

Firm and investor responses to uncertain tax benefit disclosure requirements

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Abstract: Financial Interpretation No. 48, Accounting for Uncertainty in Income Taxes, imposes mandatory disclosure requirements on public firms regarding uncertain tax positions reflected in their financial reports. While the number of studies examining the amount of the disclosed liability is growing, there is little focus on the actual quality of the disclosure itself. We examine determinants of FIN 48 disclosure quality among S&P 1500 firms by constructing a statistic to measure the quality of firm disclosures. We predict and find that firms with the highest proprietary costs of disclosure use discretion to jam the information contained in the disclosure. In stock market reaction tests, we find evidence to suggest that investors penalize firms for high disclosure quality, suggesting that investors are primarily concerned with the proprietary costs of the disclosure rather than increased transparency. These findings are interesting in light of the fact that regulators designed FIN 48 disclosure requirements to protect investors.

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I. INTRODUCTION

The desirability of mandatory disclosure requirements in securities regulation in the United States has been the subject of longstanding debate among corporate law scholars and economists [Ferrell (2004), Coffee (1984), Easterbrook and Fischel (1984), Sutton (1997), Levitt (1998)]. Yet the amount of financial reporting information that firms communicate by means of required disclosures in the United States is significant, and has been increasing over time (Schipper 2007). The fact that there is no generally accepted theory of *required* disclosures, yet required disclosures are abundant poses a conundrum.¹ This study has two main objectives. First, we examine 1,000 disclosures made pursuant to a recently enacted accounting standard, Financial Accounting Interpretation No. 48, Accounting for Uncertainty in Income Taxes (“FIN 48”) and show that high proprietary costs of disclosure reduce the quality of these mandatory disclosures.² Second, we examine the market reaction to the initial required disclosure and show that it varies with disclosure quality. Our results call into question whether the mandatory disclosure requirements of FIN 48 ‘improve transparency’ and ‘restore investor confidence’ – a primary motivation for implementing the new accounting standard.

A primary objective of disclosure regulation is to maximize social welfare. The quality of mandatory disclosure affects the social welfare maximization problem by affecting both the cost and the benefit of disclosure regulation. Any working definition of disclosure regulation must

¹ Schipper (2007) conjectures that the lack of a comprehensive theory of mandatory disclosures is due to the lack of an agreed upon objective function for them. Such a theory involves optimizing a social welfare function because required disclosures are economy-level policy choices, affecting multiple firms that differ in terms of both economic circumstances and contracting arrangements and parties. In contrast, voluntary disclosure theory involves optimizing a firm-level objective function because voluntary disclosure operates at the firm-level, which the author suggests is easier to specify than a social welfare function. Additionally, Schipper (2007) expresses the opinion that “*ad hoc* disclosure requirements are better than none at all.”

² Uncertain tax benefits are tax treatments on a corporate tax return that a tax authority may later challenge and deny, in whole or in part, and that may not ultimately be sustained. The accounting problem is how to report tax benefits from these ‘uncertain tax positions’ from the time a tax return is filed until the time that the uncertainty regarding audit and settlement is potentially resolved, which in often many years later.

consider both mandatory reporting obligations *and* enforcement of those obligations. Thus, mandatory disclosure requirements may impose high enforcement costs on regulators if the disclosure quality is low. Low disclosure quality reduces the information content of the disclosure and, in turn, reduces the benefit of disclosure to investors. Thus, poor mandatory disclosure quality can ‘tilt’ the balance of the social welfare maximization problem toward higher costs and lower benefits.

FIN 48 disclosures are an ideal setting in which to examine mandatory disclosure quality for two primary reasons. First, the required FIN 48 disclosures are ‘enumerated’, and thus less subjective in nature than other required disclosures, making it easier to measure their quality.³ Second, much of the information about the firm’s tax reserves disclosed pursuant to FIN 48 is proprietary, and therefore, it is unclear what level of disclosure quality investors would actually demand.⁴ Hanlon and Slemrod (2009) study the market reaction to news about tax aggressiveness and find that, relative to announcements of accounting fraud, the negative reaction to tax aggressiveness is less severe. This raises the possibility that some shareholders may not hold a negative view of corporate tax aggressiveness and therefore, uncertainty

³In contrast, many mandatory accounting disclosures contain qualitative information and are thus difficult to rank order in terms of quality. For example, Statement of Financial Accounting Standards No. 161, *Disclosures about Derivative Instruments and Hedging Activities - An Amendment of FASB Statement No. 133* (SFAS 161) amends and expands the disclosure requirements of Statement of Financial Accounting Standards No. 133, *Accounting for Derivative Instruments and Hedging Activities* (SFAS 133) with the intent to provide users of financial statements with an enhanced understanding of: (i) how and why an entity uses derivative instruments; (ii) how derivative instruments and related hedged items are accounted for under SFAS 133 and its related interpretations; and, (iii) how derivative instruments and related hedged items affect an entity's financial position, financial performance and cash flows. To meet those objectives, SFAS 161 requires qualitative disclosures about objectives and strategies for using derivatives, quantitative disclosures about fair value amounts of gains and losses on derivative instruments, and qualitative disclosures about credit-risk-related contingent features in derivative agreements.

⁴Firms examine tax reserves when they make an acquisition of another company. Thus, shareholders should arguably be privy to this information when they buy stock. However, the government also has access to the disclosure and thus, it becomes unclear whether the shareholders want the information enough such that they are willing to also reveal it to a regulator.

regarding investor response to disclosures of tax aggressiveness may affect firms' equilibrium disclosure behavior.

To examine determinants of FIN 48 disclosure quality, we construct statistics to measure the completeness and clarity of the disclosures of 1,000 firms. Overall, we find that firms generally score quite high on the completeness of their FIN 48 disclosure, but there is significant variation in clarity. To be fair, we are not the first to point out that FIN 48 disclosures are inconsistent, vague or ambiguous [Nichols (2008), Blouin et al. (2007), Nichols et al. (2007), Dunbar et al. (2007)], but our study is the first to measure the quality of the disclosure and examine the determinants of the cross-sectional variation in disclosure quality. Our focus is on the adoption disclosures filed in the 2007 first quarter 10-Q because quarterly disclosures are likely to reflect management discretion more so than annual disclosures (due to lower audit scrutiny). Additionally, we are interested in the determinants of management disclosure practices and investor response to the chosen quality of the initial disclosure.⁵ We predict and find a negative association between a proxy for tax aggressiveness and disclosure quality. This is consistent with the notion that tax reserve information is proprietary in nature, and there is a high cost of disclosure for tax aggressive firms.

In market reaction tests, we examine how investors respond to firms' initial FIN 48 disclosures and in particular, whether the reaction varies with disclosure quality. Specifically, we predict that if investors are primarily concerned with increased transparency, then the market will reward tax aggressive firms for making high quality disclosures. On the other hand, if investors are primarily concerned with providing a roadmap to the taxing authority that may hurt the firm's ability to defend its tax positions, then the market will penalize tax aggressive firms for

⁵ Interestingly, Nichols (2008) examines the first set of annual disclosures for the S&P 500 and finds that the quality has not markedly improved since the adoption disclosures. She casually observes this, however, rather than attempts to measure initial or subsequent improvement in quality.

making high quality disclosures. Frischmann et al. (2008) document a positive market reaction to a portion of the reported, disclosed liability, but do not distinguish between two possible explanations; a disclosed liability that was lower than expected or investors viewing tax aggressiveness as value enhancing. Thus, we contribute to the literature that seeks to understand how investors view tax aggressiveness. Specifically, we document a positive reaction to the liability amount, on average, but a less positive reaction for a high quality disclosure of that amount. Thus, by incorporating disclosure quality into our market reaction tests, we provide insight into the investor's tradeoff between the benefits from transparency and the costs of revealing private information to the taxing authority.

Our findings have two important implications for research and practice. First, our results suggest that variation in FIN 48 disclosure quality may bias the findings in the growing literature examining the disclosed liability amount [Frischmann et al. (2008), Alexander et al. (2008), Lee et al. (2008), Song and Tucker (2008)]. We show that tax aggressive firms have lower disclosure quality, which implies that these firms more likely report the lowest liability amount possible and make it ambiguous as to whether another (higher) number was the actual total liability. This raises the possibility that tax aggressiveness and the disclosed liability are inversely related. Unless a researcher scrutinizes these disclosures carefully, a researcher will choose the lower (incorrect) number to assess tax aggressiveness. Second, by examining the determinants of FIN 48 disclosure quality, our findings inform standard setters and regulators of situations where complete or high quality disclosures are unlikely to arise (or be very costly to enforce), even under a mandatory disclosure regime. While mandatory disclosure requirements are likely to raise firms' commitment level, that commitment level is still very much discretionary. Anyone who has read financial statement footnotes can appreciate that there are a number of ways of

disclosing required information such that the actual information content varies significantly.⁶ Graham et al. (2005) report that nearly three-fourths of the CFOs responding to their survey feel that discretionary disclosures correct gaps in the usefulness of mandatory financial disclosures to investors. One respondent stated that some required disclosures from the FASB “confuse rather than enlighten” investors while another stated that “some of our own mandated footnotes are so complex, even I do not understand them.” This motivation for discretionary disclosure does not get significant attention in the academic literature.

In Section II, we provide further motivation for our study and develop hypotheses. Section III describes our data and research design. Section IV highlights our empirical results and Section V concludes.

II. MOTIVATION AND HYPOTHESIS DEVELOPMENT

Disclosure theories

Discretionary disclosure theories predict that firms will disclose information when the benefits exceed the costs (Verrecchia 1983; 2001). Thus, a firm with net costs associated with disclosure will refrain from disclosure. Disclosure costs generally include implementation costs, litigation costs, and proprietary costs. Alternatively, firms that have net benefits associated with disclosure will disclose. Prior literature suggests that disclosure benefits include higher liquidity, lower cost of capital, access to financing, reduced information asymmetry, and pre-empting costly information acquisition. Firms trade off along these dimensions when choosing the observed level of disclosure or disclosure quality.

⁶ For example, since 1982, Financial Accounting Standard No. 57, Related Party Disclosures, has contained a general requirement that companies disclose the nature of relationships they have with related parties, and describe transactions with them. Enron’s FAS No. 57 footnote disclosures have been referred to by many accountants as “impenetrable” and although the footnote disclosure arguably satisfies FAS No. 57, ‘the disclosures are not optimal’ (Partnov 2002).

There is no generally accepted theory of mandatory disclosure. It is justified, however, because a market solution (equilibrium disclosure) is unlikely to produce a socially desirable level of disclosure. Leuz and Wysocki (2008) provide a comprehensive overview of the discretionary disclosure literature and the role of disclosure regulation. Where information is not produced other than via a mandatory disclosure regime, the benefits of the information to investors in question is outweighed by the firm's costs.⁷ Leuz and Wysocki (2008) point out that mandatory disclosure regimes are costly to design, enforce, and implement. It is an empirical question whether these disclosures are of sufficient quality to create externalities that make them socially desirable.

We contribute to this empirical gap by examining the quality of disclosures made under a mandatory disclosure regime. We draw from the discretionary disclosure literature because absent a "fill in the blank" exercise, even mandatory disclosures can vary on dimensions of quality. Additionally, depending on firm perceptions of disclosure regulation, mandatory disclosures may not be complete, and thus require significant enforcement efforts in order to achieve full compliance. Thus, firms with net costs (benefits) to disclosure may make poor (high) quality mandatory disclosures. This is our primary motivation for measuring both the completeness and clarity of each disclosure, an issue to which we now turn.

FIN 48 disclosures

FIN 48 was part of an attempt to improve the transparency and accountability of firms and restore investor confidence after the Enron and WorldCom scandals and related

⁷ Mills et al. (2009) note that prior to FIN 48 even firms that may have benefited from voluntary tax reserve disclosures could not make credible disclosures. Thus, it is impossible to compare voluntary disclosures pre-FIN 48 to mandatory disclosures post-FIN 48 because such disclosures were rare. For example, the cost to the firm of having such a disclosure verified and audited pre-FIN 48 was likely to be very high (if even possible).

congressional hearings. Thus, the economic rationale for this mandatory disclosure requirement is to protect investors and to correct the market's failure to produce sufficient information for investors about tax risk. Paragraphs 20 and 21 of FIN 48 describe the mandatory disclosure requirements of FIN 48 (see Appendix A).⁸ Firms typically adopt new accounting standards in quarterly filings, so firms demanded guidance regarding how the annual disclosure requirements applied to the adoption disclosures. In response, the Center for Public Company Audit Firms and the Center for Audit Quality issued alerts in February of 2007 and November of 2006, respectively.

In these alerts, the SEC staff made clear that FIN 48 adoption and quarterly disclosures should contain all of the required annual disclosures under FIN 48, with the exception of the tabular roll forward table. Specifically, firms were required to disclose the following eight items in the period of adoption; i) the amount of the uncertain tax benefit (UTB) upon adoption and any material changes during the quarter, ii) *reasons* for any material changes during the quarter in the beginning and ending balance of the UTB (use of the roll forward table was optional), iii) the amount of the UTB that, if recognized, would affect the effective tax rate, iv) accrued interest and penalties, v) the classification of interest and penalties in the financial statements, vi) a discussion of open tax years in major tax jurisdictions, vii) a forward-looking disclosure of expected changes to the UTB, and viii) the balance sheet adoption effect of retroactive application of the new recognition and measurement standard (guidance under SAB 74).

⁸ FIN 48 introduces a recognition, measurement, and disclosure regime for uncertain tax positions. The recognition and measurement regime serves to provide consistency across firms in recording uncertain tax benefits in the financial statements. However, most firms were already recording tax reserves for uncertain tax positions. 361 of the 1,000 sample firms have positive adjustments to retained earnings at the adoption of FIN 48, suggesting that many firms had higher pre-FIN 48 reserves than required by FIN 48. The disclosure requirement, on the other hand, requires that the aggregate reserve, among other things, be transparent. Gleason and Mills (2002) document evidence consistent with a significant lack of transparency pre-FIN 48. Thus, it is not the recognition and measurement of tax benefits that is so controversial, but rather the transparency surrounding the reserve.

Although FIN 48 introduced mandatory disclosure requirements, we motivate our empirical tests from the discretionary disclosure literature for two reasons. First, an investigation of the *clarity* of disclosure of mandatory items is analogous to indirect measurement of discretionary disclosure. That is, the disclosure may be *complete* (i.e., contain all of the required items), but the information may be deliberately ambiguous. Second, the FIN 48 disclosures that we study contain unaudited information because interim reports are generally the first financial reports to reflect adoptions of new accounting standards. Because interim financial reports are subject to less stringent attestation standards than annual reports, both the completeness and clarity of the disclosure should be more reflective of decisions made by the firm's managers than of the firm's auditors.⁹

The notion of a *complete* disclosure in our setting is straightforward; the disclosure presents all of the eight required items. To illustrate what we mean by a *clear* disclosure, consider the following example. Suppose a firm claims an uncertain tax position on a state income tax return that results in a \$100 decrease in its state tax liability.¹⁰ Upon filing the state income tax return, the firm is unsure of its ability to sustain the position if a dispute arises with the state taxing authority, so it records a liability 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 (i.e., the “gross” FIN 48 liability). Because state income tax payments are tax deductible when computing federal taxable income, the firm will enjoy an additional \$100

⁹ The Securities and Exchange Commission requires public companies to engage an independent accountant to review (as opposed to audit) interim financial information before it is included on Form 10-Q. Statement on Auditing Standards (SAS) 100, *Interim Financial Information*, which supersedes SAS 71, prescribes quarterly review requirements for public companies.

¹⁰ 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.

deduction on its federal income tax return. Thus, if the firm faces a 35 percent federal statutory tax rate, the “net” FIN 48 liability, or net obligation resulting from the assessment is \$65 [$\$100 \times (1 - .35)$]. Assume that the firm also expects to pay \$20 in interest and penalties associated with the tax position and, thus, the total FIN 48 liability is \$85.¹¹

This firm has numerous disclosure choices to convey the information above that would meet the mandatory disclosure requirements outlined in FIN 48. According to the standard, the FIN 48 liability should include expected tax payments, as well as expected assessments of interest and penalties. However, it is not clear whether the total FIN 48 tax liability should be reported gross (\$100) or net (\$65) of the federal tax benefit. Second, it is not clear whether firms should report the FIN 48 liability inclusive or exclusive of the stated amount (\$20) for interest and penalties. These two pieces of additional information directly affect the clarity of the reported liability, and thus the investor’s ability to use the information to value the firm.¹²

Each of the disclosure choices below contains the required disclosure items (e.g., A and B). However, discretion about the clarity of gross versus net reporting (Column 4) and inclusion of interest and penalties (Column 5) results in a range of possible inferences about the \$85 obligation, which we summarize in the table below. While each disclosure provides mandatory information required about the \$85 expected liability, only in cases 1, 2, 5 and 6 is the liability unambiguously \$85.

¹¹ For simplicity, we ignore the tax deductibility of the interest payment. This example also ignores the recognition and measurement process of FIN 48 and assumes that the disclosed liability is determined using an expected value approach. Mills et al (2009) describe the reasons that the expected liability and the liability recorded under FIN 48 may differ.

¹² Prior analytical work shows that a signal's precision is important in belief development (Kim and Verrecchia 1991, Morse et al. 1991).

1	2	3	4	5	6	7	8
Reporting Choice	Tax Liability (A)	Interest & Penalties (B)	Is (A) Gross/Net?	Does (A) Include (B)?	Inference of Total Net Obligation	Computation of Best Estimate	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 ¹³	\$65	\$20	Unsure	Unsure	\$49 to \$85	$(65-20)*.65+20$ or $65+20$	(36)
14	\$120	\$20	Unsure	Unsure	\$85 to \$140	$(120-20)*.65+20$ or $120+20$	65

Disclosures in the above table are clear (i.e., zero inference error) when firms provide the information in both Columns 4 and 5 along with the required items A and B, and can lead to incorrect inferences otherwise.¹⁴ Observe that a firm with an \$85 expected FIN 48 liability could disclose information that reflects a liability amount of anywhere between \$49 and \$140, *while still technically complying with the mandatory disclosure requirement*. To our knowledge,

¹³ Disclosure choices 12 and 13 are not the only amounts that a firm could disclose. We chose these along with the computation of the best estimate to illustrate the maximum range of inference that could result. For example, the lower bound in 13 and 14 was computed assuming ‘gross’ and ‘yes’ for the information in columns 4 and 5 while the upper bound was computed assuming ‘net’ and ‘no’ for the information in columns 4 and 5.

¹⁴ FIN 48 disclosures may be imprecise on numerous other dimensions including, for example, whether interest and penalties are reported gross or net of related tax benefits, whether the amount of the UTB that affects the ETR is gross or net, etc. These additional dimensions further hinder the user’s ability to infer the firm’s actual liability from the disclosure.

current research using the disclosed FIN 48 liability amount uses the reported amount, which our example shows could be disclosed as an amount anywhere between \$49 and \$140 for an \$85 liability for uncertain tax positions.

Our sample of firms report aggregate tax liabilities of approximately \$158 billion with \$27 billion of related interest and penalties. Only 28 and 45 percent of the firms in our sample, respectively, clearly state whether they report the liability gross or net and whether the stated liability includes interest and penalties. Thus, the clarity we describe can significantly affect the precision of the stated liability. An examination of the second quarter disclosures for the S&P 500 firms that adopted FIN 48 in the first quarter of 2007 reveals that 26 (44) percent of these firms still do not provide clarity with respect to issue A (B) one quarter after adoption. Additionally, FASB meeting minutes reveal that comment letters frequently raised the need for guidance related to whether firms should record the liability on a gross or net basis. Thus, even prior to making an adoption disclosure, the corporate tax community was well aware that this information was important, but not directly addressed in the standard.

Hypothesis development

Firms that are most aggressive in their tax reporting are likely to incur the highest proprietary costs associated with a transparent FIN 48 disclosure. This leads to our first hypothesis:

H₁: Tax aggressiveness is negatively associated with FIN 48 disclosure quality.

Many constituents expressed concerns during the FASB's deliberations about the requirement to provide a forward-looking disclosure (*D_FWD*). Respondents argued that this

disclosure could alert the taxing authority to a tax reserve 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 any forward-looking disclosure. This leads to our second hypothesis:

H₂: Tax aggressiveness is negatively associated with forward-looking disclosure quality.

Frischmann et al. (2008) examine the market reaction to events leading up to the issuance of FIN 48, the initial adoption disclosures, and the subsequent Senate request for FIN 48 related documents. The authors document a negative market reaction for tax aggressive firms when the FASB issued the FIN 48 exposure draft, no market reaction to the initial disclosure of the *total* liability amount, and a negative reaction to the subsequent Senate inquiry. With regard to the initial disclosure, Frischmann et al. (2008) conjecture that a negative market reaction suggests that investors associate tax aggressiveness with high proprietary costs and/or managerial opportunism and/or a disclosed liability that was greater than expected. On the other hand, the authors conjecture that a positive reaction suggests that investors view tax aggressiveness as value maximizing behavior and/or the disclosed liability was lower than expected. While each of these arguments is plausible, we would like to distinguish among them in order to gain a better understanding of how investors perceive tax aggressiveness and the effectiveness of the related mandatory disclosure regime under FIN 48.

We conjecture that the quality of the disclosure should determine, in part, how investors react to the FIN 48 disclosure. We expect that if shareholders generally view tax aggressiveness as a value maximizing activity and are primarily concerned with how much information the disclosure provides the IRS, then the association between the market reaction and the amount of the liability would be more negative (less positive) when accompanied with a high quality

disclosure. Because we do not have a model that allows us to determine the expected liability amount, we cannot disentangle the portion of the market reaction to the adoption disclosure that was due to some ‘unexpected’ liability amount.¹⁵ However, conditional on the sign of the association between the market reaction and the disclosed liability, on average, we predict that a high quality disclosure will have a mediating effect. This leads to our third and final hypothesis:

H_{3a}: The market reaction to the disclosure of the initial FIN 48 liability is more negative (less positive) for high liability firms that issue high quality FIN 48 disclosures.

An alternative prediction is that if shareholders generally view tax aggressiveness as an opportunity for rent extraction and were primarily concerned about increased transparency about tax aggressiveness, then the association between the market reaction and the amount of the liability would be more positive (less negative) when accompanied with a high quality disclosure. That is, conditional on the sign of the association between the market reaction and the disclosed liability, on average, we predict that a high quality disclosure will have an exacerbating effect. This leads to the following alternative prediction:

H_{3b}: The market reaction to the disclosure of the initial FIN 48 liability is more positive (less negative) for high liability firms that issue high quality FIN 48 disclosures.

By examining how disclosure quality affects the market reaction to the disclosed liability, we provide evidence regarding whether investors, on average, view tax aggressiveness as value maximizing or value destroying behavior.

¹⁵ However, our tests for *H_{3a}* and *H_{3b}* include controls for aggregate unexpected earnings, which should capture the effects of most unexpected FIN 48 liability amounts.

III. DATA AND RESEARCH DESIGN

Disclosure scores

We examine FIN 48 disclosures of 1,000 firms in the S&P 1500 index as of January 1, 2007. Our sample excludes 452 non-calendar year-end firms, 42 real estate investment trusts and six non-timely filers. For each firm, we construct two disclosure metrics. *COMPLETE* captures the presence or absence of the eight mandatory disclosure requirements in paragraphs 20 and 21 of FIN 48.¹⁶ *CLARITY* measures the clarity of the required disclosures by capturing the presence or absence of important clarifying information needed to understand and interpret the required disclosures. Each firm has a disclosure score, *TOTAL*, that is the sum of *COMPLETE* and *CLARITY*. Detailed information about our disclosure scores is contained in Appendix A.

The eight required disclosures, which form *COMPLETE*, include *D_UTB*, which ranges from zero to one depending on whether the firm disclosed a beginning and ending uncertain tax benefit (UTB) amount. *D_ETR* ranges from zero to one depending on whether the firm reported the amount of the UTB that would affect the effective tax rate. *D_READJ* ranges from zero to one depending on the completeness of the adoption adjustment disclosure. *D_INTPEN* ranges from zero to one depending on whether the firm disclosed the interest and penalties associated with the UTB. *D_CLASS* ranges from zero to one depending on whether the firms disclosed the classification of interest and penalties in the financial statements. *D_FWD* ranges from zero to one 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. *D_OPEN* ranges from zero to one depending on whether the firm disclosed open federal tax years. *D_CHG* is

¹⁶ In the Basis of Conclusions for FIN 48, the FASB decided that codifying and enumerating required disclosures [in paragraphs 20 and 21] would increase comparability and reduce complexity. SAB 74 contains additional guidance on disclosure of the adoption effects of retroactive application of new accounting standards (e.g., FIN 48) in the period of adoption.

equal to one if the firm reconciled the beginning and ending UTB amount, zero otherwise. In summary, *COMPLETE* measures a firm's minimum level of compliance with eight mandatory FIN 48 disclosure requirements.

We also construct a disclosure metric for each firm that we call *CLARITY*. While not explicitly required by FIN 48, clarifying statements are necessary to interpret and analyze the required disclosures. *D_TDIF* ranges from zero to one depending on whether the firm disclosed any information about the amount of the UTB that did not reflect items that would affect the effective tax rate (e.g., *D_ETR*), such as temporary differences. *D_GROSS* ranges from zero to one depending on whether the firm explicitly reported the UTB as being gross or net of tax benefits. *D_INCL* ranges from zero to one depending on whether the firm explicitly stated whether interest and penalties are included in the reported UTB. *D_GROSS* and *D_INCL* increase the information content on the UTB disclosure because they allow a more precise estimate of the disclosed UTB relative to other firms. *D_LUMP* ranges from zero to one depending on whether the firm reported interest and penalties as two separate numbers. Knowing interest and penalty amounts separately improves the information content of the disclosure because accrued penalties may signal a more aggressive tax position than accrued interest. In summary, *CLARITY* is the sum of these four components and is our measure of the clarity of the required disclosures. Thus, a firm's *TOTAL* disclosure score is the sum of *CLARITY* and *COMPLETE*, and has a maximum value of 12.

Table 2, Panel A provides descriptive statistics for the disclosures scores and selected FIN 48 data for the entire sample. The mean (median) of *COMPLETE* is 6.80 (7.33) out of 8, the mean (median) of *CLARITY* is 1.44 (1.00) out of 4, and the mean (median) of *TOTAL* is 8.24 (8.33) out of 12. The average UTB reported in Q1 2007 is 1.12 percent of total assets (*Q1 UTB*),

the average *Q1INTPEN* is 0.17 percent of total assets, and the average amount of the UTB that would affect the ETR (*Q1ETR*) is 0.74 percent of total assets. Firms expect the UTB, as a percentage of total assets, to decrease 12.50 percent ($0.0014 \div 0.012 = 0.125$) from Q1 2007 to Q1 2008 [$E\Delta(UTB)$]. The average adoption adjustment reduced retained earnings by 0.07 percent of total assets (*READJ*). On average, each firm has approximately 4.90 open tax years that are subject to examination by federal tax authorities (*OPEN*).

Our large sample of S&P 1500 firms allows us to provide some perspective on how the disclosure scores and FIN 48 data vary by index (e.g., S&P 400, S&P 500, and S&P 600; results not tabulated) On average, *COMPLETE* is larger for S&P 500 firms than other firms ($7.03 > 6.68$, $t = 5.19$) and *COMPLETE* is lower for S&P 600 firms than other firms ($6.55 < 6.96$, $t = 4.80$). However, *CLARITY* is lower for S&P 500 firms than other firms ($1.27 < 1.53$, $t = 4.18$) and *CLARITY* is higher for S&P 600 firms than other firms ($1.56 > 1.36$, $t = 3.29$). This is broadly consistent with the notion that it is difficult to regulate and enforce clarity, and thus, large firms are generally more ‘compliant’ but can reduce the information content of required disclosures through ambiguous language. *Q1 UTB*, *Q1 ETR*, *Q1 INTPEN*, and *OPEN* are larger for S&P 500 firms than 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* ($|-0.0011| > |-0.0005|$, $t = 2.07$).

Research Design

To test H_1 , we estimate Equation (1) using an ordered logit regression as follows:

$$SCORE_i = \beta_0 + \beta_1 TAXAGG_i + \beta_2 QSIZE_i + \beta_3 QPFT_i + \beta_4 QCAPINT_i + \beta_5 QLTDA_i + \beta_6 QMB_i + \beta_7 SUESCALE_i + \beta_8 BIG4_i + \beta_9 BODINSIDE_i + \beta_{10} BODLOCKS_i + \quad (1)$$

$$\beta_{11}BODOTHER_i + \beta_{12}LITDUM_i + \beta_{13}REGDUM_i + \beta_{14}QNUMEST_i + \beta_{15}WEAKYEARS_i + \beta_{16}TAXFEES_i + \beta_{17}FOROPS_i + \beta_{18}DAYS_i + \varepsilon_i$$

When estimating Equation (1), *SCORE* is either equal to *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 occurring or increase the effectiveness of a current audit. Consistent with H₁, we expect *TAXAGG*, our proxy for tax aggressiveness, to be negatively associated with *SCORE*. To identify tax aggressive firms, we use a number of different measures from the accounting literature. *CASHETR* is a 3-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 3-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 tax 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 carry forward. *DESAI* is a measure of abnormal tax accruals, measured as the residual from a regression of book-tax differences on total accruals (see Desai and Dharmapala 2006). *FRANK* is a measure of abnormal permanent differences (see Frank and Rego 2009). *CUSHION* measured as current tax expense less cash taxes paid and the change in income taxes payable (see Blouin and Tuna 2006). *LOBBY* is the total amount spent by a firm on tax-related lobbying.

Each of these proxies captures different aspects of tax aggressiveness and measures tax aggressiveness with error. Since we are interested in a firm's overall tax aggressiveness instead of one particular source of that aggressiveness, we aggregate these proxies using principal components analysis. Our analysis results in one factor with an eigenvalue greater than 1.5. The factors that load most significantly are *CASHETR*, *BOOKETR*, *BTD*, and *CUSHION*.

[Insert Table 1 Here]

To test H₂, we estimate Equation (1) using an ordered logit regression with *D_FWD* as the dependent variable. *D_FWD* is a forward-looking disclosure that provides expected changes to the UTB and is one of the more controversial components of the required FIN 48 disclosures in terms of its ability to provide a roadmap to the taxing authority. Consistent with H₂, we expect *TAXAGG* to be negatively associated with *D_FWD*.

Equation (1) includes a number of control variables intended to capture other firm-specific costs and benefits that may affect disclosure quality. See Table 1 for variable definitions. FIN 48 disclosures require significant implementation costs due to increased analysis and documentation requirements to prepare and support the disclosed information. Thus, *WEAKYEARS*, *TAXFEES* and *DAYS* capture implementation costs and are unique to our setting. Firms reporting a control weakness in tax accounts are likely to have less documentation needed to evaluate a tax position, which would in turn increase implementation costs. Additionally, these firms may lack the necessary documentation and skilled personnel to manage the tax audit process, which would in turn increase the proprietary cost of the disclosure. Gleason and Mills (2007) suggests that firms who paid a higher level of tax fees to their auditors were more sufficiently reserved for uncertain tax positions, suggesting that when auditors are also used for tax planning, there is more rigor placed on the firm's tax accrual work papers and supporting documentation. This rigor should reduce the cost of preparing the information required to make a FIN 48 disclosure. Anecdotally, the adoption of FIN 48 imposed significant demands on firm and auditor resources. Thus, the number of days between the quarter end and the quarterly filing date is included as a proxy for implementation costs. However, firms that disclose later than other firms may determine their disclosure quality, in part, based on observation of other

disclosures. Thus, waiting to file a 10-Q may cause firms to issue a higher or lower quality disclosure.

Prior research investigating the effects of litigation risk on management disclosure practices finds that the threat of shareholder litigation can have two effects on managers' disclosure decisions (e.g. Francis et al. 1994, Kasnik and Lev 1995, Soffer et al. 2000). The potential for legal actions on inadequate or untimely disclosures can improve disclosure. However, litigation can potentially reduce incentives to provide disclosure, particularly of forward-looking information. With the exception of *D_FWD*, FIN 48 disclosures are not forward-looking, thus we predict that litigation risk will improve disclosure quality. Prior work generally includes an indicator variable for firms in high litigation industries. However, Billings (2008) suggests that researchers can measure litigation risk by prior incidence of litigation. Thus, we include two alternative measures of litigation risk, *LITDUM* and *SUESCALE*.

Consistent with existing literature suggesting that firm monitoring affects disclosure quality, we include measures that capture various aspects of corporate governance (e.g., Warfield et al. 1995). Due to high proprietary costs of disclosure in our setting, it is not clear 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, *BODINSIDE*, *BODOTHER*, and *BODLOCKS*. However, we expect a positive coefficient on our external governance measures, *BIG4* and *REGDUM*, because auditors or regulators, unlike boards, do not hold fiduciary responsibilities to the firms shareholders. We expect a higher quality disclosure in instances when the firm uses a big four independent audit firm and/or operates in a highly regulated industry and is thus subject to additional monitoring by regulators.

Studies have shown that information asymmetry and the demand for information should increase the firm's incentives to make higher quality disclosures (e.g. Bhushan 1989, Lang and Lundholm 1993). A positive association between analyst forecasting activity, *QNUMEST*, and the level of financial disclosure would be broadly consistent with the existing literature.

Multinational firms are likely to 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 because multinational firms face more tax planning opportunities and face tax uncertainty in a number of different tax jurisdictions. However, firms with more extensive foreign operations are likely to be concerned about the foreign governments' use (or misuse) of FIN 48 information and thus, may be less forthcoming.

Following Lang and Lundholm (1993), we include firm characteristics found to predict comprehensive disclosure, to control for the possibility that FIN 48 disclosure quality is correlated with disclosure quality more generally; namely size (*QSIZE*), profitability (*QPFT*), capital intensity (*QCAPINT*), leverage (*QLTDA*) and investment opportunities (*QMB*). Prior research generally finds that firm size is positively associated with disclosure quality. However, large firms also face increased visibility, which raises the possibility of less disclosure, to reduce the likelihood of political action. 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. A firm's capital intensity is a proxy for entry barriers and disclosure quality is likely to increase as the threat of entry decreases (e.g. high capital intensity suggests a low threat of entry). 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 finds mixed results concerning the effect of performance on disclosure and we do not make a prediction for our measure of profitability. Finally, 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)].

To test H_{3a} and H_{3b} , we re-examine the analysis in Frischmann et al. (2008) by incorporating our disclosure quality score and an interaction term of our score with the firm's disclosed UTB.¹⁷ Specifically, we estimate Equation (2) using ordinary least squares (we cluster the standard errors by the filing date of Form 10-Q):

$$CAR_i = \alpha_0 + \alpha_1 UTBMV_i + \alpha_2 SCORE_i + \alpha_3 UTBMV_i * SCORE_i + \alpha_4 UE_i + \varepsilon_i \quad (2)$$

where CAR is the cumulative abnormal return for firm i over a three day window (-1, 0, +1); day zero is the filing date of Form 10-Q with the SEC and $UTBMV$ is the total unrecognized tax benefit reported for the first quarter of 2007 (ended March 31 or April 1). $SCORE$ is equal to either *COMPLETE*, *CLARITY*, or *TOTAL*. $UTBMV * SCORE$ is the interaction of $UTBMV$ and $SCORE$. 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) and is included to account for the security price consequences of unexpected earnings. We calculate CAR using a market model estimated from 170 to 21 days prior to the filing date and using the parameter

¹⁷ Prior to estimating equation (2), we replicated the analysis of S&P 500 firms in Table 5, Panel C of Frischmann et al. (2008). Although our sample differed slightly (we had 346 firms versus their sample of 334 firms), we obtained qualitatively similar results.

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.

If investors generally view tax aggressiveness as a value enhancing activity and were primarily concerned about the firm revealing its private information to the taxing authority, then we expect a negative coefficient on *UTBMV*SCORE*. However, if investors generally view tax aggressiveness as an opportunity for rent extraction and were primarily concerned about increased transparency of tax reserve information, then we expect a positive coefficient on *UTBMV*SCORE*. It is ultimately an empirical question as to how investors' tradeoff desires for increased transparency and desires to avoid the proprietary costs of providing a roadmap to the taxing authority.

IV. EMPIRICAL RESULTS

Descriptive statistics

Table 2, Panel B provides descriptive statistics for our independent variables. Our large sample of S&P 1500 firms allows us to provide some perspective on how firms look of various sizes.¹⁸ With respect to the (scaled) tax aggressiveness variables, S&P 500 firms have the lowest mean book effective tax rate (*BOOKETR*), the highest mean book-tax difference (*BTD*), the highest mean abnormal permanent tax differences (*FRANK*), and the lowest mean tax cushion (*CUSHION*). This is consistent with large firms being relatively more tax aggressive, consistent with economies of scale in tax planning.

[Insert Table 2 Here]

¹⁸ The S&P 500, 400 and 600 represent large, mid and small cap indices.

When compared to firms in the S&P 400 and S&P 600, on average S&P 500 firms are the most profitable (*QPFT*), have the largest market-to-book ratios (*QMB*), are subject to more litigation (*SUESCALE*), have the largest analyst following (*QNUMEST*), pay a larger percentage of tax fees to their audit firm (*TAXFEES*), and have the largest percentage of foreign operations (*FOROPS*). Firms in the S&P 400 are more capital intensive (*QCAPINT*), have the largest amount of debt in their capital structures (*QLTDA*), 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*). Since S&P 600 firms represent small firms, this supports the notion that *DAYS* and *WEAKYEARS* are reasonably good proxies for implementation costs.

Table 3 presents Pearson correlations for the independent variables in Equation (1). Our data do not exhibit multicollinearity; the highest correlation is between size (*QSIZE*) and analyst following (*QNUMEST*) ($\rho = 0.442$).

[Insert Table 3 Here]

Determinants of overall disclosure quality

Table 4 presents the results of estimating Equation (1) using an ordered logit regression for 643 calendar-year end firms with non-zero UTBs and data available for all control variables. We estimate Equation (1) using *COMPLETE*, *CLARITY*, and *TOTAL* as the dependent variable in columns 1, 2 and 3, respectively. We list coefficient estimates first, followed by robust z-statistics (we cluster standard errors by industry and year). Consistent with H_1 , we find a negative association between our measure of tax aggressiveness, *TAXAGG*, and our disclosure quality scores, controlling for other factors that determine disclosure quality. In fact, we observe a

negative association between our measure of tax aggressiveness regardless of whether we define the score as *COMPLETE*, *CLARITY* or *TOTAL*. A one standard deviation increase in *TAXAGG* reduces *CLARITY* and *COMPLETE* by 0.1187 and 0.1412 basis points, respectively.

We also find a significant, positive association among *COMPLETE* and firm size (*QSIZE*), the number of additional boards served on by board members (*BODOTHER*), high litigation industry membership (*LITDUM*), regulated industry membership (*REGDUM*) and the extent of foreign operations (*FOROPS*). We find a significant, negative association between *COMPLETE* and profit margin (*QPFT*). In economic terms, a one standard deviation increase in *QPFT* reduces *COMPLETE* by 0.6393 ($\beta_3 = -2.0750$, $std_{QPFT} = 0.3081$: $-2.0750 * 0.3081 = -0.6393$) basis points. A one standard deviation increase in *QSIZE*, *BODOTHER*, *LITDUM*, *REGDUM*, and *FOROPS* increases *COMPLETE* by 0.1897, 0.1429, 0.0461, 0.0808, and 0.1510 basis points, respectively. On average, profit margin is the strongest determinant of a firm's completeness score. This is consistent with the findings in Rego (2003) that profitable firms have more incentives and resources to engage in tax planning. Thus, profitable firms may find it desirable to lower the quality of their FIN 48 disclosures because their opportunities for future tax planning are valuable.

We find a significant, positive association among *CLARITY* and leverage (*QLTDA*), *REGDUM*, and tax fees paid to auditors (*TAXFEES*), and a significant, negative association among *CLARITY* and *QSIZE* and *FOROPS*. A one standard deviation increase in *QLTDA* and *REGDUM* increases *CLARITY* by 0.1612 and 0.1309 basis points, respectively. A one standard deviation increase in *QSIZE* and *FOROPS* decreases *CLARITY* by 0.2039 and 0.1650 basis points, respectively. On average, *QSIZE* is the strongest determinant of *CLARITY*. Researchers often use size as a proxy for political costs; given that the IRS continuously audits larger firms, it

makes sense that their FIN 48 disclosures are less clear. Finally, we find a significant, negative association among *TOTAL* and the market-to-book ratio (*QMB*) and analyst following (*QNUMEST*), and a significant, positive association among *TOTAL* and *LITDUM*, *REGDUM*, and the amount of tax fees paid to auditors (*TAXFEES*). A one standard deviation increase in *QMB* and *QNUMEST* will decrease *TOTAL* by 0.0545 and 0.1310 basis points, respectively. A one standard deviation increase in *LITDUM*, *REGDUM*, and *TAXFEES* will increase *TOTAL* by 0.0497, 0.1345, and 0.1368 basis points, respectively. On average, *TAXAGG* and *TAXFEES* are the strongest determinants of a firm's *TOTAL* FIN 48 disclosure score.

[Insert Table 4 Here]

Determinants of forward-looking disclosure quality

Table 5 reports the results of estimating Equation (1) using an ordered logit regression for 643 calendar-year end firms with non-zero UTBs and data available for all control variables. In column 1, we define *SCORE*, the dependent variable, as a single component of the completeness score, *D_FWD*. We list coefficient estimates first, followed by robust z-statistics (we cluster standard errors by industry and year). Consistent with H₂, we find a significant, negative association between *TAXAGG* and *D_FWD*. The signs and significance of our control variables are qualitatively similar to the results reported in Table 4. In column 2, we replace *D_FWD* with *D_CHG* [the completeness score component relating to the requirement to disclose information about *past* (as opposed to *future*) changes in tax reserves] as the dependent variable in Equation (1) to further investigate whether the negative association between *TAXAGG* and *D_FWD* is due

to the proprietary nature of the information contained in *D_FWD*. We find no significant association between *TAXAGG* and *D_CHG*.

These differing results suggest that the proprietary costs of providing a roadmap to the taxing authority for future audits largely drive the negative association between tax aggressiveness and FIN 48 disclosure quality, rather than to provide investors with increased transparency about all changes in tax reserves.

[Insert Table 5 Here]

Consequences of disclosure quality

Table 6 reports the results of estimating Equation (2) using OLS for 842 calendar year-end firms with non-zero UTBs. In columns 1, 2, and 3 of Table 6, we define the independent variable *SCORE* in the regression as *COMPLETE*, *CLARITY*, or *TOTAL*, respectively. In columns 1 and 3, we observe a significant, positive association between abnormal returns around the 10-Q filing date and the scaled unrecognized tax benefit (*UTBMV*). A one standard deviation change in *UTBMV* increases the abnormal return in the three-day window around the 10-Q filing date by 0.0118 ($a_1 = 0.7795$, $std_{UTBMV} = 0.0152$: $0.7795 * 0.0152 = 0.0118$) and 0.0109 basis points when *COMPLETE* and *TOTAL*, respectively, are included in the regression.

Turning to the disclosure scores, the results indicate that on average, the market rewards firms with FIN 48 disclosures that are relatively more complete and/or clear. A one standard deviation change in *COMPLETE*, *CLARITY*, and *TOTAL* increases *CAR* in the three-day 10-Q filing window by 0.0031, 0.0017, and 0.0031 basis points, respectively.

Finally, we examine the interaction of *UTBMV* and *SCORE*. The coefficient on *UTBMV*SCORE* is negative and significant when *SCORE* is defined as *COMPLETE* or *TOTAL*. A one standard deviation increase in the UTB reduces the abnormal return in the three-day window around the 10-Q filing date by 0.0115 (0.0105) basis points when *SCORE* is defined as *COMPLETE* (*TOTAL*). The negative coefficients on the interaction terms in all three estimations of equation (2) suggest that investors are primarily concerned with the proprietary cost of providing a roadmap to the taxing authority. This result is consistent with H_{3a} rather than H_{3b} .

[Insert Table 6 Here]

V. CONCLUSION

Recent passage of Financial Interpretation No. 48 (“FIN 48”) imposes mandatory disclosure requirements on public firms regarding uncertain tax benefits reflected in their financial reports. While the number of studies examining the disclosed liability is growing, there is little focus on the actual quality of the disclosure itself. This study examines disclosure quality among 1,000 firms and the determinants that explain the observed cross-sectional variation in the quality of the initial disclosures. In our measurement of disclosure quality, we distinguish between a *complete* disclosure and a *clear* disclosure because the information content of these required disclosures varies significantly depending on the discretionary use of clarifying language in the disclosure. We predict and find a negative association between a proxy for tax aggressiveness and disclosure quality. This is consistent with the notion that tax reserve information is proprietary in nature, and there is a high cost of disclosure for tax aggressive firms.

We then examine whether the quality of the disclosure affects how investors respond to the initial disclosed liability amount. Specifically, we predict that if investors are primarily concerned with increased transparency, then the market will reward tax aggressive firms for making high quality disclosures. On the other hand, if investors are primarily concerned with providing a roadmap to the taxing authority that may hurt the firm's ability to defend its tax positions, then the market will penalize tax aggressive firms for making high quality disclosures. Thus, we contribute to the literature that seeks to understand how investors view tax aggressiveness. We document a positive reaction to the liability amount, on average, but a less positive reaction for a high quality disclosure of that amount. Thus, by incorporating disclosure quality into our market reaction tests, we provide insight into the investor's tradeoff between the benefits from transparency and the costs of revealing private information to the taxing authority.

An important practical implication of this study is that accounting standard setters should consider the various economic factors that influence the quality of mandatory disclosure when formulating new and refining existing disclosure standards. Specifically, mandatory disclosure must call for standardization and disclosure regulation in order to maximize the benefit of such a disclosure regime. This includes the use of an identical format, tabular reconciliations (like that required in the annual FIN 48 disclosures) and perhaps even, consistent language for the disclosure to facilitate comparison. In the Basis of Conclusions in FIN 48, the Financial Accounting Standards Board decided that codifying and enumerating required disclosures [in paragraphs 20 and 21] would increase comparability and reduce complexity.

An important question for future research is whether disclosure quality improves over time for new and controversial disclosure standards such as FIN 48. While FIN 48 adoption disclosures appear to be relatively complete (with the exception of the forward-looking

disclosure), they are far from clear in their language and discussion of the required disclosures. Specifically, it would be interesting to examine how long it takes disclosure quality to improve, what factors determine those improvements, and whether there are quality differences in quarterly versus annual disclosures. FIN 48 disclosure requirements became effective for fiscal years beginning after December 15, 2006, yet the wording and characterizations contained within the disclosure are likely to evolve over time. The pace at which this evolution occurs will depend on adequate enforcement and the level of quality demanded by investors and creditors. What we do know about FIN 48 disclosures is that the initial quality is low and varies across firms.

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TABLE 1
Variable Definitions and Sources

Variable	Prediction	Definition
<i>CASHETR</i>	n/a	3-year cash effective tax rate, measured as the sum of cash taxes paid from 2004-2006 divided by the sum of total pre-tax income from 2004-2006.
<i>BOOKETR</i>	n/a	3-year effective tax rate, measured as the sum of income tax expense from 2004-2006 divided by the sum of total pre-tax income from 2004-2006.
<i>BTD</i>	n/a	Difference between book income and tax income, measured as pre-tax income minus the sum of grossed up (by 0.35) current federal and foreign tax expense less the change in the NOL carry forward.
<i>DESAI</i>	n/a	Abnormal tax accruals, measured as the residual from a regression of book-tax differences on total accruals (Desai and Dharmapala 2006).
<i>FRANK</i>	n/a	Abnormal permanent book-tax differences (Frank and Rego 2009).
<i>CUSHION</i>	n/a	Current tax expense less cash taxes paid and the change in income taxes payable (Blouin and Tuna 2006).
<i>LOBBY</i>	n/a	Total amount spent by a firm on tax-related lobbying. These data are publicly-available on www.lobbywatch.com and www.opensecrets.org
<i>TAXAGG</i>	-	Parsimonious measure of tax aggressiveness from a factor analysis of <i>CASHETR</i> , <i>BOOKETR</i> , <i>BTD</i> , <i>DESAI</i> , <i>FRANK</i> , <i>CUSHION</i> , and <i>LOBBY</i> .
<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>DAYS</i>	?	Number of days between the end of the first quarter of 2007 (03/31/07 for calendar year-end firms) and the actual filing date of the 10-Q.
<i>LITDUM</i>	+	Indicator variable set to one for firms in high litigation industries and zero otherwise. Consistent with Francis et al. (1994), Kasnik and Lev (1995) and Soffer et al. (2000) we define high litigation industries as SIC codes 2833-2836 (biotechnology), 3570-3577 (computers), 3600-3674 (electronics), 5200-5961 (retailing), 7370-7379 (programming), 8731-8734 (research and development).
<i>SUESCALE</i>	+	Variable from zero to 11; zero if the firm has not been the target of a 10b-5 shareholder lawsuit in any year from 1996 through 2006, one if last involved in a lawsuit in 1996, two if last involved in a lawsuit in 1997, and so on such that the highest value of 11 indicates that the firm was involved in a lawsuit in 2006.

<i>BODINSIDE</i>	?	The percentage of insiders on the board of directors. IRRC.
<i>BODOTHER</i>	?	The number of other major board of directors served on by current 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>BIG4</i>	+	An indicator variable set to one if a firm retains a big-four audit firm and zero otherwise.
<i>REGDUM</i>	+	An indicator variable set to one if a firm is in a highly regulated industry and zero 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>QNUMEST</i>	+	Number of analysts in I/B/E/S following the firm at the end of the first quarter of 2007.
<i>FOROPS</i>	?	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).
<i>QSIZE</i>	?	Firm size at the end of the first quarter of 2007, measured as the log of total assets
<i>QCAPINT</i>	+	Capital intensity at the end of the first quarter of 2007, measured as net property, plant, and equipment divided by total assets.
<i>QLTDA</i>	?	Debt-to-assets at the end of the first quarter 2007, measured as long-term debt divided by total assets.
<i>QPFT</i>	?	Profit margin at the end of the first quarter of 2007, measured as income before extraordinary items divided by sales.
<i>QMB</i>	?	Market-to-book ratio at the end of the first quarter of 2007, measured as the market value of equity divided by book common equity.

TABLE 2
Descriptive Statistics: Disclosure Scores, FIN 48 Data, and Regression Variables

Panel A: Disclosure Scores and FIN 48 Data¹

<i>Variable</i>	<i>n</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>1st Quartile</i>	<i>Median</i>	<i>3rd Quartile</i>
<i>Q1UTB</i>	936	0.0112	0.0146	0.0017	0.0065	0.0145
<i>Q1ETR</i>	842	0.0074	0.0109	0.0008	0.0034	0.0095
<i>READJ</i>	957	-0.0007	0.0043	-0.0008	0.0000	0.0000
<i>Q1INTPEN</i>	841	0.0017	0.0030	0.0001	0.0007	0.0021
<i>E(ΔUTB)</i>	625	-0.0014	0.0044	-0.0010	0.0000	0.0000
<i>OPEN</i>	962	4.8971	2.9287	3.0000	4.0000	6.0000
<i>COMPLETE</i>	1000	6.8018	1.2249	6.3333	7.3333	7.3333
<i>CLARITY</i>	1000	1.4380	0.9471	1.0000	1.0000	2.0000
<i>TOTAL</i>	1000	8.2398	1.5921	7.3333	8.3333	9.3333

Panel B: Regression Variables²

<i>TAXAGG</i>	776	-0.0006	1.0000	-0.4910	-0.0625	0.3603
<i>QSIZE</i>	979	8.1624	1.7283	6.8540	8.0304	9.2738
<i>QPFT</i>	981	0.0717	0.3081	0.0339	0.0718	0.1300
<i>QCAPINT</i>	979	0.2407	0.2448	0.0402	0.1520	0.3751
<i>QLTDA</i>	977	0.1841	0.1553	0.0509	0.1644	0.2821
<i>QMB</i>	965	3.5347	6.8154	1.7140	2.4383	3.6016
<i>SUESCALE</i>	1000	1.6910	3.2184	0.0000	0.0000	0.0000
<i>BIG4</i>	999	0.9429	0.2321	1.0000	1.0000	1.0000
<i>BODINSIDE</i>	910	0.2757	0.1419	0.1667	0.2500	0.3750
<i>BODLOCKS</i>	910	0.0209	0.1431	0.0000	0.0000	0.0000
<i>BODOTHER</i>	910	0.8034	0.5556	0.3636	0.7500	1.1429
<i>LITDUM</i>	1000	0.0050	0.0706	0.0000	0.0000	0.0000
<i>REGDUM</i>	1000	0.0270	0.1622	0.0000	0.0000	0.0000
<i>QNUMEST</i>	958	10.3612	6.2155	5.0000	9.0000	14.0000
<i>WEAKYEARS</i>	1000	0.2340	0.8148	0.0000	0.0000	0.0000
<i>TAXFEES</i>	997	0.0791	0.0946	0.0062	0.0414	0.1185
<i>FOROPS</i>	1000	0.4394	0.4702	0.0000	0.0000	1.0000
<i>DAYS</i>	1000	38.2470	19.1807	33.0000	38.0000	40.0000

¹ This panel presents descriptive statistics for our disclosure scores and selected FIN 48 data items. We define the variables as follows: *Q1UTB* = The uncertain tax benefit scaled by total assets at the end of Q1 2007; *Q1ETR* = The amount of the UTB that would affect the effective tax rate scaled by total assets, at the end of Q1 2007; *READJ* = The effect on retained earnings of adopting FIN 48 on 01/01/2007, scaled by total assets; *Q1INTPEN* = The amount of interest and penalties related to the UTB, scaled by total assets, at the end of Q1 2007; *E(ΔUTB)* = The expected change in the UTB from Q12007 to Q12008, scaled by total assets; *OPEN* = The amount of tax years susceptible to examination by federal tax authorities; *COMPLETE* = The sum of eight components (found in Table 1 in the appendix) required to be disclosed pursuant to FIN 48; *CLARITY* = The sum of four components (found in Table 2 of the appendix); *TOTAL* = *COMPLETE* + *CLARITY*

² This panel reports descriptive statistics of the independent variables used in the main regression analysis. We define the variables as follows: *TAXAGG* = A proxy for tax aggressiveness from a factor analysis of *CASHETR*, *BOOKETR*, *BTD*, *DESAI*, *FRANK*, *CUSHION*, and *LOBBY*. *QSIZE* = Firm size at the end of Q1 2007, measured as the log of total assets; *QPFT* = Firm profit margin at the end of Q1 2007, measured as income before extraordinary items divided by sales; *QCAPINT* = Firm capital intensity at the end of Q1 2007, measured as net property, plant, and equipment divided by total assets; *QLTDA* = Firm debt-to-assets at the end of Q1 2007, measured as long-term debt divided by total assets. *QMB* = 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 one if a firm is audited by a big four auditor, zero 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 one for firms in high litigation industries, zero otherwise; *REGDUM* = A 0/1 indicator variable set to one 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), zero otherwise; *QNUMEST* = 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 (03/31/07) and the filing of the Q1 10-Q.

TABLE 3
Pearson Correlations¹

	<i>TAX AGG</i>	<i>QSIZE</i>	<i>QPFT</i>	<i>QCAP INT</i>	<i>QLTDA</i>	<i>QMB</i>	<i>SUE SCALE</i>	<i>BIG4</i>	<i>BOD INSIDE</i>	<i>BOD LOCKS</i>	<i>BOD OTHER</i>	<i>LITDUM</i>	<i>REGDUM</i>	<i>QNUM EST</i>	<i>WEAK YEARS</i>	<i>TAX FEES</i>	<i>FOROPS</i>	<i>DAYS</i>	
<i>TAXAGG</i>	1.000																		
<i>QSIZE</i>	-0.018	1.000																	
<i>QPFT</i>	-0.197	0.132	1.000																
<i>QCAPINT</i>	0.029	0.009	0.017	1.000															
<i>QLTDA</i>	0.123	0.149	-0.013	0.315	1.000														
<i>QMB</i>	-0.058	-0.077	0.015	-0.002	0.124	1.000													
<i>SUESCALE</i>	0.072	0.135	-0.035	-0.076	0.017	0.027	1.000												
<i>BIG4</i>	-0.006	0.230	0.006	0.124	0.101	0.006	-0.025	1.000											
<i>BODINSIDE</i>	0.036	-0.113	0.018	-0.039	-0.049	-0.011	-0.076	-0.090	1.000										
<i>BODLOCKS</i>	-0.033	0.068	0.005	-0.005	-0.024	-0.029	0.007	0.035	0.129	1.000									
<i>BODOTHER</i>	-0.041	0.317	-0.018	0.000	0.116	0.015	0.091	0.137	-0.232	0.060	1.000								
<i>LITDUM</i>	-0.052	-0.049	0.004	-0.013	-0.002	-0.005	0.011	-0.044	-0.048	-0.011	-0.017	1.000							
<i>REGDUM</i>	-0.036	0.124	0.043	-0.159	-0.154	-0.051	-0.028	0.041	0.060	0.025	-0.026	-0.012	1.000						
<i>QNUMEST</i>	-0.123	0.442	0.098	-0.008	-0.054	0.060	0.090	0.180	-0.008	-0.001	0.260	-0.021	-0.073	1.000					
<i>WEAKYEARS</i>	0.011	-0.089	-0.046	-0.047	-0.021	-0.038	0.176	-0.056	-0.024	0.006	-0.031	-0.020	-0.033	-0.098	1.000				
<i>TAXFEES</i>	-0.022	-0.010	0.056	-0.048	0.018	0.033	-0.049	0.080	-0.007	0.005	0.027	0.001	-0.107	0.070	-0.042	1.000			
<i>FOROPS</i>	-0.035	-0.018	-0.003	-0.037	0.013	0.014	0.027	0.043	-0.149	-0.009	0.210	0.072	-0.150	0.119	0.146	0.162	1.000		
<i>DAYS</i>	0.058	-0.071	-0.023	-0.082	0.026	-0.047	0.070	-0.042	0.082	0.023	-0.104	-0.002	-0.032	0.001	0.215	-0.049	-0.026	1.000	

¹ This table reports Pearson correlations of the independent variables used in the main regression analysis. We define the variables as follows: *TAXAGG* = A proxy for tax aggressiveness from a factor analysis of *CASHETR*, *BOOKETR*, *BTD*, *DESAI*, *FRANK*, *CUSHION*, and *LOBBY*. *QSIZE* = Firm size at the end of Q1 2007, measured as the log of total assets; *QPFT* = Firm profit margin at the end of Q1 2007, measured as income before extraordinary items divided by sales; *QCAPINT* = Firm capital intensity at the end of Q1 2007, measured as net property, plant, and equipment divided by total assets; *QLTDA* = Firm debt-to-assets at the end of Q1 2007, measured as long-term debt divided by total assets. *QMB* = 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 one if a firm is audited by a big four auditor, zero 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 one for firms in high litigation industries, zero otherwise; *REGDUM* = A 0/1 indicator variable set to one 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), zero otherwise; *QNUMEST* = 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 (03/31/07) and the filing of the Q1 10-Q.

TABLE 4
Determinants of FIN 48 Disclosure Scores¹

$$SCORE_i = \beta_0 + \beta_1 TAXAGG_i + \beta_2 QSIZE_i + \beta_3 QPFT_i + \beta_4 QCAPINT_i + \beta_5 QLTD_i + \beta_6 QMB_i + \beta_7 SUESCALE_i + \beta_8 BIG4_i + \beta_9 BODINSIDE_i + \beta_{10} BODLOCKS_i + \beta_{11} BODOTHER_i + \beta_{12} LITDUM_i + \beta_{13} REGDUM_i + \beta_{14} QNUMEST_i + \beta_{15} WEAKYEARS_i + \beta_{16} TAXFEES_i + \beta_{17} FOROPS_i + \beta_{18} DAYS_i + \varepsilon_i \quad (1)$$

		COMPLETE	CLARITY	TOTAL
		(1)	(2)	(3)
<i>TAXAGG</i>	–	-0.1187* -2.61	-0.1412† -2.55	-0.1353† -2.44
<i>QSIZE</i>	?	0.1098† 1.96	-0.1180‡ -1.62	-0.0316 -0.61
<i>QPFT</i>	?	-2.0750† -2.24	-0.2578 -0.35	-1.1373 -1.11
<i>QCAPINT</i>	+	-0.1366 -0.47	-0.1747 -0.67	-0.0465 -0.23
<i>QLTDA</i>	?	-0.4098 -0.56	1.0381† 2.07	0.6259 1.05
<i>QMB</i>	?	0.0002 0.02	-0.0097 -1.35	-0.0080† -2.40
<i>SUESCALE</i>	+	0.0153 0.54	0.0232 1.17	0.0251 1.07
<i>BIG4</i>	+	0.2390 0.67	-0.4731 -1.22	-0.1197 -0.22
<i>BODINSIDE</i>	?	0.1264 0.17	0.1807 0.27	0.2100 0.34
<i>BODLOCKS</i>	?	-0.3543 -1.30	0.0638 0.08	-0.0925 -0.17
<i>BODOTHER</i>	?	0.2572† 1.94	-0.1041 -0.67	0.0760 0.43
<i>LITDUM</i>	+	0.6530* 5.65	0.2414 1.39	0.7043† 2.56
<i>REGDUM</i>	+	0.4985* 3.15	0.8073* 2.92	0.8296* 3.54
<i>QNUMEST</i>	+	-0.0247 -1.40	-0.0148 -1.37	-0.0211* -5.77
<i>WEAKYEARS</i>	–	-0.0743 -0.78	0.0298 0.30	-0.0317 -0.61
<i>TAXFEES</i>	+	0.5922 0.99	1.4200* 3.13	1.4464* 4.43
<i>FOROPS</i>	?	0.3212* 3.17	-0.3509† -2.13	0.0161 0.13
<i>DAYS</i>	?	0.0168 1.33	-0.0153 -1.16	-0.0008 -0.53
	<i>N</i>	643	643	643
	<i>Pseudo-R</i> ²	0.0101	0.0169	0.0054

¹ This table presents the results of ordered logit regressions (coefficient estimates in the first row and z-statistics in the second row) that evaluate the effect of firm-specific characteristics on disclosure quality. We cluster standard errors by industry and the 10-Q filing date. See Tables 1, 2, or 3 for variable definitions.

The symbols *, †, and ‡ denote significance at the 0.01, 0.05, and 0.10 (two-tail) levels, respectively.

TABLE 5
Determinants of FIN 48 Disclosure Scores: Completeness Components¹

$$SCORE_i = \beta_0 + \beta_1 TAXAGG_i + \beta_2 QSIZE_i + \beta_3 QPFT_i + \beta_4 QCAPINT_i + \beta_5 QLTDA_i + \beta_6 QMB_i + \beta_7 SUESCALE_i + \beta_8 BIG4_i + \beta_9 BODINSIDE_i + \beta_{10} BODLOCKS_i + \beta_{11} BODOTHER_i + \beta_{12} LITDUM_i + \beta_{13} REGDUM_i + \beta_{14} QNUMEST_i + \beta_{15} WEAKYEARS_i + \beta_{16} TAXFEES_i + \beta_{17} FOROPS_i + \beta_{18} DAYS_i + \varepsilon_i \quad (1)$$

		<i>D_FWD</i>	<i>D_CHG</i>
		(1)	(2)
<i>TAXAGG</i>	–	-0.1239† -2.23	-0.0545 -0.33
<i>QSIZE</i>	?	0.1123† 1.93	0.5088* 3.96
<i>QPFT</i>	?	-2.2052* -13.60	-2.4093 -1.05
<i>QCAPINT</i>	+	-0.1137 -0.20	0.0794 0.17
<i>QLTDA</i>	?	-0.1579 -0.33	-1.3811 -1.08
<i>QMB</i>	?	0.0146† 2.42	0.0005 0.05
<i>SUESCALE</i>	+	0.0336 0.97	0.0382 0.84
<i>BIG4</i>	+	-0.2701 -1.31	-1.6444† -2.38
<i>BODINSIDE</i>	?	0.2809 0.42	1.2914 1.18
<i>BODLOCKS</i>	?	0.1535 0.38	-1.6018 -1.22
<i>BODOTHER</i>	?	0.3107* 4.97	-0.1025 -0.29
<i>LITDUM</i>	+	0.2562 0.73	
<i>REGDUM</i>	+	0.7381* 2.78	
<i>QNUMEST</i>	+	-0.0090 -0.50	-0.0362* -2.66
<i>WEAKYEARS</i>	–	-0.0793 -1.28	0.2169 0.91
<i>TAXFEES</i>	+	1.0796† 2.49	0.5453 0.45
<i>FOROPS</i>	?	0.1590 0.81	0.6047† 2.48
<i>DAYS</i>	?	0.0096† 1.89	0.0195 0.34
	<i>N</i>	643	159
	<i>Pseudo-R²</i>	0.0190	0.0905

¹ This table presents the results of ordered logit (*D_FWD*) and logit (*D_CHG*) regressions (coefficient estimates in the first row and z-statistics in the second row) that evaluate the effect of firm-specific characteristics on disclosure quality. We cluster standard errors by industry and the 10-Q filing date. We define the dependent variables as follows: *D_FWD* = Indicator variable for the presence of the FIN 48 ¶21(d)(1) - 21(d)(3) forward looking disclosure, 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* = Indicator variable indicating 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, 2, or 3 for independent variable definitions.

The symbols *, †, and ‡ denote significance at the 0.01, 0.05, and 0.10 (two-tail) levels, respectively.

TABLE 6
Market Reaction to Q1 2007 Unrecognized Tax Benefit Disclosures¹

$$CAR_i = \alpha_0 + \alpha_1 UTBMV_i + \alpha_2 SCORE_i + \alpha_3 UTBMV * SCORE_i + \alpha_4 UE_i + \varepsilon_i \quad (2)$$

		<i>COMPLETE</i>	<i>CLARITY</i>	<i>TOTAL</i>
		(1)	(2)	(3)
<i>UTBMV</i>	+	0.7795* 2.74	0.1581 1.38	0.7191† 2.62
<i>SCORE</i>	+	0.0025‡ 1.79	0.0019† 2.37	0.0019† 2.68
<i>UTBMV*SCORE</i>	-	-0.1061† -2.44	-0.0782 -1.11	-0.0804† -2.46
<i>UE</i>	+	1.3637* 2.93	1.4041* 3.08	1.3837* 3.00

<i>N</i>	832	832	832
<i>R</i> ²	0.0228	0.0222	0.0241

¹ This table presents the results of ordinary least squares (OLS) regressions (coefficient estimates in the first row and t-statistics in the second row) 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 as follows: *UTBMV* = The uncertain tax benefit scaled by market value at the end of Q1 2007; *SCORE* = FIN 48 disclosure score [*COMPLETE* = The sum of eight components (found in Table 1 in the appendix) required to be disclosed pursuant to FIN 48; *CLARITY* = The sum of four components (found in Table 2 of the appendix); *TOTAL* = *COMPLETE* + *CLARITY*]; *UTBMV*SCORE* = Interaction of *UTBMV* and *SCORE*; *UE* = Unexpected earnings (actual EPS less the median analyst forecast) scaled by market value.

The symbols *, †, and ‡ denote significance at the 0.01, 0.05, and 0.10 (two-tail) levels, respectively.

Appendix A Discussion of Scores and Example Disclosures

1.0. 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) and SEC staff guidance on the adoption disclosure to determine the completeness of adoption disclosures for the S&P 1500.¹⁹ We construct two disclosure scores: *Completeness* and *Clarity*. *Completeness* 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 both the completeness and the clarity score ranges from zero to one and a firm's total score is an equally weighted sum of the components. When applicable, "not material", "immaterial", "cannot determine", or "not significant" satisfies the disclosure requirement for purposes of computing our scores. We compute the components of the completeness score as follows:

Disclosure Standard	Computation of Component Score
<p><i>FIN 48, ¶ 20:</i> 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.</p>	<p>$D_CLASS = 0$ if classification not disclosed, 0.5 if classification disclosed for either penalty or interest (but not both), 1 if classification disclosed for both.</p>
<p><i>FIN 48, ¶ 21a:</i> 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).</p>	<p>$D_UTB = 0$ if neither a beginning nor ending unrecognized tax benefit (UTB) amount is disclosed, 1 otherwise.²⁰</p>
<p><i>FIN 48, ¶ 21a1-21a4:</i> 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.</p>	<p>$D_CHG = 0$ 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.²¹</p>
<p><i>FIN 48, ¶ 21b:</i> The total amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate.</p>	<p>$D_ETR = 0$ 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</p>

¹⁹ Alerts issued by the Center for Public Company Audit firms and the Center for Audit Quality present SEC staff guidance.

²⁰ 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.

²¹ This includes giving a 1 to a firm who did not have a UTB change to explain.

	or ending that would affect the ETR was disclosed (but not both), and 1 otherwise. ²²
<i>FIN 48, ¶ 21c:</i> 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.	$D_INTPEN = 0$ if neither interest nor penalty amounts disclosed, 0.5 if interest or penalty amount disclosed, 1 if both disclosed.
<i>FIN 48, ¶ 21d1-21d3:</i> 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.	$D_FWD = 0$ if no forward-looking statement was made, or 0.33 each for mention of the item, nature, and amount of the expected change. ²³
<i>FIN 48, ¶ 21e:</i> A description of tax years that remain subject to examination by major tax jurisdictions.	$D_OPEN = 0$ if the firm did not disclose open federal tax years, 1 otherwise. ²⁴
<i>FIN 48, ¶ 23-24 and SAB 74:</i> 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.	$D_READJ = 0$ 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.

We compute the components of the clarity score as follows:

Description of Measure	Computation of Component Score
Was there a disclosure or discussion of temporary differences in UTB?	$D_TDIFF = 1$ if the firm included a discussion or amount of the temporary differences included in the UTB, 0 otherwise ²⁵
Do we know if the reported UTB is gross or net of state or foreign tax benefits?	$D_GROSS = 1$ if the firm explicitly stated whether the reported UTB was gross or net, 0 otherwise ²⁶
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 ²⁷
Were interest and penalties reported separately?	$D_LUMP = 1$ if the firm reported interest and penalties separately, 0 otherwise ²⁸

²² This includes giving a 1 to a firm that had a UTB equal to zero and therefore did not have an ETR amount to disclose.

²³ This includes giving a 1 to firms that disclosed ‘immaterial’ as the expected amount in the forward-looking statement regardless of whether the firm provided a description of the item or event.

²⁴ Firms are only required to disclose information related to major tax jurisdictions. The U.S. is a major tax jurisdiction for our sample.

²⁵ This includes giving a 1 to firms that reported a zero UTB amount.

²⁶ This includes giving a 1 to firms that reported a zero UTB amount.

²⁷ This includes giving a 1 to firms that reported zero interest and penalties.

2.0. FIN 48 Disclosure Examples and Scoring

The underlined 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 (Completeness = 1, Clarity = 0)

Pope and Talbot, Inc. is a manufacturer of softwood lumber and market pulp in the U.S. and Canada. The following excerpt comprises the FIN 48 adoption disclosure for the period ended March 31, 2007.

“In July 2006, the Financial Accounting Standards Board (FASB) issued FASB Interpretation No. 48, “Accounting for Uncertainty in Income Taxes—an interpretation of FASB Statement No. 109” (FIN 48). Specifically, FIN 48 clarifies the accounting recognition and disclosure requirements for uncertainty in a tax position taken or expected to be taken in a tax return. FIN 48 involves a two-step approach of evaluating tax positions and determining if they should be recognized in the financial statements. This process involves recognizing any tax positions that are “more likely than not” to be sustained upon examination. If the tax position meets this threshold, the tax position must be measured using the criteria specified by FIN 48. Differences between the amounts recognized in the financial statements prior to the adoption of FIN 48 and the amounts recognized upon adoption of FIN 48 were to be accounted for as a cumulative effect of a change in accounting principle recorded as an adjustment to beginning retained earnings. The Company adopted FIN 48 on January 1, 2007 and had no adjustment as a result of adopting this interpretation.”

DISCLOSURE SCORE												
<u>CLASS</u>	<u>UTB</u>	<u>CHG</u>	<u>ETR</u>	<u>INTPE</u>	<u>FWD</u>	<u>OPEN</u>	<u>READJ</u>	<u>TDIFF</u>	<u>GROSS</u>	<u>INCL</u>	<u>LUMP</u>	
0	0	0	0	0	0	0	1	0	0	0	0	
							$\Sigma=1$					$\Sigma=0$

Example 2: Intermediate Score (Completeness = 4.5, Clarity = 2)

Citrix Systems, Inc. is an enterprise software company with end-to-end virtualization for application delivery. The following excerpt comprises the FIN 48 adoption disclosure for the period ended March 31, 2007.

“On January 1, 2007, the Company adopted the provisions of FASB Interpretation (“FIN”) No. 48, Accounting for Uncertainty in Income Taxes. As a result of the implementation of FIN No. 48, the Company recognized an approximate \$12.4 million increase in the liability for unrecognized tax benefits, which was accounted for as a reduction to the January 1, 2007 balance of retained earnings. As of March 31, 2007, the Company’s net unrecognized tax benefits totaled approximately \$37.3 million which included an increase of approximately \$0.4 million for the three months ended March 31, 2007. Included in the balance at March 31, 2007, are approximately \$0.3 million of tax positions which would not affect the annual effective tax rate and approximately \$0.1 million of accrued interest on tax positions. The

²⁸ This includes giving a 0 to firms that disclose *either* interest *or* penalties separately, but fail to disclose the other item entirely.

Company and one or more of its subsidiaries is subject to United States, (“U.S.”) federal income taxes in the U.S., as well as, income taxes of multiple state and foreign jurisdictions. With few exceptions, the Company is no longer subject to U.S. federal, state and local, or non- U.S. income tax examinations by tax authorities for years prior to 2003. The Internal Revenue Service commenced an examination of the Company’s U.S. federal income tax returns for 2004 and 2005 in the third quarter of 2006.”

DISCLOSURE SCORE											
<u>CLASS</u>	<u>UTB</u>	<u>CHG</u>	<u>ETR</u>	<u>INTPE</u> <u>N</u>	<u>FWD</u>	<u>OPEN</u>	<u>READJ</u>	<u>TDIFF</u>	<u>GROSS</u>	<u>INCL</u>	<u>LUMP</u>
0	1	0	1	.5	0	1	1	0	1	1	0
								$\Sigma=4.5$			$\Sigma=2$

Example 3: High Score (Completeness = 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 comprises the FIN 48 adoption disclosure for the period ended March 31, 2007.

“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											
<u>CLASS</u>	<u>UTB</u>	<u>CHG</u>	<u>ETR</u>	<u>INTPE</u> <u>N</u>	<u>FWD</u>	<u>OPEN</u>	<u>READJ</u>	<u>TDIFF</u>	<u>GROSS</u>	<u>INCL</u>	<u>LUMP</u>
1	1	1	1	.5	1	1	1	1	1	1	0
								$\Sigma=7.5$			$\Sigma=3$

TABLE 1
Descriptive Statistics: Completeness Component Disclosure Scores¹

Panel A: Full Sample

<i>Variable</i>	<i>n</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>1st Quartile</i>	<i>Median</i>	<i>3rd Quartile</i>
<i>D_UTB</i>	1000	0.9505	0.2164	1.0000	1.0000	1.0000
<i>D_ETR</i>	1000	0.8750	0.3041	1.0000	1.0000	1.0000
<i>D_READJ</i>	1000	0.9703	0.1678	1.0000	1.0000	1.0000
<i>D_INTPEN</i>	1000	0.8883	0.2853	1.0000	1.0000	1.0000
<i>D_CLASS</i>	1000	0.9340	0.2306	1.0000	1.0000	1.0000
<i>D_FWD</i>	1000	0.3890	0.3246	0.3333	0.3333	0.6667
<i>D_OPEN</i>	1000	0.9620	0.1913	1.0000	1.0000	1.0000
<i>D_CHG</i>	1000	0.8328	0.3716	1.0000	1.0000	1.0000

Panel B: S&P 400

<i>D_UTB</i>	268	0.9422	0.2319	1.0000	1.0000	1.0000
<i>D_ETR</i>	268	0.8787	0.3079	1.0000	1.0000	1.0000
<i>D_READJ</i>	268	0.9776	0.1482	1.0000	1.0000	1.0000
<i>D_INTPEN</i>	268	0.9049	0.2690	1.0000	1.0000	1.0000
<i>D_CLASS</i>	268	0.9272	0.2435	1.0000	1.0000	1.0000
<i>D_FWD</i>	268	0.4565	0.3731	0.0000	0.3333	0.6667
<i>D_OPEN</i>	268	0.9552	0.2072	1.0000	1.0000	1.0000
<i>D_CHG</i>	268	0.8209	0.3842	1.0000	1.0000	1.0000

Panel C: S&P 500

<i>D_UTB</i>	354	1.0000	0.0000	1.0000	1.0000	1.0000
<i>D_ETR</i>	354	0.9054	0.2232	1.0000	1.0000	1.0000
<i>D_READJ</i>	354	0.9831	0.1293	1.0000	1.0000	1.0000
<i>D_INTPEN</i>	354	0.9082	0.2396	1.0000	1.0000	1.0000
<i>D_CLASS</i>	354	0.9407	0.2146	1.0000	1.0000	1.0000
<i>D_FWD</i>	354	0.4397	0.3026	0.3333	0.3333	0.6667
<i>D_OPEN</i>	354	0.9859	0.1182	1.0000	1.0000	1.0000
<i>D_CHG</i>	354	0.8651	0.3382	1.0000	1.0000	1.0000

Panel D: S&P 600

<i>D_UTB</i>	378	0.9101	0.2865	1.0000	1.0000	1.0000
<i>D_ETR</i>	378	0.8439	0.3597	1.0000	1.0000	1.0000
<i>D_READJ</i>	378	0.9533	0.2071	1.0000	1.0000	1.0000
<i>D_INTPEN</i>	378	0.8578	0.3305	1.0000	1.0000	1.0000
<i>D_CLASS</i>	378	0.9325	0.2362	1.0000	1.0000	1.0000
<i>D_FWD</i>	378	0.2937	0.2829	0.0000	0.3333	0.3333
<i>D_OPEN</i>	378	0.9444	0.2294	1.0000	1.0000	1.0000
<i>D_CHG</i>	378	0.8108	0.3909	1.0000	1.0000	1.0000

¹ This table presents descriptive statistics for the components of firm FIN 48 clarity disclosure 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.

TABLE 2
Descriptive Statistics: Clarity Component Disclosure Scores¹

Panel A: Full Sample

<i>Variable</i>	<i>n</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>1st Quartile</i>	<i>Median</i>	<i>3^d Quartile</i>
<i>D_TDIFF</i>	1000	0.4270	0.4816	0.0000	0.0000	1.0000
<i>D_GROSS</i>	1000	0.2780	0.4482	0.0000	0.0000	1.0000
<i>D_INCL</i>	1000	0.4500	0.4977	0.0000	0.0000	1.0000
<i>D_LUMP</i>	1000	0.2830	0.4507	0.0000	0.0000	1.0000

Panel B: S&P 400

<i>D_TDIFF</i>	268	0.4459	0.4856	0.0000	0.0000	1.0000
<i>D_GROSS</i>	268	0.2761	0.4479	0.0000	0.0000	1.0000
<i>D_INCL</i>	268	0.4627	0.4995	0.0000	0.0000	1.0000
<i>D_LUMP</i>	268	0.3022	0.4601	0.0000	0.0000	1.0000

Panel C: S&P 500

<i>D_TDIFF</i>	354	0.2811	0.4300	0.0000	0.0000	0.5000
<i>D_GROSS</i>	354	0.2797	0.4495	0.0000	0.0000	1.0000
<i>D_INCL</i>	354	0.4068	0.4919	0.0000	0.0000	1.0000
<i>D_LUMP</i>	354	0.2994	0.4587	0.0000	0.0000	1.0000

Panel D: S&P 600

<i>D_TDIFF</i>	378	0.5503	0.4887	0.0000	1.0000	1.0000
<i>D_GROSS</i>	378	0.2778	0.4485	0.0000	0.0000	1.0000
<i>D_INCL</i>	378	0.4815	0.5003	0.0000	0.0000	1.0000
<i>D_LUMP</i>	378	0.2540	0.4359	0.0000	0.0000	1.0000

¹ This table presents descriptive statistics for the components of firm FIN 48 clarity disclosure scores. We define the variables as follows: *D_TDIFF* = 1 if the firm included a discussion or amount of the temporary differences 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.