tar}$ is negatively correlated with BTD, our primary tax aggressiveness measure, DD_BTD, the adjusted book-tax gap measure (Desai and Dharmapala 2006), and uncertain tax benefits (UTB). These results are consistent with prior research: among various empirical proxies of tax aggressiveness, BTD and UTB are better predictors of tax shelter use (Wilson 2009; Lisowsky 2010; Lisowsky et al. 2013).[24] Overall, results from univariate analysis support the assumption that targets that do not make a non-sheltering representation in merger agreements are more likely to be tax shelter firms than those who make such a representation. The correlation coefficients presented in Panel B of Table 4 are generally modest in size and do not reveal anything unexpected.

[Insert TABLE 4 here]

Tests of Hypothesis 1

Table 5 presents estimation results of (1). In column (1) and (2), we present the results of regressing takeover premiums on targets' non-sheltering status with control variables. The coefficient estimate on $NONSHELTER_{tar}$ is 4.58 and significant at the 5 percent level (one-tailed test), suggesting that targets' non-sheltering status is associated with, on average, 4.6 percent

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[24] Similar to the univariate results reported in Lisowsky (2010) and Lisowsky et al. (2013), our $NONSHELTER_{tar}$ measure is not highly correlated with ETR and Cash ETR. As discussed in Hanlon and Heitzman (2010), firms use tax shelters when they cannot achieve their desired tax goals by other means. Thus, tax shelters may be associated with higher ETR, before the tax shelter is undertaken, but the ex-post correlation cannot be predicted. Thus, a low correlation is not a threat to the validity of our $NONSHELTER_{tar}$ measure.

higher takeover premiums.[25] The results are qualitatively similar when takeover premiums are

calculated using the target's trading price one week (column (1)) or four weeks (column (2)) prior

to the merger announcement date. The difference in takeover premium documented in these tests

(4.58 percent) amounts to an increase in mean and median acquisition values of $70 million and

$19 million, respectively. These estimates are reasonable given the aggressive nature of the type of

tax planning (i.e., reportable or listed transactions). However, the magnitude of these results would

not generalize to other forms of tax planning.

[Insert TABLE 5 here]

In addition, the results suggest that takeover premiums are significantly higher for targets

with NOLs and higher R&D, larger acquirers, and deals that are larger in relative size or contain a

target termination fee.[26] They also suggest that takeover premiums are decreasing in the size of

the target and its Tobin's q, the target's book-tax difference, the magnitude of the target's foreign

profits, and the acquirers' toehold; and are lower for high-tech mergers. These results for the

control variables are consistent with those documented in prior research (Betton and Eckbo 2000;

Moeller et al. 2004; Officer 2003). With the target's BTD included as a control variable, the

positive effect of $NONSHELTER_{tar}$ on takeover premium suggests that targets' non-sheltering

status is value-relevant incremental to targets' financial statement information on aggressive tax

planning.

To address the presence of extreme observations in the takeover premium measures, we

estimate (1) using two alternative specifications. First, we re-estimate (1) using robust regression.

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[25] The estimated premium we attribute to the targets' non-sheltering status is reasonable in the context of the effects on premiums attributed to other tax and non-tax factors. For example, the tax shelters of the 24 sample firms in Graham and Tucker (2006) generated a median tax deduction of more than $1 billion per firm per year, or about 9 percent of total assets. Erickson and Wang (2007) estimate that, relative to acquisitions of similar C corporations, acquisitions of S corporations carry a tax-based purchase price premium of 12 to 17 percent of deal value; Krishnan, Masulis, Thomas, and Thompson (2012) document that M&A deals involving target lawsuits are associated with an increase in takeover premium of about 9 percent.
[26] The results are qualitatively similar if $TERMFEE$ is defined as a percentage of the firm's market value of equity.

Unlike OLS that assigns equal weight to all observations, robust regression weighs each observation differently depending on the behavior of the observation in the sample. The results of this approach are presented in column (3) and are consistent with the OLS results. Second, 3 percent of the premium values in our sample are negative. Because zero should be an economically meaningful bound for takeover premiums (Officer 2003), we employ a Tobit specification with left censoring at zero to address the negative premium values. The results of the Tobit regression are also very similar. Finally, we control for the governance of the target and acquirer, in column (5), using the proportion of common equity owned by institutional holders. Inclusion of this variable reduces the sample size, but the coefficient on $NONSHELTER_{tar}$ yields similar inferences.

Collectively, our results indicate that the association between targets' non-sheltering status and takeover premiums is significantly positive, leading us to reject Hypothesis 1. The results suggest that acquirers pay lower takeover premiums to targets that have engaged in tax sheltering, consistent with acquirers being concerned about potential future liabilities related to the targets' tax shelters.

In table 6, we replace the BTD measure of the target with several alternative measures of tax aggressiveness. In column (2), we employ negative one times the targets' five-year Cash ETR, *negCETR5* as an alternative measure of tax aggressiveness (Dyreng et al. 2008). The coefficient on *negCETR5* is negative and statistically different from zero, consistent with the BTD measure.[27] Both the main test and the coefficients on *negCETR5* indicates that more aggressive targets receive lower takeover premiums, consistent with the basic premise of Hypothesis 1and the findings of Martin et al. (2013).

[Insert TABLE 6 here]

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[27] We also estimate this and subsequent models with Tobit and robust regressions. Consistent with the evidence from the regressions in Table 5, the results of these alternatives are qualitatively similar to the OLS results reported.

Potential endogeneity of targets' non-sheltering representations

We expect that the primary reason for targets giving non-sheltering representations is to facilitate the M&A transactions. However, the voluntary nature of including targets' non-sheltering representations in merger agreements means that the propensity to include such representations may be related to other priced aspects of the deal or its parties, rather than the nature of the disclosure. Therefore, the relation between $NONSHELTER_{tar}$ and $PREM$ may be endogenous and the observed higher takeover premiums may be due to other factors, particularly those related to disclosure choices. This section addresses the possibility that the observed positive association between targets' non-sheltering status and takeover premiums is the result of the decision to include targets' non-sheltering representations in merger agreements.[28]

We first implement an instrumental variables procedure by using the probit model in (3) below as the first-stage regression:

$$\text{Pr}(NONSHELTER_{tar} = 1) = \Phi\ (\alpha + \beta_1\ ROA_{tar} + \beta_2\ BTD_{tar} + \beta_3\ NOL_{tar} + \beta_4\ FOREIGN_{tar}$$
$$+\ \beta_5 MEZZFIN_{tar} + \beta_6\ EQEARN_{tar} + \beta_7\ BIG4_{tar} + \beta_8\ TREND + \varepsilon) \qquad (3)$$

In choosing instruments for $NONSHELTER_{tar}$, we seek variables that have been shown to correlate with aggressive forms of tax planning but not disclosure incentives, avoiding the many variables that are correlated with both (e.g., size, R&D, and litigation activity). Following Wilson (2009) and Lisowsky (2010), we include in (3) targets' profitability (ROA_{tar}), book-tax differences (BTD_{tar}), net operating losses (NOL_{tar}), income from foreign operation ($FOREIGN_{tar}$), hybrid financing ($MEZZFIN_{tar}$), equity method earnings ($EQEARN_{tar}$), the use of a Big 4 auditor ($BIG4_{tar}$), and a time trend ($TREND$) to account for the year-to-year increase in the portion of sample disclosing non-participation in tax shelters over the sample period.

Reported in column (1) of Table 7, the results of estimating (3) show that the targets' non-participation in tax shelters is positively associated with profitability, and negatively

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[28] This is not a traditional self-selection (or truncation) model in the spirit of Heckman (1979) because the outcome (whether the disclosure is made or not) is observed.

associated with BTD and inconsistent book-tax treatment ($EQEARN_{tar}$). These results are

consistent with those documented in prior research (Lisowsky 2010; Lisowsky et al. 2013) and

suggest that these firm-level characteristics are useful in identifying non-sheltering targets. The

probit model is used to compute an instrumented proxy that is then included in (1). Because the

potentially endogenous variable is categorical, we use three common methods to estimate the

model, each differing in assumptions and estimation methods in the underlying model (Maddala

1983; Cameron and Trivedi 2005, sec. 16.4; and Wooldridge 2010, sec. 18.4.1).[29] The proxies for

the targets' propensity and opportunity to engage in tax planning, not included in (1) ($MEZZFIN_{tar}$,

$EQEARN_{tar}$, and $BIG4_{tar}$) serve as exclusion restrictions in the estimation. While hybrid financing,

the reporting of equity method earnings, and the engagement of Big 4 auditors are related to tax

shelter use (Lisowsky 2010; Lisowsky et al. 2013), these features are not associated with

disclosure choices or takeover premiums, our dependent variable in the second stage.[30]

[Insert TABLE 7 here]

The results of the second-stage premium regressions are reported in columns (2) to (4) of

Table 7. Column (2) reports the results of the endogenous treatment-effects regression using (3) as

the first-stage regression. Columns (3) and (4) report the results of the instrumental variable

regressions using generalized method of moments (GMM) estimator and two-stage least squares

(2SLS) estimator, respectively. In particular, after controlling for the potential endogeneity bias,

we find that the coefficient estimates of $NONSHELTER_{tar}$ remain positive at $p<0.05$ in all three

premium regressions. Additional tests of cross-equation correlation (rho) suggest that the null

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[29] The empirical approach replaces the observed value of $NONSHELTER$ with ones that control for the likelihood of a particular observation being a so-called treatment firm. The particular concern in our setting is that the treatment firm (i.e., $NONSHELTER = 1$) may be both the one that is not a shelter participant and the one that is willing to disclose that fact. The instruments focus the proxy on the first explanation and avoid the latter.

[30] These variables are in the OLS regression models earlier and the results suggest that they are not correlated with takeover premium (Tables 5 and 6), and so make valid excluded variables.

hypothesis of no correlation between the outcome errors and the treatment errors is not rejected, indicating no reliable evidence of endogeneity.[31]

Tests of Hypothesis 2

Columns (1) and (2) of Table 8 present the results of estimating (2) using the acquirer's BTD as the measure of its tax aggressiveness, and premiums calculated over one week and four weeks, respectively. Consistent with the results reported in Table 5, the main effect of $NONSHLETER_{tar}$ on takeover premiums is significantly positive. The coefficient on the interaction of $NONSHELTER_{tar}$ and TOP_BTD_{acq} is negative at $p<0.05$, a result that is consistent with Hypothesis 2. That is, the association between targets' non-sheltering status and takeover premiums is less positive for acquirers that are more tax aggressive. In each case, the sum of the positive coefficient on the main effect of TOP_BTD_{acq}, and the negative coefficient on the interaction is not statistically different from zero. This null result is consistent with very tax aggressive acquirers paying no additional premium for targets that do not use tax shelters, while a significant premium is paid by other acquirers. The results reported in columns (3) and (4) use $PSHELTER$ as the tax aggressiveness measure. The coefficient on $NONSHELTER_{tar} \times TOP\_PSHELTER_{acq}$ in these regressions is significantly negative at $p<0.05$.[32]

[Insert TABLE 8 here]

When we include the tax aggressiveness of the acquirer, and its interaction with $NONSHELTER_{tar}$, the coefficient on the tax aggressiveness of the *target* continues to be negative in columns (1) and (2), where the proxy for tax aggressiveness is book-tax differences. The

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[31] The conclusion is based on the result of likelihood-ratio test of independent equations (prob>χ^2 = 0.1735) using the maximum likelihood estimation of (1) and (3). Including *R&D* and *LITIGATION* do not alter these conclusions.
[32] As a robustness check, we replace the one-year tax aggressiveness proxies for *BTD* and *PSHELTER* with three-year average proxies calculated over the three years prior to the deal announcement year. The results (untabulated) are similar using the three-year average proxies.

coefficient on the *target's* tax aggressiveness is not different from zero when the measure used is *PSHELTER* in columns (3) and (4), consistent with the main results.

In sum, we find empirical support for Hypothesis 2. Acquirers that are very tax aggressive do not pay a premium for the targets' non-participation in tax shelters. Taken together, the results of tests of Hypotheses 1 and 2 are consistent with acquirers discounting the amount of premium paid for targets when acquirers are concerned about the potential future liabilities related to the targets' tax shelter positions, and this price discount is observable only for less tax aggressive acquirers, whose managers are less accepting of tax sheltering and are more conservative regarding the potential future liabilities.

5. Robustness checks and additional analyses

Potential misclassification of the sheltering target sample

We assume that targets that do not make a non-sheltering representation in merger agreements are tax shelter participants. However, because a target's actual tax sheltering status is not observable, it is possible that our sample contains some non-sheltering targets that do not make the non-sheltering representation in their merger agreements. Therefore, the presence of any non-sheltering targets in the "no-representation" group would contaminate our classification. Likewise, our classification is erroneous in the unlikely situations where sheltering targets misrepresent themselves by making the non-sheltering disclosure. In an attempt to mitigate the influence of the lack of disclosure on our results, we identify the observations that are most likely to be misclassified and exclude them from the estimation. Using the variables *PSHELTER* and *NONSHELTER*, we construct two subsamples: (i) we remove 37 non-disclosing targets in the bottom tercile of tax shelter probability, and (ii) we remove 55 disclosing targets in the top tercile of tax shelter probability.

Results of tests of Hypotheses 1 and 2 using the two subsamples are reported in Table 9. After the potentially misclassified observations are discarded from the sample, we find that the

coefficient on NONSHELTER$_{tar}$ and takeover premium remains significantly positive, and the coefficient on the interaction of NONSHELTER$_{tar}$ and the indicator for tax aggressive acquirers is negative. Results on the control variables are also similar to those reported previously. Thus, the potential presence of misclassified observations does not appear to have adversely affected our main result that targets' non-sheltering status is associated with higher takeover premiums.

[Insert TABLE 9 here]

The role of targets' tax reserves

Our findings that acquirers pay higher takeover premiums for targets that disclose that they have not engaged in tax sheltering may imply that, at least from acquirers' points of view, the contingent liabilities associated with the tax shelters have not been adequately reserved. If that is the case, we may observe a weaker association between targets' non-sheltering status and takeover premiums when the related contingent liabilities are more adequately reserved. To examine this possibility, we include the natural logarithm of one plus each target's UTB, our measure of the target's tax reserve, and its interaction with NONSHELTER$_{tar}$ in (1). Results of this estimation (untabulated) indicate that neither the target's UTB nor its interaction with NONSHELTER$_{tar}$ are related to takeover premium at the conventional level of statistical significance. The coefficient on NONSHELTER$_{tar}$ remains significantly positive.[33]

Although we fail to document a significant coefficient on the interaction of the target's UTB and non-sheltering status, we do not conclude that this coefficient is, in fact, zero. There are several potential reasons for the insignificant result. First, as the test results for Hypothesis 2 indicate, an acquirer's own preference for aggressive tax planning plays an important role in

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[33] Mills, Robinson, and Sansing (2010) suggest that firms' level of tax reserve may be affected by their strategic compliance decisions in the post-FIN 48 periods. As an additional test, we conduct an analysis around the adoption of FIN 48 by interacting the NONSHELTER variable with an indicator variable for years 2007 to 2010. The untabulated results find that the coefficient on the interaction of this time-period indicator and our main variable is not statistically different from zero (coefficient of 3.86; *t*-statistic of 0.80). Finally, we include a de-meaned time trend variable and its interaction with NONSHELTER. The coefficients (*t*-statistics) on the main effect of NONSHELTER and the interaction are 4.47 (1.76) and 2.34 (1.34), respectively.

determining the price discount levied on a tax-sheltering target. Thus, even if we assume that targets were able to establish unbiased UTB reserves for the contingent liabilities related to tax shelters, it is the acquirers' judgment that matters, and they may or may not agree with the adequacy of the targets' tax reserves. Second, the insignificant coefficient on the interaction may be because of a low-power test. Because of the missing data for targets' UTB and the sample period of the study, the inclusion of targets' UTB into the regression leads to a small sample size of 224 transactions. The small sample size, coupled with the high variation in the reliability of the UTB data, may contribute to the insignificant interaction effect.

6. Conclusions

This study examines the relation between targets' non-sheltering status and takeover premiums. Specifically, using new data that identifies targets' non-participation in tax shelters in a sample of 447 transactions, we find that targets that disclose they have not used tax shelters have higher takeover premiums. We also show that this premium for targets' non-participation in tax shelters is significantly stronger for acquirers that are less tax aggressive.

Extant research using long return windows has demonstrated that the most aggressive form of tax planning, the use of tax shelters, is either positively valued for well governed firms, or unrelated to value for poorly governed firms (Desai and Dharmapala 2006; Wilson 2009). In short-window tests, Hanlon and Slemrod (2009) show a negative reaction to announcements of tax shelter participation, but Gallemore et al. (2014) show that such reaction is very short lived. By studying the premium an acquirer is willing to pay, considering past tax sheltering transactions of the target, we are the first to show a setting in which the relations are consistent with very aggressive tax planning having a negative effect on equity value.

Our findings are subject to at least one limitation. In this study, we assume that targets that do not disclose their non-participation in tax shelters are sheltering targets. However, tax-sheltering participation is not observable from publicly available data, making it impossible to

determine the amount of error in the classification (i.e., the number of non-sheltering targets not making a non-sheltering representation or the number of sheltering targets misrepresenting themselves). While we attempt to overcome this inherent limitation by controlling for disclosure choices and by eliminating potentially misclassified observations, we acknowledge that there is no way to ensure that every target in the no-representation group is a sheltering target.

Appendix 1
Examples of non-participation in tax shelters representation statements

JAMDAT Mobile Inc., December 8, 2005

 "The Company and each Company Subsidiary have disclosed on their federal income Tax returns all material positions taken therein that could, if not so disclosed, give rise to a substantial understatement penalty within the meaning of Section 6662 of the Code. Neither the Company nor any Company Subsidiary has been a party to or participated in any way in a transaction that would be defined as a "reportable transaction" within the meaning of Treasury Regulation Section 1.6011-4(b) (including, without limitation, any "listed transaction") or any confidential corporate Tax shelter within the meaning of Treasury Regulation Section 1.6111-2."

Electronic Data Systems Corp., May 13, 2008

"Neither the Company, nor any of its Subsidiaries has participated (i) in a transaction that is the same as or substantially similar to one of the types of transactions that the Internal Revenue Service has determined to be a tax avoidance transaction and identified by notice, regulation, or other form of published guidance as a listed transaction, as set forth in Treasury Regulation § 1.6011-4(b)(1) or, (ii) to the Knowledge of the Company, in a reportable transaction (other than a listed transaction), as set forth in Treasury Regulation § 1.6011-4(b)."

Varian Inc., July 26, 2009

"Neither the Company nor any Company Subsidiary has consummated, has participated in, or is currently participating in any transaction which was or is a "Tax shelter" transaction as defined in Sections 6662 or 6111 of the Code or the Treasury Regulations promulgated thereunder. Neither the Company nor any Company Subsidiary has participated in, nor are any of them currently participating in, a "Listed Transaction" or a "Reportable Transaction" within the meaning of Section 6707A(c) of the Code or Treasury Regulation Section 1.6011-4(b), or any transaction requiring disclosure under a corresponding or similar provision of state, local, or foreign law."

Robbins & Myers Inc., October 6, 2010

"For all Tax years and periods since January 1, 2006, neither R&M nor any R&M Subsidiary has participated in or been a party to a transaction that, as of the date of this Agreement, constitutes a "listed transaction" or "reportable transaction" within the meaning of Section 6011 of the Code and applicable Treasury Regulations thereunder (or a similar provision of state law)."

Appendix 2
Variable definitions and construction

Variable	Definitions and Construction
NONSHELTER	Indicator variable: 1 for transaction in which a target's non-sheltering representation is made in the Agreement and Plan of Merger, and 0 otherwise.
PREM [1-week] *PREM* [4-week]	The ratio of offer price to the target's trading price one week (four weeks) prior to the merger announcement date minus one; multiplied by 100. This variable is collected from the SDC database.
BTD	Total book-tax difference: BTD = [(Pre-tax income – taxable income – state income taxes – other income taxes – equity in earnings) / lagged assets] where taxable income = {[(current federal tax expense + current foreign tax expense) – change in tax loss carry-forward] / 35%} Observations with negative taxable income are excluded.
DD_BTD	Discretionary total book-tax difference based on Desai and Dharmapala (2006), where total book-tax difference is regressed on total accruals (with a firm-level fixed effect). Discretionary total book-tax difference is the residual value from the regression model.
PSHELTER	Probability of participation in tax shelters based on Wilson (2009): $PSHELTER = \exp(X'\beta) / [1+ \exp(X'\beta)]$, where $X'\beta$ = $-4.86 + 5.20*BTD + 4.08*DACC - 1.41*LEV + 0.76*SIZE + 3.51*ROA + 1.72*FOREIGN + 2.43*R\&D$
UTB	Natural logarithm of one plus the ending balance of the unrecognized tax benefits (UTB). This variable is hand-collected from the firms' 10-K filings.
negETR	Tax expense divided by pre-tax book income. For the ease of interpretation across tax aggressiveness proxies, we multiply *ETR* by negative one so that greater values represent higher levels of tax aggressiveness.

negCETR5	Cash effective tax rate based on Dyreng, Hanlon, and Maydew (2008): Cash tax paid over the previous five years divided by pre-tax income over the same period. This variable is truncated at [0, 1]. Observations with a negative denominator are excluded. For the ease of interpretation across tax aggressiveness proxies, we multiply *CETR5* by negative one so that greater values represent higher levels of tax aggressiveness.
TAXHAVEN (*LN_TAXHAVEN*)	The (natural logarithms of one plus the) number of material subsidiaries location in a tax haven jurisdiction as reported in Exhibit 21 of the firm's 10-K report. The data is provided by Scott Dyreng.
TOP_BTD $_{acq}$	Indicator variable: 1 if the acquirer is in the top quintile of *BTD*, and zero otherwise.
TOP_PSHELTER $_{acq}$	Indicator variable: 1 if the acquirer is in the top quintile of *PSHELTER*, and zero otherwise.
SIZE	Natural logarithm of one plus market value of equity. Market value of equity is calculated using number of shares outstanding multiplied by the stock price.
TOBINSQ	Market value of assets over book value of assets. Market value of assets equals to book value of total assets minus book value of equity plus market value of equity, where market value of equity equals to number of shares outstanding multiplied by the stock price.
ROA	Pre-tax income, scaled by lagged total assets.
LEV	Total long-term debt, scaled by lagged total assets.
DACC	Discretionary accruals in absolute value, estimated from the modified performance-matched cross-sectional Jones Model developed by Kothari, Leone, and Wasley (2005). Total accruals are measured as the change in non-cash current assets minus the change in current liabilities excluding the current portion of long-term debt, minus depreciation and amortization, scaled by lagged total assets.
NOL	Indicator variable: 1 if the firm's reported net operating loss carry-forward is positive, and 0 otherwise.
R&D	Research and development expenditures, scaled by lagged total assets. Missing values are coded as zero.
LITIGATION	Indicator variable: 1 if pretax or after-tax litigation/insurance settlement is negative, indicating a payout; 0 otherwise.
FOREIGN	Foreign pre-tax income, scaled by lagged total assets.
MEZZFIN	Convertible debt and preferred stock, scaled by lagged total assets.
EQEARN	Income reported under the equity method, scaled by lagged total assets.

BIG4	Indicator variable: 1 if the firm's auditor is Deloitte, Ernst & Young, KPMG, or PricewaterhouseCoopers, and 0 otherwise.
FORECAST	Natural logarithm of one plus the total number of management forecast in the fiscal year immediately prior to the merger announcement date. Missing values are coded as zero.
SPREAD	Natural logarithm of one plus the average bid-ask spread of the firm, measured over the 12-month period before merger announcement.
INST_OWN	The ratio of the number of shares held by institutional investors to the total number of shares outstanding.
TERMFEE $_{tar}$	Indicator variable: 1 if the merger agreement contains a termination fee payable by the target, and 0 otherwise. This variable is collected from the SDC database.
TERMFEE $_{acq}$	Indicator variable: 1 if the merger agreement contains a termination fee payable by the acquirer, and 0 otherwise. This variable is collected from the SDC database.
TOEHOLD	The fraction of the target's common stock owned by the acquirer on the merger announcement date. This variable is collected from the SDC database.
N_BIDDER	The number of competing bids for the target. This variable is collected from the SDC database.
TENDER	Indicator variable: 1 for tender offer, and 0 otherwise. This variable is collected from the SDC database.
ALLSTOCK	Indicator variable: 1 for 100 percent stock-financed deal, and 0 otherwise. This variable is collected from the SDC database.
DEALRATIO	The ratio of the total deal value to the acquirer's pre-announcement market value of equity; market value of equity is defined as the number of shares outstanding multiplied by the stock price at the 6th trading day prior to the merger announcement date. The total deal value is collected from the SDC database.
INDMATCH	Indicator variable: 1 if acquirer and target are within the same 2-digit SIC industry, and 0 otherwise.
HIGHTECH	Indicator variable: 1 if acquirer and target are both in a high-technology industry, and 0 otherwise. High-tech industries are as those in SIC codes 2833-2836 (Pharmaceuticals), 3570-3577 (Computers), 3600-3674 (Electronics), 7371-7379 (Programming), or 8731-8734 (R&D Services).

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TABLE 1
Sample Selection

Data Restriction		N
Merger or Acquisition deals listed on the SDC database involving U.S. public acquirers and U.S. public targets announced between 2005 and 2010:		975
Less:	Deals involving firms in the financial industries (SIC codes ranging from 6000 to 6999):	(344)
Less:	Deals without an Agreement and Plan of Merger	(102)
Less:	Deals with missing data (Compustat or CRSP)	(49)
Less:	Deals with missing data (SDC)	(33)
Final Sample		447

TABLE 2
Sample distribution by announcement year

Year	No. of Deals (Percent of Sample)	NON-SHELTER =1 (Percent of Sample) [Percent of Year]	Mean (Median) Acquirer Market Cap ($mil)	Mean (Median) Target Market Cap ($mil)	Mean (Median) PREM [1-week] NON-SHELTER =1	Mean (Median) PREM [1-week] NON-SHELTER =0
2005	86 (19.2)	59 (13.2)	30,850.9 (5,452.1)	1,828.9 (344.8)	34.24 (26.62)	32.85 (31.79)
2006	88 (19.7)	63 (14.1)	22,877.7 (3,956.5)	1,910.6 (561.7)	**33.46** **(28.72)**	23.89 (20.97)
2007	94 (21.0)	66 (14.8)	19,348.7 (3,340.7)	967.7 (528.0)	29.98 (28.39)	25.67 (20.70)
2008	55 (12.3)	45 (10.1)	26,159.4 (4,136.3)	1,143.5 (294.5)	48.12 (37.51)	34.41 (32.77)
2009	51 (11.4)	44 (9.80)	31,849.9 (3,017.2)	2,717.9 (302.4)	48.61 (22.82)	43.87 (41.50)
2010	73 (16.3)	64 (14.3)	25,849.9 (3,548.1)	877.3 (289.7)	**53.49** **(40.67)**	33.65 (31.13)
Total	447 (100.0)	341 (76.3)	25,582.4 (3,864.5)	1,523.6 (414.4)	39.96 (31.90)	30.09 (22.97)

Notes:

The sample consists of 447 completed U.S. mergers and acquisitions between 2005 and 2010. *NONSHELTER*

is an indicator variable equals one if a target's non-sheltering representation is made in the merger agreement,

and zero otherwise. The mean value in bold represents significant difference between the two groups at the

0.10 level (two-tailed).

TABLE 3
Descriptive statistics

Variable	Full Sample N=447			NONSHELTER = 1 N=341			NONSHELTER = 0 N=106			p-Value (Mean Diff.)
	Mean	Media	Std.Dev.	Mean	Median	Std.Dev.	Mean	Media	Std.Dev.	
Target Traits										
SIZE $_{tar}$		5.988	1.873	5.717	5.991	1.803	5.932	5.681	2.086	0.77
TOBINSQ $_{tar}$		1.774	1.270	2.154	1.778	1.297	2.047	1.742	1.180	0.45
ROA $_{tar}$		0.096	0.238	0.037	0.094	0.241	0.034	0.103	0.229	0.92
LEV $_{tar}$		0.049	0.297	0.173	0.045	0.288	0.201	0.103	0.325	0.40
DACC $_{tar}$		0.005	0.437	0.021	0.009	0.492	0.003	0.003	0.168	0.64
TERMFEE $_{tar}$		1.000	0.343	0.859	1.000	0.348	0.877	1.000	0.329	0.59
NOL $_{tar}$		0.000	0.500	0.501	1.000	0.501	0.471	0.000	0.501	0.59
R&D $_{tar}$		0.055	0.225	0.112	0.062	0.169	0.125	0.032	0.351	0.60
LITIGATION $_{tar}$		0.000	0.279	0.094	0.000	0.292	0.566	0.000	0.232	0.23
FOREIGN $_{tar}$		0.000	0.089	0.003	0.000	0.101	0.008	0.000	0.034	0.58
MEZZFIN $_{tar}$		0.000	0.154	0.052	0.000	0.158	0.047	0.000	0.138	0.79
EQEARN $_{tar}$		0.000	0.015	**0.001**	0.000	0.005	**0.004**	0.000	0.029	**0.02**
BIG4 $_{tar}$		1.000	0.416	0.780	1.000	0.415	0.774	1.000	0.420	0.89
VOLAT $_{tar}$		0.108	0.083	**0.126**	0.111	0.085	**0.104**	0.097	0.076	**0.02**
SPREAD $_{tar}$	−3.17	−3.401	1.520	−3.187	−3.426	1.408	−3.119	−3.329	1.841	0.69
BTD $_{tar}$		0.000	0.088	**0.006**	0.000	0.082	**0.028**	0.000	0.103	**0.03**
DD_BTD $_{tar}$		−0.001	0.079	**−0.001**	−0.002	0.073	**0.021**	−0.015	0.094	**0.03**
PSHELTER $_{tar}$		0.632	0.292	0.571	0.687	0.328	0.587	0.675	0.307	0.63
UTB $_{tar}$		0.000	4.456	4.214	3.466	4.460	2.845	0.000	4.316	**0.09**
negETR $_{tar}$	−0.27	−0.324	0.185	−0.276	−0.324	0.194	−0.259	−0.323	0.157	0.50
negCETR5 $_{tar}$	−0.26	−0.243	0.234	−0.273	−0.252	0.235	−0.258	−0.240	0.235	0.70
TAXHAVEN $_{tar}$		0.693	0.692	0.688	1.000	0.475	0.582	1.000	0.500	0.17
LN_TAXHAVEN $_{tar}$		0.693	0.695	0.782	0.693	0.705	0.601	0.693	0.649	**0.08**

Acquirer Traits										
$SIZE_{acq}$	8.437	8.259	2.073	**8.601**	8.385	2.003	**7.911**	7.707	2.212	**0.01**
$TOBINSQ_{acq}$	2.111	1.771	1.138	2.095	1.769	1.152	2.178	1.863	1.094	0.51
ROA_{acq}	0.099	0.095	0.126	0.097	0.093	0.119	0.099	0.103	0.145	0.96
LEV_{acq}	0.197	0.177	0.173	0.191	0.174	0.168	0.218	0.184	0.187	0.15
$TERMFEE_{acq}$	0.212	0.000	0.409	0.202	0.000	0.402	0.245	0.000	0.432	0.35
$TOEHOLD_{acq}$	0.734	0.000	6.207	0.554	0.000	5.679	1.313	0.000	7.668	0.27
BTD_{acq}	0.031	0.010	0.063	0.029	0.006	0.065	0.038	0.016	0.057	0.20
$BIG4_{acq}$	0.928	1.000	0.258	**0.947**	1.000	0.224	**0.868**	1.000	0.340	0.01
$LITIGATION_{acq}$	0.159	0.000	0.366	0.170	0.000	0.376	**0.122**	0.000	0.329	0.24
Deal Traits										
N_BIDDER	1.049	1.000	0.236	1.047	1.000	0.225	1.057	1.000	0.270	0.71
$TENDER$	0.212	0.000	0.409	**0.231**	0.000	0.422	**0.151**	0.000	0.360	**0.08**
$ALLSTOCK$	0.123	0.000	0.329	0.112	0.000	0.315	0.160	0.000	0.369	0.18
$DEALRATIO$	0.249	0.092	0.314	**0.234**	0.077	0.311	**0.301**	0.167	0.320	**0.05**
$INDMATCH$	0.637	1.000	0.481	0.631	1.000	0.483	0.660	1.000	0.476	0.58
$HIGHTECH$	0.407	0.000	0.492	0.425	0.000	0.495	0.349	0.000	0.479	0.16
Premiums (%)										
$PREM$ [1-week]	37.61	30.64	33.66	**39.96**	31.90	34.64	**30.09**	22.97	29.24	**0.01**
$PREM$ [4-week]	41.59	32.97	38.14	**44.34**	34.55	40.59	**32.73**	26.65	27.21	**0.01**

Notes:

This table reports summary statistics of the sample. The mean value in bold represents significant difference between the two groups at the 0.10 level (two-tailed). Variable definitions are given in Appendix 2. The sample size for *UTB* is 224 observations.

TABLE 4
Panel A: Correlations among tax aggressiveness measures for target firms

	Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	*NONSHELTER*								
(2)	*BTD*	**−0.105**							
(3)	*DD_BTD*	**−0.117**	**0.674**						
(4)	*PSHELTER*	0.023	**0.236**	**0.219**					
(5)	*UTB*	**−0.125**	0.086	0.107	−0.073				
(6)	*negETR*	−0.040	**0.112**	**0.346**	**−0.148**	0.138			
(7)	*negCETR5*	−0.028	**0.157**	**0.245**	**0.180**	**−0.261**	0.005		
(8)	*TAXHAVEN*	0.086	0.010	−0.045	**0.244**	0.101	−0.066	−0.069	
(9)	*LN_TAXHAVEN*	**0.109**	−0.006	−0.027	**0.366**	0.125	−0.020	−0.079	**0.806**

Panel B:

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) $PREM$ [1-week]																	
(2) $NONSHELTER_{tar}$	**0.14**																
(3) $SIZE_{tar}$	**−0.28**	0.01															
(4) $TOBINSQ_{tar}$	−0.08	0.04	**0.08**														
(5) ROA_{tar}	**−0.19**	0.00	**0.38**	**−0.27**													
(6) LEV_{tar}	0.04	−0.04	**0.15**	−0.06	−0.04												
(7) $DACC_{tar}$	**0.09**	**0.12**	**−0.11**	0.05	**−0.13**	**−0.09**											
(8) $TERMFEE_{tar}$	**0.08**	−0.02	−0.05	0.04	−0.05	−0.01	0.01										
(9) BTD_{tar}	**−0.20**	**−0.11**	**0.14**	0.05	**0.16**	0.04	−0.04	0.01									
(10) NOL_{tar}	**0.16**	0.03	**−0.16**	0.02	**−0.12**	−0.07	0.02	−0.01	−0.03								
(11) $FOREIGN_{tar}$	**−0.14**	−0.03	**0.15**	−0.01	**0.22**	0.01	**−0.12**	−0.02	0.06	0.04							
(12) $R\&D_{tar}$	**0.24**	−0.02	**−0.20**	**0.31**	**−0.45**	0.01	0.01	−0.03	−0.07	**0.16**	**−0.13**						
(13) $LITIGATION_{tar}$	−0.01	0.06	0.01	0.04	−0.01	0.04	−0.04	0.03	0.02	0.02	0.00	−0.02					
(14) $MEZZFIN$	**0.09**	0.01	−0.04	**0.08**	**−0.14**	**0.40**	−0.02	0.06	0.07	0.00	0.00	0.07	0.04				
(15) $EQEARN$	**−0.09**	−0.08	**0.26**	**−0.09**	**0.13**	**0.12**	−0.04	−0.02	−0.04	**−0.15**	0.06	**−0.14**	0.00	0.00			
(16) $BIG4$	−0.06	0.01	**0.41**	0.02	0.05	0.07	−0.05	0.02	−0.04	−0.04	**0.11**	0.04	0.03	0.01	**0.12**		
(17) $FORECAST$	−0.05	−0.03	**0.18**	0.02	**0.12**	**−0.10**	−0.05	0.03	−0.01	−0.05	0.07	−0.05	−0.01	−0.06	0.01	**0.13**	
(18) $SPREAD$	0.06	−0.02	**−0.31**	0.05	−0.05	0.04	0.02	0.00	0.01	0.02	0.01	**0.09**	−0.01	0.03	0.01	**−0.26**	**−0.20**

Notes:

This table presents Pearson correlations among tax aggressiveness measures for target firms. Reported in parentheses are p-values. The coefficients in bold are all statistically significant at the 0.10 level (two-tailed). Variable definitions are given in Appendix 2.

TABLE 5
The association between targets' non-sheltering status and takeover premiums

	Expected Sign	(1) *PREM* [1-week] OLS	(2) *PREM* [4-week] OLS	(3) *PREM* [1-week] Robust	(4) *PREM* [1-week] Tobit	(5) *PREM* [1-week] OLS
NONSHELTER $_{tar}$	+	4.581** (1.849)	5.902** (1.825)	4.675** (1.951)	4.827** (1.868)	4.928** (1.912)
Target Traits						
SIZE $_{tar}$		−5.376*** (−5.197)	−9.855*** (−5.469)	−5.863*** (−5.942)	−5.395*** (−5.294)	−5.461*** (−4.636)
TOBINSQ $_{tar}$		−2.814*** (−3.008)	0.354 (0.247)	−2.800*** (−2.912)	−3.500*** (−3.554)	−1.766* (−1.672)
ROA $_{tar}$		9.193 (1.067)	11.610 (0.912)	11.074 (1.262)	2.836 (0.488)	9.941 (0.898)
LEV $_{tar}$		3.440 (0.642)	13.258 (1.097)	2.835 (0.570)	−2.960 (−0.687)	3.468 (0.526)
DACC $_{tar}$		2.708 (0.902)	6.626* (1.656)	3.108 (1.022)	3.176 (1.119)	2.053 (0.722)
TERMFEE $_{tar}$		4.484 (1.522)	7.458 (1.593)	5.677* (1.921)	4.912 (1.540)	6.258** (2.181)
BTD $_{tar}$		−39.020*** (−2.611)	−31.670 (−1.603)	−39.070*** (−2.663)	−36.400*** (−2.871)	−36.840** (−2.401)
NOL $_{tar}$		5.930*** (2.789)	8.239** (2.478)	6.188*** (2.978)	4.820** (2.206)	6.480*** (2.944)
R&D $_{tar}$		19.840*** (4.095)	24.800** (2.512)	20.580*** (4.409)	21.820*** (3.726)	17.154 (1.491)
LITIGATION $_{tar}$		−1.823 (−0.372)	−7.855 (−1.367)	−1.104 (−0.228)	−4.246 (−1.107)	−2.298 (−0.498)
FOREIGN $_{tar}$		−23.460*** (−3.???)	−6.026	−22.490***	−20.380*	−23.050***

	(−3.225)	(−0.628)	(−2.973)	(−1.665)	(−3.019)
MEZZFIN $_{tar}$	12.710	16.630	10.540	17.230	−5.307
	(1.199)	(0.936)	(1.047)	(1.455)	(−0.442)
EQEARN $_{tar}$	0.858	−1.197	−0.187	0.516	0.771
	(0.242)	(−0.321)	(−0.055)	(0.134)	(0.220)
BIG4 $_{tar}$	1.910	2.003	1.264	2.918	4.218
	(0.637)	(0.429)	(0.428)	(0.984)	(1.466)
FORECAST $_{tar}$	0.325	−0.637	0.172	−0.020	0.027
	(0.252)	(−0.372)	(0.137)	(−0.014)	(0.021)
SPREAD $_{tar}$	−0.357	0.217	−0.421	−0.781	−1.203
	(−0.405)	(0.182)	(−0.479)	(−1.018)	(−1.192)
INST_OWN $_{tar}$					1.469
					(0.437)
Acquirer Traits					
SIZE $_{acq}$	3.375***	6.467***	3.469***	3.358***	3.674***
	(3.594)	(4.326)	(3.862)	(3.990)	(3.854)
TOBINSQ $_{acq}$	−0.289	−2.096	−0.290	0.250	−0.931
	(−0.276)	(−1.146)	(−0.276)	(0.229)	(−0.840)
ROA $_{acq}$	−4.786	12.440	−7.891	−6.880	−1.788
	(−0.416)	(0.629)	(−0.683)	(−0.681)	(−0.175)
LEV $_{acq}$	0.764	2.859	3.666	9.453	4.319
	(0.101)	(0.257)	(0.486)	(1.310)	(0.579)
TERMFEE $_{acq}$	−4.557	−3.906	−3.791	−2.886	−3.446
	(−1.473)	(−0.889)	(−1.259)	(−0.989)	(−1.081)
TOEHOLD $_{acq}$	−0.329**	−0.281	−0.352*	−0.287	−0.248
	(−2.111)	(−1.587)	(−1.727)	(−1.548)	(−1.602)
BTD $_{acq}$	1.833	−21.554	7.150	10.776	1.986
	(0.098)	(−0.818)	(0.386)	(0.585)	(0.113)
LITIGATION $_{acq}$	2.460	11.430**	3.054	3.707	1.657
	(0.818)	(2.270)	(1.042)	(1.234)	(0.565)
BIG4 $_{acq}$	−5.718	−2.405	−4.790	−7.634	−5.789

		(−1.118)	(−0.283)	(−0.920)	(−1.572)	(−0.996)
INST_OWN $_{aca}$						−5.717
						(−0.788)
<u>Deal Traits</u>						
N_BIDDER		−4.110	8.009	−1.678	−0.558	−3.129
		(−1.009)	(0.781)	(−0.436)	(−0.124)	(−0.837)
TENDER		4.011	10.590**	5.078*	5.780**	4.437
		(1.475)	(2.190)	(1.865)	(2.067)	(1.575)
ALLSTOCK		−2.720	−1.257	−3.070	−3.786	−3.632
		(−0.855)	(−0.273)	(−0.935)	(−1.056)	(−1.058)
DEALRATIO		5.055***	10.010***	4.276***	4.164***	4.853***
		(4.369)	(4.452)	(3.642)	(2.600)	(4.269)
INDMATCH		2.130	2.668	2.781	2.160	3.153
		(0.850)	(0.736)	(1.111)	(0.894)	(1.301)
HIGHTECH		−7.469**	−10.510***	−8.165**	−9.377***	−8.793**
		(−2.192)	(−2.648)	(−2.478)	(−3.411)	(−2.567)
Intercept		39.800***	14.820	35.740***	34.850***	31.110***
		(3.768)	(0.772)	(3.563)	(3.972)	(2.913)
Year Fixed Effects	YES	YES	YES	YES	YES	YES
Target Industry Fixed Effects	YES	YES	YES	YES	YES	YES
Adjusted R^2		0.34	0.30		0.35	0.368
Pseudo R^2				0.45		
N		447	447	447	447	409

Notes:

This table reports regression results of takeover premiums on targets' non-sheltering status. Variable definitions are given in Appendix 2. Column (1) computes

the takeover premium using market prices one week prior to the announcement whereas column (2) uses prices four weeks prior to the announcement. Column

(3) re-estimates the equation using robust regression. Column (4) re-estimates the equation censoring the lower tail at zero and using Tobit estimates; Column

(4) reports OLS results with corporate governance of acquirers and targets as additional control variables. Reported in parentheses are *t*-statistics computed using heteroskedasticity-consistent standard errors; *, **, *** represent statistical significance levels (two-tailed for control variables and one-tailed for *NONSHELTER* $_{tar}$) of 0.10, 0.05, and 0.01, respectively.

TABLE 6
The association between targets' non-sheltering status and takeover premiums

	Expected Sign	(1) PREM [1-week]	(2) PREM [1-week]	(3) PREM [1-week]
TAX_AGG _tar_		PSHELTER	negCETR5	UTB
NONSHELTER _tar_	+	4.823**	5.762**	8.656**
		(1.961)	(2.026)	(1.971)
Target Traits				
SIZE _tar_		−4.314***	−7.135***	−7.382***
		(−2.815)	(−5.669)	(−3.656)
TOBINSQ _tar_		−2.884***	−1.192	−3.181**
		(−3.080)	(−0.666)	(−2.359)
ROA _tar_		10.460	13.679	17.910*
		(1.037)	(0.596)	(1.812)
LEV _tar_		2.710	15.340***	8.981
		(0.524)	(2.934)	(1.096)
DACC _tar_		2.796	4.305**	−0.005
		(0.912)	(2.044)	(−0.002)
TERMFEE _tar_		5.115*	5.778*	5.470
		(1.727)	(1.791)	(1.152)
TAX_AGG _tar_		−10.890	−27.200***	0.173
		(−1.183)	(−3.478)	(0.335)
NOL _tar_		5.424**	1.380	7.894**
		(2.450)	(0.475)	(2.417)
R&D _tar_		18.060***	14.440	20.410***
		(3.829)	(0.395)	(4.555)
LITIGATION _tar_		−2.207	42.120	−4.005
		(−0.448)	(1.237)	(−0.710)
FOREIGN _tar_		−21.840***	2.303	−29.440***
		(−2.828)	(0.417)	(−4.019)
MEZZFIN _tar_		10.420	−36.450**	8.949
		(0.998)	(−2.194)	(0.497)
EQEARN _tar_		2.360	1.467	4.696
		(0.642)	(0.379)	(0.690)
BIG4 _tar_		3.818	−3.650	3.511
		(1.266)	(−0.859)	(0.839)
FORECAST _tar_		1.051	−0.662	0.347
		(0.799)	(−0.423)	(0.160)
SPREAD _tar_		−0.493	−2.280*	1.325
		(−0.558)	(−1.700)	(0.764)
Acquirer Traits				
SIZE _acq_		2.982**	3.786***	4.761***

	(1)	(2)	(3)
	(2.523)	(3.144)	(2.724)
TOBINSQ $_{acq}$	0.128	−0.184	−1.952
	(0.124)	(−0.100)	(−0.965)
ROA $_{acq}$	−4.640	8.856	9.969
	(−0.367)	(0.570)	(0.620)
LEV $_{acq}$	2.317	4.431	2.868
	(0.294)	(0.589)	(0.259)
TERMFEE $_{acq}$	−5.039	−0.034	−4.907
	(−1.642)	(−0.011)	(−1.089)
TOEHOLD $_{acq}$	−0.328**	−0.420***	−0.273
	(−2.007)	(−3.298)	(−1.395)
TAX_AGG $_{acq}$	1.231	3.333	−0.189
	(0.088)	(0.341)	(−0.283)
LITIGATION $_{acq}$	2.407	3.832	−2.122
	(0.795)	(1.071)	(−0.545)
BIG4 $_{acq}$	−5.635	2.466	−16.470**
	(−1.050)	(0.373)	(−2.056)
Deal Traits			
N_BIDDER	−3.036	−1.732	−10.530*
	(−0.746)	(−0.274)	(−1.680)
TENDER	3.383	−0.416	1.530
	(1.139)	(−0.116)	(0.405)
ALLSTOCK	−3.671	−7.574*	−11.850**
	(−1.104)	(−1.672)	(−2.427)
DEALRATIO	4.952***	4.729***	5.491
	(4.193)	(4.200)	(0.880)
INDMATCH	1.354	−1.927	0.852
	(0.537)	(−0.684)	(0.227)
HIGHTECH	−6.673*	−2.118	0.470
	(−1.933)	(−0.494)	(0.092)
Intercept	43.730***	28.490**	61.560***
	(3.872)	(2.111)	(4.128)
Year Fixed Effects	YES	YES	YES
Target Industry Fixed Effects	YES	YES	YES
Adjusted R^2	0.34	0.46	0.45
N	447	227	224

Notes:

This table reports regression results of takeover premiums on targets' non-sheltering status, controlling for

other proxies of targets' tax aggressiveness. For results presented from column (1) to column (3), *TAX_AGG*

$_{tar}$ is targets' estimated tax shelter probability, negative 1 times the five-year cash ETR, and natural logarithm

of one plus ending UTB balance, respectively. Variable definitions are given in Appendix 2. Reported in

parentheses are *t*-statistics computed using heteroskedasticity-consistent standard errors; *, **, *** represent

statistical significance levels (two-tailed for control variables and one-tailed for *NONSHELTER $_{tar}$*) of 0.10,

0.05, and 0.01, respectively.

TABLE 7
The association between targets' non-sheltering status and takeover premiums: instrumental variables two-stage regressions

	(1) First-stage	(2) Second-stage	(3)	(4)
	NONSHELTER	PREM [1-week]	PREM [1-week]	PREM [1-week]
NONSHELTER tar (Expected Sign: +)		16.640** (1.919)	4.641** (1.997)	9.439** (1.726)
Target Traits				
SIZE tar		−4.585*** (−5.481)	−4.947*** (−7.072)	−4.781*** (−5.796)
TOBINSQ tar		−2.542*** (−2.626)	−2.928*** (−4.318)	−2.648*** (−2.703)
ROA tar	0.536* (1.647)	4.551 (0.803)	−0.010 (−0.002)	6.678 (1.186)
LEV tar		5.241 (1.335)	5.078 (1.451)	4.616 (1.234)
DACC tar		4.212 (1.488)	2.457 (1.100)	3.038 (1.062)
TERMFEE tar		6.200** (2.002)	5.818*** (3.048)	6.291** (2.012)
BTD tar	−2.523*** (−2.639)	−39.760*** (−3.043)	−30.600*** (−3.126)	−42.18*** (−3.385)
NOL tar	−0.007 (−0.049)	5.448** (2.490)	5.468*** (3.534)	6.403*** (2.939)
R&D tar		23.790*** (4.236)	22.870*** (7.952)	25.930*** (4.650)
LITIGATION tar		−1.149 (−0.310)	−1.357 (−0.415)	−1.774 (−0.473)
FOREIGN tar	0.763 (1.023)	−22.670* (−1.923)	−21.620*** (−4.616)	−20.170* (−1.676)
MEZZFIN tar	0.513 (1.306)			
EQEARN tar	−16.760* (−1.941)			
BIG4 tar	0.097 (0.552)			
FORECAST tar		0.152 (0.107)	1.146 (1.296)	0.119 (0.083)
SPREAD tar		−1.186 (−1.528)	−0.748 (−1.175)	−1.047 (−1.347)

Acquirer Traits				
SIZE $_{acq}$		3.223***	3.376***	3.274***
		(4.019)	(4.661)	(3.989)
TOBINSQ $_{acq}$		0.147	−0.407	−0.233
		(0.141)	(−0.481)	(−0.221)
ROA $_{acq}$		−6.474	−4.473	−5.991
		(−0.684)	(−0.559)	(−0.627)
LEV $_{acq}$		1.303	5.870	0.374
		(0.181)	(1.116)	(0.053)
TERMFEE $_{acq}$		−4.758*	−4.626**	−3.819
		(−1.695)	(−2.531)	(−1.368)
TOEHOLD $_{acq}$		−0.311*	−0.240**	−0.303*
		(−1.754)	(−2.323)	(−1.679)
BTD $_{acq}$		3.206	22.810*	8.409
		(0.179)	(1.897)	(0.462)
LITIGATION $_{acq}$		3.092	5.346***	3.544
		(1.071)	(2.670)	(1.222)
BIG4 $_{acq}$		−6.183	−3.627	−6.354
		(−1.338)	(−1.250)	(−1.353)
Deal Traits				
N_BIDDER		−2.588	−6.719**	−2.714
		(−0.596)	(−2.283)	(−0.614)
TENDER		3.698	3.472*	3.906
		(1.340)	(1.699)	(1.388)
ALLSTOCK		−2.051	−3.149	−2.296
		(−0.590)	(−1.610)	(−0.671)
DEALRATIO		4.765***	4.508***	4.221***
		(3.072)	(4.629)	(2.737)
INDMATCH		2.002	1.149	1.114
		(0.810)	(0.665)	(0.489)
HIGHTECH		−7.921**	−6.219***	−8.936***
		(−2.572)	(−3.238)	(−3.873)
TREND	0.175***			
	(4.017)			
Intercept	0.713	40.240***	32.280***	28.870***
	(0.941)	(3.096)	(4.530)	(3.221)
Year Fixed Effects	NO	YES	YES	YES
Target Industry Fixed Effects	YES	YES	YES	YES
Cross-equation correlation (rho)		−0.32		
Adjusted R^2			0.301	0.293
Pseudo R^2	0.122			
Area under ROC	0.73			
N	447	447	447	447

Notes:

This table reports regression results of takeover premiums on targets' non-sheltering status.   Column (1)

reports the results of probit estimation of Equation (3). Column (2) reports the results of the endogenous

treatment regression using Equation (3) as the first-stage regression. Columns (3) and (4) report the results of

the instrumental variable regressions using generalized method of moments (GMM) estimator and two-stage

least squares (2SLS) estimator, respectively; both using Equation (3) as the first-stage regression. Variable

definitions are given in Appendix 2. Reported in parentheses are t-statistics computed using

heteroskedasticity-consistent standard errors; *, **, *** represent statistical significance levels (two-tailed for

control variables and one-tailed for *NONSHELTER $_{tar}$*) of 0.10, 0.05, and 0.01, respectively.

TABLE 8

The association between targets' non-sheltering status and takeover premiums: the role of acquirers' tax aggressiveness

	Expected Sign	(1) PREM [1-week]	(2) PREM [4-week]	(3) PREM [1-week]	(4) PREM [4-week]
NONSHELTER $_{tar}$	+	7.017***	5.748**	6.089***	4.625**
		(2.426)	(2.002)	(2.557)	(1.695)
NONSHELTER $_{tar}$ × TOP_BTD $_{acq}$	−	−9.756**	−11.59***		
		(−1.800)	(−2.391)		
NONSHELTER $_{tar}$ × TOP_PSHELTER $_{acq}$	−			−18.270**	−21.290**
				(−1.730)	(−1.814)
Target Traits					
SIZE $_{tar}$		−5.325***	−6.269***	−4.292***	−5.926***
		(−5.227)	(−4.956)	(−3.004)	(−3.425)
TOBINSQ $_{tar}$		−2.561***	−0.564	−2.810***	−0.349
		(−2.817)	(−0.478)	(−2.642)	(−0.289)
ROA $_{tar}$		7.320	5.619	9.978	9.019
		(0.827)	(0.534)	(0.965)	(0.665)
LEV $_{tar}$		3.451	4.322	3.030	5.903
		(0.645)	(0.720)	(0.622)	(0.987)
DACC $_{tar}$		1.956	3.660	2.748	4.203
		(0.662)	(1.143)	(0.894)	(1.282)
TERMFEE $_{tar}$		5.680*	6.297*	5.055*	4.466
		(1.930)	(1.879)	(1.751)	(1.351)
BTD $_{tar}$		−35.620**	−26.810*		
		(−2.516)	(−1.737)		
PSHELTER $_{tar}$				−10.920	−5.264
				(−1.236)	(−0.438)
NOL $_{tar}$		4.605**	4.379*	4.886**	3.539
		(2.169)	(1.732)	(2.325)	(1.440)
R&D $_{tar}$		20.360***	18.190***	17.930***	14.060**
		(4.280)	(2.870)	(4.177)	(2.177)
LITIGATION $_{tar}$		−1.057	−8.039*	−1.936	−7.534
		(−0.219)	(−1.732)	(−0.385)	(−1.556)
FOREIGN $_{tar}$		−23.420***	−9.228	−22.080***	−14.620**
		(−3.143)	(−1.270)	(−2.884)	(−2.045)
MEZZFIN $_{tar}$		13.310	11.380	9.842	5.753
		(1.289)	(0.906)	(0.921)	(0.445)
EQEARN $_{tar}$		1.753	−0.625	2.602	0.411
		(0.508)	(−0.183)	(0.754)	(0.124)
BIG4 $_{tar}$		2.528	2.477	3.069	2.755

	(0.867)	(0.689)	(1.058)	(0.758)
FORECAST $_{tar}$	0.370	0.638	0.548	0.424
	(0.281)	(0.436)	(0.420)	(0.317)
SPREAD $_{tar}$	−0.268	0.520	−0.315	0.613
	(−0.305)	(0.571)	(−0.370)	(0.668)
Acquirer Traits				
SIZE $_{acq}$	3.008***	3.721***	2.671***	3.361***
	(3.196)	(3.339)	(2.782)	(3.234)
TOBINSQ $_{acq}$	0.023	−0.285	−0.253	−0.816
	(0.022)	(−0.216)	(−0.230)	(−0.581)
ROA $_{acq}$	−4.456	7.638	−5.630	4.100
	(−0.384)	(0.539)	(−0.467)	(0.282)
LEV $_{acq}$	2.936	7.087	4.637	9.588
	(0.397)	(0.834)	(0.575)	(1.092)
TERMFEE $_{acq}$	−5.375*	−6.324*	−4.873	−6.255*
	(−1.740)	(−1.856)	(−1.604)	(−1.945)
TOEHOLD $_{acq}$	−0.288*	−0.239	−0.321**	−0.321
	(−1.752)	(−1.268)	(−1.986)	(−1.527)
TOP_BTD $_{acq}$	8.216*	5.218		
	(1.722)	(1.391)		
TOP_PSHELTER $_{acq}$			21.06**	20.900*
			(2.139)	(1.828)
LITIGATION $_{acq}$	2.612	8.575**	2.475	8.413**
	(0.851)	(2.229)	(0.823)	(2.188)
BIG4 $_{acq}$	−4.558	−1.421	−4.350	−0.235
	(−0.895)	(−0.223)	(−0.751)	(−0.031)
Deal Traits				
N_BIDDER	−2.084	0.748	−2.558	1.344
	(−0.501)	(0.124)	(−0.656)	(0.234)
TENDER	2.530	5.601	3.339	4.786
	(0.870)	(1.628)	(1.057)	(1.294)
ALLSTOCK	−4.839	−2.043	−4.496	−2.601
	(−1.485)	(−0.508)	(−1.345)	(−0.636)
DEALRATIO	4.698***	5.804***	4.393***	5.071***
	(4.094)	(4.756)	(3.737)	(4.039)
INDMATCH	1.567	0.532	1.388	2.111
	(0.637)	(0.191)	(0.540)	(0.754)
HIGHTECH	−5.778*	−4.035	−6.415*	−4.461
	(−1.840)	(−1.022)	(−1.925)	(−1.230)
Intercept	58.370***	41.93***	61.100***	64.390***
	(4.234)	(3.304)	(4.702)	(3.829)
Year Fixed Effects	YES	YES	YES	YES
Target Industry Fixed Effects	YES	YES	YES	YES
Adjusted R^2	0.37	0.34	0.36	0.36

N	447	447	447	447

TABLE 9

The association between targets' non-sheltering status and takeover premiums: subsample analysis

	Expected Sign	(1) PREM [1-week]	(2) PREM [1-week]	(3) PREM [1-week]	(4) PREM [1-week]
$NONSHELTER_{tar}$	+	4.663**	8.051***	5.040**	7.398**
		(1.888)	(2.435)	(1.954)	(2.227)
$NONSHELTER_{tar} \times$ TOP_BTD_{acq}	−		−15.050***		−10.970**
			(−2.358)		(−1.807)
Target Traits					
$SIZE_{tar}$		−4.901***	−4.863***	−5.899***	−5.964***
		(−4.441)	(−4.173)	(−5.820)	(−5.194)
$TOBINSQ_{tar}$		−2.724***	−2.429**	−3.133***	−2.829**
		(−2.640)	(−2.531)	(−2.733)	(−2.512)
ROA_{tar}		3.581	3.022	9.858	9.562
		(0.396)	(0.296)	(1.149)	(0.995)
LEV_{tar}		−1.601	−0.997	1.114	2.480
		(−0.263)	(−0.147)	(0.209)	(0.425)
$DACC_{tar}$		1.477	0.375	5.625	4.448
		(0.505)	(0.131)	(1.508)	(1.170)
$TERMFEE_{tar}$		6.357**	6.650**	5.394	7.127**
		(2.058)	(1.975)	(1.640)	(2.010)
BTD_{tar}		−47.850***	−44.580***	−40.170**	−41.750**
		(−3.374)	(−2.907)	(−2.254)	(−2.199)
NOL_{tar}		7.998***	6.858***	6.267***	5.123**
		(3.683)	(2.956)	(2.620)	(2.085)
$R\&D_{tar}$		23.910***	20.290***	25.560***	22.590***
		(4.456)	(3.852)	(4.444)	(4.243)
$LITIGATION_{tar}$		−1.989	−1.611	−0.901	−0.259
		(−0.388)	(−0.306)	(−0.171)	(−0.047)
$FOREIGN_{tar}$		−21.420***	−22.360***	−20.150**	−21.650**
		(−3.092)	(−2.981)	(−2.328)	(−2.397)
$MEZZFIN_{tar}$		18.170	15.580	19.080*	15.890
		(1.583)	(1.323)	(1.657)	(1.317)
$EQEARN_{tar}$		0.352	0.550	−1.205	0.140
		(0.101)	(0.144)	(−0.345)	(0.035)
$BIG4_{tar}$		2.643	2.191	2.873	2.502
		(0.880)	(0.699)	(0.936)	(0.766)
$FORECAST_{tar}$		−0.056	0.209	0.339	0.305
		(−0.044)	(0.141)	(0.240)	(0.187)
$SPREAD_{tar}$		−0.718	−0.586	−0.139	−0.202
		(−0.731)	(−0.590)	(−0.143)	(−0.198)
Acquirer Traits					

SIZE $_{acq}$	3.155***	2.494**	3.877***	3.226***
	(3.138)	(2.329)	(3.850)	(2.957)
TOBINSQ $_{acq}$	−0.363	−0.329	0.123	0.005
	(−0.342)	(−0.292)	(0.100)	(0.004)
ROA $_{acq}$	−1.050	−1.562	−3.210	−2.327
	(−0.081)	(−0.110)	(−0.265)	(−0.186)
LEV $_{acq}$	−0.788	1.803	3.772	7.206
	(−0.095)	(0.216)	(0.471)	(0.877)
TERMFEE $_{acq}$	−3.411	−4.099	−4.929	−5.422
	(−1.079)	(−1.201)	(−1.487)	(−1.420)
TOEHOLD $_{acq}$	−0.258	−0.251	−0.319*	−0.294
	(−1.434)	(−1.257)	(−1.891)	(−1.525)
BTD $_{acq}$	0.642	1.261	0.706	−4.263
	(0.032)	(0.047)	(0.033)	(−0.139)
LITIGATION $_{acq}$	4.412	3.707	3.484	3.110
	(1.389)	(1.114)	(0.993)	(0.857)
BIG4 $_{acq}$	−2.517	−0.393	−6.586	−4.955
	(−0.501)	(−0.070)	(−1.221)	(−0.873)
Deal Traits				
N BIDDER	−6.187	−4.169	−4.248	−1.496
	(−1.188)	(−0.766)	(−0.916)	(−0.324)
TENDER	4.383	2.434	4.169	2.136
	(1.479)	(0.788)	(1.359)	(0.625)
ALLSTOCK	−2.790	−3.632	−1.699	−3.216
	(−0.841)	(−0.914)	(−0.485)	(−0.789)
DEALRATIO	5.245***	4.931***	5.175***	4.551***
	(4.226)	(3.919)	(4.143)	(3.571)
INDMATCH	−0.093	−0.551	2.483	3.224
	(−0.040)	(−0.192)	(0.961)	(1.040)
HIGHTECH	−8.442***	−5.864*	−11.49***	−9.758**
	(−3.079)	(−1.651)	(−4.038)	(−2.551)
Intercept	38.330***	42.930***	40.740***	48.850***
	(3.624)	(3.450)	(3.866)	(3.618)
Year Fixed Effects	YES	YES	YES	YES
Target Industry Fixed Effects	YES	YES	YES	YES
Adjusted R^2	0.35	0.42	0.35	0.42
N	410	410	392	392

Notes:

This table reports regression results of takeover premiums on targets' non-sheltering status. *TOP_BTD* $_{acq}$

(*TOP_PSHELTER* $_{acq}$) is an indicator variable that equals one if the acquirer is in the top quintile of *BTD* $_{acq}$

(*PSHELTER $_{acq}$*). Variable definitions are given in Appendix 2. Reported in parentheses are *t*-statistics computed using heteroskedasticity-consistent standard errors; *, **, *** represent statistical significance levels (two-tailed for control variables and one-tailed for *NONSHELTER $_{tar}$* and its interaction terms) of 0.10, 0.05, and 0.01, respectively.