

Firm and Investor Responses to Uncertain Tax Benefit Disclosure Requirements

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ABSTRACT: We examine whether proprietary costs affect disclosure quality and how investors react to disclosure quality in a new proprietary cost setting. We apply Verrecchia's (1983) proprietary cost theory to the FIN 48 adoption setting and argue that proprietary costs result from beliefs that the new disclosures could weaken a firm's competitive position when negotiating with tax authorities. FIN 48 is an ideal setting to examine how proprietary costs affect disclosure given the proprietary nature of uncertain tax positions, and the ability to construct objective measures of both proprietary costs and disclosure quality. We construct disclosure quality scores for S&P 1500 firms and offer two empirical findings. First, we find a negative association between proprietary costs and disclosure quality. Second, investors reward firms for low disclosure quality, especially small firms and firms with high proprietary costs. Both findings are consistent with Verrecchia's (1983) theory, and suggest that proprietary costs moderate investor demand for full disclosure.

Keywords: FIN 48 (ASC 740-10); proprietary costs; disclosure quality; tax avoidance.

JEL Classifications: G14; L15; M41; M44; M45.

INTRODUCTION

We examine firms' initial disclosures under Financial Interpretation No. 48, *Accounting for Uncertainty in Income Taxes* (FIN 48, FASB 2006). Verrecchia (1983) predicts that, in equilibrium, proprietary costs suppress managers' voluntary disclosures because disclosing proprietary information can reduce their firms' competitive position. We apply this theory to the FIN 48 adoption setting and argue that proprietary costs result from market participants' beliefs that the FIN 48 disclosures would provide new information to the tax

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authorities that would lead to an increase in tax deficiencies. Accordingly, we predict that managers of firms that face higher proprietary costs will disclose less about their uncertain tax positions.¹ Moreover, we also predict that investors will recognize why managers of firms with higher proprietary costs disclose less information, resulting in abnormal stock returns consistent with investors not favoring full disclosure.

FIN 48, effective for fiscal years beginning after December 15, 2006, provides accounting guidance for uncertain tax positions, which arise when taxpayers are uncertain whether the tax authority will assess additional tax payments pursuant to a tax audit. The guidelines standardize the process by which a firm determines the amount of tax benefits it claimed on its tax returns, but that it may not recognize in its financial statements during the time that potential disputes with tax authorities remain unresolved. This amount reflects a liability, termed the unrecognized tax benefit (UTB) that a firm must reveal as part of the FIN 48 disclosure requirements.

Due to the potential to provide new information to the tax authorities, the disclosure requirements of FIN 48 were highly controversial.² Although standard-setters maintained that FIN 48 disclosures would not be useful to tax authorities, both firm managers and investors frequently expressed concern that the disclosures could induce an audit, increase the likelihood that the tax authority might uncover an issue, or shift bargaining power toward the taxing authority. [Blouin et al. \(2007, 2010\)](#) noted that 89 percent of 4,000 KPMG webcast participants believed FIN 48 disclosures would increase scrutiny by tax authorities. Other constituents noted that the disclosures could provide “a roadmap for the tax authority that undercuts the firm’s bargaining power in the associated tax disputes” ([Spatt 2007](#)) or that firms could “virtually be holding an arrow, pointing the IRS toward controversial tax benefits it might audit” ([Yoon 2006](#)).

[Leuz \(2004\)](#) notes the difficulty in empirically testing the proprietary cost hypothesis and, as a result, “there is little empirical evidence on the existence of proprietary costs and their importance in explaining firms’ disclosure choices.” Applying the proprietary cost hypothesis of [Verrecchia \(1983\)](#) to the FIN 48 adoption setting helps overcome two important measurement issues faced in the literature. First, the disclosures are proprietary with respect to tax authorities and increase in the firm’s level of tax avoidance, a construct with numerous established proxies in the literature.³ This overcomes the elusive nature of identifying and measuring competitively sensitive information ([Beyer et al. 2010](#)). Second, the mandatory nature of the disclosures provides a benchmark for measuring disclosure choices—deviations from the explicit requirements of FIN 48 imply withholding of information.⁴ This overcomes the need to infer disclosure choices from, for instance, the level of aggregation or fineness of a disclosure (e.g., [Piotroski 2002](#)). Finally, and more generally, we improve the external validity of the proprietary cost hypothesis by offering empirical evidence in a new setting with different types of firms ([Shadish et al. 2002](#)).

¹ FIN 48 disclosure guidance is mandatory. However, less than full disclosure arises in our setting in two ways: (1) noncompliance with the disclosure requirements (completeness), and (2) lack of disclosure specificity (clarity), which requires assumptions on the part of the user of the information. Regarding the latter, prior analytical work shows that a signal’s precision is important in belief development ([Kim and Verrecchia 1991](#); [Morse et al. 1991](#)). In our setting, we operationalize “precision” as “disclosure clarity.”

² Consistent with firms being particularly averse to disclosure in our setting, [Gleason and Mills \(2002\)](#) find that many large firms with material IRS deficiencies *recognize*, but do not *disclose*, a liability pre-FIN 48.

³ In contrast, [Harris \(1998\)](#) and [Shin \(2002\)](#) rely on measures of product market competition to infer proprietary costs associated with industry segment disclosures. In fact, much of the existing empirical literature is limited to such proprietary costs (i.e., [Botosan and Stanford 2005](#); [Berger and Hahn 2003, 2007](#)).

⁴ In contrast, [Shalev \(2009\)](#) measures disclosure quality in the business combination setting by using an equally weighted index of 27 required disclosures, but must adjust for “materiality” since only *material* business combinations require disclosure. FIN 48 does not contain materiality thresholds for disclosure.

To address our research question, we first investigate whether firms that face higher proprietary costs exhibit lower quality FIN 48 adoption disclosures. Adoption disclosures provide the most powerful setting for our study. As described above, perceived proprietary costs *ex ante* were significant—anecdotally, this perception declined *ex post*.⁵ We measure disclosure quality for calendar year-end S&P 1500 firms using a two-part disclosure score: (1) disclosure compliance, and (2) disclosure clarity. We measure proprietary costs using multiple proxies for tax avoidance from the literature. We examine whether differences in disclosure quality relate to proprietary costs after controlling for other determinants of firms' disclosure choices, and find evidence consistent with the proprietary cost hypothesis. Moreover, we also predict and find that the relative significance of proprietary costs may differ across certain components of FIN 48 disclosures—in particular, the proprietary costs of disclosing forward-looking UTB changes are greater than the proprietary costs of disclosing current UTB changes.

Second, we examine how firms' disclosure quality influences investor reaction to FIN 48 adoption disclosures. Verrecchia (1983) suggests that the expected stock price effects of disclosure influence disclosure decisions in the presence of proprietary costs. That is, managerial concerns of revealing proprietary information rationally limit full disclosure despite its apparent benefit because investors no longer treat withheld information as unequivocally less favorable. In the presence of proprietary costs, investors' demand for full disclosure is unclear. To determine how investors view withheld information in our setting, we examine how the market reaction to firms' disclosed UTB amounts varies with disclosure quality. If investors favor full disclosure—i.e., they want firms to provide transparency regarding tax uncertainty—they will reward high-quality FIN 48 disclosures. If investors do not favor full disclosure—i.e., they want firms to avoid scrutiny from taxing authorities—they will penalize high-quality disclosures. Whether investors consider the proprietary costs of disclosure as sufficiently high to forgo the benefits of full disclosure is an empirical question.

We find evidence consistent with investors penalizing firms that make high-quality disclosures, on average. Moreover, our results are concentrated in small firms and firms with higher proprietary costs, consistent with Verrecchia (1983). Our finding complements a relatively small but growing body of evidence that investors place a positive value on tax avoidance (e.g., Frischmann et al. 2008; Desai and Dharmapala 2009; Hanlon and Slemrod 2009; Koester 2011). However, our focus on disclosure quality provides new evidence that investors appear willing to accept less disclosure in order to “facilitate” firms' tax avoidance activities. This finding is particularly interesting because the motivation for FIN 48 disclosure requirements was to protect investors by forcing firms to provide investors with transparent and comparable disclosures about firms' tax uncertainties.

The paper proceeds as follows: In the second section, we provide motivation and develop hypotheses. The third section describes our data and research design. The fourth section highlights our empirical results and the fifth section concludes.

MOTIVATION AND HYPOTHESIS DEVELOPMENT

Background on FIN 48 Disclosures

Paragraphs 20 and 21 of FIN 48 require disclosure of eight items (see the “Method for Constructing FIN 48 Discloser Scores” section of Appendix A). Each disclosure potentially may reveal useful information to various taxing authorities (i.e., state, federal, foreign) regarding tax

⁵ See <http://www.cfo.com/article.cfm/14471282> While some firms and investors may still perceive significant proprietary costs associated with FIN 48 disclosures, on average, this perception is relatively weaker *ex post*. Moreover, quarterly disclosures are more suitable to test our hypotheses than annual disclosures (see the “Hypothesis Development” section).

positions currently under examination, as well as potential issues that these authorities have not yet identified. First, firms must disclose the amount of the UTB upon adoption of FIN 48, and any material changes during the first quarter. Second, firms must describe any material changes to the UTB during the quarter. Third, firms must separately disclose the amount of the UTB that, if recognized, would affect the effective tax rate (ETR).⁶ Fourth, the disclosure should contain amounts of any accrued interest and penalties related to the UTB. Fifth, firms must stipulate where they report interest and penalties in the income statement. Sixth, the disclosure should include a discussion of open tax years in major jurisdictions. Seventh, firms should make a forward-looking disclosure of expected changes to the UTB within the next 12 months. Finally, firms should disclose the balance sheet adoption effect of retroactive application of FIN 48.

We construct disclosure quality scores that capture disclosure compliance (*completeness*) and disclosure specificity (*clarity*). The notion of *completeness* in our setting is straightforward—the disclosure contains all eight items that the FIN 48 guidance requires. The notion of *clarity* in our setting recognizes that the disclosures lack transparency and comparability, despite the detailed disclosure requirements proscribed by FIN 48. Blouin et al. (2007) note inconsistencies in FIN 48 disclosures, highlighting that the actual aggregate UTB for their sample could range from \$70b to \$78b depending on their assumption as to whether the disclosed UTB amount includes interest.

We illustrate how inconsistencies in reporting the UTB can affect the clarity of the disclosure. For the following fact pattern, Figure 1 shows various disclosure options that meet the disclosure requirements, but that result in a range of inferences about the actual UTB amount. Suppose a firm takes an uncertain tax position on a state income tax return that results in a \$100 decrease in its state tax liability. The tax manager is unsure of the position's sustainability, so she records a UTB of \$100 to reflect this uncertainty. If the state taxing authority succeeds in reversing the entire position, the firm will pay additional state income tax of \$100. As firms deduct state taxes when computing federal taxable income, the firm will enjoy an additional \$100 deduction on its federal income tax return.⁷ Thus, if the firm faces a 35 percent federal statutory tax rate, the firm should expect a refund of \$35. In FIN 48 terminology, the \$100 is the “gross UTB,” while the \$65 (\$100 – \$35) is the “net UTB.” Further, assume that the firm expects to pay \$20 in interest associated with the disputed amount (for simplicity, we ignore the tax deductibility of interest).

Referring to Figure 1, in all cases the firm reports a UTB (Column 2) and interest (Column 3). Knowing whether the reported UTB is gross versus net (Column 4) and includes interest (Column 5), influences the reader's ability to determine the true UTB amount. Only when the firm provides clarity with respect to both issues (i.e., cases 1, 2, 5, and 6) is the UTB unambiguously \$85. Observe that a firm with a UTB amount of \$85 can disclose information that reflects a UTB amount of anywhere between \$49 (i.e., the lower bound in option 13) and \$140 (i.e., the upper bound in option 14), *while technically complying with the disclosure requirements*.

⁶ A firm would recognize a UTB if the firm ultimately settled an uncertain tax position in cash at an amount lower than the UTB recorded with respect to that tax position. Firms must separately state the portion of the UTB that, if reversed (i.e., recognized), would impact the income statement as opposed to some other balance sheet account such as deferred tax assets/liabilities or goodwill. This portion of the UTB also excludes any UTB reversals that flow through other comprehensive income or income from discontinued operations.

⁷ This example is also analogous for a foreign tax position where foreign income taxes paid may be either tax deductible or generate foreign tax credits that firms use to offset federal income tax liabilities. Additionally, transfer pricing adjustments may ultimately be settled through Competent Authority negotiations or involve other compensating adjustments. In measuring the amount of an uncertain tax position, management may separately evaluate any offsetting transaction, but should record (and disclose) the corresponding tax payable (receivable) on a gross basis on the balance sheet.

FIGURE 1
Disclosure Options that Influence the Clarity of FIN 48 Disclosures^a

1	2	3	4	5	6	7	8
Disclosure Options	Reported UTB (A)	Interest (B)	Is (A) Gross/Net?	Does (A) Include (B)?	Inference of Total Net UTB	Computation of Best Estimate of UTB	Outer Bound of Inference Error from Disclosure
1	\$120	\$20	Gross	Yes	\$85	$(120-20)*.65+20$	0
2	\$100	\$20	Gross	No	\$85	$100*.65+20$	0
3	\$100	\$20	Gross	Unsure	\$72 or \$85	$(100-20)*.65+20$ or $100*.65+20$	(13)
4	\$120	\$20	Gross	Unsure	\$85 or \$105	$(120-20)*.65+20$ or $120*.65+20$	20
5	\$85	\$20	Net	Yes	\$85	85	0
6	\$65	\$20	Net	No	\$85	$65+20$	0
7	\$65	\$20	Net	Unsure	\$65 or \$85	65 or $65+20$	(25)
8	\$85	\$20	Net	Unsure	\$85 or \$105	85 or $85+20$	20
9	\$120	\$20	Unsure	Yes	\$85 or \$120	$(120-20)*.65+20$ or 120	35
10	\$85	\$20	Unsure	Yes	\$62 or \$85	$(85-20)*.65+20$ or 85	(23)
11	\$100	\$20	Unsure	No	\$85 or \$120	$100*.65+20$ or $100+20$	35
12	\$65	\$20	Unsure	No	\$62 or \$85	$65*.65+20$ or $65+20$	(23)
13	\$65	\$20	Unsure	Unsure	\$49 to \$85	$(65-20)*.65+20$ or $65+20$	(36)
14 ^b	\$120	\$20	Unsure	Unsure	\$85 to \$140	$(120-20)*.65+20$ or $120+20$	55

^a This figure illustrates 14 separate disclosure options that influence disclosure clarity under FIN 48. With the exception of options 1, 2, 5, and 6, the total UTB amount inferred from the disclosure varies depending on the assumptions made by the user of the financial statements regarding columns 4 and 5. This example considers a firm with unrecognized tax benefits from an uncertain state tax position in the amount of \$100 as well as \$20 of interest. The state tax benefits, if recognized, will generate a federal tax benefit at 35 percent, while the interest is assumed to be non-deductible (for simplicity).

^b Disclosure options 13 and 14 illustrate the maximum range of inference about the UTB amount that could result when a user is unsure of the information in both columns 4 and 5. For example, the lower bound of \$49 in option 13 assumes “gross” and “yes” in columns 4 and 5, respectively, while the upper bound of \$140 in option 14 assumes “net” and “no” in columns 4 and 5, respectively.

Hypothesis Development

We motivate our hypotheses from the discretionary disclosure literature because the ambiguous nature of the mandatory FIN 48 disclosure guidelines effectively gives managers discretion over what numbers they report in a disclosure that technically meets the FIN 48 guidelines (see Figure 1 for an illustration of this ambiguity). Moreover, managers may successfully limit their disclosures,

even when disclosures are required—particularly in unaudited interim financial reports that are subject to less stringent attestation standards.⁸

Grossman and Hart (1980) and Milgrom (1981) provide the theoretical framework for discretionary disclosure. These studies conclude that full disclosure arises if (1) disclosure is costless; (2) investors know that the firm has private information; (3) the firm can credibly disclose its private information to investors; (4) investors respond to the firm's disclosure decision in the same way; and (5) the firm knows how investors will respond to disclosure of its private information.

The primary cost of disclosure cited in the literature arises when a disclosure provides proprietary information to external parties (Verrecchia 1983; Dye 1986; Wagenhofer 1990; Darrough and Stoughton 1990; Feltham and Xie 1992). Little empirical research exists, however, on the effects of proprietary costs on disclosure, except in the area of segment reporting (Hayes and Lundholm 1996; Leuz 2004; Berger and Hann 2003, 2007; Botosan and Stanford 2005). Beyer et al. (2010) state that measuring and quantifying proprietary costs remains a major challenge, which contributes to the lack of empirical research as well as the difficulty of finding settings where researchers can observe managers withholding proprietary information.

FIN 48 is an ideal setting to examine how proprietary costs influence firms' disclosure choices given the proprietary nature of information about tax uncertainty, the availability of measures of tax avoidance (providing measures of proprietary costs), and sufficiently ambiguous mandated disclosure guidelines adopted in unaudited financial reports (providing measures of firms' disclosure choices). Consistent with the proprietary cost hypothesis in Verrecchia (1983), we predict a negative association between proprietary costs and FIN 48 disclosure quality (stated in the null):

H1: Firms' proprietary costs are not negatively associated with their initial FIN 48 disclosure quality.

We are also interested in how proprietary costs affect the quality of a specific component of the FIN 48 disclosure, the look-forward disclosure (FIN 48 ¶21d). Various constituencies expressed significant concerns during the FASB's deliberations about the requirement to provide a forward-looking disclosure. Respondents argued that this disclosure could alert the taxing authority to a UTB amount that is specific to a particular issue within a taxing jurisdiction. Consistent with this concern, less than 40 percent of firms in our sample provide this disclosure (see, also, Katz 2008; Seigel and Associates 2008; Dunbar et al. 2010). Because firms initially perceived that the look-forward disclosure would reveal proprietary information to the taxing authority, we predict a negative association between proprietary costs and FIN 48 look-forward disclosure quality (stated in the null):

H2: Firms' proprietary costs are not negatively associated with their initial FIN 48 look-forward disclosure quality.

Finally, we examine how firms' disclosure quality influences investor reaction to initial FIN 48 disclosures. Verrecchia (1983) suggests that the expected stock price effects of disclosure influence disclosure decisions in the presence of proprietary costs. That is, managerial concerns of revealing proprietary information rationally limit full disclosure despite its apparent benefit because investors

⁸ Statement on Auditing Standards (SAS) No. 100, *Interim Financial Information* (AICPA 2002), prescribes quarterly review requirements for public companies. The SEC only issued 34 comment letters related to FIN 48 over the period 2007 through 2009 for our sample of firms (requesting either more disclosure or clarification of amounts disclosed). Thus, the actual cost of noncompliance appears low.

no longer treat withheld information as unequivocally less favorable. In the presence of proprietary costs, demand for full disclosure by investors is unclear.

To determine how investors view withheld information in our setting, we examine how the market reaction to firms' disclosed UTB amounts varies with disclosure quality. If investors favor full disclosure—i.e., they want firms to provide transparency regarding tax uncertainty—they will reward high-quality FIN 48 disclosures. If investors do not favor full disclosure—i.e., they want firms to avoid scrutiny from taxing authorities—they will penalize high-quality disclosures. Whether investors consider the proprietary costs of disclosure as sufficiently high to forgo the benefits of full disclosure is an empirical question. This leads to our final hypothesis (stated in the null):

H3: Investor reaction to initial disclosures of firms' UTB amounts does not vary with firms' FIN 48 disclosure quality.

DATA AND RESEARCH DESIGN

Disclosure Scores

We examine FIN 48 footnote disclosures of 1,048 calendar year-end firms in the S&P 1500 index as of January 1, 2007, excluding 128 firms that disclose a 0 or non-material UTB amount, 42 real estate investment trusts, and 7 non-timely filers. We construct a two-part disclosure quality score for each firm in our sample. *COMPLETE* ranges from 0 to 8 and measures compliance with the FIN 48 disclosure guidelines by capturing the presence or absence of each required disclosure described in the "Background on FIN 48 Disclosures" section. *CLARITY* ranges from 0 to 4 and measures the precision of the required disclosures by capturing the presence or absence of important clarifying information needed to understand and interpret the disclosure. Each firm has a disclosure score, *TOTAL*, equal to *COMPLETE* plus *CLARITY*. We define each of the 12 disclosure score components in Table 1, Panel B and provide detailed information on our disclosure scores in Appendix A.

Table 2, Panel A provides descriptive statistics for the disclosure scores and selected FIN 48 data for our full sample of 871 firms. The mean (median) of *COMPLETE* is 7.05 (7.33) out of 8, the mean (median) of *CLARITY* is 1.36 (1.00) out of 4, and the mean (median) of *TOTAL* is 8.41 (8.33) out of 12. The average UTB reported in Q1 2007 (*UTBMV*) is 1.22 percent of the market value of equity (MVE), the average interest and penalties reported in Q1 (*Q1INTPEN*) is 0.19 percent of MVE, and the average amount of the UTB that would affect the ETR (*ETRMV*) is 0.82 percent of MVE. Firms expect the UTB, as a percentage of MVE [$E\Delta(UTB)$], to decrease 13.51 percent ($0.0015 \div 0.012 = 0.1351$) from Q1 2007 to Q1 2008. The average adoption adjustment reduced retained earnings by 0.08 percent of MVE (*READJ*). On average, each firm has approximately five open tax years subject to examination by federal tax authorities (*OPEN*).

Our relatively large sample of calendar year-end S&P 1500 firms allows us to provide some perspective on the disclosure quality of firms of various sizes (statistics not tabulated); e.g., the S&P 500, 400, and 600 indices represent large-, mid-, and small-cap firms, respectively. On average, *COMPLETE* is higher for S&P 500 firms relative to other firms ($7.03 > 6.68$, $t = 5.19$) but lower for S&P 600 firms relative to other firms ($6.55 < 6.96$, $t = 4.80$). However, *CLARITY* is lower for S&P 500 firms relative to other firms ($1.27 < 1.53$, $t = 4.18$) but higher for S&P 600 firms relative to other firms ($1.56 > 1.36$, $t = 3.29$). If it is difficult to regulate and enforce clarity relative to completeness, then large firms may be more "compliant" but reduce the information content of required disclosures through ambiguous language. *UTBMV*, *ETRMV*, *Q1INTPEN*, and *OPEN* are larger for S&P 500 firms relative to other firms ($0.0145 > 0.0092$, $t = 5.09$; $0.0093 > 0.0064$, $t = 3.66$; $0.0024 > 0.0014$, $t = 4.41$; and $5.37 > 4.63$, $t = 3.42$, respectively). On average, S&P 400 firms expect the largest UTB decrease ($|-0.0026| > |-0.0011|$, $t = 2.56$) and S&P 600 firms had the largest *READJ* ($|-0.0011| > |-0.0005|$, $t = 2.07$).

TABLE 1
Variable Definitions and Sources

Panel A: Tax Avoidance Measures

Variable	Predict	Definition
<i>CASHETR</i>	NA	3-year cash effective tax rate, measured as the sum of cash taxes paid (TXPD) from 2004–2006 divided by the sum of total pre-tax income (PI) from 2004–2006.
<i>BOOKETR</i>	NA	3-year book effective tax rate, measured as the sum of income tax expense (TXT) from 2004–2006 divided by the sum of total pre-tax income (PI) from 2004–2006.
<i>BTD</i>	NA	Difference between book income and tax income, measured as pre-tax income (PI) minus the sum of grossed up (by 0.35) current federal and foreign tax expense (TXFED + TXFO) less the change in the NOL carry forward (TLCF).
<i>DD_BTD</i>	NA	Abnormal tax accruals (Desai and Dharmapala 2006), measured as the residual from a regression of book-tax differences (defined above) on total accruals (earnings before extraordinary items and discontinued operations [IBC] minus cash flows from operating activities [OANCF] minus extraordinary items and discontinued operations [XIDOC]).
<i>DTAX</i>	NA	Abnormal permanent book-tax differences (Frank et al. 2009), measured as the residual from regression of Permanent <i>BTD</i> (<i>BTD</i> [defined above] minus temporary book-tax differences [TXDI / 0.35]) on goodwill and other intangibles (INTAN), income(loss) reported under the equity method (ESUB), income(loss) attributable to minority interest (MII), current state tax expense (TXS), change in net operating losses (TLCF), and lagged permanent <i>BTD</i> ; estimated by year and 2-digit SIC code on population of Compustat firms in 2007.
<i>CUSHION</i>	NA	Tax cushion (Blouin and Tuna 2007), measured as current tax expense (TXT – TXDI – TXS – TXO) less cash taxes paid (TXPD) and the change in income taxes payable (TXP).
<i>LOBBY</i>	NA	Total amount spent by a firm on tax-related lobbying. These data are publicly available on www.lobbywatch.com and www.opensecrets.org

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Research Design

Tests of H1 and H2

To test H1, we estimate Equation (1) using an ordered logit regression as follows:

$$\begin{aligned}
 SCORE_i = & \beta_0 + \beta_1 TAXAVD_i + \beta_2 CPCLDS_i + \beta_3 Q1SIZE_i + \beta_4 Q1PFT_i + \beta_5 Q1CAPINT_i \\
 & + \beta_6 Q1LTDA_i + \beta_7 Q1MB_i + \beta_8 SUESCALE_i + \beta_9 BIG4_i + \beta_{10} BODINSIDE_i \\
 & + \beta_{11} BODLOCKS_i + \beta_{12} BODOTHER_i + \beta_{13} LITDUM_i + \beta_{14} REGDUM_i \\
 & + \beta_{15} Q1NUMEST_i + \beta_{16} WEAKYEARS_i + \beta_{17} TAXFEES_i + \beta_{18} FOROPS_i \\
 & + \beta_{19} DAYS_i + \beta_{20} BUS_SEG_i + \beta_{21} GEO_SEG_i + \varepsilon_i.
 \end{aligned} \tag{1}$$

When estimating Equation (1), we define the dependent variable, *SCORE*, as either *COMPLETE*, *CLARITY*, or *TOTAL*. Proprietary costs of disclosing information about uncertain tax positions arise from the possibility that the disclosure may increase the probability of an audit

TABLE 1 (continued)

Panel B: Disclosure Score Components (see Appendix A for more detail)

Variable	Predict	Definition
<i>D_UTB</i>	NA	An indicator variable that takes the value of 0 if neither a beginning nor ending unrecognized tax benefit (UTB) amount is disclosed, 1 otherwise.
<i>D_ETR</i>	NA	A variable that takes the value of 0 if the amount of the UTB that would affect the effective tax rate (ETR) is not disclosed, 0.5 if the UTB changed during the quarter and only the beginning or ending that would affect the ETR was disclosed (but not both), and 1 otherwise;
<i>D_READJ</i>	NA	A variable that takes the value of 0 if the firm did not provide an adoption adjustment, 0.33 for each component of the entry that was provided (i.e., A = L + E), 1 otherwise;
<i>D_INTPEN</i>	NA	A variable that takes the value of 0 if neither interest nor penalty amounts disclosed, 0.5 if interest or penalty amount disclosed, 1 if both disclosed;
<i>D_CLASS</i>	NA	A variable that takes the value of 0 if classification not disclosed, 0.5 if the classification disclosed for either penalty or interest (but not both), 1 if classification disclosed for both;
<i>D_FWD</i>	NA	A variable that takes the value of 0 if no forward-looking statement was made, or 0.33 each for mention of the item, nature, and amount of the expected change;
<i>D_OPEN</i>	NA	An indicator variable that takes the value of 0 if the firm did not disclose open federal tax years, 1 otherwise;
<i>D_CHG</i>	NA	An indicator variable that takes the value of 0 if the firm disclosed a change in the UTB amount during the quarter, but did not explain the reason for the change, 1 otherwise.
<i>D_NONETR</i>	NA	An indicator variable that takes the value of 1 if the firm included a discussion or amount of the UTB that does not affect the ETR (i.e., temporary differences, goodwill, or other comprehensive income adjustments) included in the UTB, 0 otherwise;
<i>D_GROSS</i>	NA	An indicator variable that takes the value of 1 if the firm explicitly stated whether the reported UTB was gross or net, 0 otherwise;
<i>D_INCL</i>	NA	An indicator variable that takes the value of 1 if the firm explicitly stated whether the reported UTB included interest and penalties, 0 otherwise; and
<i>D_LUMP</i>	NA	An indicator variable that takes the value of 1 if the firm reported interest and penalties separately, 0 otherwise.

(continued on next page)

occurring or increase the effectiveness of a current audit. Consistent with H1, we expect a negative association between *SCORE* and *TAXAVD*, our proxy for proprietary costs.

We consider multiple measures of the extent to which firms engage in tax avoidance (*TAXAVD*). *CASHETR* is a three-year average cash effective tax rate, measured as the sum of cash taxes paid from 2004 to 2006 divided by the sum of total pretax income from 2004 to 2006 (Dyreng et al. 2008). *BOOKETR* is a three-year average book effective tax rate, measured as the sum of total income tax expense from 2004 to 2006 divided by the sum of total pretax income from 2004 to 2006. *BTD* is the difference between book income and estimated taxable income, measured as pretax income minus the sum of grossed up (by 0.35) current federal and foreign tax expense less the change in the NOL carryforward. *DD_BTD* is a measure of abnormal tax accruals, calculated as the residual from a regression of book-tax differences on total accruals (Desai and Dharmapala

TABLE 1 (continued)

Panel C: Regression Variables

Variable	Predict	Definition
<i>COMPLETE</i>	NA	The sum of eight required disclosure score components: <i>D_UTB</i> , <i>D_ETR</i> , <i>D_READJ</i> , <i>D_INTPEN</i> , <i>D_CLASS</i> , <i>D_FWD</i> , <i>D_OPEN</i> , and <i>D_CHG</i> .
<i>CLARITY</i>	NA	The sum of four disclosure score components: <i>D_NONETR</i> , <i>D_GROSS</i> , <i>D_INCL</i> , and <i>D_LUMP</i> .
<i>TOTAL</i>	NA	<i>COMPLETE</i> + <i>CLARITY</i> .
<i>TAXAVD</i>	–	Parsimonious measure of tax avoidance from a factor analysis of <i>CASHETR</i> , <i>BOOKETR</i> , <i>BTD</i> , <i>DD_BTD</i> , <i>DTAX</i> , <i>CUSHION</i> , and <i>LOBBY</i> .
<i>QISIZE</i>	?	Firm size at the end of the first quarter of 2007, measured as the log of total assets (AT).
<i>QIPFT</i>	?	Profit margin at the end of the first quarter of 2007, measured as income before extraordinary items (IB) divided by sales (SALE).
<i>QICAPINT</i>	+	Capital intensity at the end of the first quarter of 2007, measured as net property, plant, and equipment (PPENT) divided by total assets (AT).
<i>QILTDA</i>	?	Debt-to-assets at the end of the first quarter 2007, measured as long-term debt (DLT) divided by total assets (AT).
<i>QIMB</i>	?	Market-to-book ratio at the end of the first quarter of 2007, measured as the market value of equity (PRCC_F * CSHO) divided by book common equity (CEQ).
<i>BIG4</i>	+	An indicator variable set to 1 if a firm retains a big-four audit firm, and 0 otherwise.
<i>BODINSIDE</i>	?	The percentage of insiders on the board of directors. IRRC.
<i>BODLOCKS</i>	?	The number of interlocks (where board members serve on other company boards together) on the board of directors. IRRC.
<i>BODOTHER</i>	?	The number of other major board of directors served on by current directors. IRRC.
<i>LITDUM</i>	+	An indicator variable set to 1 if a firm is in a highly regulated industry, and 0 otherwise. Consistent with Francis et al. (1994) we define highly litigated industries as 2833–2836, 8731–8734, 7371–7379, 3570–3577, and 3600–3674.
<i>REGDUM</i>	+	An indicator variable set to 1 if a firm is in a highly regulated industry and 0 otherwise. Consistent with Warfield et al. (1995) we define highly regulated industries as SIC codes 4812–4813, 4833, 4841, 4811–4899, 4922–4924, 4931, 4941, 6021–6023, 6035–6036, 6141, 6311, 6321, and 6331.
<i>QINUMEST</i>	+	Number of analysts in I/B/E/S following the firm at the end of the first quarter of 2007.
<i>WEAKYEARS</i>	–	Total number of years in the Audit Analytics database that a firm had a control weakness related to tax accounts.
<i>TAXFEES</i>	+	Ratio of tax fees to total fees paid to the financial statement auditor in the year preceding the FIN 48 disclosure. Audit Analytics database.
<i>FOROPS</i>	?	Number of times a firm reports foreign pretax income (PIFO) as a percentage of the number of times a firm reports total pretax income (over the previous five years).
<i>DAYS</i>	?	Number of days between the end of the first quarter of 2007 (March 31, 2007 for calendar year-end firms) and the actual filing date of the 10-Q.

(continued on next page)

TABLE 1 (continued)

Variable	Predict	Definition
<i>BUS_SEG</i>	?	The logarithm of 1 plus the number of business segments from Compustat segment data.
<i>GEO_SEG</i>	?	The logarithm of 1 plus the number of geographic segments from Compustat segment data.
<i>CAR</i>	NA	Cumulative abnormal return for firm <i>i</i> over a five-day window (−2, 0, +2); day 0 is the filing date of Form 10-Q with the SEC.
<i>UTBMV</i>	?	The Q1 2007 ending uncertain tax benefit, scaled by the market value of equity at the end of 2006.
<i>ETRMV</i>	?	The Q1 2007 ending uncertain tax benefit that would affect the effective tax rate, scaled by the market value of equity at the end of 2006.
<i>OTHMV</i>	?	The Q1 2007 ending uncertain tax benefit that would not affect the effective tax rate, scaled by the market value of equity at the end of 2006.
<i>DQ</i>	?	An indicator variable that takes the value of 1 when <i>COMPLETE</i> , <i>CLARITY</i> , or <i>TOTAL</i> , respectively, is above the sample median, 0 otherwise. (<i>COMPLETE</i> = The sum of eight required disclosure score components [see Appendix A, Table 6]; <i>CLARITY</i> = The sum of four discretionary disclosure score components [see Appendix A, Table 7]; <i>TOTAL</i> = <i>COMPLETE</i> + <i>CLARITY</i>).
<i>UE</i>	+	Earnings forecast error computed as the reported EPS less the mean I/B/E/S analyst forecast for the first quarter of 2007 (scaled by beginning of quarter price per share) and is included to account for the security price consequences of unexpected earnings.
<i>RET100</i>	?	The cumulative raw return for the 100 days prior to the beginning of the 10-Q disclosure announcement period.

This table presents definitions for all of the variables in Equations (1)–(3). Where applicable, Compustat mnemonics are in parenthesis.

2006). *DTAX* is a measure of abnormal permanent differences (Frank et al. 2009). *CUSHION* is the tax cushion, measured as current tax expense less cash taxes paid less the change in income taxes payable (Blouin and Tuna 2007). Finally, *LOBBY* is total firm spending on tax-related lobbying.⁹

These measures capture different aspects of the nature and extent of firm's tax avoidance (Hanlon and Heitzman 2010) and they measure actual tax reporting with error (see De Simone et al. 2011). Therefore, we aggregate these proxies using principal components analysis, which results in one factor with an eigenvalue greater than 1.5. *CASHETR*, *BOOKETR*, *BTD*, and *CUSHION* have the largest factor loadings in the principal components analysis. A higher value of *TAXAVD* implies that a firm engages in more extensive tax avoidance behavior and, thus, faces higher proprietary costs from full disclosure in our FIN 48 setting.

To test H2, we estimate Equation (1) using an ordered logit regression with *D_FWD* as the dependent variable. *D_FWD* is a component of *COMPLETE* and ranges from 0 to 1 depending on whether the firm makes a forward-looking disclosure regarding the item, nature, and amount of the expected change in the UTB over the next 12 months. Disclosure of expected changes to the UTB is

⁹ Firms lobby Congress in a variety of ways, from personal and political action committee (PAC) contributions to direct/indirect contributions by trade associations or corporate/industry lobbyists. Gupta and Swenson (2003) find firms generated \$1,616 of tax benefits for every dollar of tax-related PAC contributions related to the Deficit Reduction Act of 1984.

a controversial component of the required FIN 48 disclosures in terms of providing a roadmap to the taxing authority for all firms. Consistent with H2, we expect a negative association between *TAXAVD*, our proxy for proprietary costs, and *D_FWD*.

Equation (1) includes a number of control variables that capture firm-specific costs and benefits that may affect firms' disclosure choices. FIN 48 potentially entails significant implementation costs arising from the need to analyze, document, and support the firm's tax positions using a new recognition and measurement process. Because *COMPLETE* and *CLARITY* measure different aspects of the FIN 48 disclosure (*CLARITY* measures lack of precision while *COMPLETE* measures lack of compliance), we include *CPCL_DS* to control for a firm's propensity toward full disclosure. When the dependent variable *SCORE* equals *COMPLETE* (*CLARITY*), *CPCL_DS* equals *CLARITY* (*COMPLETE*). When the dependent *SCORE* equals *TOTAL*, we drop *CPCL_DS* from Equation (1).¹⁰ To control for cross-sectional variation in implementation costs, we include *WEAKYEARS*, *TAXFEES*, *DAYS*, *BUS_SEG*, and *GEO_SEG*. Firms reporting a control weakness in their tax accounts (*WEAKYEARS*) may have greater difficulty analyzing and substantiating their tax positions. Firms that pay higher tax fees to their auditors (*TAXFEES*) tend to be more sufficiently reserved for uncertain tax positions (Gleason and Mills 2011). If auditor-provided tax services places more rigor on the tax accrual process, this may reduce the cost of preparing information necessary to comply with FIN 48. Anecdotally, the adoption of FIN 48 imposed significant demands on firm and auditor resources. Thus, we include the number of days between the quarter-end and the quarterly filing date (*DAYS*) as a proxy for implementation costs. We also include *BUS_SEG* and *GEO_SEG* to control for the complexity of the firms underlying business (Li 2008, 2010). Managers of firms with complex operations are more likely to engage in complex tax positions that they must analyze pursuant to FIN 48 adoption, increasing the burden of applying the two-step process of FIN 48 to each tax position.¹¹

Prior research investigating the effects of litigation risk on management disclosure practices finds that the threat of shareholder litigation can have opposing effects on managers' disclosure decisions (Skinner 1994; Francis et al. 1994; Kasznik and Lev 1995; Soffer et al. 2000). The potential for legal action related to inadequate or untimely disclosures can improve disclosure. However, litigation risk can potentially reduce incentives to provide disclosure in cases where a significant amount of judgment is inherent in making the disclosure. Prior work generally includes an indicator variable for firms in high-litigation industries (*LITDUM*). However, Billings (2008) suggests that researchers can also measure litigation risk by prior incidence of litigation (*SUESCALE*). As the net effect of litigation risk on disclosure is ambiguous, we do not make a prediction on either *LITDUM* or *SUESCALE*.

Consistent with existing literature suggesting that firm monitoring affects disclosure quality, we include measures that capture various aspects of corporate governance (Warfield et al. 1995). Due to the high proprietary costs of disclosure in our setting, it is unclear whether a high-quality FIN 48 disclosure is in the shareholders' best interest. Therefore, we do not make predictions on our measures of internal governance, the percentage of insiders on the board (*BODINSIDE*), the number of additional boards current directors serve on (*BODOTHER*), and the number of board interlocks (*BODLOCKS*). However, we expect a positive coefficient on our external governance

¹⁰ This research design choice does not affect any of the inferences in our study. When we estimate Equation (1) with *D_FWD* as the dependent variable, *CPCL_DS* equals *CLARITY*. Including *CLARITY* as an independent variable in the *D_FWD* regression does not affect the inferences from the other regression variables.

¹¹ If managers were already analyzing their complex tax positions carefully, then this cost of implementing FIN 48 is unclear. However, if the level of analysis required under FIN 48 is greater than what managers were doing previously, then firms with more complex tax positions will face greater implementation costs, all else equal, than firms with less complex tax positions.

measures, *BIG4* and *REGDUM*, because auditors or regulators, unlike boards, do not hold fiduciary responsibilities to firms' shareholders. We expect a higher-quality disclosure in instances when the firm uses a Big 4 audit firm (*BIG4*) and/or operates in a highly regulated industry (*REGDUM*), and is thus subject to additional monitoring by regulators.¹²

Studies have shown that information asymmetry and the demand for information should increase firms' incentives to make high-quality disclosures (e.g., Bhushan 1989; Lang and Lundholm 1993). A positive association between analyst forecasting activity, *QINUMEST*, and the level of financial disclosure would be consistent with the existing literature. Multinational firms likely face greater information asymmetry than firms that generate most of their business domestically. In our setting specifically, the demand for tax information should be higher the greater the extent of foreign operations (*FOROPS*) because multinational firms face more tax planning opportunities and face tax uncertainty in a number of different tax jurisdictions. However, managers of firms with more extensive foreign operations likely have concerns about the foreign governments' use (or misuse) of FIN 48 information and thus, may be less forthcoming.

Finally, to control for the possibility that FIN 48 disclosure quality is correlated with disclosure quality more generally, we include in Equation (1) firm characteristics that predict comprehensive disclosure, size (*QISIZE*), profitability (*QIPFT*), capital intensity (*QICAPINT*), leverage (*QILTDA*), and investment opportunities (*QIMB*). Prior research generally finds a positive association between firm size and disclosure quality (Lang and Lundholm 1993). However, large firms also face increased visibility, which raises the possibility of less disclosure to reduce potential political costs. Additionally, large firms are in a better position to "hide" information contained in any single disclosure due to the sheer volume of financial disclosures that they make. Capital intensity is a proxy for entry barriers and disclosure quality is likely to increase as the threat of entry decreases (Cohen 2003). Agency problems associated with debt increase with leverage. However, there may be an inverse relationship between higher leverage, which implies less equity, and cost savings in private information acquisition. Prior research (Skinner 1994; Lang and Lundholm 1993) finds mixed results concerning the effect of performance on disclosure and we do not make a prediction for our measure of profitability. Investors commonly use the market-to-book ratio to measure the investment opportunity set, and the associated financing considerations. The market-to-book ratio also proxies for the information asymmetry between management and investors, an important determinant of the disclosure choice (Verrecchia 1990).

Many of our control variables also control for the complexity of different aspects of a firm's environment so *TAXAVD* should not primarily reflect the effect of "complexity" on the firm's ability to offer a high-quality disclosure. For example, debt-to-assets (*QILTDA*) measures capital structure complexity; size (*QISIZE*), capital intensity (*QICAPINT*), and (*FOROPS*) could capture complexities in a firm's operating structure; and analyst following (*QINUMEST*) and the number of internal control weaknesses (*WEAKYEARS*) could capture complexities associated with the firm's internal information environment, which managers need to substantiate a firm's tax positions.

Tests of H3

To test H3, we examine how the market reaction to firms' disclosed UTB amounts varies with disclosure quality. Specifically, we estimate Equation (2) using ordinary least squares (we cluster

¹² We also run separate specifications of Equation (1) that drop the industry-based indicators *LITDUM* and *REGDUM* and include industry fixed-effects (using the Fama-French 17-industry classification scheme). Our inferences are qualitatively similar to the inferences we make based on the regressions we report in Table 3.

the standard errors by the filing date of Form 10-Q):

$$CAR_i = \alpha_0 + \alpha_1 UTBMV_i + \alpha_2 DQ_i + \alpha_3 UTBMV * DQ_i + \alpha_4 UE_i + \alpha_5 Q1SIZE_i + \alpha_6 RET100_i + \varepsilon_i, \quad (2)$$

where *CAR* is the cumulative abnormal return for firm *i* over a five-day window (−2, 0, +2); day 0 is the filing date of Form 10-Q with the SEC. We calculate *CAR* using a market model estimated from 170 to 21 days prior to the filing date and using the parameter estimates to compute risk-adjusted abnormal returns. We require a minimum of 36 daily return observations prior to the filing date to calculate the market model.

UTBMV is the total UTB reported at the end of the first quarter of 2007, scaled by MVE at the end of 2006.¹³ We denote *DQ* as an indicator variable equal to 1 when either *COMPLETE*, *CLARITY*, or *TOTAL* falls above the sample median, 0 otherwise.¹⁴ *UTBMV * DQ*, the interaction between *UTBMV* and *DQ*, is the focus of our test of H3. If investors favor full disclosure—i.e., they want firms to provide transparency regarding tax uncertainty—then we expect a positive coefficient on α_3 . If investors do not favor full disclosure—i.e., they want firms to avoid scrutiny from taxing authorities—then we expect a negative coefficient on α_3 . Whether investors consider the proprietary costs of disclosure as sufficiently high to forgo the benefits of full disclosure is an empirical question.

UE is the earnings forecast error, computed as the reported EPS less the mean I/B/E/S analyst forecast for the first quarter of 2007 (scaled by beginning of quarter price per share); we include *UE* to account for the security price consequences of unexpected earnings. *Q1SIZE* is the log of total assets at the end of the first quarter of 2007 and *RET100* is the cumulative raw return for the 100 days prior to the beginning of the 10-Q disclosure announcement period. We include *RET100* in order to control for error in our measure of *UTBMV* and unexpected earnings (Brown et al. 1987; Collins et al. 1994; Lys and Sivaramakrishnan 1988; Kumar and Visvanathan 2003).¹⁵ By including *RET100*, we hope to mitigate any potential measurement error-related coefficient bias.¹⁶

EMPIRICAL RESULTS

Descriptive Statistics

We provide aggregate descriptive statistics for the independent variables we use to test our hypotheses in Table 2, Panel B. However, our large sample of calendar year-end S&P 1500 firms allows us to discuss how these characteristics vary by firm size (size-based descriptives are untabulated). S&P 500 firms have the lowest mean book effective tax rate (*BOOKETR*), the highest mean book-tax difference (*BTD*), and the highest mean abnormal permanent tax differences (*DTAX*), consistent with large firms engaging in higher levels of tax avoidance. S&P 500 firms are also the most profitable (*QIPFT*), have the largest market-to-book ratios (*QIMB*), are subject to more litigation (*SUESCALE*), have the largest analyst following (*QINUMEST*), pay a larger percentage of tax fees to their audit firm (*TAXFEES*), and have the largest percentage of foreign operations (*FOROPS*).

¹³ We obtain similar results if we scale *UTBMV* by contemporaneous MVE.

¹⁴ We estimate separate versions of Equation (2) in order to examine the moderating effect of each disclosure score (*COMPLETE*, *CLARITY*, or *TOTAL*).

¹⁵ We also calculate *RET100* over alternative windows, i.e., 120 days and 80 days prior to the start of the event window. All results reported in Tables 4 and 5 are quantitatively similar using these alternative measures.

¹⁶ We also include a number of additional control variables in our return regressions, including *QIMB*, *QILTDA*, *QICAPINT*, and *QIPFT*, lagged *TAXAVD*, *WEAKYEARS*, and *TAXFEES*. All of the results reported in Tables 4 and 5 are quantitatively similar when we include these additional variables in the regressions.

TABLE 2

Descriptive Statistics: Disclosure Scores, FIN 48 Data, and Regression Variables

Panel A: Disclosure Scores and FIN 48 Data^a

Variable	n	Mean	Standard Deviation	1st Quartile	Median	3rd Quartile
UTBMV	857	0.0122	0.0149	0.0029	0.0073	0.0161
ETRMV	762	0.0082	0.0112	0.0014	0.0042	0.0101
OTHMV	817	0.0044	0.0099	0.0000	0.0014	0.0041
READJ	838	-0.0008	0.0046	-0.0010	0.0000	0.0000
QIINTPEN	843	28.9942	119.0313	0.5000	2.7000	13.2000
E(Δ UTB)	591	-0.0015	0.0045	-0.0010	0.0000	0.0000
OPEN	855	5.0187	2.9729	3.0000	4.0000	6.0000
COMPLETE	871	7.0519	0.7303	6.8333	7.3333	7.3333
CLARITY	871	1.3594	0.9113	1.0000	1.0000	2.0000
TOTAL	871	8.4112	1.2086	7.6667	8.3333	9.3333

Panel B: Regression Variables^b

Variable	n	Mean	Standard Deviation	1st Quartile	Median	3rd Quartile
CAR	871	-0.0024	0.0460	-0.0221	-0.0039	0.0152
TAXAVD	718	0.0127	1.0153	-0.4913	-0.0680	0.3660
QISIZE	853	8.2584	1.7341	6.9531	8.1019	9.3661
QIPFT	855	0.0818	0.0967	0.0339	0.0706	0.1264
QICAPINT	853	0.2401	0.2357	0.0496	0.1581	0.3617
QILTDA	851	0.1904	0.1551	0.0584	0.1753	0.2856
QIMB	839	3.6098	7.1646	1.7788	2.4946	3.6607
SUESCALE	871	1.7979	3.2931	0.0000	0.0000	2.0000
BIG4	870	0.9563	0.2045	1.0000	1.0000	1.0000
BODINSIDE	805	0.2694	0.1425	0.1538	0.2500	0.3636
BODLOCKS	805	0.0224	0.1479	0.0000	0.0000	0.0000
BODOTHER	805	0.8398	0.5608	0.4000	0.7857	1.1818
LITDUM	871	0.0057	0.0756	0.0000	0.0000	0.0000
REGDUM	871	0.0184	0.1344	0.0000	0.0000	0.0000
QINUMEST	838	10.6205	6.2756	6.0000	10.0000	15.0000
WEAKYEARS	871	0.2423	0.8262	0.0000	0.0000	0.0000
TAXFEES	869	0.0845	0.0968	0.0081	0.0490	0.1298
FOROPS	871	0.4805	0.4732	0.0000	0.4000	1.0000
DAYS	871	38.1917	18.1393	33.0000	38.0000	40.0000
BUS_SEG	784	3.0931	1.9012	1.0000	3.0000	4.0000
GEO_SEG	772	3.0933	2.3931	1.0000	2.0000	5.0000
UE	871	0.0002	0.0070	-0.0006	0.0004	0.0015
RET100	871	0.0829	0.1560	0.0003	0.0813	0.1641

(continued on next page)

TABLE 2 (continued)

^a This panel presents descriptive statistics for our disclosure scores and selected FIN 48 data items. We define the variables as follows: *UTBMV* = The Q1 2007 ending uncertain tax benefit, scaled by the market value of equity at the end of 2006; *ETRMV* = The Q1 2007 ending uncertain tax benefit that would affect the effective tax rate, scaled by the market value of equity at the end of 2006; *OTHMV* = The Q1 2007 ending uncertain tax benefit that would not affect the effective tax rate, scaled by the market value of equity at the end of 2006; *READJ* = The effect on retained earnings of adopting FIN 48 on January 1, 2007, scaled by the market value of equity at the end of 2006; *INTPENMV* = The Q1 2007 amount of interest and penalties related to the UTB, scaled by the market value of equity at the end of 2006, at the end of Q1 2007; *E(ΔUTB)* = The expected change in the UTB from Q1 2007 to Q1 2008, scaled by the market value of equity at the end of 2006; *OPEN* = The amount of tax years susceptible to examination by federal tax authorities; *COMPLETE* = The sum of eight required disclosure score components (see Appendix A, Table 6); *CLARITY* = The sum of four discretionary disclosure score components (see Appendix A, Table 7); *TOTAL* = *COMPLETE* + *CLARITY*.

^b This panel reports descriptive statistics of the independent variables used in the main regression analysis. We define the variables as follows: *CAR* = The cumulative abnormal return for firm *i* over a five-day window (−2, 0, +2), where day 0 is the filing date of Form 10-Q with the SEC; *TAXAVD* = A proxy for tax avoidance from a factor analysis of *CASHETR*, *BOOKETR*, *BTD*, *DD_BTD*, *DTAX*, *CUSHION*, and *LOBBY*; *QISIZE* = Firm size at the end of Q1 2007, measured as the log of total assets; *QIPFT* = Firm profit margin at the end of Q1 2007, measured as income before extraordinary items divided by sales; *QICAPINT* = Firm capital intensity at the end of Q1 2007, measured as net property, plant, and equipment divided by total assets; *QILTDA* = Firm debt-to-assets at the end of Q1 2007, measured as long-term debt divided by total assets; *QIMB* = Firm market-to-book ratio at the end of Q1 2007, measured as the market value of equity divided by book common equity; *SUESCALE* = A measure from 0 to 11, where higher values indicate sued more recently by shareholders; *BIG4* = A 0/1 indicator variable set to 1 if a firm is audited by a big four auditor, 0 otherwise; *BODINSIDE* = The percentage of insiders on the board of directors; *BODLOCKS* = The number of interlocks on the board of directors; *BODOTHER* = The number of other major board of directors served on by current directors; *LITDUM* = A 0/1 indicator variable set to 1 for firms in high-litigation industries, 0 otherwise; *REGDUM* = A 0/1 indicator variable set to 1 if a firm is in a highly regulated industry (Four-digit SIC codes = 4812–4813, 4833, 4841, 4811–4899, 4922–4924, 4931, 4941, 6021–6023, 6035–6036, 6141, 6311, 6321, 6331), 0 otherwise; *QINUMEST* = The number of analysts following the firm at the end of Q1 2007; *WEAKYEARS* = The number of years a firm had a control weakness in tax accounts; *TAXFEES* = Current year tax fees paid divided by total fees paid to auditor; *FOROPS* = The extent of foreign operations, measured as the number of times a firm reports foreign pretax income as a percentage of the number of times a firm reports total pretax income (over the previous 5 years); *DAYS* = The number of days between the end of Q1 2007 (March 31, 2007) and the filing of the Q1 10-Q; *BUS_SEG* = The logarithm of 1 plus the number of business segments; *GEO_SEG* = The logarithm of 1 plus the number of geographic segments; *UE* = Unexpected earnings, computed as the reported earnings per share less the mean I/B/E/S analyst forecast for the first quarter of 2007, scaled by beginning of quarter price; and *RET100* = The cumulative raw return for the 100 days prior to the beginning of the 10-Q disclosure announcement period.

Firms in the S&P 400 are more capital intensive (*QICAPINT*), have the largest amount of debt in their capital structures (*QILTDA*), and have the most firms in regulated industries (*REGDUM*). S&P 600 firms have the largest 10-Q filing period (*DAYS*) and the highest frequency of internal control weaknesses (*WEAKYEARS*). Pearson correlations (untabulated) for all variables in our regression equations suggest that our large set of independent variables does not exhibit multicollinearity. The highest correlation is between the extent of foreign operations (*FOROPS*) and our measure of tax avoidance (*TAXAVD*) ($\rho = 0.446$).

Firm Response—Determinants of Disclosure Quality

In Table 3, we present the results of estimating Equation (1) for 643 firms with available data for the model variables, using *COMPLETE*, *CLARITY*, and *TOTAL* as the dependent variable in Columns (1), (2), and (3), respectively. We present fully standardized coefficients

TABLE 3
Determinants of FIN 48 Disclosure Scores^a

		Disclosure Score Components			COMPLETE Components	
		COMPLETE	CLARITY	TOTAL	D_FWD	D_CHG
		(1)	(2)	(3)	(4)	(5)
TAXAVD	-	-0.058** (0.026)	-0.072*** (0.028)	-0.070*** (0.025)	-0.074*** (0.029)	-0.037 (0.119)
CPCL_DS ^b	?	0.046* (0.025)	0.073*** (0.020)		-0.053* (0.032)	-0.005 (0.078)
Q1SIZE	?	0.105** (0.044)	-0.104* (0.065)	-0.021 (0.040)	0.092* (0.053)	0.427*** (0.077)
Q1PFT	?	-0.088* (0.049)	-0.007 (0.036)	-0.050 (0.041)	-0.096*** (0.033)	-0.129 (0.111)
Q1CAPINT	+	-0.018 (0.040)	-0.016 (0.040)	-0.003 (0.042)	-0.016 (0.043)	0.010 (0.047)
Q1LTD	?	-0.038 (0.062)	0.080*** (0.027)	0.048 (0.046)	-0.004 (0.036)	-0.118 (0.159)
Q1MB	?	0.004 (0.037)	-0.042 (0.041)	-0.032** (0.016)	0.060*** (0.014)	-0.004 (0.074)
SUESCALE	+	0.025 (0.044)	0.037 (0.047)	0.040 (0.046)	0.061 (0.052)	0.079 (0.087)
BIG4	+	0.024 (0.032)	-0.045 (0.038)	-0.010 (0.041)	-0.027 (0.019)	-0.075 (0.049)
BODINSIDE	?	0.008 (0.039)	0.010 (0.043)	0.013 (0.039)	0.023 (0.041)	0.043 (0.078)
BODLOCKS	?	-0.022 (0.028)	0.011 (0.062)	0.002 (0.042)	0.008 (0.025)	-0.106 (0.098)
BODOTHER	?	0.078** (0.036)	-0.039 (0.045)	0.022 (0.047)	0.089** (0.036)	-0.046 (0.095)
LITDUM	+	0.033* (0.018)	0.010 (0.036)	0.037 (0.028)	0.011 (0.060)	
REGDUM	+	0.039 (0.040)	0.067** (0.028)	0.073*** (0.028)	0.061 (0.037)	
Q1NUMEST	+	-0.085 (0.059)	-0.053 (0.045)	-0.077*** (0.028)	-0.032 (0.048)	-0.186** (0.083)
WEAKYEARS	-	-0.025 (0.025)	0.011 (0.039)	-0.011 (0.019)	-0.027 (0.029)	0.089 (0.087)
TAXFEES	+	0.030 (0.030)	0.068* (0.037)	0.077*** (0.029)	0.058** (0.024)	-0.001 (0.070)
FOROPS	?	0.104*** (0.040)	-0.077** (0.035)	0.033 (0.038)	0.012 (0.040)	0.058 (0.132)
DAYS	?	0.048 (0.037)	-0.045 (0.037)	-0.003 (0.036)	0.022 (0.032)	0.040 (0.099)
BUS_SEG	-	-0.036 (0.037)	-0.045 (0.046)	-0.062* (0.037)	0.012 (0.034)	-0.146* (0.077)
GEO_SEG	-	-0.030 (0.041)	-0.027 (0.034)	-0.043 (0.036)	0.039 (0.041)	0.081 (0.133)
n		643	643	643	643	163
Pseudo-R ²		0.011	0.017	0.0054	0.030	0.087

(continued on next page)

TABLE 3 (continued)

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 (two-tailed) levels, respectively.

^a This table presents the results of ordered logit regressions (fully standardized coefficient estimates in the first row followed by standard errors in parentheses in the second row) that evaluate the effect of firm-specific characteristics on disclosure quality. We cluster standard errors by industry (using the Fama-French 17-industry classification scheme) and the 10-Q filing date in each regression. We define the dependent variables as follows: *COMPLETE* = The sum of eight required disclosure score components (see Appendix A, Table 6); *CLARITY* = The sum of four discretionary disclosure score components (see Appendix A, Table 7); *TOTAL* = *COMPLETE* + *CLARITY*; *D_FWD* = Variable measuring the presence of the FIN 48 ¶21(d)(1)–21(d)(3) forward-looking disclosures, defined as 0 if no forward-looking statement was made, or 0.33 each for mention of the item, nature, and amount of the expected change; *D_CHG* = Variable measuring the presence of the FIN 48 ¶21(a)(1)–21(a)(4) UTB change disclosure, defined as 0 if the firm disclosed a change in the amount of the UTB during the quarter, but did not explain the reason for the change, 1 otherwise. See Tables 1 or 2 for independent variable definitions.

^b When we include *CPCL_DS* as an independent variable in Columns (1), (2), (4), and (5), we define it as follows: Column (1): *CPCL_DS* = *CLARITY*; Column (2): *CPCL_DS* = *COMPLETE*; Columns (4) and (5): *CPCL_DS* = *CLARITY*.

first, followed by standard errors clustered by industry (using the Fama-French 17-industry scheme).¹⁷

Consistent with H1, we find a negative association between our measure of proprietary costs, *TAXAVD*, and FIN 48 disclosure quality, regardless of whether we define *SCORE* as *COMPLETE*, *CLARITY*, or *TOTAL*. A one standard deviation increase in *TAXAVD* reduces *COMPLETE*, *CLARITY*, and *TOTAL* by 0.058, 0.072, and 0.070 standard deviations, respectively. The observed (latent) standard deviation of *COMPLETE*, *CLARITY*, and *TOTAL* is 1.05 (1.86), 0.90 (1.87), and 1.43 (1.84); therefore, in economic terms, a one unit increase in *TAXAVD* reduces *COMPLETE* by 0.8 to 1.4 percent, *CLARITY* by 1.6 to 3.3 percent, and *TOTAL* by 0.9 to 1.1 percent.

The results in Column (1) of Table 3 show a significantly positive association among *COMPLETE* and *CPCL_DS* (*CLARITY*), firm size (*QISIZE*), the number of additional boards served on by board members (*BODOTHER*), high-litigation industry membership (*LITDUM*), and the extent of foreign operations (*FOROPS*). We find a significant, negative association between *COMPLETE* and profit margin (*QIPFT*). On average, *QISIZE*, *QIPFT*, and *FOROPS* are the strongest determinants of *COMPLETE*. The results in Column (2) of Table 3 show a significantly positive association among *CLARITY* and *CPCL_DS* (*COMPLETE*), leverage (*QILTDA*), *REGDUM*, and tax fees paid to auditors (*TAXFEES*), and a significant, negative association among *CLARITY* and *QISIZE* and *FOROPS*. On average, *QISIZE*, *QILTDA*, and *FOROPS* are the strongest determinants of *CLARITY*. We attribute the different sign on *QISIZE* and *FOROPS* in Columns (1) and (2) to the possibility that large firms and firms with more extensive foreign operations face greater scrutiny from the SEC. Thus, managers of large and multinational firms reduce their firms' disclosure quality by reducing the clarity of the disclosure, while technically complying with the FIN 48 guidelines. Finally, in Column (3), we report a significant, negative association among *TOTAL* and the market-to-book ratio (*QIMB*), analyst following (*QINUMEST*), and the number of business segments (*BUS_SEG*), and a significant, positive association among *TOTAL* and *REGDUM*, and the amount of tax fees paid to auditors (*TAXFEES*). On average, *TAXAVD*, *QINUMEST*, and *TAXFEES* are the strongest determinants of *TOTAL*.

We report the results of estimating Equation (1) after we define the dependent variable as *D_FWD*, a component of *COMPLETE*, in Column (4) of Table 3. Again, we report fully

¹⁷ In order to compare coefficients both within and across the ordered logit models, we standardize the dependent and independent variables because the variance of the dependent variable is not fixed (unlike OLS, the variance of the latent dependent variable will change as you add variables to the model). Further, as you add or change variables in the logit model, the coefficients can change even if the new variables are uncorrelated with the old ones.

standardized coefficients followed by standard errors clustered by industry. Consistent with H2, we report a negative association between our measure of proprietary costs, *TAXAVD*, and FIN 48 look-forward disclosure quality in Column (4). In Column (5), we replace *D_FWD* with *D_CHG* as the dependent variable in Equation (1) to contrast the relative proprietary costs associated with these two similar disclosure components.¹⁸ *D_CHG* provides information about *past* changes in the UTB, while *D_FWD* provides information about *future* changes in the UTB. We find a negative but insignificant association between *TAXAVD* and *D_CHG*. This is evidence that the firm-specific proprietary costs of disclosure varies across certain disclosure components, perhaps depending on each firm's unique tax situation.¹⁹

Investor Response—Consequences of Disclosure Quality

We report the results of estimating Equation (2) for 829 firms with available data for the model variables in Panel A of Table 4.²⁰ We focus on the interaction effect between the UTB and disclosure quality; therefore, investor expectations of the disclosed UTB do not cloud how we interpret our result.²¹ Our view is that revised expectations of firms' future *cash flows* associated with uncertain tax positions varied with the amount of information provided in the new disclosure. By failing to comply with the disclosure requirements of FIN 48 and/or ensuring that the disclosed information lacked specificity, "low-quality" firms reduce the proprietary cost of the disclosure by making it less informative to the taxing authority. Consequently, investors revise their beliefs downward regarding the costs that FIN 48 would impose on these firms.

In Columns (1), (4), and (7) of Panel A, we define the independent variable *DQ* in the regression as an indicator variable that equals 1 when *COMPLETE*, *CLARITY*, or *TOTAL*, respectively, is above the sample median, 0 otherwise. When *DQ* is *below* the sample median, we observe a significant, positive association between abnormal returns and *UTBMV*. A one standard deviation change in *UTBMV* increases the abnormal return in the five-day window around the 10-Q filing date by 46, 63, and 72 basis points when we define *DQ* as *COMPLETE*, *CLARITY*, and *TOTAL*, respectively.²²

The interaction of *UTBMV* and *DQ* represents the incremental association between abnormal returns and *UTBMV* when *DQ* is *above* the sample median. We obtain negative coefficients on the interaction term in all three columns; however, the coefficient on *UTBMV * DQ* is significant only when we define *DQ* as *CLARITY* or *TOTAL*. Furthermore, the total coefficient on *UTBMV* when *DQ* is *above* the sample median (i.e., the sum of $\alpha_1 + \alpha_3$) is not significantly different from zero.

¹⁸ The requirement to disclose, *D_CHG*, applies only to firms that have *actual* UTB changes during the quarter, thus the sample we used to estimate the *D_CHG* Equation ($n = 163$) is smaller than that used to estimate the *D_FWD* Equation ($n = 643$). When we estimate the *D_FWD* Equation using the sample from the *D_CHG* Equation, the coefficient on *D_FWD* increases from -0.074 to -0.112 and remains significant.

¹⁹ For robustness, we also define the dependent variable *COMPLETE* as the sum of *D_FWD*, *D_ETR*, and *D_INTPEN* (the three components of *COMPLETE* that likely have the highest proprietary costs of disclosure) and find results consistent with H1 and H3. We also use each component of our *TOTAL* disclosure score as a dependent variable in Equation (1) and document a negative and significant association between *TAXAVD* and each of the following disclosure score components: interest and penalties (*D_INTPEN*), future UTB changes (*D_FWD*), the adoption adjustment (*D_READJ*), the part of the UTB that does not affect the ETR (*D_NONETR*), whether the UTB is reported gross or net of any tax benefits (*D_GROSS*), and whether the UTB includes interest and penalties (*D_INCL*).

²⁰ Our inferences do not change if we limit the sample to the 643 firms we used to estimate Equation (1).

²¹ In an efficient market, it is reasonable to expect that investors formed sensible expectations regarding expected future cash outflows associated with uncertain tax positions. It is less likely that investors formed expectations regarding the contemporaneous disclosure quality given that FIN 48 was a new standard and the optimal threshold level of disclosure was unknown. Therefore, in our setting, the revised beliefs about the cost that FIN 48 imposes on firms reflected in the market reaction predominately arises from unexpected disclosure quality.

²² The standard deviation of *UTBMV* is 0.018 ($\alpha_1 = 0.2558$, $std_{UTBMV} = 0.018$: $0.2558 * 0.018 = 0.0046$).

TABLE 4
Market Reaction to Q1 2007 UTB Disclosures^a

Panel A: Disclosure Score and UTB Announcement Period Abnormal Returns—DV = CAR (-2, 0, +2)

	<i>DQ</i> = COMPLETE			<i>DQ</i> = CLARITY			<i>DQ</i> = TOTAL		
	FULL (1)	TAXAVD = 1 (2)	TAXAVD = 0 (3)	FULL (4)	TAXAVD = 1 (5)	TAXAVD = 0 (6)	FULL (7)	TAXAVD = 1 (8)	TAXAVD = 0 (9)
<i>UTBMV</i>	0.256** (0.106)	0.458** (0.189)	0.217 (0.135)	0.349*** (0.106)	0.779*** (0.194)	0.124 (0.147)	0.412*** (0.111)	0.894*** (0.158)	0.174 (0.138)
<i>DQ</i>	0.004 (0.003)	-0.001 (0.008)	0.006* (0.004)	0.004 (0.003)	0.006 (0.006)	0.003 (0.003)	0.003 (0.004)	0.005 (0.008)	0.001 (0.004)
<i>UTBMV</i> * <i>DQ</i>	-0.172 (0.134)	0.058 (0.261)	-0.302* (0.172)	-0.373** (0.154)	-0.646** (0.249)	-0.158 (0.175)	-0.447*** (0.164)	-0.783*** (0.268)	-0.226 (0.141)
<i>UE</i>	1.727*** (0.644)	3.299*** (1.117)	1.528** (0.660)	1.792*** (0.624)	2.907*** (1.027)	1.602** (0.678)	1.814*** (0.631)	3.021*** (1.092)	1.621** (0.665)
<i>QSIZE</i>	0.001 (0.001)	0.002 (0.002)	0.001 (0.001)	0.001 (0.001)	0.002 (0.002)	0.001 (0.001)	0.001 (0.001)	0.003 (0.003)	0.001 (0.001)
<i>RETI00</i>	-0.026** (0.013)	-0.037 (0.034)	-0.022** (0.010)	-0.026** (0.013)	-0.035 (0.033)	-0.024** (0.010)	-0.027** (0.013)	-0.038 (0.032)	-0.024** (0.010)
n	829	223	606	829	223	606	829	223	606
R ²	0.028	0.062	0.023	0.032	0.076	0.023	0.027	0.059	0.014

(continued on next page)

TABLE 4 (continued)
Panel B: Disclosure Score and UTB Decomposition Announcement Period Abnormal Returns—DV = CAR (-2, 0, +2)

	<i>DQ = COMPLETE</i>			<i>DQ = CLARITY</i>			<i>DQ = TOTAL</i>		
	FULL (1)	TAXAVD = 1 (2)	TAXAVD = 0 (3)	FULL (4)	TAXAVD = 1 (5)	TAXAVD = 0 (6)	FULL (7)	TAXAVD = 1 (8)	TAXAVD = 0 (9)
<i>ETRMV</i>	0.047 (0.273)	0.206 (0.508)	0.007 (0.345)	0.353*** (0.125)	0.685*** (0.220)	-0.039 (0.197)	0.468*** (0.102)	0.895*** (0.089)	-0.094 (0.202)
<i>OTHMV</i>	0.359*** (0.114)	0.573 (0.320)	0.320 (0.141)	0.343*** (0.174)	0.865*** (0.277)	0.258 (0.175)	0.387*** (0.179)	0.755* (0.430)	0.343 (0.218)
<i>DQ</i>	0.004 (0.003)	0.001* (0.006)	0.006** (0.004)	0.003 (0.003)	0.000 (0.006)	0.003 (0.003)	0.004* (0.003)	0.007 (0.006)	0.001 (0.004)
<i>ETRMV * DQ</i>	0.087 (0.302)	0.446 (0.817)	-0.099 (0.382)	-0.387** (0.163)	-0.352 (0.244)	-0.055 (0.211)	-0.529*** (0.148)	-0.874*** (0.219)	0.025 (0.224)
<i>OTHMV * DQ</i>	-0.446* (0.230)	-0.720 (0.680)	-0.393* (0.221)	-0.368** (0.262)	-0.996** (0.389)	-0.219 (0.333)	-0.362* (0.199)	-0.617 (0.633)	-0.349 (0.232)
<i>UE</i>	1.575** (0.631)	2.683*** (1.010)	1.484*** (0.695)	1.606*** (0.616)	2.314** (0.913)	1.530** (0.730)	1.627*** (0.621)	2.311** (0.987)	1.545** (0.725)
<i>Q/SIZE</i>	0.001 (0.001)	0.001 (0.002)	0.001 (0.001)	0.001 (0.001)	0.000 (0.002)	0.001 (0.001)	0.001 (0.001)	0.001 (0.002)	0.001 (0.001)
<i>RET100</i>	-0.026* (0.013)	-0.040 (0.035)	-0.020* (0.010)	-0.026* (0.013)	-0.040 (0.034)	-0.021** (0.010)	-0.026** (0.013)	-0.037 (0.032)	-0.022** (0.010)
<i>n</i>	790	213	577	790	213	577	790	213	577
<i>R</i> ²	0.027	0.067	0.024	0.029	0.084	0.021	0.031	0.088	0.022

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 (two-tailed) levels, respectively.

^a This table presents the results of ordinary least squares (OLS) regressions (coefficient estimate followed by clustered standard errors) that evaluate the market reaction to the disclosure of unrecognized tax benefits in Q1 2007. We cluster standard errors by the 10-Q filing date and estimate the regression using three samples: *FULL* = The full sample; *TAXAVD = 1* (*TAXAVD = 0*); Sample of tax avoiders (non-tax avoiders), where we classify firms as tax avoiders (non-tax-avoiders) if lagged *TAXAVD* falls in the upper 25 percent (lower 75 percent) of its distribution. We define the variables in Table 1.

Therefore, firms with high FIN 48 disclosure quality experience no significant market reaction to the disclosed UTB amount, while firms with low FIN 48 disclosure quality experience a significantly positive market reaction to the disclosed UTB amount. Verrecchia (1983) predicts that investors will not punish (or will punish less) a firm for withholding information in the presence of proprietary costs. The results we report in Table 4 are consistent with this prediction and the presence of proprietary costs in the FIN 48 setting.

To provide further evidence that the results of our market reaction tests arise from proprietary costs, we partition our sample based on *TAXAVD*, our measure of proprietary costs. We create an indicator variable that equals 1 when lagged *TAXAVD* falls in the upper quartile of its distribution, 0 otherwise. If investors consider the proprietary costs of disclosure as sufficiently high to forgo the benefits of full disclosure, we anticipate that our results of H3 should be concentrated in the sample of firms for which *TAXAVD* = 1.

The results we report in Columns (2), (3), (5), (6), (8), and (9) of Panel A in Table 4 largely correspond to this prediction. The coefficient on *UTBMV* * *DQ* for *TAXAVD* = 1 firms is significantly smaller than the coefficient on *UTBMV* * *DQ* for *TAXAVD* = 0 firms when *DQ* equals *CLARITY* and *TOTAL* (the difference in interaction terms is insignificant when *DQ* equals *COMPLETE*). Overall, our findings suggest that when investors evaluate FIN 48 disclosures, they are primarily concerned with the proprietary cost of providing a roadmap to the taxing authority rather than full disclosure.²³

Exploratory Analyses

We expand upon our main investor reaction analysis in two ways. First, we allow the coefficient on *UTBMV* in Equation (2) to vary across two components of the UTB (discussed below). Second, we compare our main results across large versus small firms. Both analyses introduce potential additional variation in proprietary costs associated with the UTB disclosure.

UTB Components

FIN 48 requires that the firm separately state the portion of the UTB that, if recognized, would affect the ETR and, thus, earnings (*ETRMV*). Here, we clarify the types of tax positions that *ETRMV* does and does not capture (i.e., *OTHMV*). *ETRMV* does *not* capture UTB reversals that would affect another balance sheet account such as deferred tax assets/liabilities, goodwill, or accumulated other comprehensive income. This includes tax positions that create temporary book-tax differences, tax positions that create no book-tax differences, the *excess of the gross versus the net* effect of state and foreign tax positions (including nexus issues) and foreign transfer pricing issues, any uncertain tax benefits acquired, and uncertain tax positions recorded in foreign subsidiaries for which the firm records a currency translation adjustment. *ETRMV* also does *not* include any UTB reversals that would flow through income from discontinued operations.²⁴ *ETRMV* does capture uncertain tax positions that create permanent book-tax differences, the *net*

²³ Prior studies find that investors value tax avoidance among well-governed firms but that tax avoidance among poorly governed firms could exacerbate concerns of managerial diversion (e.g., Desai and Dharmapala 2009; Koester 2011). In untabulated analysis, we find that the coefficient on the interaction term (*UTBMV* * *DQ*) is only significantly negative for well-governed firms, suggesting that poor disclosure quality heightens concerns of managerial diversion in poorly governed firms.

²⁴ In our example from Figure 1, referring only to the tax, the firm should disclose a gross UTB (*UTBMV*) of \$100 but an amount that affects the ETR (*ETRMV*) of only \$65. Thus, the amount that does not affect the ETR (*OTHMV*) would be \$35 (\$100 – \$65). Thus, *OTHMV* includes the portion of the UTB arising state and foreign tax planning that the firm expects to offset with a benefit in another taxing jurisdiction. However, as not all firms follow this disclosure practice, there is likely to be measurement error in studies that parse out *ETRMV* from *OTHMV*.

effect of state tax positions (including nexus issues), and possibly the *net* effect of foreign transfer pricing issues.²⁵

We motivate our exploratory analysis of the UTB using Hanlon and Heitzman (2010), who note that others have conjectured that tax positions that reduce accounting earnings (i.e., permanent differences) may be more aggressive than those that do not (i.e., temporary differences), although the authors also note that there is no evidence on this issue.²⁶ If uncertain tax positions that affect accounting earnings are relatively more aggressive, then these tax positions may have a higher proprietary cost of disclosure.

To explore whether the effect of disclosure quality on the market reaction to the UTB varies across these two UTB components, we estimate an expanded version of Equation (2) as follows:

$$CAR_i = \delta_0 + \delta_1 ETRMV_i + \delta_2 OTHMV_i + \delta_3 DQ_i + \delta_4 ETRMV * DQ_i + \delta_5 OTHMV * DQ_i + \delta_6 UE_i + \delta_7 Q1SIZE_i + \delta_8 RET100_i + \varepsilon_i. \quad (3)$$

We report the results of estimating Equation (3) in Columns (1), (4), and (7) of Panel B in Table 4. Overall, these results show a positive market reaction to a low-quality disclosure of both UTB components, and no reaction to a high-quality disclosure of both components (i.e., $ETRMV^{HQ} = \delta_1 + \delta_4$; $OTHMV^{HQ} = \delta_2 + \delta_5$). All uncertain tax positions affect expected future cash flows; therefore, it is not surprising that investors react similarly across the two components. We caveat our results however, by pointing out that knowing the portion of the UTB that affects the ETR requires high-quality disclosure. Thus, we are hesitant to draw strong conclusions from our UTB decomposition.²⁷

Firm Size

We also separately examine small-cap (S&P 600) and large-cap (S&P 500) firms.²⁸ Internal Revenue Service (IRS) examination statistics of tax year 2007 returns reveal that 75 percent of the large firms in our sample can expect to be audited 63 percent of the time, while nearly half of these firms can expect to be audited 100 percent of the time. In contrast, more than half of the small firms in our sample should expect to be audited only 19 percent of the time.²⁹ These statistics reflect that resource-constrained taxing authorities will, all else equal, strive for greater coverage of larger firms. Consequently, the presumption that the taxing authority will examine all tax positions in the recognition and measurement process of FIN 48 introduces a greater proprietary cost of FIN 48 disclosure for small firms.³⁰

²⁵ If the firm has an APB No. 23 assertion in place, then uncertain tax benefits associated with transfer pricing issues would not be included at all in *ETRMV*; rather, all of the uncertainty would be part of *OTHMV*. This is because any reversal of the UTB would affect a deferred tax liability.

²⁶ In fact, descriptive evidence highlighted by Hanlon and Heitzman (2010) suggests the opposite. Further, Wilson (2009) and Lisowsky et al. (2013) document that many aggressive tax shelters create temporary differences.

²⁷ For instance, when a firm is silent on the portion of the UTB that affects the ETR (which is noncompliant in our view), assuming the entire amount of the UTB affects the ETR increases the coefficient on *ETRMV* by 500 percent. Additionally, the portion of the UTB that will affect earnings (*ETRMV*) sometimes includes interest and penalties, while the disclosed UTB does not. Thus, if one computes *OTHMV* by subtracting *ETRMV* from *UTBMV*, one will often understate *OTHMV* and overstate *ETRMV*. Any study that attempts to decompose the UTB into these two components suffers from the disclosure quality issues that we describe in our study.

²⁸ Frischmann et al. (2008) and Koester (2011) examine the market reaction disclosures of firms in the S&P 500. <http://www.irs.gov/pub/irs-soi/07databkrevise.pdf>

³⁰ The recognition and measurement process requires that firms assume that the probability that the tax authority will audit the uncertain tax position is 100 percent. Since the audit probability of smaller firms is much lower than that of larger firms, FIN 48 disclosure requirements may impose greater costs on smaller firms by attracting a tax audit that it might have otherwise avoided.

TABLE 5
Market Reaction to Q1 2007 UTB Disclosures
Small-Cap and Large-Cap Firms^a

Panel A: Disclosure Score and UTB Announcement Period Abnormal Returns—DV = CAR
(−2, 0, +2)

		S&P 500 (1)	S&P 600 (2)
<i>UTBMV</i>	?	0.166* (0.090)	0.867*** (0.208)
<i>DQ_TOT</i>	?	0.001 (0.007)	−0.001 (0.005)
<i>UTBMV * DQ_TOT</i>	?	0.013 (0.222)	−0.959*** (0.229)
<i>UE</i>	+	2.227 (1.558)	2.345*** (0.834)
<i>QISIZE</i>	+	0.002* (0.001)	0.006* (0.003)
<i>RET100</i>	?	−0.043* (0.023)	−0.020 (0.022)
n		333	279
R ²		0.045	0.0806

Panel B: Disclosure Score and UTB Decomposition Announcement Period Abnormal
Returns—DV = CAR (−2, 0, +2)

		S&P 500 (1)	S&P 600 (2)
<i>ETRMV</i>	?	0.138 (0.174)	0.859*** (0.111)
<i>OTHMV</i>	?	0.216* (0.102)	1.248* (0.736)
<i>DQ_TOT</i>	?	0.005 (0.004)	−0.001 (0.005)
<i>ETRMV * DQ_TOT</i>	?	−0.154 (0.276)	−0.826*** (0.223)
<i>OTHMV * DQ_TOT</i>	?	0.087 (0.167)	−1.560* (0.621)
<i>UE</i>	+	1.722 (1.562)	2.070* (0.950)
<i>QISIZE</i>	+	0.003*** (0.001)	0.005* (0.002)
<i>RET100</i>	?	−0.033* (0.018)	−0.024 (0.024)
n		325	259
R ²		0.060	0.079

*, **, *** Denote significance at the 0.10, 0.05, and 0.01 (two-tailed) levels, respectively.

^a This table presents the results of ordinary least squares (OLS) regressions (coefficient estimate followed by clustered standard errors) that evaluate the market reaction to the disclosure of unrecognized tax benefits in Q1 2007. We cluster standard errors by the 10-Q filing date.

We define the variables in Table 1.

To examine this potential size-based variation in proprietary costs, we investigate whether the market reaction to FIN 48 disclosure quality varies by firm size. In Panel A of Table 5, we present the results of estimating Equation (2) separately for large and small firms, which correspond to the S&P 500 and S&P 600, in Columns (1) and (2), respectively. This additional analysis suggests that our primary results in Panel A of Table 4 appear to be concentrated in small firms. Specifically, the results in Panel A of Table 5 show a positive and significant association between *UTBMV* and returns when disclosure quality is low for both large and small firms, but the incremental association between returns and *UTBMV* when disclosure quality is high is significant only for small firms. Documenting that the results for the full sample from Panel A of Table 4 are concentrated in small firms further reinforces the link between proprietary costs and disclosure.

In Panel B of Table 5, we re-examine our UTB decomposition analysis by estimating Equation (3) separately across large and small firms. These tests reveal similar inferences as those we report in Panel A of Table 5, namely that disclosure quality affects the market reaction to the UTB for small firms, but not large firms. Furthermore, we observe a “reward” for low-quality disclosure in small firms with respect to both UTB components, consistent with the fact that both components affect expectations of future firm cash flows, regardless of the UTB’s settlement effect on earnings.

In Column (1) of Panel B in Table 5, we observe that disclosure quality does not influence the market reaction to the UTB disclosure of large firms (i.e., the interaction terms are insignificant). However, we do document an overall positive market reaction to the UTB. By allowing the coefficient on *UTBMV* to vary across *ETRMV* and *OTHMV*, we learn that for large firms, the positive association between returns and *UTBMV* is concentrated in the portion of the UTB that does not affect earnings (*OTHMV*).

We conjecture a reasonable explanation for this finding. As we describe at the beginning of the “UTB Components” section, *OTHMV* can be a signal of the extent to which the firm engages in state and foreign tax planning because a large portion of *OTHMV* may just be the difference between the gross and net UTB.³¹ To the extent that firms engage in multi-jurisdictional tax planning, the proprietary cost of a FIN 48 disclosure is lower regardless of disclosure quality. The reason is that each taxing authority in each taxing jurisdiction in which the firm engages in tax planning, learns very little from the UTB disclosure as it relates to their jurisdiction. Thus, investors may revise upward their assessment of firms’ future cash flows when they observe an “unexpectedly” high *OTHMV*, consistent with investors valuing state and foreign tax planning, and recognizing that the disclosure of *OTHMV* is less likely to be informative to any one taxing authority. Additionally, *OTHMV* may not represent a future cash outflow at all if the firm realizes the offsetting deferred tax asset. For these reasons, investors in large firms are likely to have reacted positively when they observed, at adoption, a higher portion of the UTB in the form of *OTHMV*.

As an aside, we also re-examine H1 and H2 in subsamples of small and large firms by estimating Equation (1) separately for small and large firms (untabulated). We continue to find a negative and significant association between *TAXAVD* and disclosure quality in both subsamples. However, the negative association is significantly stronger in S&P 600 firms relative to S&P 500 firms, regardless of whether we define the dependent variable as *COMPLETE*, *CLARITY*, *TOTAL*, or *D_FWD*. These similar results corroborate our subsample

³¹ Based on discussions with practitioners, this is likely to be a large component of *OTHMV*. In practice, tax positions that create temporary differences are likely to result in small reserves, and some firms do not set up reserves for many of these tax positions at all, despite the guidance in FIN 48.

market reaction tests above, which suggest smaller firms face higher proprietary costs when making FIN 48 disclosures.³²

CONCLUSION

We undertake a detailed analysis of firms' UTB disclosure practices under the recently issued mandatory disclosure requirements of FIN 48, which requires disclosure regarding uncertain tax positions. Disclosure theories predict a negative association between proprietary costs and full disclosure because, in equilibrium, managers anticipate that investors will react less negatively to withheld information in the presence of proprietary costs. We apply this theory to the FIN 48 adoption setting because many constituents anticipated that the proprietary costs of the FIN 48 disclosures could be non-trivial. We conduct two sets of tests. First, we examine whether firms that face higher proprietary costs exhibit lower-quality FIN 48 adoption disclosures. Second, we examine how firms' disclosure quality influences investor reaction to initial FIN 48 disclosures of UTB amounts.

We note two key empirical findings, their implication, as well as primary contribution to the literature. First, we find a negative association between measures of proprietary costs and full disclosure (i.e., we observe a lower level of compliance with FIN 48 and less disclosure specificity for firms that engage in more extensive tax avoidance). This finding implies that enforcement issues are salient when implementing mandatory disclosure guidelines for proprietary information. We extend the relatively narrow body of empirical work on the effects of proprietary costs on disclosure beyond segment reporting, improving the external validity of [Verrecchia \(1983\)](#).

Second, we find evidence consistent with investors penalizing firms that, on average, make high-quality UTB disclosures. Moreover, our results are concentrated in firms with higher proprietary costs, consistent with [Verrecchia \(1983\)](#). Our finding complements a relatively small but growing body of evidence that investors place a positive value on tax avoidance (e.g., [Frischmann et al. 2008](#); [Desai and Dharmapala 2009](#); [Hanlon and Slemrod 2009](#); [Koester 2011](#)). However, our focus on disclosure quality implies that investors appear willing to accept less disclosure in order to "facilitate" firms' tax avoidance activities. This finding is particularly interesting because the motivation for FIN 48 disclosure requirements was to protect investors by forcing firms to provide investors with transparent and comparable disclosures about firms' tax uncertainties.

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³² While we believe that our size-based analysis points to an empirical association between proprietary costs and FIN 48 disclosure quality, we recognize that small firms may face greater implementation costs of FIN 48 than large firms when adopting FIN 48. If so, and if our controls for task complexity (and firm size) in our regressions do not adequately control for differential task complexity across large and small firms, then task complexity may be driving the negative association between tax avoidance and disclosure quality. However, the fact that we find support for H1 and H2 in a sample of only large firms, suggests that the proprietary cost story is valid.

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APPENDIX A

Discussion of Disclosure Scores and Example Disclosures

Method for Constructing FIN 48 Disclosure Scores

We use the disclosure requirements outlined in paragraphs 20–24 of FASB Interpretation No. 48, *Accounting for Uncertainty in Income Taxes* (FIN 48, FASB 2007) and SEC staff guidance on the adoption disclosure to determine the completeness of adoption disclosures for the S&P 1500.³³ We construct two disclosure scores: *COMPLETE* and *CLARITY*. *COMPLETE* measures the number of required items disclosed by the firm. The highest possible score for completeness is eight, which includes all seven items highlighted in paragraphs 20 and 21 of FIN 48 and the disclosure of the SAB 74 adoption adjustment, which mandates reporting the cumulative effect of adopting FIN 48 as an adjustment to the opening balance of retained earnings (FIN 48 ¶23–24). *CLARITY* measures how clearly firms convey the required information. The highest possible clarity score is four.

Each component of *COMPLETE* and *CLARITY* ranges from zero to one and a firm's total score is an equally weighted sum of the components. When applicable, we view “not material,” “immaterial,” “cannot determine,” or “not significant” as satisfying the disclosure requirements. We compute the components of the completeness score as follows:

Disclosure Guidelines

FIN 48 ¶20:

An enterprise shall disclose its policy on classification of interest and penalties in accordance with paragraph 19 of this Interpretation in the footnotes to the financial statements.

FIN 48 ¶21a:

An enterprise shall disclose the following at the end of each annual reporting period presented: (a) A tabular reconciliation of the total amounts of unrecognized tax benefits at the beginning and end of the period (the tabular format is option in the adoption and quarterly disclosures; however, the same information is required).

FIN 48 ¶21a1–21a4:

The gross amounts of the increases and decreases in unrecognized tax benefits as a result of (1) tax positions taken during a prior period, (2) tax positions taken during the current period, (3) decreases in the unrecognized tax benefits relating to settlements with taxing authorities, and (4) a lapse of the applicable statute of limitations.

Computation of Component Score

$D_CLASS = 0$ if classification not disclosed, 0.5 if classification disclosed for either penalty or interest (but not both), 1 if classification disclosed for both.

$D_UTB = 0$ if neither a beginning nor ending unrecognized tax benefit (UTB) amount is disclosed, 1 otherwise.³⁴

$D_CHG = 0$ if the firm disclosed a change in the UTB amount during the quarter, but did not explain the reason for the change, 1 otherwise.³⁵

³³ The Center for Public Company Audit Firms (2006, Alert #138) and the Center for Audit Quality (2007, Alert # 2007-2) issued clarifying guidance that first quarter adoption disclosures should contain all required annual disclosures, with the exception of the use of a tabular format for the reconciliation of beginning and ending UTB balances.

³⁴ If the firm disclosed either the beginning or ending balance, but not both, we credited the firm for disclosing both. Firms are required to disclose the amount of the UTB as of adoption and any material changes.

³⁵ This includes giving a 1 to a firm who did not have a UTB change to explain.

Disclosure Guidelines (continued)*FIN 48 ¶21b:*

The total amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate.

FIN 48 ¶21c:

The total amounts of interest and penalties recognized in the statement of operations and the total amounts of interest and penalties recognized in the statement of financial position.

FIN 48 ¶21d1–21d3:

For positions for which it is reasonably possible that the total amounts of unrecognized tax benefits will significantly increase or decrease within 12 months of the reporting date: (1) The nature of the uncertainty, (2) The nature of the event that could occur in the next 12 months that would cause the change, (3) An estimate of the range of the reasonably possible change or a statement that an estimate of the range cannot be made.

FIN 48 ¶21e:

A description of tax years that remain subject to examination by major tax jurisdictions.

FIN 48 ¶23–24 and SAB 74:

The cumulative effect of applying the provisions of this Interpretation shall be reported as an adjustment to the opening balance of retained earnings for that fiscal year, presented separately.

We compute the components of the clarity score as follows:

Description of Measure

Was there a disclosure or discussion of reasons for the portion of the UTB that does not affect the ETR?

Computation of Component Score (continued)

$D_ETR = 0$ if the amount of the UTB that would affect the effective tax rate (ETR) is not disclosed, 0.5 if the UTB changed during the quarter and only the beginning or ending that would affect the ETR was disclosed (but not both), and 1 otherwise.³⁶

$D_INTPEN = 0$ if neither interest nor penalty amounts were disclosed, 0.5 if interest or penalty amount was disclosed, 1 if both disclosed.

$D_FWD = 0$ if no forward-looking statement was made, or 0.33 each for mention of the item, nature, and amount of the expected change.³⁷

$D_OPEN = 0$ if the firm did not disclose open federal tax years, 1 otherwise.³⁸

$D_READJ = 0$ if the firm did not provide an adoption adjustment, 0.33 for each component of the entry that was provided (i.e., $A = L + E$), 1 otherwise.

Computation of Component Score

$D_NONETR = 1$ if the firm included a discussion of the portion of the UTB that does affect the ETR, 0 otherwise.^{39,40}

³⁶ This includes giving a 1 to a firm that had a UTB equal to 0 and, therefore, did not have an ETR amount to disclose.

³⁷ This includes giving a 1 to firms that explicitly disclosed “immaterial” as the expected amount in the forward-looking statement regardless of whether the firm provided a description of the item or event.

³⁸ Firms are only required to disclose information related to major tax jurisdictions. The U.S. is a major tax jurisdiction for our sample.

³⁹ This includes giving a 1 to firms that reported a 0 UTB amount.

⁴⁰ The clarifying nature of D_NONETR is subtle. If the amount of the UTB that affects the ETR is less than the UTB, it does not mean that the difference is due to tax benefits that create temporary differences between book and tax income. D_NONETR could include uncertain tax benefits that create temporary differences, affect goodwill or other comprehensive income, or reflect the difference between the UTB reported on a gross versus net basis. The benefit of explicitly telling an investor that a reduction in the UTB would affect goodwill is that the investor can distinguish pre-acquisition UTBs arising from the firm’s acquisition of target companies with existing UTBs, from aggressive tax positions taken by the firm itself. However, also consider that this information involves proprietary costs because it provides the IRS with the ability to pinpoint the uncertain tax position.

Description of Measure (continued)	Computation of Component Score (continued)
Do we know if the reported UTB is gross or net of state or foreign tax benefits? ⁴¹	$D_GROSS = 1$ if the firm explicitly stated whether the reported UTB was gross or net, 0 otherwise. ⁴²
Do we know if the reported UTB includes interest and penalties?	$D_INCL = 1$ if the firm explicitly stated whether the reported UTB included interest and penalties, 0 otherwise. ⁴³
Were interest and penalties reported separately?	$D_LUMP = 1$ if the firm reported interest and penalties separately, 0 otherwise. ^{44,45}

We provide descriptive statistics for the disclosure score components in Table 6 and Table 7 of the Appendix.

FIN 48 Disclosure Examples and Scoring

The italicized portions of the FIN 48 excerpts below satisfy the disclosure requirements of FIN 48 and/or increase the clarity of the disclosed items, the dimension on which we base our disclosure scores.

Example 1: Low Score (COMPLETE = 4.5, CLARITY = 0)

Founded in 1952, Lawson Products, Inc., sells and distributes specialty products to the industrial, commercial, institutional and government maintenance, repair, and operations market (MRO) through Lawson Products. Lawson Products has been recognized as one of The 50 Best Companies to Sell For by *Selling Power* magazine for the past eight years, has been ranked among Industrial Distribution's Big 50 for over four years, and is on Modern Distribution Management's "Top 40" list. The following excerpt comprises the FIN 48 adoption disclosure for the period ended March 31, 2007. (Italicized passages in the excerpt contain the data we used to construct the disclosure scores.)

The Company adopted the provisions of FASB Interpretation 48, *Accounting for Uncertainty in Income Taxes* (FIN 48), on January 1, 2007. Previously, the Company had accounted for tax contingencies in accordance with Statement of Financial Accounting Standards No. 5, *Accounting for Contingencies*. As required by FIN 48, which clarifies Statement No. 109, *Accounting for Income Taxes*, the Company currently recognizes the financial statement benefit

⁴¹ The language in the annual disclosure requirements suggests that firms should report gross amounts in the tabular reconciliation; however, this reconciliation was not required at adoption. Therefore, firms reported the UTB both gross and net at adoption, making it impossible to know the answer for a firm that said nothing. We recognize that the gross versus net reporting issue is particularly important for firms that face state and foreign tax uncertainties, but we have no reason to expect that this would not include nearly every firm in our sample. Gross versus net reporting is also important in cases where the firm reports significant interest/penalties associated with the UTB.

⁴² This includes giving a 1 to firms that reported a 0 UTB amount.

⁴³ This includes giving a 1 to firms that reported 0 interest and penalties.

⁴⁴ This includes giving a 0 to firms that disclose *either* interest *or* penalties separately, but fail to disclose the other item entirely.

⁴⁵ Knowing interest and penalty amounts separately improves the information content of the disclosure because accrued penalties signal a relatively aggressive tax position.

TABLE 6
Descriptive Statistics: Completeness Component Disclosure Scores^a

Panel A: Full Sample

<u>Variable</u>	<u>n</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>1st Quartile</u>	<u>Median</u>	<u>3rd Quartile</u>
<i>D_UTB</i>	871	1.0000	0.0000	1.0000	1.0000	1.0000
<i>D_ETR</i>	871	0.9122	0.2469	1.0000	1.0000	1.0000
<i>D_READJ</i>	871	0.9763	0.1497	1.0000	1.0000	1.0000
<i>D_INTPEN</i>	871	0.9257	0.2197	1.0000	1.0000	1.0000
<i>D_CLASS</i>	871	0.9610	0.1684	1.0000	1.0000	1.0000
<i>D_FWD</i>	871	0.4309	0.3197	0.3333	0.3333	0.6667
<i>D_OPEN</i>	871	0.9816	0.1344	1.0000	1.0000	1.0000
<i>D_CHG</i>	871	0.8642	0.3405	1.0000	1.0000	1.0000

Panel B: S&P 400

<u>Variable</u>	<u>n</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>1st Quartile</u>	<u>Median</u>	<u>3rd Quartile</u>
<i>D_UTB</i>	230	1.0000	0.0000	1.0000	1.0000	1.0000
<i>D_ETR</i>	230	0.9261	0.2359	1.0000	1.0000	1.0000
<i>D_READJ</i>	230	0.9826	0.1310	1.0000	1.0000	1.0000
<i>D_INTPEN</i>	230	0.9543	0.1655	1.0000	1.0000	1.0000
<i>D_CLASS</i>	230	0.9717	0.1333	1.0000	1.0000	1.0000
<i>D_FWD</i>	230	0.5072	0.3669	0.3333	0.3333	1.0000
<i>D_OPEN</i>	230	0.9783	0.1461	1.0000	1.0000	1.0000
<i>D_CHG</i>	230	0.8565	0.3513	1.0000	1.0000	1.0000

Panel C: S&P 500

<u>Variable</u>	<u>n</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>1st Quartile</u>	<u>Median</u>	<u>3rd Quartile</u>
<i>D_UTB</i>	343	1.0000	0.0000	1.0000	1.0000	1.0000
<i>D_ETR</i>	343	0.9023	0.2261	1.0000	1.0000	1.0000
<i>D_READJ</i>	343	0.9854	0.1200	1.0000	1.0000	1.0000
<i>D_INTPEN</i>	343	0.9111	0.2328	1.0000	1.0000	1.0000
<i>D_CLASS</i>	343	0.9417	0.2117	1.0000	1.0000	1.0000
<i>D_FWD</i>	343	0.4500	0.2995	0.3333	0.3333	0.6667
<i>D_OPEN</i>	343	0.9883	0.1075	1.0000	1.0000	1.0000
<i>D_CHG</i>	343	0.8608	0.3427	1.0000	1.0000	1.0000

(continued on next page)

of a tax position only after determining that the relevant tax authority would more-likely-than-not sustain the position following an audit. For tax positions meeting the more-likely-than-not threshold, the amount recognized in the financial statements is the largest benefit that has a greater than 50 percent likelihood of being realized upon ultimate settlement with the relevant tax authority. At the adoption date, the Company applied FIN 48 to all tax positions for which the statute of limitations remained open.

TABLE 6 (continued)

Panel D: S&P 600

Variable	n	Mean	Standard Deviation	1st Quartile	Median	3rd Quartile
<i>D_UTB</i>	298	1.0000	0.0000	1.0000	1.0000	1.0000
<i>D_ETR</i>	298	0.9128	0.2767	1.0000	1.0000	1.0000
<i>D_READJ</i>	298	0.9609	0.1884	1.0000	1.0000	1.0000
<i>D_INTPEN</i>	298	0.9203	0.2387	1.0000	1.0000	1.0000
<i>D_CLASS</i>	298	0.9748	0.1305	1.0000	1.0000	1.0000
<i>D_FWD</i>	298	0.3501	0.2844	0.3333	0.3333	0.3333
<i>D_OPEN</i>	298	0.9765	0.1517	1.0000	1.0000	1.0000
<i>D_CHG</i>	298	0.8742	0.3303	1.0000	1.0000	1.0000

^a This table presents descriptive statistics for the eight components of our FIN 48 disclosure completeness scores. We define the variables as follows: *D_UTB* = 0 if neither a beginning nor ending unrecognized tax benefit amount is disclosed, 1 otherwise; *D_ETR* = 0 if the amount of the UTB that would affect the effective tax rate (ETR) is not disclosed, 0.5 if the UTB changed during the quarter and only the beginning or ending that would affect the ETR was disclosed (but not both), and 1 otherwise; *D_READJ* = 0 if the firm did not provide an adoption adjustment, 0.33 for each component of the entry that was provided (i.e., A = L + E), 1 otherwise; *D_INTPEN* = 0 if neither interest nor penalty amounts disclosed, 0.5 if interest or penalty amount disclosed, 1 if both disclosed; *D_CLASS* = 0 if classification not disclosed, 0.5 if the classification disclosed for either penalty or interest (but not both), 1 if classification disclosed for both; *D_FWD* = 0 if no forward-looking statement was made, or 0.33 each for mention of the item, nature, and amount of the expected change; *D_OPEN* = 0 if the firm did not disclose open federal tax years, 1 otherwise; *D_CHG* = 0 if the firm disclosed a change in the amount of the UTB during the quarter, but did not explain the reason for the change, 1 otherwise.

As a result of the implementation of FIN 48, the Company recognized an increase of approximately \$1,200,000 in the liability for unrecognized tax benefits, which was accounted for as a reduction to the January 1, 2007 balance of retained earnings. At January 1, 2007, the Company recorded interest payable of approximately \$675,000. The Company's federal returns for the tax years 2004 through 2006 remain open to examination. In addition, the years 2000 through 2002 remain open to the extent of a refund claim. Generally, the tax years 2002 through 2006 remain open to examination by major state taxing jurisdictions. Finally, the major foreign jurisdictions in which the Company files income tax returns are Canada and Mexico. Generally, the tax years 2001 through 2006 remain open for Mexico and 2002 through 2006 for Canada.

DISCLOSURE SCORE

COMPLETE								CLARITY			
<i>D_CLASS</i>	<i>D_UTB</i>	<i>D_CHG</i>	<i>D_ETR</i>	<i>D_INTPEN</i>	<i>D_FWD</i>	<i>D_OPEN</i>	<i>D_READJ</i>	<i>D_NONETR</i>	<i>D_GROSS</i>	<i>D_INCL</i>	<i>D_LUMP</i>
0	1	0	0	0.5	0	1	1	0	0	0	0
$\Sigma = 4.5$								$\Sigma = 0$			

Example 2: High Score (COMPLETE = 7.5, CLARITY = 3)

Ruth's Chris Steakhouse Inc. is the largest upscale steakhouse company in the United States based on company- and franchisee-owned restaurants in the United States. The following excerpt

TABLE 7
Descriptive Statistics: Clarity Component Disclosure Scores^a

Panel A: Full Sample

<u>Variable</u>	<u>n</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>1st Quartile</u>	<u>Median</u>	<u>3rd Quartile</u>
<i>D_NONETR</i>	871	0.3433	0.4591	0.0000	0.0000	1.0000
<i>D_GROSS</i>	871	0.2641	0.4411	0.0000	0.0000	1.0000
<i>D_INCL</i>	871	0.4466	0.4974	0.0000	0.0000	1.0000
<i>D_LUMP</i>	871	0.3054	0.4608	0.0000	0.0000	1.0000

Panel B: S&P 400

<u>Variable</u>	<u>n</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>1st Quartile</u>	<u>Median</u>	<u>3rd Quartile</u>
<i>D_NONETR</i>	230	0.3543	0.4643	0.0000	0.0000	1.0000
<i>D_GROSS</i>	230	0.2870	0.4533	0.0000	0.0000	1.0000
<i>D_INCL</i>	230	0.4870	0.5009	0.0000	0.0000	1.0000
<i>D_LUMP</i>	230	0.3348	0.4729	0.0000	0.0000	1.0000

Panel C: S&P 500

<u>Variable</u>	<u>n</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>1st Quartile</u>	<u>Median</u>	<u>3rd Quartile</u>
<i>D_NONETR</i>	343	0.2580	0.4168	0.0000	0.0000	0.5000
<i>D_GROSS</i>	343	0.2624	0.4406	0.0000	0.0000	1.0000
<i>D_INCL</i>	343	0.3936	0.4893	0.0000	0.0000	1.0000
<i>D_LUMP</i>	343	0.2857	0.4524	0.0000	0.0000	1.0000

Panel D: S&P 600

<u>Variable</u>	<u>n</u>	<u>Mean</u>	<u>Standard Deviation</u>	<u>1st Quartile</u>	<u>Median</u>	<u>3rd Quartile</u>
<i>D_NONETR</i>	298	0.4329	0.4843	0.0000	0.0000	1.0000
<i>D_GROSS</i>	298	0.2483	0.4328	0.0000	0.0000	0.0000
<i>D_INCL</i>	298	0.4765	0.5003	0.0000	0.0000	1.0000
<i>D_LUMP</i>	298	0.3054	0.4613	0.0000	0.0000	1.0000

^a This table presents descriptive statistics for the four components of our FIN 48 disclosure clarity scores. We define the variables as follows: *D_NONETR* = 1 if the firm included a discussion or amount of the UTB that does not affect the ETR (i.e., the UTB caused by temporary differences, goodwill, or other comprehensive income) included in the UTB, 0 otherwise; *D_GROSS* = 1 if the firm explicitly stated whether the reported UTB was gross or net, 0 otherwise; *D_INCL* = 1 if the firm explicitly stated whether the reported UTB included interest and penalties, 0 otherwise; *D_LUMP* = 1 if the firm reported interest and penalties separately, 0 otherwise.

comprises the FIN 48 adoption disclosure for the period ended March 31, 2007. (Italicized passages in the excerpt contain the data we used to construct the disclosure scores.)

The Company adopted FASB Interpretation No. 48, *Accounting for Uncertainty in Income Taxes* (FIN 48), on January 1, 2007. The implementation of FIN 48 did not result in any

changes to the Company's unrecognized tax benefits for uncertain tax positions. As of the date of adoption, the Company's gross unrecognized tax benefits totaled approximately \$650, all of which, if recognized, would impact the effective tax rate. The Company does not anticipate there will be any material changes in the unrecognized tax benefits within the next 12 months. Our continuing practice is to recognize interest and penalties related to income tax matters in income tax expense. As of January 1, 2007, the Company had accrued approximately \$134 for the payment of interest, which is included as a component of the \$650 unrecognized tax benefit noted above. The Company files consolidated and separate income tax returns in the United States federal jurisdiction, many state jurisdictions, and Puerto Rico. With few exceptions, the Company is no longer subject to U.S. federal income tax examinations for years before 2003 and is no longer subject to state and local or Puerto Rico income tax examinations by tax authorities for years before 2002.

DISCLOSURE SCORE

COMPLETE								CLARITY			
D_CLASS	D_UTB	D_CHG	D_ETR	D_INTPEN	D_FWD	D_OPEN	D_READJ	D_NONETR	D_GROSS	D_INCL	D_LUMP
1	1	1	1	0.5	1	1	1	1	1	1	0
$\Sigma = 7.5$							$\Sigma = 3$				

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