

FIN 48 and Tax Compliance

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ABSTRACT: We develop a model to examine the effects of Financial Accounting Standards Board (FASB) Interpretation No. 48, *Accounting for Uncertainty in Income Taxes* (FIN 48), on the strategic interaction between publicly traded corporate taxpayers and the government. Several of our findings contradict conjectures voiced by members of the business community regarding the economic effects of implementing FIN 48. Specifically, taxpayers with strong facts obtain *higher* expected payoffs from uncertain tax benefits and some disclosed liabilities *understate* the expected tax liability. Consistent with the common conjectures, however, some taxpayers are more likely to be audited or are deterred from entering into transactions that generate uncertain tax benefits because of FIN 48.

Keywords: *tax compliance; FIN 48; ASC 740-10-25; accounting for income taxes; disclosure.*

I. INTRODUCTION

Financial Accounting Standards Board (FASB) Interpretation No. 48, *Accounting for Uncertainty in Income Taxes* (FIN 48, [FASB 2006](#)), is the most significant change in financial accounting for income taxes over the past decade. This interpretation prescribes the accounting for uncertain income tax benefits recognized in a firm's financial statements in accordance with FASB Statement No. 109, *Accounting for Income Taxes*. Taxpayers are often uncertain whether the government will assess an additional income tax payment upon audit, which would reduce tax benefits claimed in the originally filed tax return. FIN 48 dictates how uncertain tax benefits should be measured and requires a taxpayer to disclose any liability for tax benefits claimed on its tax return that are not permitted to be recognized in its publicly available financial

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statements. We investigate how the strategic interaction between publicly traded corporate taxpayers and the government changes as the result of this new accounting interpretation.

Tax uncertainty arises because of the difficulty in applying ambiguous tax laws to a set of circumstances. Shareholders and creditors previously had little information about the future cash payments corporations expected to make to the government arising from disputes over uncertain tax positions. Although the FASB intended for FIN 48 to provide financial statement users with information about tax uncertainty, the government also observes this new disclosure. Accordingly, the government receives a signal about the taxpayer's level of uncertainty about its tax filing positions. We model tax uncertainty in a strategic game between the taxpayer and government, and use a nondisclosure benchmark case to examine the effect of the FIN 48 disclosure on the strategic choices made by the taxpayer and the government.

Early models that examined the strategic interaction between the taxpayer and the government assumed that the taxpayer knew its true taxable income and that the government could discover such income with an audit. Thus, taxpayers could perfectly anticipate the consequences of an audit (Graetz et al. 1986). Beck and Jung (1989a) and Beck and Jung (1989b) examine tax compliance in an environment in which taxpayers are uncertain regarding their tax liability; the latter did so using a game theory framework in which audit probabilities are endogenous. Other studies allow the government to observe a signal regarding the taxpayer, which affects their strategic interaction (Sansing 1993; Mills and Sansing 2000; Beck et al. 2000, hereafter BDJ).¹ Our model features a *mandatory* truthful disclosure of taxpayers' private information via the new financial reporting disclosure regulation.

Specifically, we model the FIN 48 financial statement disclosure as a public signal from the taxpayer to the shareholders that also provides information to the government. As in Beck and Jung (1989b), we introduce a continuum of taxpayers that differ in the strength of their filing positions, but each taxpayer makes a discrete tax reporting decision. The government draws inferences regarding the taxpayer's type from both its tax return and its financial statements before deciding whether to audit. Our model has several features in common with BDJ. BDJ examine the effect of allowing a taxpayer to make a voluntary disclosure regarding its private information in exchange for which the government agrees to waive a penalty in case a claimed tax benefit is lost upon audit. Although the institutional setting examined in BDJ differs from the one we examine here in several important respects, our analysis of the effects of disclosure in Section IV identifies both similarities and differences in how voluntary and mandatory disclosure regimes affect taxpayer behavior and payoffs.

Our model imposes five important assumptions about the information environment. As in BDJ, we make assumptions that increase the government's ability to draw inferences from the disclosure "in order to create an environment conducive to information transfers among taxpayers and the tax agency" (BDJ, 248). Thus, our assumptions reflect our primary objective, which is to explore the *maximum* extent to which FIN 48 could affect strategic choices of both the taxpayer and the government. This approach ensures that we determine an upper bound on the effects of FIN 48; different assumptions would yield weaker effects than those we find.

First, we assume that the taxpayer files a tax return with a single government. This assumption eliminates having a single aggregate disclosure related to tax uncertainties in multiple political jurisdictions. Second, we assume that the tax return claims at most one uncertain tax benefit. Third, we assume that the government can observe whether the tax return claims an uncertain tax

¹ In BDJ, the signal is in the form of a disclosure by the taxpayer. In Mills and Sansing (2000), the signal is whether book income exceeds or equals taxable income. In Sansing (1993), the IRS privately observes a signal about the taxpayer's income, e.g., the IRS' "DIF" score.

benefit. This assumption allows the government to distinguish between taxpayers that disclose no FIN 48 liability on their financial statements because they are confident of sustaining the position and those taxpayers that did not enter into a transaction that generates an uncertain tax benefit. Fourth, we assume that the government knows the distribution from which the taxpayer's private information is drawn. This allows the government to infer the strength of the taxpayer's filing position in our model whenever the taxpayer discloses a liability associated with an uncertain tax benefit. Finally, we assume that the taxpayer reports truthfully in the sense that the firm complies fully with the financial reporting requirements of FIN 48.²

Our model provides important insights that are contrary to two common conjectures made by the business community regarding the effects of FIN 48. First, we show that mandatory disclosure of uncertainty about tax filing positions need not put all taxpayers at a disadvantage in the tax audit process. In fact, we show that taxpayers with strong tax positions have *higher* expected payoffs from claiming uncertain tax positions post-FIN 48. To our knowledge, the possibility that some taxpayers may benefit from the mandatory disclosure requirements of FIN 48 has not been discussed by the business community or standard-setters. Second, we show that the liability disclosed in the financial statements is not necessarily an overstatement of the expected cash payment. The conjecture that FIN 48 liabilities are likely to be overstated is due to the interpretation's departure from the traditional expected value approach.³ Under FIN 48, the taxpayer must assume that each uncertain tax benefit is audited when calculating its tax liability. Our model illustrates that the direction of any misstatement depends on the distribution of tax benefits the taxpayer expects to retain upon audit as well as the taxpayer's expectation of the probability of being audited. For some taxpayers, however, we obtain results consistent with the common conjectures about the effect of FIN 48. Specifically, we find that some taxpayers have lower expected payoffs under FIN 48. This lower payoff arises because such taxpayers either face a higher probability of audit or refrain from entering into transactions that generate uncertain tax benefits due to the higher audit probability.

We compare the effects of mandatory disclosure pursuant to FIN 48 on taxpayer behavior and payoffs to the effects of voluntary disclosure examined in [BDJ](#). We find that taxpayers with sufficiently strong support for the uncertain tax position do not change their behavior as a result of the mandatory disclosure and are better off because the government is less likely to audit them. Taxpayers with weaker facts are weakly better off in the voluntary disclosure setting of [BDJ](#), but are weakly worse off in the mandatory disclosure setting that we examine. The difference between the two settings is that the government must give up something (a penalty waiver) in the voluntary setting in order to induce the taxpayer to disclose. The government does not give up anything to get the disclosure in our mandatory disclosure setting. Thus, our study enriches our understanding of the effects of disclosure on tax compliance by comparing the different effects of voluntary versus mandatory disclosure.

Not surprisingly, FIN 48 has generated broad interest and concern across the business and academic community, as well as among investors and regulators. Using our framework, concurrent

² We emphasize that our assumptions allow us to examine an important *benchmark* case. Thus, for example, while truthful reporting may not be *descriptive* per se, truthful reporting is conducive to information transfers. Not only is this important in a strategic tax compliance framework, it is also consistent with the disclosure literature. See [Admati and Pfleiderer \(2000, 481\)](#), who "assume, as is often done in the literature on disclosure, that all disclosed information is truthful. This is a reasonable assumption when antifraud laws are rigorously enforced. Also, disclosures are often made by third parties, such as accounting firms, whom are not directly affected by the content of the disclosure and for whom the reputation for truthfulness is valuable."

³ The expected value approach with respect to uncertain tax positions involves recording a liability equal to the probability of the uncertain tax position being audited multiplied by the expected tax deficiency, conditional on an audit occurring.

studies by [Gupta et al. \(2009\)](#), [Dunbar et al. \(2009\)](#), and [Lisowsky et al. \(2010\)](#) examine the effects of FIN 48 on tax reporting. We believe our model can guide current and future research during the post-FIN 48 adoption period by offering a framework for thinking about the potential economic effects of FIN 48.

In Section II, we characterize the tax and financial reporting environment in which the taxpayer operates. Section III models the strategic interaction between the taxpayer and government pre-FIN 48, which we use as our nondisclosure benchmark case. Section IV models the recognition and measurement process of FIN 48 and the strategic interaction between the taxpayer and the government post-FIN 48. In Section V, we address two common conjectures about the effects of FIN 48 in the context of our model and compare the effects of mandatory disclosure to the effects of voluntary disclosure. Section VI concludes. All proofs are in Appendix A.

II. TAX AND FINANCIAL REPORTING UNDER TAX UNCERTAINTY

Tax Reporting under Tax Uncertainty

We first characterize the corporate income tax research, filing, and settlement process to clarify the notion of tax uncertainty that we model and that FIN 48 was designed to address. The taxpayer has an opportunity to enter into a business transaction that produces an uncertain tax benefit.⁴ Before deciding whether to enter into the transaction, the taxpayer privately observes all relevant facts and supporting documentation with regard to the transaction. An important aspect of the tax reporting process is that the taxpayer conducts research for purposes of applying technical tax law to the facts and circumstances of the transaction, evaluating various tax filing positions ([Magro and Nutter 2009](#)). If the taxpayer enters into the transaction, then the tax benefit is claimed on a tax return filed with the government and becomes the taxpayer's "filing position."

The government observes the tax return and thus whether the taxpayer has entered into a transaction and claimed an uncertain tax benefit, but does not observe the strength of the taxpayer's filing position. Because it is uncertain whether the taxpayer will prevail if the government challenges the claimed tax benefit, the government cannot merely assess a deficiency upon observing a claimed uncertain tax benefit; instead, it must conduct a costly audit in order to challenge the taxpayer's position. If the tax return is audited, then the outcome of a dispute could result in the taxpayer retaining all, some, or none of the tax benefit originally claimed on the tax return. Figure 1 summarizes the sequence of play.

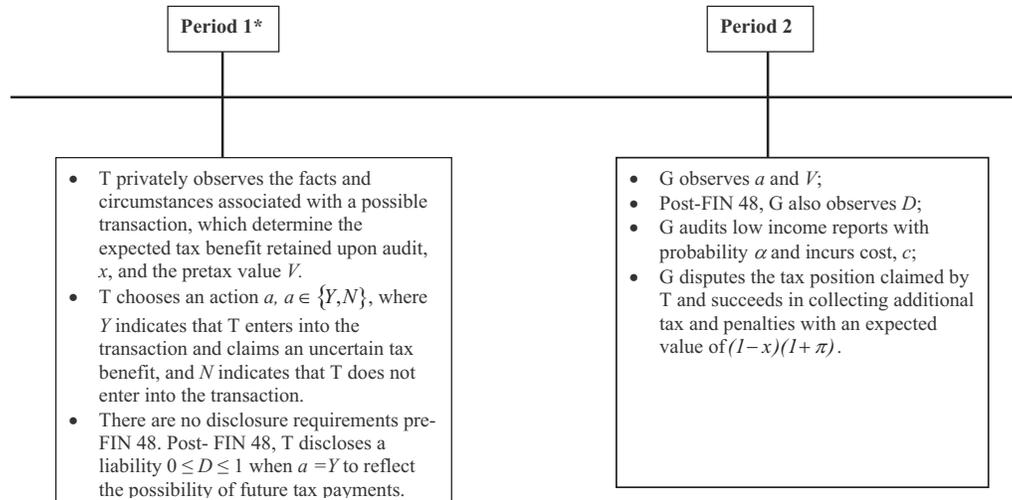
Financial Reporting under Tax Uncertainty

The financial reporting problem that FIN 48 seeks to address is how to reflect uncertain tax benefits in its financial statements during the time that potential tax disputes remain unresolved. The relevant accounting question is how much of the current tax benefit that the taxpayer receives from the uncertain tax position should be recognized as a reduction to current period income tax expense. Because we compare a FIN 48 mandatory disclosure regime to a benchmark pre-FIN 48 case of no disclosure, we first highlight important financial reporting features of the pre-FIN 48 regime.

Practice varied pre-FIN 48 with respect to recognizing liabilities for uncertain tax positions. Anecdotally, many corporations recognized a liability for uncertain tax benefits using a traditional expected value approach, although some recognized the entire tax benefit as a liability unless it was probable of being sustained. Even when the latter approach was used, the definition of

⁴ Alternatively, the taxpayer may engage in a transaction that has an uncertain tax benefit for non-tax business reasons. In this case, the taxpayer's decision is not whether to engage in the transaction but is, instead, whether to claim an uncertain tax benefit associated with the transaction on the tax return. From the point of view of our model, this alternative framing has no effect.

FIGURE 1
Timeline Summarizing the Sequence of Play between the Taxpayer (T) and the Government (G)



Note that Period 1 and Period 2 do not imply two equal time periods, but rather the actions of T (Period 1) and G (Period 2). Period 1 is relatively short, while Period 2 may take many years to complete.

“probable” varied across companies. Furthermore, the extent to which corporations incorporated the probability of audit into the calculation of expected tax liabilities was unclear. Evidence in [Blouin et al. \(2007\)](#) suggests that firms generally recognized smaller liabilities pre-FIN 48 when they faced a lower probability of audit or detection.

Regardless of how much benefit from uncertain tax positions was recognized in financial statements pre-FIN 48, there was no explicit disclosure requirement. Thus, even if a taxpayer recognized a liability pre-FIN 48, the lack of a mandatory disclosure requirement prevented outsiders from observing the liability directly.⁵ [Gleason and Mills \(2002\)](#) document that even large companies that have material IRS deficiencies do not voluntarily disclose the amount of their tax reserves.

FIN 48 imposes new recognition, measurement, and disclosure requirements regarding tax uncertainty. Of particular importance is that compliance with the disclosure requirement (that is, truthful reporting) makes the taxpayer’s level of uncertainty transparent to the government in the post-FIN 48 regime. Furthermore, the recognition and measurement requirements serve to increase the information content of the disclosure by providing consistency in the language with which

⁵ Because financial statement balance sheets only present limited detail, recorded liabilities for unrecognized tax benefits tax would not typically be visible to the public. For example, these liabilities may have been aggregated with environmental or legal liabilities. In addition, liabilities for uncertain tax positions were sometimes intermingled with deferred tax liabilities as evidenced by the prohibition in FIN 48 against this classification (FIN 48, ¶17) and the significant reclassification adjustments reported at adoption (e.g., in the first quarter of 2007, Verizon Communications Inc. reports a \$3 billion reduction in deferred income taxes and a corresponding increase in other liabilities as a reclassification adjustment upon adoption of FIN 48).

taxpayers express their level of uncertainty. An important feature of the pre-FIN 48 regime was that the lack of guidance gave taxpayers no way to credibly disclose a low level of uncertainty with respect to an uncertain tax position.

III. TAX COMPLIANCE PRE-FIN 48

Pre-FIN 48 Model

Our pre-FIN 48 model examines the interaction between the taxpayer and the government prior to the implementation of FIN 48. Thus, our benchmark case is characterized by tax uncertainty without public disclosure of the taxpayer's level of uncertainty. There are two players in our model: the taxpayer (T) and the government (G). The taxpayer can take two possible actions. It can enter into a business transaction ($a = Y$) or not ($a = N$). The value of the transaction has two components, x and V , where x is the expected tax benefit associated with entering into the transaction, conditional on being audited, and V is the value of the transaction in absence of the tax benefit.

For tractability, we simplify the model so that there are only two possible tax treatments for a transaction. We normalize the best possible tax result from entering into the transaction to 1 and the worst possible tax result to 0. In order to model business transactions in which the tax benefit is decisive for the taxpayer's decision to enter into the transaction, we consider cases in which $-1 < V < 0$. Therefore, the value of the transaction when the tax-favored treatment occurs and is sustained is $V + 1 > 0$. Furthermore, the taxpayer would not enter into the transaction if it knew the tax outcome would be unfavorable because $V < 0$.⁶ Consider V the pre-tax payoff *relative to a required return*; thus, we do not model transactions that lose money in raw terms, but rather, absent the tax benefit, the taxpayer would not choose this transaction. Municipal bonds and tax credit investments, for example, do not lack economic substance, but they would be negative NPV investments in absence of the tax benefits (Robinson 2010).

Thus, we consider discrete tax disputes in which rejection of the taxpayer's filing position implies a definitive alternative tax treatment. However, tax law ambiguity makes it hard for each party to determine whether the tax benefit claimed is valid. The taxpayer and the government may therefore compromise on a settlement, even though as a matter of law a court would ultimately have to allow or disallow the entire claimed tax benefit. An example is a tax-free spin-off that can only be challenged on the grounds that it lacks economic substance. A spin-off qualifies as tax-free under §355 or it does not; any decision about the applicability of tax law to the transaction must either grant or deny the claimed tax benefit in its entirety. Tax-free mergers provide a second example in which a recent tax case illustrates the discrete nature of many real world disputes. To avoid taxable gains of nearly \$1.4 billion on the sale of a subsidiary, Times Mirror (the Company) engaged in complex and unconventional tax-free reverse triangular mergers with Reed Elsevier and Harcourt General in 1998. Upon audit in 2002, the Internal Revenue Service (IRS) recharacterized the reorganization as a fully taxable sale based on an argument that the transaction lacked economic substance, and assessed a tax deficiency of \$550 million. The Company litigated the case and in 2006, a Tax Court judge issued a ruling that supported the IRS position disallowing tax-free treatment. As a result, the Company paid \$880 million (which included interest on the deficiency) and then appealed. The IRS considered possible outcomes in the Seventh Circuit Court

⁶ The notion that a taxpayer would engage in transaction only if the tax outcome was favorable can be illustrated more concretely by disclosures surrounding reorganizations. Liberty Media Group, Inc. reports the following in its 2008 annual report: "The Redemption and resulting separation of LEI from LMC are referred to as the Split Off. The Split Off is *conditioned on*, among other matters, receipt of stockholder approval and receipt of a private letter ruling from the IRS and a tax opinion from tax counsel and is expected to occur in the second quarter of 2009."

of Appeals and decided to initiate settlement. In late 2007, nearly 10 years after the transaction was entered into, the parties agreed to settle the case for \$536 million (Mulligan 2007).

The taxpayer in our model is fully informed regarding the facts of the transaction, in that it knows how its particular facts fit within the applicable law, regulations, court cases, other authority, and IRS practices regarding settling appeals. Based on these facts and circumstances, the taxpayer knows the distribution of possible audit outcomes if it enters into the transaction and the IRS audits the tax return. We assume that both the taxpayer and the government are risk-neutral, which implies that the mean value (pretax value plus the expected tax benefit retained upon audit) is everything the taxpayer needs to know in order to decide whether to engage in the transaction in the pre-FIN 48 regime.⁷

Finally, we assume that no firm can make a *credible* voluntary disclosure that would deter government audits, because practice varied too much for disclosures to be meaningful until FIN 48 established consistent rules for recognition, measurement and the content of the disclosure. For example, even if a firm stated that it had recorded no liability for tax uncertainty, the government could not know whether the disclosure reflected a low probability of government detection or a strong case on its merits. Gleason and Mills (2002) find that the largest 100 nonfinancial firms rarely disclosed even the amounts of IRS disputes throughout the 1990s, even when the proposed adjustments were material. In the two quarters between FIN 48 enactment and adoption, Blouin et al. (2010) find that firms continued to not disclose contingent tax reserves. Thus, our assumption is consistent with prior empirical findings about the frequency of tax contingency disclosures prior to FIN 48.

Let x represent the expected value of the tax benefit that will be retained upon audit of a transaction that produces an uncertain tax benefit. The realization x represents the taxpayer's private information because, although the government can observe whether the taxpayer entered into a transaction that produced an uncertain tax benefit, it cannot observe the strength of the underlying position. For example, the government can tell from the tax return that the taxpayer has been a party to a merger and has treated it as tax-free, but it cannot tell how strongly the facts support this characterization. In addition, we assume that the government can observe the pretax value, V . Thus, in the pre-FIN 48 regime, taxpayers claiming the uncertain tax benefit are indistinguishable to the government in terms of their level of uncertainty. We assume that x is the realization of a random variable drawn from a uniform $[1/2, 1]$ distribution. The taxpayer observes x before deciding whether to enter into the transaction.⁸ We assume $x \geq 1/2$ because we focus on cases for which the taxpayer is more likely than not to prevail in a dispute with the government. This ensures that no paid preparer has an obligation under Internal Revenue Code (IRC) §6694 to disclose any information about the transaction on the tax return.

After observing a tax return that contains an uncertain tax benefit, the government audits the tax return with probability α . The government faces an audit cost c where $c \in (0, 1]$ and collects a penalty π on the expected additional tax collected $(1 - x)$, where π denotes the expected tax penalty rate $\pi \in (0, 1]$.⁹ Figure 2 summarizes the expected payoffs to the taxpayer and the government when the taxpayer does and does not enter into the transaction. As illustrated in

⁷ For purposes of our focus on tax compliance, we ignore any financial reporting preferences a taxpayer might have for either tax benefits or contingent liabilities beyond the pretax values represented in V .

⁸ When we add the FIN 48 disclosure to our model, we impose additional structure on the underlying distribution of outcomes from which the FIN 48 liability is derived. We emphasize that x is the mean of the possible tax benefits retained upon audit, not the outcome itself.

⁹ We impose an upper bound on the penalty rate of 100 percent to reflect the U.S. tax law, in which the penalty for negligence is 20 percent (IRC §6662) and the penalty for fraud is 75 percent (IRC §6663). Putting an upper bound on the penalty rules out implausible cases in which taxpayers with very strong positions are intimidated into filing high income reports by the presence of a draconian penalty regime.

FIGURE 2
Payoff Matrix for the Taxpayer (T) and the Government (G)

Payoff Matrix [T, G]	Audit	No Audit
Enter into transaction ($a = Y$)	$V + x - \pi(1 - x), -x + \pi(1 - x) - c$	$V + 1, -1$
Do not enter into transaction ($a = N$)	$0, -c$	$0, 0$

$a = Y$ when the taxpayer enters into a transaction with a pretax value, V , and an expected tax benefit retained upon audit, x . $a = N$ when a taxpayer does not enter into a transaction. π is the penalty rate, and c is the cost to the government of conducting an audit.

Figure 2, we normalize the “no transaction, no audit” payoff to 0 such that the payoff to the government from the “transaction, no audit” outcome is -1 , and the difference between the government’s payoff from the “transaction, no audit” outcome and the “transaction, audit” outcome is $(1 + \pi)(1 - x) - c$. Thus, the aggregate payoffs make economic sense, equaling either 0, V , $V - c$, or $-c$ in the four cells of Figure 2.

Not entering into the transaction ($a = N$) gives the taxpayer a payoff of 0. Entering into the transaction ($a = Y$) gives the taxpayer a payoff of $V + 1$ if the tax return is not audited and an expected payoff of $V + x - \pi(1 - x)$ if the tax return is audited. If the government does not conduct an audit, then the government’s payoff is -1 if the taxpayer chooses $a = Y$ and 0 if the taxpayer chooses $a = N$. If it conducts an audit, then the government’s payoff is $-x + \pi(1 - x) - c$ if $a = Y$ and $-c$ if $a = N$. The payoff from auditing when $a = N$ is $-c$, because audits are costly and no additional tax is collected. Thus the government never audits when $a = N$. The government’s payoff from auditing the transaction, $-x + \pi(1 - x) - c$, reflects our assumption that the government may not recover all the tax on audit. In our model, audit outcomes vary because they depend on the strength of taxpayer’s facts and circumstances, which determines x .

Pre-FIN 48 Equilibria

An equilibrium is an audit strategy for the government and a reporting strategy for each type- x of taxpayer, where each taxpayer’s strategy is a best response to the government’s strategy and the government’s strategy is a best response given the set of taxpayer strategies. When the taxpayer’s facts and the available authority (law, judicial precedents, and administrative guidance) make the probability of retaining more of the tax benefit relatively high, we refer to that taxpayer as having a strong position. When the taxpayer’s facts and available authority make the probability of retaining more of the benefit relatively low, we refer to that taxpayer as not having a strong position.

Four types of equilibria arise. We first describe two simple equilibria in which all taxpayers claim the uncertain tax benefit. We then develop and discuss two more complex equilibria that we formalize in Proposition 1.

First, if auditing is sufficiently costly, $c \geq \frac{1+\pi}{4}$, all taxpayers enter into the transaction and the government conducts no audits. Audit costs are so high that the threat to audit is not credible; hence, all taxpayers enter into the transaction that generates uncertain tax benefits.

When audit costs are low, $c < \frac{1+\pi}{4}$, behavior depends on the pretax value V of the transaction

and in some cases the taxpayer's private information, x . Figure 3 depicts taxpayer and government behavior for the equilibria that arise when audit costs are low.

If audit costs are low and the pretax value V of the transaction is sufficiently high, $V \geq \frac{\pi-1}{2}$, then all taxpayers are willing to enter the transaction despite a certain audit. Their willingness arises because the pretax value of the transaction is sufficiently high, and the government is willing to audit all transactions with uncertain tax benefits because the audit cost is sufficiently low.

Proposition 1 below formalizes the behavior of the government and the taxpayer for the two equilibria for which the behavior of the taxpayer depends on the realization of x when $V < \frac{\pi-1}{2}$. If audit costs are low and V takes on an intermediate value, $2c - 1 < V < \frac{\pi-1}{2}$ (see Proposition 1(a)), then the government audits all tax returns that claim uncertain tax benefits and taxpayers determine their reporting strategy according to a cutoff value x^* . Taxpayers with a type- x above x^* enter into the transaction even when they are certain they will be audited, whereas taxpayers with

FIGURE 3
Pre-FIN 48 Equilibrium When $c < \frac{1+\pi}{4}$ and Post-FIN 48 Equilibrium When $x_S \leq 1 - \frac{2c}{1+\pi}$

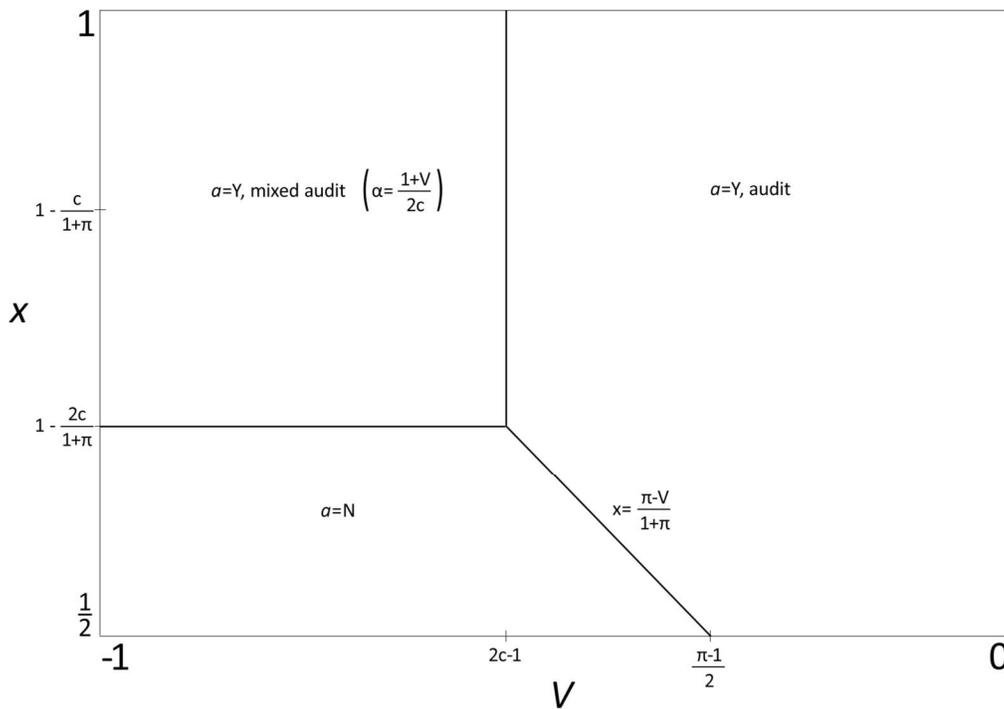


Figure 3 illustrates taxpayer and government behavior, respectively. With respect to the taxpayer, $a = Y$ when the taxpayer enters into a transaction with a pretax value, V , and an expected uncertain tax benefit retained upon audit, x . $a = N$ when a taxpayer does not enter into a transaction. With respect to the government, *audit* means the government audits all taxpayers, whereas *mixed audit* means the government audits taxpayers with probability, α . π is the penalty rate, and c is the cost to the government of conducting an audit.

a type- x below x^* do not enter into the transaction. We emphasize that taxpayers with relatively strong positions ($x > x^*$) claim an uncertain tax benefit even in the face of certain audit.

Finally, when audit costs are low and the transaction value is low, $V \leq 2c - 1$ (see Proposition 1(b)), the threat to audit deters taxpayers from entering the transaction unless $x \geq 1 - \frac{2c}{1+\pi}$. Because only taxpayers with sufficiently strong facts enter into the transaction, the government does not have an incentive to audit all tax returns that claim uncertain tax benefits. In equilibrium, the government adopts a mixed strategy, auditing some returns and not others. Given this mixed strategy, a taxpayer for whom $x = 1 - \frac{2c}{1+\pi}$ is indifferent about entering into the transaction; taxpayers with stronger facts enter into the transaction and taxpayers with weaker facts do not. Likewise, the government's expected payoff from auditing a return that claims uncertain tax benefits is equal to its payoff from not auditing the return.

Proposition 1:

- (a) If audit costs (c) are low, $c < \frac{1+\pi}{4}$, and the pretax transaction value (V) is intermediate, $2c - 1 < V < \frac{\pi-1}{2}$, then:
 - (i) G audits no $a = N$ tax returns,
 - (ii) G audits all $a = Y$ tax returns,
 - (iii) each T chooses $a = Y$ if $x > \frac{\pi-V}{1+\pi}$, and chooses $a = N$ otherwise.
- (b) If $c < \frac{1+\pi}{4}$, and the pretax transaction value is low, $V \leq 2c - 1$, then:
 - (i) G audits no $a = N$ tax returns,
 - (ii) G audits $a = Y$ tax returns with probability $\alpha = \frac{1+V}{2c}$,
 - (iii) each T chooses $a = Y$ if $x \geq 1 - \frac{2c}{1+\pi}$, and chooses $a = N$ otherwise.

IV. TAX COMPLIANCE POST-FIN 48

Post-FIN 48 Model

We next examine the interaction between the taxpayer and the government in a post-FIN 48 regime characterized by mandatory public disclosure of the taxpayer's level of uncertainty. FIN 48 determines the amount of the uncertain tax benefit the taxpayer may recognize in the financial statements under a two-step process: recognition and measurement. First, taxpayers may only recognize tax benefits that are more than 50 percent likely to be sustained by the court of last resort based solely on the technical merits of the filing position. For positions that pass the recognition step, the measurement step then determines the *amount* of the tax benefit that should be recognized, if any. The tax benefit recognized in the financial statements is the largest tax benefit that cumulatively is greater than 50 percent likely to be sustained on audit, taking into account likely settlements with the government. This two-step process is a departure from an expected value approach. Rather than recording an expected benefit (a mean) in which the expectation incorporates audit probability, both the recognition and measurement steps under FIN 48 consider a "more likely than not" threshold (a median) and assume the government has full knowledge of the position.

FIN 48 requires the taxpayer to recognize a liability for the unrecognized tax benefit to offset some or all of the total tax benefit claimed on the tax return. Because the recognized benefit is the median value of the taxpayer's retained tax benefit (the more likely than not amount), the recognized liability is equal to 1 minus the median value of the taxpayer's retained tax benefit. Most notable in our model is the requirement under FIN 48 that the taxpayer disclose the liability for the unrecognized tax benefit in its publicly available financial statements. Thus, post-FIN 48 the government can observe both an uncertain tax position in the tax return and the FIN 48 disclosure in the financial statements. This allows the government to form a more precise belief regarding the

strength of the taxpayer's filing position than it could pre-FIN 48. The government can use this revised belief to determine its audit strategy. Finally, the government can observe the value of the pretax features of the transaction, V . The cost of the audit, c , is unchanged in our post-FIN-48 model, because although the government can identify the existence of the transaction by observing a , it must still conduct a costly audit to analyze the transaction.¹⁰

We assume that the taxpayer's facts are sufficiently strong that they pass the recognition step. Although some transactions would not satisfy the criteria for recognition, other features of the institutional environment make this difficult to hide from the government. For example, a paid preparer has an obligation to disclose the existence of a transaction that would fail the "more likely than not" standard (IRC §6694; BDJ; Pauly 2008). Because our focus is solely on the effect of FIN 48 on the strategic interaction between publicly traded corporate taxpayers and the government, we confine our attention to settings in which the government can only condition its audit decision on the existence of the uncertain tax position on the tax return and the firm's FIN 48 disclosure.

To model the measurement processes of FIN 48, we introduce the function $m(x)$, which represents the median tax benefit retained upon audit, given x . The uncertain tax benefit recognized under FIN 48 is $1 - m(x)$. We make no assumption about whether $m(x)$ is greater or less than x ; medians can be above or below means. We assume that $m(x)$ is continuous, $m'(x) \geq 0$ for all $m(x) < 1$, and $m(1) = 1$.

We allow the taxpayer to retain the full tax benefit with some positive probability $p(x)$. This implies that the expected retained benefit given some of the benefit is lost, which occurs with probability $1 - p(x)$, is $\frac{x-p(x)}{1-p(x)}$, so that the expected retained benefit is equal to x . We define x_S as the smallest value of x for which $m(x) = 1$. We denote this cutoff point as x_S to signify the point above which the taxpayer's type- x is "strong." We provide an example of a probability distribution of audit outcomes that is consistent with all of our assumptions regarding $p(x)$ and $m(x)$ in Appendix B.

We denote the disclosed FIN 48 liability as D , where $D \in [0,1]$. If $x \geq x_S$ (i.e., taxpayer has a strong position), then $m(x) = 1$ and so $D = 0$ because $D = 1 - m(x)$. If $x < x_S$ (i.e., taxpayer does not have a strong position), then $0 < D < 1$. The function $m(x)$ is common knowledge, so if $0 < D < 1$, then the government can infer x . In contrast, if $D = 0$, the government only knows that $x \geq x_S$. In summary, the mean and median settlement outcomes are linked, so we let x be the mean settlement and $m(x)$ be the median settlement. We make x the main random variable, and $m(x)$ is expressed as a function of x .

Two types of FIN 48 disclosures thus correspond with the measurement process of FIN 48: $D = 0$ or $0 < D < 1$. A disclosure of $D = 0$ in the financial statements is consistent with two situations. First, $D = 0$ when $a = N$, because the taxpayer did not claim an uncertain tax benefit. Second, $D = 0$ when the taxpayer claims an uncertain tax benefit and has a strong position (i.e., the taxpayer records $D = 1 - m(x)$ where $m(x) = 1$). Because the government can observe from

¹⁰ Recall that we assume there is only one transaction in our model, so a FIN 48 disclosure fully reveals which transaction is uncertain. For most companies of any complexity, the FIN 48 disclosure will be an aggregate liability for multiple tax positions in multiple taxing jurisdictions. Although FASB's initial exposure draft proposed requiring corporations to disclose domestic and foreign components of unrecognized tax benefits separately, that finer disclosure did not survive the adopted standard. Thus, even if the FIN 48 disclosure helps the IRS select the taxpayer for audit, the FIN 48 disclosure does not lower the cost of conducting the audit. An important real world example that supports this feature in our model is the recent *Textron v. Comm.* (2007), in which the court disallowed the IRS access to workpapers prepared during an audit. The business community has speculated that one of the key ways that the government will reduce their audit cost as a result of FIN 48 is by obtaining documentation used to prepare the FIN 48 financial statement disclosure. The *Textron* case seems to provide taxpayers with support for asserting that the work product privilege (*Arthur Young v. Comm.* 1984) applies to tax accrual workpapers that were provided to the taxpayer's independent auditors.

the tax return whether the taxpayer has claimed an uncertain tax benefit, it can distinguish between these two situations for which $D = 0$.

We assume the independent audit process ensures that the disclosure D is truthful, i.e., consistent with FIN 48. As a result, taxpayers without strong positions cannot simply decide to disclose $D = 0$ to pool with taxpayers with strong positions. Introducing another actor to the game (the independent auditor) would complicate our model and obscure our goal for this initial study. Our goal from imposing this simplifying assumption is to strengthen the government's information set so that we can evaluate the maximum effect of FIN 48 on the strategic interaction between the taxpayer and the government.

We depict the possible realizations of x and associated value of D in Figure 4.

Post-FIN 48 Equilibria

We consider the equilibria that can occur in two cases: (1) $x \geq x_S$, and (2) $x < x_S$. When $x \geq x_S$, the taxpayer has a strong position, and we begin our analysis with this case.

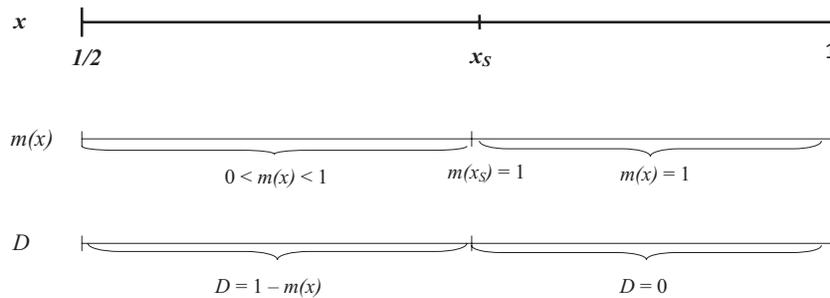
Taxpayer with a Strong Position ($x \geq x_S$)

A taxpayer that claims an uncertain tax benefit with a strong position discloses $D = 0$. When the government observes $a = Y$ and $D = 0$, it knows that x lies in the interval $[x_S, 1]$. As before, we first describe two simple equilibria in which taxpayers always claim the uncertain tax position. We formalize more complex cases for taxpayers with strong positions in Proposition 2.

If x_S is sufficiently high, $x_S \geq 1 - \frac{2c}{1+\pi}$, then the disclosure $D = 0$ deters the government from auditing. With no government audits, all taxpayers with strong positions claim the tax benefit.

If $x_S < 1 - \frac{2c}{1+\pi}$, then the strategies of the taxpayer and the government depend on the pretax value V of the transaction and the realization of x . When the value of the transaction is high, $V \geq \frac{\pi-1}{2}$, a taxpayer with a strong position is willing to claim the tax benefit even if an audit is certain. In this case, all taxpayers with a strong position claim the tax benefit, and the government audits all returns that claim the tax benefit.

FIGURE 4
Possible Realizations of the Expected Tax Benefit, x , and Associated Values of the Disclosed FIN 48 Liability, D



The expected tax benefit retained on audit is x . The median retained benefit on audit is $m(x)$. $D = 0$ is disclosed when taxpayers have strong positions, which implies $x \geq x_S$ in our model. $0 < D < 1$, or $1 - m(x)$, is disclosed when taxpayers do not have strong positions, which implies that $\frac{1}{2} < x < x_S$ in our model.

When the value of the transaction is intermediate, $2c - 1 < V < \frac{\pi-1}{2}$, or low, $V \leq 2c - 1$, the behavior of the taxpayer depends on the realization of x . We characterize the behavior of the taxpayer with a strong position and the government in Proposition 2 below.

When V takes on an intermediate value, $2c - 1 < V < \frac{\pi-1}{2}$, (see Proposition 2(a)), the government audits all tax returns that claim uncertain tax benefits and taxpayers determine their reporting strategy according to a cutoff value x^* . Taxpayers with a type- x above x^* enter into the transaction even when they are certain they will be audited, while taxpayers with a type- x below x^* do not enter into the transaction.

When the transaction value is low, $V \leq 2c - 1$ (see Proposition 2(b)), the threat to audit deters taxpayers from entering the transaction unless $x \geq 1 - \frac{2c}{1+\pi}$. Because only taxpayers with sufficiently strong facts enter into the transaction, the government does not have an incentive to audit all tax returns that claim uncertain tax benefits. In equilibrium, the government adopts a mixed strategy, auditing some returns and not others.

Proposition 2: When $x \geq x_S$, $D = 0$ for both $a = Y$ and $a = N$.

- (a) If the lowest value of x for which no liability is recognized under FIN 48 is low $x_S < 1 - \frac{2c}{1+\pi}$, and the value (V) of the transaction is intermediate, $2c - 1 < V < \frac{\pi-1}{2}$, then:
 - (i) G audits no $a = N$ tax returns,
 - (ii) G audits all $a = Y$ tax returns, and
 - (iii) each T chooses $a = Y$ if $x > \frac{\pi-V}{1+\pi}$ and chooses $a = N$ otherwise.
- (b) If $x_S < 1 - \frac{2c}{1+\pi}$ and the value of the transaction is low, $V \leq 2c - 1$, then:
 - (i) G audits no $a = N$ tax returns,
 - (ii) G audits $a = Y$ tax returns with probability $\alpha = \frac{1+V}{2c}$, and
 - (iii) each T chooses $a = Y$ if $x > 1 - \frac{2c}{1+\pi}$ and chooses $a = N$ otherwise.

Taxpayer without a Strong Position ($x < x_S$)

When $x < x_S$, the taxpayer is more likely than not to lose part of the claimed tax benefit. When a taxpayer without a strong position enters into a transaction that generates an uncertain tax benefit, it must disclose $0 < D < 1$, where $D = 1 - m(x)$. Unlike the case in which $D = 0$, when the government observes $a = Y$ and $0 < D < 1$, the taxpayer’s private information, x , is fully revealed to the government because the government knows $m(x)$. In this setting, both the taxpayer and the government are in a full information environment. We characterize the behavior of the taxpayer without a strong position and the government in Proposition 3 below.

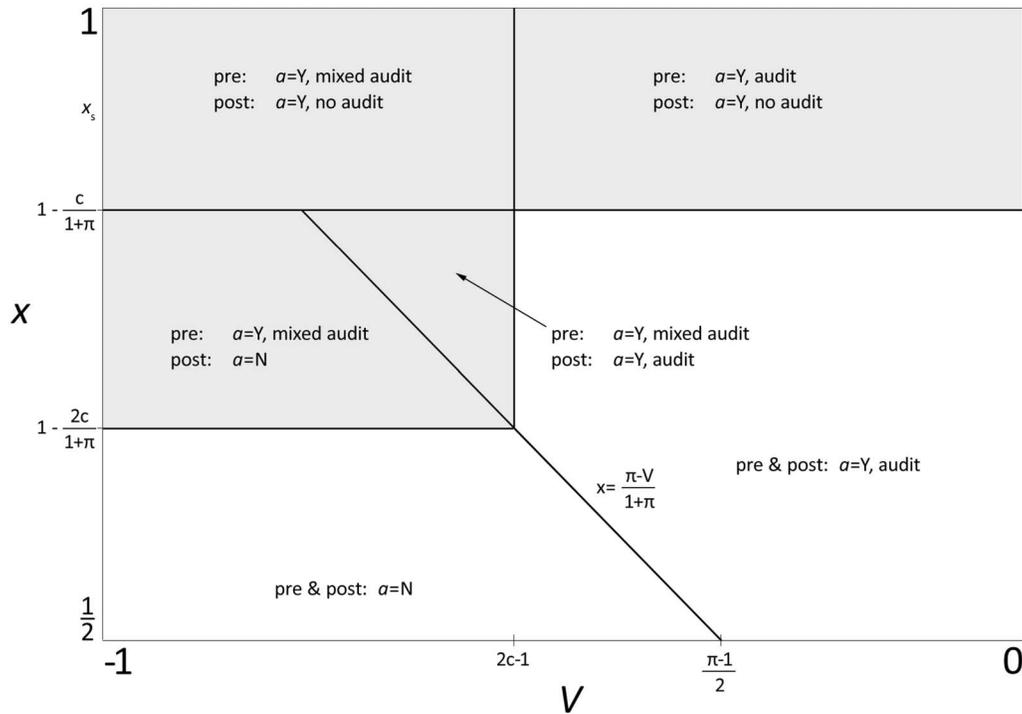
Proposition 3: When $\frac{1}{2} < x < x_S$, $D = 1 - m(x)$ when $a = Y$ and $D = 0$ when $a = N$.

- (a) If $x \geq 1 - \frac{c}{1+\pi}$ then:
 - (i) G audits no tax returns, and
 - (ii) all T chooses $a = Y$.
- (b) If $\frac{1}{2} \leq x < 1 - \frac{c}{1+\pi}$, then:
 - (i) G audits no $a = N$ tax returns,
 - (ii) G audits all $a = Y$ tax returns, and
 - (iii) each T chooses $a = Y$ if $x > \frac{\pi-V}{1+\pi}$ and chooses $a = N$ otherwise.

We illustrate the behavior of taxpayers and the government when $c < \frac{1+\pi}{2}$ in Figures 3, 5, and 6. Figure 3 represents the situation in which $x_S \leq 1 - \frac{2c}{1+\pi}$. Recall also that Figure 3 depicts the pre-FIN 48 equilibria. Figure 5 represents $x_S \geq 1 - \frac{c}{1+\pi}$, and Figure 6 represents $1 - \frac{2c}{1+\pi} < x_S < 1 - \frac{c}{1+\pi}$.

We emphasize that the region of each figure for which $x \geq x_S$ is the region for which all taxpayers that engage in the transaction disclose $D = 0$ and the region for which $x < x_S$ is the region for which all taxpayers that engage in the transaction disclose $D = 1 - m(x) > 0$. Thus,

FIGURE 5
Comparing Equilibria Pre-FIN 48 and Post-FIN 48 When $x_S \geq 1 - \frac{c}{1+\pi}$

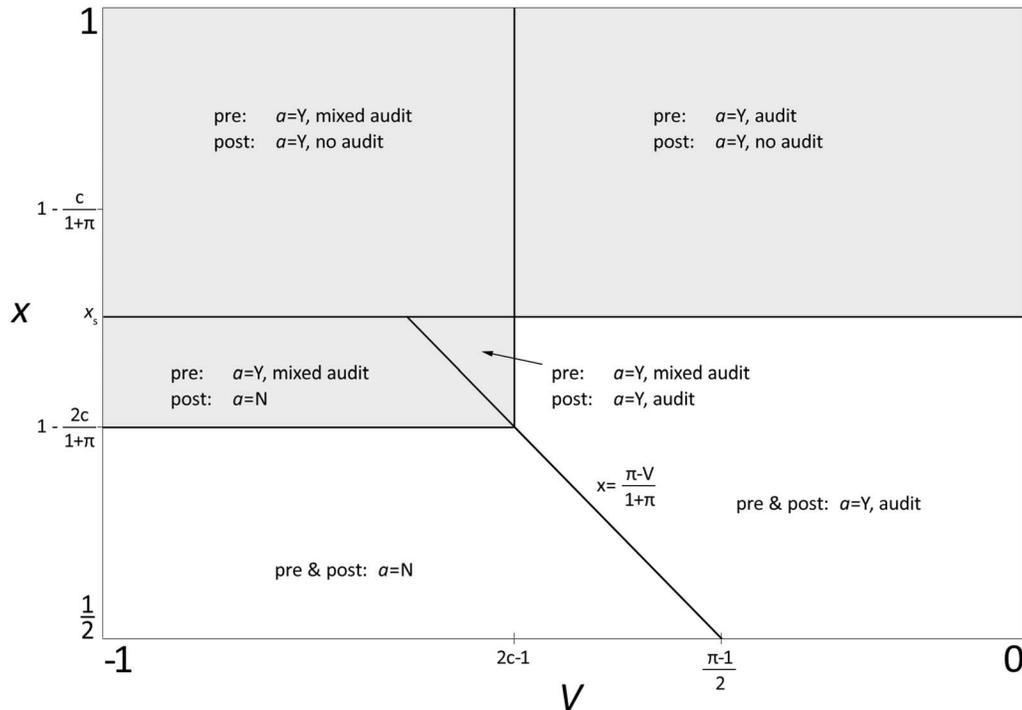


because Figure 5 shows a high range for x_S , it depicts the situation in which audit costs are relatively high, whereas Figure 3 represents a situation in which audit costs are relatively low.

Figure 3 characterizes the behavior of taxpayers and the government both prior to FIN 48 and after FIN 48 when $x_S \leq 1 - \frac{2c}{1 + \pi}$. Most taxpayers disclose no FIN 48 liability because x_S is so low. In the extreme case in which $x_S = \frac{1}{2}$, the disclosure has no information content because all taxpayers make the same disclosure. For taxpayers that disclose a FIN 48 liability, the audit costs are so low that the government does not need the disclosure to convince it to audit. Therefore, the FIN 48 disclosure does not affect either taxpayer or government behavior when $x_S \leq 1 - \frac{2c}{1 + \pi}$.

Figures 5 and 6 illustrate the behavior of the government and the taxpayers both pre-FIN 48 and post-FIN 48. The figures are similar, in that each features a threshold value, x^* , for which post-FIN 48 all $x \geq x^*$ enter into the transaction and the government does not audit. For all $x < x^*$, the taxpayer enters into the transaction (and the government audits) post-FIN 48 when V is high and does not enter into the transaction when V is low. The only difference between Figures 5 and 6 is that the threshold value x^* is less than x_S in Figure 5 but is equal to x_S in Figure 6. This difference is driven by audit costs. In Figure 5, some taxpayers enter into the transaction despite disclosing a FIN 48 liability. In Figure 6, audit costs are low enough that taxpayers are deterred from entering into the transaction unless they have no FIN 48 liability. We interpret these figures when discussing our insights in Section V.

FIGURE 6
Comparing Equilibria Pre-FIN 48 and Post-FIN 48 When $1 - \frac{2c}{1+\pi} < x_S < 1 - \frac{c}{1+\pi}$



V. INSIGHTS AND CONTRIBUTIONS

Our model contributes to our understanding of FIN 48 by challenging commonly expressed beliefs in the business press regarding the effects of FIN 48. It also highlights the differences between the effects of mandatory and voluntary disclosure regimes. First, we show how some of our results contradict conjectures by the business press. Second, we compare our results to those from the BDJ model of voluntary disclosure in a strategic tax compliance setting.

Challenging Common FIN 48 Conjectures

A common conjecture about the effects of FIN 48 is that the new accounting interpretation will typically harm taxpayers and aid the government by providing a “road map” to a taxpayer’s controversial tax return filing positions. In discussing FIN 48 during an SEC speech, Chester Spatt, Chief Economist and Director of the Office of Economic Analysis of the SEC, stated that “providing publicly more information about the taxpayer’s position on salient tax issues may provide a ‘roadmap’ for the government that may undercut the firm’s bargaining power in the associated tax disputes” (Spatt 2007).¹¹ Similarly, Allergan, Inc.’s comment letter to the FASB

¹¹ Available online at: <http://www.sec.gov/news/speech/2007/spch030807css.htm> as of July 22, 2010, Speech by SEC staff: “The Economics of FIN 48: Accounting for Uncertainty in Income Taxes.”

argues that disclosures of accrued liability “will provide a readily visible red flag to all taxing authorities as to the magnitude of potential audit issues for which the taxing authorities should be looking.”¹²

By comparing the behavior of taxpayers and the government pre- and post-FIN 48, we show that some taxpayers that claim uncertain tax benefits with relatively strong positions are better off post-FIN 48. The shaded regions in Figures 5 and 6 are those in which the equilibrium behavior changes due to FIN 48. Consider Figure 5. When $x \geq 1 - \frac{c}{1+\pi}$ and the FIN 48 disclosure reveals that x is high, the “road map” makes taxpayers better off because the government does not audit the transaction and makes the government better off because it does not audit taxpayers with strong positions. FIN 48 provides a credible signal that the taxpayer has relatively strong facts—a signal that makes both parties better off. The effects of FIN 48 are more subtle when $1 - \frac{2c}{1+\pi} < x < 1 - \frac{c}{1+\pi}$ and $V < 2c - 1$. If $x \leq \frac{\pi-V}{1+\pi}$, then the FIN 48 disclosure deters the taxpayer from engaging in the transaction. This makes the government better off and the taxpayer worse off. On the other hand, if $x > \frac{\pi-V}{1+\pi}$, then the taxpayer is worse off because it faces certain audit, but the government is better off because the government conditions its audit on the FIN 48 disclosure. Figure 6 is similar to Figure 5; the only difference is the size of the regions. Specifically, the size of the shaded areas in which both parties are better off increases and the size of the shaded areas in which the government is better off but the taxpayer is either indifferent or worse off decreases.

In contrast, Figure 3 reveals that the behavior of neither the taxpayer nor the government changes when audit costs are sufficiently low. When $x_S < 1 - \frac{2c}{1+\pi}$, most taxpayers disclose $D = 0$, either because they do not engage in the transaction or because $x \geq x_S$. Because most taxpayers make the same FIN 48 disclosure, it is of little use as a signal. Conversely, taxpayers with $D > 0$ were being audited in the pre-FIN 48 regime, so the disclosure of their relatively weak facts has no effect on their probability of being audited.

Finally, we consider the effects of FIN 48 when $c \geq \frac{1+\pi}{4}$. There are two possibilities, which we explain but do not illustrate in a figure. If $c \geq \frac{1+\pi}{2}$, then auditing is too costly in either the pre-FIN 48 or post-FIN 48 environments. In each case, every taxpayer engages in the transaction and the government does not audit. If $\frac{1+\pi}{4} \leq c < \frac{1+\pi}{2}$, then auditing is too costly pre-FIN 48 but not necessarily post-FIN 48 because the government can condition its audit decision on the taxpayer’s FIN 48 disclosure. In absence of a FIN 48 disclosure, the government lacks a credible threat to audit any taxpayer if it would be unwilling to audit the average taxpayer ($x = \frac{3}{4}$). With a FIN 48 disclosure, the government is weakly better off because it audits some taxpayers that do not have strong facts and deters other taxpayers from claiming the uncertain tax position. Taxpayers are weakly worse off.

Overall, we see that FIN 48 can make the government better off but never makes it worse off. The FIN 48 “road map” is weakly valuable to the government. But the road map can also be valuable to the taxpayer, deterring audits with low expected payoffs to the government. Of course, the road map can also make the taxpayer worse off, either by deterring the taxpayer from entering into a transaction with uncertain tax benefits or by subjecting the taxpayer to a higher audit probability.

A second common conjecture is that FIN 48 may cause many issuers of GAAP financial statements to significantly overstate their ultimate tax liabilities (BNA 2006). Critics of FIN 48 note that because the recognition and measurement process of FIN 48 assumes that the government will audit a particular tax return filing position, the departure from expected value will cause the recorded liability to be greater than the expected tax payment. J. Howard Stecker, the V.P. and

¹² Available online at: http://www.fasb.org/jsp/FASB/CommentLetter_C/CommentLetterPage?project_id=1215-001 as of July 22, 2010.

Chief Tax Officer of Prudential Financial, wrote a comment letter to the FASB stating that the proposed interpretation “will have the effect of consistently overstating the tax accruals for uncertain tax positions [relative to the responsible professional judgment under FAS 5] in direct conflict with the conceptual framework of the Board.”¹³

Recall that x is the expected value of the tax benefit associated with an uncertain tax benefit that will be retained upon audit, α is the probability of being audited, and D is the difference between the “as filed” tax benefit of 1 and the median tax benefit retained on audit. Therefore, the expected tax liability is $\alpha(1 - x)$; however, the disclosed FIN 48 liability, D , is either 1, 0, or $1 - m(x)$. We denote a FIN 48 liability as either *overstated* when the disclosed liability exceeds the expected liability, *understated* when the expected liability exceeds the disclosed liability, or *correctly stated* when the two are equal.

When $D = 0$, the disclosed liability is correctly stated when $\alpha = 0$ and is understated otherwise. When $D = 1$, the disclosed liability is overstated. There are two factors that determine whether the disclosed liability is overstated or understated when $D = 1 - m(x)$: the distribution of expected tax benefit retained upon audit and the probability of audit. We explore both factors in turn. First, the implications of the distribution of the expected tax benefit retained on audit can be examined by comparing the expected liability, $1 - x$, to the disclosed liability, $1 - m(x)$, conditional upon audit (i.e., when $\alpha = 1$). These two liabilities can differ because the median retained tax benefit, $m(x)$, can be higher or lower than the mean retained tax benefit, x . Second, the implications of the probability of an audit can be addressed by comparing the expected liability, $\alpha(1 - x)$ to the disclosed liability, $1 - m(x)$. The expected liability conditional upon audit, $1 - x$, decreases when $\alpha < 1$. However, $\alpha < 1$ does not change the amount of the disclosed liability because FIN 48 does not incorporate audit probabilities into the measurement process. Thus, when the disclosed liability, $1 - m(x)$, exceeds the expected liability conditional upon audit, $1 - x$, $\alpha < 1$ exacerbates the amount by which the disclosed liability is overstated. However, when the expected liability conditional upon audit, $1 - x$, exceeds the disclosed liability, $1 - m(x)$, $\alpha < 1$ results in a disclosed liability that could be higher, lower, or equal to the expected liability, depending on the equilibrium value of α .

Comparison to Voluntary Disclosure Research

BDJ analyze the effect of voluntary taxpayer disclosure on the strategic interaction between the taxpayer and the government. Specifically, **BDJ** model the effect of allowing the government to waive a penalty if the taxpayer discloses the existence of a transaction that generates uncertain tax benefits. An important objective of **BDJ** is to determine the conditions under which taxpayer disclosure would occur. The disclosure in **BDJ**, if made, truthfully reveals the existence of the transaction rather than the strength of the taxpayer’s position; thus, in equilibrium, the decision to disclose provides only a coarse signal regarding the taxpayer’s private information. **BDJ** show that the disclosure can benefit both sides of the transaction because the taxpayer can avoid penalties, whereas the government enjoys lower audit costs.

In contrast, we model mandatory disclosure such that examining the conditions under which disclosure occurs is not relevant. An important difference of mandatory disclosure is that the disclosure itself does not *directly* affect the payoffs associated with the players’ possible actions; recall voluntary disclosures are made in **BDJ** to obtain penalty reductions. Furthermore, the mandatory disclosure pursuant to FIN 48 allows the government to learn the strength of the taxpayer’s

¹³ Available online at: http://www.fasb.org/jsp/FASB/CommentLetter_C/CommentLetterPage?project_id=1215-001 as of July 22, 2010.

uncertain tax position directly, instead of inferring it from the equilibrium disclosure decisions of all taxpayers.

Although the voluntary and mandatory disclosure settings feature important institutional differences, the effects of disclosure in each setting have both similarities and differences. Taxpayers with sufficiently strong facts (low p in [BDJ](#), high x in our study) do not change their behavior when disclosure is introduced in either the voluntary or mandatory disclosure settings, but actually benefit from the possibility of disclosure in each setting because they are audited less than if no disclosure was possible. In [BDJ](#), taxpayers with strong facts claim the uncertain tax benefit and do not disclose the transaction (i.e., the expected value of the penalty reduction is so low given the strength of their position that it does not outweigh the possibility of providing a roadmap to the government). However, the fact that other taxpayers do disclose induces the government to audit taxpayers with strong facts less frequently. In the mandatory disclosure setting, it is the direct disclosure of the strong taxpayers' facts that deters the government from auditing such taxpayers.

Some taxpayers with weaker facts do change their behavior when disclosure is introduced, but in quite different ways in the two settings. When disclosure is voluntary, the possibility of disclosure induces some of these taxpayers to claim the tax benefit and disclose the transaction; the possibility of disclosure makes these taxpayers better off. In contrast, taxpayers with weaker facts are weakly worse off in the mandatory disclosure setting, as their disclosure induces weakly more aggressive auditing from the government. The difference in the two settings is that the government must give up something (a penalty waiver) in the voluntary setting in order to induce the taxpayer to disclose. The government does not give up anything to get the disclosure in the mandatory disclosure setting. Thus, taken together, [BDJ](#) and our study create a cohesive understanding of the effects of voluntary and mandatory disclosure on strategic tax compliance.

VI. CONCLUSION

We investigate how the strategic interaction between publicly traded corporate taxpayers and the government changes as a result of a new accounting interpretation, FIN 48, which requires these taxpayers to disclose liabilities in public financial statements for uncertain tax benefits claimed on a tax return. Our model provides two interesting insights that could not be gleaned from a cursory examination of FIN 48.

First, we show that taxpayers are not necessarily harmed by FIN 48. In fact, we find that taxpayers with strong positions have higher expected payoffs post-FIN 48. Although the disclosed liability does provide a roadmap in our simple one-position, one-jurisdiction model, mandatory disclosure permits taxpayers with strong facts to benefit through truthful reporting of little or no liability. This positive effect of FIN 48 for some taxpayers has not been documented to date. In addition, taxpayers with weaker facts are not necessarily harmed by FIN 48, even when the disclosure provides a "perfect roadmap" for the government. This observation results from the nuanced relation between x and c , whereby uncertain tax benefits claimed cannot be extracted from taxpayers except through a costly audit, settlement, and collection process.

Second, we find that the liability disclosed under FIN 48 can be overstated or understated relative to the expected cash payment. In contrast, International Financial Reporting Standards (IFRS) differ from U.S. Generally Accepted Accounting Principles (GAAP) by using an expected value approach, which differs from the two-step recognition and measurement process under GAAP. If expected values are more relevant to shareholders, then convergence toward IFRS standards, accompanied by disclosure, could potentially improve financial reporting.

Our model imposes certain simplifying assumptions. Critical among these is truthful reporting of the FIN 48 liability, because we assume that independent auditors and regulators assure such reporting in the post-Sarbanes-Oxley period. If independent auditors assure such truthful reporting and if the IRS relies upon it, then one effect of FIN 48 appears to be the substitution of indepen-

dent auditors for the government. That is, if the independent auditors decide that the tax position is so strong that that all the benefit can be recognized and no liability recorded, then the IRS can forgo examination. Because all public corporations receive independent audits of their GAAP financial statements but the IRS does not have the budget to examine all taxpayers, shifting this role could increase overall tax compliance by directing IRS attention to taxpayers with the weakest cases and deterring some aggressive tax claims. To the extent that mandatory disclosure and post-SOX auditing rigor requires independent auditors to evaluate the merits of uncertain tax benefits, government audit costs could decrease or government audits will be targeted more effectively. However, there may be a higher deadweight social cost due to a higher independent audit costs. Future analytical work could consider incentives and constraints for taxpayers to falsify their disclosures.

We believe our model also has various testable empirical implications. Over time, researchers could study whether the IRS more frequently audits returns with high disclosed liabilities relative to claimed tax benefits or whether FIN 48 reduces the amount of tax planning done in large public companies. In the short run, experiments and field studies could contribute evidence to test some of the implications of our model.

APPENDIX A

Proof of Proposition 1 (Pre-FIN 48)

- (a)(i) Not auditing when $a = N$ is a dominant strategy for the government because $c > 0$.
- (a)(ii) The government will audit when $a = Y$ if $E[-x + \pi(1 - x) - c] > -1$. Given that only taxpayers with $x \geq \frac{\pi - V}{1 + \pi}$ choose $a = Y$, $E[x | a = Y] = \frac{1 + 2\pi - V}{2 + 2\pi}$. Therefore, the government's expected payoff from auditing when $a = Y$ is $\frac{V - 1}{2} - c \geq -1$ because $V > 2c - 1$. Therefore, the government audits all tax returns of $a = Y$.
- (a)(iii) A taxpayer of type x will choose $a = Y$ if and only if the expected payoff is greater than 0, the payoff from choosing $a = N$. Given that the government audits all tax returns of $a = Y$, the taxpayer's expected payoff from reporting $a = Y$ is $E[V + x - \pi(1 - x)] \geq 0$ for all $x \geq \frac{\pi - V}{1 + \pi}$. Therefore, taxpayers for whom $x \geq \frac{\pi - V}{1 + \pi}$ choose $a = Y$, and other taxpayers choose $a = N$.
- (b)(i) Same argument as in (a)(i).
- (b)(ii) Given that only taxpayers with $x \geq 1 - \frac{2c}{1 + \pi}$ choose $a = Y$, $E[x | a = Y] = \frac{1 - c + \pi}{1 + \pi}$. The government is indifferent between auditing and not auditing tax returns of $a = Y$ because $E[-x + \pi(1 - x) - c] = -1$. Therefore, the government's strategy of auditing tax returns of $a = Y$ with probability $\alpha = \frac{1 + V}{2c}$ is a best response. Because $V < 2c - 1$, α is bounded above by 1 and because $V > -1$, α is bounded below by 0.
- (b)(iii) A taxpayer of type x will choose $a = Y$ if and only if the expected payoff is greater than 0, the payoff from choosing $a = N$. Given that the government audits when $a = Y$ with probability $\alpha = \frac{1 + V}{2c}$, the expected payoff from choosing $a = Y$ is $\alpha[V + x - \pi(1 - x)] + (1 - \alpha)[V + 1] = \frac{(1 + V)[2c - (1 + \pi)(1 - x)]}{2c} \geq 0$ for all $x \geq 1 - \frac{2c}{1 + \pi}$. Because $c < \frac{1 + \pi}{4}$ the cutoff-value for x is greater than $\frac{1}{2}$. QED

Proof of Proposition 2 (Post-FIN 48: $x \geq x_3$)

- (a)(i) Not auditing when $a = N$ is a dominant strategy for the government because $c > 0$.
- (a)(ii) The government will audit when $a = Y$ if $E[-x + \pi(1 - x) - c] > -1$. Given all taxpayers for whom $x \geq \frac{\pi - V}{1 + \pi}$ choose $a = Y$, the government's expected payoff from auditing when $a = Y$ is $\frac{V - 1 - 2c}{2} \geq -1$ because $V \geq 2c - 1$, and $E[x | x \geq \frac{\pi - V}{1 + \pi}] = \frac{1 + 2\pi - V}{2(1 + \pi)}$. Therefore, the government audits whenever $a = Y$.

- (a)(iii) A taxpayer of type x will choose $a = Y$ if and only if the expected payoff is greater than 0, the payoff from choosing $a = N$. Given that the government audits all tax returns of $a = Y$, the expected payoff to the taxpayer when $a = Y$ is $E[V + x - \pi(1 - x)] > 0$ for all $x \geq \frac{\pi - V}{1 + \pi}$.
- (b)(i) Same argument as in (a)(i).
- (b)(ii) Given that only taxpayers for whom $x \geq 1 - \frac{2c}{1 + \pi}$ choose $a = Y$, $E[x | a = Y] = \frac{1 - c + \pi}{1 + \pi}$. The government is indifferent between auditing and not auditing tax returns of $a = Y$ because $E[-x + \pi(1 - x) - c] = -1$. Therefore, the government's strategy of auditing tax returns of $a = Y$ with probability $\alpha = \frac{1 + V}{2c}$ is a best response. Because $V < 2c - 1$, α is bounded above by 1 and because $V > -1$, α is bounded below by 0.
- (b)(iii) A taxpayer of type x will choose $a = Y$ if and only if the expected payoff is greater than 0, the payoff from choosing $a = N$. Given that the government audits tax returns of $a = Y$ with probability $\alpha = \frac{1 + V}{2c}$, the expected payoff from reporting $a = Y$ is $\alpha[V + x - \pi(1 - x)] + (1 - \alpha)[V + 1] = \frac{(1 + V)[2c - (1 + \pi)(1 - x)]}{2c} \geq 0$ for all $x \geq 1 - \frac{2c}{1 + \pi}$. The cutoff-value for x is greater than x_S because $x_S < 1 - \frac{2c}{1 + \pi}$. QED

Proof of Proposition 3 (Post-FIN 48: $\frac{1}{2} < x < x_S$)

- (a)(i) Not auditing when $a = N$ is a dominant strategy for the government because $c > 0$.
- (a)(ii) The government will audit when $a = Y$ if $E[-x + \pi(1 - x) - c] > -1$. Auditing all tax returns of $a = Y$ is a best response by the government because $x < \frac{1 + \pi - c}{1 + \pi}$.
- (a)(iii) A taxpayer of type- x will choose $a = Y$ if and only if the expected payoff is greater than 0, the payoff from choosing $a = N$. Given that the government audits all tax returns of $a = Y$, the expected payoff from choosing $a = Y$ is $V + x - \pi(1 - x) \geq 0$, which is positive if and only if $x \geq \frac{\pi - V}{1 + \pi}$.
- (b)(i) Same argument as in (a)(i). The government will audit a tax return of $a = Y$ if $\pi(1 - x) - x - c \geq -1$. Not auditing when $a = Y$ is a best response by the government because $x \geq \frac{1 + \pi - c}{1 + \pi}$.
- (b)(ii) Given that the government does not audit any tax returns, all taxpayers prefer $a = Y$ to $a = N$. QED

APPENDIX B

To model the measurement processes of FIN 48, we introduce the function $m(x)$, which represents the median tax benefit retained upon audit, given x . The uncertain tax benefit recognized under FIN 48 is equal to $1 - m(x)$. We make no assumption about whether $m(x)$ is greater or less than x ; medians can be above or below means. We assume that $m(x)$ is continuous, $m(0) = 0$, and $m(1) = 1$. We also assume that $m'(x) \geq 0$ for all $m(x) < 1$. Below, we provide an example of a probability distribution of audit outcomes that is consistent with all of these assumptions.

Suppose a firm with private information x retains a tax benefit y that is equal to 1 with probability $p(x) = x^2$, and drawn from a distribution $f(y) = x[y^{x-1}]$, $0 < y < 1$ otherwise. This distribution has the following properties. First:

$$\int_0^1 x[y^{x-1}]dy = 1,$$

which is required for a valid probability density function. Second:

$$p(x) + [1 - p(x)] \int_0^1 xy[y^{x-1}]dy = x,$$

so the expected retained tax benefit upon audit is equal to the value of the taxpayer's private information. Third, the median of the distribution, $m(x)$, is the value of y that solves:

$$[1 - p(x)] \int_0^{m(x)} x[y^{x-1}]dy = \frac{1}{2},$$

which has a solution of $m(x) = [2(1 - x^2)]^{-1/x}$, $1/2 \leq x < \sqrt{2}/2$, and $m(x) = 1$ if $\sqrt{2}/2 \leq x \leq 1$, which has all the assumed properties of the $m(x)$ function.

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