Changes in Tax Reserves in Anticipation of FIN 48*

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Abstract

FIN 48, *Accounting for Uncertainty in Income Taxes*, introduces new disclosure and computational requirements that reduce discretion in estimating tax reserves. FIN 48's adoption rule requires firms to record cumulative effect adjustments in stockholders' equity rather than through earnings. We predict that over-reserved firms will decrease their tax reserves in advance of adoption because such releases will enhance earnings and potentially decrease visibility to the IRS. We analyze 2006 and 2007 disclosures for 200 non-financial, non-utility firms followed by analysts. We find that firms are more likely to decrease reserves in the quarters prior to adopting FIN 48 if they have excess reserves, even controlling for settlements. Our study sheds light on how firms that held excess reserves, either because of conservatism or earnings management, reacted when FIN 48 increased the cost of maintaining excess reserves. Moreover, our results suggest that an unintended consequence of providing equity adjustments for cumulative effect adjustments is that companies will leak beneficial effects into earnings before adoption.

Additional comments welcome.

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*An earlier version of this paper was titled, "Do Firms Eat their Tax Cookies before FIN 48 Reveals the Cookie Jar?"

Changes in Tax Reserves in Anticipation of FIN 48

1. Introduction

We examine disclosed changes in tax reserves between enactment and adoption of Financial Interpretation No. 48 (FIN 48), *Accounting for Uncertainty in Income Taxes*, to learn whether the FASB's adoption rules affect pre-adoption reporting. FIN 48 standardizes recognition and measurement of uncertain tax benefits and also requires, for the first time, that firms disclose the amount of their reserves for unrecognized tax benefits. On adoption of FIN 48, firms must record any cumulative effect of a change in reserves for uncertain tax benefits (UTB) as an adjustment to opening stockholders' equity.

Firms whose reserves are insufficient benefit from this treatment because they avoid an earnings decrease when they increase their reserves. However, we expect that over-reserved firms would prefer to decrease reserves in advance of adoption. Doing so increases earnings rather than merely stockholders' equity and also potentially reduces IRS and other political scrutiny. For these reasons we predict that firms with estimated excess reserves at enactment will decrease reserves and thus increase earnings in the quarters prior to FIN 48 adoption.[1]

Although the incentive to "use it [earnings] or lose it" seems clear, we are unsure whether firms were able to take advantage of the asymmetric earnings treatment associated with FIN 48 adoption. The Sarbanes-Oxley Act of 2002 (SOX) mitigated much of the discretion in tax accounts. Auditors conducting SOX Section 404 audits identified numerous material control weaknesses in firms' tax accounts (KPMG 2006,

[1] For firms in our sample, FIN 48 was adopted at the beginning of the 2007 fiscal year. None of our sample firms adopted FIN 48 early, nor have we heard of any early adopters. Enacted in July 2006, FIN 48 became effective for calendar year firms on January 1, 2007.

23-24; Gleason, Pincus and Rego 2007). As a result, anecdotal evidence suggests that auditors now require documentation of total tax reserves by year and tax jurisdiction, limiting managers' discretion in adjusting tax reserves, even related to IRS settlements. In addition, tax directors seem less willing to view their departments as sources of earnings management following SOX. For instance, in 2001, surveys identified tax departments' top priorities as effective tax rate (ETR) management and cash tax savings, but by 2006, accurate and timely financial reporting and SOX 404 compliance had moved to the top of the list.[2]

As prima facie evidence that firms could not act entirely opportunistically, firms did not eliminate all excess reserves prior to adoption. Our descriptive statistics show that more than a third of firms with excess reserves decrease their reserves in whole or part at adoption of FIN 48 rather than before adoption. Thus, the extent to which firms responded to pre-adoption incentives is an open question.

We examine financial statement disclosures related to tax reserves and FIN 48 during 2005 and 2006 for a sample of 200 firms with December 31 fiscal year-ends. Our sample is composed of the 100 largest and 100 smallest non-regulated and non-financial public companies that are covered by at least five analysts on the Institutional Brokers Estimate System (I/B/E/S).[3] The disclosures allow us to determine whether a firm increases or decreases reserves, but not necessarily the amount of the change. Thus, for

[2] http://www.kpmg.com/aci/docs/surveys/KPMG_Tax_Survey.pdf. Similarly, Ernst and Young documents that ensuring tax accounts and disclosures in financial statements are correct and managing tax risk in general are the two leading measures of tax department performance. http://www.ey.com/GLOBAL/content.nsf/International/TARAS_-_Global_Tax_Risk_Survey_2006

[3] We require five or more analysts even for our small firm sample to identify public firms that are motivated to meet/beat analysts' forecasts. We selected these 100 small and 100 large firms in Fall 2006 to construct a proxy for over- or under-reserved prior to FIN 48 data becoming available. As expected, preliminary tests suggested that large firms were more likely to release tax reserves in 2006 consistent with firms facing greater IRS scrutiny recording larger reserves.

most of our tests, we employ indicator variables related to the sign of the change.

Using the provisions of FIN 48, we test whether firms that are over-reserved at enactment are more likely than other firms to decrease reserves in the quarters prior to adoption. We compute the change in reserves following FIN 48 enactment as the sum of the change in reserves at adoption and any disclosed changes in the third and fourth quarters of 2006. If the net change represents a release, we designate the firm as over-reserved at enactment. A firm is under-reserved if the net change increases reserves.

Univariate tests are consistent with our prediction that, on average, firms with excess reserves began to release them after FIN 48 enactment and prior to its adoption. Specifically, univariate tests show a significant increase in the number of firms disclosing decreases in reserves in quarters three and four of 2006 relative to 2005. In contrast, few firms disclose increases to reserves in the quarters before adoption. The number of firms increasing reserves is not significantly different between 2006 and 2005.

Using a logit model, we regress the sign of the reserve change in quarters three and four of 2006 on a dummy variable for whether the firm had excess reserves at enactment. Because settlements provide a discrete event that resolves uncertainty about issues under audit, we control for disclosures of settlements with a tax authority. We include controls to capture tax reserve activity unrelated to FIN 48 adoption, including firm size, number of disclosed jurisdictions, the last tax return year closed by the IRS, and the effective tax rate. We also control for the difference between the imputed pre-adoption reserve and the expected outstanding tax owed to the IRS, which we estimate using historical IRS examination and settlement data.

As predicted, we find that firms with excess reserves at enactment are more likely

to decrease reserves through quarterly earnings prior to FIN 48 adoption than are other firms, all else equal. We find no evidence that firms that are under-reserved are more likely to increase reserves prior to adoption. We also find that settlements are strongly related to releasing reserves, consistent with incentives for over-reserved firms to settle disputes with the IRS prior to adopting FIN 48. Together, our evidence suggests that many firms with excess reserves sought to resolve uncertainties prior to adoption. Such resolution permitted firms to record releases as increases to earnings rather than as increases to stockholders' equity. In our sample, firms that appear to have excess reserves at enactment released about half of their aggregate $8.6 billion in reserves before adoption.

Our result that firms with excess reserves are more likely to release reserves prior to adoption is robust to various samples and specifications. Specifically, our results are robust to replacing the dependent variable with the expected rather than the actual release, using the excess reserve at adoption rather than the imputed excess at enactment, using continuous explanatory or dependent variables, eliminating firms with no reserve, including industry indicators, and eliminating firms with losses. In an extension of Dhaliwal, Gleason and Mills (2004), we find weak evidence that releases are more likely if over-reserved firms would have missed their fourth quarter consensus forecast without a decrease in tax expense. Finally, we find no evidence that firms are attempting to "hide" from the tax authorities by removing all reserves from their books in advance of FIN 48 adoption.

Our evidence, consistent with opportunistic behavior around FIN 48, has broader implications for other changes in accounting standards. Adoption rules that record

cumulative effects in equity create asymmetric reporting incentives. One example is Statement of Financial Accounting Standards No. 154 (SFAS 154), *Accounting Changes and Error Corrections*, which applies to all voluntary changes in accounting principle and mandatory changes where other adoption guidelines are not specified. SFAS 154 directs firms to adjust the beginning balance of retained earnings unless retrospective application is impracticable.[4] If the voluntary change is favorable to net income in the year of change, firms may claim that retrospective application is impracticable and include the change in net income, following APB Opinion No. 20. On the other hand, if the voluntary change would decrease net income, the likelihood that firms will follow SFAS 154's retrospective application and adjust retained earnings might be greater. SFAS 159, *The Fair Value Option for Financial Assets and Financial Liabilities*, provides another example. Investment advisors touted the adjustment to equity rather than to earnings as the "FAS 159 Mulligan" (Leone 2007; Henry and Kopecki 2007). In contrast to that setting, we found no business press articles highlighting the incentive to release reserves before FIN 48 adoption. Thus, it does not appear that regulators anticipated our results. Although pressure from the Securities & Exchange Commission (SEC) appears to have reigned in early abuses related to SFAS 159, the potential for asymmetric incentives to increase accounting opportunism is evident.

2. Background and hypothesis

2.1 Brief technical details

Corporations and external auditors applied a variety of accounting methods to recognize and estimate uncertain tax benefits prior to FIN 48. In the appendix, we

[4] APB Opinion No. 20 required that the cumulative effect of accounting changes be recorded in income. Currently, many changes in method require retroactive restatement of the financial restatements. Because FIN 48 does not require restatement, our results may not fully generalize to other settings.

illustrate typical journal entries common to periods before and after FIN 48. The differences arise not in the basic entries, but in the estimation method, which also potentially affects when firms should record tax benefits and liabilities.

The diversity in measurement before FIN 48 arose in part because SFAS 109, *Accounting for Income Taxes*, did not address uncertainty in accounting for income tax assets and liabilities (FIN 48, *Summary*). SFAS 5, *Accounting for Contingencies*, provides authoritative guidance for recognition and disclosure of contingent losses, and many companies applied this guidance to uncertain tax benefits. Under SFAS 5 companies should record tax reserves to offset tax benefits when losses are probable and the amount or range of loss is estimable.[5] FIN 14's interpretation of SFAS 5 directs firms to record the lower estimate of a liability when no amount of a range of loss is more likely than another amount. However, not all taxpayers followed SFAS 5 to estimate uncertain tax benefits. KPMG auditors reported that their firm policy required companies to record a contingency unless the uncertain tax position had a 70 percent or higher probability to survive a challenge by the IRS.[6] Anecdotally, other firms suggest that many clients used an expected value approach to recording contingent liabilities. In summary, practice varied widely.

FIN 48 establishes a benefit approach for recognizing uncertain tax benefits. Specifically, FIN 48 requires a firm to identify uncertain tax positions and evaluate each position in two steps:

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[5] The FASB (SFAS 5, para. 65) recognized that many investors preferred stable earnings and firms could build reserves that they could later use to smooth earnings. However, the FASB stated that "earnings fluctuations are inherent in risk retention, and they should be reported as they occur." There is also evidence that under SFAS 5 some firms used lower probability thresholds for recording tax-related contingencies.

[6] The Permanent Subcommittee on Investigations of the Committee on Homeland Security and Governmental Affairs (PSICHSGA) of United States Senate "The role of professional firms in the U.S. tax shelter industry" on February 8, 2005.

(1) Determine whether it is more likely than not that the tax position will be sustained upon examination, including related appeals or litigation, based on its technical merits. An important difference from past practice is that a company must assume that the appropriate taxing authority will audit the company's books and will have knowledge of all relevant information.[7] If an uncertain tax position fails this "more likely than not" test, the firm cannot recognize any of the benefit. Instead, the firm records a tax liability equal to the amount of the uncertain tax position.

(2) If the company determines that the more likely than not standard is met, then the company must measure the tax position to determine the amount of the benefit that should be recognized on its financial statements. The recognized benefit is the largest amount of benefit that is more than 50 percent likely to be realized upon ultimate settlement.[8] In essence, the firm has a reserve for the difference between the benefit claimed on the return and the benefit recognized in income as a result of applying steps (1) and (2).

The most controversial aspect of FIN 48, from taxpayers' point of view, is the new requirement for detailed disclosure of the reserve for uncertain tax benefits.[9] FIN 48

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[7] Although SFAS 5 does not directly permit firms to consider audit probability and detection risk, FIN 48 explicitly prohibits such consideration by basing recognition on the technical merits of the position, assuming that the tax enforcer has all relevant information. That clarification and our anecdotal conversations with audit firms over the last decade suggest that many firms with low audit probabilities recorded smaller tax reserves prior to FIN 48. Mills, Robinson and Sansing (2008) analyze conditions under which reserves either increase or decrease as a result of FIN 48. The result depends on whether the mean benefit retained after audit is larger or smaller than the median benefit assuming audit.

[8] See FASB Staff Position (FSP) No. FIN 48-1, *Definition of Settlement in FASB Interpretation No. 48*, which changed the rule from ultimate to effective settlement.

[9] Under SFAS 5, if no accrual is made for a loss contingency, or if the loss in excess of the amount accrued is reasonably possible, firms should disclose the contingency (Para 10). SFAS 5 also directs firms to disclose amounts recorded for contingent losses if the absence of such disclosure would be misleading to financial statement users. Historically, few firms disclose tax-related contingent losses and most that do use boilerplate language. Gleason and Mills (2002) examine financial statements and footnotes for a sample of the 100 largest industrial firms over a nine-year period from 1987-1998. They find that only 27 percent of firm-years mention tax contingencies. Using a text search of 1993-2005 10-Ks, Blouin and Tuna

requires the following disclosures on an annual basis:

- a tabular reconciliation of the beginning and ending balances of the recorded liability for unrecognized tax benefits;
- the total amount of unrecognized benefits that would affect the ETR (i.e., the "permanent" effects);
- the amounts of accrued interest and penalties. A firm may record interest and penalties either in interest expense and SG&A, or as part of income tax expense, but it must disclose its classification choice;
- a description of any possible changes expected in the coming 12 months;
- the years still open to examination in major filing jurisdictions.

FIN 48 requires a company to report the effect of adopting FIN 48 as a "change in accounting principle" and record any cumulative-effect adjustment as an adjustment to the opening balance of the company's retained earnings account for the fiscal year of adoption. Because prior accounting methods were diverse, the adoption adjustment does not imply that the firm was improperly accounting for its reserves previously.

2.2 Hypotheses

The judgment inherent in estimating reserves makes them a ripe setting for earnings management. For instance, Petroni (1992) finds that property-casualty insurers under-provide for claim losses in an effort to mask poor financial performance from insurance regulators. Jones (1991) finds that U.S. companies appeared to decrease earnings using discretionary accruals during a period when the U.S. International Trade Commission was considering increasing import tariffs on foreign companies. The complexity of tax expense makes it a particularly difficult account for users to understand. For example, Plumlee (2003) finds that analysts have difficulty predicting changes in tax rates. Until recently, the lack of clear authority regarding uncertain tax benefits exacerbated the opaqueness of tax accounting. Thus, corporations could manage

(2007) find only 20 percent of firms that report the existence of a "tax cushion" or "tax contingency" disclose any information regarding the level or the change in tax reserves from 1993 to 2005.

earnings through the discretion in recording tax reserves for uncertain tax benefits.

Prior evidence suggests firms use tax expense for earnings management. Dhaliwal et al. (2004) show that firms often achieve analysts' forecasts through tax expense decreases. Blouin and Tuna (2007) find that firms appear to use tax reserves to smooth earnings. Firms could under-record tax reserves to increase earnings. Alternatively, during good times firms could build excess tax reserves as a cookie jar to be released when earnings are needed. Gupta and Laux (2007) document 120 disclosures of reserve releases between 2003 and 2005 for a random sample of 100 firms in the S&P 500 Index. They find that in 47 percent of quarters with releases, firms would have missed their earnings forecast in the absence of the reserve reversal.

We do not claim that all tax reserves are the result of opportunistic accounting. Anecdotal evidence is consistent with large firms having sufficient reserves to avoid earnings decreases when firms settle with the IRS during IRS examinations. For example, Glaxo Smithkline reported a record settlement with the IRS in September 2006 for $3.4 billion. The company stated that there was no "earnings hit" because they were adequately reserved (Hilzenrath 2007), and the 2006 annual report shows no reserve release, indicating that Glaxo Smithkline had adequate, but not excessive reserves.

The adoption rules of FIN 48 change the incentives to build or release reserves. Under-reserved firms avoid an earnings decrease by recording the increase to reserves as an adjustment to stockholders' equity as required under FIN 48. In contrast, firms with excess reserves do not benefit as much from an equity adjustment as they would from releasing reserves to earnings. So, firms may generally believe the excess reserves represent a "use it or lose it" earnings opportunity between FIN 48 enactment and

adoption. On average, we expect that managers generally prefer more earnings to less, due to various incentives such as meeting earnings benchmarks associated with analysts, compensation contracts, or debt agreements.[10] To the extent the pre-adoption period represents a one-time chance to bring excess reserves into earnings, the incentive that we are studying applies broadly to any accounting standard enactment period.

In addition to the earnings incentive, firms may wish to release reserves prior to FIN 48 adoption to reduce political or IRS scrutiny. For example, FIN 48 disclosures led the Senate Permanent Subcommittee on Investigations to send letters on August 23, 2007 to 40 taxpayers requesting additional detail supporting FIN 48 disclosures related to "transactions, activities or structures involving foreign entities or jurisdictions." Those firms that released reserves early may have avoided receiving this confidential letter.

Disclosure of tax reserves also potentially increases IRS scrutiny, although this was not the intent of the FASB.[11] As far as we know, the IRS has not historically used financial statement footnote data to select a return for audit, although the business press has raised such concerns for the future.[12] In discussing the FASB's issuance of FIN 48,

[10] In addition, if some portion of the market's participants fixates on earnings (Deitrich 1984; Hand 1989; Chen and Schoderbek 2000), or managers believe they do, then firms should prefer to report higher earnings. Because classification of amounts on an income statement impacts firm valuation (Elliott and Shaw 1988), firms appear to manage the classification of amounts on the income statement (McVay 2006). Recording the change in method directly to retained earnings is similar in spirit to the ultimate reclassification: the effect of the cumulative change is altogether excluded from net income. We do not expect or test cross-sectional differences in incentives that would typically exist when the choice is one of timing: increase earnings now or later. In supplemental tests, however, we consider whether the reserve releases generate substantial forecast errors.

[11] FASB member Edward Trott told the Tax Council Policy Institute's Tax Policy and Practice Symposium in Washington that the FASB did not impose the disclosure requirements for the sake of the IRS. Rather, he stipulated that the FASB's disclosure position was to provide better information to the capital markets. The FASB believes that the IRS has substantial other data to uncover noncompliance and FIN 48 is not a substantial new tool ("SEC Encourages Issuers to Use Own Judgment in FIN No. 48 Disclosures" (February 7, 2007). *RIA Checkpoint Corporate Finance Weekly Update* 7(6)).

[12] See Internal Revenue Manual Section 4.46 for current audit procedures for large firms. The IRS audits the largest corporations regularly under the Coordinated Industry Cases program. Our 100 large firms probably face high audit probabilities already. However, half our sample of small firms has financial statement assets between $10 million and $250 million, and the 2006 IRS Data Book reports that the IRS

Robert Willens of Lehman Brothers commented, "[It] would not be overstating the case to conclude that FIN 48 may prove to be one of the most significant enforcement tools the IRS has been presented with in recent years."[13] Mills, Robinson and Sansing (2008) model the strategic interaction between the taxpayer and the government before and after FIN 48. Their model suggests that the IRS can use the FIN 48 disclosed tax reserve as a signal of the strength of the taxpayer's underlying position, given that the IRS observes the taxpayer claiming an uncertain tax benefit on its return. Thus, companies with large reserves face higher audit probabilities after FIN 48 reveals the reserve. This prediction is consistent with taxpayer beliefs. On May 9, 2007, KPMG surveyed about 4,000 webcast participants with the question "Is FIN 48 likely to increase audits by tax enforcers?" Fifty-two percent answered "highly likely," and 37 percent answered "likely."[14] Thus, even if actual audit probabilities do not increase, firms may change their reporting because they believe probabilities will increase. All else equal, we predict that firms with excess reserves prefer to release them in 2006, because maintaining a cookie jar for financial reporting purposes is more costly for tax purposes starting on January 1, 2007. In the extreme, firms could avoid scrutiny by reducing their contingent tax liability to zero.

However, various constraints may mitigate firms' opportunistic behavior. First,

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audits about 14 percent of firms that size. Our remaining small firms are larger than $250 million of assets, and the audit probabilities generally increase with asset size.

[13] Willens (2006). On April 12, Deborah Nolan, IRS LMSB Division Commissioner, affirmed that the IRS is reviewing its policy of restraint on requesting tax accrual workpapers. She added that the LMSB "does not have a policy on asking for the [FIN 48] list" but that taxpayers may volunteer the information in order to get certainty. However, as of April 12, less than 20 taxpayers had used the IRS audit issue resolution process for uncertain tax positions, signaling that taxpayers are not yet willing to offer transparency in exchange for certainty. Fanning such fears was a comment by Robert D. Adams, senior adviser to the commissioner of the IRS Large and Midsize Business (LMSB) Division, that the IRS might reopen an audit more often than it has in the past to ask about a FIN 48 disclosure (Stratton (2007) TaxNotes April 13, 2007).

[14] KPMG Tax Governance Institute 5/9/07 Webcast, FIN 48: The First Quarter Experience.

because internal control audits under SOX Section 404 revealed widespread material control weaknesses in tax accounting systems, tax expense accounts have been under additional scrutiny following SOX.[15] Thus, perhaps firms had fewer excess reserves when the FASB enacted FIN 48. Second, the SEC could view opportunistic reporting of reserves as counter to GAAP, requiring a restatement.[16] As noted before, KPMG's 2006 Tax Department Survey indicates that tax directors now place a higher priority on accurate and timely financial reporting and SOX 404 compliance than on ETR management or cash tax savings, which were the higher priorities in 2001. Finally, firms may prefer to retain excess reserves for future earnings management. Although FIN 48's purpose is to impose more structure and constrain discretion, it is too early to tell whether it will succeed. If managers believe the benefit of having a cookie jar for future earnings management exceeds the cost of potentially higher IRS scrutiny, they could maintain excess reserves even after adoption, counter to our prediction. Future research can investigate whether tax-related earnings management decreases after FIN 48.

Excess reserves, as measured by FIN 48 standards, are not necessarily indicative of opportunistic reserves. Rather, some firms may record contingent losses conservatively without any intention to manage earnings in the future. The wide variation in practice pre-FIN 48 suggests that some firms will have excess reserves, particularly if their audit firm required the benefit to meet a probable threshold for recognition. Whether the excess is associated with opportunism (cookie jar), conservatism, or method change, the

[15] Tax weaknesses were included in 30 percent of filings reporting material weaknesses (Federal Taxes Weekly Alert, 12/22/2005; Hanlon and Krishnan 2005).

[16] Although the SEC's Staff Accounting Bulletin 108 makes explicit the requirement to evaluate the materiality of the cumulative and current effects of correcting errors, an SEC staff member on a KPMG webcast seemed to indicate that the SEC would attribute differences between reserves and audit outcomes to changes in estimate, if the bases for initial assumptions were documented. Thus, we are unsure how powerful an incentive the SEC oversight is in this setting.

earnings and scrutiny incentives should motivate a pre-adoption release to earnings.

In sum, we predict that excess reserves at enactment will be positively associated with decreases in reserves before adoption. If so, we will infer that firms responded opportunistically to the adoption requirements to benefit earnings. Alternatively, auditor scrutiny and managers' and audit committees' concerns about financial reporting accuracy may be sufficient to curtail opportunism. As we compare over-reserved firms to all other firms and to under-reserved firms, we construct two hypotheses as follows:

Hypothesis 1: The likelihood that a firm will decrease reserves in the quarters between enactment and adoption of FIN 48 is greater for firms that are over-reserved at enactment than for other firms.

Hypothesis 1a: The likelihood that firms that are over-reserved at enactment will decrease reserves in the quarters between enactment and adoption of FIN 48 is greater than the likelihood that under-reserved firms will increase reserves.

3. Research design

3.1 Test of H1

We test our main hypothesis by estimating whether the probability of releasing reserves during the pre-adoption period is associated with a firm having excess tax reserves at FIN 48 enactment (June 30, 2006). Because some firms disclose only the direction of a reserve change in their quarterly tax footnotes, we base our main tests on the existence of a reserve release, rather than on the amount of the reserve change. We maximize our sample by using an indicator dependent variable.[17]

We estimate the following binary logit model to test our hypothesis:

$$\ln \frac{P_{DecreasePRE48}}{1 - P_{DecreasePRE48}} = \beta X + \varepsilon$$

[17] Our results are robust to the use of a continuous variable in the model, setting to zero the handful of observations that disclose only "increase" or "decrease."

Where $P_{DecreasePRE48} = \frac{1}{1+e^{-(\beta x+\varepsilon)}}$ = the probability that the firm decreases reserves for uncertain tax benefits in the third or fourth quarter of 2006.

$$\beta X = \beta_0 + \beta_1 OverreservedEnactDummy + \beta_2 DiscloseSettlement + \beta_3 LogSales + \beta_4 \#Jurisdictions + \beta_5 LastYearClosed + \beta_6 ETR + \beta_7 (Reserve\text{-}Expected\ Loss)/Sales + e,$$

where:

DecreasePRE48 = one if the firm reduces its reserve during the third and fourth quarters of 2006; zero otherwise.
OverreservedEnactDummy = one if a firm is over-reserved as of June 30, 2006; zero otherwise.
DiscloseSettlement = one if the firm discloses in its tax footnotes in the third or fourth quarter of 2006 that it settled a dispute with a tax authority; zero otherwise.
LogSales = the natural logarithm of sales (Compustat data item #12) at December 31, 2006.
#Jurisdictions = the number of foreign jurisdictions and U.S. states with open tax years specifically mentioned in the first quarter 2007 FIN 48 disclosure.
LastYearClosed = The last year for which the IRS has completed its examination of the return per the first quarter 2007 FIN 48 disclosure.
ETR = The effective tax rate for fiscal year 2006 (Provision for income tax #16 / Pretax Income #170).
Reserve = Estimated reserve at enactment, equal to the disclosed Unrecognized Tax Benefit at adoption, plus any disclosed adjustments either at adoption or in quarters three and four of 2006.
Expected Loss = Estimate of expected loss at June 30, 2006, calculated using data from audited and unaudited returns (*see* Table 3 for calculation).

Our main relation of interest is whether firms with excess reserves at enactment decrease them through quarterly earnings before they adopt FIN 48. We assign *DecreasePRE48* equal to one if the firm reduces its reserve during the third and fourth quarters of 2006; zero otherwise. To estimate the amount by which a firm is over- or under-reserved on June 30, 2006, we add the change in retained earnings at January 1, 2007 to any disclosed reserve changes in the third and fourth quarter of 2006. We set

OverreservedEnactDummy equal to one if the sum of the changes is a negative number; zero otherwise.[18]

We control for several factors associated with the likelihood that a firm will release reserves, including whether the firm has a reserve to release. We acknowledged earlier that firms do not have complete discretion over decreases in reserves. Anecdotally, some auditors appear to permit a reserve release only when a new event verifies that reserves are too high – akin to recognizing a gain contingency. Gleason and Mills (2002) and Gupta and Laux (2007) find that a firm often releases reserves when a discrete event occurs that changes its information set, such as settling a dispute with a tax authority. Thus, we include a dummy variable (*DiscloseSettlement*) equal to one if the firm discloses that it settled a dispute in the third or fourth quarter of 2006; zero otherwise.[19]

We control for size using the natural log of sales, *LogSales*. Because large firms are more likely to have returns audited by tax authorities, they are more likely to record reserves and adjust reserves in any given period.[20] Large firms may also face political costs associated with being perceived as aggressive tax planners, as evidenced by attention from the Senate Foreign Relations Committee discussed earlier. These firms could have stronger incentives to reduce reserves prior to FIN 48 adoption in order to limit detailed disclosure. We also control for the number of foreign and state jurisdictions

[18] Nine firms are classified as over-reserved at June 30, 2006 even though the adoption adjustment to retained earnings is negative. In alternate tests, we measure our explanatory over-reserved binary variable as the sign of the cumulative effect adjustment to retained earnings at January 1, 2007. By ignoring the third and fourth quarter pre-adoption changes, this alternate test does not rely on voluntary disclosures of changes in reserves. However, to the extent firms eliminated reserves prior to adoption, the alternate test is less powerful.

[19] Examples of discrete events other than settlements include the following: expiration of the statute of limitations; resolution of uncertainties related to changes in foreign tax laws; and changes in estimates for tax benefits claimed on prior year tax returns and for tax reserves pertaining to prior period tax exposures.

[20] In preliminary work conducted prior to the availability of FIN 48 disclosures, we used large versus small firms as our proxy for likely over- versus under- reserve. We found that large firms were more likely to release reserves in the third and fourth quarters of 2006. We control for size in the regression because it was our original sample selection partitioning variable.

(*#Jurisdictions)* in which the firm reports that it has open tax returns. A limitation of this proxy is that many firms say they have open returns in several jurisdictions but do not provide a specific number. We include the last year for which the IRS has completed its examination of the return (*LastYearClosed*), as reported by the firm.

Firms with low ETRs may face political pressures (Zimmerman 1983) or additional IRS scrutiny if they appear to be aggressive in their tax positions. We conjecture that these firms prefer to report smaller reserves at FIN 48 adoption, and thus will decrease reserves prior to FIN 48 adoption. We include the ETR for the 2006 fiscal year as a control for such political pressures and expect lower ETRs to be associated with a higher likelihood of decreasing reserves. Because our measure of ETR includes any current year addition to the tax reserve, this variable will lack power to identify aggressive firms with large annual additions to their reserves. Our results are robust to using a four-year average long-run ETR.

We use confidential data on IRS examinations completed between March 1991 and March 2007 (of tax returns from 1960 through 2004) to control for tax compliance risk that the IRS historically detected and challenged. The confidential data include the tax deficiency (*Deficiency*) proposed by the IRS examiners and the amounts paid by the taxpayer to settle the examination (*Settlement*). *Settlement* equals all amounts paid in the examination, appeals or judicial process for closed returns.

We estimate *Expected Loss* on June 30, 2006 in several steps. First, we construct a measure of the firm's experience with settling deficiencies with the IRS. We use the ratio of the sum of the firm's settlements divided by the sum of the firm's deficiencies. We bound the ratio between zero and one. Second, we sum the deficiencies by firm for

all return-years for which IRS examinations are completed but not settled. Third, we multiply the historical settlement ratio by the sum of deficiencies on unsettled, audited returns to construct a measure of expected losses on open audited return-years. Fourth, we consider the unaudited returns (all return-years after the last completed examination, or three years if missing). We use the average of prior settlements and expected losses on audited returns as the annual expected loss on unaudited returns. Finally, we sum the expected losses on audited and unaudited returns to form our estimate of *Expected Loss*.

3.2 Tests of H1a

We employ a multinomial logistic regression to evaluate whether the relation between being over-reserved and releasing reserves is different from the relation between being under-reserved and building reserves. We allow both the change in reserve and the status of over- or under- reserved to take on three values of -1, 0, +1. If the January 1, 2007 reserve exceeds the estimated June 30, 2006 reserve, our explanatory variable takes on a value of positive one, indicating insufficient reserves on June 30, 2006. If the January 1, 2007 reserve is less than the June 30, 2006 reserve, the explanatory variable takes on a value of negative one. If there is no difference between the January 1, 2007 reserve and the estimated June 30, 2006 reserve, the explanatory variable equals zero. The dependent variable equals -1 if the firm releases reserves in the third or fourth quarters of 2006, 0 if it does not change reserves, and +1 if it builds reserves in the third or fourth quarters of 2006. A finding that having excess reserves at enactment explains changes in the reserve between enactment and adoption more than having either sufficient or insufficient reserves will provide support for H1a.

4. Sample description

We collect disclosures related to uncertain tax benefits for the 100 largest (based on average ranks of market value and total assets) and the 100 smallest, calendar year-end, non-regulated and non-financial firms that are followed by five or more analysts. Requiring at least five analysts to cover the firms excludes small, non-followed firms from our sample. We also require firms to have filed a 10-K for 2005 and 2006 and 10-Qs for the first three quarters of 2006 and the first quarter of 2007.

Table 1 describes the industry composition of the large and small firms in our sample. Most of the large firms are clustered in asset intensive industries: Durable Manufacturing (21 firms), Extractive Industries (16 firms), and Transportation (15 firms). For small firms, the largest industry category (38 firms) is Services, followed by Durable Manufacturing (20 firms).

Table 2, Panel A compares the actual change in tax reserves at FIN 48 adoption to the anticipated effects that firms disclosed in the fourth quarter of 2006 as tabulated in Blouin, Gleason, Mills, and Sikes (2007), hereinafter BGMS (2007). Almost as many large firms decrease tax reserves (39 firms) as increase reserves (41 firms). In contrast, 39 small firms increase tax reserves while only five small firms decrease tax reserves. When firms disclose an explicit expectation of the FIN 48 effect, that expectation was largely borne out. However, firms reporting that they were still evaluating the effect during 2006 often have a FIN 48 adjustment. Most small firms that were still evaluating the effect in 2006 increased reserves at adoption.

Table 2, Panel B summarizes the amounts of the reserve change at adoption. For large firms, the mean change equals $-19.11 million, which is 0.05 percent of assets. For comparison, BGMS (2007, Table 3) report that these firms in aggregate increased

stockholders' equity by about $2 billion to correct for being over-reserved. The mean change for small firms equals $0.55 million, which is 0.20 percent of assets.

5. Results

5.1 Univariate tests

Table 3, Panel A reports descriptive statistics for the large and small firms in our sample. By design, large firms have significantly higher values for all financial variables, including the amount of UTB. The change in reserve is not significantly different across the groups because the standard errors are large. On average, total UTB is substantial as a percentage of sales (3 percent for large firms and 1.1 percent for small firms) or as a percentage of pretax income (about 18 percent for both small and large firms). In untabulated tests, UTB that would affect earnings per share is 10 percent of pretax income for large firms and 13 percent of pretax income for small firms. We also describe the estimated UTB on June 30, 2006, and find that, consistent with firms releasing reserves, the average UTB is larger on June 30, 2006, than on January 1, 2007.

In addition to larger assets, sales, market value, and income, large firms also have higher returns on assets. Only five of the large firms have a loss in 2006, but 17 of the small firms do. We control for loss firms in supplemental tests. Effective tax rates are not significantly different between our large and small firms. However, large firms report in more jurisdictions and more years open under audit.

Among large firms, 39 percent disclose a settlement during the third or fourth quarter of 2006, as do three percent of the small firms. Finally, we report as of June 30, 2006 the scaled estimates of *Expected Loss* to the IRS and the scaled difference between the estimated tax reserve and this loss. For large firms, the mean estimated loss

approaches one percent of assets, and the difference between the reserve and the estimated loss (to the IRS) is another one percent of assets.

Table 3, Panel B reports the frequency of increases and decreases in tax reserves at FIN 48 adoption and in the surrounding quarters. In total, 60 of the 100 large firms disclose a change in reserves during 2006. This 60 percent is significantly higher than the 41 percent from 2005 (untabulated p-value = 0.01). In addition, firms disclose more information about reserves in 2006 than in the 1990s and early 2000s (see Gleason and Mills (2002) and Blouin and Tuna (2007)). The increase in firms reporting material changes in reserves in 2006 relative to 2005 and prior studies implies that firms increased disclosure in the quarters leading up to FIN 48 adoption. We find that only two firms completely eliminate their tax reserves before January 1, 2007.

For small firms, four, nine, and six firms disclose changes in 06Q3, 06Q4 and 07Q1, respectively. The infrequent changes suggest that small firms are less likely to experience events that significantly revise their estimates of tax loss.

Even without any manipulation, firms' normal tax reporting and planning activities will lead to increases and decreases in tax reserves. However, consistent with our hypothesis, the overwhelming majority of reserve changes disclosed in 2006 are decreases, and decreases in 2006 exceed decreases in 2005.[21] Few firms disclose increases in reserves prior to adopting FIN 48, and we observe little change in firm behavior related to reserve increases between 2005 and 2006.[22]

[21] We replicate our tests for decreases in reserves during 2005. There is no relation between being over-reserved at June 30, 2006, and releases during 2005. These results suggest that firms did not begin "clandestine" adoption of FIN 48 in 2005 when the FASB issued its exposure draft, which did not include additional disclosure provisions.

[22] We do not code as *Increases* in Q1 of 2007 those observations that only report increases in accrued interest on UTBs in their FIN 48 disclosures.

In Panel C, we compare reserve releases to our estimate of excess reserves at enactment. For the 66 firms that have excess reserves at June 30, 2006, the aggregate excess is about $8.6 billion. During the 3rd and 4th quarters of 2006, the aggregate releases are $4.2 billion by 43 firms. Settlements account for only 32 releases, less than 75 percent. By comparison, settlements account for nearly all reserve releases in 2005, both in frequency and amount.[23] Overall, this panel suggests that firms succeeded in releasing half of their excess reserves between enactment and adoption.

Table 3, Panel D indicates that a higher than expected proportion of firms that have imputed excess reserves on June 30, 2006 release reserves prior to adopting FIN 48. We have no evidence from public data or from discussions with the IRS that settlements increased directly in response to FIN 48. Available public IRS statistics show no obvious trend from 2004 to 2006 that would be consistent with firms anticipating FIN 48. For large corporations ($250 million of assets or more), the IRS completed 740, 1,065, and 944 exams in 2004, 2005, and 2006, respectively, that resulted in additional tax.[24] Because the IRS' fiscal year ends on September 30, we have no public data yet concerning whether IRS audit activity and taxpayer settlements increased surrounding FIN 48. However, few firms sought formal expedited resolution (Stratton 2007).

Panel D also reveals that having insufficient reserves (column 3) appears to be unrelated to changes in reserves pre-adoption. Of the 72 firms that we estimate are under-reserved on June 30, 2006, only eight increase reserves prior to adoption, and ten actually

[23] Perhaps some of these settlements were also motivated by changing accounting standards, because the FASB issued its Exposure Draft, *Uncertain Tax Positions*, on July 14, 2005. However, our finding that firms that settled examinations usually released reserves is consistent with prior research (Gupta and Laux 2007).

[24] See Tables 10 and/or 11 in the IRS Data Book extracts at http://www.irs.gov/taxstats/compliancestats/article/0,,id=97177,00.html for the frequencies of exams resulting in "unagreed, recommended additional tax."

release some reserves prior to adoption. Nearly all of the firms disclose no change between enactment and adoption and instead decrease stockholders' equity at adoption.

Table 4 shows correlations between our dummy variable for decreasing reserves before FIN 48 adoption and our explanatory variables. We present the correlations for the full sample and for the large firm and small firm sub-samples. *LogSales* strongly explains releases only in the full sample suggesting that this variable is capturing structural differences in the two sub-samples. Nearly all of the large firms have substantial reserves, whereas many of the small firms have zero reserves before FIN 48. Only firms that had a prior reserve could have released reserves before adoption.[25] Disclosing a settlement is strongly correlated with releasing reserves, so we control for settlements in our multiple regression. Finally, releases are correlated with the difference between the reserve and the expected loss in the small firm sample. This correlation suggests that the small firms that have reserves prior to FIN 48 adoption were subject to ongoing IRS audit activity.

5.2 Multivariate results for H1

Table 5 reports our primary multivariate results. Our dependent variable for the binary logit regressions is *DecreaseReserve*, which equals one if the firm decreases its reserve during the third and fourth quarter of 2006 and zero otherwise. Our explanatory variable is whether the firm is over-reserved at June 30, 2006, defined above.

Our results, using the full sample and the large firm sub-sample, are consistent with our hypothesis. Using the full sample, the coefficient on being over-reserved is positive (Coeff=3.934) and significant at the one percent level. Using untabulated odds ratios we estimate that the predicted probability of an adequately- or under-reserved firm

[25] Our results are robust to using only 139 (of 200 total firms) or 87 (of 100 large firms) firms that have positive imputed tax reserves on June 30, 2006.

releasing a tax reserve in quarters three and four of 2006 is only one percent using the median values of all the explanatory variables. The predicted probability of a tax reserve release increases to 37 percent for firms with excess reserves but no settlement. Even controlling for disclosed settlements, firms release reserves before adopting FIN 48. Firms with settlements are 88 percent likely to release reserves, and firms with settlements and excess reserves are 99.7 percent likely to release reserves.

Our results are qualitatively similar in the large firm sub-sample. Within the small firm sub-sample, there are too few releases and too great an overlap with settlements to estimate a valid model. As a result, we do not tabulate small firm results in other tests.

5.3 Multivariate results for H1a

Next, we extend our primary analysis to test not only whether over-reserved firms release reserves, but whether under-reserved firms do not build reserves. Thus, we estimate a multinomial logistic regression to predict the sign of the pre-adoption reserve change on the sign of the difference between the January 1, 2007 reserve and the June 30, 2006 estimated reserve. If the January 1, 2007 reserve exceeds the estimated June 30, 2006 reserve, our explanatory variable takes on a value of positive one, indicating insufficient reserves on June 30, 2006. If the January 1, 2007 reserve is less than the June 30, 2006 reserve, the explanatory variable takes on a value of negative one. If there is no difference between the January 1, 2007 reserve and the estimated June 30, 2006 reserve, the explanatory variable equals zero. The dependent variable equals -1 if the firm releases reserves in the third or fourth quarters of 2006, 0 if it does not change reserves, and +1 if it builds reserves in the third or fourth quarters of 2006.

Table 6 indicates that having excess reserves on June 30, 2006 is significantly

positively related to releasing rather than holding constant or building reserves. This result is consistent with Table 5. Of incremental interest, there is no relation between releasing or building reserves and having insufficient reserves on June 30, 2006. The odds ratio tests in Panel B confirm that although over-reserved firms release reserves prior to adoption, under-reserved firms do not build them in advance. Excess reserves explain changes pre-adoption more than either having sufficient reserves or having insufficient reserves (order 1 versus 2 or 1 versus 3). However, sufficient or insufficient reserves (order 2 versus 3) contribute no additional likelihood of reserve changes.

5.4 Exploratory work regarding IRS examinations

Table 7 reports the results of investigating the relation between imputed excess reserves per financial statement disclosures and an estimate of excess reserves based on IRS examination data. Column one reports the results of estimating a logistic regression to explain whether the firm had imputed excess reserves on June 30, 2006, and column two estimates a similar model for whether the firm releases reserves when it adopts FIN 48 on January 1, 2007. As in Table 5, we use IRS data to construct an explanatory variable that represents the difference between the tax reserve and the expected loss, where we measure both components on June 30, 2006 for the first column, and on December 31, 2006 for the second column.

Table 7 shows that larger firms are more likely to have excess reserves either at enactment (first column) or at adoption (second column). The results also suggest that the greater the difference between the reserve and the expected IRS loss, the more likely the firm has excess reserves. These results confirm that controls for size and the difference between the reserve and the expected loss in our test of pre-adoption releases in reserves

are reasonable proxies for whether a firm had excess reserves at enactment or adoption.

5.4 Additional (untabulated) tests

Industry. Disclosures in one corporation provide information to other corporations in that industry. For example, in September 2006, Glaxo settled a major transfer-pricing audit with the IRS (Hilzenrath 2007), conveying additional information about the likely outcomes of their own transfer-pricing audits to other pharmaceutical companies. We assign firms to 15 industry groupings (Barth, Beaver, and Landsman,1998). Although including industry fixed-effects does not change our inferences in Table 5, the model fit is questionable.

Expected FIN 48 effect. Releasing reserves opportunistically probably requires firms to know in advance whether they are over-reserved by FIN 48 standards. Table 2, Panel A suggests that only 17 large firms and two small firms disclosed that they expected a decrease. We replicate our tests using the expectation of being over-reserved to explain a decrease in reserve preceding adoption of FIN 48. The expectation explains reserve decreases (two-tailed p-value is 0.027 in the full sample and 0.097 in the large firm sub-sample), providing further support for H1.

Adoption proxy for excess reserve. As explained previously, we compare the imputed reserve on June 30, 2006 to the UTB on January 1, 2007 to determine whether a firm is over- or under-reserved at enactment. However, if firms disclose releases but not increases, then our proxy for firms being over-reserved is overstated. As a sensitivity test, we use the adjustment to retained earnings at adoption as our binary variable of over- or under-reserved. Our results are robust at the ten and five percent levels (two-tailed) for the full sample and the large firm sub-sample. However, we do not use the adoption

variable for our main tests, because this alternative omits some over-reserved firms. Thirteen firms with zero change to their UTB on January 1, 2007 released reserves in the third and fourth quarters of 2006, suggesting they were over-reserved at enactment.

Analyst forecast targets. Dhaliwal et al. (2004) find that firms are more likely to decrease tax expense if they would have missed their fourth quarter consensus forecast without decreasing their effective tax rate from the third quarter. We introduce a variable (*MissWithoutTax*) that equals one if the firm would have missed the forecast, and zero otherwise, alone and interacted with an indicator variable for having excess reserves. Third quarter releases are unrelated to whether over-reserved firms would have missed their forecasts. In the fourth quarter, over-reserved firms that would have missed their forecasts without decreasing their ETRs from the prior quarter are weakly more likely to decrease reserves (two-tailed p-value = 0.107). We obtain this latter result only when we omit *Disclose Settlement Q4* from the regression. In the presence of *Settlement*, the model is no longer valid, probably because settlements, releases, and beating targets are correlated (Gupta and Laux 2007). Our primary results are unchanged, however. Being over-reserved remains significant at the one percent level, suggesting that some firms shed excess reserves without regard to beating analysts' forecasts.

We consider whether untabulated descriptive evidence can corroborate the use of reserve releases for earnings management. Based on public FIN 48 and analysts' data, no firms with excess reserves on January 1, 2007 missed their third quarter earnings target, although one firm with insufficient reserves missed this target. In the fourth quarter, eight firms with excess reserves on January 1, 2007 missed their targets. The median forecast error for these eight firms was -2 cents, so releasing sufficient tax expense to achieve the

forecast appears feasible for at least some of those firms. The failure of these firms to release reserves to beat the analyst target is consistent with regulatory and audit scrutiny deterring some opportunism.[26] Eighteen firms that built reserves on January 1, 2007 missed their fourth quarter earnings target, with a median forecast error of -6 cents.

Hiding Reserve Balances. An alternative explanation of our findings is that firms are attempting to "hide" from the tax authorities by removing the reserves from their books in 2006 to minimize their disclosure under FIN 48. However, the FIN 48 disclosures suggest that only two firms completely eliminate their tax reserves before January 1, 2007. The remainder of the sample changing their reserve balance ahead of adoption ultimately reported a reserve balance as of January 1, 2007.

Continuous effects. We also estimate an ordinary least-squares regression of the continuous change in reserves between enactment and adoption on the continuous amount of over- or under-reserve at enactment, scaling both variables by sales. We include an interaction term for being over-reserved at enactment times the amount of over- or under-reserve to test whether over-reserved firms decrease their reserves by a greater amount of the over-reserve.[27] Consistent with the multinomial logit results and hypothesis 1a, untabulated results show that the amount of over- or under-reserve only explains changes in reserves when the firm is over-reserved.[28] Because the continuous measures both include the changes in reserves in the third and fourth quarter of 2006, any

[26] Some firms likely prefer smooth or predictable earnings. Although we have not determined the extent to which the releases made earnings less smooth, there is little evidence that the releases resulted in large forecast errors. Of the four firms that released reserves and beat their targets due to a tax rate decrease in the third quarter, two firms exactly beat the forecast, one beat by one cent and the last beat by three cents. Of the nine firms that similarly beat the forecast in the fourth quarter, the largest amount by which they beat the forecast was four cents. One such firm would have missed the forecast by $1.56.

[27] We thank John Phillips for suggesting this test.

[28] The untabulated coefficients on the interaction term of about 60 percent (t = 12.78) in the full sample and 55 percent (t = 7.21) in the large-firm sample are consistent with the descriptive results that more than half of the aggregate excess reserve was released into earnings.

measurement error induces a relationship. However, there is no relation between the amount of over- or under-reserve and changes in reserves when the firm is under-reserved, in spite of the supposed mechanical effect.

6. Conclusion

By enacting FIN 48, *Accounting for Uncertainty in Income Taxes*, the FASB seeks to increase conformity in recognition and measurement of uncertain tax benefits and to increase transparency by requiring first-ever disclosure of those liabilities. Because prior practice varied widely, we expect variation in whether firms increase or decrease reserves when they adopt FIN 48.

Our focus is on the reporting preceding FIN 48 adoption. FIN 48 requires that any cumulative effect of the change in reserves upon adoption be recorded directly to opening stockholders' equity. This treatment is favorable for firms that need additional reserves because an increase to reserves at adoption will decrease stockholders' equity, as opposed to earnings. However, firms with excess reserves will be unable to recoup an earnings benefit since decreasing their reserves upon adoption yields an equity adjustment. In addition, maintaining conservative or excess reserves for earnings management becomes more costly after FIN 48 if large reserves increase IRS or political scrutiny. Thus, we predict that firms are more likely to decrease reserves in quarters three and four of 2006,before adoption, if they have excess reserves at enactment (estimated at June 30, 2006). We control for settlements with a tax authority because firms with excess reserves may resolve disputes prior to adoption to provide independent auditors with verifiable evidence that uncertainty has been resolved.

To assure a sample of firms with variation in over- or under-reserve, we hand-

collect 100 each of the smallest and largest firms followed by five or more analysts, excluding firms in regulated or financial industries. Nearly all disclosed quarterly changes are decreases. Furthermore, firms who appeared to have excess reserves at enactment released nearly half of that excess prior to adopting FIN 48.

Our logistic regression results confirm that decreases in reserves leading up to FIN 48 adoption are more likely if firms had excess reserves at enactment, even after controlling for disclosed settlements with tax authorities. On the other hand, firms without excess reserves generally wait until adoption to increase reserves through retained earnings. These results suggest that FIN 48, while intended to increase conformity as well as transparency, generated some nonconformity in its adoption.

Evidence of opportunistic behavior around FIN 48 has broader implications for whether adoption rules that record cumulative effects in equity create asymmetric reporting incentives. Recent standards require equity adjustments when restatement is impracticable. SFAS No. 154, *Accounting Changes and Error Corrections*, has general applications, whereas SFAS No. 159, *The Fair Value Option for Financial Assets and Financial Liabilities*, is a specific example. In the latter setting, many firms postponed the recognition of unrecognized losses in order to record an equity adjustment. FIN 48 provides an opportunity to complement that setting with evidence of firms accelerating benefits into income when the adjustment would otherwise only affect equity.

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Appendix, Example of journal entries to account for tax reserves.

This example provides the structure of recording tax reserves. This structure generally applies both before and after FIN 48. The most substantive changes under FIN 48 apply to the method for recognition, estimation and disclosure.

When a corporation files its tax return, it obtains "tax benefits" from deductions and credits. Consider a simple example where a firm incurs a $1,000 tax liability before considering any tax credits for which it may be eligible. If the firm is eligible for a Research and Experimentation credit of $100, then the firm accounts for its income taxes prior to FIN 48 as follows:

Year 1		Debit	Credit
Tax Expense		$900	
	Cash		$900

If the $100 tax benefit is uncertain, the matching principle requires additional judgment. Under SFAS 5, the firm would record additional tax expense and a contingent liability when some amount of the uncertain benefit represents a probable and estimable loss. Under FIN 48, the original benefit can only be recorded to the extent it meets the recognition and measurement thresholds of "more likely than not." In either case, some amount could increase the tax expense and increase the tax liability. Such amount(s) could be recorded in the year the firm files the tax return or in subsequent years as more information becomes available about the uncertainty.

Whatever the applicable amount, the journal entry's general form would be a debit to tax expense and a credit to tax liability. The FASB is explicit in FIN 48 that the tax liability cannot be recorded in deferred taxes but must be in taxes payable (current or noncurrent). We understand anecdotally that some firms recorded the liability in deferred tax prior to FIN 48. The adoption disclosures indicate only a minority of firms took this approach.

Year 1, 2 or 3		Debit	Credit
Tax Expense		$XX	
	Contingent Tax Liability		$XX

Now assume that in Year 4, the tax authority audits the firm's research credit, and requires the firm to pay an additional $20. Additional assessments do not mean that the firm did something wrong, but that the firm's interpretation of the tax law and its facts differed from the IRS's.[29]

[29] The tax assessment has cash flow implications for the company. The possibility that the disclosure requirements of FIN 48 will increase audit scrutiny motivated Frischmann, Shevlin and Wilson (2007) to conduct an event study for key dates surrounding FIN 48 enactment. They find mixed evidence that aggressive taxpayers suffer lower returns on dates when the probability of FIN 48 passage increased. This

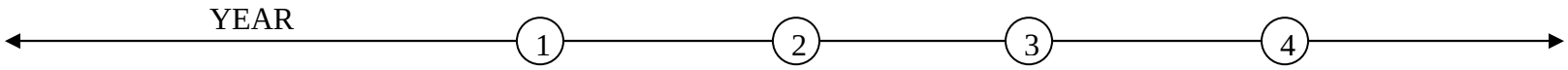
If the firm had previously made no provision for the uncertainty of the $100 research credit, then it must record $20 of additional tax expense when it pays the cash to the IRS as follows:

Year 4		Debit	Credit
Tax Expense		$20	
	Cash		$20

If instead the firm had already recorded some liability for the uncertain tax benefit, the Year 4 journal entry would only record additional tax expense to the extent the accrued contingent tax liability was too low but would decrease tax expense and increase income to the extent the accrued contingent tax liability was too high. Anecdotal evidence and FIN 48 adoption disclosures suggest that some firms recorded the contingent liability as a deferred tax liability instead of in taxes payable. Figure 1 illustrates the sequence of events. Note that cash flows only occur when the return is filed and when subsequent payments are made to the IRS. Intervening adjustments to accrued taxes payable are non-cash entries.

mixed evidence could be consistent with Mills, Robinson and Sansing's (2007) model that indicates only aggressive taxpayers with poor facts fare worse under FIN 48.

Figure 1: Illustration of the recording of tax reserves



Net Income	(900)	(15)	(10)	5
Net Assets		(15)	(10)	25
Cash Flows	(900)			(20)

In Year 1, the firm records the current period's tax expense and pays the tax owed on its return, which includes $100 of R&E credit.
In Year 2, facts and circumstances lead the firm to conclude that only $85 of the R&E credit taken on its Year 1 return is more likely than not of being sustained. Alternatively, under SFAS 5 the firm decides that $15 is a probable and estimable contingent loss.
In Year 3, facts and circumstances lead the firm to conclude that only $75 of the R&E credit taken on its Year 1 return is more likely than not of being sustained. Alternatively, under SFAS 5 the firm decides that an additional $10 is a probable and estimable contingent loss.
In Year 4, the audit of Year 1's return concludes, $20 of the Year 1 R&E credit is disallowed, and the firm pays the IRS $20 in additional tax.

Table 1, Sample industry composition

Industry (per Barth, Beaver and Landsman, 1998)	Large Firms (N=100)	Small Firms (N=100)
1. Mining and construction (1000<=SIC<=1299 or 1400<=SIC<=1999)	1	1
2. Food (2000<=SIC<=2111)	7	1
3. Textiles, printing and publishing (2200<=SIC<=2780)	6	5
4. Chemicals (2800<=SIC<=2824 or 2840<=SIC<=2899)	4	0
5. Pharmaceuticals (2830<=SIC<=2836)	10	3
6. Extractive industries (2900<=SIC<=2999 or 1300<=SIC<=1399)	16	3
7. Durable manufacturing (3000<=SIC<=3999 excluding 3570<=SIC<=3579 or 3670<=SIC<=3679, plus 7370<=SIC<=7379)	21	20
8. Computers (3570<=SIC<=3579 or 3670<=SIC<=3679)	5	12
9. Transportation (4000<=SIC<=4899)	15	5
10. Utilities (4900<=SIC<=4999)	excluded from sample	
11. Retail (5000<=SIC<=5999)	4	12
12. Financial institutions (6000<=SIC<=6411)	excluded from sample	
13. Insurance and real estate (6500<=SIC<=6999)	excluded from sample	
14. Services (7000<=SIC<=8999) excluding 7370<=SIC<=7379	10	38
15. Other	1	0
TOTALS	100	100

Table 2, Comparisons of expected FIN 48 effects disclosed in the Form 10-Q for the fourth quarter of 2006 to actual adoption adjustments at January 1, 2007 disclosed in the first quarter of 2007.

Panel A	**Large Firms**				**Small Firms**			
	Anticipated Effect 2006Q4	*Actual FIN 48 Adoption 1/1/2007*			*Anticipated Effect 2006Q4*	*Actual FIN 48 Adoption 1/1/2007*		
		Increase	*Decrease*	*No Change*		*Increase*	*Decrease*	*No Change*
Anticipated Effect of FIN 48 adoption disclosed by company:								
Still Evaluating	24	13	8	3	51	29	2	20
Still Evaluating/Immaterial Adjustment	9	4	3	2	12	3	1	8
Still Evaluating/Expect "Modest" Effect	1	1	0	0	0	0	0	0
Still Evaluating/Expect Decrease to Reserves	2	1	1	0	1	1	0	0
Still Evaluating/Expect Increase to Reserves	2	2	0	0	1	0	0	1
No or Immaterial Adjustment	37	10	12	15	31	6	1	24
Does Not Address	0	0	0	0	2	0	0	2
Decrease in Reserves	15	1	14	0	1	0	1	0
Increase in Reserves	10	9	1	0	1	0	0	1
	100	41	39	20	100	39	5	56

Panel B	**Large Firms**		**Small Firms**	
	Disclosed Expected Reserve Change 2006Q4	*Actual Reserve Change 1/1/2007*	*Disclosed Expected Reserve Change 2006Q4*	*Actual Reserve Change 1/1/2007*
N	29	100	3	100
Mean amount of change ($MM)	(87.08)	(19.11)	0.00	0.55
Mean amount of change as a percentage of 2005 assets	0.02%	0.05%	-0.07%	0.20%
Median amount of change ($MM)	(2.00)	0.00	(1.50)	0.00
Median amount of change as a percentage of 2005 assets	-0.02%	0%	-0.51%	0%

Table 3, Descriptive statistics

Panel A, Mean, Median by Firm Size

		Large Firm			Small Firm		*Difference*
Variable	*N* [a]	*Median*	*Mean*	*N* [a]	*Median*	*Mean*	*in Means*
UTB / Sales	100	0.019	0.030	100	0.002	0.011	***
UTB / Pretax income if positive	95	0.135	0.187	83	0.042	0.182	
Change to Reserve 1/1/07	100	0.000	-19.110	100	0.000	0.546	
Implied 6/30/06 Reserve / Sales	100	176.000	543.648	100	0.162	1.214	***
Implied (over)under reserve 6/30/06	100	1.292	2.094	100	0.031	0.522	**
Over-reserved 6/30/2006 Dummy	100	-7.000	-49.696	100	0.000	0.533	
LogSales 2006	100	9.753	9.887	100	5.521	5.374	***
Assets 2006	100	25,000 [b]	49,149.490	98	250 [b]	307.119	***
Sales 2006	100	17,000 [b]	34,243.210	100	250 [b]	319.116	***
MVE 2006	100	30,000 [b]	53,294.800	97	500 [b]	508.045	***
PTI 2006	100	2,500 [b]	4,612.200	100	20 [b]	23.365	***
ROA 2006	100	0.108	0.116	99	0.064	0.071	***
LossDummy 2006	100	0.000	0.050	100	0.000	0.170	***
Effective Tax Rate (ETR)	100	30.211	29.838	100	34.704	27.069	
#Jurisdictions	100	0.000	1.890	100	0.000	0.640	***
LastYearClosed	100	2,000	1,999.650	100	2,002	2,001.030	**
Settlement Disclosed in Q3 or Q4 Footnote	100	0.000	0.390	100	0.000	0.030	***
IRS variables measured at 6/30/06:							
For full sample:							
Expected Loss/Sales2006	100	0.00174	0.00880	100	0.00000	0.00072	***
(Reserve–ExpectedLoss)/ Sales2006	100	0.00462	0.01214	100	0.00029	0.00450	**
For audited firms only: [c]							
Expected Loss/Sales2006	[c]	0.00220	0.00988	[c]	0.00026	0.00131	***
(Reserve–ExpectedLoss)/ Sales2006	[c]	0.00438	0.01074	[c]	0.00126	0.00545	***

*****, ** indicates t-test for difference in means is significant at p-value < 0.001, 0.01.**

[a] We have fewer than 100 observations in some cases because the firm either had negative pretax income or because the firm was de-listed and does not report market value of equity.

[b] Rounded

[c] Number of taxpayers for which we have any audit data is suppressed for IRS confidentiality in small sample. We determine the frequency by having a nonmissing examination date in the available data. In the full sample, we set missing audit data to zero.

Variable Definitions: *UTB/Sales* = Uncertain Tax Benefit "UTB"/Sales2006 (Compustat annual data #12). *UTB/Pretax income if positive* = UTB/pretax income (Compustat annual data #170). *Change to Reserve 1/1/07* = The adjustment to stockholders' equity as a result of adopting FIN 48 as reported in the 2007Q1 10-Q. *Implied 6/30/06 Reserve/Sales* =Sum of UTB at 1/1/07 and any disclosed adjustments either at adoption or in quarters three and four of 2006/ Sales2006 (Compustat annual data #12). *Implied (over)under reserve 6/30/06* = Sum of cumulative effect adjustment at 1/1/07 and any disclosed reserve changes in the third and fourth quarters of 2006. *Over-reserved 6/30/06 Dummy* = one if sum of cumulative effect adjustment at 1/1/07 and any disclosed reserve changes in the third and fourth quarters of 2006 is a net decrease to reserves; zero otherwise. *LogSales 2006* = The natural log of 2006 net sales (Compustat annual data #12). *Assets 2006* is total assets as of 12/31/2006 (Compustat annual data #6). *Sales 2006* = 2006 net sales (Compustat annual data #12). *PTI 2006* = 2006 pretax income (Compustat annual data #170). *MVE 2006* = market value of equity as of 12/31/2006 (Compustat annual data #25 * Compustat annual data #199). *ROA 2006* = Return on assets for 2006 (Compustat annual data #18 ÷ Compustat annual data #6). *LossDummy 2006* = one if the annual pretax income (Compustat data #170) < 0; zero otherwise. *Effective Tax Rate* = 2006 tax expense divided by pretax income (Compustat annual data #16 ÷ Compustat annual data #170). *#Jurisdictions*= the number of foreign jurisdictions and U.S. states with open tax years specifically mentioned in the footnotes. *LastYearClosed* = The last year for which the IRS has completed its examination of the return. *Settlement Disclosed in Q3 or Q4* = one if the tax footnotes, either text or ETR reconciliation, indicates that the corporation settled a tax dispute during the third or fourth quarter of 2006; zero otherwise.

We compute *Expected Loss* as follows. First, we construct a measure of the historical settlement ratio to take into account firm's experience of settling deficiencies with the IRS. As our primary measure, we use the ratio of the firm-sum of settlements divided by the firm-sum of deficiencies. If this ratio of sums is missing, we use as an alternative the firm-mean of the yearly ratios of settlements to deficiencies. In either case, we bound the ratio to zero and one. Second, we sum the deficiencies by firm for all return-years for which the IRS examinations are completed but not settled. Third, we multiply the historical settlement ratio by the sum of deficiencies on unsettled, audited returns to construct a measure of expected losses on open audited return-years. Fourth, we consider the unaudited returns (all return-years after the last completed examination, or three years if missing). We use the average of prior settlements and expected losses on audited returns as the annual expected loss on unaudited returns. Finally, we sum the expected losses on audited and unaudited returns to form our estimate of *Expected Loss.*

Panel B, Frequencies of increases and decreases in tax reserves

		Large Firms				Small Firms		
Period	N	*Increases*	*Decreases*	*Mean Change*	*N*	*Increases*	*Decreases*	*Mean Change*
2005Annual	100	5	36	-67.03	100	5	8	0.06
2006Q1	100	2	8	-14.98	100	0	2	-0.02
2006Q2	100	2	18	-6.49	100	1	2	-0.06
2006Q3	100	4	20	-14.53	100	0	4	-0.05
2006Q4	100	2	36	-26.70	100	4	5	0.04
2006Annual	100	5	55	-65.68	100	3	11	-0.08
FIN48adoption	100	41	39	-19.11	100	39	5	0.55
2007Q1excludinginterest	100	10	13	-37.60	100	6	0	0.03

Panel C, Aggregate decreases in tax reserves in the two quarters prior to adopting FIN48 for firms with imputed over-reserve at June 30, 2006.

Firms with excess reserves at June 30, 2006	Period	N	All firms releasing	N	Firms disclosing settlements
Aggregate implied (over)under reserve ($ millions)	June 30, 2006	66	8,583	32	5,859
Aggregate change to reserve	2006Q3 and 2006Q4	43	4,209	32	3,709
Firms that released reserves in 2005					
Aggregate change to reserve	2005 full year	44	6,680	41	6,560

Panel D, Chi-square test of relation between being over- or under-reserved at June 30, 2006, and changes in reserve in the two quarters prior to adopting FIN48 for the sample of all 200 firms. Number of firms, actual percentage in parentheses, and expected percentage in brackets.

	Over-reserved At 6/30/2006	*Neither over- or Under-reserved*	*Under-reserved At 6/30/2006*	*Total*
	43	0	10	53
	(21.0%)	(0.0%)	(5.0%)	(26.0%)
Decrease in preceding quarters	{8.6%}	{8.1%}	{9.4%}	
	23	62	54	139
	(12.0%)	(31.0%)	(27.0%)	(70.0%)
No change in preceding quarters	{23.1%}	{21.7%}	{25.2%}	
	0	0	8	8
	(0.0%)	(0.0%)	(4.0%)	(4.0%)
Increase in preceding quarters	{13.2%}	{12.4%}	{14.4%}	
	66	62	72	200
Total	(33.0%)	(31.0%)	(36.0%)	(100.0%)
				89.26
Chi-Square				p-value<0.0001

Table 4, Correlations

	Decrease Reserve 2006Q3 or Q4		
	(1)	*(2)*	*(3)*
	Full Sample	*Large firms*	*Small firms*
Over-reserved 6/30/06 Dummy	0.627***	0.512***	0.603***
Disclose Settlement in Q3 or Q4	0.792***	0.784***	0.596***
LogSales	0.433***	0.117	0.120
# Jurisdictions	0.105	-0.021	0.042
Effective Tax Rate	-0.071	-0.167	-0.107
LastYearClosed	-0.029	0.052	0.110
Settlement Disclosed	0.792***	0.784***	0.596***
(Reserve–ExpectedLoss) At 6/30/06/ Sales2006	0.063	-0.056	0.258***

*** indicates p-value<0.01.

Variable Definitions: See Table 3.

Table 5, Logit regression of release of tax reserves during the two quarters preceding FIN 48 adoption on whether the firm was over-reserved at June 30, 2006, an indicator variable for whether the release is related to a settlement, firm size, the disclosed number of jurisdictions with reserves or audits, the disclosed last year closed by the IRS, the effective tax rate, and the scaled difference between the imputed tax reserve at enactment and our estimate of expected losses on IRS deficiencies.

		(1)	*(2)*	*(3)*
		Full Sample	*Large firms*	*Small firms*
Dependent variable:	*Expected Sign*	*Decrease Reserve 2006Q3orQ4*	*Decrease Reserve 2006Q3orQ4*	*Decrease Reserve 2006Q3orQ4*
		Coefficient (Chi-square)	*Coefficient (Chi-square)*	*Coefficient (Chi-square)*
Intercept		-479.100*	-320.6	-11,005.2
		3.63	*1.61*	*1.26*
Over-reserved 6/30/06Dummy	+	**3.934*** *18.77*	**3.221*** *8.55*	47.332 *0.67*
Disclose Settlement	+	6.235***	5.590***	55.34
		27.36	*19.98*	*0.01*
LogSales	+	0.110	0.271	0.192
		0.37	*0.35*	*0.01*
#Jurisdictions	*?*	0.030	-0.047	3.436
		0.04	*0.11*	*0.75*
LastYearClosed	*?*	0.237*	0.157	5.493
		3.58	*1.56*	*1.26*
EffectiveTaxRate	-	-0.048*	-0.018	-1.283
		3.51	*0.23*	*0.72*
(Reserve–Expected Loss) at 6/30/06 / Sales	+	0.033	0.046	-1.522
		0.10	*0.21*	*0.20*
Observations		200	100	100
Likelihood ratio chi-sq.		166.05	89.36	51.32 Validity of fit questionable

***, **, and * indicates p-value <0.01, <0.05, and <0.10, respectively, in two-tailed test.

Variable Definitions: See Table 3.

Table 6, Multinomial logistic regression of the sign of disclosed reserve changes (decrease, no change, increase) in the third or fourth quarter of 2006 on a categorical variable for whether at June 30, 2006, the firm had estimated excess, sufficient, or insufficient reserves.

Panel A, Multinomial estimation results, where dependent variable equals -1 if the firm releases reserves in the third and fourth quarters of 2006, 0 if it does not change reserves, and +1 if it builds reserves in the third and fourth quarters of 2006.

		(1)	*(2)*
		Full Sample	*Large firms*
	Expected Sign	Coefficient *(Chi-Square)*	Coefficient *(Chi-Square)*
Intercept1		-83.557	-146.560
		0.33	*0.53*
Intercept2		-77.11	-141.624
		0.28	*0.50*
June30,2006 reserve excess (-1)	+	**3.513*** **	**2.613*** **
		21.59	***11.19***
June30,2006 reserve sufficient (0)	*n/s*	0.692	0.516
		1.06	*0.28*
June30,2006 reserve insufficient (1)	*?*	.	.
Disclose Settlement	+	5.477***	4.544***
		30.72	*23.60*
LogSales	+	-0.066	-0.101
		0.33	*0.10*
#Jurisdictions	*?*	0.078	0.005
		0.56	*0.00*
LastYearClosed	*?*	0.040	0.072
		0.30	*0.52*
EffectiveTaxRate	-	-0.005	0.008
		0.11	*0.09*
(Reserve–ExpectedLoss) at 6/30/06/Sales	+	-0.041	-2.310
		0.23	*0.08*
Observations		200	100
Log-likelihood		-72.162	-45.504

***, **, and * indicates p-value <0.01, <0.05, and <0.10, respectively, in two-tailed test.

Variable Definitions: See Table 3.

Panel B, Tests of odds ratios

	(1) *Full Sample*		*(2)* *Large firms*	
Label	Estimate	Chi-Square	Estimate	Chi-Square
logOR12	2.82***	14.24	2.10**	4.61
Exp(logOR12)	16.80		8.15	
logOR13	3.51***	21.59	2.61***	11.19
Exp(logOR13)	33.55		13.65	
logOR23	0.69	1.06	0.52	0.28
Exp(logOR23)	2.00		1.68	

Table 7, Logistic Regression of Excess Reserve on Expected IRS Loss and other variables

Dependent variable	*(1)* *Over-reserved at 6/30/06*	*(2)* *Release Reserve 1/1/07*
	Coefficient *chi-square*	Coefficient *chi-square*
Intercept	-40.171 *0.12*	147.200 *1.71*
(Reserve–Expected Loss) at 6/30/06 or 12/31/06/ Sales	0.146* *2.95*	0.097† *1.88*
LogSales	0.531*** *35.29*	0.476*** *21.72*
#Jurisdictions	-0.100 *1.90*	0.013 *0.03*
LastYearClosed	0.018 *0.09*	-0.076 *1.84*
EffectiveTaxRate	-0.002 *0.04*	0.007 *0.28*
Observations	200	200
Model Fit	*LR Chi-Sq* 54.84	*LR Chi-Sq* 43.37

***,**,* indicates p-value < 0.01, < 0.05, < 0.10, two-tailed test. † indicates p-value < 0.10, one-tailed. *Reserve* and *Expected Loss* are measured at the dates shown in the caption. See Table 3 for variable definitions.