Earnings Management through Tax Reserves and Auditor-Provided Tax Services

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Abstract

This study investigates whether firms continue to use tax reserves to achieve financial reporting objectives in the post-FIN 48 period and the effect of auditor-provided tax services on earnings management through tax reserves. Three types of earnings management incentives are considered in this study: meeting or beating the consensus forecasts, income smoothing, and taking an "earnings bath." The analyses yield evidence that only non-large firms manipulate tax reserves to meet/beat earnings forecast in the post-FIN 48 period; however, tax reserves are still utilized by both large and non-large firms to smooth earnings. Moreover, evidence is provided that the auditor who provides more tax services facilitates large firms' earnings smoothing in the post-FIN 48 period, implying independence impairment. But this behavior does not exist within non-large firms, arguably because the auditor does not compromise independence for less important clients.

Keywords*:* Tax reserve, Earnings management, FIN 48, Earnings forecast, Auditor-provided tax service

1. Introduction

In order to pursue more effective tax planning, all firms take particular tax positions. The validity of these positions is subject to challenges from tax authorities. Tax reserves represent management's estimation of potential future tax payments for such tax positions if they are examined by tax authorities. A substantial amount of managerial judgment and discretion is involved in estimating the tax reserve due to the complexity and uncertainty associated with tax positions. The literature on earnings management identifies the tax reserve as one of the three main tax accounts that managers would manipulate to achieve certain financial reporting objectives (Graham, Raedy, & Shackelford, 2012) (Note 1). However, Financial Interpretation No. (FIN) 48, *Accounting for Uncertainty in Income Taxes* (FASB 2006), could significantly change the landscape. FIN 48 not only standardizes the process of recognizing and measuring tax reserves (officially called unrecognized tax benefits (UTB) in FIN 48) but also requires explicit disclosure of tax reserves. Tighter standards in FIN 48 could limit managers' discretion in tax reserves, while explicit disclosures of tax reserves could decrease information asymmetry in tax reserves, and increase tax audit scrutiny and independent auditors' monitoring. A question arises naturally about whether FIN 48 has the potential to restrain managers from manipulating earnings through tax reserves. Specifically, two related questions are examined in this study: (1) Do firms continue managing earnings through tax reserves in the post-FIN 48 period and (2) Do auditor-provided tax services (ATS) affect the behavior of earnings management through tax reserves?

Studies (Cazier, Rego, Tian, & Wilson, 2015; Gupta, Laux, & Lynch, 2016) have been conducted to examine whether managers continue using tax reserves to meet earnings targets in the post-FIN 48 period. However, these two studies come to contradictory conclusions. While Cazier et al. (2015) find that tax reserves are still manipulated to meet earnings forecasts in the post-FIN 48 period, Gupta et al. (2016) find no evidence to suggest such earnings management behavior continues to exist post-FIN 48. I suspect the contradiction is a result of the difference in samples. Gupta et al. (2016) rely on large firms only (a random sample of 100 *Fortune 500* firms), while Cazier et al. (2015) include firms of all sizes (all non-REITS firms in Compustat with available data). IRS Data Books (2007-2010) show that there is significant variation in the level of tax authority monitoring and enforcement (hereafter, tax enforcement) faced by firms of different sizes. Consequently, it is unlikely that FIN 48 has a consistent effect on all firms. This study examines whether the firm size plays a part in managers' behavior involving the use of tax reserves to achieve financial reporting objectives in the post-FIN 48 period and possibly reconciles the contradiction between Cazier et al. (2015) and Gupta et al. (2016).

While the argument that the joint provision of audit and non-audit services (NAS) impairs auditor independence and audit quality has become popular with the public after a series of accounting failures (e.g., Enron, Worldcom, and others), academic researchers have not been able to build a consensus on this view. Another view on the effect of NAS on audit services is "knowledge spillovers," which is the idea that the production of NAS could bring efficiencies and/or effectiveness to an audit as the knowledge acquired for NAS is likely to benefit the audit as well (Simunic, 1984). Tax reserves represent an overlap between the external auditor's audit and tax services, and offer a genuine opportunity to investigate the knowledge spillover or the independence impairment between audit and tax services. If knowledge spillovers through ATS can improve the auditor's understanding of uncertain tax positions, it is expected that ATS could inhibit earnings management through tax reserves. However, if the provision of tax services impairs the independence of the auditor and causes an economic bond between the auditor and the client ("independence impairment"), the auditor would facilitate the client managing earnings through tax reserves. Moreover, the independence impairment effect probably varies with firm size. The auditor is much less likely to compromise independence for small and medium firms, who are not important clients for the auditor and their purchases of tax services are unlikely to be meaningful for the auditor.

To empirically test the research questions, tax reserve data have been hand-collected from firms' 2007-2010 annual reports (Note 2). The sample is limited to S&P 1500 Composite Index firms as of January 1, 2007. S&P 1500 index covers approximately 85% of the U.S. market capitalization and includes large, medium, and small cap firms. Consistent with Dhaliwal, Gleason, and Mills (2004) and Gleason, Pincus, and Rego (2017), this study investigates earnings management through tax reserves by examining the relationship between changes in tax reserves and pre-managed earnings (the earnings before the change of tax reserves), while controlling for other facts that might affect the changes in tax reserves. Findings are generally consistent with the expectations. I find evidence that non-large firms (firms with total assets less than $5 billion) are likely to make income-increasing changes in tax reserves when their pre-managed earnings barely miss the earnings forecasts, while large firms (firms with total assets of $5 billion or more) do not behave in the same way in the post-FIN 48 period. In addition, both large and non-large firms manipulate tax reserves to smooth earnings when their pre-managed earnings are far above or far below the earnings forecast. Moreover, evidence supporting the independence impairment hypothesis is provided through the analysis as the auditor providing more tax services to large clients facilitates earnings smoothing in the post-FIN 48 period (Note 3). This behavior does not exist within non-large firms as the auditor does not compromise independence for unimportant clients.

This study makes contributions to several streams of research. First, this study expands the literature investigating earnings management through tax reserves in the post-FIN 48 period and helps us better understand the effects of FIN 48. Previous studies (e.g., Cazier et al., 2015; Gupta et al., 2016) either examine only large firms or treat all firms as a homogenous group. This study documents that firms of different sizes behave differently in the post-FIN 48 period. While FIN 48 restrains managers from managing earnings through tax reserves for large firms, the effect of FIN 48 on non-large firms is marginal. Moreover, the findings of this study can have implications for regulation as International Financial Reporting Standards (IFRS) do not have disclosure requirements for tax reserves similar to FIN 48 yet. A better understanding of the potential economic consequences of the new requirements facilitates the decision whether to adopt similar disclosure requirements under IFRS. Finally, by jointly studying one specific type of NAS, ATS, and one specific task of auditing, the attestation of tax reserves, this study provides clear evidence of independence impairment due to ATS, which contributes to the long-running debate about whether the auditor should be allowed to conduct NAS, in particular tax services, to its audit clients.

The remainder of this paper is organized as follows. Section 2 presents background and develops the hypotheses. Section 3 describes the research design and sample selection, while Section 4 provides the empirical results. Section 5 concludes.

2. Background and Hypotheses Development

The validity of tax positions taken by firms is subject to scrutiny from tax authorities. Until tax authorities complete their examinations or the statute of limitation expires, tax benefits from these positions are uncertain. In the intervening time, consistent with the conservatism and matching principles, firms must accrue additional income tax expenses for those uncertain tax positions, which may not be sustained upon future examination. Such tax accruals are called "tax reserves" (Note 4). Tax reserves represent management's estimation of potential future tax payments for uncertain tax positions if they are examined by tax authorities.

FASB Statement of Financial Accounting Standards No. 109 (SFAS 109), *Accounting for Income Taxes* (FASB 1992), provides guidance for companies to record and disclose income taxes. However, SFAS 109 did not address uncertainty in accounting for uncertain tax positions (FIN 48, Summary). Prior to the issuance of FIN 48, there was no authoritative guidance for tax reserves. In addition, disclosure of any tax reserve information was rare (Gleason & Mills, 2002). The complexity and uncertainty associated with uncertain tax positions, the lack of authoritative guidance on how to measure and record tax reserves, and the information asymmetry between investors and managers gave managers substantial discretion over tax reserves in the pre-FIN 48 period. The literature on earnings management identifies the tax reserve as one of the three main tax accounts that managers would manipulate to achieve certain financial reporting objectives (Graham et al., 2012) (Note 5). The SEC's allegation against two former Dell executives in August 2010 provides a real-life example of how the company used tax reserves as a "cookie jar" to attain earnings forecasts (Note 6). Moreover, on large sample scales, both Cazier et al. (2015) and Gupta et al. (2016) find evidence that managers use tax reserves to meet earnings targets in the pre-FIN 48 period.

2.1 Earning Management through Tax Reserves in the Post-FIN 48 Period

In an effort to standardize the process of recognizing and measuring tax reserves and increase the relevance of the financial reporting of income taxes, the FASB released FIN 48, effective for fiscal years starting after December 15, 2006, on July 13, 2006. FIN 48 adopts a uniform process of recognizing and measuring tax reserves (Note 7). Moreover, for the first time, FIN 48 requires explicit disclosure of tax reserves (Note 8). FIN 48 has been the biggest change in financial accounting for income taxes over the past decade (Mills, Robinson, & Sansing, 2010) and is believed to have had widespread effects. One of its potential effects is to decrease earning management through tax reserves (Cazier et al., 2015; Gupta et al., 2016). In fact, one of the underlying reasons to issue FIN 48, as stated by FASB Chairman Robert Herz, was the SEC's concerns that the diverse practices in accounting for tax reserves made it possible for managers to manipulate earnings (Shaw and Leone, 2007).

Studies in the post-FIN 48 period (e.g., Lisowsky, 2010; Lisowsky, Robinson, & Schmidt, 2013) find evidence that tax reserves do reflect uncertain tax positions (e.g., tax shelters). But to what extent tax reserves represent uncertain tax positions is still an open question. De Simone, Robinson, and Stomberg (2014) investigate whether firms apply FIN 48 consistently by looking into how 19 public paper companies report one specific uncertain tax position: the taxation of exercise tax credits for alternative fuel mixtures. Even though the underlying facts are identical for each firm, De Simone et al. (2014) find significant variation in the amount of tax reserves recorded. Even within firms that use the same auditor, this variation persists. The findings in De Simone et al. (2014) illustrate that managers still have substantial discretion over tax reserves even under auditors' monitoring in the post-FIN 48 period and imply that managers could continue managing earnings through tax reserves. In addition, Abernathy, Beyer, Gross, and Rapley (2017) provide evidence that managers have discretion regarding interest and penalty expenses classification for UTBs. Moreover, the effect of FIN 48 disclosures on information asymmetry between investors and managers is very limited. The disclosures required by FIN 48 are in aggregation for the entire firm. Investors would not be able to identify earnings management through tax reserves by examining FIN 48 disclosures. In addition, previous studies (Dunbar, Omer, & Schultz, 2010; Robinson & Schmidt, 2013) observe low compliance with FIN 48 disclosures. These aforementioned studies (i.e., Abernathy et al., 2017; De Simone et al., 2014; Dunbar et al., 2010; Robinson & Schmidt, 2013) illustrate that FIN 48 probably could not completely eliminate earnings management through tax reserves.

Based on his own experience, Harvey (2011), a former IRS employee, states that an IRS audit was not effective in identifying tax issues in the pre-FIN 48 period. The IRS's intention to use FIN 48 disclosures as a "roadmap" for tax audits (IRS 2007) could significantly improve tax audit effectiveness and inevitably influences the behavior of management. However, the odds of tax audit vary with firm size. Figure 1 displays the IRS audit rates for "large corporations" as defined by the IRS (i.e., firms with assets of $10 million or more) from 2007 to 2010. As illustrated in Figure 1, the level of tax enforcement from the IRS varies with firm size; larger firms, especially firms with total assets exceeding $5 billion, face much more stringent tax enforcement from the IRS. Thus, it is expected that larger firms who face a higher level of tax enforcement are most likely to be affected by FIN 48; however, for firms who face a lower level of tax enforcement, the effect can be marginal.

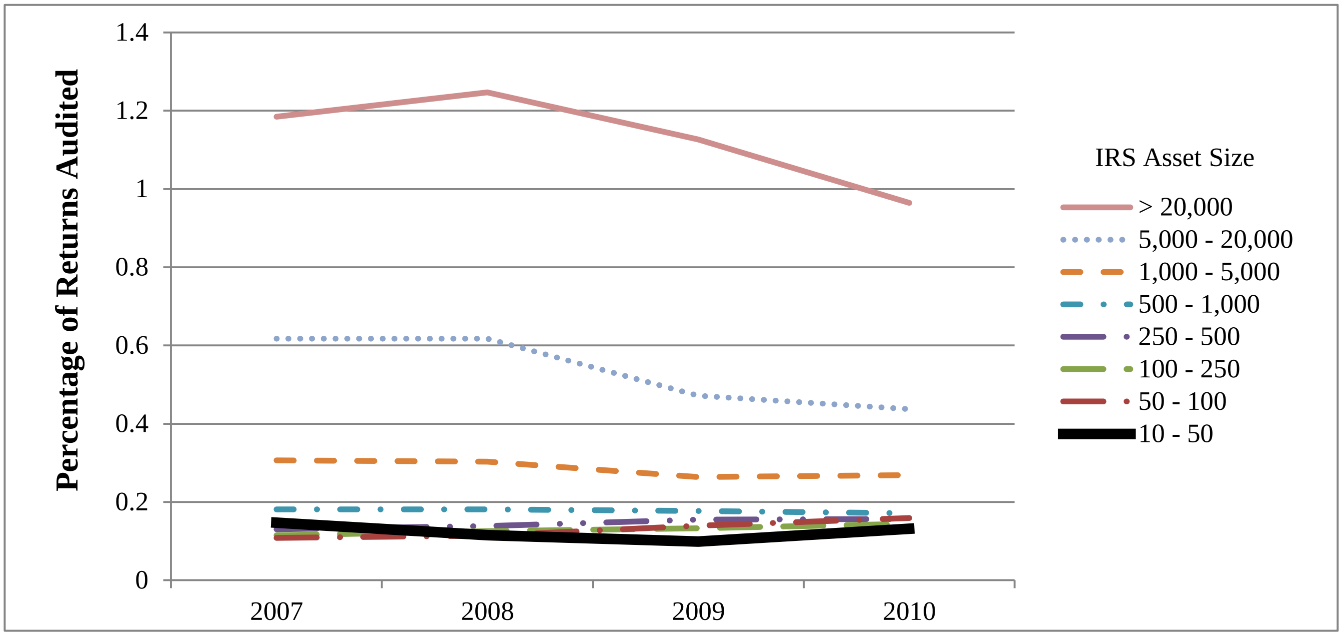

Figure 1. Time trend in audit rates by asset size group (in millions)

Source: IRS Data Books 2007-2010.

[a] The percentage of returns examined may be greater than 100 percent of the returns filed since examinations may be conducted on returns filed in prior calendar years.

Cazier et al. (2015) and Gupta et al. (2016) empirically investigate whether managers continue manipulating tax reserves to meet earnings targets in the post-FIN 48 period and they come to contradictory conclusions. Based on a random sample of 100 *Fortune 500* firms, Gupta et al. (2016) find that firms no longer manage tax reserves to meet earnings forecasts. On the other hand, examining the whole Compustat population (excluding REITS), Cazier et al. (2015) provide evidence that managers continue using tax reserves to meet earnings forecasts. I suspect the contradiction is a result of the difference in sample sizes. While Gupta et al. (2016) study large firms only, Cazier et al. (2015) cover firms of all sizes.

Based on the aforementioned literature on consequences of FIN 48 (i.e., Cazier et al., 2015; De Simone et al., 2014; Dunbar et al., 2010; Gupta et al., 2016; Robinson & Schmidt, 2013) and the argument that the effect of FIN 48 varies with firm size, I specify the following hypotheses:

H1: Large firms (firms with total assets of $5 billion or more) no longer manage earnings through tax reserves to meet earnings targets in the post-FIN 48 period.

H2: Non-large firms (firms with total assets less than $5 billion) continue managing earnings through tax reserves to meet earnings targets in the post-FIN 48 period.

2.2 Auditor-Provided Tax Services and Earnings Management through Tax Reserves

The argument that the joint provision of audit and NAS impairs auditor independence and audit quality became popular with the public after a series of accounting failures (e.g., Enron, Worldcom, and others) at the beginning of the 21st century and subsequently led to regulatory reform in auditing (e.g., SOX, PCAOB, and others). SOX prohibited most NAS. But tax services are specifically identified by SOX as services that can be performed by the auditor, as long as they are pre-approved by the company's audit committee on a case-by-case basis (Section 201).

However, academic researchers have not been able to build a consensus on the effect of NAS on audit services. Using discretionary accruals as a measure for earnings management, Frankel, Johnson, and Nelson (2002) find a positive relationship between the joint provision of services and discretionary accruals and argue that such a positive association provides evidence of independence impairment from the joint provision of services. However, subsequent studies (e.g., Ashbaugh, LaFond, & Mayhew, 2003; Chung & Kallapur, 2003) do not find such a positive association between the joint provision of services and discretionary accruals. Considering the limitations of discretionary accrual models (Jones, Krishnan, & Melendrez, 2008), other studies use restatements as a measure for earnings management. Ferguson, Seow, and Young (2004) show that firms are more likely to restate if they also hire their auditors for non-audit services. But this relationship does not hold in Kinney, Palmrose, and Scholz (2004). Furthermore, by partitioning total non-audit fees into five types (financial information system design and implementation, internal audit, audit-related, tax, and unspecified fees), Kinney et al. (2004) find a negative relationship between tax fees and restatements, but a positive relationship between unspecified fees and restatements. The findings of Kinney et al. (2004) are consistent with SOX's decision to prohibit certain NAS and keep tax services.

Another view on the effect of NAS on audit services is "knowledge spillovers." "Knowledge spillovers" is the idea that the production of NAS could bring efficiencies and/or effectiveness to an audit as the knowledge acquired for NAS is likely to benefit the audit as well (Simunic, 1984). Simunic (1984) models the effects of non-audit fees on audit fees and argues that the efficiency gained through knowledge transfer from NAS can be passed to clients, leading to greater purchase of audit services from them. Using survey data from U.S. companies, Simunic (1984) and Palmrose (1986) report a positive association between audit fees and non-audit fees. But their empirical results support the existence of "knowledge spillover" only under the assumption that the market for audit services is competitive. Otherwise, such results can be explained as higher profit margins for auditors serving as both auditor and advisor. Furthermore, applying different data and different research designs, subsequent studies (e.g., Davis, Ricchiute, & Trompeter, 1993; Whisenant, Sankaraguruswamy, & Raghunandan, 2003) do not find such a positive relation between audit fees and non-audit fees. Using confidential data from the IRS, Gleason and Mills (2011) find that, in the pre-SOX period, corporations that purchase ATS are on average fully reserved for IRS disputes while other corporations are in general under-reserved (Note 9).

In summary, current literature on the relation between NAS and audit services only provides mixed evidence. Part of the reason is that, except for Gleason and Mills (2011), most studies try to link NAS to the overall effectiveness and/or efficiency of audit. But it is possible that the production of NAS would not directly and materially impair or improve the effectiveness and/or efficiency of the audit of most accounts. It is probable that one specific type of NAS can only affect a few specific accounts. By only looking at the big picture, we may omit underlying independence impairment or knowledge spillover effects. The tax reserve account represents an overlap between the external auditor's audit and tax services and offers a genuine opportunity to examine the independence impairment or the knowledge spillover between audit and tax services. Thus, this study tries to follow Gleason and Mills's (2011) approach to test the existence of independence impairment or knowledge spillover by studying whether ATS constrain or facilitate earnings management through tax reserves.

ATS mainly include tax compliance, tax advice, and tax consulting (Maydew & Shackelford, 2007). In most cases, audit personnel and tax personnel belong to different departments in the same accounting firm. Knowledge spillover can be achieved by consulting with an informed internal tax professional. By discussing with tax and audit partners across the Big 4 audit firms, Gleason and Mills (2011) get to the understanding that tax partners generally believe that they have unique knowledge about tax risk by providing permissible services to audit clients and they are more forthcoming with information to the audit partner of the same firm than to the other audit firm. It is expected that the better understanding of tax reserves by the auditor, the less leeway the manager has to manipulate tax reserves. If knowledge spillovers from ATS can improve the auditor's understanding of tax reserves, I would expect that if the auditor provides more tax services, the change of tax reserves would be more of a reflection of change in underlying facts and less of a reflection of earnings management incentives. However, if the joint provision of tax services and audit services do impair auditor independence, the opposite would be the case.

While I believe the knowledge spillover effect could apply to all firms, the independence impairment effect probably varies with client importance. The auditor is less likely to compromise independence for less important clients. Medium and small firms are not likely to be important clients for the auditor and their purchases of tax services are unlikely to be meaningful for the auditor. Based on the assumption that the joint provision of tax services and audit services impairs auditor independence (at least for large firms) or creates knowledge spillover, I specify the following non-directional hypotheses:

H3a: Firms that purchase more tax services from their auditors manipulate earnings through tax reserves to a larger extent.

H3b: Firms that purchase more tax services from their auditors manipulate earnings through tax reserves to a lesser extent.

3. Methodology

3.1 Empirical Specification for H1 and H2

H1 and H2 predict whether firms of different sizes continue manipulating tax reserves to meet or beat earnings forecasts in the post-FIN 48 period. Following the previous literature (e.g., Frank & Rego, 2006; Healy, 1985), I also consider other types of earnings management incentives, which are income smoothing and taking an "earnings bath." More specifically, firms are likely to decrease their tax reserves to meet or beat the consensus analyst forecast when their pre-managed earnings are below the consensus forecast, increase/decrease their tax reserves to smooth earnings toward the consensus analyst forecast, or increase their tax reserves (i.e., take an "earnings bath") when the consensus analyst forecast cannot be met by accrual management.

The final model to test H1 and H2 is defined as follows:

$$\begin{aligned}D\Delta UTB\_ETR_{it} = {} & \alpha_0 + \alpha_1 BIG\_MISS_{it} + \alpha_2 MISS_{it} + \alpha_3 BIG\_MEET_{it} + \alpha_4 LARGE \\ & + \alpha_5 BIG\_MISS_{it} * LARGE + \alpha_6 MISS_{it} * LARGE \\ & + \alpha_7 BIG\_MEET_{it} * LARGE + b_1 PT\_ROA_{it} + b_2 LNSIZE_{it} \\ & + b_3 FOREIGN_{it} + b_4 RD_{it} + b_5 SGA_{it} + b_6 CASHETR_{it} + b_7 LEV_{it} \\ & + b_8 BTM_{it} + b_9 SALEGROWTH_{it} + \sum \rho_j\, INDUSTRY_j \\ & + \sum \tau_j\, YEAR_j + \varepsilon_{it} \qquad (1)\end{aligned}$$

Specific details regarding each variable, including calculation and data availability, are provided in Table 1.

The dependent variable, the discretionary change in tax reserves that would affect the effective tax rate if recognized (*DΔUTB_ETR*), is scaled by the number of common shares used to calculate basic earnings per share. Consistent with Gupta et al. (2016), the total change in tax reserves that would affect the effective tax rate if recognized (*ΔUTB_ETR*) is used as the proxy for the discretionary change in tax reserves (*DΔUTB_ETR*) (Note 10).

The set of proxies for earnings management incentives consider how far the pre-managed earnings per share (EPS) are from the consensus analyst forecast (Note 11). Consistent with the previous literature (e.g., Frank & Rego, 2006; Matsumoto, 2002; Phillips, Pincus, & Rego, 2003), the whole sample is partitioned into far below (*BIG_MISS*), just below (*MISS*), just meet (*MEET*), and far above (*BIG_MEET*). The pre-managed EPS is computed as reported EPS plus the per share discretionary change in *UTB_ETR* from year t-1 to year t. *BIG_MISS* (*MISS*) is equal to 1 for firm-years where pre-managed EPS miss the consensus analyst forecast by more than (less than or equal to) 3 cents; and zero otherwise. *BIG_MEE*T (*MEET*) is equal to 1 for firm-years where pre-managed EPS meet or beat the consensus analyst forecast by more than or equal to (less than) 3 cents; and zero otherwise. It is reasonable to believe that managers of the *MEET* group have the least intention to manipulate earnings. Thus, I include the three indicator variables *BIG_MISS*, *MISS*, and *BIG_MEET* in the regression model and use the *MEET* group as the baseline in the model. An indicator variable, *LARGE*, is set to 1 for firms with total assets of $5 billion or more, and zero otherwise. As it is expected through H1 and H2 that firms of different sizes behave differently in the post-FIN 48 period, the indicator variable, *LARGE*, and its interactions with incentives for earnings management are added in the model (1) as well.

The coefficients of interest are α_2 and α_6 in model (1). If, as per H1, large firms no longer manipulate tax reserves to meet or beat earnings forecasts in the post-FIN 48 period, the coefficient on *MISS* for large firms ($\alpha_2 + \alpha_6$) would not be significantly different from zero. The coefficient on *MISS* for non-large firms would be negative as H2 predicts that non-large firms continue discretionally decreasing tax reserves to meet or beat earnings forecasts in the post-FIN 48 period. *BIG_MISS*, *BIG_MEET*, and their interactions with *LARGE* are applied to control managers' other earning management incentives (i.e., earnings smoothing and "big bath"). There is no predicted sign on *BIG_MISS* (both α_1 and $\alpha_1+\alpha_5$) as firms with pre-managed earnings substantially below the consensus analyst forecast may decrease tax reserves to smooth earnings up or increase tax reserves to take an "earnings bath." The expected sign on *BIG_MEET* (both α_3 and $\alpha_3+\alpha_7$) is positive as it is expected that firms in this group intend to hide earnings by increasing tax reserves.

Table 1. Variable measurement (capitalized, non-italic variables are Compustat acronyms)

FIN 48 Data (10-K reports)		
ΔUTB_ETR	=	Change in unrecognized tax benefits that would affect the effective tax rate if recognized, scaled by the number of common shares used to calculate EPS (CSHPRI);
Measure for the Extent of Tax Services (Source: Audit Analytics):		
TAXSERVICE	=	Tax fees/square root of total assets (AT);
Measures for Earnings Management Incentives (Source: I/B/E/S and 10-K reports):		
MISS_AMOUNT	=	Pre-managed EPS (EPS + *ΔUTB_ETR*) minus the consensus forecast (the median forecasted EPS from I/B/E/S) if pre-managed EPS is less than the consensus forecast;
MEET_AMOUNT	=	Pre-managed EPS minus the consensus forecast if pre-managed EPS is greater than the consensus forecast;
PES	=	Pre-managed EPS minus the consensus forecast;
AES	=	Actual EPS minus the consensus forecast;
BIG_MISS	=	1 in firm-years in which pre-managed EPS is lower than the consensus forecast by more than 3 cents, and zero otherwise;
MISS	=	1 in firm-years in which pre-managed EPS is lower than the consensus forecast by no more than 3 cents, and zero otherwise;
BIG_MEET	=	1 in firm-years in which pre-managed EPS is greater than the consensus forecast by more than 3 cents, and zero otherwise;
MEET	=	1 in firm-years in which pre-managed EPS is greater than the consensus forecast by no more than 3 cents, and zero otherwise;
Other Firm Characteristics (Source: Compustat):		
LARGE	=	1 if the firm has total assets of $5 billion or more, and zero otherwise;
PT_ROA	=	Pretax income (PI)/lagged total assets (AT);
LNSIZE	=	Natural logarithm of total assets (AT);
FOREIGN	=	Sum of foreign sales scaled by total assets (AT), missing values are coded zero; (Source: Compustat Segments)
RD	=	Research and development expenses (XRD) (missing values are coded zero), scaled by lagged total assets;
SGA	=	Selling and administrative expenses (XSGA) (missing values are coded zero)/lagged assets (AT);
CASHETR	=	Cash taxes paid (TXPD)/[Pre-tax income (PI)-Special items (SPI)];
LEV	=	Ratio of short-term and long-term debt to total assets, calculated as (DLTT+DLC)/lagged assets (AT);
BTM	=	Book to market ratio calculated as CEQ/(CSHO*PRCC_F);
SALEGROWTH	=	Three-year average growth in sales (SALE).

To control for non-discretionary changes in tax reserves that would affect the effective tax rate if recognized, control variables are included in Model (1). Based on the previous literature on the determinants of tax reserves (e.g., Cazier, Rego, Tian, & Wilson, 2010; Song & Tucker, 2008), I identify the following control variables in Model (1): pre-tax return on assets (*PT_ROA*) as a measure for firm profitability; the current year cash effective tax rate (*CASHETR*) to control for the firm's tax avoidance activities during the year; the natural logarithm of total assets (*LNSIZE*) to control for the size of the company; R&D expenditures (*RD*), selling and administrative expenses (*SGA*), and the proportion of foreign sales to total sales (*FOREIGN*) as measures for tax complexity; book-to-market ratio (*BTM*) and three-year average change in sales (*SALEGROWTH*) as proxies for growth opportunities; and ratio of short-term and long-term debt to total assets (*LEV*) to control for tax savings from interest tax deductions. Indicator variables are included to control for industry and year fixed effects. Robust standard errors are clustered at the firm level to adjust for heteroskedasticity and time-series correlation (Petersen, 2009).

3.2 Empirical Specification for H3

H3 tests whether ATS facilitate or constrain earnings management through tax reserves in the post-FIN 48 period. Following Kinney et al. (2004), the proxy for the extent of auditor-provided tax services, *TAXSERVICE*, is defined as the ratio of tax fees to the square root of total assets. This measure not only linearizes the relation between fees and size, but also reduces heterogeneity of variance due to size. The final model to test H3a and H3b is defined as follows:

$$\begin{aligned} D\Delta URB\_ETR_{it} = {} & \alpha_0 + \alpha_1 BIG\_MISS_{it} + \alpha_2 MISS_{it} + \alpha_3 BIG\_MEET_{it} + \alpha_4 LARGE \\ & + \alpha_5 BIG\_MISS_{it} * LARGE + \alpha_6 MISS_{it} * LARGE \\ & + \alpha_7 BIG\_MEET_{it} * LARGE + \alpha_8 TAXSERVICE_{it} \\ & + \alpha_9 BIG\_MISS_{it} * TAXSERVICE_{it} + \alpha_{10} MISS_{it} * TAXSERVICE_{it} \\ & + \alpha_{11} BIG\_MEET_{it} * TAXSERVICE_{it} + \alpha_{12} TAXSERVICE_{it} * LARGE \\ & + \alpha_{13} BIG\_MISS_{it} * TAXSERVICE_{it} * LARGE \\ & + \alpha_{14} MISS_{it} * TAXSERVICE_{it} * LARGE \\ & + \alpha_{15} BIG\_MEET_{it} * TAXSERVICE_{it} * LARGE + b_1 PT\_ROA_{it} \\ & + b_2 LNSIZE_{it} + b_3 FOREIGN_{it} + b_4 RD_{it} + b_5 SGA_{it} + b_6 CASHETR_{it} \\ & + b_7 LEV_{it} + b_8 BTM_{it} + b_9 SALEGROWTH_{it} + \sum \rho_j \, INDUSTRY_j \\ & + \sum \tau_j \, YEAR_j + \varepsilon_{it} \end{aligned} \tag{2}$$

Interactions with the extent of tax services (*TAXSERVICE*) and proxies for earnings management incentives (*BIG_MISS*, *MISS*, and *BIG_MEET*) are included in the regression models as the intention is to test whether the joint provision of audit and tax services could to some level facilitate (restrain managers from) manipulating earnings through tax reserves. As I expect the "independence impairment" effect is stronger for large firms than medium and small firms (non-large firms), the indicator variable, *LARGE*, and its interactions with incentives for earnings management and the extent of tax services provided by the auditor are added in the model (2) as well. For non-large firms, the coefficients of interest are α_9, α_{10} and α_{11} in model (2). Under the hypothesis that independence impairment (knowledge spillover) through the joint provision of audit and tax services could to some extent facilitate (inhibit managers from) earnings manipulations through tax reserves, I predict α_9 to be the same sign (opposite sign) of α_1, α_{10} to be negative (positive), and α_{11} be negative (positive). For large firms, the coefficients of interest are $\alpha_9+\alpha_{13}$, $\alpha_{10}+\alpha_{14}$ and $\alpha_{11}+\alpha_{15}$ in model (2). Under the hypothesis that independence impairment (knowledge spillover) through the joint provision of audit and tax services could to some extent facilitate (inhibit managers from) earnings manipulations through tax reserves, I predict $\alpha_9+\alpha_{13}$ to be the same sign (opposite sign) of $\alpha_1+\alpha_5$, $\alpha_{10}+\alpha_{14}$ to be negative (positive), and $\alpha_{11}+\alpha_{15}$ be negative (positive).

3.3 Sample Selection and Descriptive Statistics

Following Lisowsky et al. (2013) and Robinson and Schmidt (2013), the sample is limited to S&P 1500 Composite Index firms as of January 1, 2007. The S&P 1500 index covers approximately 85% of the U.S. market capitalization and offers a fair representation of the U.S. market as it is comprised of the S&P 500, 400, and 600 large, mid, and small cap indices, respectively. Tax reserve data were hand-collected from the 2007-2010 annual reports of S&P 1500 firms as of January 1, 2007 (Note 12). The sample starts in 2007, since FIN 48 requires all public companies to disclose their tax reserve information for fiscal periods beginning after December 15, 2006.

Panel A of Table 2 details the sample selection process. Starting with 1,500 unique firms, 140 firms are deleted as they were acquired or liquidated before the adoption of FIN 48. Another 242 firms in the financial industry (SIC 6000-6999) are deleted due to the unique nature of financial and tax regulatory requirements. Since audit and non-audit fee data is drawn from the Audit Analytics database, financial data is drawn from Compustat, and earnings forecast data is drawn from I/B/E/S, 49 firms are further excluded as insufficient Compustat and/or Audit Analytics and/or I/B/E/S data. In the end, the sample includes 1,069 unique firms, including 359 firms, 294 firms, and 416 firms for S&P 500, 400, and 600, respectively. Panel B of Table 2 lists the number of post-FIN 48 firm-year observations in the sample. The final sample includes 3,781 firm-year observations. The fiscal year 2007 has the least observations due to some firms with 2007 fiscal years beginning prior to December 15, 2006, the official starting date of FIN 48.

Table 2. Sample selection

Panel A: No. of Firms		
S&P 1500 firms as of January 1, 2007		1,500
Less: Acquired/liquidated		140
Less: Financial Institutions		242
Less: Insufficient Compustat and/or AuditAnalytics and/or I/B/E/S data		49
		1,069
Including:	S&P 500	359
	S&P 400	294
	S&P 600	416
Panel B: Firm-year observations		
Fiscal Year		Full Sample
	2007	822
	2008	1,006
	2009	987
	2010	966
Total		3,781

Table 3 presents descriptive statistics for the variables in the models. The mean (median) change in tax reserves that would affect the effective tax rate if recognized is 0.005 (0.000), suggesting that firms do not significantly decrease or increase tax reserves in the post-FIN 48 period. Out of the 3,781 observations, 1,456 observations have pre-managed earnings below the consensus analyst forecast. The mean (median) forecast error for such observations is -0.283 (-0.067). The other 2,325 observations have pre-managed earnings equal to or above the consensus analyst forecast. The mean (median) forecast error for these observations is 0.151 (0.070). The extent of tax services provided by the auditor (*TAXSERVICE*), measured as tax fees scaled by square root of total assets, has the mean (median) of 0.217 (0.087). The median firm reports positive pre-tax income of 7.5% of lagged total assets, has foreign sales that are 16.1% of total sales (*FOREIGN*), and has a book-to-market ratio of 0.503 (*BTM*). The median current cash effective tax rate is 25.9%. This measure is significantly lower than the statutory tax rate, providing evidence that the typical firm does take efforts to save tax payments.

Table 3. Descriptive Statistics

Variable	N	25th	Median	Mean	75th	Std. Dev.
ΔUTB_ETR	3781	-0.021	0.000	0.005	0.031	0.194
MISS_AMOUNT	1456	-0.181	-0.067	-0.283	-0.024	1.165
MEET_AMOUNT	2325	0.030	0.070	0.151	0.158	0.391
TAXSERVICE	3781	0.013	0.087	0.217	0.286	0.323
PT_ROA	3781	0.027	0.075	0.074	0.135	0.132
LNSIZE	3781	13.660	14.658	14.780	15.769	1.532
FOREIGN	3781	0.000	0.161	0.257	0.400	0.358
RD	3781	0.000	0.000	0.030	0.037	0.057
SGA	3781	0.084	0.198	0.240	0.334	0.231
CASHETR	3074	0.141	0.259	0.276	0.355	0.206
LEV	3766	0.074	0.219	0.237	0.348	0.215
BTM	3781	0.317	0.503	0.581	0.747	1.678
SALEGROWTH	3781	-0.008	0.054	0.068	0.124	0.150

Note: See Table 1 for full variable definitions.

Table 4 provides distribution of observations based on pre-managed earnings and actual earnings. In Panel A of Table 4, I partition the observations into four groups *(BIG_MISS=1*, *MISS=1*, *MEET*=1, and *BIG_MEET*=1). The *MISS* and *MEET* groups include firm-year observations with pre-managed earnings within 3 cents of the consensus forecast. The *BIG_MISS* and *BIG_MEET* groups include firm-year observations with pre-managed earnings more than 3 cents from the consensus forecast. I notice significant asymmetry between groups. While 69.3% of firm-year observations in the *BIG_MEET* group increase their tax reserves (which decrease net income), 62.9% and 67.4% of firm-year observations in the *MISS* and *BIG_MISS* group, respectively, decrease their tax reserves (which increases net income). At the same time, even though the increase of tax reserves decreases net income, most firms manage to increase tax reserves without failing to meet the consensus earnings forecast. Within the observations with an increase of tax reserves in the *MEET* and *BIG_MEET* groups, 70.2% and 90.7% of them respectively have actual EPS still above the consensus forecast. On the other hand, a substantial number of firms with pre-managed earnings less than the consensus forecast manage to meet the consensus forecast by decreasing tax reserves. Within the observations with a decrease of tax reserves in the *MISS* and *BIG_MISS* groups, 80.8% and 41.0% of them, respectively, successfully meet the consensus forecast. All these asymmetric results are consistent with managers using their discretion over tax reserves to meet the consensus forecast or create “cookie jars” for future financial reporting purposes in the post-FIN 48 period.

Panel B of Table 4 presents the distribution of the sample by pre-managed earnings surprises (calculated as the difference between pre-managed earnings and the consensus analyst forecast) and actual earnings surprises (calculated as the difference between actual earnings and the consensus analyst forecast). Figure 2 plots the distribution of pre-managed earnings surprises and actual earnings surprises in 1-cent bins in a range from -10 cents to +10 cents per share. Panel B of Table 4 and Figure 2 display the same information but the graphical demonstration in Figure 2 makes the information more intuitive. Figure 2 shows that the distribution of observations based on pre-managed earnings surprises appears to approximate a normal distribution. However, consistent with the previous literature (e.g., Degeorge, Patel, & Zeckhauser, 1999), the distribution of observation based on actual earnings surprises is much tighter and drops sharply below zero. There are much less extreme cases in the actual earnings surprises. Based on actual earnings surprises, most of the observations (2,790 out of 3,781) fall into the range from -10 to +10 cents per share. But based on pre-managed earnings surprises, only 2,307 observations are within this range. In summary, the results in Table 3 and Figure 2 suggest that the actual EPS are the product of earnings management and the tax reserves are the tool applied by managers to smooth earnings or meet or beat the consensus analyst forecast.

Table 4. Distribution of sample

Panel A. Sample partition by *BIG_MISS*, *MISS*, *MEET*, and *BIG_MEET*

BIG_MISS=1		*MISS*=1		*MEET*=1		*BIG_MEET*=1	
N=	1017	N=	439	N=	585	N=	1740
% *UTB_ETR* Increase	21.8%	% *UTB_ETR* Increase	25.1%	% *UTB_ETR* Increase	41.9%	% *UTB_ETR* Increase	69.3%
% *UTB_ETR* Decrease	67.4%	% *UTB_ETR* Decrease	62.9%	% *UTB_ETR* Decrease	35.7%	% *UTB_ETR* Decrease	22.0%
% *UTB_ETR* No Change	10.8%	% *UTB_ETR* No Change	12.1%	% *UTB_ETR* No Change	22.4%	% *UTB_ETR* No Change	8.8%
Mean PES[1]	-0.398	Mean PES[1]	-0.015	Mean PES[1]	0.014	Mean PES[1]	0.197
Mean *ΔUTB_ETR*	-0.090	Mean *ΔUTB_ETR*	-0.014	Mean *ΔUTB_ETR*	-0.001	Mean *ΔUTB_ETR*	0.067
P(MEET)	27.6%	P(MEET)	50.8%	P(MEET)	87.5%	P(MEET)	93.6%
P(MEET|Decrease)	41.0%	P(MEET|Decrease)	80.8%	P(MEET|Increase)	70.2%	P(MEET|Increase)	90.7%

[1]Pre-Managed Earnings Surprises

Panel B: Distribution of sample by Pre-Managed Earnings Surprises (PES) and Actual Earnings Surprises (AES)

	PES	AES
(-∞ , -0.1)	559	379
[-0.1 , -0.08)	103	71
[-0.08 , -0.06)	102	87
[-0.06 , -0.04)	137	162
[-0.04 , -0.02)	264	221
[-0.02 , 0)	291	217
[0 , 0.02)	406	709
[0.02 , 0.04)	350	556
[0.04 , 0.06)	273	355
[0.06 , 0.08)	237	248
[0.08 , 0.1)	144	164
[0.1 , +∞)	915	612
Total	3781	3781

Note: See Table 1 for full variable definitions

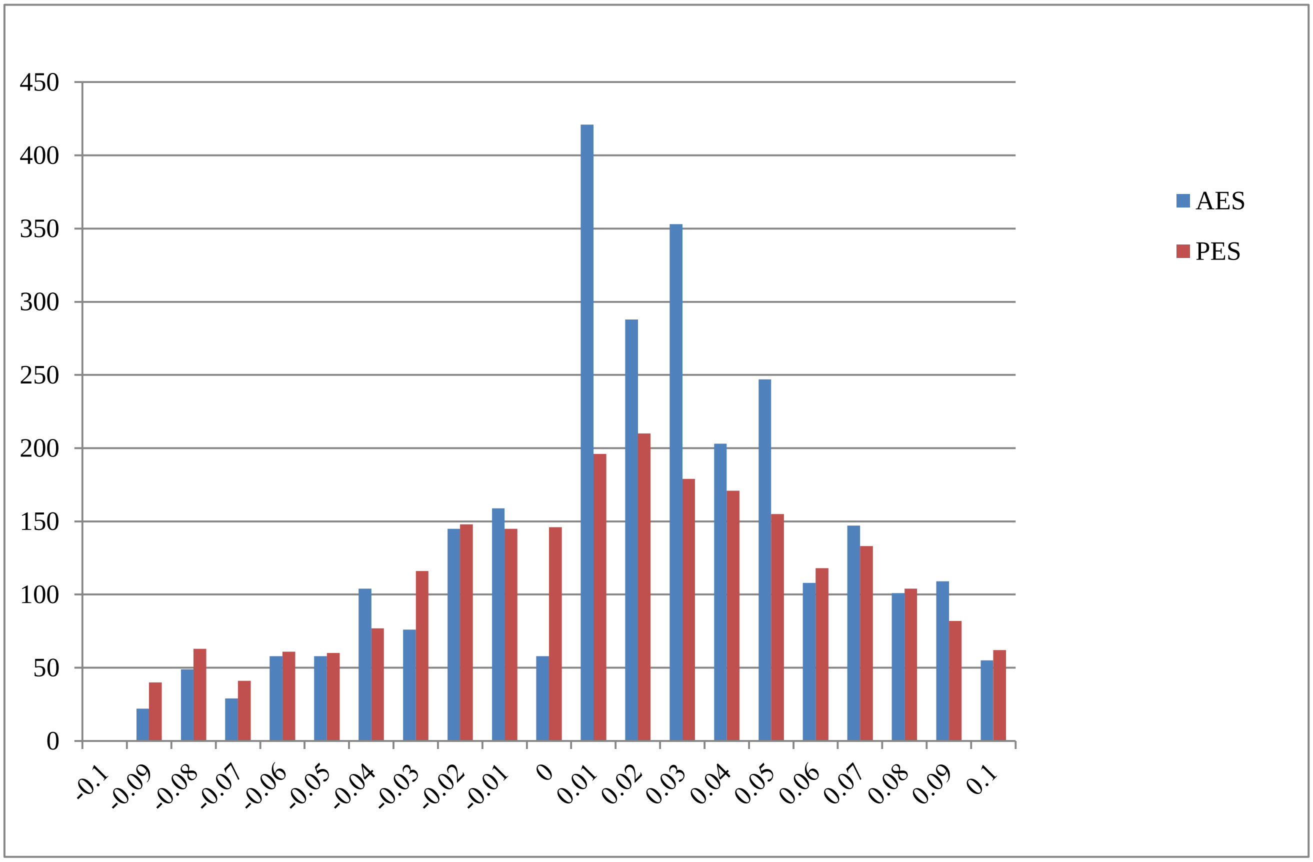

Figure 2. Distribution of sample by Pre-Managed Earnings Surprises (PES) and Actual Earnings Surprises (AES)

This chart plots the distribution of pre-managed earnings surprises (PES) and actual earnings surprises (AES) in 1-cent bins in a range from -10 cents to +10 cents per share. Observations with earnings surprise outside of the bin range are deleted. The number of observations with AES within this range is 2790. The number of observations with PES within this range is 2307.

Table 5 tabulates the Pearson and the Spearman correlations between variables for the earnings management model. Table 5 shows that most control variables are significantly related to the dependent variable (*ΔUTB_ETR*), which indicates that the models have successfully identified various determinants of the non-discretionary change of tax reserves.

Table 5. Correlation table

Pearson (above) / Spearman (below) Correlations

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
(1) *ΔUTB_ETR*		-0.04**	-0.01	-0.30***	0.30***	-0.02	0.04***	0.04***	0.00	0.03**	0.00	-0.05***	0.02	0.00	0.09***
(2) *MISS*	-0.15***		-0.16***	-0.22***	-0.33***	-0.05***	0.03*	-0.02	-0.07***	-0.02	-0.02	0.01	0.04**	-0.01	0.00
(3) *MEET*	-0.03	-0.16***		-0.26***	-0.40***	-0.03**	0.05***	-0.10***	-0.03*	0.00	0.09***	-0.01	-0.05***	-0.01	0.06***
(4) *BIG_MISS*	-0.41***	-0.22***	-0.26***		-0.56***	-0.01	-0.17***	-0.02	-0.02	-0.07***	-0.06***	0.10***	0.05***	0.01	-0.12***
(5) *BIG_MEET*	0.48***	-0.33***	-0.40***	-0.56***		0.07***	0.09***	0.11***	0.08***	0.08***	0.00	-0.09***	-0.04**	0.00	0.07***
(6) *TAXSERVICE*	0.06***	-0.04***	-0.05***	-0.03*	0.09***		0.02	0.07***	0.18***	0.08***	0.08***	0.06***	-0.05***	-0.03	0.00
(7) *PT_ROA*	0.07***	0.04**	0.07***	-0.20***	0.10***	0.04***		0.10***	0.05***	-0.13***	0.16***	-0.05***	-0.02	-0.08***	0.32***
(8) *LNSIZE*	0.07***	-0.02	-0.10***	-0.01	0.10***	0.08***	0.08***		-0.02	-0.20***	-0.36***	-0.07***	0.28***	-0.02	0.05***
(9) *FOREIGN*	0.06***	-0.07***	-0.05***	-0.01	0.09***	0.30***	0.10***	-0.01		0.15***	0.13***	0.04**	-0.20***	-0.02	0.05***
(10) *RD*	0.10***	-0.06***	-0.04**	-0.04***	0.10***	0.22***	0.04**	-0.17***	0.47***		0.19***	-0.07***	-0.18***	-0.04**	0.10***
(11) *SGA*	0.03**	-0.02	0.09***	-0.08***	0.02	0.14***	0.21***	-0.40***	0.23***	0.29***		0.11***	-0.23***	-0.02	0.01
(12) *CASHETR*	-0.05***	0.02	0.02	0.08***	-0.09***	0.05***	0.08***	-0.09***	0.04**	-0.06***	0.20***		-0.06***	0.04**	-0.01
(13) *LEV*	0.00	0.02	-0.07***	0.07***	-0.03*	-0.05***	-0.17***	0.39***	-0.24***	-0.27***	-0.36***	-0.15***		-0.04**	0.03*
(14) *BTM*	-0.06***	-0.04**	-0.04**	0.13***	-0.06***	-0.07***	-0.54***	-0.09***	-0.12***	-0.20***	-0.20***	-0.03	-0.02		-0.03**
(15) *SALEGROWTH*	0.17***	0.00	0.07***	-0.14***	0.07***	0.02	0.40***	0.04**	0.05***	0.10***	0.04**	0.07***	-0.04**	-0.16***	

***, **, * represent significance at the $p<0.01$, 0.05, and 0.10 levels, respectively.

See Table 1 for full variable definitions

4. Regression Results and Discussion

4.1 Regression Results

To mitigate the effect of outliers, all continuous variables are winsorized at the 1 and 99 percent levels. Table 6 provides the results from estimating Model (1), which examines H1 and H2. Column 1 of Table 6 reports results based on the full sample. For large firms, the coefficient on *MISS* ($\alpha_2+\alpha_6$ =-0.003, t=-0.43) is not significantly different from zero, consistent with H1 and Gupta et al. (2016) finding that managers of large firms no longer manipulate tax reserves to meet/beat earnings forecast in the post-FIN 48 period. For non-large firms, the coefficient on *MISS* (α_2=-0.015, t=-4.53) is significantly negative, consistent with H2 and Cazier et al. (2015) that managers of non-large firms continue manipulating tax reserves to meet/beat earnings forecast in the post-FIN 48 period. In addition, the coefficients on *BIG_MISS* for large firms ($\alpha_1+\alpha_5$=-0.104, t=-9.11) and non-large firms (α_1=-0.067, t=-9.85) are both significantly negative and the coefficients on *BIG_MEET* for large firms ($\alpha_3+\alpha_7$=0.093, t=11.07) and non-large firms (α_3=0.044, t=9.77) are both significantly positive, implying that managers of both types of firms use tax reserves to smooth earnings in the post-FIN 48 period. Columns 2 and 3 of Table 6 tabulate results solely based on the large firm subsample and the non-large firm subsample respectively. All the results are qualitatively similar to Column 1 of Table 6. The coefficients on *BIG_MISS* (*BIG_MEET*) are significantly negative (positive) for both subsamples. However, the coefficient on *MISS* is significantly negative only for the non-large firm subsample.

Table 7 provides the results from estimating Model (2). Interaction terms between the extent of tax services provided by the auditor (*TAXSERVICE*) and *MISS, BIG_MISS,* and *BIG_MEET* are applied to test H3a and H3b. Column 1 of Table 7 reports results based on the full sample. The coefficients on *MISS*, *BIG_MISS*, and *BIG_MEET* are consistent with Table 6. For large firms, the coefficients on *BIG_MEET*TAXSERVICE* ($\alpha_{11}+\alpha_{15}$=0.140, t=3.37), *BIG_MISS*TAXSERVICE* ($\alpha_9+\alpha_{13}$=-0.035, t=-0.87), and *MISS*TAXSERVICE* ($\alpha_{10}+\alpha_{14}$=0.003, t=0.07) are significant at 1%, non-significant, and non-significant respectively, providing some support to H3a that ATS to large clients could impair auditor independence and the auditor providing more tax services to large clients could facilitate managers smoothing earnings through tax reserves. For non-large firms, none of the coefficients on the interaction terms between the extent of pre-managed earnings and the extent of tax services provided by the auditor (*BIG_MEET*TAXSERVICE, BIG_MISS*TAXSERVICE, and MISS*TAXSERVICE*) is significant, implying that providing tax services to non-large audit clients would not impair audit independence. Columns 2 and 3 of Table 7 tabulate results solely based on the large firm subsample and the non-large firm subsample respectively. All the results are qualitatively similar to Column 1 of Table 7.

Table 6. Regression results: Model (1)

Dependent Variable: *ΔUTB_ETR*		[1]		[2]		[3]	
	Pred.	Full Sample		Large Firms		Non-large Firms	
Variable	Sign	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
a_0 *INTERCEPT*	?	-0.161 ***	-3.35	-0.432 ***	-3.13	-0.082 **	-2.07
a_1 *BIG_MISS*	?	-0.067 ***	-9.85	-0.105 ***	-8.46	-0.066 ***	-9.54
a_2 *MISS*	-	-0.015 ***	-4.53	-0.003	-0.32	-0.014 ***	-4.17
a_3 *BIG_MEET*	+	0.044 ***	9.77	0.094 ***	10.30	0.045 ***	10.15
a_4 *LARGE*	?	-0.024 ***	-3.02				
a_5 *BIG_MISS*LARGE*	?	-0.038 ***	-2.82				
a_6 *MISS*LARGE*	+	0.013 **	1.81				
a_7 *BIG_MEET*LARGE*	?	0.049 ***	5.09				
b_1 *PT_ROA*		0.024	0.76	0.043	0.55	0.001	0.03
b_2 *LNSIZE*		0.007 **	2.33	0.018 ***	2.61	0.001	0.46
b_3 *FOREIGN*		-0.010	-1.15	0.005	0.26	-0.010	-1.22
b_4 *RD*		0.068	1.15	0.082	0.51	0.050	0.89
b_5 *SGA*		0.022	1.34	0.079 *	1.83	0.003	0.18
b_6 *CASHETR*		0.005	0.41	-0.022	-0.86	0.016	1.19
b_7 *LEV*		0.034 ***	2.73	0.096 ***	2.92	0.021	1.63
b_8 *BTM*		0.011	1.29	0.033 *	1.80	0.002	0.22
b_9 *SALEGROWTH*		0.055 *	1.93	0.042	0.81	0.063 *	1.88
Industry dummies			Yes		Yes		Yes
Year dummies			Yes		Yes		Yes
a_1 + a_5	?	-0.104 ***	-9.11				
a_2 + a_6	-	-0.003	-0.43				
a_3 + a_7	+	0.093 ***	11.07				
N			3062		1066		1996
Adj. R^2			25.14%		31.13%		19.04%

All continuous variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. ***, **, * represent significance at the p<0.01, 0.05, and 0.10 levels, respectively, using a one-tailed (two-tailed) test of significance for variables with (without) a directional prediction. All reported test statistics are calculated using robust standard errors adjusted for clustering at the firm level. The industry and the year indicator variable results are not reported for parsimony.

See Table 1 for full variable definitions

Table 7. Regression Results: Model (2)

Dependent Variable: *ΔUTB_ETR*			[1]		[2]		[3]	
		Pred.	Full Sample		Large Firms		Non-large Firms	
	Variable	Sign	Coeff.	t-stat	Coeff.	t-stat	Coeff.	t-stat
a_0	*INTERCEPT*	?	-0.161***	-3.42	-0.397***	-3.12	-0.082**	-2.09
a_1	*BIG_MISS*	?	-0.055***	-7.98	-0.076***	-6.31	-0.053***	-7.67
a_2	*MISS*	-	-0.007**	-1.71	-0.006	-0.60	-0.006*	-1.39
a_3	*BIG_MEET*	+	0.035***	7.05	0.058***	5.55	0.036***	7.35
a_4	*LARGE*	?	-0.016*	-1.77				
a_5	*BIG_MISS*LARGE*	?	-0.022*	-1.66				
a_6	*MISS*LARGE*	+	0.005	0.53				
a_7	*BIG_MEET*LARGE*	?	0.022**	2.04				
a_8	*TAXSERVICE*	?	-0.004	-0.45	-0.078*	-1.91	-0.001	-0.11
a_9	*BIG_MISS*TAXSERVICE*	?	-0.022	-1.02	-0.034	-0.76	-0.025	-1.15
a_{10}	*MISS*TAXSERVICE*	?	-0.031	-1.33	0.009	0.19	-0.032	-1.45
a_{11}	*BIG_MEET*TAXSERVICE*	?	0.021	1.27	0.146***	2.91	0.022	1.31
a_{12}	*TAXSERVICE*LARGE*	?	-0.063**	-2.09				
a_{13}	*BIG_MISS*TAXSERVICE*LARGE*	?	-0.013	-0.28				
a_{14}	*MISS*TAXSERVICE*LARGE*	?	0.034	0.75				
a_{15}	*BIG_MEET*TAXSERVICE*LARGE*	?	0.119***	2.65				
b_1	*PT_ROA*		0.043	1.31	0.102	1.24	0.007	0.20
b_2	*LNSIZE*		0.007**	2.42	0.017***	2.69	0.001	0.39
b_3	*FOREIGN*		-0.007**	-0.80	0.012	0.61	-0.010	-1.17
b_4	*RD*		0.089	1.45	0.140	0.81	0.048	0.84
b_5	*SGA*		0.010	0.63	0.038	0.85	-0.001	-0.04
b_6	*CASHETR*		0.009	0.73	-0.010	-0.38	0.016	1.14
b_7	*LEV*		0.033***	2.63	0.095***	2.85	0.024*	1.81
b_8	*BTM*		0.012	1.41	0.029	1.61	0.003	0.35
b_9	*SALEGROWTH*		0.046	1.56	0.018	0.35	0.060*	1.75
Industry dummies				Yes		Yes		Yes
Year dummies				Yes		Yes		Yes
$a_9 + a_{13}$		?	-0.035	-0.87				
$a_{10} + a_{14}$		?	0.003	0.07				
$a_{11} + a_{15}$		?	0.140***	3.37				
N				3062		1066		1996
Adj. R^2				24.46%		30.96%		17.68%

All continuous variables are winsorized at the 1 and 99 percent levels to mitigate the effect of outliers. ***, **, * represent significance at the p<0.01, 0.05, and 0.10 levels, respectively, using a one-tailed (two-tailed) test of significance for variables with (without) a directional prediction. All reported test statistics are calculated using robust standard errors adjusted for clustering at the firm level. The industry and the year indicator variable See Table 1 for full variable definitions.

4.2 Discussion

The effect of FIN 48 on the behavior of earnings management through tax reserves remains unclear as previous studies (Cazier, Rego, Tian, & Wilson, 2015; Gupta, Laux, & Lynch, 2016) couldn't achieve a consensus view. While Cazier et al. (2015) find that tax reserves are still manipulated to meet earnings forecasts in the post-FIN 48 period, Gupta et al. (2016) find no evidence to suggest such earnings management behavior continues to exist post-FIN 48. Based on IRS data that large firms face a much higher level of tax enforcement, this study examines whether the effect of FIN 48 on the behavior of using tax reserves to achieve financial reporting objectives is different for large firms and non-large firms in the post-FIN 48 period. Consistent with H1 and H2, the results in Table 6 provide evidence that only non-large firms manipulate tax reserves to meet/beat earnings forecast in the post-FIN 48 period; however, tax reserves are still utilized by both large and non-large firms to smooth earnings. Table 6 also reconciles the contradiction between Cazier et al. (2015) and Gupta et al. (2016) on whether managers still manipulate tax reserves to meet/beat earnings forecast in the post-FIN 48 period.

Tax reserves represent an overlap between the external auditor's audit and tax services, and offer a genuine opportunity to investigate the mystery whether ATS generate knowledge spillover or impair independence. This study also examines whether the effect of ATS on the behavior of using tax reserves to achieve financial reporting objectives is different for large firms and non-large firms in the post-FIN 48 period. Evidence supporting H3a, the independence impairment hypothesis, is provided in Table 7 as the auditor providing more tax services would facilitate large firms' earnings smoothing. This behavior does not exist within non-large firms as arguably the auditor does not compromise independence for unimportant clients.

However, any conclusion drawn in this study depends on the accurate identification of discretionary changes in tax reserves; i.e., all the factors related to nondiscretionary changes in tax reserves have been controlled in the regression. The results shown in this study could be misleading if the accurate identification of discretionary changes in tax reserves hasn't been achieved.

The natural next step for this study would be an expanded study including more years as the effect of FIN 48 could be time-varying. Moreover, FIN 48 has been the biggest change in financial accounting for income taxes over the past decade (Mills, Robinson, & Sansing, 2010) and is believed to have had widespread effects. More studies examining the economic consequences of FIN 48 are needed for us to better understand FIN 48 and its implications.

4.3 Robustness Checks

Cazier et al. (2015) argue that managers have less discretion in settlements with tax authorities and statute of limitations expirations. As a robustness check, I re-estimate the regression specifications presented in Tables 5 and 6 by using the total change in tax reserves that would affect the effective tax rate if recognized excluding settlements with tax authorities and statute of limitations expirations (*ΔUTB_ETR_ES*) as the proxy for discretional change in tax reserves. Results are consistent with those reported in Tables 5 and 6 and yield no change in inferences.

The observations are partitioned into four groups *(BIG_MISS=1*, *MISS=1*, *MEET*=1, and *BIG_MEET*=1), based on whether pre-managed earnings per share are below or above the consensus forecast and whether the difference is more or less than 3 cents from the consensus forecast. Because prior research considers different intervals (e.g., Frank & Rego, 2006; Matsumoto, 2002; Phillips et al., 2003), alternative intervals (i.e., 2- and 4-cent earnings per share intervals) are applied to test the sensitivity of the results. The results based on alternative intervals are qualitatively similar to those presented in Tables 5 and 6 and yield no change in inferences.

Finally, to invalidate the possibility that the results are sensitive to a particular year, especially the year of implementation of FIN 48, I re-estimate the regression specifications presented in Tables 5 and 6 by year. There is no significant disparity among years, suggesting that the results are not driven by a particular year.

5. Conclusion

This study examines whether firms continue to use tax reserves to achieve financial reporting objectives in the post-FIN 48 period and the effect of ATS on such earnings management. Previous studies (e.g., Cazier et al., 2015; Gupta et al., 2016) either examine only large firms or treat all firms as a homogenous group. As firms of different sizes are under different levels of tax enforcement, firms could behave differently in the post-FIN 48 period. Thus, I incorporate the role of firm size in this study. Firm size also plays a role in the effect of ATS on earnings management through tax reserves as the auditor is unlikely to compromise independence for unimportant clients.

Three types of earnings management incentives are considered in this analysis: meeting or beating the consensus forecasts, income smoothing, and taking an "earnings bath." The analysis yields evidence that only non-large firms manipulate tax reserves to meet/beat earnings forecast in the post-FIN 48 period. But in the post-FIN 48 period, tax reserves are still utilized by firms of different sizes to smooth earnings. No evidence of an "earnings bath" is discovered. Moreover, evidence supporting the independence impairment hypothesis is provided as the auditor providing more tax services would facilitate large firms' earnings smoothing in the post-FIN 48 period. This behavior does not exist within non-large firms. Finally, the auditor providing more tax services would not facilitate using tax reserves to meet or beat earnings forecasts for both large and non-large firms.

In closing, this paper contributes to the literature in two ways. First, this study provides evidence that firms of different sizes behave differently in terms of whether to use tax reserves to meet or beat the consensus forecasts in the post-FIN 48 period, which reconciles the contradiction within the current literature (i.e., Cazier et al., 2015; Gupta et al., 2016). Second, this study provides clear evidence of independence impairment from ATS to audit services.

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Notes

Note 1. The other two main tax accounts are the valuation of allowance and the amount of foreign earnings designated as permanently reinvested abroad.

Note 2. Compustat now provides tax reserve data. However, data for fiscal years 2007 and 2008 are missing for many firms, especially firms with non-December year-end.

Note 3. But the auditor does not facilitate earnings manipulation through tax reserves to meet/beat earnings targets in the post-FIN 48 period.

Note 4. The tax reserve is often referred to as the tax cushion or the tax contingency as well.

Note 5. Cazier et al. (2015) further argue that the tax reserve is the most likely of these three mechanisms to be used to manage earnings.

Note 6. Instead of following GAAP by releasing the entire $17 million excess tax reserve in 2003, Dell allegedly released only $5 million and $7.1 million in 2003 and 2004 respectively for financial reporting purposes (https://www.sec.gov/litigation/litreleases/2010/lr21634.htm).

Note 7. FIN 48 applies a “benefit recognition model” that requires a two-step process in recognizing and measuring uncertain tax benefits. The first step is recognition: An enterprise determines whether it is more likely than not that a tax position will be sustained upon examination, based solely on the technical merits of the position and assuming that the position will be examined by an appropriate taxing authority that has full knowledge of all relevant information. The second step is measurement: If a tax position meets the more-likely-than-not recognition threshold, the tax position is measured at the largest amount of benefit that is greater than a 50 percent likelihood of being realized upon ultimate settlement. The amount of uncertain tax benefits that is recognized on the tax return but not in the financial statements becomes the tax reserve (officially called unrecognized tax benefits [UTB], in FIN 48).

Note 8. FIN 48 disclosures include a tabular reconciliation of the total amount of tax reserves at the beginning and the end of the period, the total amount of tax reserves that, if recognized, would affect the effective tax rate, and a description of tax years that remain subject to examination by major tax jurisdictions.

Note 9. Even though confidential data from the IRS offer a unique research setting, it limits the sample size at the same time. Gleason and Mills’s (2011) results are based on a sample of 497 corporation-year observations between 2000 and 2002.

Note 10. I also use the total change in tax reserves that would affect the effective tax rate if recognized, excluding settlements with tax authorities and statute of limitations expirations as a robustness check.

Note 11. The consensus analyst forecast is measured as the median of all forecasts available just prior to the earnings announcement.

Note 12. Hand-collection was no longer needed for tax reserve data as Compustat has included tax reserve data. However, data for fiscal years 2007 and 2008 are missing for many firms, especially firms with non-December year-end.