

Taxable Income as a Performance Measure: The Effects of Tax Planning and Earnings Quality

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Abstract: Extant research suggests that book-tax differences are useful measures in evaluating firm performance. There is little evidence, however, regarding taxable income as an alternative performance measure to book income. We examine firm characteristics that mitigate or enhance the ability of taxable income to inform investors regarding firm performance and document that the relative information content of taxable income to book income is significantly lower for high tax planning firms and significantly higher for low earnings quality firms relative to all other firms. Our results suggest that tax planning and low earnings quality have contrasting effects on the information content of taxable income. These findings are pertinent to recent research examining book-tax differences as a measure of discretion or earnings quality and taxable income as an alternative performance measure, as well as the recent debate on book-tax conformity.

Taxable Income as a Performance Measure: The Effects of Tax Planning and Earnings Quality

1. Introduction

Hanlon (2005) and Lev and Nissim (2004) provide rather compelling evidence that book-tax differences are systematically related to earnings growth, future stock returns, and earnings persistence. Among other implications, these studies suggest that book-tax differences are useful measures in evaluating firm performance. Consistent with these studies, Shevlin (2002) and Hanlon, Laplante, and Shevlin (2005) find that while book income explains a firm's annual stock returns better than taxable income (calculated using financial statement disclosures), taxable income has significant *incremental* explanatory power to book income (i.e., taxable income summarizes information reflected in stock returns that is not captured by book income). Beyond these studies, there is little evidence regarding taxable income as an alternative performance measure and, in particular, firm characteristics that mitigate or enhance the ability of taxable income to inform investors regarding firm performance. This study seeks to address this void in the literature.

Based on extant literature and anecdotal evidence, we identify two settings (high tax planning and low quality earnings) that we anticipate impair or enhance the information content of taxable income relative to book income. Similar to Hanlon et al. (2005), we define information content as the ability of book income and taxable income to summarize information that affects stock returns, and we assess information content using long-window association tests.¹ We hypothesize that the information content of taxable income decreases as tax planning increases. Understanding the effects of tax planning on the information content of taxable income is especially relevant to the recent debate on mandatory book-tax conformity. Concerned

¹ The term "information content" is utilized by some researchers in examining long-window associations between earnings and returns (e.g., Ball and Brown 1968; Alford et al. 1993) but is used by others to refer to an event study that examines, for example, whether earnings announcements have a stock price effect at the time of the announcement (see Watts and Zimmerman 1987 p. 39 for a discussion). Given the nature of our tests, we use the same terminology as in Hanlon et al. (2005).

by large book-tax differences, recent calls for mandatory book-tax conformity argue that the dual system of reporting book and taxable income is “the province of much creative decision-making” (Desai 2006 testimony p. 8) that manifests in taxable income that does not reflect the firm’s actual performance. Nonetheless, it is difficult to draw conclusions regarding the extent to which tax planning obscures the relation between taxable income and firm performance from simply identifying large book-tax differences as book-tax differences also reflect mechanical differences between the two systems, managerial discretion used in financial reporting, etc. Our analyses speak more directly to this debate by analyzing the information content of taxable income for high tax planning firms. Using annual returns as a measure of investors’ perception of firm performance, we investigate whether the information content of taxable income declines as tax planning increases. Our analyses allow us to draw conclusions regarding the potential information loss of mandatory book-tax conformity for those firms targeted by the book-tax conformity proponents as well as to better understand those settings where taxable income is less informative to investors as an alternative performance measure.

When book income is of lower quality, we expect that investors are more likely to utilize alternative performance measures (e.g., taxable income). We define low quality earnings as earnings comprised of relatively large “abnormal accruals.”² Understanding the effects of earnings quality on the information content of taxable income is relevant both to the recent debate on book-tax conformity and recent studies investigating the link between book-tax differences and earnings persistence (and growth). Seida (2003) in his Congressional testimony regarding Enron’s tax disclosures posed the question of whether taxable income may be a useful alternative

² Sloan (1996) defines low quality earnings as earnings comprised primarily of accruals. We use abnormal accruals to define earnings quality because we are interested in the ability of taxable income to inform investors in settings where managers may have used discretion in reporting book income and/or where book income may be more difficult to evaluate as represented by large abnormal accruals. Hribar and Nichols (2006) question the ability of unsigned abnormal accruals to detect earnings management. While firms that manage earnings represent a subset of firms with low quality earnings, our tests using abnormal accruals are not intended to isolate these firms. In sensitivity analysis (discussed later), we investigate a sample of firms with low quality earnings resulting from earnings management (i.e., firms subject to SEC enforcement action for overstating earnings). As expected, we find that information content of taxable income is enhanced for these firms.

measure of income. To date, there is little evidence on the relative merits of book income versus taxable income as a performance measure in settings where book income is considered to be of lesser quality. Lev and Nissim (2004) and Hanlon (2005) find that large book-tax differences are systematically associated with the quality (persistence, growth) of firm earnings. These studies suggest that taxable income may have enhanced information content as a summary performance measure when book income is of lower quality. Nonetheless, this is not a foregone conclusion. If lower earnings quality is a result of opportunistic management discretion (e.g., discretion used to mislead investors), we anticipate that taxable income will have enhanced information content to the extent taxable income does not reflect management discretion.³ In contrast, if lower earnings quality results from transitory events (i.e., low persistent but value relevant events) not yet reflected in tax income (e.g., the write-down of purchased goodwill, restructuring charges, mark-to-market adjustments, etc.), then the relative information content of taxable income may actually decrease, i.e., the relative ability of current year taxable income to explain returns may decrease.⁴

Following Hanlon et al. (2005), we estimate the relative information content of tax and book income using separate annual regressions of stock returns on first differences in tax and book income. For each analysis, we compare the ratio of the adjusted R^2 for the separate tax and book regressions for the comparison group (i.e., high tax planning; low earnings quality) to the ratio of the adjusted R^2 for these regressions for all other firms. We also assess the incremental information content of taxable income by comparing the difference in adjusted R^2 s from a regression of returns on both the change in book and taxable income and a regression of returns on just the change in book income for the comparison group (high tax planning; low earnings

³ Managers may use discretionary accruals to reduce information asymmetry and increase the information content of earnings (Subramanyam 1996). To the extent our measure of abnormal accruals reflects discretion that increases the information content of earnings, this biases against finding our predicted results. Likewise, if aggressive tax planning accompanies lower earnings quality this also biases against finding our predicted results (Frank, Lynch and Rego 2006).

⁴ Joos, Pratt and Young (2000) examine whether investors shift their reliance from book income to taxable income when firms have large book-tax differences. They find that the information content of taxable income does not change when book-tax differences are large. In contrast, we predict and find that two sources of book-tax differences (tax planning and low earnings quality) have opposite effects on the relative informativeness of tax and book income.

quality) versus all other firms. We identify firms as high tax planners using current effective tax rates calculated as the ratio of the sum of current tax expense over the five years from year $t-4$ to year t to the sum of pre-tax book income calculated over the same period. We designate firms ranked in the lowest 20% of current effective tax rates for each industry and year as high tax planning firms.

We find that that the information content of book income is similar for high tax planning firm-years and for other firm years. These results suggest that tax planning does not adversely affect the information content of book income. However, consistent with expectations, we find that that the information content of taxable income for high tax planning firms is much lower than that of other firms.⁵ Specifically, although we find that taxable income for high tax planning firms continues to be significantly associated with annual stock returns, taxable income for these firms explains only 34.1% of the annual return variation explained by book income (i.e., the adjusted $R^2_{\text{taxable income}} / \text{adjusted } R^2_{\text{book income}} = 34.1\%$). In contrast, taxable income for all other sample firms explains 72.8% of annual return variation explained by book income (i.e., the adjusted $R^2_{\text{taxable income}} / \text{adjusted } R^2_{\text{book income}} = 72.8\%$). These results suggest that although the taxable income of high tax planning firms is not completely devoid of information content, conforming book income to taxable income (i.e., calculating book income using the tax rules) for these firms results in a 65.9% loss of explanatory power. Among other implications, these results suggest that the potential information loss of mandatory book-tax conformity for those firms targeted by the book-tax conformity proponents (i.e., high planning firms) is much larger than the information loss for the average firm estimated in Hanlon, Laplante, and Shevlin (2005).⁶ The results from our incremental information content tests are also consistent with the information in taxable income being impaired for high tax planning firm years. Additional analyses suggest that

⁵ Results are similar when we use cash effective tax rates (Dyreng, Hanlon, and Maydew, 2006) to identify high tax planning firms.

⁶ Hanlon, Laplante and Shevlin (2005) document the information loss for an average firm of approximately 50% if firms are forced to conform book income to taxable income.

the relative information content of taxable income for high tax planning firms versus other firms decreased significantly post-1992, a period commonly perceived to be characterized by high tax shelter activity (e.g., Treasury 1999, GAO 2003).

We identify low earnings quality firms using modified Jones model abnormal accruals. We designate firms ranked in the highest 20% of abnormal accruals (absolute value) for each industry and year as firms with low earnings quality. Consistent with expectations, we find that the relative information content of taxable income to book income for firms with large abnormal accruals is significantly larger compared to other firms. Specifically, for firms with large abnormal accruals, taxable income explains 66.2% of the annual return variation explained by book income (i.e., the adjusted $R^2_{\text{taxable income}} / \text{adjusted } R^2_{\text{book income}} = 66.2\%$) versus 49.8% for all other firms. Conclusions from our incremental information content tests are similar. In sensitivity analysis, we compare the relative information content of taxable income and book income for firms subject to SEC enforcement action for overstating earnings. As expected, we find that the relative information content of taxable income is particularly high for these firms (i.e., the adjusted $R^2_{\text{taxable income}} / \text{adjusted } R^2_{\text{book income}} = 81.1\%$). Among other implications, these results suggest that the relative explanatory power of taxable income improves in those settings where managers may have used opportunistic discretion in reporting book income. Additional analyses suggest that the relative information content of taxable income for low quality earnings firms versus other firms increased significantly post-1992, a period marked by increased concerns of opportunistic earnings management (e.g., Levitt 1998, Katz 2002, Bergstresser and Philippon 2006).

This study makes several contributions. First, our analyses contribute to the recent debate on book-tax conformity. Consistent with speculation in Desai (2006), our results suggest that tax planning obscures the relation between taxable income and firm performance (as proxied by annual stock returns). While taxable income continues to have significant information content for high tax planning firms, results suggest that the potential information loss of mandatory book-

tax conformity for these firms is much larger than the information loss for the average firm estimated in Hanlon, Laplante, and Shevlin (2005). Second, our analyses contribute to the recent literature investigating taxable income as an alternative performance measure. Consistent with speculation in Seida (2003), our results suggest that taxable income becomes a more useful performance measure in settings where management may have used discretion in reporting book income. Nonetheless, we find that book income better explains annual stock returns, on average, and for firms with large abnormal accruals, i.e., the ratio of the explanatory power (adjusted R^2) of taxable income to book income for returns is less than one in most years. In sum, our evidence suggests that investors view taxable income as a supplemental, and not superior, performance measure. Third, our results suggests that tax planning and low earnings quality have contrasting effects on the information content of taxable income. Given that both tax planning and events that result in low earnings quality may generate book-tax differences, our findings may be particularly useful for researchers investigating book-tax differences. In particular, our analyses suggest that existing tax planning and low earning quality proxies are sufficiently powerful to detect settings where book-tax differences are more likely attributable to either discretion in reporting book or taxable income.

Our paper proceeds as follows. Section 2 develops our hypotheses, while Section 3 describes our sample data and research methods. Section 4 presents our results and sensitivity analyses, and Section 5 concludes.

2. Prior Research and Hypotheses

Managers prepare two summary measures of firm performance, one for financial reporting purposes in accordance with Generally Accepted Accounting Principles (GAAP), and one for tax purposes in accordance with the Internal Revenue Code (IRC). The primary objective of financial reporting is to provide useful economic information to external financial statement users (FASB 1978) while the primary goal of tax accounting is, among other things, to facilitate

the equitable collection of revenue (*Thor Power Tool Co. v. Commissioner*, 439 U.S. 522, Scholes et al. 2004). The rules underlying financial and tax reporting, therefore, are quite different especially regarding the timing of the recognition of income and expense items. For financial reporting, income is recognized when earned regardless of when payment is received and expenses are matched, or recognized, against the income that they help produce. For tax purposes, income is generally recorded the earlier of when cash is received or earned, while expenses are deducted only after all events have occurred to fix the liability and the liability has been satisfied, regardless of whether recognition results in matching of revenue and expenses.⁷ Conceptually, the differences between book and taxable income result in either amounts that show up on one set of books but never show up on the other (i.e., “permanent differences” such as municipal bond income that is included in book income but exempt from taxable income), or amounts that show up on both sets of books but during different reporting periods (i.e., “temporary differences” such as bad debt expense that is accrued for matching purposes to calculate book income but is not reflected in taxable income until it is written off).

Because book and taxable income serve different purposes and stakeholders, managers have different incentives in reporting book and taxable income. Managers have incentives to report higher income for financial reporting purposes because of bond covenants, compensation contracts, regulatory capital requirements, etc.⁸ For tax purposes, managers have incentives to report lower taxable income. Given that managers face different incentives in reporting book and taxable income and each measure is a summary measure of a firm’s performance, both book and tax income may be informative performance measures for tax authorities and financial statement users. Specifically, each measure should be informative if the “shocks” to taxable income and

⁷ The two tests that must be met to deduct an expense for tax purposes are referred to as the “all-events test”, meaning all the events have occurred to fix the liability and the amount of the liability is determinable, and the “economic performance” test, meaning the liability has been satisfied. See IRC §461 and Reg. §1.461 for an explanation and exceptions to the general rule.

⁸ There are situations in which firms prefer reporting lower income because, for example, of political costs and compensation contracts. See Watts and Zimmerman (1986) for a discussion of the contracting reasons associated with political costs and Healy (1986) for evidence regarding compensation contracts.

book income and the managed components of each measure are not identical (Lev and Nissim, 2004). Anecdotal and empirical evidence confirm this expectation. For example, IRS audit manuals instruct internal revenue agents to reconcile book and tax amounts and question any differences when auditing corporate tax returns.⁹ Likewise, Mills (1998) finds that IRS audit adjustments increase as the book-tax gap widens (i.e., as book income exceeds taxable income), providing further evidence that tax authorities view book income as an informative measure of a firm's tax base.

Recent literature also suggests that taxable income is an informative measure of firm performance for financial statement users. Hanlon (2005) and Lev and Nissim (2004) find that book-tax differences are systematically related to earnings growth, future stock returns, and earnings persistence, suggesting that book-tax differences are useful measures in evaluating firm performance. Consistent with these studies, Shevlin (2002) and Hanlon, Laplante, and Shevlin (2005) find that while book income better explains a firm's annual stock returns than taxable income (calculated using financial statement disclosures), taxable income has significant *incremental* explanatory power to book income. Beyond these studies, there is little evidence regarding taxable income as an alternative performance measure. Despite the paucity of evidence, there is ample speculation regarding taxable income as a performance measure, especially in settings where the firm engages in tax planning or has lower quality earnings.

Tax planning hypothesis development

Concerned by large differences between income reported for financial statement and tax purposes, recent calls for mandatory book-tax conformity argue that the dual system of reporting book and taxable income manifests in taxable income that does not reflect the firm's actual performance. It is difficult, however, to draw conclusions regarding the extent to which tax planning obscures the relation between taxable income and firm performance from simply

⁹ See Audit Technique Guides for various industries at www.irs.gov.

identifying large book-tax differences. Our analyses speak to this debate by analyzing the information content of taxable income for high tax planning firms. Based on the expectation that tax planning obscures the firm's actual performance by minimizing the firm's tax liability (e.g., by avoiding or deferring taxable income), we hypothesize that, *ceteris paribus*, the information content of taxable income declines as tax planning increases.

Despite the rather clear preceding prediction, there is debate whether tax planning enhances or adversely affects the information content of taxable income. Lev and Nissim (2004) argue that, under the assumption that firms "smooth" taxable income to minimize the present value of income taxes, tax planning actually enhances the ability of taxable income to inform investors regarding future earnings growth.¹⁰ Specifically, under the assumption that smoothing is the optimal tax planning strategy, taxable income (after tax planning) provides a better indicator of the firm's expected income in the future (i.e., higher taxable income suggests a higher expected future income). However, Graham and Smith (1999) conclude that 75 percent of firms have little tax-based incentive to smooth earnings. In contrast, we contend that most firms have incentives to avoid or defer tax, and thus, we expect that, on average, tax planning decreases the information content of taxable income. Our first hypothesis stated in the alternative is:

H1: High tax planning firms have relatively less informative taxable income than other firms.

Earnings quality hypothesis development

Seida (2003) in his Congressional testimony regarding Enron's tax disclosures and rather sizable differences in Enron's book and taxable incomes posed the question of whether taxable income may be a useful alternative measure of income. Consistent with this view, Lev and

¹⁰ The incentive to smooth taxable income is a function of the convexity of the present value of income taxes in taxable income which is attributable to (a) a progressive tax rate schedule, (b) the alternative minimum tax and investment tax credit, and (c) asymmetric treatment of taxable income and losses. Graham and Smith (1999) suggest that the asymmetric treatment of taxable income and losses creates most of the observed convexity of income taxes in taxable income.

Nissim (2004) and Hanlon (2005) find that large-book tax differences are systematically associated with the quality (persistence, growth) of firm earnings. Among other implications, these studies suggest that taxable income may have enhanced information content as a summary performance measure when book income is of lower quality. Nonetheless, this is not a foregone conclusion (e.g., Joos et al. 2000, Frank et al. 2006). Instead, the enhanced information content of taxable income in this setting depends on the source of the lower quality earnings and the extent to which taxable income is likewise affected. For example, if lower earnings quality results from opportunistic management discretion (e.g., discretion used to mislead investors), we anticipate that taxable income will have enhanced information content to the extent taxable income does not reflect management discretion. Erickson et al. (2005) show that of 27 firms that were accused of fraudulently overstating book income, 15 willingly paid taxes on fraudulent earnings. Their evidence is consistent with some, but not all, firms trading off higher taxes in exchange for higher book income. In contrast, if the low earnings quality results from transitory events (i.e., value relevant events with low persistence) reflected in book income but not yet in taxable income (e.g., the write-down of purchased goodwill, restructuring charges, mark-to-market adjustments, etc.), then the relative information content of taxable income (i.e., the relative ability of current year taxable income to explain returns) may actually decrease. Thus, it is an empirical question whether, on average, taxable income has enhanced information content when earnings are of lower quality. Our second hypothesis stated in alternative form is:

H2: Firms with lower earnings quality have relatively more informative taxable income.

3. Research Method

We conduct long-window tests of the information content of taxable and book income for high tax planning firms in H1 and low earnings quality firms in H2 relative to all other firms. Information content is defined as the ability of either taxable or book income to capture, or summarize, information that affects returns. This definition does not mean that the information in

book or taxable income causes returns to vary, rather a number has information content if it reflects, or is associated with, information that equity investors find useful in assessing firm performance. Because we are interested in examining the ability of taxable or book income to summarize all information that affects returns and are not concerned with causality, we utilize long-window association tests.

We conduct two association tests to assess the information content of taxable and book income. We use 16 month long windows to test for a statistical association between the two measures of income and security returns to ensure market participants have received the annual income numbers. This is especially pertinent to our setting because tax returns are confidential, and we derive an estimate of taxable income from details in the financial statements. We follow Hanlon et al. (2005) in calculating taxable and book income. Our primary measure of taxable income (TI) for firm j at time t is estimated as follows:

$$TI_{jt} = \left(\frac{(FTE_{jt} + FOTE_{jt})}{str_t} \right) - \Delta NOL_{jt} \quad (1)$$

where FTE is current federal income tax expense (data 63), $FOTE$ is current foreign tax expense (data 64), str_t is the top U.S. statutory tax rate for year t and ΔNOL is the change in net operating loss carryforwards (data 52).^{11,12} We subtract ΔNOL because we require an estimate of the firm's taxable income (or loss) for the year prior to the effects of any carryback or carryforwards.^{13,14}

Because we want to evaluate the taxable income measure available to the market, we use financial statement disclosures to estimate taxable income. Plesko (2000) provides evidence that suggests that taxable income calculated from financial statements is highly correlated with firms'

¹¹ Statutory tax rates (STR) equal 46% for 1986 and prior tax years, 40% for 1987, 34% for tax years 1988 through 1992, and 35% thereafter.

¹² Unless otherwise noted, data refers to Compustat data items.

¹³ If federal income tax expense is missing from Compustat, we estimate TI as the difference between total income tax expense (data 16) and deferred taxes (data 50) again divided by the top statutory tax rate for year t , str_t , less the change in NOL carryforwards, ΔNOL_{jt} .

¹⁴ Mills, Newberry and Novack (2003) examine Compustat's reporting of NOLs in a setting that focuses on U.S. income. Because we are examining worldwide income, the screens they suggest that help mitigate problems with Compustat NOLs are not necessary, and we include the change in NOL carryforwards in our measure of TI.

actual taxable income, thus providing some assurance that taxable income estimated from financial statements is a reasonable proxy for a firm’s actual taxable income. Nonetheless, Hanlon (2003) identifies seven major problems in estimating a firm’s tax liability and hence taxable income from financial statement disclosures. Briefly, the issues include accounting for employee stock options exercises, reserves for uncertain tax positions, intraperiod tax allocation, consolidation, tax credits, foreign operations, and negative taxable income. While each of these issues contributes to potential measurement error in our estimate of taxable income, as in Hanlon et al. (2005), the first four issues should not affect our inferences (See Appendix A of Hanlon et al. (2005) for a detailed discussion related to the current setting). Because we compare the relative information content of taxable income across groups of firms, measurement error in taxable income resulting from the last three issues is less of a concern to the extent that the error is not systematically related to how we classify high tax planning and low earnings quality firms. We address the last three issues in sensitivity analysis in Section 5 to provide assurance that these issues do not significantly influence our results.

Because taxable income represents the worldwide income of the firm, we also estimate worldwide book income. Our measure of book income, pre-tax book income (*PTBI*) for firm j at time t , is calculated as follows:

$$PTBI_{jt} = PTB_{jt} - MI_{jt} \quad (2)$$

where *PTB* is pre-tax book income (data170) and *MI* is minority interest (data 49). We use a pre-tax measure of book income to be consistent with taxable income, which is a pre-tax measure.

A. Test 1 – Information Content

In our first test, we examine the ratio of the information content of taxable to book income for high tax planning firms versus all other firms to test H1. We conduct a similar test for low earnings quality firms to test H2. We measure the information content of taxable and book

income separately as the adjusted R^2 in regressions of security returns on each measure. To implement this test, we estimate the following two equations annually for each group of firms (high tax planners versus all others for H1; low earnings quality firms versus all others for H2):

$$R_{jt} = \alpha_0 + \alpha_1 \Delta TI_{jt} + \varepsilon_{jt} \quad (3)$$

$$R_{jt} = \alpha_0 + \alpha_1 \Delta PTBI_{jt} + \varepsilon_{jt} \quad (4)$$

where R_{jt} is the buy-and-hold market-adjusted return to security j over the 16-month return window starting at the beginning of fiscal year t and ending four months after the end of fiscal year t . The changes in taxable and book income, ΔTI_{jt} and $\Delta PTBI_{jt}$, are equal to the difference in each measure for firm j from year $t-1$ to year t [$(TI_{jt} - TI_{jt-1})$ and $(PTBI_{jt} - PTBI_{jt-1})$] each scaled by the market value of equity measured at the start of fiscal year t , respectively. TI_{jt} and $PTBI_{jt}$ are as previously defined.

Our test statistic is the average ratio of the adjusted R^2 from Equation (3) to the adjusted R^2 from Equation (4) for each group of firms over our sample period, as follows:

$$\text{Adjusted } R^2_{\text{Taxable Income}} / \text{Adjusted } R^2_{\text{Book Income}} \quad (5)$$

An advantage of this statistic is that it allows us to compare the information content of two performance measures (taxable and book income), holding returns for the firm constant. For Hypothesis 1, we predict that the ratio represented by Equation (5) will be lower for high tax planning firms versus all other firms because the relative information content of taxable income is reduced for high tax planning firms. For Hypothesis 2, we predict that the ratio represented by Equation (5) will be higher for firms with lower earnings quality versus all other firms because the relative information content of taxable income is enhanced for the low earnings quality firms. We test significance using both t-tests and Wilcoxon rank sum tests of the yearly values of Equation (5).

B. Test 2 – Incremental Explanatory Power of Taxable Income

In our second test, we assess the additional explanatory power (i.e., the incremental or unique explanatory power) of including taxable income in a regression of book income on returns for high tax planning firms versus all other firms. We conduct a similar test for low earnings quality firms versus all other firms. We measure the additional explanatory power of taxable income as the difference in the adjusted R^2 from a regression of returns on both the change in taxable and book income and the adjusted R^2 from Equation (4). To implement this test, we estimate Equation (4) and the following equation annually for each group of firms (high tax planners versus all other firms to test H1 and low earnings quality versus all other firms to test H2):¹⁵

$$R_{jt} = \beta_0 + \beta_1 \Delta PTBI_{jt} + \beta_2 \Delta TI_{jt} + \varepsilon_{jt} \quad (6)$$

where all of the variables are as previously defined.

Our test statistic for this test is the difference in the adjusted R^2 from Equation (6) and the adjusted R^2 from Equation (4) for each group of firms over our sample period, as follows:

$$\text{Adjusted } R_{Equ(6)}^2 - \text{Adjusted } R_{Equ(4)}^2 \quad (7)$$

Our expectations for these tests are the same as discussed in hypotheses 1 and 2. For Hypothesis 1, the difference represented by Equation (7) will be lower for high tax planning firms versus all other firms if tax planning reduces the information content of taxable income. For Hypothesis 2, the difference represented by Equation (7) will be higher for firms identified as low earnings quality firms versus all other firms if the relative information content of taxable income is enhanced for firms with lower quality earnings.

¹⁵ Hanlon et al. (2005) test the incremental information content of taxable income by analyzing the statistical significance of including ΔTI in Equation (6). Because we are comparing the incremental information content of taxable income across differing groups of firms, we test incremental information content by analyzing the increase in adjusted R2 from Equation (4) to Equation (6).

C. Identification of high tax planning firms.

Dyreng, Hanlon and Maydew (2006) argue that tax avoidance firms are those that are able to sustain a low tax rate over multiple years. Following their logic regarding sustainability, we identify high tax planning firms as firms in the lowest quintile of accumulated effective tax rates (*ETR*) for each year and two digit SIC industry calculated as follows:

$$ETR_{jt} = \frac{\sum_{m=t-4}^t CTE_{jm}}{\sum_{m=t-4}^t PTB_{jm}} \quad (8)$$

where *CTE* is current tax expense equal to total tax expense (data 16) less deferred tax expense (data 50) for firm *j* over the five year period from *t-4* through *t*, and *PTB* is as previously defined, also accumulated for firm *j* over the five year period from *t-4* through *t*. We exclude deferred tax expense from *ETR* because it represents future tax effects from current transactions and not taxes due in the current period (Dyreng et al. 2006). Measuring *ETR* this way captures both the timing and avoidance tax planning strategies (i.e., both deferring and permanently avoiding taxable income result in lower *ETR*).

Despite its advantages (e.g., current tax expense is readily available), the traditional measure of *ETR* has its limitations. First, *ETR* is an accrual-based measure of tax avoidance and measures the actual taxes paid with error because the accrued expense often differs from the actual payment to the government due to challenges by the IRS or mistakes made in estimating current tax expense (Dyreng et al. 2006). If, for example, a firm accrues an expense for an uncertain tax position that later is resolved in their favor, the current tax expense overstates the actual liability. Similarly, if the IRS fails to allow for a questionable position, the current tax expense may understate the actual liability. The second limitation of *ETR* is that it excludes the benefit of the deduction for stock options, i.e., current tax expense is overstated for firms with

stock option deductions.¹⁶ We address these limitations in two ways. First, we accumulate *ETR* over a five-year period, which allows for some offsetting of over and understatement of tax liability (i.e., mitigating the 1st limitation). Second, as an alternative measure of tax avoidance, we calculate our accumulated *ETR* using actual cash taxes paid (i.e., instead of current tax expense), which addresses both limitations.^{17, 18}

D. Identification of low earnings quality firms.

We use abnormal accruals to define earnings quality. Although abnormal accrual models are subject to criticism in their ability to isolate discretion (McNichols and Wilson, 1998; Dechow et al, 1995, Kasznik, 1999, McNichols, 2000, Dechow et al. 2003, Kothari et al. 2005, Hribar and Nichols 2006, etc.), this study's setting is less susceptible to these criticisms as we are interested in the ability of taxable income to inform investors where managers use discretion in reporting income and/or where book income may be more difficult to interpret (as one may expect when firms have large abnormal accruals). We identify firms as low earnings quality firms by designating firms ranked in the highest 20% of absolute abnormal accruals for each year and two digit SIC industry as having low quality earnings.¹⁹ We estimate abnormal accruals as the difference between total accruals and modified Jones' model normal accruals (Dechow et al. 1995; DeFond and Subramanyam 1998). Modified Jones model normal accruals are estimated using the following equation cross-sectionally by year for each two-digit SIC industry with at least ten observations:

¹⁶ See Hanlon (2003) for a more complete discussion of this issue.

¹⁷ Similar to Dyreng et al. (2006), we calculate cash effective tax rates as the sum of cash taxes paid (data 317) divided by the sum of pre-tax book income (data 170) both summed over five years. Because the cash flow statement is only available after 1987, our sample for these tests begins in 1992.

¹⁸ We note that accumulated *ETR* does not capture "income smoothing" as a tax planning strategy. As suggested in Graham and Smith (1999), the majority of firms have little tax incentives to smooth income. We leave the investigation of tax motivated smoothing to future research.

¹⁹ In sensitivity analysis, we compare the relative information content of taxable income to book income for firms in the top 20% of signed abnormal accruals to firms in the middle 60% of signed abnormal accruals. We do the same for firms in the bottom 20% of signed abnormal accruals. We find that the relative information content of taxable income is higher for firms in the top 20% (bottom 20%) of signed abnormal accruals compared to firms in the middle 60%. In addition, we find no significant difference in the relative information content of taxable income to book income for firms in the top 20% of signed abnormal accruals compared to firms in the bottom 20%.

$$TACC_{jt} / TA_{jt-1} = \alpha_0 + \alpha_1 \frac{1}{TA_{jt-1}} + \alpha_2 \frac{(\Delta Sales_{jt} - \Delta REC_{jt})}{TA_{jt-1}} + \alpha_3 \frac{(PPE_{jt})}{TA_{jt-1}} + \varepsilon_{jt} \quad (9)$$

TACC is total accruals measured as the change in current assets (data 4), plus the change in short term debt (data 34), less the change in current liabilities (data5), the change in cash (data 1), and depreciation and amortization expense (data 14) for firm *j* in year *t*. $\Delta Sales$ is the change in sales (data12) from year *t-1* to year *t*, and ΔREC is the change in accounts receivable (data 2) measured as accounts receivable in year *t* minus accounts receivable in year *t-1*. PPE_{jt} is firm *j*'s gross property, plant and equipment (data 7) for year *t*. We deflate all variables except the constant term by beginning of the year total assets for firm *j*, TA_{jt-1} , (data 6). We include an intercept term in Equation (9) because Kothari et al. (2005, 173) advocate that this term helps alleviate heteroskedasticity, mitigate concerns regarding an omitted size variable, and generate a more symmetric measure of abnormal accruals.

4. Results

A. Sample discussion

Our primary sample consists of firms with available data in the intersection of the 2005 Compustat Industrial Annual files and the CRSP stock return files covering the period from 1983 through 2002. We exclude financial institutions (SIC codes 6000-6999), utilities (SIC codes 4900-4999) and firms incorporated outside the United States because they operate in regulated industries or under different regulations and face a different set of tax and/or book rules than other firms. We eliminate any firm-year observation in which the fiscal year end changes to insure that observations are comparable across years. We also exclude any firm-year observations with the absolute value of the change in pre-tax book income or taxable income greater than one to avoid the influence of extreme values. For the tax planning analyses, we limit our sample to firms with positive values for both the numerator (sum of current tax expense over five years) and the denominator (sum of pre-tax income over five years) from Equation (8).

Finally, firm-year observations must have sufficient data to allow us to estimate taxable income, pre-tax book income and return variables as discussed in Section 3. These criteria result in a sample of 52,493 firm years for the tax planning analyses using the accrual based *ETR*, 24,921 firm years using the cash based *ETR*, and 74,403 firm years for the low earnings quality analyses.²⁰ The samples for the tax planning analyses are smaller due to the calculation of the tax planning variable, *ETR*, described in Equation (8). The sample based on cash based *ETR* is considerably smaller because cash taxes paid is available in the Statement of Cash Flows beginning in 1988.

B. Descriptive statistics

Table 1 reports descriptive statistics for our sample and empirical proxies. Panel A reports descriptive statistics for the overall sample, the high tax planning (HTP) sample, and all other (AO) firms where we identify high tax planners using *ETR*. Panel B reports descriptive statistics for the tax planning sample using Cash *ETR* to identify high tax planners. In panels A and B descriptive data suggests that high tax planning firms have lower tax rates (by construction). There is no consistent pattern in returns, changes in pre-tax book income, $\Delta PTBI$, and changes in taxable income, ΔTI , for high tax planning firms versus all other firms across panels A and B.

Panel C of Table 1 provides descriptive statistics for our low earnings quality sample. The low earnings quality sample has higher abnormal accruals (by construction) and a significantly lower change in pre-tax book income than all other firms (-0.007 versus 0.005). This latter evidence suggests our sample of low quality earnings firm-years is skewed toward firms with negative changes in book income. We find no differences in returns or changes in taxable income for the low quality firms relative to all other firms.

²⁰ We winsorize (reset) regression variables at the most extreme one percent level each year to mitigate the influence of extreme observations in our regressions.

C. Main results

Tables 2 and 3 present results for our first hypothesis with results based on our primary measure of tax planning, *ETR*, in Table 2 and our alternative measure, Cash *ETR*, in Table 3. Table 4 presents the results for the low earnings quality analysis.

In Panel A of Table 2, we find that that the information content of book income is similar for high tax planning firm-years and for other firm years (adjusted $R^2_{\text{book income}}$ of 0.150 for high tax planning firms versus 0.151 for all other firms, $p\text{-value} = 0.473$, one tailed t -test). These results suggest that tax planning does not adversely affect the information content of book income. However, the information content of tax income for high tax planning firm-years is substantially lower than that of other firm years (adjusted $R^2_{\text{taxable income}}$ of 0.053 for high tax planning firms versus 0.107 for all other firms, $p\text{-value} < .001$, one-tailed t -test). Likewise, relative to book income, the information content of taxable income for high tax planning firms is much lower ($p = 0.001$, one-tailed t test) compared to all other firms. Specifically, taxable income for high tax planning firm-years only explains 34.1 % of the annual return variation explained by book income (i.e., the adjusted $R^2_{\text{taxable income}} / \text{adjusted } R^2_{\text{book income}} = 34.1 \%$) versus 72.8 % for all other firms (i.e., the adjusted $R^2_{\text{taxable income}} / \text{adjusted } R^2_{\text{book income}} = 72.8 \%$).²¹ These results suggest that conforming book income to taxable income for high tax planning firm-years results in a 65.9% loss of explanatory power.²² Results for the tax planning firm-years identified by cash *ETR* in Panel A of Table 3 are similar in that the high tax planning firm-years only explains 38.6 % of the annual return variation explained by book income versus 79.3 % for all other firms.

The year-by-year analyses in Panel A of Table 2 provide an opportunity to evaluate changes in the information content of taxable income for tax planners over time. The bottom of

²¹ Although we make no predictions regarding the information content of taxable income to book income for firms with the highest ETRs (e.g., the 20% of firms with the highest accumulated ETRs), untabulated results indicate that these firms have a relatively high adjusted R^2 ratio of taxable income to book income of 71%.

²² The adjusted R^2 declines from 0.150 to 0.053 (see Table 2, Panel A).

Table 2 reports the adjusted R^2 ratio pre-1993 and post-1992. Treasury (1999) and the GAO (2003) suggest that tax shelter activity increased dramatically beginning in the early 1990s. Consistent with increased aggressive tax planning during this period, results suggest that the relative information content of taxable income for high tax planning firms versus other firms decreased significantly post-1992. Specifically, the difference in adjusted R^2 ratio for high tax planning firms versus all other firms decreased from -0.304 (i.e., 0.330 - 0.634) pre-1993 to -0.470 (i.e., 0.352 - 0.822) post-1992 (p -value = 0.032, one-tailed t test).

The results from our second association test reported in Panel B of Table 2 are also consistent with the information in taxable income being impaired for high tax planning firm-years. The difference in adjusted R^2 for the high tax planning firms when the change in taxable income is added to a regression of returns on the change in pre-tax income is substantially smaller than the difference in adjusted R^2 for all other firms. Admittedly the difference in additional explanatory power is small (0.010 versus 0.003), but it is statistically significant at the 1% level. Results for the tax planning firm-years based on cash ETR in Panel B of Table 3 generate the same inference. Adding the change in tax income to the regression of returns on the change in book income increases the adjusted R^2 by 0.6% for high tax planning firms and by 1.5% for all other firms (p -value = 0.010, one-tailed t test). In summary, the results from Tables 2 and 3 are consistent with our first hypothesis, which predicts that the information content of taxable income is impaired for high tax planning firm-years.

Our second hypothesis predicts that the relative information content of taxable income to book income is higher for firm-years with low earnings quality. Results in Panel A of Table 4 confirm this expectation. Specifically, for firm-years with large abnormal accruals taxable income explains 66.2% of the annual return variation explained by book income (i.e., the adjusted $R^2_{\text{taxable income}} / \text{adjusted } R^2_{\text{book income}} = 66.2\%$) versus 49.8% for all other firms. In addition, the additional explanatory power of adding the change in taxable income to a regression of returns on a change in pre-tax income is significantly larger for the firm-years with low earnings quality as

reported in Panel B of Table 4. As before, the difference in explanatory power is modest (0.009 versus 0.005) but it is significant in the predicted direction using a *t*-test (*p*-value = 0.063, one-tailed test). Overall, the results from Table 4 are consistent with our second hypothesis which predicts that the information content of taxable income relative to book income is higher for firms with low quality earnings.

The year-by-year analyses in Table 4 provide an opportunity to evaluate changes in the information content of taxable income for low earnings quality firms over time. The bottom of Table 4 reports the adjusted R^2 ratio pre-1993 and post-1992. Bergstresser and Philippon (2006) suggest increased concern of opportunistic earnings management/poor earnings quality during the latter period. Consistent with decreased earnings quality during this period, results suggest that the relative information content of taxable income for low earnings quality firms versus other firms increased significantly post-1992. Specifically, the difference in adjusted R^2 ratio for low earnings quality firms versus all other firms increased from 0.008 (i.e., 0.536 - 0.528) pre-1993 to 0.319 (i.e., 0.788 - 0.469) post-1992 ($p = 0.033$, one-tailed *t* test).

5. Sensitivity

A. Analysis of Firms subject to SEC Enforcement Actions

To further test the relative information content of taxable income when book income is of lower quality, we collect a sample of firms subject to SEC enforcement action for allegedly overstating earnings. This sample does not rely on estimated accruals to identify firms with lower accounting quality, and thus, provides a strong test of our second hypothesis. However, Erickson, Hanlon, and Maydew (2004) find that firms are willing to pay additional tax for overstated earnings, which suggests that taxable income for these of firms is also of lower quality. Thus, it is an empirical question if whether taxable income is more informative in this setting.

Following the method in Dechow et al. (1995) and Dechow et al. (1996), we conducted a keyword search for “Section 13(a)” in the Accounting and Auditing Enforcement Releases Database through Lexis-Nexis. We searched for AAERs issued between 1994 and 2004 with an

identified manipulation between 1994 and 2002. We eliminated releases involving violation of auditing standards, multiple releases involving the same firms, and firms not having stock returns, pretax book income or taxable income. The final sample consisted of 253 firm-years subject to enforcement actions by the SEC between 1994 and 2002 for overstating earnings. Results presented in Table 5 show that the sample has a R^2 ratio of 0.811. By comparison, the R^2 ratios for “all other firms” reported in the last column of Panel A of Table 4 is significantly lower ($0.498 < 0.811$ p -value = 0.01, one-tailed t -test). In sum, results suggest that taxable income is particularly informative for firms overstating earnings, despite the fact that prior research finds that these firms also overstate taxable income (Erickson et al. 2004).

B. Misclassification of tax planning firms.

A potential issue with our classification of tax planning firms is that we may identify firms that are managing earnings upward instead of tax planning (i.e., managing taxable income downward). If firms manage earnings upward but do not simultaneously increase their current tax expense, then our measure of taxable income will be low relative to book income. The resulting book – tax difference is not due to tax planning per se but from managing earnings. To the extent that the “high tax planning” sample includes these firms, tests should be biased against the tax planning hypothesis (H1). Specifically, H1 predicts that the taxable income of high tax planning firms should be *less* informative relative to other firms. If the tax planning sample merely represents firms that manage earnings upward, we would expect that the taxable income of these firms would be *more* informative relative to other firms (as predicted for low quality firms in H2). To mitigate the concern that the tax planning sample is characterized by firms managing earnings, we examine the intersection of the high tax planning and low earnings quality samples. We note that only 17 percent of the high tax planning firms are classified as low earnings quality firms. All inferences remain the same after excluding these firms from our analyses.

C. Measurement error in taxable income.

As discussed in Section 3, we calculate taxable income from income statement disclosures. Because of the issues reported in Hanlon (2003), this estimate of taxable income contains measurement error. Because we compare the relative information content of taxable income across groups of firms, measurement error in estimating taxable income is less of a concern in this study to the extent that the error is not systematically related to how we classify high tax planning and low earnings quality firms. We perform four sensitivity tests to assess if our results are robust to the sources of measurement error in taxable income. Our first two tests address the fact that tax expense is reported after tax credits (e.g., investment tax credit, research and development, and foreign tax credit), which reduces current tax expense and understates our measure of taxable income. In addition, for firms with foreign operations there is an issue as to which tax rate is appropriate to use in grossing up tax expense to arrive at taxable income. To the extent tax expense reflects amounts paid to foreign governments at different tax rates than in the United States, our measure of taxable income contains measurement error. We address these issues by re-estimating our analyses after eliminating multinational firms and firms with high levels of research and development activities.²³ We classify firms as multinationals if their ratio of domestic income (data 272) over domestic plus foreign income (data 273) is less than 50 percent. We classify firms as high research and development firms if their ratio of research and development expenses (data 46) to sales (data 12) is in the upper quartile. Inferences remain the same.

We also employ an alternative specification of taxable income (taxable income without permanent differences) that may be less susceptible to the measurement error concerns associated

²³ Post-1992 results presented in tables 2, 3, and 4 suggest that the investment tax credit (phased out beginning in 1986) does not affect our inferences.

with tax credits and foreign taxes. We estimate taxable income without permanent differences (*TIPD*) as follows:²⁴

$$TIPD_{jt} = (PTB_{jt} - MI_{jt}) - \left(\frac{DTE_{jt}}{str_t} \right) \quad (10)$$

where *PTB* is pre-tax book income (data170), *MI* is minority interest (data49), *DTE* is deferred tax expense (data 50) for firm *j* at time *t*, and *str* is the statutory tax rate applicable at time *t*.

TIPD represents a measure of taxable income before permanent differences. We re-estimate our analyses using *TIPD* from Equation (10) in place of *TI* from Equation (1). Inferences remain the same, suggesting that measurement error related to permanent differences does not significantly influence our results.

Finally, current tax expense is truncated at zero for firms with negative taxable income. We address this issue in our main analysis by subtracting the change in NOL carryforward from our estimate of taxable income. In sensitivity tests, we duplicate our tests using firm-years in which the change in NOL is zero. Conclusions are the same.

6. Conclusion

Based on extant literature and anecdotal evidence, we identify two settings (high tax planning and low quality earnings) that we anticipate impair or enhance the information content of taxable income relative to book income. Following Hanlon et al. (2005), we estimate the relative information content of tax and book income using separate annual regressions of stock returns on first differences in tax and book income. We designate firms ranked in the lowest 20% of accumulated current effective tax rates for each industry and year as high tax planning firms. We designate firms ranked in the highest 20% of modified Jones model abnormal accruals (absolute value) for each industry and year as low earnings quality firms.

²⁴ This specification mitigates the measurement error concerns associated with foreign taxes on permanent differences but not temporary differences.

Consistent with expectations, we find that the information content of taxable income for high tax planning firms is much lower than that of other firms. Results suggest that although the taxable income of high tax planning firms is not completely devoid of information content, conforming book income to taxable income for high tax planning firms results in a 65.9% loss of explanatory power. Nonetheless, we find no difference in the information content of book income for tax planning firms relative to other firms. These results suggest that tax planning does not adversely affect the information content of book income. Additional analyses suggest that the relative information content of taxable income for high tax planning firms versus other firms decreased significantly post-1992, a period commonly perceived to be characterized by high tax shelter activity. As expected, we also find that the relative information content of taxable income to book income for firms with large abnormal accruals is significantly larger compared to other firms. Additional analyses suggest that the relative information content of taxable income for low quality earnings firms versus other firms increased significantly post-1992, a period marked by increased concerns of opportunistic earnings management. Finally, in sensitivity analysis, we compare the relative information content of taxable income and book income for firms subject to SEC enforcement action for overstating earnings. Results suggest that the relative information content of taxable income is particularly high for these firms.

This study makes several contributions. First, our analyses contribute to the recent debate on book-tax conformity. Consistent with speculation in Desai (2006), our results suggest that tax planning obscures the relation between taxable income and firm performance (as proxied by annual stock returns). While taxable income continues to have significant information content for high tax planning firms, results suggest that the potential information loss of mandatory book-tax conformity for these firms is much larger than the information loss for the average firm estimated in Hanlon, Laplante, and Shevlin (2005). Second, our analyses contribute to the recent literature investigating taxable income as an alternative performance measure. Consistent with speculation in Seida (2003), our results suggest that taxable income becomes a more useful

performance measure in settings where management may have used discretion in reporting book income. Nonetheless, consistent with Hanlon, Laplante, and Shevlin (2005), we find that book income better explains annual stock returns, on average, and for firms with large abnormal accruals. In sum, our evidence suggests that investors view taxable income as a supplemental, and not superior, performance measure. Finally, our results suggests that tax planning and low earnings quality have contrasting effects on the information content of taxable income. Given that both tax planning and events that result in low earnings quality may generate book-tax differences, our findings may be particularly useful for researchers investigating book-tax differences as a measure of discretion or earnings quality. In particular, our analyses suggest that existing tax planning and low earning quality proxies are sufficiently powerful to detect settings where book-tax differences are likely attributable to either discretion in reporting book or taxable income.

Our study is subject to certain limitations. As discussed in Section 3 (Research Methods) and Section 5 (Sensitivity), we estimate taxable income from publicly available financial statements. While this calculation contains measurement error, it is the measure that is available to the market, which is pertinent in our setting. We also identify tax planning firms using a firm's effective tax rate. The effective tax rate is problematic because, among other things, it measures actual taxes paid with error and it excludes benefits related to employee stock option deductions. We address these limitations by accumulating the effective tax rate over five years and utilizing an alternative measure of tax planning (cash taxes paid), an alternative specification of taxable income, and sensitivity analyses. Finally, we group firms according to abnormal accruals, which is a somewhat nebulous measure of earnings quality. We use abnormal accruals to define earnings quality because we are interested in the ability of taxable income to inform investors in settings where managers may have used to discretion in reporting book income and/or where book income may be more difficult to evaluate as represented by large abnormal accruals. In sensitivity analysis, we investigate the relative informativeness of taxable and book income for

firms subject to SEC enforcement action for overstating earnings. We find that the information content of taxable income for these firms is particularly acute, suggesting that our results, at least in part, capture low quality earnings.

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TABLE 1
Panel A: Sample Descriptive Statistics and Tests for Differences in Means across
High Book Tax Planning and All Other Firms^a

<i>Variables</i>	<i>Significant Difference^b</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>25% Quartile</i>	<i>Median</i>	<i>75% Quartile</i>
<i>Return</i>						
Overall sample		0.055	-0.375	0.712	-0.068	0.3
High Tax Plan Firms	HTP < AO	0.036	0.743	-0.423	-0.111	0.296
All Other Firms		0.059	0.704	-0.363	-0.06	0.3
<i>ΔPTBI</i>						
Overall sample		0.009	-0.033	0.13	0.012	0.049
High Tax Plan Firms	HTP ≈ AO	0.012	0.136	-0.038	0.012	0.057
All Other Firms		0.008	0.129	-0.032	0.012	0.048
<i>ΔTI</i>						
Overall sample		0.008	-0.029	0.12	0.006	0.044
High Tax Plan Firms	HTP ≈ AO	0.008	0.122	-0.025	0.001	0.039
All Other Firms		0.008	0.119	-0.03	0.008	0.044
<i>Book ETR</i>						
Overall sample		0.371	0.263	0.209	0.365	0.439
High Tax Plan Firms	HTP < AO	0.134	0.099	0.038	0.135	0.218
All Other Firms		0.427	0.187	0.331	0.392	0.461

^a Our overall sample consists of 52,493 firm-years from 1983 to 2002. The “High Tax Plan Firms” subsample consists of the 10,066 firm-years whose book *ETRs* over five years are in the bottom quintile ranked by industry and year. The “All Other Firms” subsample consists of the remaining 42,427 firm-years whose book *ETRs* over five years are in the top four quintiles ranked by industry and year.

^b Significant differences between the high tax planning (HTP) firm-years and all other (AO) firm-years are based on *t*-tests of means and Wilcoxon rank sum tests of medians ($p < 0.05$).

Return = the buy-and-hold market-adjusted return to firm *j* over the 16-month return window starting at the beginning of fiscal year *t* and ending four months after the end of fiscal year *t*

ΔPTBI = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year *t* where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year *t*. Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

Book ETR = current tax expense (data 16 - data 50) divided by pre-tax income (data 170) each summed over five years from *t-4* through *t*.

TABLE 1 (Continued)
Panel B: Sample Descriptive Statistics and Tests for Differences in Means across High Cash Tax Planning and All Other Firms^a

<i>Variables</i>	<i>Significant Difference^b</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>25% Quartile</i>	<i>Median</i>	<i>75% Quartile</i>
<i>Return</i>						
Overall sample		0.086	-0.364	0.754	-0.049	0.339
High Tax Plan Firms	HTP > AO	0.148	0.871	-0.378	-0.029	0.411
All Other Firms		0.072	0.723	-0.361	-0.052	0.324
<i>ΔPTBI</i>						
Overall sample		0.009	-0.03	0.126	0.012	0.047
High Tax Plan Firms	HTP > AO	0.023	0.124	-0.019	0.017	0.059
All Other Firms		0.006	0.126	-0.033	0.011	0.044
<i>ΔTI</i>						
Overall sample		0.006	-0.027	0.111	0.005	0.039
High Tax Plan Firms	HTP > AO	0.015	0.116	-0.016	0.006	0.043
All Other Firms		0.004	0.109	-0.03	0.005	0.038
<i>Cash ETR</i>						
Overall sample		0.363	0.238	0.219	0.337	0.424
High Tax Plan Firms	HTP < AO	0.123	0.083	0.051	0.125	0.185
All Other Firms		0.419	0.203	0.302	0.367	0.454

^a Our overall sample consists of 24,921 firm-years from 1992 to 2002. The “High Tax Plan Firms” subsample consists of the 4,731 firm-years whose cash *ETRs* over five years are in the bottom quintile ranked by industry and year. The “All Other Firms” subsample consists of the remaining 20,190 firm-years whose cash *ETRs* over five years are in the top four quintiles ranked by industry and year.

^b Significant differences between the high tax planning (HTP) firm-years and all other (AO) firm-years are based on *t*-tests of means and Wilcoxon rank sum tests of medians ($p < 0.05$).

Return = the buy-and-hold market-adjusted return to firm *j* over the 16-month return window starting at the beginning of fiscal year *t* and ending four months after the end of fiscal year *t*

ΔPTBI = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year *t* where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year *t*. Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

Cash ETR = cash taxes paid (data 317) divided by pre-tax income (data 170) each summed over five years from *t-4* through *t*. If data 317 is missing, we assign cash taxes paid the value of current tax expense (data 16 – data 50) as in Dyreng et al (2006).

TABLE 1
Panel C: Sample Descriptive Statistics and Tests for Differences in Means across High Accruals and All Other Firms^a

<i>Variables</i>	<i>Significant Difference^b</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>25% Quartile</i>	<i>Median</i>	<i>75% Quartile</i>
<i>Return</i>						
Overall sample		-0.014	0.819	-0.507	-0.157	0.246
High Acc Firms	HA \approx AO	-0.019	0.964	-0.626	-0.235	0.26
All Other Firms		-0.013	0.779	-0.476	-0.142	0.243
<i>$\Delta PTBI$</i>						
Overall sample		0.002	0.184	-0.053	0.008	0.055
High Acc Firms	HA < AO	-0.007	0.223	-0.084	0.006	0.071
All Other Firms		0.005	0.173	-0.047	0.008	0.052
<i>ΔTI</i>						
Overall sample		0.004	0.157	-0.034	0	0.042
High Acc Firms	HA \approx AO	0.001	0.187	-0.046	0	0.053
All Other Firms		0.005	0.148	-0.032	0.001	0.04
<i> Abnormal Accruals </i>						
Overall sample		0.083	0.095	0.023	0.053	0.107
High Acc Firms	HA > AO	0.225	0.121	0.142	0.19	0.272
All Other Firms		0.049	0.038	0.018	0.04	0.071

^a Our overall sample consists of 74,403 firm-years from 1983 to 2002. The “High Acc Firms” subsample consists of the 14,662 firm-years whose absolute values of abnormal accruals are in the top quintile ranked by industry and year. The “All Other Firms” subsample consists of 59,741 firm-years whose absolute value of abnormal accruals are not in the top quintile ranked by industry and year.

^b Significant differences between the high-accrual (HA) firm-years and all other (AO) firm-years are based on *t*-tests of means and Wilcoxon rank sum tests of medians ($p < 0.05$).

Return = the buy-and-hold market-adjusted return to firm *j* over the 16-month return window starting at the beginning of fiscal year *t* and ending four months after the end of fiscal year *t*

$\Delta PTBI$ = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year *t* where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year *t*. Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

|Abnormal Accruals| = the absolute value of abnormal accruals calculated as the difference between total accruals and modified Jones model normal accruals estimated cross-sectionally annually and by two digit SIC code.

TABLE 2
Panel A: Relative Information Content of Taxable Income to Book Income for High Tax Planning Firms (Defined Using Book ETRs) and for All Other Firms

Year	High Book Tax Planning Firms						All Other Firms					
	obs	Δ PTBI	R^2_{PTBI}	Δ TI	R^2_{TI}	$\frac{R^2_{TI}}{R^2_{PTBI}}$	obs	Δ PTBI	R^2_{PTBI}	Δ TI	R^2_{TI}	$\frac{R^2_{TI}}{R^2_{PTBI}}$
1983	500	1.607	0.125	1.105	0.037	0.296	2125	1.940	0.169	1.804	0.114	0.676
1984	515	1.690	0.228	1.521	0.099	0.432	2141	1.234	0.125	1.228	0.096	0.771
1985	502	1.533	0.156	1.084	0.035	0.223	2085	1.820	0.156	1.447	0.080	0.515
1986	466	1.767	0.185	1.409	0.065	0.352	1953	2.162	0.220	1.840	0.127	0.578
1987	462	1.446	0.149	0.695	0.024	0.164	1954	1.711	0.181	1.394	0.117	0.647
1988	473	1.586	0.161	0.899	0.056	0.350	2012	1.559	0.162	1.030	0.094	0.580
1989	458	1.777	0.180	0.947	0.047	0.259	1941	1.642	0.167	1.023	0.082	0.494
1990	456	1.884	0.200	1.611	0.125	0.625	1910	1.742	0.173	1.391	0.120	0.697
1991	443	2.302	0.144	1.400	0.051	0.355	1902	1.895	0.136	1.600	0.098	0.717
1992	465	2.140	0.116	1.080	0.028	0.244	1967	2.531	0.239	2.143	0.159	0.667
1993	490	2.996	0.209	2.092	0.103	0.495	2085	2.506	0.197	2.485	0.141	0.715
1994	532	2.075	0.115	1.214	0.039	0.336	2263	2.185	0.170	1.974	0.110	0.651
1995	567	2.857	0.149	1.541	0.034	0.227	2376	2.739	0.126	3.077	0.124	0.983
1996	592	1.908	0.118	1.818	0.065	0.548	2482	2.010	0.136	2.464	0.127	0.936
1997	619	2.325	0.133	2.336	0.099	0.744	2583	2.457	0.167	2.869	0.153	0.914
1998	597	2.402	0.168	1.455	0.052	0.310	2517	1.867	0.094	1.995	0.088	0.933
1999	557	2.650	0.085	1.898	0.026	0.302	2349	2.367	0.061	2.513	0.047	0.772
2000	507	2.495	0.184	1.391	0.052	0.281	2125	2.103	0.124	2.057	0.092	0.743
2001	449	1.561	0.112	0.489	0.008	0.069	1902	1.553	0.095	1.800	0.095	0.997
2002	416	1.058	0.085	0.456	0.017	0.205	1755	1.273	0.122	1.067	0.070	0.574
Ave_Prior93	474	1.773	0.164	1.175	0.057	0.330 ^a	1999	1.824	0.173	1.490	0.109	0.634
Ave_Post92	533	2.233	0.136	1.469	0.049	0.352 ^b	2244	2.106	0.129	2.230	0.105	0.822
Ave Total	503	2.003	0.150	1.322	0.053	0.341^c	2121	1.965	0.151	1.860	0.107	0.728

^a 0.330 < 0.634. *pvalue* < 0.001 (t-test), or *pvalue* < 0.001 (Wilcoxon Rank Sum test), one tailed test.

^b 0.352 < 0.822. *pvalue* < 0.001 (t-test), or *pvalue* < 0.001 (Wilcoxon Rank Sum test), one tailed test.

^c **0.341 < 0.728. *pvalue* < 0.001 (t-test), or *p-value* < 0.001 (Wilcoxon Rank Sum test), one tailed test.**

The “High Tax Plan Firms” subsample consists of the 10,066 firm-years whose book *ETRs* over five years are in the bottom quintile ranked by industry and year. The “All Other Firms” subsample consists of the remaining 42,427 firm-years whose book *ETRs* over five years are in the top four quintiles ranked by industry and year.

Book ETR = current tax expense (data 16 - data 50) divided by pre-tax income (data 170) each summed over five years from $t-4$ through t .

Relative Information content = R^2_{TI} / R^2_{PTBI} = Ratio of the adjusted R^2 from a regression of *Return* on the change in taxable income (ΔTI) to the adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

Return = the buy-and-hold market-adjusted return to firm j over the 16-month return window starting at the beginning of fiscal year t and ending four months after the end of fiscal year t

$\Delta PTBI$ = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year t where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

R^2_{PTBI} = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year t . Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

R^2_{TI} = adjusted R^2 from a regression of *Return* on the change in taxable income (ΔTI).

TABLE 2 (Continued)
Panel B: Incremental Information Content of Taxable Income for
High Tax Planning Firms (Defined Using Book ETRs) and for All Other Firms

Year	High Book Tax Planning Firms				All Other Firms			
	Obs	R ² _{PTBI}	R ² _{PTBI+TI}	$\frac{R^2_{PTBI+TI} - R^2_{PTBI}}{R^2_{PTBI}}$	Obs	R ² _{PTBI}	R ² _{PTBI+TI}	$\frac{R^2_{PTBI+TI} - R^2_{PTBI}}{R^2_{PTBI}}$
1983	500	0.125	0.124	-0.001	2125	0.169	0.172	0.003
1984	515	0.228	0.230	0.002	2141	0.125	0.133	0.008
1985	502	0.156	0.154	-0.002	2085	0.156	0.158	0.002
1986	466	0.185	0.184	-0.001	1953	0.220	0.228	0.007
1987	462	0.149	0.148	-0.001	1954	0.181	0.188	0.007
1988	473	0.161	0.160	-0.001	2012	0.162	0.163	0.001
1989	458	0.180	0.178	-0.001	1941	0.167	0.167	0.000
1990	456	0.200	0.208	0.007	1910	0.173	0.178	0.005
1991	443	0.144	0.146	0.002	1902	0.136	0.142	0.006
1992	465	0.116	0.114	-0.001	1967	0.239	0.252	0.013
1993	490	0.209	0.230	0.021	2085	0.197	0.214	0.017
1994	532	0.115	0.117	0.002	2263	0.170	0.182	0.012
1995	567	0.149	0.148	-0.001	2376	0.126	0.148	0.022
1996	592	0.118	0.129	0.011	2482	0.136	0.157	0.021
1997	619	0.133	0.163	0.030	2583	0.167	0.188	0.021
1998	597	0.168	0.171	0.002	2517	0.094	0.109	0.015
1999	557	0.085	0.083	-0.002	2349	0.061	0.066	0.005
2000	507	0.184	0.184	0.000	2125	0.124	0.131	0.007
2001	449	0.112	0.112	0.001	1902	0.095	0.116	0.021
2002	416	0.085	0.083	-0.002	1755	0.122	0.129	0.007
Ave_Prior93	474	0.164	0.165	0.001 ^a	1999	0.173	0.178	0.005
Ave_Post92	533	0.136	0.142	0.006 ^b	2244	0.129	0.144	0.015
Ave_tot	503	0.150	0.153	0.003^c	2121	0.151	0.161	0.010

^a 0.001 < 0.005. *pvalue* = 0.002 (t-test), or *pvalue* = 0.004 (Wilcoxon Rank Sum test), one tailed test.

^b 0.006 < 0.015. *pvalue* = 0.029 (t-test), or *pvalue* = 0.019 (Wilcoxon Rank Sum test), one tailed test.

^c **0.003 < 0.010. *pvalue* = 0.006 (t-test), or *pvalue* < 0.001 (Wilcoxon Rank Sum test), one tailed test.**

The “High Tax Plan Firms” subsample consists of the 10,066 firm-years whose book *ETRs* over five years are in the bottom quintile ranked by industry and year. The “All Other Firms” subsample consists of the remaining 42,427 firm-years whose book *ETRs* over five years are in the top four quintiles ranked by industry and year.

Book ETR = current tax expense (data 16 - data 50) divided by pre-tax income (data 170) each summed over five years from $t-4$ through t .

Incremental Information Content = $R^2_{PTBI+TI} - R^2_{PTBI}$ = Difference in the adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and the change in taxable income (ΔTI).

Return = the buy-and-hold market-adjusted return to firm j over the 16-month return window starting at the beginning of fiscal year t and ending four months after the end of fiscal year t

$\Delta PTBI$ = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year t where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

R^2_{PTBI} = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year t . Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

$R^2_{PTBI+TI}$ = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and the change in taxable income (ΔTI).

TABLE 3
Panel A: Relative Information Content of Taxable Income to Book Income for High Tax Planning Firms (Defined Using Cash ETRs) and for All Other Firms

Year	High Cash Tax Planning Firms						All Other Firms					
	obs	$\Delta PTBI$	R^2_{PTBI}	ΔTI	R^2_{TI}	$\frac{R^2_{TI}}{R^2_{PTBI}}$	obs	$\Delta PTBI$	R^2_{PTBI}	ΔTI	R^2_{TI}	$\frac{R^2_{TI}}{R^2_{PTBI}}$
1992	309	2.753	0.176	2.413	0.109	0.619	1346	2.179	0.206	1.892	0.134	0.651
1993	394	2.991	0.209	1.777	0.077	0.368	1697	2.208	0.201	2.368	0.163	0.810
1994	414	2.183	0.138	1.462	0.055	0.399	1787	1.903	0.170	1.733	0.109	0.641
1995	433	2.394	0.104	1.443	0.032	0.307	1859	2.298	0.134	2.510	0.119	0.885
1996	468	2.140	0.140	1.496	0.046	0.331	1982	1.727	0.133	2.240	0.138	1.033
1997	482	2.348	0.151	2.202	0.103	0.681	2040	2.364	0.175	2.610	0.151	0.860
1998	480	1.988	0.114	1.613	0.066	0.577	2023	1.814	0.107	1.834	0.088	0.824
1999	487	4.309	0.120	3.829	0.059	0.494	2065	1.977	0.054	2.030	0.039	0.727
2000	459	3.216	0.180	1.607	0.041	0.228	1954	1.937	0.123	2.045	0.106	0.863
2001	415	1.145	0.062	0.351	0.003	0.045	1763	1.724	0.118	1.764	0.096	0.816
2002	390	0.965	0.063	0.426	0.012	0.196	1674	1.228	0.124	1.056	0.077	0.617
Ave_Post92	442	2.368	0.128	1.621	0.049	0.363 ^a	1884	1.918	0.134	2.019	0.109	0.808
Ave_tot	430	2.403	0.132	1.693	0.055	0.386^b	1835	1.942	0.14	2.007	0.111	0.793

^a 0.363 < 0.808. *pvalue* < 0.001 (t-test), or *pvalue* < 0.001 (Wilcoxon Rank Sum test), one tailed test.

^b **0.386 < 0.793. *pvalue* < 0.001 (t-test), or *pvalue* < 0.001 (Wilcoxon Rank Sum test), one tailed test.**

The “High Tax Plan Firms” subsample consists of the 4,731 firm-years whose cash *ETRs* over five years are in the bottom quintile ranked by industry and year. The “All Other Firms” subsample consists of the remaining 20,190 firm-years whose cash *ETRs* over five years are in the top four quintiles ranked by industry and year.

Cash ETR = cash taxes paid (data 317) divided by pre-tax income (data 170) each summed over five years from *t-4* through *t*. If data 317 is missing, we assign cash taxes paid the value of current tax expense (data 16 – data 50) as in Dyreng et al. (2006).

Relative Information content = R^2_{TI} / R^2_{PTBI} = Ratio of the adjusted R^2 from a regression of *Return* on the change in taxable income (ΔTI) to the adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

Return = the buy-and-hold market-adjusted return to firm *j* over the 16-month return window starting at the beginning of fiscal year *t* and ending four months after the end of fiscal year *t*

$\Delta PTBI$ = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year *t* where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

R^2_{PTBI} = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year *t*. Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

R^2_{TI} = adjusted R^2 from a regression of *Return* on the change in taxable income (ΔTI).

TABLE 3 (Continued)
Panel B: Incremental Information Content of Taxable Income for
High Tax Planning Firms (Defined Using Cash ETRs) and for All Other Firms

Year	High Cash Tax Planning Firms				All Other Firms			
	Obs	R^2_{PTBI}	$R^2_{PTBI+TI}$	$R^2_{PTBI+TI} - R^2_{PTBI}$	Obs	R^2_{PTBI}	$R^2_{PTBI+TI}$	$R^2_{PTBI+TI} - R^2_{PTBI}$
1992	309	0.176	0.191	0.015	1346	0.206	0.218	0.012
1993	394	0.209	0.223	0.014	1697	0.201	0.225	0.024
1994	414	0.138	0.140	0.003	1787	0.170	0.183	0.013
1995	433	0.104	0.102	-0.002	1859	0.134	0.151	0.016
1996	468	0.140	0.142	0.002	1982	0.133	0.162	0.028
1997	482	0.151	0.174	0.023	2040	0.175	0.194	0.019
1998	480	0.114	0.127	0.013	2023	0.107	0.118	0.011
1999	487	0.120	0.125	0.006	2065	0.054	0.057	0.003
2000	459	0.180	0.180	0.000	1954	0.123	0.136	0.014
2001	415	0.062	0.061	-0.001	1763	0.118	0.132	0.014
2002	390	0.063	0.061	-0.002	1674	0.124	0.133	0.009
Ave_Post92	442	0.128	0.134	0.006 ^a	1884	0.134	0.149	0.015
Ave_tot	430	0.132	0.139	0.006^b	1835	0.14	0.155	0.015

^a $0.006 < 0.015$. *pvalue* =0.007 (t-test), or *pvalue* =0.007 (Wilcoxon Rank Sum test), one tailed test.

^b **0.006 < 0.015**. *pvalue* =0.010 (t-test), or *pvalue* =0.015 (Wilcoxon Rank Sum test), one tailed test.

The “High Tax Plan Firms” subsample consists of the 4,731 firm-years whose cash *ETRs* over five years are in the bottom quintile ranked by industry and year. The “All Other Firms” subsample consists of the remaining 20,190 firm-years whose cash *ETRs* over five years are in the top four quintiles ranked by industry and year.

Cash ETR = cash taxes paid (data 317) divided by pre-tax income (data 170) each summed over five years from *t-4* through *t*. If data 317 is missing, we assign cash taxes paid the value of current tax expense (data 16 – data 50) as in Dyreng et al (2006).

Incremental Information Content = $R^2_{PTBI+TI} - R^2_{PTBI}$ = Difference in the adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and the change in taxable income (ΔTI).

Return = the buy-and-hold market-adjusted return to firm *j* over the 16-month return window starting at the beginning of fiscal year *t* and ending four months after the end of fiscal year *t*

$\Delta PTBI$ = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year *t* where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

R^2_{PTBI} = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year *t*. Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

$R^2_{PTBI+TI}$ = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and the change in taxable income (ΔTI).

TABLE 4
Panel A: Relative Information Content of Taxable Income to Book Income for
High Abnormal Accruals Firms and for All Other Firms

Year	High Accruals Firms						All Other Firms					
	obs	$\Delta PTBI$	R^2_{PTBI}	ΔTI	R^2_{TI}	$\frac{R^2_{TI}}{R^2_{PTBI}}$	obs	$\Delta PTBI$	R^2_{PTBI}	ΔTI	R^2_{TI}	$\frac{R^2_{TI}}{R^2_{PTBI}}$
1983	618	1.581	0.133	1.347	0.071	0.538	2518	1.403	0.117	1.308	0.070	0.603
1984	655	1.152	0.156	1.141	0.123	0.790	2670	0.950	0.100	0.885	0.060	0.593
1985	673	1.122	0.095	0.926	0.050	0.523	2746	1.094	0.088	0.823	0.037	0.420
1986	654	1.248	0.135	0.947	0.060	0.440	2656	1.094	0.104	0.899	0.048	0.462
1987	668	0.764	0.070	0.741	0.046	0.663	2731	0.901	0.099	0.684	0.043	0.432
1988	689	1.032	0.108	0.659	0.042	0.390	2823	0.986	0.092	0.737	0.053	0.572
1989	668	0.922	0.086	0.372	0.013	0.147	2721	1.078	0.102	0.684	0.046	0.446
1990	654	0.926	0.092	0.671	0.049	0.531	2673	1.023	0.092	0.706	0.046	0.502
1991	632	1.059	0.049	1.066	0.047	0.952	2584	1.421	0.088	1.183	0.059	0.666
1992	652	1.166	0.082	0.851	0.032	0.384	2667	1.600	0.144	1.255	0.084	0.584
1993	709	1.409	0.095	1.483	0.072	0.760	2911	1.550	0.116	1.085	0.044	0.376
1994	785	1.062	0.085	1.287	0.062	0.735	3192	1.134	0.092	1.003	0.040	0.434
1995	833	1.321	0.060	1.125	0.026	0.444	3383	1.448	0.068	1.260	0.029	0.430
1996	869	1.296	0.100	1.744	0.079	0.785	3539	1.151	0.071	1.345	0.050	0.705
1997	936	1.291	0.090	2.043	0.098	1.089	3777	1.468	0.100	1.665	0.070	0.696
1998	906	0.588	0.015	0.846	0.017	1.106	3689	1.035	0.049	0.933	0.025	0.511
1999	834	1.456	0.031	2.581	0.054	1.751	3381	1.343	0.024	0.918	0.007	0.277
2000	803	1.312	0.090	1.213	0.041	0.459	3247	1.507	0.089	1.228	0.037	0.411
2001	746	0.999	0.082	0.879	0.037	0.456	3052	0.976	0.064	0.933	0.037	0.573
2002	678	0.576	0.042	0.377	0.012	0.292	2781	0.715	0.064	0.451	0.018	0.277
Ave_Prior93	656	1.097	0.101	0.872	0.053	0.536 ^a	2679	1.155	0.103	0.916	0.054	0.528
Ave_Post92	810	1.131	0.069	1.358	0.050	0.788 ^b	3295	1.233	0.074	1.082	0.036	0.469
Ave_tot	733	1.114	0.085	1.115	0.052	0.662^c	2987	1.194	0.088	0.999	0.045	0.498

^a 0.536 \approx 0.528. *pvalue* = 0.461 (t-test), or *pvalue* = 0.396 (Wilcoxon Rank Sum test), one tailed test.

^b 0.788 > 0.469. *pvalue* = 0.026 (t-test), or *pvalue* = 0.013 (Wilcoxon Rank Sum test), one tailed test.

^c **0.662 > 0.498. *pvalue* = 0.034 (t-test), or *pvalue* = 0.070 (Wilcoxon Rank Sum test), one tailed test.**

The “High Accrual Firms” subsample consists of the 14,662 firm-years whose absolute values of abnormal accruals are in the top quintile ranked by industry and year. The “All Other Firms” subsample consists of 59,741 firm-years whose absolute value of abnormal accruals are not in the top quintile ranked by industry and year.

$|AbnormalAccruals|$ = the absolute value of abnormal accruals calculated as the difference between total accruals and modified Jones model normal accruals estimated cross-sectionally annually and by two digit SIC code.

Relative Information content = R^2_{TI} / R^2_{PTBI} = Ratio of the adjusted R^2 from a regression of *Return* on the change in taxable income (ΔTI) to the adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

Return = the buy-and-hold market-adjusted return to firm j over the 16-month return window starting at the beginning of fiscal year t and ending four months after the end of fiscal year t

$\Delta PTBI$ = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year t where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

R^2_{PTBI} = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year t . Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

R^2_{TI} = adjusted R^2 from a regression of *Return* on the change in taxable income (ΔTI).

TABLE 4 (Continued)
Panel B: Incremental Information Content of Taxable Income for
High Abnormal Accrual Firms and for All Other Firms

Year	High Accrual Firms				All Other Firms			
	Obs	R ² _{PTBI}	R ² _{PTBI+TI}	$\frac{R^2_{PTBI+TI} - R^2_{PTBI}}{R^2_{PTBI}}$	Obs	R ² _{PTBI}	R ² _{PTBI+TI}	$\frac{R^2_{PTBI+TI} - R^2_{PTBI}}{R^2_{PTBI}}$
1983	618	0.133	0.134	0.002	2518	0.117	0.121	0.005
1984	655	0.156	0.172	0.016	2670	0.100	0.105	0.004
1985	673	0.095	0.096	0.001	2746	0.088	0.090	0.002
1986	654	0.135	0.135	-0.000	2656	0.104	0.107	0.004
1987	668	0.070	0.077	0.007	2731	0.099	0.101	0.002
1988	689	0.108	0.109	0.001	2823	0.092	0.096	0.004
1989	668	0.086	0.086	0.001	2721	0.102	0.104	0.002
1990	654	0.092	0.094	0.002	2673	0.092	0.094	0.002
1991	632	0.049	0.060	0.011	2584	0.088	0.097	0.009
1992	652	0.082	0.083	0.001	2667	0.144	0.155	0.011
1993	709	0.095	0.108	0.013	2911	0.116	0.119	0.002
1994	785	0.085	0.105	0.020	3192	0.092	0.100	0.008
1995	833	0.060	0.065	0.005	3383	0.068	0.072	0.004
1996	869	0.100	0.126	0.026	3539	0.071	0.083	0.013
1997	936	0.090	0.122	0.031	3777	0.100	0.120	0.020
1998	906	0.015	0.022	0.007	3689	0.049	0.053	0.003
1999	834	0.031	0.059	0.028	3381	0.024	0.024	0.000
2000	803	0.090	0.096	0.007	3247	0.089	0.095	0.006
2001	746	0.082	0.090	0.008	3052	0.064	0.073	0.009
2002	678	0.042	0.044	0.002	2781	0.064	0.066	0.002
Ave_Prior93	656	0.101	0.105	0.004 ^a	2679	0.103	0.107	0.004
Ave_Post92	810	0.069	0.084	0.015 ^b	3295	0.074	0.080	0.007
Ave_tot	733	0.085	0.094	0.009^c	2987	0.088	0.094	0.005

^a 0.004 ≈ 0.004. *pvalue* = 0.427 (t-test), or *pvalue* = 0.081 (Wilcoxon Rank Sum test), one tailed test.

^b 0.015 > 0.007. *pvalue* = 0.025 (t-test), or *pvalue* = 0.038 (Wilcoxon Rank Sum test), one tailed test.

^c **0.009 > 0.005. *pvalue* = 0.063 (t-test), or *pvalue* = 0.328 (Wilcoxon Rank Sum test), one tailed test.**

The “High Accrual Firms” subsample consists of the 14,662 firm-years whose absolute values of abnormal accruals are in the top quintile ranked by industry and year. The “All Other Firms” subsample consists of 59,741 firm-years whose absolute value of abnormal accruals are not in the top quintile ranked by industry and year.

$|AbnormalAccruals|$ = the absolute value of abnormal accruals calculated as the difference between total accruals and modified Jones model normal accruals estimated cross-sectionally annually and by two digit SIC code.

Incremental Information Content = $R^2_{PTBI+TI} - R^2_{PTBI}$ = Difference in the adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and the change in taxable income (ΔTI).

Return = the buy-and-hold market-adjusted return to firm j over the 16-month return window starting at the beginning of fiscal year t and ending four months after the end of fiscal year t

$\Delta PTBI$ = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year t where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

R^2_{PTBI} = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year t . Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

$R^2_{PTBI+TI}$ = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and the change in taxable income (ΔTI).

TABLE 5
Accounting and auditing Enforcement Release Analysis

This table contains results from tests of information content and incremental explanatory power of firms designated as having low quality earnings, i.e., firms subject to SEC enforcement action for overstating earnings. Firms are included if they have an Accounting and Auditing Enforcement Release (AAER) issued between 1994 and 2004 with an identified manipulation between fiscal year 1994 and 2002.

Obs	Information Content					Incremental Information Content			
	$\Delta PTBI$	R^2_{PTBI}	ΔTI	R^2_{TI}	$\frac{R^2_{TI}}{R^2_{PTBI}}$	obs	R^2_{PTBI}	$R^2_{PTBI+TI}$	$R^2_{PTBI+TI} - R^2_{PTBI}$
253	0.632	0.043	0.753	0.035	0.811*	253	0.043	0.047	0.004

* The information content of taxable income for the AAER firms (0.811) is significantly greater than the information content of taxable income for “All Other Firms” (i.e., high earnings quality firms) from Table 4 Panel A (0.498) – i.e., $[0.811 > 0.498, p\text{-value} = 0.0]$, one tailed t test].

Information content = R^2_{TI} / R^2_{PTBI} = Ratio of the adjusted R^2 from a regression of *Return* on the change in taxable income (ΔTI) to the adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

Incremental Information Content = $R^2_{PTBI+TI} - R^2_{PTBI}$ = Difference in the adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and the change in taxable income (ΔTI).

Return = the buy-and-hold market-adjusted return to firm j over the 16-month return window starting at the beginning of fiscal year t and ending four months after the end of fiscal year t

$\Delta PTBI$ = the change of pre-tax book income deflated by the market value of equity at the start of fiscal year t where pre-tax book income is (Compustat data 170) minus minority interest (data 49).

R^2_{PTBI} = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$).

ΔTI = the change in taxable income deflated by the market value of equity at the start of fiscal year t . Taxable income is the sum of federal tax expense (data 63) and foreign tax expense (data 64) grossed up by the top U.S. statutory tax rate minus the change in net operating loss carryforwards (data 52). If both data 63 and data 64 are missing, we measure tax expense as the difference between total income tax expense (data 16) and the deferred portion of income tax expense (data 50).

R^2_{TI} = adjusted R^2 from a regression of *Return* on the change in taxable income (ΔTI).

$R^2_{PTBI+TI}$ = adjusted R^2 from a regression of *Return* on the change in pre-tax book income ($\Delta PTBI$) and the change in taxable income (ΔTI).