Effects of IRS Monitoring on Earnings Management via Unrecognized Tax Benefits

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PREFACE

This master thesis is written in order to complete my Master Accounting at Tilburg University. When searching for a topic I wanted to somehow combine my Master Accounting with my Master in Fiscal Economics. I found the article by Graham, Ready and Shackelford (2011) which contained an overview of research done at accounting for income taxes. There were several interesting topics in income taxes discussed and after some further investigation my attention was drawn by the concept of uncertainty in income taxes. With the helpful comments and ideas by my supervisor W.H.P. Janssen I was able to specify and finalize this research topic.

I would like to thank my supervisor W.H.P. Janssen for the guidance provided during the writing process of my thesis. Further, I would like to thank my friends who provided the much needed and very welcome distractions and enjoyment every day in the past and that it may continue upon the future.
Finally, I would like to thank my parents for always being there for me and provide aid and assistance whenever I may seek it.

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SUMMARY

This study investigates earnings management via a specific tax reserve, unrecognized tax benefits to meet the consensus analysts' forecasts. In 2006, the FASB introduced FIN 48 forcing firms to disclose their unrecognized tax benefits. This has put the account in the academic spotlight and opened multiple research opportunities. This article builds on two prior studies with conflicting results regarding unrecognized tax benefits and earnings management. It then adds the possibility that IRS monitoring affects management's decision to use unrecognized tax benefits to manipulate earnings to meet the consensus analysts' forecasts.

Results show that IRS monitoring, proxied by tax audit probability, does not affect earnings management via the unrecognized tax benefits. In fact, unrecognized tax benefits are not used to engage in earnings management overall. Results are significant when only focusing on the sample group with the highest tax audit probability, indicating earnings management via unrecognized tax benefits. Future research could use a larger sample to state this with more power. Further, there is an indication that the discrepancy in prior research can be explained by the choice of the variable measuring unrecognized tax benefits.

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1 INTRODUCTION

Earnings management has always been an interesting and much studied topic in the accounting literature (e.g. Bartov, Givoly & Hayns, 2002; Brown & Caylor, 2005; Degeorge, Patel & Zeckhauser, 1999; Leuz, Nanda & Wysocki, 2003). This prior research provide evidence that management is incentivized to meet benchmarks set up by the analysts' forecasts. One element of the financial report where earnings management is investigated is so called cookie jars. For this, Levitt (1998) set up a specific cookie jar hypothesis. Accruals are built in economical good times, only to be released in economical bad times, like a missed analysts' forecast. Cookie jars are, among other, located in the income tax account.

Research in accounting for income taxes is a relatively new and active field as can be seen by the reviews of relevant research topics by Graham, Ready and Shackelford (2011) and Hanlon and Heitzman (2010). For example, Dhaliwal, Gleason and Mills (2004) show evidence that the tax expense is indeed used as a cookie jar to manipulate earnings. They do not study specific accounts of the tax expense in which this is done. This article focuses on one specific account, the unrecognized tax benefits balance, which is put in the academic spotlight by the adaptation of FASB Interpretation No. 48, Accounting for Uncertainty in Income Taxes (FIN 48) in 2006. The study builds on prior research by Cazier, Rego, Tian and Wilson (2010) and Gupta, Laux and Lynch (2011) regarding earnings management via these unrecognized tax benefits.

This article adds the possibility that outside monitoring by the Internal Revenue Service (IRS) affects earnings management possibilities via unrecognized tax benefits, as research shows that other outside monitoring activities indeed affect managerial behavior. An empirical model is build with a variable that proxies IRS monitoring by the probability of an audit by the IRS. FIN 48 itself prescribes that firms need to assess their tax positions assuming all are going to be audited by the IRS. An effect of IRS monitoring in engaging in earnings management is therefore a direct contradiction to the prescribing standard. A total sample size of 105 firms is used, divided over seven sample groups depending on the probability of being monitored by the IRS via a tax audit. The time period covers three years from 2008 until 2010, totaling 315 observations for the entire sample and 45 per sample group.

Results indicate that earnings management via unrecognized tax benefits is not affected by outside monitoring of the IRS. In fact, unrecognized tax benefits are overall not used to engage in earnings management to meet the consensus analysts' forecasts. This indicates that the FASB is successful in pursuing one goal set by introducing FIN 48, constraining earnings management possibilities via unrecognized tax benefits. When regression analyses are done per sample group, the sample group with tax audit probabilities approaching one show a significant result. This means that firms in that sample group who lower their unrecognized tax benefits are more likely to meet the consensus analysts' forecasts. The sample group contains 45 observations and future research could use a larger sample to state this with more power. Initially, this last result goes against a prior study by Gupta et al. (2011), finding no earnings management using a similar sample. Looking further, there is some evidence this difference might stem from the choice of indicator instead of non indicator variable measuring unrecognized tax benefits.
Data indicates that the results for the second FASB goal, improve comparability of the unrecognized tax balance, are questionable. There are still differences between firms disclosing the changes during the year in the balance and the accrued interest and penalties.

This article contributes to the increasing literature on accounting for income taxes and in specific on unrecognized tax benefits. It hopes to contribute to settling the discrepancy between the Gupta et al. (2011) and Cazier et al. (2010) articles. In addition, it sheds light on the effects of IRS monitoring on managerial behavior. Next, with the recent financial crisis, distrust in the financial system is increasing around the globe. Recent financial scandals involving large audit firms have further deteriorate people's faith in accountants. It is therefore interesting to see what outside monitoring activities constrain managerial behavior in hopes to restore faith in the financial system.

The remainder of this article is structured as follows. In section two the institutional background regarding uncertainty in the income tax account and the introduction of FIN 48 is discussed. Section three contains the hypothesis development, reviewing academic literature on earnings management and monitoring. The research method and data selection are reported in section four. Next, the results of this study are presented in section five, after which section six concludes this article.

2 INSTITUTIONAL BACKGROUND

In 2006 the FASB introduced FASB Interpretation No. 48, Accounting for Uncertainty in Income Taxes (FIN 48), creating one standard prescribing procedures regarding uncertainty in the income tax account. Prior to the enactment of FIN 48, the academic literature and accounting standards always used the terms tax cushions or (uncertain) tax contingency (Cazier et al., 2010). FIN 48 commonly uses the term unrecognized tax benefits (UTB) which was then adopted by following research. Also, in financial year reports the term uncertain tax positions is used occasionally regarding the subject. This article uses the term unrecognized tax benefits or its abbreviation UTB when referring to any of the above.

This section discusses the institutional background regarding uncertainty in the income tax account. Further, the introduction and guidelines of FIN 48 are covered, including research done on its enactment.

2.1 Uncertainty in income taxes and its regulation

Commercial and taxable income stem from standards created by respectively the Financial Accounting Standards Board (FASB)[1] and the Internal Revenue Service (IRS)[2]. Both standard setters have different objectives resulting in accrual based book income and cash based taxable income with accompanying differences between the commercial and taxable income. (Revsine, Collins, Johnson & Mittelstaedt, 2009; Scholes, Wolfson, Erickson, Maydew & Shevlin, 2002). In line with this, the commercial amount of income tax payable also differs from the fiscal amount. With these differences uncertainty is imbedded, since complex and unclear tax laws have to be put into practice for different sets of circumstances (Mills, Robinson & Sansing, 2010). Further, settlement of liabilities between the tax authority and firms can often take close to a decade (Spatt, 2007).

Before 2007, regulation for U.S. GAAP concerning income taxes and the associated contingent liability was noted in the Statement of Financial Accounting Standards No. 109, Accounting for Income Taxes (SFAS 109) and SFAS No. 5, Accounting for Contingencies (SFAS 5). SFAS 5 prescribes guidance on contingencies and defines a contingency as an

[1] http://www.fasb.org/
[2] http://www.irs.gov/

"existing condition, situation, or set of circumstances involving uncertainty as to possible gain or loss to an enterprise that will ultimately be resolved when one or more future events occur or fail to occur" (p.4). This is also the case for uncertain tax positions. When a liability is probable, yet the amount cannot be reasonably estimated or the liability is reasonably possible but not probable, a disclosure of the contingency needs to be made (SFAS 5, Par.10). The terms 'probably' and 'reasonably possible' are vaguely defined in SFAS 5, Paragraph 3 as respectively 'likely to occur' and 'more than remote but less than likely'. Gupta, Laux and Lynch (2011) obviously point out that SFAS 5 provide vague thresholds and a lack of guidance for the disclosure of uncertain tax positions.

2.2 Introduction of FIN 48

A lack of guidance and thresholds has a negative effect on comparability and in order to improve this, FIN 48 was introduced. As explained in Paragraph B2 of FIN 48: "diverse accounting practices had developed with respect to the recognition and measurement of current and deferred tax assets and liabilities in financial statements" (p.23). The second reason for creating FIN 48 is voiced by former FASB Chairman Robert Herz, indication concerns by SEC staff regarding the possibility to manage earnings with tax reserves (Shaw & Leone, 2007). Thus, in 2006 the FASB issued FIN 48, being effective for fiscal years beginning after December 15, 2006 (FIN 48). It is an addition to SFAS 109 regarding unrecognized tax benefits and a replacement of SFAS 5 for the composition of these accounts. As stated in the summary of the Interpretation itself, FIN 48 increases comparability of income tax accounts in financial statements:

> This Interpretation prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. This Interpretation also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition (p.3).

In prior years unrecognized tax benefits are rarely reported or disclosed in a financial report (Graham et al., 2011; Hanlon & Heitzman, 2010). Since the acceptance of FIN 48 firms are required to disclose information on unrecognized tax benefits in their financial statement footnotes (FIN 48, Par.21).

2.2.1 Disclosing unrecognized tax benefits under FIN 48

Assume an expense on a tax return with a high level of uncertainty whether the tax position will be accepted upon auditing by the IRS. An amount can be put on the balance sheet to accrue for a possible future payment of taxes and should be disclosed in the footnotes (Graham, et al., 2011; FIN 48). To establish if and with what amount this tax position should be disclosed FIN 48 works with two conditions that need to be met, working as a two step approach (FIN 48).

The first step concerns recognition. This works on a 'more-likely-than-not' basis, where the firm determines if a tax position has more than 50 percent chance of being accepted upon an IRS audit. When the first step of recognition is not met, the full amount has to be accrued for as an unrecognized tax benefit. To determine the chance of acceptance firms must assume that all tax positions are going to be examined by the appropriate taxing authority, with full knowledge of all relevant information. The second step focuses on measurement. When a tax position is recognized as 'more-likely-than-not', the smallest amount of benefit that has a greater than 50 percent likelihood of being realized upon settlement should be taken.

Example of recognizing an UTB under FIN 48: Doyle Company

Doyle Company has a profit of 10.000, a 40 percent tax rate and included an expenditure of 1.000 with a high level of uncertainty. If the expenditure does not get accepted by the IRS, profit will go up by 1.000, resulting in an additional tax expense of 400. Stated differently, there is now an uncertain tax benefit of 400. Assuming that management assesses acceptance of the expense as more than 50 percent, the first outcome upon settlement with a cumulative probability of more than 50 percent needs to be used. Assume that the first outcome meeting the 50 percent benchmark is a deduction of 625, holding a benefit of the uncertain tax position of 250. An unrecognized tax benefit of 400 minus the 250, equaling 150 will arise for Doyle Company (from Revsine et al., 2009, p.763).

2.3 Studies on FIN 48

The enactment of FIN 48 has put unrecognized tax benefits in the academic spotlight. Since then, multiple studies have focused on the account and its introduction. Before this, Gleason and Mills (2002) study UTB in the pre-FIN 48 period with the use of private IRS data. They

find that disclosures of UTB are more likely when the amount of the claim or expected loss increases. Materiality is being assessed by firms upon a stable measurement, i.e. assets instead of the current period income. The amount of the UTB is measured as the difference of the income tax expense in the financial statements and the total tax on the income tax return. The firm's estimation of a probable loss is proxied by the average settlement rate. Considering the sample set of only large, frequently audited, industrial firms for the time period 1987 until 1995, these results cannot be generalized to smaller firms or the time period after FIN 48 enactment. In addition to Gleason and Mills (2002), Blouin and Tuna (2009) contribute a measurement based upon publicly available data to the literature. In their research for the time period 1997 until 2004, they show that disclosure is rare, yet 74,1 percent of the disclosures are accompanied with an income increase. The positive effect on the contingency cannot be fully represented by the income increase. According to the authors this suggests that firms try to mask their UTB and disclose this opportunistically (Blouin & Tuna, 2009).

After the introduction of FIN 48 research on the topic increases greatly, partly because of increasing availability of relevant data. For instance, Frischmann, Shevlin and Wilson (2008) study how the stock market reacts to announcements regarding the upcoming enactment of FIN 48. For announcements pre-FIN 48, there is no significant negative difference shown in stock returns. These results have a limited indication that investors do not expect the implementation of FIN 48 will be accompanied with additional significant costs for firms. The market reaction to the first mandatory disclosure, the first quarter of 2007, is positive. This is either the result of the downwards reassessment of unrecognized tax benefits with increased earnings as a result, or a positive reaction on a firm's tax aggressiveness. Graham et al. (2011) use these results to argue that the IRS already has superior tax information, especially of the largest firms which are almost all under constant IRS audit and review. For subsequent news of congressional inquiries into firms' FIN 48 disclosures, the market reaction is significant negative. Investors interpret the news as potential new IRS monitoring for UTB related transactions. This suggests that beliefs changed from the pre-FIN 48 period, namely that FIN 48 will not cost firms large amounts of additional taxes.

More specific on the topic of FIN 48 and IRS monitoring are two studies done by Blouin,

Gleason, Mills and Sikes (2007, 2010). The studies focus on the implementation of FIN 48 in combination with visibility to the IRS and settlements made with the tax authority. For the time period 2005 until the first quarter of 2007 they examine the 100 largest and 100 smallest non-regulated, non-financial public firms. They find that few firms disclose an increase to their reserves in either 2005 or 2006. Especially large firms register an increasing amount of material decreases from 2005 to 2006. By lowering their reserves, they try to be less visible to the IRS, which uses the reserve as a signal for tax aggressiveness (Bouin et al., 2007). In the period between enactment and adoption, the third and fourth quarter of 2006, a significant increase is shown in the number of settlements between firms and the IRS. This indicates that firms want to avoid disclosing information that is informative to the IRS (Blouin et al., 2010). Further, when firms have incentives to meet targets, they are more likely to release reserves. However, this incentive is not more intense in the time period before adaption than in other time periods. It appears that firms manage the release of their reserves to their own best interest, either to increase earnings or to decrease attention from the IRS.

Concluding, FIN 48 is introduced to achieve two goals: More comparability between the firms' unrecognized tax benefits balances and to constrain earnings management possibilities. When firms establish unrecognized tax benefits, they need to assume that all tax positions are going to be audited by the IRS. In the next section, arguments to support the concept that the possibility of an IRS audit has an effect on the managerial ability to manipulate earnings are discussed, leading towards the hypothesis.

3 HYPOTHESIS DEVELOPMENT

In this section the hypothesis is formulated. First, an overview of prior research concerning earnings management, specifically via (tax related) cookie jars is given. After this, monitoring by the IRS is discussed, ending in combining both topics to formulate the hypothesis.

3.1 Earnings management and meeting expectations

To study the possibility of using unrecognized tax benefits to manipulate earnings, the point to which earnings are being managed is established first.

Among others, Leuz et al. (2003) and Schipper (1989) define earnings management as an adjustment of the economic achievement by insiders to mislead or influence stakeholders. They consider two types of earnings management: Earnings smoothing and managing towards a goal. Earnings smoothing is the concept of reducing high possible fluctuations in profits over time. When insiders manage towards a goal or benchmark, the focus lies on achieving goals that will create positive effects for the insider itself. Goals and benchmarks incentivize managers strongly, for which Dechow and Skinner (2000) imply that "firms just beating benchmarks are potentially more likely to be engaging in earnings management" (p.248). Such benchmarks are ordered in importance as (1) reporting positive profits, (2) sustaining recent performances and (3) meeting analysts' expectations (Degeorge et al., 1999; Dechow & Skinner, 2000). Brown and Caylor (2005) find evidence that this order is true for the first years of their sample (1985 until 1993) but shifted to meeting analysts' expectation as the main benchmark in later years (1996 until 2002). Bartov, Givoly and Hayn (2002) provide evidence that investors reward firms that meet or beat the forecasts and punish the ones that do not, independent of absolute performance. A study by Ready and Wilson (2009, in Graham et al., 2011), find that for firms with equity investors as their main stakeholders, earnings are altered to meet forecasts rather than to achieve other benchmarks. In his speech at the New York University Center for Law and Business, former SEC Chairman Levitt (1998) state that the ability of firms to grow market capitalization and increase the value of stock depends on achieving the expectations of analysts. As a conclusion in their summery of research regarding accounting for income taxes, Graham et al. (2011) state that the general evidence indeed suggests that managers manipulate earnings to meet the analysts' forecasts

but not other goals or to smooth earnings. Therefore, to establish earnings management meeting the consensus analysts' forecasts is used.

3.2 Earnings management via cookie jar reserves

In his speech, Levitt (1998) addresses the five main subjects where earnings management is applied: 'big bath' restructuring charges, creative acquisition accounting, so called cookie jar reserves, 'immaterial' misapplications of accounting principles and the premature recognition of revenue. The subsection below goes in dept on cookie jar reserves, specifically those related to taxes.

3.2.1 Cookie jar reserve hypothesis

For earnings management via so called cookie jars, Levitt (1998) defines a cookie jar reserve hypothesis. It portrays management as makes unrealistic assumptions when estimating liabilities in account ledgers such as sales returns and loans losses. In this matter, accruals are being saved in economical good times only to be released in economical bad times, for example when a benchmark is just missed.

Examples of the cookie jar reserve hypothesis

Take the situation of Doyle Company in subsection 2.2.1 (*Disclosing unrecognized tax benefits under FIN 48*) a hypothetical step forward. Suppose Doyle's management wants to improve earnings because it is incentivized to meet the otherwise missed analysts' forecasts. By altering the assessments of possible outcomes, assume that the first outcome with a cumulative probability of more than 50 percent is a benefit of 350 (retrieved from a deduction of 875) instead of the previously 250 (deduction of 625). This will result in lowering the UTB balance with 100, from 150 to 50, thus increasing earnings with the same 100. Another example is the study done by Duh, Lee and Lin (2009), that finds that firms who recognize an impairment loss are more likely to reverse this loss when facing an earnings decline.

3.2.2 Tax expense as a cookie jar reserve

Dhaliwal et al. (2004) provide evidence that the tax expense is used as a cookie jar to meet the analysts' forecasts. In their research, they use the difference between the effective tax rate at

the third and fourth quarter as a proxy for earnings management. Results show that firms decrease their annual effective tax rate in order to meet the analysts' forecasts. Dhaliwal et al. (2004) point out that overall, the income tax line is a very interesting subject for earnings management. In the income statement, it is the last line before actual income. This causes the authors to state that it could be considered as the last change for management to alter earnings in order to meet analysts' expectations. Further, information asymmetry can easily arise since the tax expense account possesses high levels of complexity and manager discretion. Cook, Huston and Omer (2008) find additional evidence supporting the claim of Dhaliwal et al. (2004) regarding earnings management via the effective tax rate. Cook et al. (2008) look at tax service fees paid to auditors in relation to the effective tax rate. Evidence is found that, absentee effective tax rate changes, firms who would miss the consensus earnings forecasts pay higher tax service fees and have larger decreases in the effective tax rate from the third to the fourth quarter. Further, they find that above results also count for firms who do not purchase tax services from their auditors.

While Dhaliwal et al. (2004) prove that the overall tax expense is used to manipulate earnings they do not study specific tax accounts within the expense. Tax related cookie jar reserves mainly studied by academic literature are: The valuation allowance, foreign earnings and unrecognized tax benefits (Dhaliwal et al., 2004; Hanlon & Heitzman, 2010; Graham et al., 2011).

3.2.2.1 Specific tax related cookie jar reserves

The valuation allowance is an account which offsets deferred tax assets that are not expected to be realized (Hanlon & Heitzman, 2010; Graham et al., 2011). Increasing the valuation allowance has a direct lowering effect on earnings and vice versa. Graham et al. (2011) provide an overview of studies that in totality give evidence that the valuation allowance is used to meet the analysts' forecasts but not to smooth earnings or take big baths. Mixed results are there for meeting prior or zero earnings targets. For foreign earnings there is one study done in relation with earnings management. Krull (2004, in Hanlon & Heitzman, 2010; Graham et al., 2011) find evidence that firms register foreign earnings as permanently reinvested so they can manipulate them to meet the consensus analysts' forecasts. As a result of the introduction of FIN 48 and its mandatory disclosure more data becomes obtainable to

study this tax related cookie jar in combination with earnings management. A review of this research is done in the following subsection.

3.2.2.2 Earnings management via unrecognized tax benefits

Academic literature focusing on earnings management via unrecognized tax benefits is limited to two studies: Cazier et al. (2010) and Gupta et al. (2011). Prior research on FIN 48 focuses mainly on tax avoidance (Lisowksy, Robinson & Schmidt, 2010; Mills et al., 2010), even though one of the goals behind introducing FIN 48 is to have more unified practices to reduce earnings management possibilities. Cazier et al. (2010) point out that the complexity of rules and required management discretion continues to attract earnings management activities to the unrecognized tax benefits balance. In their study, Cazier et al. (2010) look at the total change in the firm's tax reserve in the time period after FIN 48 implementation. They find that firms are more likely to decrease their tax reserve when pre-managed earnings are below the analysts' forecasts. The opposite also holds true, firms with pre-managed earnings above analysts' expectations are more likely to increase their tax reserves in order to build up reserves, as is consistent with the cookie jar hypothesis. This would mean that FIN 48 was unsuccessful in achieving one of its goals. Gupta et al. (2011) make a comparison between the time period before and after FIN 48 implementation. The focus lies on the effect of a disclosure of a UTB reverse, defined as a decrease in the part of the UTB balance that impacts earnings. Gupta et al. (2011) find that unrecognized tax benefits before FIN 48 is used to manipulate earnings. In contrast to Cazier et al. (2010), their data shows that this is no longer the case after implementing FIN 48, meaning the enactment of FIN 48 is successful on this matter. Thus, prior research appears not to be conclusive on the question whether UTB are used for earnings management.

3.3 Monitoring and earnings management

This subsection will examine the effects on earnings management by different types of monitoring, ending with monitoring by the IRS.

In general, evidence proves that outside monitoring constrains earnings management possibilities. For example, Peasnell, Pope and Young (2005) study the effect of monitoring by outside board members and the audit committee on the likelihood of managers manipulating earnings in order to avoid losses and earnings reductions. They conclude that

management has less chance to manipulate earnings with the presence of outside board members. An audit committee does not have the same effect. Research by Xi, Davidson and Dadalt (2003) confirms the findings of Peasnell et al. (2005) and add that directors with financial expertise also lower the likelihood of earnings management.

Burns, Kedia and Lipson (2010) find evidence that institutional ownership is negatively related to financial reporting quality, which is largely due to the institutions with short term horizons. Ownership by institutions with long term horizons and thus more incentives to engage in monitoring decreases incentives to misreport. These results could be indicative for the IRS, since they have long term horizons as well and thus more incentives to engage in monitoring. Further, the concentration of ownership is positively related to the reporting quality. Hadani, Goranova and Khan (2011) find evidence in line with Burns et al. (2010) that monitoring by the largest institutional owner decreases the likelihood of earnings management. Further, evidence is given that fully independent auditors do not decrease the possibilities of earnings management, which is in line with Peasnell et al. (2005). However, a firm that is lacking independent auditors gives rise to increased importance to monitoring by institutional owners.

3.3.1 Influence of IRS monitoring on managerial behavior

Recent studies by Hanlon, Hoopes and Shroff (2011) and Hoopes, Mescall and Pittman (2011) focus on the influence of monitoring by the tax authority on managerial behavior. For this, they proxy IRS monitoring by the probability of an IRS audit, or tax audit rate, which depends on total asset size. Arguments in favor of the concept that stricter IRS monitoring influences managerial behavior are stated below.

Scholes et al. (2002) illustrate an interesting conflict which arises when one considers corporate taxes. Firms will want to state low levels of taxable income so that they will have to pay low amounts of income taxes. In contrast, investors will want high amounts of earnings which are then accompanied with relatively high levels of payable taxes (Scholes et al., 2002). To achieve the first, managers will perform tax planning activities to keep the amount of income taxes low[3]. On the opposing site, management can conduct in earnings management

[3] See Hanlon and Heitzman (2010) from page 137 onwards.

in order to meet analysts' expectations. Book tax differences can emerge when one strives to achieve both goals. The article of Hanlon et al. (2011) sums up evidence that firms cannot manage book and tax income separately without the costs of increasing attention of the IRS. Hoopes et al. (2011) indeed find that a higher probability of an IRS audit results in less aggressive tax stands taken by management of public firms. It is still unclear whether monitoring by the IRS has any influence on managerial behavior on the opposing side of the conflict illustrated by Scholes et al. (2002): Managing earnings upwards.

The main argument for IRS monitoring stems from the article of Desai, Dyck and Zingales (2007). They develop a theory on the interaction of corporate governance and the tax system consisting of three players: The state, insiders and outside shareholders. With this, the relation of corporate governance with corporate taxation and its effects on insider benefits is studied. They argue that the government is de facto the largest minority shareholder in almost every profitable firm and therefore has an interest in preventing insiders from obtaining corporate funds for private benefits. Managers participating in manipulation activities need to conceal such activities from their shareholders of which the tax authority is one (Dyck & Zingales, 2004). Desai et al. (2007) argue that with better IRS monitoring detection risk for managers will increase. Thus, active monitoring makes it more difficult for insiders to extract benefits, indirectly benefitting outside shareholders who are else denied these benefits. Dyck and Zingales (2004) show that countries have lower levels of private benefits from being in control when they are faced with better quality of IRS monitoring.

The theory of Desai et al. (2007) is empirically tested by Guedhami and Pittman (2008) and El Ghoul, Guedhami and Pittman (2010) in combination with the cost of capital. In both articles the tax authority is also proxied by the IRS audit rate. Guedhami and Pittman (2008) look at the relation of IRS monitoring with debt yield spreads for private firms. An increase in the probability of an IRS audit leads to a reduction in the cost of debt capital, resulting in cheaper debt financing. El Ghoul et al. (2010) extend this by examining the cost of equity for public firms. As expected, they conclude that for public firms a higher IRS audit probability decreases the equity cost of capital. It could be possible that investors see a higher probability of a tax audit as a control against managerial manipulation, rewarding this with lower financing costs. For this, Hanlon et al. (2011) study IRS monitoring in relation with

financial reporting quality. For both measurements of financial reporting quality, accrual quality and discretionary accruals, a higher tax audit rate indeed results in a higher quality of financial reporting. In fact, the quality of financial reporting is the mechanism by which higher IRS monitoring lowers the cost of capital (Hanlon et al., 2011). It can hold the same for the concept of this study: More IRS monitoring lowers earnings management via the mechanism of financial reporting quality, since heavily manipulated earnings are of low financial quality.

3.4 Hypothesis and alternative hypothesis

Concluding, there is evidence that management uses tax related cookie jars to meet the analysts' forecasts. Further, management's possibility to manipulate earnings is indeed lowered by outside monitoring of outside board members and institutions with long term horizons. There are some indications that IRS monitoring influences managerial behavior and improves financial reporting quality. However, the effect of IRS monitoring on earnings management remains uncertain. FIN 48 demands that firms establish the UTB balance, assuming all tax positions will be audited by the IRS. Finding that IRS monitoring has an effect on earnings management via unrecognized tax benefits means also finding that firms do not comply to this requirement of the FASB. The hypothesis is formulated as follows.

Hypothesis: *The degree of IRS monitoring is negatively related to the extent that unrecognized tax benefits are used to manage earnings to meet the consensus analysts' forecasts.*

A positive result of the above hypothesis means that larger firms engage in relatively less earnings management via unrecognized tax benefits than smaller firms.

An alternative hypothesis could be that firms weigh the costs of a possible IRS audit to the benefits of meeting the analysts' forecasts. This is a common concept with research concerning tax avoidance, where firms weigh the costs of prosecution against the benefits of their tax planning activities (Hoopes et al., 2011). The same can be argued for manipulating earnings to meet the analysts' forecasts. Assuming that firms with a high tax audit probability are generally under more attention of their stakeholders, they have more to gain when meeting these expectations. Therefore, benefits of meeting the analysts' forecasts can outweigh the costs of prosecution, resulting in an opposite result from the above hypothesis.

4 RESEARCH METHOD AND DATA SELECTION

The hypothesis of this study predicts that IRS monitoring has a negative effect on the degree the unrecognized tax benefits account is used to manipulate earnings. Below, an empirical model based upon the one used by Gupta et al. (2011) is presented to test the hypothesis. Next, a summary of the procedures with regards to the data collecting is given.

4.1 Empirical model

To test whether IRS monitoring has influence on the degree of earnings management via unrecognized tax benefits, the act of meeting the consensus analysts' forecasts is regressed on changes in this tax related cookie jar reserve and several control variables. The empirical model of Gupta et al. (2011) is used as a starting point since they find, using a sample of large firms, that no earnings management is applied via unrecognized tax benefits. It is then studied if tax audit rates influences firms possibly engaging in earnings management. The empirical model is presented in equation (1).

$$\begin{aligned} MEET_{i,t} = {} & \beta 0 + \beta 1 \Delta UTB_{i,t} + \beta 2 AUDITPROB_{i,t} + \beta 3 INTERACTION_{i,t} + \beta 4 R\&D_{i,t} + \beta 5 Labor_{i,t} + \\ & \beta 6 MtBratio_{i,t} + \beta 7 SalesGrowth_{i,t} + \beta 8 Litigation_{i,t} + \beta 9 Loss_{i,t} + \beta 10 \#Analysts_{i,t} + \\ & \beta 11 MeetPriorY_{i,t} + \beta 12 NOA_{i,t} + \beta 13 LnShares_{i,t} + \beta 14 TA_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

where the subscript i indexes the individual firm and subscript t the sample year.

4.1.1 Meeting analysts' expectation

The indicator variable *MEET* is used as the dependent variable. Meeting the analysts' forecasts is used to indicate possible earnings management. Following prior research (e.g. Gupta et al., 2011; Dhaliwal et al., 2004) the Institutional Broker's Estimate System (I/B/E/S)[4] median consensus forecasts are used to determine the analysts' forecasts. The value of *MEET* is set to one if actual quarterly earnings per share (EPS) reported by I/B/E/S are equal to or above the consensus median analysts' quarterly EPS forecasts just prior to the earnings announcement. If the forecasts are not met its value is set to zero.

[4] http://thomsonreuters.com/products_services/financial/financial_products/a-z/ibes/

4.1.2 Unrecognized tax benefits

Earnings management via the unrecognized tax benefits account is studied previously by Cazier et al. (2010) and Gupta et al. (2011). The latter looks at the effect of the disclosure of an UTB reversal at the time period after implementing FIN 48 by the use of an indicator variable. An UTB reversal is defined as a decrease in the UTB balance, merely considering downscaling the UTB balance to improve earnings and not the size of an individual reversal. Cazier et al. (2010) use the change of the total UTB balance as the dependent variable. By doing this, the size of change of the balance can be taken into account. Therefore, the independent variable ΔUTB is set up for unrecognized tax benefits. ΔUTB states the amount of change in unrecognized tax benefits a firm reports, scaled by lagged total assets (Cazier et al., 2010; Dunbar, Kolbasovsky & Philips, 2007). This means the main independent variable of Gupta et al. (2011) is changed from an indicator into a non-indicator variable. A significant, negative coefficient of ΔUTB indicates that when the UTB balance is lowered, the consensus analysts' forecasts are more likely to be met.

Prior research investigates which amounts disclosed regarding unrecognized tax benefits should be included when one considers the UTB balance. The amounts investigated are the parts affecting the effective tax rate and the accrued interest and penalties. These are discussed below.

4.1.2.1 Unrecognized tax benefits affecting the effective tax rate

Dhaliwal et al. (2004) and Cook et al. (2008) show that earnings are managed via the tax expense. The effective tax rate is lowered resulting in higher earnings enabling a firm to meet analysts' expectations. This is only possible with certain parts of the UTB balance (Gupta et al., 2011; Blouin et al., 2007; Dunbar et al., 2007). Whether an unrecognized tax benefit can affect the effective tax rate is dependent on the permanent or temporary book tax difference underlying the unrecognized tax benefit. Permanent differences are transactions noted in either the accounting or taxable income but never the other. As a consequence, the difference does not dissolves over time (Scholes et al., 2002). Temporary differences are transactions noted for both accounting and taxable income but not equally in the same time period. This difference does dissolves over time (Scholes et al., 2002). The consequence of this difference is explained by Revsine et al. (2009): "Only permanent book to tax differences affect a firm's

effective tax rates. Temporary differences affect the deferred portion of the current period's tax provision but do not cause a divergence between statutory tax rates and effective tax rates" (p.766, footnote 18). Revsine et al. (2009) explain this further by stating: "This amount [that affects the effective tax rate] reflects the portion of the […] contingent tax liability due to permanent differences that, if resolved in [the firm's] favor, would lower tax expense and raise income by this amount" (p.766). For example, Frischmann et al. (2008) find no relation between the total amount of unrecognized tax benefits and their two measurements for tax aggressiveness: Book to tax differences and the cash effective tax rate. However, a significant result is achieved for both measurements when only the part of the UTB balance that impacts the effective tax rate is included. This difference is also mentioned by Gupta et al. (2011) in his comparison with the Cazier et al. (2010) article. Where the latter looks at the total tax reserve, Gupta et al. (2011) only focus on permanent differences, affecting the effective tax rate. A more clear view of unrecognized tax benefits used to manipulate earnings is given by solely examining the part of the UTB balance that affects the effective tax rate. Therefore, only these parts are included in ΔUTB.

4.1.2.2 Accrued interest and penalties concerning unrecognized tax benefits

Firms needs to accrue for interest and penalties associated with unrecognized tax benefits (FIN 48, Par.15 & 16). They are treated as part of the income tax expense or as an expense that reduces net income from continuing operations before income taxes. Since this has a direct effect on earnings, this study follows Dunbar et al. (2007) by including the change in accrued interest and penalties in the ΔUTB variable. Dunbar et al. (2007) and Blouin et al. (2007) do place a note of attention regarding interest and penalties. The majority of firms do not disclose explicitly whether accrued interest and penalties are included or excluded in the unrecognized tax benefits balance. This means FASB's goal to create more comparability with FIN 48 is not reached on this matter. The diversity in reporting UTB is best explained in the article of Blouin et al. (2007), where the total amount of unrecognized tax benefits that affects the effective tax rate is 57.7 billion dollar for the entire sample. The total amount of accrued interest and penalties is 13.3 billion dollar. The authors point out that it is not fully clear whether the 13.3 billion dollar is already included in the 57.7 billion dollar or not. This study follows Blouin et al. (2007) who assume that disclosed UTB exclude accrued interest and penalties when disclosure is not clear on the matter.

4.1.3 IRS monitoring

To proxy IRS monitoring the variable *AUDITPROB* is used, indicating the probability of an IRS audit. *AUDITPROB* is measured by the number of corporate income tax returns examined in IRS fiscal year t (running from October 1st until September 30th) divided by the total number of corporate income tax returns filed in calendar year t-1 (Hanlon et al., 2011; Hoopes et al., 2011). This is then split in categories dependent on total asset size. The measurement implicitly assumes that returns take less than one year to audit. This is in line with statements by the IRS saying examination activity is associated with returns filed in the previous calendar year. Gleason and Mills (2002) however suggest that the average audit time is about three years. To the extent this suggestion is true, violating the above implicit assumption, tax audit probability is a noisy measurement. Still, it is the only statistic publicly available for IRS monitoring and is being used internally by the IRS and is the relevant statistic that the IRS reports to Congress (Hanlon et al., 2011). For the usage of IRS audit rates it is necessary that firms have familiarity with the probability of being monitored by the tax authority. To ensure this, Hoopes et al. (2011) name multiple ways how firms can obtain the IRS audit rates:

> (i) through budget reports that indicate shifts in IRS funding; (ii) news about structural changes in the IRS; (iii) hiring former IRS employees; (iv) leadership changes at the IRS; (v) changes in financial accounting standards; (vi) IRS statements that suggest adjustments to audit rates; (vii) trends in government revenue; (viii) maintain contact with former employees who currently work at the IRS; (ix) formal and informal meetings with IRS officials and employees (x) talking with peer firms undergoing audits; and (xi) accessing historical annual and monthly audit coverage data released by the IRS or organizations that monitor the IRS (p.8).

Actual IRS audit rates are only known afterwards and the real perception of management on their tax audit probability is impossible to observe. As in prior research, tax audit probabilities are used under the assumption that they amount for unbiased estimates of management's estimates. Any deviations from management having perfect expectations are strictly random (Hanlon et al., 2010; Hoopes et al., 2011; El Ghoul et al., 2011). It is expected that *AUDITPROB* has a negative coefficient, signaling that if the probability of an IRS audit increases, the possibility of meeting the analysts' forecasts is lower.

The variable *INTERACTION* is an interaction term between *ΔUTB* and *AUDITPROB*. This variable is leading for the hypothesis, stating that if the tax audit probability is higher, relatively less earnings management is conducted via unrecognized tax benefits to meet the analysts' forecasts. A significant, negative coefficient of *INTERACTION* indicates consistency with the hypothesis. A significant, positive coefficient indicates consistency with the alternative hypothesis.

4.1.4 Control variables

This study follows Gupta et al. (2011) by using control variables established by Matsumoto (2002) and Barton and Simko (2002) to control for factors that influence incentives and abilities of management to meet analysts' expectations. Due to time constrains this study omits the variables from the 'other control variables' category in the study of Gupta et al. (2011) from the equation.

Matsumoto (2002) find that firms which have higher implicit claims, higher growth prospects, a higher value relevance and those with high litigation risks have more incentives to meet the analysts' forecasts. Implicit claims are measured by research and development expenses (*R&D*) and labor intensity (*Labor*). *Labor* is calculated by one minus property, plant and equipment scaled by total assets and annual R&D expenditures scaled by total revenues is used for *R&D*. Growth prospects are operationalized by the market to book ratio (*MtBratio*) and the percentage of change in sales per year (*SalesGrowth*). Coefficients for all the control variables above are expected to be positive as is also predicted by Gupta et al. (2011), although *MtBratio* reported a significant negative result. Working in a sector with high litigation risks (*Litigation*) has an expected positive effect. *Litigation* works as an indicator variable, signaling one when a firm operates in a sector with high litigation risks, as defined by Matsumoto (2002). Further, Matsumoto (2002) states that it is likely shareholders react more strongly if earnings are of high value relevance than when they are of low value relevance. This is controlled for by the indicator variable *Loss*, which indicates value one for negative actual unadjusted EPS and zero otherwise. The expected coefficient is negative. In a similar research, Barton and Simko (2002) find that factors such as the degree in which firms are followed by analysts, a pattern of meeting the analysts' forecasts, the net operating assets and a high amount of outstanding shares all have an effect on the likelihood of meeting the

consensus analysts' forecasts. These factors are controlled for by the respective variables *#Analysts*, *MeetPriorY*, *NOA* and *LnShares*. *#Analysts* and *MeetPriorY* are expected to have a positive coefficient, *NOA* and *LnShares* a negative one. Further, since tax audit probability is based on total asset size, control variable *TA* is included to exclude the possibility that just the total asset size and not tax audit probability is explanatory for the effect of IRS monitoring on the extent to which UTB are used to manipulate earnings. Following Barton and Simko (2002) the expected coefficient is negative.
Operationalization of all variables can be found in Appendix B.

4.2 Data and sample selection

The sample consist of 105 firms for the years 2008 until 2010, evenly divided among seven tax audit probability categories, making sure every category has the same amount of observations. As a starting point, firms are collected in COMPUSTAT per tax audit probability with all the necessary financial data available for operationalising the control variables. Then, information on earnings per share, the number of analysts following a firm and their expectations are retrieved from I/B/E/S. Having all the data from COMPUSTAT and I/B/E/S, a random selection of 15 firms is picked per sample group. Next, the necessary 10-K forms for the entire sample are hand collected via the EDGAR database[5], which has almost all SEC fillings stored. If the EDGAR database is not sufficient, official firm websites are used. Given that some information needs to be hand collected the total sample size is limited to 315 observations. To conduct the data collecting more efficient the *Conditional Statements* option in COMPUSTAT is used to select firms per category of asset size. This has the implication that when a firm has a sample year where asset size is increased (decreased) above (below) the border of an asset size category, COMPUSTAT eliminates this observation, resulting in a firm with a missing observation, excluding it from entering in the sample groups. This is a noisy measurement done in order to benefit efficiency in data collecting although it is not expected it has an effect on the end results. The total procedure is given in Table 1.

Since tax audit rates are based on the percentage of corporate income tax returns examined

[5] http://www.sec.gov/edgar/searchedgar/webusers.htm

for a certain asset class, these classes are leading to determine the sample groups. This information is gathered from IRS Data Books[6], in contrary to prior studies who use Transactional Records Access Clearinghouse (TRAC) (Hanlon et al., 2011; Guedhami and Pittman, 2008; El Ghoul et al., 2010). IRS Data Book has more classes of probabilities for firms above the 250 million dollar total asset point than TRAC, which makes differentiating among IRS audit probability more valuable. For example, TRAC combines so called Coordinated Industry Case (CIC)[7] with non CIC firms in one category. When classified a CIC firm, companies have a tax audit probability approaching one, meaning they have an IRS audit almost every year. (Gleason & Mills, 2002; Hanlon et al., 2011). Prior studies by Gupta et al. (2011) and Cazier et al. (2010) have samples consisting of the largest firms in the United States. It can be reasonably assumed that tax audit probability is approaching one for both samples, making it questionable to generalize these results to firms with lower tax audit probabilities. Total asset size borders for each sample group and their matching tax audit probabilities are presented in Table 2 and Figure 1. Firms with an asset size above twenty billion dollar have an audit probability approaching one, in line with the existence of the so called CIC firms. Main differences in tax audit probability are primarily between sample groups one until four. These are all located above the 250 million dollar point, the start of the highest category available with TRAC. This is a conformation on using data from IRS Data Books instead of TRAC.[8]

The sample covers the fiscal time period from 2008 until 2010. FIN 48 became mandatory for fiscal years beginning after December 15, 2006. Since the ΔUTB variable for year t is compiled of unrecognized tax benefits in the years t-1 and t, firms with 2007 fiscal years beginning before December 15, 2006 are eliminated. More specifically, only firms with December as fiscal year end are included in the sample. IRS Data Book 2011 is the most recent one available, meaning sample time t cannot be later than 2010. This restricts the sample of 105 firms to a total of 315 observations.

[6] http://www.irs.gov/taxstats/article/0,,id=102174,00.html

[7] To establish a firm as a CIC firm, a point system is set up in Internal Revenue Manual Exhibit 4.46.2-2.

[8] IRS audit rates of TRAC and IRS Data Books are only comparable for sample groups six and seven. For all years TRAC has rates constantly below the IRS Data Books. In 2009 and 2011 differences are a mere 0.2 percent for group six and a mere .3 percent for group seven. In 2010 is TRAC respectively 2.5 and 2.6 percent lower.

Gupta et al. (2011) use quarterly data instead of the annual data that is used here, giving the following argument: "Quarterly disclosures allow us to more clearly identify the timing, sign and magnitude of tax cushion changes than is possible with annual data" (Gupta et al., 2011, p.5). The necessary data was often not disclosed in 10-Q forms, resulting in a large number of missing values. Reasoning for this is unclear yet can probably be found in FIN 48, Paragraph 21, stating that disclosure of information on unrecognized tax benefits shall be done at the end of each annual reporting period. Therefore, this study follows Cazier et al. (2010) in using year end balances. Examples of footnotes found in 10-K forms used to collect UTB data for this research can be found in Appendix A.

5 RESULTS

This section contains the analysis of the data, describing the descriptive statistics and the results of the logistic regression.

5.1 Descriptive statistics

Descriptive statistics of the variables of equation (1) are presented in Table 3. The total number of observations is 315, compiled out of 105 firms for three sample years. The consensus analysts' forecasts are being met 67.9 percent of the time. The reported tax audit probability mean (median) of 34 percent (18.9) falls in between those of studies by Hanlon et al. (2011) and Guedhami and Pittman (2008), which are respectively 40 percent (22) and 27.4 percent (29). This is consistent with the expectation since Hanlon et al. (2011) have relatively more firms with a high probability in their sample, as shown by a quartiles comparison of Hanlon et al. (2011) (this study): .14 (.15), .22 (.19) and 1 (.45). At least 25 percent are so called CIC firms, compared to 14.3 percent in this study. Guedhami and Pittman (2008) merely focus on private firms, which on average are smaller in asset size than public firms and thus have generally a lower tax audit probability (Hanlon et al., 2011). The mean (median) of ΔUTB is in line with the expectation a negative -.004 (.000), which indicates on average the balance slightly decreases during the sample period. Almost half of the sample operates in an industry with a high litigation risk and 27.6 percent of the observations present a loss, which is significantly more compared to the sample of Gupta et al. (2011).

Table 4 reports the descriptive statistics of the FIN 48 data retrieved from the footnotes. For the changes in the balance there are 297 observations. This corresponds to almost six percent of the sample with no disclosure on the nature of changes, although it is mandatory to disclose this (FIN 48). Begin and end balances are total amounts of unrecognized tax benefits for the years 2008 until 2010 and include amounts that do not affect earnings if recognized. As consistent with Cazier et al. (2010) the largest mean (median) is *CCurrentY* with a value of -.003 (.001) percent change of total assets, concerning tax positions for the current year. Mean *EndB* is .4 percent lower of total assets than the mean *BeginB*, a decrease which is just slightly higher than the ΔUTB mean. This shows consistency with Cazier et al. (2010) that most changes in unrecognized tax benefits affect net income and thus can be used to manipulate

earnings. The mean (median) amount accrued for interest and penalties, *I&P*, is .3 (.1) percent of total assets. *ΔI&P*, the mean change in interest and penalties accrued for is .000. The change in *ΔUTB* is thus derived mainly from the balance itself and changes in *I&P* are generally small.

Pearson and Spearman correlation coefficients for variables concerning unrecognized tax benefits are presented in Table 5. It reports that the change in the UTB balance and *Meet* have not significant Pearson (Spearman) correlation coefficients of -.039 (-.022). A significant positive correlation coefficient with *ΔUTB* is shown for changes in the current year. This is consistent with expectations since by definition, increases in tax positions for the current year increases the balance of UTB.

5.2 Logistic regression statistics

Table 6 reports the logistic regression results. None of the variables *ΔUTB* (coefficient of -.163), *AUDITPROB* (-.105) and *INTERACTION* (-.327) have a significant effect on the possibility of meeting forecasts, rejecting the hypothesis. Overall, the control variables are consistent with prior research but provide little additional evidence to the empirical model. This is also visible in the overall adjusted-R square of merely 6.7 percent. Except for *R&D* and *MtBratio,* all control variables have coefficients matching their predicted sign, retrieved from Barton and Simko (2002) and Matsumoto (2002). For *MtBratio*, Gupta et al. (2011) also show a negative coefficient in contrast to their prediction. Variable *TA* is not significant. This disproves concerns that total asset size has an effect instead of *AUDITPROB*. Of all control variables only *Labor* (coefficient of -.232), *#Analysts* (.014) and *Loss* (-.149) have a significant effect at respectively the one, one and five percent levels. Blouin et al. (2007) requires a minimum of five analysts to identify motivation incentives for public firms to meet the analysts' forecasts. For the lowest sample groups not enough firms are followed by at least five analysts to fill the sample groups. To ensure that other sample groups do not have higher motivational incentives by deleting firms in those groups with amounts below the threshold, the criteria of Blouin et al. (2007) is not used on any sample group. To test the argument by Blouin et al. (2007) a regression analysis is run where all cases with less than five analysts following are omitted. Results show no significant difference with the regression analysis when they are included.

Possible explanations for the insignificant results for the main variables *ΔUTB*, *AUDITPROB* and *INTERACTION* are multiple. First, the personnel and financial IRS resources are inadequate to compete with those more vastly available at corporate firms (Hanlon & Heitzman, 2010; Hanlon et al., 2011; Hoopes et al., 2011). Second, other U.S. government agencies are there to monitor financial reporting, such as the Securities and Exchange Commission (SEC) (Hanlon et al., 2011). It is therefore possible that IRS monitoring is not considered a threat by firms. Third, the lower sample groups have higher percentages of firms who do not have any unrecognized tax benefits disclosed. These percentages are shown in Figure 2. This can have an influence on the outcome. To control for this, regression analyses per sample group of IRS monitoring are done. For this, variables *AUDITPROB* and *INTERACTION* are taken out of the empirical model. The coefficient and significance for *ΔUTB* per sample group are presented in Table 7. It becomes clear that results differ greatly per group. Especially sample groups five and seven have odd results, as well as respectively 33.333 and 60 percent of observations with an unrecognized tax benefits balance of zero.

A peculiar result in Table 7 is shown by group one, consisting of so called CIC firms. The change in uncertain tax benefits has a significant negative effect on the possibility of meeting the analysts' forecasts. This result is consistent with the alternative hypothesis, which raises the possibility that firms, align with behavior for tax avoidance, weigh costs of prosecution against the benefits of their actions. Therefore only the sample group with the highest IRS audit rates engage in earnings management since it is most likely for them the possible benefits outweigh the costs. This result is contrary to the findings of Gupta et al. (2011). There can be two explanations for this difference. First, working with annual data compared to quarterly data has such an effect on the timing, sign and magnitude of changes in the unrecognized tax benefits balance to explain this (Gupta et al., 2011). Second, the usage of an interaction instead of a non interaction variable for UTB can explain the difference. To test for this, the same regression analysis is done with *ΔUTB* changed into an indicator variable signaling one if the *ΔUTB* variable is negative, indicating the unrecognized tax benefits balance is lowered, and zero if not. The coefficient is as expected a positive value of .082. Consistent with Gupta et al. (2011) the variable is not significant at .562 (t-statistic of .587). This indicates that the results from Gupta et al. (2011) could stem from its choice of indicator variable to operationalize unrecognized tax benefits.

6 CONCLUSIONS

The focus of this article is to get insight into the effect of IRS monitoring on the possibility to engage in earnings management via a specific tax reserve. The main question is if IRS monitoring has an effect on the magnitude which unrecognized tax benefits are used to manipulate earnings in order to meet the consensus analysts' forecasts. Using a total sample size of 315 observations evenly divided over seven sample groups based on IRS audit probability, the following conclusions can be made.

Results show that the variables that proxy the change in the unrecognized tax benefits balance, the IRS audit probability and the interaction term between them are all not significant. This indicates they do not have a material effect on the chance of a firm meeting the consensus analysts' forecasts. An explanation for this can be that firms do not see an audit by the IRS as a constrain for their manipulating activities. Also, the IRS has but a fraction of the personnel and financial resources to the disposal of corporate firms.

There is a discrepancy in academic research regarding earnings management via unrecognized tax benefits due to the different findings by Gupta et al. (2011) and Cazier et al. (2010). When running regression analyses only with sample group one, a possible explanation for this differentiation appears. There is an indication that the results of Gupta et al. (2011) stem from their use of an indicator variable instead of a non indicator variable, also measuring the magnitude of the change in the reserve.

There are two main reasons for introducing FIN 48. The first is a desire for more unity and therefore comparability among companies disclosing their UTB. The second is to stop earnings alteration possibilities by management. FIN 48 also notes that firms need to assume all tax positions are under IRS audit when determining unrecognized tax benefits. It appears the FASB succeeded partly in their intentions. Overall, firms appear not to use unrecognized tax benefits to manipulate earnings. IRS monitoring seems not to have an effect on management's decisions, meaning tax positions are indeed evaluated as if they will be investigated by an IRS audit. In the sample groups with relatively low tax audit rates higher percentages of firms do not have unrecognized tax benefits. There is an significant result for large firms, more specifically the sample group consisting of so called CIC firms, using UTB

to manipulate earnings. Further, there are still differences in the disclosures done for FIN 48. It is not always clear whether interest and penalties are included in the account balance or not and the nature of changes in the balance is not always included as required.

Of course this study has some limitations. First, the total sample size is limited to 315 observations. This is due to the fact that information on UTB that affects the effective tax rate needs to be hand collected from the footnotes of the respective financial reports. This results in a relatively small sample size. Since differentiating among IRS audit probability is necessary, sizes of sample groups remain small. Larger sample sizes will lead to more power in the tests. Further, due to efficiency gains firms moving from one sample group to another one are omitted, although it is not expected this will alter results. Final, the measurement of IRS monitoring, the probability of a tax audit, is a noisy one. Although the IRS states that examination activity is done in less than one year, there are signs that this assumption is violated. None the less, this measurement is the only available data concerning audits by the IRS and is used by the IRS to report to Congress.

This article contributes to the relatively young and active academic literature of accounting for income taxes. By knowledge of the author it is one of the first that examines the effects of IRS monitoring on earnings management. Overall, full effects of the probability of an IRS audit on managerial behavior remain unclear. Further, it contributes to the research of the new mandatory disclosures of UTB and contributes to a better understanding of the balance. It also hopes to resolve the discrepancy between the findings of Gupta et al. (2011) and Cazier et al. (2010). New research is invited to study unrecognized tax benefits with a larger sample and study IRS monitoring in different settings.

APPENDICES

Appendix A Examples of unrecognized tax benefits disclosures

2007 10-K Form of Advance Auto Parts Inc.

As a result of the adoption of FIN 48 on December 31, 2006, the Company recorded an increase of $2,275 to the liability for unrecognized tax benefits and a corresponding decrease in its balance of retained earnings. The following table summarizes the activity related to our unrecognized tax benefits for the fiscal year ended December 29, 2007:

Balance at December 31, 2006	$ 16,453
Gross increases related to prior period tax positions	1,279
Gross decreases related to prior period tax positions	(1,853)
Gross increases related to current period tax positions	5,340
Settlements	(539)
Expiration of statute of limitations	(271)
Balance at December 29, 2007	$ 20,409

As of December 29, 2007 the entire amount of unrecognized tax benefits, if recognized, would reduce the Company's annual effective tax rate.

With the adoption of FIN 48, the Company provides for interest and penalties as a part of income tax expense. During fiscal 2007, the Company accrued potential penalties and interest of $709 and $1,827, respectively, related to these unrecognized tax benefits. As of December 29, 2007, the Company has recorded a liability for potential penalties and interest of $1,843 and $4,421, respectively. Prior to the adoption of FIN 48, the Company classified interest associated with tax contingencies in interest expense. The Company has not provided for any penalties associated with tax contingencies unless considered probable of assessment. The Company does not expect its unrecognized tax benefits to change significantly over the next 12 months.

During the next 12 months, it is possible the Company could conclude on $2,000 to $3,000 of the contingencies associated with unrecognized tax uncertainties due mainly to settlement and expiration of statute of limitations (including tax benefits, interest and penalties). The majority of these resolutions would be achieved through the completion of current income

tax examinations.

2009 10-K Form of Snap-On Inc.

The following is a reconciliation of the beginning and ending amounts of unrecognized tax benefits for 2009 and 2008:

(Amounts in millions)	2009	2008
Unrecognized tax benefits at beginning of year	$20.6	$18.7
Gross increases – tax positions in prior periods	7.0	0.6
Gross decreases – tax positions in prior periods	–	(0.7)
Gross increases – tax positions in the current period	1.9	0.5
Settlement with taxing authorities	(1.1)	–
Increases related to acquired business	–	1.9
Lapsing of statutes of limitations	(10.9)	(0.4)
Unrecognized tax benefits at end of year	$ 17.5	$ 20.6

Of the $17.5 million and $20.6 million of unrecognized tax benefits at the end of 2009 and 2008, approximately $15.0 million and $18.1 million, respectively, would impact the effective income tax rate if recognized.

Interest and penalties related to unrecognized tax benefits are recorded in income tax expense. During 2009, the company reversed a net $1.6 million of interest and penalties to income associated with unrecognized tax benefits. During 2008 and 2007, the company provided a net $0.7 million and $1.2 million, respectively, of interest and penalties expense. As of 2009, 2008 and 2007 year end, the company has provided for $3.6 million, $5.1 million and $3.4 million, respectively, of accrued interest and penalties related to unrecognized tax benefits. The unrecognized tax benefits and related accrued interest and penalties are included in "Other long-term liabilities" on the accompanying Consolidated Balance Sheets.

2010 10-K Form of Tessera Technologies Inc.

As of December 31, 2010, unrecognized tax benefits approximated $4.8 million, of which $3.2 million would affect the effective tax rate if recognized. As of December 31, 2009, unrecognized tax benefits approximated $4.5 million, of which $3.5 million would affect the

effective tax rate if recognized. It is reasonably possible that unrecognized tax benefits will decrease by $1.4 million to $1.7 million in the next 12 months due to the anticipated conclusion of an examination by the California Franchise Tax Board and a lapse in a foreign statute of limitations relating to various tax incentives. The reversal of the unrecognized tax benefits should not have a material effect to the statement of operations

The reconciliation of unrecognized tax benefits for the years ended December 31, 2010, 2009 and 2008 is as follows (in thousands):

	Years Ended December 31,		
	2010	**2009**	**2008**
Total unrecognized tax benefits at January 1	$4,533	$4,205	$3,245
Gross increases and decreases due to tax positions taken in prior periods	—	—	(446)
Gross increases and decreases due to tax positions taken in the current period	476	328	1,406
Gross increases and decreases due to settlements or lapses in applicable statues of limitations	(172)	—	—
Total unrecognized tax benefits at December 31	$4,837	$4,533	$4,205

It is the Company's policy to classify accrued interest and penalties related to unrecognized tax benefits in the provision for income taxes. For the years ended December 31, 2010 and 2009, the Company recognized $0.5 million and $0.3 million, respectively, of interest and penalties related to unrecognized tax benefits. For the year ended December 31, 2008, the Company recognized an insignificant amount of interest and penalties related to unrecognized tax benefits.

Appendix B Measurement of variables

Earnings management variables	
Meet	An indicator variable equaling one if actual annually earnings per share (EPS) equals or exceeds the unadjusted consensus median analysts' forecast earnings and zero if not (Source: I/B/E/S).
AUDITPROB	Returns examined in Fiscal year t+1 divided by returns filed in calendar year t (Source: IRS Data Books).
INTERACTION	Variable AUDITPROB multiplied by variable ΔUTB.
Control variables	
R&D	Annual research and development expenditures (XRD) scaled by annual total revenue (REVT) (Source: COMPUSTAT).
Labor	One minus annual property, plant and equipment (PPEGT) scaled by end of year total assets (AT) (Source: COMPUSTAT) .
MtBratio	Annual market value of equity (end of year stock price multiplied by common shares outstanding (CSHO)) divided by end of year book value of equity (CEQ) (Source: COMPUSTAT).
SalesGrowth	Annual sales (REVT) at year t divided by annual sales of the previous year, minus one (Source: COMPUSTAT).
Litigation	Indicator variable equaling 1 for firm observations in high litigation risk industries (SIC 2833-2836,3570-3577, 7370-7374, 3600-3674, 5200-5961) and zero if not (Source: COMPUSTAT).
Loss	Indicator variable equaling one if a firm's actual unadjusted EPS amount is less than 0 and zero if not (Source: I/B/E/S).
#Analysts	Number of analysts' estimates for the consensus median forecast immediately prior to the earnings announcement (Source: I/B/E/S).
MeetPriorY	Indicator variable equaling one if unadjusted earnings in the previous year are greater than or equal to the unadjusted median forecast of the previous year (Source: I/B/E/S).
NOA	Annual shareholders' equity (SEQ) minus annual cash and short term investments (CHE) plus total debt (DLC + DLTT) scaled by sales, where all variables are used of the prior year (Source: COMPUSTAT).
LnShares	Natural logarithm of total common shares outstanding (CSHFD) (Source: COMPUSTAT).
TA	Total assets at year end (TA) (Source: COMPUSTAT).
FIN 48 footnote data	
BeginB	Beginning balance of total gross unrecognized tax benefits scaled by lagged assets.
CPriorY	Change in unrecognized tax benefits related to prior year positions scaled by lagged assets.
CCurrentY	Change in unrecognized tax benefits related to current year positions scaled by lagged assets.
CSettlements	Change in unrecognized tax benefits related settlements with tax authorities scaled by lagged assets.
CStatueLim	Change in unrecognized tax benefits related to the expiration of statute

	of limitations scaled by lagged assets.
OtherC	Other changes in unrecognized tax benefits scaled by lagged assets.
EndB	Ending balance of total gross unrecognized tax benefits scaled by lagged assets.
ΔUTB	Change in the portion of unrecognized tax benefits that would affect the effective tax rate if recognized, including accrued interest and penalties, scaled by lagged assets
I&P	Amount accrued for interest and penalties related to the unrecognized tax benefits, scaled by lagged total assets.
CI&P	Change in amount accrued for interest and penalties related to the unrecognized tax benefits, scaled by lagged total assets.

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Figure 1
Tax audit probability

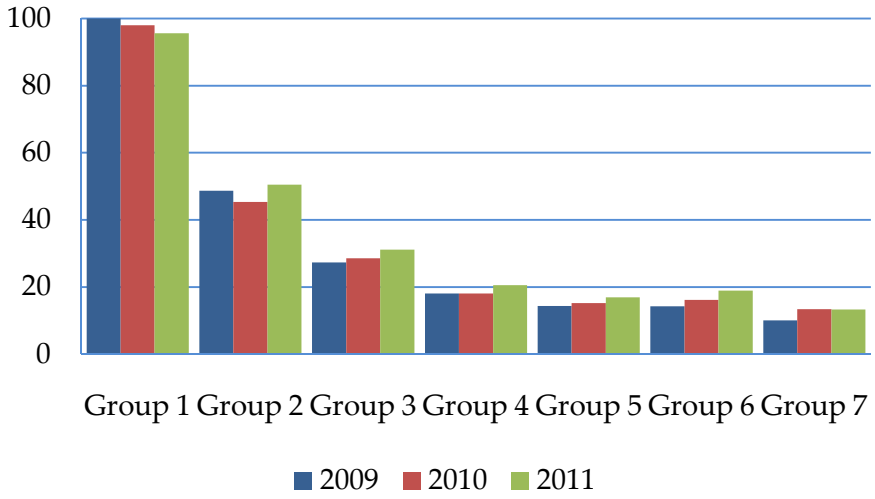

Figure 2
Percentage of firms not having unrecognized tax benefits

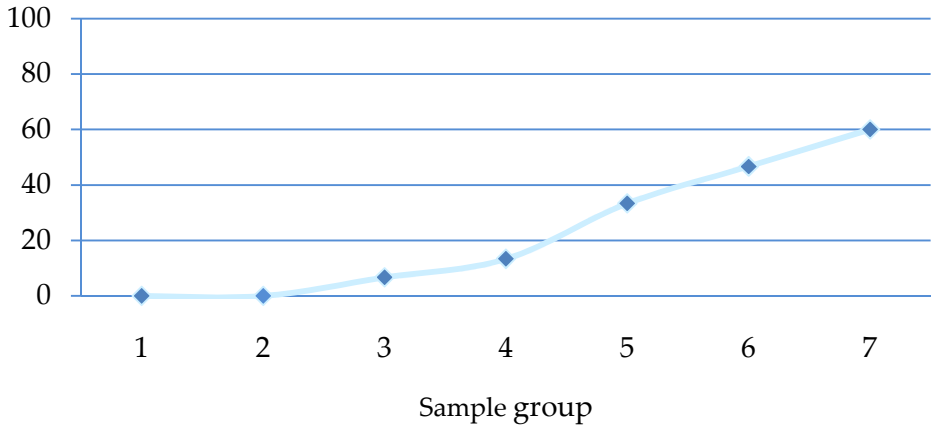

Table 1
Sample selection

Sample groups *(asset size in millions)*	Group 1 *20000 or more*	Group 2 *5000 under 20000*	Group 3 *1000 under 5000*	Group 4 *500 under 1000*	Group 5 *100 under 500*	Group 6 *50 under 100*	Group 7 *10 under 50*
Total firms	446	660	1338	691	1345	4510	829
Firms with fiscal year end 31/12 and non-financial firms	222	380	281	357	992	306	505
Firms with data from COMPUSTAT	94	100	200	99	282	171	151
Firms with data from I/B/E/S	75	89	181	84	232	59	48
Percentage taken	20	16.9	8.3	17.9	6.5	25.4	31.3

Notes: Financial firms are those who have SIC codes between 6000 and 7000, which are deleted. Only firms with fiscal year end on 31/12 are used. Percentage taken is the fifteen firms taken divided by the amount of firms with data from I/B/E/S.

Table 2
Tax audit probability

	Asset size *(millions)*	**IRS fiscal years** *(percentage)*		
		2009	2010	2011
Group 1	20000 or more	100*	98.0	95.6
Group 2	5000 under 20000	48.7	45.3	50.5
Group 3	1000 under 5000	27.3	28.6	31.1
Group 4	500 under 1000	18.1	18.1	20.6
Group 5	100 under 500	14.4	15.2	16.9
Group 6	50 under 100	14.3	16.2	18.9
Group 7	10 under 50	10.1	13.4	13.3

Notes: From Table 9a, IRS Data Book 2009, 2010, 2011. *Audit rate equals 114.4 percent since examinations may be conducted on returns filed in prior calendar years (IRS Data Book 2009).

Table 3
Descriptive statistics for regression variables

Variable	N	Mean	Std. Dev.	Median
ΔUTB	315	-.004	.148	.000
AUDITPROB	315	.340	.285	.189
INTERACTION	315	.002	.038	.000
Meet	315	.679	.467	1
R&D	315	2.161	22.322	.047
Labor	315	.608	.308	.711
MtBratio	315	2.974	10.246	2.319
SalesGrowth	315	.400	5.032	.053
Litigation	315	.429	.496	0
Loss	315	.276	.448	0
#Analysts	315	9.378	8.091	7
MeetPriorY	315	619	.486	1
NOA	315	.971	6.787	.482
LnShares	315	4.386	1.502	.405
TA *(in millions)*	315	9044.182	19836.240	678.226

Notes: All data is retrieved from the databases of COMPUSTAT and I/B/E/S. All variables are as defined in Appendix B.

Table 4
Descriptive statistics for FIN 48 footnote data

Variable	N	Mean	Std. Dev.	Median
BeginB	315	.043	.263	.007
CProirY	297	.001	.020	.000
CCurrentY	297	-.003	.151	.001
CSettlements	297	-.001	.005	.000
CStatueLim	297	-.001	.007	.000
OtherC	297	.000	.002	.000
EndB	315	.039	.214	.000
I&P	315	.003	.011	.001
ΔI&P	315	.000	.009	.000

Notes: All data is retrieved from the footnotes in the financial reports of the sampled firms. All variables are as defined in Appendix B.

Table 5
Pearson (Spearman) correlations on upper (lower) diagonal

	Meet	ΔUTB	CPriorY	CCurrentY	CSettlements	CStatueLim	OtherC	INTERACTION
Meet	1	-.039	.040	-.036	-.054	-.059	-.115	.010
		.493	.494	.539	.352	.313	.046	.854
ΔUTB	-.022	1	.119*	.996**	-.033	-.050	.013	.771**
	.703		.040	.000	.571	.386	.820	.000
CPriorY	.020	.276**	1	.060	.301**	.348**	-.028	.456**
	.724	.000		.304	.000	.000	.634	.000
CCurrentY	.156**	.372**	-.041	1	-.072	-.094	.003	.749**
	.007	.000	.485		.216	.104	.955	.000
CSettlements	-.084	.057	-.032	-.388**	1	.501**	-.124*	-.099
	.145	.323	.580	.000		.000	.032	.087
CStatueLim	-.113	.062	.066	-.318**	.486**	1	.005	-.172**
	.050	.288	.257	.000	.000		.935	.003
OtherC	-.102	.116*	-.031	-.007	-.122*	-.016	1	.118*
	.078	.046	.592	.908	.035	.785		.042
INTERACTION	-.023	.989**	.288**	.356**	.040	.036	.046	1
	.686	.000	.000	.000	.491	.536	.428	

Notes: Pearson (Spearman) correlations coefficients are shown in the upper (lower) diagonal. * and ** denote significant correlations at the 5 and 1 percent level (two sided test). All variables are as defined in Appendix B.

Table 6
Logistic regression results

$$MEET_{i,t} = \beta 0 + \beta 1 \Delta UTB_{i,t} + \beta 2 AUDITPROB_{i,t} + \beta 3 INTERACTION_{i,t} + \beta 4 R\&D_{i,t} + \beta 5 Labor_{i,t} + \beta 6 MtBratio_{i,t} + \beta 7 SalesGrowth_{i,t} + \beta 8 Litigation_{i,t} + \beta 9 Loss_{i,t} + \beta 10 \#Analysts_{i,t} + \beta 11 MeetPriorY_{i,t} + \beta 12 NOA_{i,t} + \beta 13 LnShares_{i,t} + \beta 14 TA_{i,t} + \varepsilon_{i,t}$$

	Prediction	Coefficient	T-statistic	P-value
Intercept	?	.506	3.789	.000
ΔUTB	-	-.163	-.572	.568
AUDITPROB	-	-.105	-.447	.655
INTERACTION	-	-.327	-.275	.784
R&D	+	-.001	-1.196	.233
Labor	+	.232***	2.587	.010
MtBratio	+	-.002	-.830	.407
SalesGrowth	+	.011	1.307	.192
Litigation	+	.035	.586	.558
Loss	-	-.149**	-2.192	.029
#Analysts	+	.014***	2.743	.006
MeetPriorY	+	.069	1.233	.219
NOA	-	-.006	-.985	.325
LnShares	-	-.016	-.426	.671
TA	-	.000	.101	.920
Adjusted R		.067		
Total observations		315		

Notes: This table reports the results from regressing *Meet* on the variables considered to manipulate earnings and control variables. The regression formula used is equation (1). *INTERACTION* is the interaction term between *ΔUTB* and *AUDITPROB*. *, ** and *** denote statistical significance at the 10, 5 and 1 percent level. All variables are as defined in Appendix B.

Table 7
Logistic regression results of *ΔUTB* per sample group

$$MEET_{i,t} = \beta 0 + \beta 1 \Delta UTB_{i,t} + \beta 2 R\&D_{i,t} + \beta 3 Labor_{i,t} + \beta 4 MtBratio_{i,t} + \beta 5 SalesGrowth_{i,t} + \beta 6 Litigation_{i,t} + \beta 7 Loss_{i,t} + \beta 8 \#Analysts_{i,t} + \beta 9 MeetPriorY_{i,t} + \beta 10 NOA_{i,t} + \beta 11 LnShares_{i,t} + \beta 12 TA_{i,t} + \varepsilon_{i,t}$$

	Coefficient of *ΔUTB*	T-statistic	P-value
Group 1	- 2.779**	-2.173	.037
Group 2	-4.178	-.353	.727
Group 3	.633	.227	.822
Group 4	-5.060	-.251	.803
Group 5	16.415	.720	.477
Group 6	-.230	-1.216	.233
Group 7	17.574	.317	.753

Notes: This table reports the results from regressing *Meet* on the variables considered to manipulate earnings and control variables for every sample group separately. From equation (1), the variables *INTERACTION* and *AUDITPROB* are taken out. Only tabled are the results for the *ΔUTB* variable. *, ** and *** denote statistical significance at the 10, 5 and 1 percent levels. All variables are as defined in Appendix B.