Research in accounting for income taxes

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ABSTRACT

This paper comprehensively reviews the Accounting for Income Taxes (AFIT) literature. We begin by identifying four distinctive aspects of AFIT and briefly covering the rules surrounding AFIT. We then review the existing studies in detail and offer suggestions for future research. We emphasize the research questions that have been addressed (most of which relate to whether the tax accounts are used to manage earnings and whether the tax accounts are priced by equity market participants). We also highlight areas that have not received much research attention and that warrant future analysis.

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1. Introduction

This paper reviews one of the more complex areas of financial reporting: accounting for income taxes (AFIT). AFIT is the process by which (1) future cash tax payments and refunds arising from current and past transactions are recorded as deferred tax assets and liabilities in an attempt to accurately portray the financial position of the firm, and (2) the income tax expense is reported in an attempt to accurately portray the current financial performance of the firm. Before this millennium, AFIT and its implications for financial reporting and effective tax planning attracted limited attention in scholarly circles. However, in recent years, both financial accounting and tax researchers have begun to focus on AFIT, so much so that AFIT has become the most active area of accounting research in taxation. Almost all of the studies have been

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1 Throughout the paper, we use the term “effective tax planning” to mean tax plans that consider all parties to a transaction, all taxes (explicit and implicit), and all costs (tax and non-tax). See Scholes et al. (2009) for elaboration.

2 To calibrate the interest in AFIT research, we searched the titles of papers published during the last decade in the Journal of Accounting and Economics, the Journal of Accounting Research, and The Accounting Review for the word “tax” or any variant. We find that 38% of the “tax” papers since 2008 address AFIT issues, compared with 35% from 2004 to 2008 and 22% from 1999 to 2003. One possible reason for a growth in AFIT studies over the last decade is that, beginning in the 1990s, anecdotal information indicates that the tax accounts assumed an enhanced role in financial reporting, becoming instrumental to managing earnings and designing corporate tax shelters. In fact, some companies began to view the tax function as a profit center with a...
empirical, primarily testing the incremental information content of the tax accounts and their role in earnings management. To provide structure for understanding this growing literature, we discuss why AFIT is distinct from other financial reporting topics, briefly explain the essential principles that govern AFIT reporting, review extant studies, highlight key contributions, identify specific remaining questions of interest, and discuss weaknesses and opportunities of a more general nature.¹

To our knowledge, this is the first comprehensive review of AFIT research.⁴ It is designed both to introduce new scholars to this field and to encourage active researchers to expand the frontier of AFIT. It is challenging to reach such a broad audience. For readers who have little or no understanding of the process by which firms account for income taxes in their financial statements (the income statement, balance sheet, statement of cash flows, and the statement of equity), we include an intuitive explanation of the rules governing AFIT in Section 3. Others may wish to skip Section 3.

To narrow the scope of our analysis, we define AFIT research as work that evaluates the implications of the financial reporting choices involving the income tax accounts. Examples include tests of AFIT’s role in earnings management and its information content. We exclude from our analysis those studies that use the tax accounts to analyze other phenomena. For example, Mills (1998) tests whether differences in book and tax accounting affect Internal Revenue Service (IRS) audit decisions. Another topic we exclude relates to work examining the association between differences in book and tax accounting and the cost of capital (e.g., Dhalivelal et al., 2008; Ayers et al., 2009; Crabtree and Maher, 2009). While these papers are interesting and important, we exclude them from our analysis because they evaluate the impact of AFIT, rather than studying AFIT itself. We recognize that this delineation is arbitrary, but as with all literature reviews, we are forced to set boundaries for our analysis. In addition, we do not discuss the sizeable literature that addresses tradeoffs between financial reporting and tax considerations.⁵ Although AFIT may involve tax planning considerations, we ignore issues related to the coordination of book and tax choices and refer readers to the Hanlon and Heitzman (2010) and Shackelford and Shevlin (2001) reviews.

Although related to traditional corporate income tax research, recent AFIT work resembles mainstream financial accounting research far more than it resembles the “Scholles-Wolson” tax research, which draws heavily from economics and finance.⁶ However, there are some notable differences between AFIT and other financial reporting areas. While the distinctions are detailed in the next section, we briefly discuss them here. First, all companies are subject to taxation, making it one of the most pervasive financial reporting topics. Second, the taxing authority is one of the users of the tax information in the footnotes. Thus, the tax accounts provide information to an adversarial party. Third, the tax accounts provide an alternative measure of income. Finally, income tax expense is not included as a component of operating income. In fact, portions of the tax expense are reported below net income in items such as discontinued operations and other comprehensive income. These distinctive features of accounting for income taxes enable scholars to expand our understanding of financial reporting in directions that might not be possible using other accounts.

We divide the research literature into three topics: earnings management, the association between book-tax differences and earnings characteristics, and the equity market pricing of information in the tax accounts.⁷ Rather than provide here in the introduction a detailed and lengthy review of the many inferences that we draw from the extant literature and the directions that we propose for enhanced future study, we condense our findings into four broad generalizations. First, managers use the tax accounts to manage earnings to meet or beat analysts’ forecasts, but not for other objectives, such as to smooth earnings, increase a big bath, avoid losses, or meet/beat prior earnings. Second, a small literature documents associations between book-tax differences and earnings characteristics, such as growth and persistence. Third, the evidence is inconsistent about the market’s use of the information provided in the tax accounts. Fourth, by eliminating a second source of income information, conforming book and tax accounting would result in a loss of understanding of financial reporting in directions that might not be possible using other accounts.

We provide an overview of AFIT, and Sections 4–6 review the scholarly studies in the field.  

2. Why study accounting for income taxes?

A large proportion of AFIT studies have focused on questions that have been well researched in financial accounting, such as earnings management and the incremental content of financial disclosures. To what extent, therefore, do studies

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¹ Appendix 2.2 of Scholes et al. (2009) also provides a detailed discussion of accounting for income taxes.

² In their wide-ranging, excellent review of tax research in accounting, finance, and economics, Hanlon and Heitzman (2010) discuss parts of the accounting for income tax literature. However, because the scope of their paper is so wide, they do not provide a complete, detailed analysis of accounting for income taxes.


⁴ See Shackelford and Shevlin (2001), Graham (2003), and Hanlon and Heitzman (2010) for reviews of this literature.

⁵ Our characterization of AFIT research maps similarly with Hanlon and Heitzman (2010). They state that AFIT research generally examines: (a) the market’s interpretation of AFIT information, (b) the use of income tax accruals to manipulate after-tax earnings and (c) the extent to which valuation allowance reveals inside information about the future earnings of the firm. That said, because they review all aspects of tax research, their discussion of accounting for income taxes is relatively brief and limited. In contrast, because we focus solely on AFIT, we are able to provide a more comprehensive analysis of the field.
of the tax accounts produce new information? What is special about the tax accounts? Are these studies of general interest to the scholarly community or do they mainly re-examine previous questions using a different account and data?\footnote{We note that these questions may set an unreasonably high hurdle for AFIT studies, because similar questions could be raised of other areas of inquiry in financial accounting, e.g., is there anything unique about pensions, leases, loan loss reserves, etc.?}

At least four features of accounting for income taxes distinguish it from other areas of financial reporting. First, income taxes are the only expense that all for-profit firms face and taxes can be substantial, often consuming more than a third of pre-tax profits. Because tax returns are confidential, AFIT, as the bridge between the financial statements and the tax return, provides most investors with their sole source of information about current and future taxes.

Second, besides providing information to the usual consumers of financial reporting information, the tax accounts provide information to an adversarial party, i.e., the taxing authorities. In fact, the primary user of the tax information may be this adversary.\footnote{As an indication of the extent to which financial statements are important to the taxing authorities, numerous publicly available Internal Revenue Service documents detail the role that a firm’s financial statements should play in the decision to audit a tax return and the conduct of that audit. Some, such as the Large and Mid-Size Business Division (LMSB)’s Guide for Quality Examinations, concern the general role of the financial statements in the overall auditing process. Others, such as Revenue Procedure 2005-99 and Revenue Procedure 2007-53, specify accounts in the financial statements that the IRS examiner is to examine. For example, LMSB-04-0507-044 discusses mandatory training about how to use FIN 48 information in (tax) risk assessments. A long-time, recently retired senior IRS official privately told us that there were even more confidential directives, adding “...the IRS uses such [financial statement] information more than the public may know.” He noted that the IRS is increasingly turning to auditors who specialize in financial accounting to enable it to better coordinate financial information from Schedule M-3, FIN 48, Form UTP, and audit work papers. However, the importance of financial statement information to the taxing authorities is not a recent phenomenon. Perhaps the best example of managers’ long-standing attempts to limit scrutiny of financial accounting information is the continuing disputes over the extent to which the IRS can access the work papers used by independent auditors to provide assurance about the tax information in the financial statements. Although the IRS has generally adopted a self-imposed restriction of its broad access to the work papers gained in the landmark 1984 Supreme Court decision, United States v. Arthur Young Inc., court cases continue. For example, last year in United States v. Textron Inc. the Supreme Court denied a writ of certiorari, handing the IRS a major defeat. Finally, strong corporate opposition to both new disclosures and work paper access is consistent with managers’ believing that the information in the financial statements is informative to the IRS. That said, the few studies that have attempted to document how the information in financial statements provides a road map for the IRS have found little evidence. For example, findings from some of the early FIN 48 studies, e.g., Frischmann et al. (2008), are consistent with added disclosure (in this case, FIN 48) providing little information to IRS auditors. We look forward to additional attempts at documentation in this area.}

On the one hand, they face the usual incentives to account for income taxes in a manner that reduces financial reporting costs, which would normally occur by minimizing the income tax expense and thus maximizing after-tax book profits.\footnote{Of course, if firms try to maximize after-tax book profits, they need to minimize income tax expense using methods that do not involve transactions for which the book and tax treatment is the same. If the treatment is the same, lowering taxable income (and thus income tax expense) reduces book income.}

On the other hand, reporting low income taxes may provide a red flag for the taxing authorities, lowering their search costs, and reducing the firm’s after-tax profits. Reporting low income taxes also can lead to negative publicity and potentially unfavorable legislation.\footnote{An example is a recent Bloomberg article about Google’s 2.4% effective tax rate on foreign profits. See http://www.bloomberg.com/news/2010-10-21/google-2-4-rate-shows-how-60-billion-u-s-revenue-lost-to-tax-loopholes.html.} Thus, AFIT choices must balance the information flows to the government with those to other users of the financial statements.

Third, the tax accounts provide an alternative measure of income. Book income is based upon GAAP, rules promulgated by FASB and the SEC. However, taxable income is based on the tax code, promulgated by Congress. The two systems have different goals and are influenced differently. Besides differences in the measurement of income, the statement of deferred tax accounts and the reconciliation of book and taxable income in the tax footnotes potentially provide users of the financial statements with information about the firm’s profitability.

Finally, the income tax expense is never included as a component of operating income. It is primarily reported as income tax expense (or benefit) immediately before the computation of net income. It also is effectively reported below net income in items such as discontinued items and other comprehensive income that are reported net of tax. The fact that the income tax expense number is never reported in operating income likely influences how investors, analysts, and managers view this expense.

By exploiting the four distinctive elements of accounting for income taxes, scholars can use the tax accounts to address questions that would otherwise be difficult, if not impossible, to address using other accounts. Indeed, a motivation (often implicit) of many AFIT studies is that the tax accounts provide a unique opportunity to study important questions. For example, studies of earnings management in the tax accounts either explicitly or implicitly consider both that tax expense is not included in operating income as well as the inherent tradeoff of managing earnings when there is an adversarial party involved. Likewise, many of the studies on the tax contingency focus on the new disclosures required by FIN 48, and how that affects firms given that the tax authorities will see that information. Having noted that some unique AFIT attributes have been exploited to study earnings management and tax contingencies, we also highlight that there appear to be additional opportunities for studies of accounting for income taxes to further exploit its distinctive features. We note some of these opportunities in our suggestions for future research.
3. Overview of the rules governing accounting for income taxes

3.1. Background

Although AFIT requires expertise in both financial accounting and taxation, it is important to understand that AFIT only addresses the reporting of tax information in the financial statements. No tax statute mandates or governs AFIT. The purpose of all financial accounting is to provide useful information to stakeholders, such as investors and creditors. The specific purpose of AFIT is to present information about the firm’s taxes, using the same Generally Accepted Accounting Principles (GAAP) that govern the reporting of other economic activities of the firm.\(^{12}\)

GAAP accounting uses an accrual system as opposed to a cash system. Under a cash-basis system of accounting, revenues are recorded (i.e., included in the income statement) when cash is received and expenses are recorded when cash is paid out. Under an accrual-basis accounting system, revenue and expenses are recorded when a transaction occurs. For example, assume that a firm sells 100 units of product for $1,000 on credit in 2010, but does not collect cash until 2011. Under a cash-basis system, the firm records revenue in 2011 because that is when it receives the cash. Under an accrual-basis system, the firm records revenue in 2010, when the transaction occurs. One common misunderstanding is that the number reported as income tax expense is merely the cash taxes paid. Because of the accrual nature of GAAP, this is not the case. Instead, it is the tax expense incurred during this period. Thus, generally speaking, if a firm generates income as recorded in their financial reports (computed under GAAP), then they will report a corresponding tax expense, regardless of when they are actually required to pay the taxes.

Furthermore, the rules and principles that govern GAAP are sometimes different from those that govern income tax reporting. This is the primary reason that AFIT is a complex area of financial reporting. While for many transactions book and tax treatment are the same, often the treatment differs. These differences result in two different measures of income (book income and taxable income) as well as two different measures of assets, liabilities, and equity.\(^{13}\) These book-tax differences (BTDs) stem from tax legislation that mandates departures from GAAP accounting for various economic, social, political, and administrative reasons. There are two types of BTDs: temporary and permanent.

3.2. Temporary differences

Temporary differences are differences in the tax and book bases of assets and liabilities. These differences in bases result in taxable or deductible amounts in future years when the asset is recovered or the liability is settled.\(^{14}\) Consider, for example, the book and tax treatment of property, plant, and equipment. Often the basis of property, plant, and equipment is lower under tax rules than under GAAP because the tax laws mandate faster depreciation. Thus, GAAP will report higher assets and higher income than will the tax laws. Taxes remitted to the government will be lower early in an asset’s life due to the accelerated depreciation, but will be higher in future years, once the asset is fully depreciated for tax purposes but is still depreciating for book purposes. Thus, a liability is reported on the company’s GAAP balance sheet that measures the amount of the future tax liability that will be owed when the book depreciation becomes greater than the tax depreciation. This liability is called the deferred tax liability (DTL).

Likewise, companies will often report a deferred tax asset balance. Consider, for example, the treatment of bad debts. GAAP rules set up an allowance account (thus reducing the basis of the accounts receivable balance) while tax laws do not. Thus, assets (and income) will be lower for financial reporting purposes than for tax purposes. Taxes remitted to the government will be higher this year, but will be lower in a future year when the bad debt is written off for tax purposes. Thus, on the balance sheet of the company, a tax asset is included that measures the amount of future tax benefit that will be available when the same bad debts that were expensed under GAAP this year are deducted for tax purposes in a future year. This account is called the deferred tax asset account (DTA).

An important consideration under GAAP, when recording any asset, relates to the probability of recoverability of the asset. Under GAAP, when a firm records a deferred tax asset, it must also assess its recoverability. If it is more likely than not that the asset will not be recovered, then the firm must reduce the net asset balance. In the case of the DTA, the net asset balance is reduced by recording a valuation allowance that offsets the DTA balance. For example, if a company recorded a $1,000 deferred tax asset, but believes that it will only benefit by $700, then it will record a valuation allowance of $300. It is important to note that the offset to the creation of the valuation allowance runs through tax expense (and thus net income). Thus, in the preceding example, the creation of the $300 valuation allowance account would increase income tax expense and thus reduce net income by $300.

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\(^{12}\) U.S. GAAP is based on standards that are set by the Security and Exchange Commission (SEC), Financial Accounting Standards Board (FASB), and the American Institute of Certified Public Accountants (AICPA). The primary accounting pronouncements that affect AFIT in the United States are: (a) SFAS No. 109 – “Accounting for Income Taxes” (Financial Accounting Standards Board, 1992), (b) FIN 48 – “Accounting for Uncertainty in Income Taxes” (Financial Accounting Standards Board, 2006), and (c) APB No. 23 – “Accounting for Income Taxes – Special Areas” (Accounting Principles Board, 1972). Although these statements have been superseded by the recent FASB codification, which primarily includes these statements in FASB ASC topic 740, we refer to the legacy statements throughout the paper.

\(^{13}\) While firms report their balance sheet according to GAAP, conceptually there is also a balance sheet based on income tax rules. However, firms never report this “tax” balance sheet and, in fact, rarely maintain one.

\(^{14}\) See ASC 740-10-20 for a more complete definition.

The tax footnotes in the financial statements are the best source of detailed information about temporary differences. Examining Fortune 50 firms from 1993 to 2007, Raedy et al. (2011) find that the number of accounts listed on the statement of deferred tax positions ranges from two to 28. Using similar data, Poterba et al. (2011) find that more companies have net DTLs than have net DTAs, and depreciation is the largest source of temporary differences. For some companies, the deferred accounts are very large, e.g., in 2004, 25% of the net-DTL companies had net DTLs that exceeded 5% of total assets. The largest DTL (DTA) is property, plant and equipment (other assets). The mean valuation allowance balance suggests that a majority of DTAs are not expected to provide a tax benefit.

3.3. Permanent differences

Whereas temporary differences arise because there are differences in when certain transactions are included on the balance sheet and income statement, other differences do not arise from timing issues, but rather are permanent in nature. For example, municipal bond interest is not taxed but is included in revenue for book purposes. Consequently, permanent differences do not create deferred tax assets or liabilities. Instead, permanent differences cause effective tax rates (income tax expense divided by pretax income) to differ from the statutory tax rates. For example, municipal bond interest is included in pretax income, but no tax expense is recorded. Thus, earning municipal bond interest results in a lower effective tax rate (ETR).

The tax footnotes of the financial statements provide information about permanent differences through a reconciliation of the effective tax rate to the federal statutory tax rate. All significant reconciling items must be disclosed. The governing principal (SEC Regulation S-X Rule 4-08(h)) defines significant as 5% of the statutory rate (1.75% for a 35% statutory tax rate). This high threshold typically results in disclosure of only a handful of permanent differences for any given firm-year. Permanent book-tax differences are not the only items that affect the reconciliation of the ETR to the federal statutory rate. For example, state and foreign taxes also cause the ETR of a company to differ from the U.S. federal rate. In fact, in their examination of the rate reconciliations of the Fortune 250 from 1993 to 2007, Raedy et al. (2011) find that the largest reconciling items are foreign and state taxes.15

Unlike Poterba et al. (2011) and Raedy et al. (2011), who examine hand-collected data from the tax footnotes, most studies use computer-readable databases, which enable them to examine larger samples but prevent them from identifying the specific temporary and permanent BTDs. Thus, most studies tend to examine aggregations of temporary and permanent BTDs. Among other findings, they report that BTDs are disproportionately concentrated among the largest companies (Mills et al., 2002), and greater in the financial and information industries (Seidman, 2010). Furthermore, the determinants of BTDs include tax planning, earnings management behavior, and changes in financial accounting rules (Seidman, 2010), as well as changes in firm-level sales and the level of property, plant and equipment in a given firm (Manzon and Plesko, 2002).

Finally, an area of continuing interest among scholars and policymakers concerns the gap between book income and taxable income and the factors that have caused it to change over time (see Mills et al., 2002; Desai, 2003, among others). We extend those analyses by adding data through 2009. Fig. 1 shows that, since 1992, book income has exceeded estimated taxable income in all years, except 2001 and 2008.16 In those two recessionary years, a precipitous drop in book income reverses the book-tax gap, leaving book income substantially less than estimated taxable income.17 Over the 17 years, aggregate book income is 102% of aggregate estimated taxable income. However, if the two recessionary years are excluded, aggregate book income rises to 111% of aggregate taxable income. Our updated book-tax gap computations are consistent with Manzon and Plesko (2002), Seidman (2010), and others, who report that overall economic activity is an important predictor of the book-tax gap and generalizations about the direction of the book-tax gap depend critically on whether the period of investigation is one of economic expansion or contraction.

3.4. Uncertain tax contingency

Uncertain tax contingencies have recently attracted the attention of standard setters, academics, and the taxing authorities. When firms take uncertain tax positions on their tax return, there is some chance that they will be required to pay taxes related to these positions in the future, once the taxing authorities audit their corporate tax returns. To accrue an expense for these possible future tax payments on the income statement in the year of the activity, firms establish liabilities on the balance sheet, known as tax contingencies, which estimate the taxes (in addition to those reported on the tax return) that might have to be paid in the future.

Although the uncertain tax contingency account (commonly referred to as the “cushion”) is included among the other liabilities on the balance sheet, historically it has rarely been reported as a separate line item or even disclosed.18 Thus, the

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15 Note that even though state and foreign taxes involve no differences in the book and tax measurement of income (or assets or liabilities), the literature often refers to them as permanent book-tax differences.

16 Book income is pretax income adjusted for minority interests. Taxable income is federal and foreign tax expense divided by the maximum statutory rate.

17 One possible explanation for the divergent paths for book and taxable income during recessions would be a spike in impairments, which would reduce book income, but not taxable income. We find that impairments account for about half of the reversal in both 2001 and 2008. However, the pattern of book income exceeding taxable income, except during recessions when book income plunges, remains even after adjusting for impairments.


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cushion has been largely unobservable to researchers (impeding scholarly work), the taxing authorities (possibly impeding their ability to detect firms that consider their tax positions potentially unsustainable under audit), or other users of the financial statements (potentially enhancing its usefulness for managing earnings). However, since 2007, a new financial reporting standard (FIN 48) has required firms to disclose the balance of the tax contingency in their financial statement footnotes.¹⁹ These disclosures substantially expand our understanding of the process by which firms impound the uncertainty of tax plans in their income tax expense calculation.

FASB’s adoption of FIN 48 was controversial. Many believed that these disclosures would hurt companies because the IRS could use them to both identify firms with significant uncertain tax positions and also use the disclosures to more effectively challenge the firms’ aggressive tax positions.²⁰ Frischmann et al. (2008) find no support for these concerns.²¹ Conducting short-window event studies around key dates leading up to and including the passage of FIN 48, they find no evidence that tax-aggressive firms experience significantly negative abnormal returns, except around the release of the exposure draft. One possible reason that FIN 48 may not have had the negative impact that some anticipated (e.g., may not have provided the IRS a road map for auditing purposes) is that the FIN 48 information provides the IRS with little new information. In fact, Frischmann et al. (2008) document results consistent with the market’s knowing that the IRS already had superior cushion information. This may be particularly true for the largest firms, which are for the most part under constant IRS audit and review.

Although the market did not seem to view the FIN 48 requirements negatively, corporate managers may still have worried about increased IRS scrutiny of the FIN 48 disclosures. Blouin et al. (2010) examine the number of settlements made with the IRS between enactment and adoption, as well as the number and amount of reserves that were reduced during this period. They find that firms with higher IRS deficiencies were more likely to settle during the period between enactment and adoption and that firms reduced their reserves more during this period than they did prior to enactment.

Robinson and Schmidt (2009) examine disclosures that were reported after the adoption of FIN 48 on a larger sample (643 firms in the S&P 1500) than used in prior FIN 48 disclosure-related research. They find that the quality of the disclosure is inversely related to the tax aggressiveness of the firm.²² One important caveat is that their analysis is only performed on the disclosures included in the 1st quarter of 2007 (i.e., the first quarter after adoption of FIN 48). Thus, it is unclear whether these behavioral patterns will persist after firms and the market gain a deeper understanding of a new and somewhat complex standard.²³

3.5. Permanently reinvested foreign earnings

Another AFIT area that has recently received scholarly attention involves the reporting of U.S. taxes on foreign profits. APB No. 23 (Accounting Principles Board, 1972) permits managers to choose between permanent or temporary treatment

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¹⁹ Examining 100 of the largest companies with at least five analysts, Blouin et al. (2007) find that the aggregate contingency balance as of December 31, 2006 (the last disclosure before FIN 48 became effective) was 1.8% of assets. They add that more firms changed their contingency in 2006 than in 2005, mostly decreases, which is consistent with companies having overstated their contingency balance in the past and reversing them before FIN 48 disclosures became publicly observable by investors. However, the mean change in 2006 was not statistically different from that in 2005, which may partly be attributable to their small sample size.

²⁰ Consistent with the IRS believing that the disclosures would aid in identifying firms that had underpaid their taxes, in 2007 (the year of FIN 48’s adoption) IRS official Robert Adams said that FIN 48 disclosures were the “centerpiece of our revenue agent training this year” (Messier, 2007).


²² See Robinson and Schmidt (2009, p. 11) for an interesting example of the many variations of compliant FIN 48 reporting.

²³ See Song and Tucker (2008), Gupta et al. (2005), Lisowsky (2010), and Wilson (2009), among others, for tests of tax shelter and tax avoidance issues in the context of FIN 48.
if the U.S. tax rate exceeds the local tax rate for the foreign subsidiary. To elaborate, foreign subsidiaries of U.S. companies pay income tax in the jurisdictions where they operate. Their parent companies generally pay no U.S. taxes on these foreign earnings until the profits are repatriated to the parent as dividends. If the profits are never repatriated, then no U.S. taxes are ever paid.

GAAP permits corporations to record the residual U.S. taxes in two ways. The first creates a temporary difference, leaving the ETR unaffected. Specifically, a firm estimates the U.S. tax that will be required at repatriation and accrues that income tax expense when it records the foreign earnings that will eventually trigger those U.S. taxes. This treatment creates a temporary difference (i.e., a DTL is recorded). A consequence of this option is reduced current after-tax book income. However, in the year that the dividend is repatriated to the parent and the U.S. taxes are paid, after-tax book income is unaffected.

A second option, if the firm does not expect to repatriate the profits in the foreseeable future, is to defer the expense until it decides to repatriate the funds. When a company makes this choice, the foreign profits are termed permanently reinvested earnings (PRE). This deferral reduces the ETR because if the firm never repatriates, then it never pays the U.S. taxes. In contrast to the first option (i.e., booking the expense on the residual U.S. tax liability), this option boosts after-tax book earnings when the foreign profits are earned (because it assumes that repatriation and the accrual of eventual U.S. taxes will never occur). However, the downside of this choice is that the after-tax book income falls by the amount of the estimated U.S. residual tax if expectations change and the firm eventually repatriates the foreign profits.

PRE can be very large for some multinationals. Analyzing the 50 largest U.S. companies in 2008, we found that their aggregate PRE was $610 billion. The mean, median and standard deviation of PRE as a percentage of market capitalization for those companies was 15% with a maximum of 67% (Pfizer). PRE exceeded one-third of market capitalization for three other pharmaceuticals (Merck, Bristol-Myers-Squibb, and Eli Lilly) and General Electric, which alone had $75 billion of PRE. In addition, PRE has grown rapidly in recent years. In 2008, 273 firms in the Fortune 500 reported some amount of PRE for an aggregate amount of $1.02 trillion (Wunder, 2009). This compares with Albring et al.’s (2005) estimate of $381 million of PRE in 2002 for 296 Standard & Poor’s 500 firms. Wunder’s (2009) average of $3.74 billion per firm was over seven times the $485 million mean reported by Krull (2004) in her study of Compustat firms in the 1990s.

The growth in permanently reinvested earnings is particularly noteworthy because a large amount of PRE was eliminated through the large repatriations during the tax holiday provided by the American Jobs Creation Act of 2004.27 On the other hand, since PRE was one of the factors that determined the amount of foreign earnings that was subject to the favorable holiday rates in the 2004 Act, managers may be classifying as PRE as much foreign profits as possible so that their total PRE is as large as possible in the future. In other words, if managers believe that tax rates will be temporarily reduced in the future and PRE will be a factor in determining the amount of dividends that can enjoy the low rate, firms have an incentive to overstate PRE now.28

4. Earnings management

The remainder of the paper examines existing AFIT research, identifies areas that warrant additional inquiry, and proposes extensions. We begin with the primary area of AFIT empirical research, the study of whether and how companies use GAAP-based tax accounts to manage earnings. All but a handful of the studies in this area have focused on two specific tax accounts: the valuation allowance and the income tax contingency. These studies look for evidence that managers manipulate these accounts in a manner consistent with achieving certain financial reporting objectives. In general, the evidence suggests that managers use these accounts to meet (or beat) analysts’ forecasts, but not to meet (or beat) prior earnings or to smooth earnings.

4.1. Studies of earnings management via the valuation allowance

As discussed above, when managers believe that some or all of the future tax benefits of a deferred tax asset (DTA) will never be realized, they establish a valuation allowance (VA) account as an offset against the deferred tax asset account. For further discussion of APB No. 23 and its implications for corporate behavior, see Altshuler et al. (1995), Collins et al. (2001), Krull (2004), Albring (2006, 2007), Mock and Simon (2008), Blouin and Krull (2009), Dharmpalal et al. (2010), Graham et al. (2010), Schultz and Fogarty (2009), Wunder (2009), Blouin et al. (2011), Hines and Hubbard (2010), Shackelford et al. (2011), and Albring et al. (2011b).

25 Even upon repatriation, no U.S. taxes would be required if foreign tax credits offset any U.S. taxes due upon repatriation. Since foreign tax credits and other details about U.S. taxation of foreign profits are complex and beyond the scope of this paper, we assume for this discussion that at least some U.S. taxes are due at repatriation.

26 The potential recording of the tax expense associated with PRE can affect other business decisions. Corporate executives at one of the U.S. largest conglomerates told us that the company considered repatriating some of its excess cash during the 2008 financial crisis to address acute liquidity needs in the U.S. However, the company feared that repatriating even a small portion of the foreign cash holdings would require an immediate charge to earnings for the tax expense associated with some, if not all, of their PRE. Thus, management decided that, even though the residual U.S. cash tax payment would have been small, the costs associated with the potential charge to earnings exceeded the costs associated with the liquidity constraints.

27 The American Jobs Creation Act of 2004 provided a one-time U.S. tax rate of no more than 5.25% on dividends from foreign subsidiaries. See Blouin and Krull (2009), for more details. An IRS study of actual corporate tax returns estimates that the legislation led to the repatriation of $362 billion of foreign earnings (Redmiles, 2008).

28 See Sinai (2009), House (2010), Kudlow (2010), and Lodge (2010), among others, for recent discussions about enacting another tax holiday for repatriations of foreign profits.

Though they do not examine whether firms manipulate these accounts to manage earnings, two early papers studied how firms compute the VA. Behn et al. (1998) create proxies for the four sources of income that are supposed to be considered in estimating the VA. They determine that all four sources of income are statistically significant determinants of the VA balance (as a percentage of the DTA balance) in 1993, although the income sources explain less than half of the variation in the VA account, suggesting that other factors are also at work.

Another early study, by Miller and Skinner (1998), hypothesizes that firms with (1) greater expected future taxable income and (2) more DTLs (relative to DTAs) should be more likely to realize their DTAs and thus should have smaller VA balances. They also hypothesize that firms with larger carryforwards should be less likely to realize their DTAs and thus should have larger VA balances. Miller and Skinner (1998) find support for these hypotheses; however, the association between the VA and expected future taxable income is weak. They do find a strong association between the VA and the amount of the DTA attributable to carryforwards, consistent with the carryforward limitations being a primary determinant of the valuation allowance.

A recent study by the Federal Reserve Board concludes that there is substantial variation in the practice of establishing valuation allowances (Lindo, 2009). Surprised by the lack of increases in banks' valuation allowances during the recent financial crisis, the Federal Reserve Board reviewed the December 31, 2008 audit working papers for 15 banks with DTAs. The sample banks varied by asset size, coverage ratios, and financial strength, and were audited by 10 different firms. The Board found that most banks were not establishing a VA if positive taxable income was anticipated during the next two to six years. At the extreme, two banks took the position that no VA was required if positive taxable income was expected within 10 years; notably, one of those banks failed soon thereafter. The study also documented a wide range of approaches to estimating future taxable income.

This considerable subjectivity in the determination of the VA suggests that it may be an attractive account for managing earnings. Since changes in the VA account typically flow through the income tax expense, manipulation of the VA account could be an effective means of earnings management. However, to the extent managers wish to camouflage their earnings management, other accounts may dominate the VA because firms must report the amount of the VA in the footnotes to their financial statements. In other words, the visibility of the VA may diminish its usefulness in earnings management. Research in this area examines a variety of possible earning management objectives including reporting smooth earnings, taking big baths, creating “cookie jar” reserves, and meeting various earnings targets. These studies provide little evidence that the valuation allowance is used to manage earnings with one exception: firms appear to use the VA to meet or beat analysts’ forecasts.

Both Visvanathan (1998) and Miller and Skinner (1998) test the hypothesis that the change in the valuation allowance account is associated with managers' incentives to smooth earnings. They both regress the change in the VA on the change in income. They suggest that if managers use the VA to smooth earnings then the coefficient on the change in earnings should be positive because a positive (negative) change in earnings would result in an increase (decrease) in the VA. Neither study finds results consistent with the smoothing hypothesis; thus, this evidence is not supportive of firms' using the VA to smooth earnings.

That said, readers should be cautious in accepting these conclusions for at least three reasons. First, both sample sizes are small. Second, the samples include a narrow set of firms so it is not clear whether the results are generalizable. Third, both samples cover only the two or three years immediately following the effective date of SFAS No. 109. Specifically, Visvanathan (1998) examines 105 (182) observations in 1993 (1994) from firms in the S&P 500 that had changes in their VA account. Attempting to focus on firms with large deferred tax asset balances, Miller and Skinner (1998) study 200 observations of firms that took large other-post-employment benefit charges upon the adoption of SFAS No. 106. In addition, the actual tests for smoothing (based on the coefficient on the change in earnings) are potentially problematic because researchers need more than one year of data to construct powerful tests of smoothing. Earnings smoothing is inherently a time series phenomenon. A powerful test of smoothing would use many years (or quarters) of earnings data to examine the firm-specific pattern of earnings.

Three studies (Bauman et al., 2001; Frank and Rego, 2006; Christensen et al., 2008) address the research question of whether firms use the VA to increase the magnitude of a big bath. Examining a limited sample of 62 firms, Bauman et al. (2001) find that the association between the income effect of the change in the VA and the amount of the loss (excluding the VA income effect) is consistent with a big bath story. That is, firms appear to overstate the VA when they face large losses from other operations. However, they cannot rule out a very likely alternative explanation, namely that firms with big losses are less likely to realize their DTAs and thus should increase their VA. Christensen et al. (2008) take a different approach to estimating the VA.

Miller and Skinner (1998) acknowledge that their tests of earnings management are weak.
approach. In an attempt to identify big-bath firms, they examine a sample of firms that reported large write-offs from 1996 through 1998. They compute unexpected VA (scaled by DTA) using VA determinants identified by Behn et al. (1998) and Miller and Skinner (1998). They then compare the unexpected VA balances for their sample with the unexpected VA balances for a control sample of firms without large write-offs, matched on industry and size. If the unexpected VA balances for their sample are larger than those for the control sample, they infer that firms are using the VA account to increase the magnitude of the big bath. Results are mixed regarding whether the firms believed to be big-bath firms used the VA to decrease their income even more in the write-off year. Besides the problem of the alternative explanation of the results in Bauman et al. (2001), the analyses in both Bauman et al. (2001) and Christensen et al. (2008) are largely univariate, further limiting the conclusions that can be drawn.

Frank and Rego (2006) provide a thorough and well-executed study that provides strong evidence that companies do not use the VA to enhance a big bath. (We discuss Frank and Rego (2006) in more depth below.) After joint evaluation of Bauman et al. (2001), Christensen et al. (2008), and Frank and Rego (2006), we conclude that the extant literature provides no conclusive evidence that managers use the VA account to enhance the magnitude of a big bath.

Schrand and Wong (2003) investigate whether firms use the VA account to create hidden reserves. They examine whether banks (which tend to have large DTAs) created reserves when they initially set up their VA accounts at the adoption of SFAS No. 109. They reason that in future years the bank could remove the reserves, reducing the VA account and increasing book earnings in the process. In their tests, the authors regress the VA on disincentives for earnings management, as measured by inadequacy of a bank’s regulatory capital. If bank capital adequacy is low, the authors posit that banks are less likely to decrease current income by increasing the VA (in their effort to create hidden reserves for the future). The authors find little evidence that banks established hidden reserves. While the study is definitive with respect to banks, its generalizability is limited.

Finally, three studies examine whether managers use the VA to meet (or beat) various earnings targets. Frank and Rego (2006), Schrand and Wong (2003), and Bauman et al. (2001) test whether firms use the VA to meet (or beat) prior earnings and analysts' forecasts. Frank and Rego (2006) and Bauman et al. (2001) also test whether firms use the VA to avoid reporting a loss.

Frank and Rego's (2006) predictions assume that firms will overstate the VA if pre-managed earnings are higher than the target and will underestimate the VA if pre-managed earnings are lower than the target. For example, if the firm uses the VA account to provide a small boost to earnings to meet the target, then the coefficients on the indicator variables that measure whether the adjusted earnings are slightly below the target will be negative since firms will be decreasing the VA in order to increase earnings. Based on these tests, Frank and Rego (2006) find no evidence that the VA is used to avoid losses or to meet earnings targets based on prior earnings. They do, however, find strong evidence that managers use the VA to meet (or beat) analysts' forecasts. Given the comprehensive nature of the Frank and Rego (2006) study, we conclude that managers do not use the VA to avoid losses or to meet prior earnings targets but that they do use the VA account to manage towards analysts' forecasts. Banks, however, may be different, given Schrand and Wong's (2003) finding that banks manage towards prior earnings.

To summarize, the VA-earnings management studies provide somewhat mixed evidence as to whether managers use the VA account to manipulate earnings. There is no evidence consistent with smoothing behavior; however, recall that there is room for sample composition and other empirical improvements in this area. While there is mixed evidence that firms use the VA to increase their losses in a big bath, the most comprehensive study, Frank and Rego (2006) concludes that the VA is not used in this manner. Similarly, there is limited evidence that managers use the VA to avoid losses and meet prior earnings. Meeting or beating analysts' forecasts is the only objective for which there is consistent evidence that nonfinancial managers use the VA to manage earnings.35

35 The papers in this section address the use of the tax accounts to manage earnings. A related literature, which we only mention briefly here, explores the usefulness of the tax accounts to detect earnings management. Some examples include Phillips et al. (2003), who test whether the use of the deferred tax expense balance can help identify earnings management behavior incremental to using various existing accrual models to identify earnings management. They find that it can. Phillips et al. (2004) follow by examining which of the components of deferred tax expense are incrementally useful in identifying earnings management behavior. Building on these two papers, Joos et al. (2005) add that consideration of the level and change of deferred
4.2. Studies of earnings management via the tax contingency account

Scholars also study the uncertain tax contingency account for evidence of earnings management. As discussed in Section 3, the “cushion” is booked when a company takes an uncertain tax position on its tax return. The contingency balance is an estimate of how much the company will ultimately remit to the government related to the aggressive tax position. Since this estimate is subjective, it could allow for considerable manipulation. Gupta and Laux (2008) use footnote disclosures from 2003 to 2005 (before FIN 48) to test whether companies reduced their tax cushion to meet or beat prior earnings and analysts’ forecasts. From a random sample of 100 companies in the Fortune 500, they identify firm-quarters during which reversals in the tax contingency were reported. (Note that a reversal of the tax contingency results in an increase in income). They regress the amount of the cushion reversal on the amount by which earnings (adjusted for the cushion reversal) are less than the earnings target. The authors infer that firms manage the contingency account to beat analysts’ forecasts.

A strength of this paper is that it uses pre-FIN 48 data. Since the passage of FIN 48 (and thus the requirement that firms disclose their contingency balances) could cause a change in behavior, this is a useful benchmark. A limitation of the paper is that before FIN 48 firms self-selected into disclosing the contingency. In an attempt to address this endogeneity, the authors utilize a two-stage analysis, with the first stage modeling the decision to disclose.

Extending Gupta and Laux (2008), Gupta et al. (2010) examine the use of the cushion account to meet or beat analysts’ forecasts after enactment of FIN 48. They find that although firms seem to use the cushion to meet analysts’ forecasts before FIN 48, they do not seem to use it to meet analysts’ forecasts after FIN 48. Specifically, in the quarterly observations preceding the inclusion of the disclosures required by FIN 48, firms that disclosed a reversal in their cushion were 11.5% more likely to meet the analysts’ forecasts than firms that did not disclose a reversal. However, firms that reported a reversal in the disclosures in their financial statement footnotes following the enactment of FIN 48 were no more likely to meet analysts’ forecasts than were firms without a cushion reversal. This evidence is consistent with the new requirement of disclosures about the tax cushion affecting managerial behavior, possibly eliminating the use of the tax contingency account to manage earnings.

In contrast to Gupta et al. (2010), Cazier et al. (2010) find that firms do seem to use the discretion inherent in reporting the tax contingency balance to meet or beat analysts’ forecasts. Specifically, they find that 37% of their observations with earnings (exclusive of the change in the contingency balance) below the consensus forecast meet the forecast once the change in the contingency balance is included. However, less than 10% of the observations with earnings (exclusive of the change in the contingency balance) above the consensus forecast increased their tax reserves enough to cause them to miss the forecast. They also find that firms with earnings above the consensus analyst forecast are more likely to increase their contingency balances and thus create reserves to use in future years.

Besides Gupta et al. (2010) and Cazier et al. (2010), Blouin et al. (2010) provide some indirect evidence about earnings management. They count the number of settlements between firms and the IRS between enactment and adoption of FIN 48, as well as the number and amount of reserves that were reduced during this period. When firms adopted FIN 48 (as of January 1, 2007 for calendar year-end firms), these companies had to adjust their contingency accounts in accordance with the new rules under FIN 48 and they had to adjust their beginning shareholder’s equity by the same amount. However, if firms adjusted their contingency in 2006 before FIN 48 became effective, then changes in the contingency balance flowed through income with a decrease (increase) in the contingency increasing (decreasing) earnings. Thus, firms facing a decrease in their cushion had an earnings-based incentive to decrease the contingency in 2006. If they had waited until 2007, the adjustment would have flowed directly to their opening equity balance without affecting net income. Blouin et al. (2010) find limited evidence that IRS settlements were associated with earnings management behavior. A logit analysis of the probability of settlement finds marginal evidence that a firm would have settled in the period between enactment and adoption, if the firm would have missed analysts’ forecasts without a reduction in the tax expense. They find no evidence that they reduce the reserve account to meet analysts’ forecasts.

Testing for earnings management through the contingency account is not the primary purpose of Blouin et al. (2010) and thus it is unfair to criticize their paper for its shortcomings in shedding light on earnings management. However, in the spirit of learning from their work, note that Blouin et al. (2010) suffers from at least three weaknesses. First, the earnings management tests are somewhat weak. In particular, the measures used to capture the incentive to manage earnings (primarily a dummy variable that equals 1 if the firm would have missed the analysts’ forecasts without a reduction in the tax expense) do not consider whether the reduction in the reserve balance actually allowed the firm to meet the forecast. The reason for this omission is that the actual decrease in the reserve account is not always included in the disclosures. Second, the sample size is only 100

(footnote continued)

taxes can indicate both the conditions under which earnings management is more likely (when book income is smaller than taxable income) and the strategies that managers use to achieve certain earnings targets.

36 Blouin and Tuna (2009) also attempt to test for earnings management of the contingency before FIN 48. The problem that they faced, and a key reason why scholars had shied away from studying this interesting question, is that before FIN 48, the cushion disclosure was not required. Since the cushion had to be estimated, any error in the estimate could potentially render the study’s findings meaningless. Blouin and Tuna (2009) measure the cushion as the difference between the current tax expense and the current tax liability with adjustments for stock option deductions. As evidence that they measure the cushion with error, for a small subsample of firms that disclosed their contingency balance, they find the correlation between the disclosed amount and the cushion amount that they estimate is only 40%.

firms, limiting the study’s generalizability. Third, their study is primarily about possible opportunistic behavior at adoption of the standard, rather than the more interesting and important issue of ongoing earnings management behavior. In summary, we know little about the use of the tax contingency to manage earnings on an ongoing basis and, in particular, whether this behavior occurs since the effective date of FIN 48.

4.3. Studies of earnings management via discretion in reporting the U.S. tax expense on foreign profits

Another AFIT opportunity to manage earnings involves the reporting of U.S. taxes on foreign profits. However, presently very little research addresses whether and why managers exploit the discretion under APB 23 to manage earnings.

To our knowledge, Krull (2004) is the only empirical study that examines whether firms manage earnings by exploiting the GAAP discretion in reporting permanently reinvested foreign earnings (PRE). Krull advances four reasons firms may manage earnings by exploiting the discretion in recording residual taxes paid to the IRS. First, the computation of the permanently reinvested portion of foreign earnings forces managers to exercise considerable judgment. Second, changes in the permanently reinvested account have no cash flow implications. Third, investors may have difficulty detecting earnings management via this account because there is limited public information about a firm’s foreign operations. Fourth, the amount of unrepatriated foreign earnings (potentially subject to earnings management) is large. Consistent with her predictions, Krull (2004) finds that firms manage earnings by using their discretion in recording residual taxes. Specifically, she shows that year-to-year changes in the amounts reported as permanently reinvested foreign earnings from 1993 to 1999 are positively related to the difference between analysts’ forecasts and pre-managed earnings for firms she estimates are in excess limit (i.e., firms that do not have excess foreign tax credits). She does not find this same relation for those firms that she estimates face excess foreign tax credits. This makes sense because excess credit firms have no incentive to classify earnings as permanently reinvested because they face no taxes upon repatriation. Thus, the inference drawn from Krull (2004) is similar to those inferences drawn from the other AFIT earnings management studies, i.e., firms are more likely to defer recognition of residual taxes if deferral better enables them to meet analysts’ forecasts.

Collins et al. (2001) test whether the market can see through this APB No. 23 earnings management option. They examine the tax footnotes of the financial statements for firms that have classified at least some of their foreign profits as permanently reinvested. They find that the market values the permanently reinvested foreign earnings net of tax, i.e., as though the firm will eventually repatriate the profits and pay any residual U.S. taxes. The findings in Collins et al. (2001) suggest that the market can undo the earnings management documented in Krull (2004). This suggests that managers may use the type of earnings management reported by Krull (2004) to achieve non-equity market goals. Another possibility is that the results in Krull (2004) or Collins et al. (2001) are incorrect.

For example, Collins et al. (2001) has at least two design problems. First, the study suffers from self-selection. Under SFAS No. 109, firms are not required to disclose a residual tax if it is “not practicable” to determine the amount, a position that 26% of their sample takes. Since Collins et al. (2001) cannot observe the unrecognized residual taxes for all firms, they cannot reject the proposition that these firms are successfully managing their earnings through this APB 23 reporting option. Second, their test is a type of value relevance test that suffers from the problems discussed by Holthausen and Watts (2001). As discussed in Barth et al. (2001), several studies identify a host of econometric concerns with price-level regression models including measurement error, coefficient bias, inefficient standard errors, and cross-sectional differences in valuation parameters. While this same literature provides solutions to many of these problems, Collins et al. (2001) generally do not make use of these techniques.

To summarize, presently only a very limited amount of research addresses whether and why managers exploit the discretion under APB 23 to manage earnings. The inference drawn from Krull (2004) is similar to those inferences drawn from the other AFIT earnings management studies, i.e., firms are more likely to defer recognition of the residual taxes if deferral better enables them to meet analysts’ forecasts.

4.4. Other studies

The papers discussed above study specific tax accounts in search of evidence of earnings management. Another approach is to investigate settings where earnings management is suspected and then look for patterns in the tax expense

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37 This difficulty in detecting earnings management does not exist in all countries. The disclosure requirements in some countries (especially, European countries) provide substantial information about a firm’s foreign operations.

38 Krull’s (2004) analysis turns on how well she can identify excess limit and excess credit firms from the financial statements. She classifies firms as excess limit if their foreign tax expense divided by foreign earnings over the last five years is less than 35%, the U.S. statutory tax rate. Since the book numbers (foreign tax expense and profits) are accrual-based and the foreign tax credits are computed based on a cash basis (potentially relating to actual foreign taxes paid and profits earned from decades before), her approach is imperfect at best. If her separation into excess limit and excess credit is flawed, then the inferences she reaches may be erroneous. That said, we cannot think of a superior way of estimating limit and credit positions.

39 Recent findings in Graham et al. (2010) suggest that Krull (2004)’s results may be time-specific or sample-specific. Graham et al. (2010) report that 75% of their sample firms designate all of their unremitted foreign earnings as permanently reinvested. It is possible that the Krull (2004) discretion in classifying foreign earnings as PRE has been curtailed in recent years by regulation, such as Sarbanes-Oxley.

40 We discuss the shortcomings of value relevance studies as laid out by Holthausen and Watts (2001) in more detail in Section 6, so we do not elaborate further here.
consistent with earnings management, without specifying the balance sheet account that is being manipulated. Although knowing the specific balance sheet account through which manipulation is occurring is important, the evidence about whether firms manage earnings through the tax accounts is sufficiently scant that we find merit in any documentation of AFIT earnings management.

An example of this approach is Dhaliwal et al. (2004). They reason that since the income tax expense is usually the final account determined in the financial statement preparation process, it provides an important “last chance” to manage earnings. Dhaliwal et al. (2004) examine data from 1986 to 1999 to determine whether companies use the income tax expense account to meet analysts’ forecasts in the fourth quarter. They find a negative association between the difference in the fourth quarter and the third quarter ETRs and the amount by which the firm would have missed its earnings forecast at the end of the year if earnings had not been managed. Their findings are consistent with managers manipulating tax expense down (thus, increasing net income and decreasing the ETR) when the pre-managed earnings would fall short of the forecasted earnings. Dhaliwal et al. (2004) do not attempt to identify the specific balance sheet account through which earnings management occurs.

Gleason and Mills (2008) conclude that the market mostly sees through the manipulation documented in Dhaliwal et al. (2004). They measure the market reaction to the unexpected earnings of firms that beat the analysts’ forecasts without manipulating their tax expense, which they contrast with the market reaction to the unexpected earnings of firms that beat the analysts’ forecasts by manipulating their tax expense. Comparing the two measures and controlling for abnormal accruals, they document a weaker market reaction to the manipulated unexpected earnings, which they interpret as evidence that the market sees through managerial manipulation of the tax expense account. Given this interpretation, it is puzzling why managers manage tax expense to meet analyst forecasts at all, if the market sees through almost all of the manipulation.

Gordon and Joos (2004) identify another setting where the tax expense may be a prime candidate for earnings management. The U.K. once employed a partial method of accounting for deferred taxes. Under the partial method, the financial statements only recognize deferred tax balances that are expected to reverse in the foreseeable future. Thus, managers have some discretion in choosing which deferred taxes to record. By not recording DTLs (DTAs), a company can increase (decrease) income and equity. Gordon and Joos (2004) find that managers of British firms opportunistically used their discretion to manage their leverage (through increasing equity) but not to smooth earnings. While it is useful and interesting to know that firms did manipulate the tax accounts under the U.K.‘s former accounting rules, it is not clear whether these results generalize to the less flexible AFIT rules under GAAP and IFRS.

4.5. Future research in earnings management

To summarize, a consistent pattern emerges from the extant research on earnings management: Firms use the tax accounts to manage earnings to meet analysts’ forecasts but not to manage towards other goals. Although this field has reached some maturity, a number of issues remain unresolved. The remainder of this section highlights eight unresolved research questions.

First, it is somewhat unclear why managers would not use the tax accounts to meet or beat prior earnings. In the survey by Graham et al. (2005), managers report that prior period earnings are an important benchmark. It is worth noting, however, that while 85.1% of surveyed executives indicated that EPS from the same quarter in the prior year is an important benchmark, only 54.2% responded that previous quarter EPS was an important benchmark. Thus, does the lack of research consensus about whether managers use the tax accounts to meet or beat prior earnings stem from which measure of prior earnings is used as the benchmark? Both Bauman et al. (2001) and Frank and Rego (2006) use prior year earnings as the benchmark and find no result consistent with this type of earnings management in the VA account. However, Schrand and Wong (2003) find that the valuation allowance is used as hypothesized when they define the prior earnings benchmark as the three-year historical average. In addition, Gupta and Laux (2008) find that tax cushion reversals are used to meet or beat prior earnings when they define prior earnings as earnings from the same quarter, one year previous. A related question is: Why do managers not exploit the subjectivity in the tax accounts to facilitate big baths?

41 The pre-managed fourth quarter earnings are computed as actual pretax income × (1 – third quarter ETR).

42 Compris et al. (2010) find that first quarter ETRs are on average the highest of the year and that ETRs decline monotonically through the year. The authors interpret this as being consistent with building slack in the ETR estimate that can be used to manage (increase) earnings later in the year. Bauman and Shaw (2005) find that on average changes in interim ETRs help predict an opposite signed movement in next quarter earnings during their 1994 to 2001 sample; however, they find the perplexing result that small increases in ETRs lead to large increases in next quarter earnings, while large increases in ETRs lead to lower next quarter earnings.

43 Two studies test for changes in earnings management following passage of the Sarbanes-Oxley. Cook et al. (2008) extend Dhaliwal et al. (2004), testing whether this usefulness of the tax accounts to achieve “last chance” earnings management changed with the Sarbanes-Oxley Act of 2002. They find that the earnings management discovered in Dhaliwal et al. (2004) is greater in firms that pay higher tax-related fees to their auditors and that this result did not change after passage of Sarbanes-Oxley. They also find that among firms that pay no tax-related fees to their auditors, those that would miss their earnings forecasts utilize this form of earnings management more than for those that would not miss their forecasts. This result does not hold after the Sarbanes-Oxley Act. Gleason et al. (2010) also examine changes around the Sarbanes-Oxley Act. After studying cross-firm changes in earnings management following passage of Sarbanes-Oxley, they conclude that its mandated internal control reforms successfully reduced tax-accrual earnings management.
Second, while Gupta et al. (2010) conclude that managers are not using the tax contingency to meet or beat analysts' earnings forecasts, Cazier et al. (2010) conclude the opposite. Some resolution of this issue is required. Furthermore, Gupta et al. (2010) argue that the increased disclosures that are required under FIN 48 have decreased the use of the tax cushion to manage earnings. Does this mean that firms are now using other approaches to manipulate the tax expense line item more, or has total management of the tax expense decreased?

Third, we have very little information related to whether and how the users of the financial statements "see through" the earnings management of the tax accounts. Do analysts and the market see through this manipulation? How effectively do the taxing authorities use what is reported in the tax accounts to assess the tax situation of the firm?

Fourth, given the discretion permitted under APB No. 23, as well as the limited required disclosures in this area, surprisingly few papers analyze this option to defer recognition of the residual U.S. tax on foreign earnings. Graham et al. (2011) present evidence that managers value the ability to defer the recognition of the residual U.S. taxes as much as they value the ability to defer the actual cash payments. Furthermore, this earnings management option likely is becoming increasingly popular as foreign earnings become a larger proportion of U.S. firms' profits and as long as U.S. tax rates exceed those of most of its trading partners. On the other hand, analyzing firms in the 1990s, Krull (2004) acknowledged that annual changes in the permanently reinvested foreign earnings account might "...raise suspicion with auditors..." Graham et al.'s (2011) recent findings are consistent with Sarbanes-Oxley, FIN 48, and other regulatory changes having altered the practice of auditing. Thus, we would be interested to know whether firms still manipulate the permanently reinvested foreign earnings amount to manage earnings given the tradeoffs between (1) the increasing importance of foreign earnings and the discretion allowed managers in this area, (2) the current auditing environment that involves increased scrutiny from regulators, and (3) as discussed above, cash taxes pressure arising from the possibility that PRE may again affect the amount of foreign profits qualifying for a repatriation tax holiday.

Fifth, besides earnings management, the option under APB No. 23 to reduce the ETR provides researchers with an opportunity to study the importance that managers place on the ETR. Anecdotally, managers appear to place emphasis on maintaining a smooth and reasonably low ETR. The discretion allowed managers in reporting tax expense on foreign earnings could provide a fruitful setting to examine this issue.

Sixth, one of the distinctive features of accounting for income taxes is that the tax expense occurs below the computation of operating income on the income statement. In fact, some of the total tax expense falls below net income because items, such as income from discontinued operations and other comprehensive income, are reported net of tax. Consequently, manipulation of the tax expense account does not affect operating income and sometimes does not affect net income, key items on the income statement. It would be interesting to have empirical evidence that speaks to the importance of the placement of the tax expense on the income statement on management's choice to manage the tax expense account.

Seventh, the extant literature largely ignores the IRS audit implications of managing the tax accounts. In light of the adversarial role of the IRS, the tax accounts provide a setting for important and interesting questions that cannot be easily studied using other accounts. For example, how does this adversarial relation affect earnings management in general? Does it reduce the overall attractiveness of the tax accounts as earnings management options? Which parts of the tax account are less attractive management options, given the adversarial relation? How does it affect the nature of the earnings management behavior? Are different firms affected differently (e.g., the largest firms, which are audited each year by the IRS, versus smaller firms, which are only audited every few years)?

Finally, if the U.S. ultimately adopts the IFRS rules related to accounting for income taxes, the decision to elect permanent reinvestment could be interesting to study. Under GAAP (IFRS), undistributed earnings must be reinvested in the foreign subsidiary "indefinitely" ("for the foreseeable future") in order to elect permanent reinvestment. Generally, "indefinitely" is interpreted as permanent, whereas "for the foreseeable future" is interpreted as a much shorter period. Thus, if IFRS is adopted, it could be interesting to see what happens to the magnitude of the amount of earnings labeled as permanently reinvested.

5. The association between book-tax differences and earnings characteristics

A few studies explore the association between book-tax differences and various earning characteristics. Lev and Nissim (2004) focus on how the magnitude of the book-tax differences affects earnings growth. They posit that the ratio of estimated taxable income to book income (TI/BI) is a measure of earnings quality (and thus contains information incremental to that found in accruals and cash flows) for three reasons. First, discretionary accruals are included in book income but often are excluded from taxable income, and since discretionary accruals must reverse in the future, they reduce earnings quality. Second, if firms time transactions to smooth taxable income, then estimated current-period taxable income should reflect management's assessment of future taxable income. It then follows that high current...
estimated taxable income signals that managers anticipate having high future estimated taxable income and, by inference, high future book income. Third, since firms usually recognize income (deductions) for tax purposes before (after) they recognize revenue (expenses) for book purposes, a high ratio of TI/BI should predict high (low) future book revenues (expenses).

To test whether TI/BI provides information content, Lev and Nissim (2004) regress earnings growth on TI/BI and controls. They find that earnings growth is positively associated with TI/BI, consistent with their book-tax difference hypotheses. While interesting and influential in spurring future AFIT research, Lev and Nissim (2004) suffers from two potential problems. First, the authors assume that the only form of tax planning involves smoothing taxable income across years, which is obviously only one type of tax avoidance. However, this likely biases against finding an association between TI/BI and future earnings growth. Second, there are many potential determinants of the book-tax difference; however, they only control for industry effects. Thus, something other than earnings quality could be driving the relevance of TI/BI.

Another interesting paper that also contributed to the surge in AFIT studies is Hanlon’s (2005) study of the potential information content of BTDs. She focuses on deferred tax timing differences and tests whether BTDs affect the persistence of earnings, cash flows and accruals. She hypothesizes that firms with the most extreme BTDs (whether positive or negative) will have less persistent book earnings and that the accrual portion of earnings will have less persistence for these firms.45 She finds that firms with the most extreme BTDs experience less persistence in earnings, accruals, and cash flows, thus indicating that extreme book-tax differences are associated with lower earnings quality.46

There are a few issues to consider when interpreting the results in Hanlon (2005).47 First, any one-time accrual could cause the association documented with persistence and yet have nothing to do with earnings quality per se. Hanlon (2005) addresses this issue by excluding special items and rerunning the analysis. However, given that the results weaken in this sensitivity analysis and that not all one-time accruals are contained only within special items, dropping special items only partially addresses this concern. Second, given Hanlon et al.’s (2005) finding that estimated taxable income for loss firms does not exhibit incremental explanatory power over book income, the results in Hanlon (2005) may be sensitive to its exclusion of loss firms.48 Third, her finding that, in addition to earnings, cash flows exhibit less persistence when the firm has extreme book-tax difference raises concerns that the changes in earnings quality arise for reasons other than BTDs. That said, although both Lev and Nissim (2004) and Hanlon (2005) are imperfect, both are seminal works that paved new ground in our understanding of the potential importance of accounting for income taxes and are principally responsible for initiating the surge in AFIT research over the last decade.

Schmidt (2006) also investigates the persistence of tax information, focusing on the tax change component of earnings (i.e., the change in earnings attributable to a change in the ETR). His work extends earlier studies that as a group were inconsistent and inconclusive about the persistence related to ETR changes (e.g., Lipe, 1986; Lev and Thiagarajan, 1993; Abarbanell and Bushee, 1997, 1998; Bryant-Kutcher et al., 2009). Schmidt (2006) finds that the tax change component of earnings in the first fiscal quarter is not transitory and hence may have predictive value. In fact, it rivals the ability of other (non-tax) components of earnings to forecast next year’s earnings. However, Schmidt finds that revisions to the ETR in subsequent quarters are transitory and hence have less information content. The transitory nature of later quarters is consistent with Dhaliwal et al.’s (2004) finding that firms use the income tax expense account to meet analysts’ forecasts in the fourth quarter. Schmidt (2006) is well executed, though its sensitivity to the exclusion of loss firms is unknown.

These few studies suggest that BTDs are associated with earnings characteristics, but room remains for future research in this area. First, as discussed in Section 2, every firm is subject to taxation. Thus, understanding how the tax accounts shed light onto earnings characteristics (and perhaps earnings quality) would be a useful line of research with relevance to all firms. Second, since taxable income (and thus book-tax differences) provides information about an alternative measure of income (as discussed in Section 2), it seems to be reasonable to think that there would be information embedded in the accounting for income taxes that would be associated with earnings characteristics.

Looking ahead, the AFIT literature needs a more expansive view of earnings quality. To date, only earnings persistence and earnings growth have been used as measures of earnings quality. However, earnings quality is not a single construct and the various proxies do not have similar consequences. As stated by Dechow et al. (2010), “…research should exploit the unique features of the earnings proxies to provide more compelling evidence that identifies the determinants and consequences of quality for a given research question.” Additional measures of earnings quality include accruals quality, smoothness of earnings, nearness to earnings targets, timeliness, and conservatism. Finally, the association between

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45 Persistence is measured by the coefficient on a one-period lagged value of earnings (or the accrual portion of earnings), when the dependent variable is current period earnings.

46 In their extension of Hanlon (2005), Blaylock et al. (2010) find that when aggressive tax reporting creates extremely positive BTDs (book income is greater than estimated taxable income), earnings and accruals persistence is greater than when the extremely positive BTDs arise for other reasons. Conversely, when upward earnings management creates extremely positive BTDs, earnings and accruals persistence is lower than when the extremely positive BTDs arise for other reasons.

47 A new working paper by Guenther (2011) raises doubts about whether the relation that Hanlon (2005) documents between large BTDs and persistence arises because firms are boosting book income and reducing taxable income through temporary differences. Guenther (2011) argues that most of the observations that drive Hanlon’s results are from firms that are younger, smaller, have high pre-tax return on assets, and have larger transitory items and that the large BTDs come mostly from net operating loss carryforwards and changes in the valuation allowance. However, as noted, Guenther (2011) is a new paper and further scrutiny is needed.

48 Thomas and Zhang (2009) show that results in these types of analyses are quite sensitive to the exclusion of loss firms.
earnings quality and temporary timing differences needs further examination. Hanlon (2005) finds that temporary differences affect earnings persistence while Lev and Nissim (2004) report that they have no explanatory power for future earnings growth.

6. The pricing of tax information reported in the financial statements

The earliest AFIT studies assessed whether the market uses tax information to set prices. The pricing of tax information continues to be an active area of research. This section reviews the market-related literature and highlights important unresolved issues. In general, the evidence is consistent with the market impounding financial statement information about taxes.

6.1. Deferred tax accounts

6.1.1. Empirical studies

Several early papers at least tangentially address the pricing of deferred tax accounts. Beaver and Dukes (1972) determine that a measure of earnings that includes tax-related deferrals has a higher association with market returns than does a measure of earnings that excludes these deferrals. Rayburn (1986) finds that the tax accrual provides information to the market that is incremental to cash flow information. Similarly, Chaney and Jeter (1994) find that the deferred tax component of earnings provides information to the market incremental to that provided by income computed without the deferred tax component.

Recent research focuses on two approaches to determining whether the market prices the deferred tax accounts. The first approach used by Amir et al. (1997), Ayers (1998), Amir and Sougiannis (1999), and Dhaliwal et al. (2000), is a levels approach. These value relevance studies include some measure of the level of market equity as the dependent variable and measures of the deferred tax accounts (along with other balance sheet variables) as explanatory variables. In general, they find that the market prices the deferred tax accounts, with the exception of the VA. The evidence is mixed regarding whether the VA account is priced. In addition, Amir et al. (1997) test whether the market prices components of the deferred tax accounts differently depending on when they are likely to reverse. They report that the components are priced as though the market discounts the value of the deferred tax account based on its likelihood of settlement and length of time until settlement. Interestingly, Dhaliwal et al. (2000) test whether the market prices off-balance sheet DTLs and finds that it does.

While these studies seem to indicate that the deferred tax accounts (with the possible exception of the VA) are priced by the market, it is not clear what, if anything, we can really infer from these results. Holthausen and Watts (2001) discuss some serious concerns with value relevance studies. Most notable is the fact that it is difficult to draw inferences from these papers because they do not provide descriptive theories of accounting and standard setting. In addition, Holthausen and Watts (2001) discuss weaknesses in the models that this literature uses and certain econometric problems. In addition, all three studies of the on-balance sheet deferred tax accounts use data from around the enactment of SFAS No. 109, specifically 1992, 1993 and 1994. The generalizability of these studies is in question because the sample sizes are small and, during the years examined, the market may have been still learning how to impound information in these complex footnote disclosures.

The second approach for determining whether the market prices the deferred tax accounts is to examine the change in their pricing around the change of corporate tax rates. For example, Givoly and Hayn (1992) use the Tax Reform Act of 1986's reduction in the corporate tax rate from 46% to 34% to test the pricing of DTLs during the APB No. 11 era. Since the 1986 legislation reduced future cash outlays, it should have increased the value of the firms. Furthermore, if the market viewed DTLs as "real" liabilities (i.e., taxes to be paid in the future), then the change in the firm's stock price should have been correlated with the amount of a firm's DTLs (since those expected future tax payments would fall after the reduction in the corporate tax rate). Givoly and Hayn (1992) find that the market does price DTLs as liabilities. Specifically, the abnormal returns of the firms in their sample are positively associated with the amount of DTL, consistent with the market anticipating that the DTLs would decrease when the tax rates fell. They also find that the market reaction is smaller for firms that were less likely to realize their DTLs and smaller for firms that had a longer expected period until reversal. One potential problem with this study is that it does not include a measure of unexpected earnings as an explanatory variable. Thus, coefficients could be biased if unexpected earnings are correlated with the change in the deferred tax accounts due to the tax rate change.

Unlike APB No. 11 (Accounting Principles Board, 1967), when the corporate statutory tax rate changes under SFAS No. 109, the deferred tax balances must be recomputed using the new corporate statutory tax rate in the year of the tax law change, with income being adjusted accordingly in that period. For example, under APB No. 11, the deferred tax balances were not altered when the statutory corporate tax rate fell from 46% to 34% in 1986. If SFAS No. 109 had applied in 1986,
the DTLs (DTAs) would have been revalued under the new lower rate and the change would have increased (decreased) current income.

In 1993, corporate statutory tax rates increased from 34% to 35%, increasing DTLs (DTAs) and decreasing (increasing) current period income. Chen and Schoderbek (2000) test whether analysts (investors) impounded this higher rate change into their forecasts (prices), before firms released their earnings. They find no evidence that analysts or investors accounted for this information, even though analysts and the market should have been able to estimate the expected adjustment based on the firms’ current balance in their deferred tax accounts. Their results could be interpreted as being consistent with inefficiency on the part of analysts and the market. Alternatively, since the statutory rate change in 1993 was only one percentage point, their tests may not have had adequate power to detect a response. In addition, the sample size of 158 is quite small, limiting the generalizability of the inferences.

In summary, several studies address the extent to which the market values the deferred tax accounts. However, most of the literature is based on price levels regressions, the results of which are questionable given the discussion in Holthausen and Watts (2001). Excluding the price-level studies from the overall interpretation of this literature, it remains an open question whether the deferred tax accounts are priced.

6.1.2. Theoretical studies

Three theoretical papers grapple with the valuation of deferred tax accounts. The primary finding is that under certain circumstances the deferred tax accounts should not be discounted to reflect the length of time until the reversal. This implication stands in contrast to the empirical evidence in Givoly and Hayn (1992) and Amir et al. (1997) that the timing of the reversal matters. Sansing (1998) is the first of these theoretical papers. He evaluates whether DTLs should have any valuation effects, given that DTLs are not discounted and may never reverse. He demonstrates that the value of the DTL component related to depreciation is a specific fraction of the reported DTL component, thus providing theoretical support for the notion that DTLs should be valued at their full book value.

Guenther and Sansing (2000) extend Sansing (1998). They demonstrate that if (a) the assets and liabilities that support the deferred tax accounts are reported at their present values, and (b) the tax deductions are taken on a cash basis, then the DTLs and DTAs should be valued at their reported amounts. If those two conditions do not hold, then the DTLs and DTAs should be valued less than their reported amounts. The authors also show that the anticipated reversal of the deferred tax accounts should not affect their value.

Guenther and Sansing (2004) focus on the relevance of the reversal. Evaluating the DTL that arises from BTDs in depreciation, they show that the value of the DTL is not a function of the expected time to reversal. Their explanation is that the timing of reversal can only affect valuation if it has cash flow implications. Since the rate of reversal is a function of book depreciation and has no cash flow implications, it should not have valuation implications.

As mentioned above, these findings stand in contrast to the empirical results that the timing of the reversal matters. A key difference appears to be whether the book-tax difference carries cash flow implications (e.g., warranty expense) or whether it has no cash flow implications (e.g., depreciation). If the BTD does not involve cash flow, reversal appears irrelevant. Would the theory’s non-reversal conclusions hold if the book-tax difference carried cash flow implications? What conditions, if any, could the models relax to reach the same conclusions as the empirical papers?

6.2. Tax contingency

Frischmann et al. (2008) and Robinson and Schmidt (2009) address the market pricing of the unrecognized tax benefits (i.e., the tax contingency). Both report that the market seems to view the contingency account positively, consistent with a positive perception of tax planning activities. However, potential problems suggest caution when interpreting their findings, leaving the door open for future research to address the suspect issues.

These two papers examine the market reaction to the release of the contingency balance in the 10-Q. Frischmann et al. (2008) regress the 3-day abnormal return (computed around the release of the 10-Q) on the unrecognized tax benefit balance reported in the footnotes (as required by FIN 48) and unexpected earnings. They find that the contingency balance is positively associated with the abnormal return, consistent with the market viewing tax planning positively. Robinson and Schmidt (2009) expand on this finding, testing whether this positive relation varies with the quality of the disclosures. They find that the association is less positive for firms with high quality disclosures. This result provides an indication that although the market views tax planning positively, it is concerned with the potential costs of disclosure related to this tax planning.

While these results are interesting, there are a number of potential problems. First, both papers only examine the market reaction during the 1st quarter of 2007 (i.e., the first quarter firms provided FIN 48 disclosures). It is unclear whether these results hold in subsequent periods after the market had time to process the implications of this complex standard. Second, since the returns are computed around the release of the 10-Q, the market could be reacting to other information, much of which could be correlated with the contingency balance. Third, both papers use the contingency

51 Chen and Schoderbek (2000) find that this mispricing was more severe for firms with an income-increasing adjustment and for firms that did not disclose the adjustment in their earnings release. They do not find that the severity of the mispricing varies with the level of institutional holdings.

52 The fraction is the tax depreciation rate divided by the sum of the tax depreciation rate and the cost of capital.

balance, rather than the unexpected contingency balance, the latter of which is more relevant when considering market reactions. The implicit assumption is that the market expects a balance of zero; thus, the entire realized balance is unexpected. This assumption limits our ability to interpret the results.

6.3. Information content of estimated taxable income and book-tax differences

This section reviews a growing literature that investigates whether the tax information in the financial statements is value-relevant. As discussed above, market participants cannot observe actual taxable income because tax returns are confidential filings with the taxing authorities. Nonetheless, researchers can attempt to estimate taxable income using the tax information in the financial statements. Current income tax expense grossed up by the statutory corporate income tax rate is the standard taxable income estimate53 that researchers use to assess whether market participants find the tax information in the financial statements to have incremental content. Most studies adjust this amount by the change in net operating loss carryforwards.54

We review two bodies of literature in this area. First, we look at the studies that attempt to assess the association between contemporaneous returns and estimated taxable income (or alternatively, book-tax differences). This literature provides evidence on whether the market processes the information that book-tax differences provide about various earnings characteristics. It also provides evidence on whether the market values information in estimated taxable income incremental to book income. However, it does not address whether the market prices this information fully and efficiently. For example, the market might react to one dollar of unexpected taxable income (as estimated using financial statement data), but it might do so in a manner that does not fully and instantaneously impound the information. Thus, the second set of studies examines the association between future returns and estimated taxable income. If the market correctly impounds all relevant information when estimated taxable income is released, these studies implicitly assume that there should not be an association with future returns. If a statistical relation between current taxable income and future returns is found, it is possible that the market did not fully value taxable income when it was released.

6.3.1. Association between contemporaneous returns and book-tax differences

Several studies test whether book-tax differences provide information to the market. Other studies test whether taxable income (estimated from information in the financial statements) provides information to the market. Since these latter studies control for book income, they also can be interpreted as tests of whether BTDs provide information to the market.

To test whether estimated taxable income provides the market with information that is incrementally “useful” beyond book income, Hanlon et al. (2005) perform three tests. First, they test the incremental information content of estimated taxable income by regressing long-window contemporaneous returns on both the change in pre-tax book income and the change in estimated taxable income. They find that both measures explain returns. Although book income has a larger coefficient (and t-statistic), the coefficient on estimated taxable income is still statistically significant, consistent with estimated taxable income providing incremental information to the market.55 Second, they test the relevant information content by comparing the adjusted $R^2$ from a regression of returns on the change in pre-tax book income to the adjusted $R^2$ from a regression of returns on the change in estimated taxable income. They find that the adjusted $R^2$ from the pre-tax book income is higher than the adjusted $R^2$ from the taxable income regression, thus concluding that book income is more “useful” than taxable income. Finally, they examine portfolio returns to assess the returns that can be earned with foreknowledge of the change in income. They find that knowledge of both the sign and magnitude of the change in pre-tax book income (estimated taxable income) results in average market-adjusted returns of 27.4% (21.1%). The analyses performed by Hanlon et al. (2005) are well done, and it is reassuring that they perform three different tests as well as a host of robustness analyses.

53 Note that while this is only an estimate of taxable income and not the actual tax income reported on the firm’s tax return, the specific research question dictates which of the two is preferable in a given research study. This is an example of a setting where, even if they had access to the actual tax returns, researchers would focus on information available to market participants rather than using information in confidential tax returns. Thus, the inability to observe the actual tax returns is not a limitation in this area of study.

54 Lipe (1986) examines the information content of various components of earnings, including income tax expense. He finds that income tax expense provides additional information to the market incremental to that in the other components. Looking at a more recent period, Thomas and Zhang (2009) find that the tax expense is positively priced by the market, unlike other expense components of income. They attribute this to the possibility that taxable income is a measure of economic profit.

55 A new working paper by Raedy et al. (2011) attempts to determine the specific components of estimated taxable income that the market finds informative in Hanlon et al. (2005). They follow Hanlon et al. (2005), except that they hand-collect data to disaggregate the BTDs into the deferred tax and rate reconciliation items obtained from the tax footnotes in the financial statements. Although Raedy et al. (2011) can replicate Hanlon et al. (2005), they surprisingly find no evidence that the equity markets differentially price the various elements of BTDs. One possible reason for this seemingly puzzling result is that hand-collected disaggregated book-tax differences rarely equal machine-readable, aggregated book-tax differences. Hand-collected, disaggregated data from the tax footnotes are unable to measure actual book-tax differences precisely because they cannot segregate the effects of mergers and acquisitions on the changes between beginning of year and end of year balances. At the same time, tax footnote data can segregate items that affect tax expense but not taxable income, such as credits and state tax expense (while machine-readable, aggregate data cannot segregate in this manner). Furthermore, both methods are subject to measurement error from such sources as employee stock options and uncertain tax contingencies. (For further discussions of these measurement problems, see Hanlon, 2003; Hanlon et al., 2005; Raedy et al., 2011). In summary, the findings in Raedy et al. (2011) differ from previous analyses, but they should be interpreted with caution, both because the paper needs further scrutiny and because of data are measurement issues.

Ayers et al. (2009) extend Hanlon et al. (2005) by considering cross-firm differences in tax planning and earnings quality. They first hypothesize that firms that engage in more tax planning will report a taxable income figure that is less representative of the firm’s underlying economic activity. Their second hypothesis is that taxable income (estimated by grossing up tax expense) will have relatively greater information content for firms that engage in higher levels of earnings management of book income. They define high tax planning firms as those in the lowest quintile of accumulated effective tax rates (industry-adjusted) over a five-year window and low quality earnings firms as those in the highest quintile of absolute abnormal accruals.56 Their tests begin with long-window association tests between returns and both book income and estimated taxable income, where the returns and the income variables are measured contemporaneously. From these regressions, they compute a ratio where the numerator is the $R^2$ from the estimated taxable income regression and the denominator is the $R^2$ from the book income regression. They then compare the ratio for the two groups of test firms (i.e., high tax planners and the low earnings quality firms) with the ratio for all other firms. As predicted, they find that the information content of estimated taxable income (compared with the information content in book income) is lower for firms with high levels of tax planning and higher for firms with low levels of book earnings quality.

The second hypothesis in Ayers et al. (2009) deserves further scrutiny. It assumes that managers only undertake earnings management when book and tax do not conform and that the market treats book income and taxable income as substitute measures of economic income, as opposed to alternative measures. Consistent with this potential conceptual problem with the second hypothesis, the empirical results for that hypothesis in Ayers et al. (2009) are weak. However, the first hypothesis is well conceived and the tests are implemented well. One potential problem with the analyses in Ayers et al. (2009) is that they do not consider the effect of tax planning and earnings management simultaneously. Thus, they do not control for the book (tax) manipulation when testing the information content of the taxable income for tax planners (earnings managers).57

In addition to these two papers, several studies examine whether BTDs provide information about various earnings characteristics (as were discussed in Section 5). These same studies then examine whether the market seems to understand the information that BTDs provide about earnings. As discussed in Section 5, Lev and Nissim (2004) find that the ratio of estimated taxable income to book income (TI/BI) is positively associated with earnings growth. They then explore whether the market prices this information about the quality of earnings contemporaneously by regressing the current E/P ratio on the TI/BI measure and controls. Curiously, they find that the market seems to (at least partially) impound this information in the post-SFAS No. 109 period but not the period that precedes the enactment of the standard, which the authors attribute to investors’ more quickly and fully learning the implications of the tax information for future earnings following the enactment of SFAS 109. This explanation is a bit unsatisfactory. It is unclear why the ability of the market to understand the implications of the tax information would be related to the enactment of SFAS No. 109. In addition, while this finding may actually just be the result of a time trend in the market’s ability to interpret data, the authors do not provide any time trend analysis.

As discussed in Section 5, Hanlon (2005) also studies the association between BTDs and earnings characteristics, namely earnings persistence, and then tests whether BTDs affect the market’s assessment of earnings persistence. She finds that for firms with extremely negative BTDs (book income is less than estimated taxable income), the market correctly estimates the persistence of earnings and cash flows, but overestimates the persistence of accruals. For firms with the most extreme positive BTDs (book income is greater than estimated taxable income), the market actually underestimates the degree of persistence of earnings and cash flows, but correctly estimates the persistence of accruals.58 The mixed results of these market tests are puzzling and difficult to reconcile. In addition, as discussed in Section 5, Schmidt (2006) investigates the persistence of tax information, focusing on the change in earnings attributable to a change in the ETR and then analyzes how the market reacts to this persistence. He finds that the market tends to underweight the persistence of the tax change component of earnings.

In summary, estimated taxable income has information content incremental to that in book income. However, it is hard to identify the specific BTDs that provide this information to the market. Furthermore, cross-sectional tests show that the relative contribution of estimated taxable income decreases when firms engage in aggressive tax planning. However, the evidence regarding whether the market properly prices the information in BTDs that relate to earnings characteristics is mixed and thus does not provide a clear answer to the question.

6.3.2. Association between future returns and estimated taxable income

This section reviews three papers that examine the extent to which (and how quickly) market prices impound information about estimated taxable income. The earliest work was performed by Lev and Nissim (2004), who examine the explanatory power of TI/BI (the ratio of estimated taxable income to book income) for future returns. They find that TI/BI is


56 Abnormal accruals are measured using the modified Jones model as in Dechow et al. (1995).
57 Both Raedy (2009) and Chen et al. (2007) address this issue by including both the tax planning and earnings management variables in a regression together. Both papers find that the information content of estimated taxable income is less for tax aggressive firms, consistent with the results in Ayers et al. (2009). However, results of the effect of earnings management on the information content of taxable income are inconsistent among the three papers.
positively correlated with one-year ahead stock returns, consistent with the market not immediately impounding all information about estimated taxable income into prices. The relation, however, is much weaker after SFAS No. 109. As discussed in the previous section, the authors attribute the weakened reaction to investors’ more quickly and fully learning the implications of the tax information for future earnings.

Thomas and Zhang (2007) control for book income in their analysis of the association between estimated taxable income and future market returns. They regress future stock returns on the surprise components for both taxable and book income (where surprise is defined as the current quarter’s income less the income from four quarters before). They find that the estimated taxable income surprise is associated with stock returns up to six months in the future, consistent with the market not fully impounding the information in estimated taxable income when the financial statements are released.

Thomas and Zhang (2007) explore two reasons that this anomaly might exist: (1) The tax surprise contains information about future book income that is not included in current book income; (2) The tax surprise captures information that is not contained in future book income but is contained in other financial information that will be released in the future. They find support for both of these explanations. This well-executed study provides intriguing results. It is difficult to interpret the second result (i.e., that the tax surprise captures information that is released in the future) without better understanding the type of information that (i) is not included in future book income, (ii) is not predicted by current book income, (iii) is not included in future cash flow, but (iv) is priced when future earnings are released.

Weber (2009) expands upon Lev and Nissim (2004) and Thomas and Zhang (2007) in several ways. First, he demonstrates that the association between future returns and book-tax differences only exists in firms with weaker information environments (as measured by analyst following). Second, he examines analysts’ earnings forecasts to assess whether they fully capture the information in estimated taxable income. Regressing analyst forecast errors on the ratio of estimated taxable income over book income, he finds that the forecast errors are significantly associated with this tax variable, consistent with analysts not fully utilizing the information in estimated taxable income. Specifically, he finds that earnings forecasts are, on average, more optimistically biased when tax-basis differences are large. He then tests whether this failure on the part of analysts explains the inability of the market to impound immediately and fully the information in current-period estimated taxable income. Regressing future returns on both the forecast error and the tax variable, he reports that the analysts’ forecast error is significantly associated with future returns but the tax variable is not. He interprets these results as evidence that the failure of analysts to fully incorporate current-period tax information into their forecasts (at least partially) explains the failure of the market to fully and immediately impound tax information. While interesting, this hypothesis rests heavily on the implicit assumption that the market relies on analysts to interpret and report tax information.

In brief, both unexpected estimated taxable income and the ratio of estimated taxable income to book income predict future returns. Lev and Nissim (2004) and Thomas and Zhang (2007) leave unanswered the question as to why tax information is not fully and immediately impounded into market prices (given that current tax information affects future stock returns). Weber (2009) attributes this result to the failure of analysts to utilize properly the information in estimated taxable income. Below we suggest possible extensions to this area of research.

6.4. Summary

The evidence reviewed in Section 6 is mixed as to whether and how the market uses the tax accounts to set prices. Several important results are found. First, the market appears to price the deferred tax accounts and does so in a manner that reflects the length of time until expected reversal. However, this inference is largely drawn from studies that use price levels regressions. Ignoring those studies, the evidence is mixed about whether the market prices the deferred tax accounts. Second, market prices are positively associated with size of the tax contingency. Third, taxable income, estimated using tax information in the financial statements, provides information to the market incremental to the information in book income. However, the relative contribution of estimated taxable income decreases to the extent that firms engage in aggressive tax planning. Fourth, firms with large book-tax differences (low values of the TI/BI ratio) have lower P/E ratios, presumably due to the association between the TI/BI ratio and future earnings growth. However, sample limitations make it unclear whether this result is generalizable. Fifth, unexpected taxable income (estimated by grossing up financial statement tax expense) and the ratio of taxable income to book income predict future returns, a finding that Weber (2009) attributes to the failure of analysts to properly use the information in estimated taxable income.

6.5. Future research about the pricing of tax information reported in the financial statements

The surprising lack of consistent evidence related to if and how the market prices the information provided in the tax accounts leads us to believe that this area will produce the most interesting AFIT research in the coming years. We can identify seven directions for further study. First, it is puzzling that the tax information in the financial statements can (apparently) simultaneously communicate so little about a firm’s actual taxes (as asserted by many accountants, auditors,

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59 In a separate study, Chen et al. (2003) find evidence that they interpret as indicating that analysts do not fully understand certain AFIT provisions. The 1993 increase in corporate income tax rates from 34% to 35% required a one-time deferred tax adjustment. Given that this was a one-time adjustment, it should not have affected analysts’ forecasts of the future—but it did, on average, implying that analysts incorrectly thought the adjustment would be recurring.

and tax practitioners\textsuperscript{60} and still help to explain future earnings and predict share prices (see Lev and Nissim, 2004; Hanlon, 2005; Thomas and Zhang, 2007, among others). We look forward to research that resolves this conundrum. One possible explanation is that the capital markets are not interested in the firm’s actual taxes. Instead, market participants may find something useful in the tax information that is unrelated to actual taxes paid. If so, researchers need to identify the non-tax information that is apparently communicated better through the tax accounts.

Second, the pricing of the tax accounts raises questions about whether the market is inefficient or whether another, but not well understood, pricing factor is being ignored. There is ample evidence that the market prices the tax information in the financial statements. At the same time, there also is evidence that current period tax information is associated with future prices. The challenge for future studies is to discern whether the long-run return effects are driven by market inefficiencies or a form of efficient pricing not currently understood.\textsuperscript{61}

Third, additional research is warranted to determine whether the market prices the deferred tax accounts, including the valuation allowance. Most of the extant work is based on some form of a price level analysis, and thus is subject to a variety of econometric issues. It is important to investigate these issues using appropriate statistical methodologies. Related, more work is needed to test and reconcile the theoretical predictions and the empirical findings about the valuation of DTLs and whether they should be discounted. DTLs are not discounted under SFAS No. 109, and Guenther and Sansing (2004) show that, under certain assumptions, the value of the DTL is unrelated to the time until reversal. It is worth noting, however, that some empirical evidence indicates that the market discounts DTLs. Policymakers, among others, would benefit from resolving this apparent conflict between the theory and the empirical evidence.

Fourth, we have only limited evidence regarding the pricing of the tax contingency because the extant literature is based on the timeframe immediately subsequent to the effective date of FIN 48. It would be useful to know how the market prices this information now that more time has elapsed.

Fifth, only two papers directly address whether estimated taxable income is priced. Given that taxable income is an alternative income measure (to GAAP earnings), more work is warranted here. For example, since these studies estimate taxable income by grossing up the current income tax expense reported in the income statement, it is not clear whether the observed pricing behavior relates to the market’s attempts to actually price taxable income or whether the market is merely pricing a component of the income statement. Further analysis is needed to assess what exactly the market is pricing.

Sixth, we look forward to research about the information content of taxes netted against below-the-line items. Do they have the same value-relevance as other taxes? To our knowledge, no one has explored how the market evaluates these items. Finally, the majority of this literature deals only with the use of the tax information by equity market participants.\textsuperscript{62} However, as discussed by Holthausen and Watts (2001), there are many other users of the financial statements (e.g., public debt market participants, private creditors, customers, employees, and regulatory bodies). It would be interesting to examine the extent to which and the accuracy with which tax information in the financial statements is used by other groups.

7. Closing remarks

This paper reviews and evaluates research about tax information in financial statements. Historically largely overlooked by both financial accounting and tax researchers, no area of tax research in accounting is presently attracting more scholarly attention than is accounting for income taxes. Applying skills developed in and questions imported from mainstream financial accounting research, the empirical studies have concentrated on the role of the tax accounts in earnings management and the extent to which the market prices the tax information that is contained in the financial statements.

AFIT studies have been conducted primarily by accounting scholars with expertise in both financial accounting and taxation, a sufficiently rare combination that has served as a barrier to researching this complex area of financial reporting. We hope that this review will encourage, expedite, and guide further AFIT study. We also hope that this paper will expose scholars from finance, economics, law, and other fields to the ongoing AFIT work, interest them in both producing and consuming its knowledge, and guide them toward questions of interest. We conclude our review with a summary of our findings.

The paper begins with a discussion of four features of AFIT that distinguish it from other financial reporting areas (all firms pay taxes, an important user of the tax information in the financial statements is an adversary—the taxing authorities, the tax information can serve as an alternative measure of income, and income tax expense is not a component...)

\textsuperscript{60} See anecdotes in McGill and Outslay (2002), among others. Furthermore, in separate and private conversations, we have been told (by the head of the accounting for income taxes practice at a Big 4 firm plus the tax directors for one of the world’s largest conglomerates, one of the U.S.’s largest banks, one of the world’s largest mining companies, and a major European publishing house) that the tax information in the financial statements is inadequate and too obfuscatory to convey much information about a firm’s tax liabilities to any user of the financial statements, including analysts and investors. They claim that the reason for the poor quality of the tax information is that managers fear that disclosing quality tax information would aid the tax authorities in their audits.

\textsuperscript{61} We recognize that the pricing of tax accounts is not the only area that raises this puzzle. Similar issues exist with post-earnings announcement drift, for example.

\textsuperscript{62} Ayers et al. (2010) provide a notable exception to this. They examine whether credit analysts use book-tax differences in their credit risk analyses. They find that book-tax differences are associated with ratings changes, providing an indication that the equity markets participants are not the only users of the financial statements that find this information relevant.

of operating income). Following a brief overview of the rules that govern AFIT, we review studies of earnings management using the tax accounts and find the evidence is mixed. Managers appear to use the tax accounts to meet or beat analysts’ forecasts, but not to meet or beat prior earnings, smooth earnings, or to increase a big bath.

We also evaluate the existing literature that connects BTDs and earning characteristics. These studies find an association between book-tax differences and several different characteristics of earnings, namely earnings growth and earnings persistence. Given the paucity of literature in this area, more work is needed and we provide some specific suggestions.

Next, we address the pricing of the tax accounts where the evidence is not consistent. Because the tax accounts provide information about an alternative measure of income, the tax accounts should provide useful incremental information to the market that it cannot get elsewhere. However, given the limited number of studies and significant research design limitations, the implications are inconclusive in this area.

In conclusion, AFIT research has blossomed in the last few years, vastly expanding our knowledge about the use of the tax information in the financial statements. Assuming a framework develops to better interpret extant empirical findings and guide future study, we see many questions that still need resolution. We look forward to research that leads to a deeper understanding of the tax accounts in the financial statements.

References


