

An Examination of Corporate Tax Shelter Participants

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January 2008

Abstract:

Recent evidence suggests corporate tax shelters have become an important instrument for reducing the tax burden of many corporations. Based on a sample of firms identified ex post as having participated in tax shelters, I develop a profile of the type of firm that is likely to be currently engaged in tax sheltering. The purpose of the model is to detect tax shelter participants through the use of variables predicted to be either affected by tax sheltering or associated with tax sheltering. I find firms actively engaged in tax sheltering exhibit larger book-tax differences and more aggressive financial reporting practices. I then use this model of tax shelter firm characteristics to identify a broad sample of ‘predicted tax shelter firms’ from the general population of firms. I use both the small sample of identified tax shelter firms and the broader sample of ‘predicted tax shelter firms’ to examine whether tax sheltering is associated with wealth creation for shareholders or rent extraction on the part of managers. I find that active tax shelter firms with strong corporate governance exhibit positive abnormal returns during the period of active tax sheltering, which are significantly greater than the returns of tax shelter firms with poor corporate governance. These findings are consistent with tax sheltering being a tool for wealth creation in well-governed firms.

I appreciate the helpful comments and advice of my dissertation committee: Robert Bowen, Neil Bruce, Jonathan Karpoff, Shiva Rajgopal, Ed Rice, and especially my chair Terry Shevlin. This paper has also benefited from the helpful comments of Helen Adams, Ben Ayers, Linda Bamber, Philip Berger, Dave Burgstahler, Andy Call, Shuping Chen, Charles Christian, Merle Erickson, Peter Frischmann, Jenny Gaver, Cristi Gleason, Shane Heitzman, Max Hewitt, Frank Hodge, Bruce Johnson, Ken Klassen, Stacie Laplante, Dawn Matsumoto, Sean McGuire, Sonja Olhoft Rego, Stephanie Sikes, D. Shores, Jerry Zimmerman, and workshop participants at the following universities: Arizona State University, Stanford University, the University of Chicago, the University of Georgia, the University of Illinois at Urbana-Champaign, the University of Iowa, the University of Rochester, and the University of Washington. I would also like to thank John Graham and Alan Tucker for making information on their tax shelter sample available with their paper. Finally, I gratefully acknowledge financial support from the Deloitte Foundation.

I. Introduction

In June of 2006 IRS Commissioner Mark Everson warned a U.S. Senate Panel that tax arbitrage strategies are on the rise, and are among the most significant enforcement problems the agency faces (Drucker 2006). Bankman (1999) estimates that tax shelters allow U.S. firms to avoid more than \$10 billion in federal income taxes annually. Among 33 identified corporate tax shelter participants in this study, the mean federal tax deficiency associated with these tax shelters is more than \$375 million. These statements and findings are consistent with tax shelters being an important instrument for reducing the tax burden of many corporations.

Corporate tax shelters generate significant tax savings but it is often difficult for investors to identify whether a firm is actively participating in a tax shelter. Firms generally do not disclose their tax shelter involvement and even when it becomes known *ex post* that a firm participated in a tax shelter, it is often impossible to determine the dollar amount of the tax benefit using only the firm's financial statements (McGill and Outslay 2004). As a result, our understanding of how to identify active tax shelter participants through financial statement analysis is quite limited.

This study examines in detail the financial reporting effect of tax shelter participation on a sample of 59 firms accused by the government of engaging in tax shelter activity. This analysis includes the development of a model of tax shelter participation using the sample of identified tax shelter firms. In an effort to determine whether tax sheltering activity leaves a detectible footprint in the financial statements, this model identifies firm-specific characteristics **that result from** tax shelter participation (e.g., large differences between financial reporting income and taxable income). The model also identifies firm characteristics associated with the type of firm

likely to be engaged in tax sheltering activity (e.g. firm size and a tendency toward aggressive financial reporting). Developing a model that identifies aggressive corporate tax shelter participants is important to investors in assessing the effectiveness of management's tax reporting strategies. This model is also valuable for research examining changes in the willingness of firms to engage in aggressive tax strategies as a result of changes in financial reporting regulations or tax law. Further, identifying tax shelter participants is important for research investigating whether tax shelters create wealth for shareholders or whether they represent opportunistic behavior by managers.

I predict and find that book-tax differences (hereafter BTDs) are positively associated with the incidence of tax sheltering activity. This result holds when the actual tax shelter participants are compared to either a size- and industry-matched control sample or a broader set of control firms. Using court documents and financial reports I identified the amount of federal tax savings associated with the tax shelters for 33 of the sample firms. For these firms the federal tax savings generated from the identified tax shelters increased their reported book-tax differences by an average of 102% during the years of active tax shelter participation.¹ When the BTDs of the 33 identified tax shelter firms are adjusted for the federal tax savings generated by the tax shelters their BTDs are no longer significantly different from those of the matched control firms. There is also a positive association between discretionary accruals and the incidence of tax sheltering. Discretionary accruals do not, however, fully explain the BTD result. This means that BTDs contain information about aggressive tax reporting that is unrelated to discretionary accruals and accrual-based earnings management. Together these findings suggest

¹ 8 of the 33 sample firms did not appear to recognize the tax benefit generated by the identified tax shelter during the period of active tax shelter participation. As a result, for these 8 firms it is unlikely their reported book-tax differences were affected by the identified tax shelter and I estimate the tax shelter activity had no impact on the book-tax differences of these firms. This issue is discussed in more detail in the following section.

the impact of tax shelter participation on reported BTDs is significant, and as a result, BTDs are incrementally useful in identifying tax shelter participants among a cross-section of firms.

To illustrate how the tax shelter model can be used in other research settings, I provide preliminary evidence on whether tax shelter use is consistent with managers maximizing shareholder value or signals managerial opportunism.² Desai and Dharmapala (2006a) conjecture that elaborate tax shelter schemes may facilitate dishonesty on the part of management rather than increase shareholder wealth. To test this conjecture, I examine the stock return performance of the sample firms for the periods before, during, and immediately after their tax shelter participation using the four factor Fama-French (1993) model.³ I find actual tax shelter firms with strong corporate governance scores report significantly higher abnormal returns during the period of active tax shelter participation than tax shelter firms with poor corporate governance or samples of well-governed and poorly-governed control firms. These results are complemented by the tests examining the stock return performance of the broader sample of predicted tax shelter firms based on the model of tax shelter participation. Taken together, these findings are consistent with corporate governance being an important factor in determining whether tax sheltering is associated with wealth creation for shareholders or managerial opportunism.

This study extends the Graham and Tucker (2006) model of tax shelter participation by considering a more comprehensive set of firm characteristics such as the existence of foreign operations, book-tax differences, and financial reporting aggressiveness. This study also extends recent research on the usefulness of BTDs as a proxy for tax aggressiveness. Some research

² In this study I use the term managerial opportunism in a broad sense to mean any actions taken by management that are inconsistent with shareholder interests including the excess consumption of perquisites or the pursuit of activities designed to mislead investors. The use of this term is consistent with the discussion of managerial diversion in Desai and Dharmapala (2006a).

³ Note that using stock returns as a measure of firm performance in an effort to identify opportunistic behavior on the part of managers is a joint test of stock market efficiency and the alignment of manager and shareholder interests. These tests are subject to several limitations that are discussed in detail in the following sections.

provides evidence consistent with BTDs being, at least in-part, attributable to aggressive financial reporting (e.g. Phillips et al. 2003; Hanlon 2005). In contrast, Desai (2003) argues that the increase in BTDs in the 1990s is consistent with increasing levels of tax sheltering. I find evidence consistent with BTDs being a useful proxy for tax aggressiveness in a powerful setting where it is clear *ex post* that firms were aggressive in their tax reporting as evidenced by their participation in publicly identified tax shelters.⁴ However, it should be noted that this association alone does not rule out the possibility that BTDs reflect *both* tax and financial reporting aggressiveness.

This investigation also extends recent research investigating whether tax aggressiveness is a signal of an overall aggressive corporate environment. Specifically, I test whether firms that are engaged in tax sheltering also exhibit more aggressive financial reporting practices. Frank et al. (2007) find that aggressive financial reporting is associated with aggressive tax reporting using unexplained or residual permanent BTDs as their proxy for aggressive tax reporting. I provide additional evidence on this relationship by including a measure of financial reporting aggressiveness in a comprehensive model of tax shelter participation and examining its association with actual incidences of tax sheltering. I find a positive association between aggressive financial reporting and the incidence of tax sheltering.

Finally, I use the model of tax shelter participation developed in this study and the sample of identified tax shelter firms to provide preliminary evidence on the association between tax sheltering and shareholder/manager incentive alignment. Building on the theoretical framework developed by Desai and Dharmapala (2006a), I predict and find that corporate governance is an

⁴ I use an estimate of book-tax differences that is designed to reflect both temporary and permanent differences. I use this measure because different types of tax shelters can lead to either permanent or temporary differences. See Appendix A for a description of the financial reporting implications for the sample tax shelters.

important mediating factor in determining whether tax sheltering is associated with wealth creation for shareholders or managerial opportunism.

The remainder of the paper proceeds as follows. The next section provides a detailed analysis of the identified tax shelter firm characteristics. Section three develops the model to identify tax shelter participants. Section four discusses the results. Section five discusses the tests investigating the association between managerial opportunism and tax sheltering. The final section concludes.

II. Characteristics of Tax Shelter Firms

The Joint Committee on Taxation (1999) defines a corporate tax shelter as a plan or arrangement that is designed principally to avoid or evade federal income tax without exposure to economic risk or loss. Bankman (1999) offers a more creative definition, “a tax shelter can be defined as a product whose useful life is apt to end soon after it is discovered by the Treasury.” Specifically, Bankman argues that tax shelters are tax motivated transactions based on a literal interpretation of government regulations that are inconsistent with the original intent of the legislation. For the purposes of this study, the tax shelter sample is limited to firms that were either accused by the Treasury or identified in the press as tax shelter participants.

As indicated in Panel A or Table 1, the tax shelters examined in this study are based on a combination of two sources. One source is Graham and Tucker (2006), who conducted a search of Tax Court dockets and the popular press to identify 43 public corporations accused of tax sheltering between 1975 and 2000. The sample was then augmented by 18 additional corporate tax shelter participants from the Factiva Database. This search was conducted for the periods between January 1, 1990 and December 31, 2007 using the key words “tax shelter” and

“corporat.*” Consistent with Hanlon and Slemrod (2006), I recognize that there is no generally accepted definition of tax sheltering and that some of the firms in this sample may not have received a Notice of Deficiency from the IRS. Panel B of Table 1 indicates many of the shelters span multiple years, and consequently the sample is comprised of 215 firm-year tax shelter observations.

The tax shelters in this study include: 16 cases involving transfer pricing; 12 corporate-owned life insurance (COLI) transactions; seven contingent payment installment sales; seven contested liability accelerations; four lease-in, lease-out (LILO) deals; two cross border dividend capture cases; two intellectual property havens; two 401(k) Accel shelters; and seven shelters categorized as other. A summary of each type of tax shelter and the potential financial reporting implications is presented in Appendix A.⁵

a. Book-tax differences

I begin developing a profile of tax shelter firms by first examining the effect of tax sheltering activity on BTDs using the sample of identified tax shelter firms. The difficulty of identifying aggressive tax reporting firms stems in part from the ongoing uncertainty regarding the causes of BTDs. Previous research has suggested that large positive BTDs are partially caused by aggressive financial reporting. Hanlon (2005) finds that firms with large positive temporary BTDs have less persistent GAAP earnings and concludes that investors appear to view large BTDs as a “red flag” indicating low quality earnings. This view is supported by Lev

⁵ Graham and Tucker (2006) also provide an excellent summary of each type of shelter along with a summary of key judicial doctrines related to tax sheltering.

and Nissim (2004) who find that the ratio of tax-to-book income predicts earnings growth for up to five years ahead.⁶

Despite the view of some that large BTDs are an indicator of aggressive financial reporting, some research suggests that large positive BTDs are a signal of tax aggressiveness. Desai (2003) argues that the divergence between book and tax income during the 1990s was not attributable to traditional drivers of book-tax differences such as depreciation, but was instead caused by increased levels of tax sheltering. Additional support is provided by Heltzer (2006) who finds results consistent with BTDs providing insight into a firm's relative level of tax reporting aggressiveness, but not a firm's relative level of financial reporting aggressiveness.⁷ Finally, in a contemporaneous study Desai and Dharmapala (2007) examine 14 firms involved in tax shelter litigation and find a positive association between incidence of sheltering and book-tax differences.

An additional difficulty in examining BTDs as a sign of aggressive tax reporting arises because BTDs can be caused by firm-specific characteristics that are independent of aggressive tax or book reporting strategies. Examples include normal temporary differences such as those that result from differences in the rates of depreciation between the two systems of accounting. BTDs could also arise from normal permanent differences such as the interest on tax-exempt municipal bonds which is included in book income, but excluded from taxable income. Hanlon

⁶ There are a couple of key differences between the continuous measure of total BTDs used in this study and those examined in Hanlon (2005) and Lev and Nissim (2004). Hanlon (2005) uses indicator variables set equal to one for firms in the top quintile of large positive and large negative temporary book-tax differences. Hanlon (2005) also eliminates all firms with a pre-tax financial reporting loss from her study. Lev and Nissim in contrast use a multinomial variable with values between 1 and 5 based on the ratio of taxable income to book net income. Similar to Hanlon (2005), Lev and Nissim restrict their sample to firms with positive earnings.

⁷ Using the Basu (1997) measure of conservatism, Heltzer (2006) examines the level of financial reporting and tax reporting conservatism for firms with large positive BTDs and finds that the financial reporting conservatism for these firms is similar to that of other sample firms. However, applying the same measure of conservatism to taxable income, she finds that firms with large positive BTDs do exhibit more conservative (and therefore more aggressive from a tax perspective) tax reporting.

(2003) and McGill and Outslay (2004) identify a number of factors that make it difficult to draw inferences about the degree of sheltering activity in which a firm has engaged simply by examining the extent of a firm's BTDs. Firm-specific characteristics such as the extent of a firm's foreign operations or the level of its capital expenditures can lead to large BTDs that could be unrelated to the type of aggressive tax reporting characterized by corporate tax shelters.

I begin my analysis of the association between BTDs and tax sheltering by examining in detail the BTDs of the identified tax shelter firms and estimating the impact of the tax sheltering activity on their BTDs. Panel A of Table 2 provides descriptive statistics for the 33 tax shelter firms where I was able to identify the extent of the federal tax savings resulting from the tax shelter. The mean (median) federal tax savings resulting from the tax shelters was \$375.5 (\$66.5) million. These tax savings numbers likely understate the total value of the tax shelter to the firm because they do not include potential state income tax savings that is also likely to arise from the tax shelters. The sources used to identify the tax savings are listed in the final column of Panel A. In most cases, the tax savings data was gathered from court documents associated with the disputed tax shelter.

Table 2 indicates the mean (median) reported BTDs for the tax shelter firms during the years of active tax shelter participation are positive. In order to calculate an estimate of BTDs, I first calculate an estimate of taxable income based on financial statement information. Book income is pre-tax book income (data 170). Taxable income is calculated by grossing up the sum of the current federal tax expense (data 63) and the current foreign tax expense (data 64) and subtracting the change in NOL Carryforward (data 52).⁸ If the current federal tax expense is

⁸ Taxable income is grossed up by the top U.S. statutory tax rate (STR) equal to 48% for tax years 1975 through 1978, 46% for tax years 1979 through 1986, 40% for 1987, 34% for tax years 1988 through 1993, and 35% thereafter.

missing, total current tax expense is calculated by subtracting deferred taxes (data 50), state income taxes (data 173) and other income taxes (data 211) from total income taxes (data 16). The BTD is then calculated as the difference between book and tax income. This measure of BTDs is designed to reflect both permanent and temporary differences.⁹ The BTDs reported in Table 2 are the cumulative BTDs for tax shelter firms for all of the years they were identified as participating in a given tax shelter.

Next, I calculate the revised BTDs to remove the effect of the tax sheltering activity. The first step in this process is to identify whether management of the firm recognized the tax benefits associated with the tax shelter during the period the firm was engaged in tax sheltering.¹⁰ To do this, I reviewed the financial statement footnotes of each firm for the period of active tax sheltering through the year when the tax dispute was ultimately settled. For 10 of the 33 firms it was evident from reading the footnotes that the firm had recognized the tax benefit from the tax shelter during the period they were engaged in the tax sheltering. The following excerpt from the 2001 Annual Report of Ruddick Corporation illustrates the type of disclosure made by a firm that had previously recorded the tax benefit from their tax shelter activity.

In fiscal 2001, the Company recorded a non-recurring charge of \$20.0 million reflecting the terms of settlement with the Internal Revenue Service ("IRS") for income tax exposure related to the disallowance of deductions for its corporate owned life insurance ("COLI") policy loan interest and administrative fees for all the years of the insurance program since its inception October 4, 1993. The settlement provided for the surrender of the related insurance policies, thereby eliminating any material future tax exposure.

⁹ Hanlon (2005) excludes the effect of permanent differences when examining book-tax differences because of the difficulty associated with measuring permanent items. For purposes of this study, however, I include the effect of permanent differences because I am investigating the association between book-tax differences and tax shelters, much of which give rise to permanent book-tax differences (McGill and Outslay 2004).

¹⁰ Recognizing means recording a financial statement benefit and could involve, among other items, recording a smaller current tax expense or reducing an existing tax related liability.

It is important to note that the IRS had only mixed success in challenging the tax shelters identified in this study. In some cases, such as Ruddick, the tax benefits generated by the identified tax shelters were ultimately reversed. The IRS typically challenges the shelters on the grounds that they lack economic substance or a business purpose. However, it is often difficult to prove a transaction lacks a business purpose or economic substance and in some notable cases such as *United Parcel Service of America Inc. (UPS) v. Commissioner*, the courts ultimately ruled against the IRS. See Graham and Tucker (2006) for a complete discussion of the key doctrines developed by the IRS to challenge corporate tax shelters.

Once it is clear that a firm recognized the tax benefits generated by the identified tax shelter, I then calculate the effect of the tax shelter benefits on the firm's BTDs. The identified federal tax savings are grossed up by the applicable statutory federal corporate tax rate at the time the firm engaged in the tax shelter to determine the impact of the tax sheltering on taxable income.¹¹ I then subtract the grossed-up tax benefit from the firms reported BTD to calculate a revised BTD. The reported BTDs in Table 2 represent the total aggregate BTDs for all the years the firm was engaged in the tax shelter. For the cases where it was unclear from a review of the financial statements whether the firms recognized the full tax benefit generated by the tax shelter I made the simplifying assumption the full tax benefit was recognized in calculating the revised BTD for those firms. The results in Table 2 indicate that when the cumulative BTDs are adjusted to remove the effect of the identified tax shelter, the mean BTD remains positive but is reduced by 102% and the median BTD actually becomes negative.

¹¹ If the statutory federal corporate tax rate changed during the years a firm engaged in tax sheltering I attempted to identify the federal tax savings for each respective year and gross those amounts up by the applicable rates for each year. However, if I was unable to determine the tax benefits for each respective year, I used the average corporate statutory tax rate over all the years the firm engaged in the tax shelter.

An alternative to recognizing the tax shelter benefit would be to record a contingency for the tax position if management believed it was probable the position would be successfully challenged by the relevant tax authority. Pursuant to SFAS No. 5 (FASB 1975) firms must accrue a loss contingency for uncertain tax positions if the loss is probable and reasonably estimable.¹² For 8 of the 33 firms in Panel A it was clear from their footnote disclosures that management had not recognized the benefit associated with the tax shelter. The following excerpt from Black & Decker regarding their participation in a contingent-payment installment sale tax shelter illustrates the type of disclosure made by tax shelter firms when management had not recorded the benefit associated with the tax shelter during the period of active tax sheltering:

During 2003, the Corporation received notices of proposed adjustments from the United States Internal Revenue Service (I.R.S.) in connection with audits of the tax years 1998 through 2000. The principal adjustment proposed by the I.R.S. consists of the disallowance of a capital loss deduction taken in the Corporation's tax returns. The Corporation intends to vigorously dispute the position taken by the I.R.S. in this matter. The Corporation has provided adequate reserves in the event that the I.R.S. prevails in its disallowance of the previously described capital loss and the imposition of related interest. Should the I.R.S. prevail in its disallowance of the capital loss deduction and imposition of related interest, it would result in a cash outflow by the Corporation of approximately \$140 million. The Corporation believes that any such cash outflow is unlikely to occur until some time after 2004.

In the case of firms that record a contingency for the full extent of the benefit generated by the tax shelter, the tax shelter activity would have no impact on their BTDs during the period

¹² Gleason and Mills (2002) find that for a sample of 100 large manufacturing firms over the nine year period from 1987-1995 only 27 percent of the firms disclose any contingent tax liability and only 30 percent of those firms provide all the disclosures required by SFAS No. 5. These findings suggest that not all firms were using the guidance provided by SFAS No. 5 in determining whether to disclose contingencies associated with income taxes. Consistent with this finding, for 15 of the tax shelter firms identified in Panel A of Table 2 I was unable to clearly determine whether they had recorded a contingency for the tax benefit generated by the identified tax shelter.

of active tax shelter participation.¹³ Consequently, the BTDs of the 8 firms that appear to have recorded contingencies for their tax shelter positions would not be affected by their tax shelter activity. It is evident from examining the BTDs of the identified tax shelter firms that the tax sheltering activity has a significant impact on the reported BTDs of many of these firms. However, there is a sub-set of these firms that are not recording the tax benefit associated with their tax sheltering activity at the time they are engaged in the sheltering due to the uncertainty surrounding the ultimate sustainability of the tax benefits generated by the shelter. In these cases BTDs are likely to have limited use as a signal of tax sheltering.¹⁴

b. Additional Tax Shelter Characteristics

Panel A of Table 2 also reports the effective tax rates (ETRs) of the tax shelter firms during the period of active tax sheltering and an estimation of what their effective tax rates would have been without the impact of the tax shelter activity. The effective tax rate is calculated as the total tax expense divided by pre-tax book income and is averaged over the years the firm was identified as participating in a given tax shelter. Consistent with the adjustment of the cumulative BTDs for the effect of tax sheltering, the ETRs of the firms that booked contingencies associated with their tax shelter positions are not adjusted.¹⁵ The median unadjusted ETR reported by the tax shelter firms was 33% and the median adjusted ETR is estimated to be 37%. It is important to note that this analysis likely understates the impact of the

¹³ If ultimately some portion of the tax benefit derived from the tax shelter was sustained upon examination then the firm would recognize this benefit at the time the dispute was resolved and presumably reduce their tax expense (increase income) and increase their reported BTDs at that time.

¹⁴ Consistent with this conjecture, in untabulated results I find that for the 8 firms that appeared to record full contingencies associated with their tax sheltering activity, there is not a significant difference between their BTDs and those of 8 size and industry matched control firms.

¹⁵ Book-tax differences resulting from differences in the timing of recognition for an expense or income item between book and tax reporting would not result in a reduction in the effective tax rate as calculated in this analysis. Only one of the 33 tax shelters identified in Table 2 is expected to generate only temporary book-tax differences. That tax shelter is the lease-in, lease-out tax shelter employed by BB&T Corporation. See Appendix A for a discussion of the financial reporting treatment of this particular tax shelter.

tax sheltering on the ETR of these firms because of the likely state tax benefit also generated from the sheltering activity.

Panel B provides some additional descriptive statistics related to the tax shelter cases. Notably, in 14 cases I was able to identify the original amount of interest assessed by the IRS related to the tax deficiency stemming from the tax shelter activity. For these cases, the mean amount of interest assessed was \$154.5 million, representing on average 40% of the total tax deficiency. Further, I was able to identify the proposed penalties assessed by the IRS for 9 of the cases, which on average amounted to 9.26% of the proposed tax deficiency. These findings suggest the interest and penalties associated with tax sheltering represent an economically significant cost to the firms in the event the IRS is successfully in challenging these transactions. Finally, in 7 of the cases I was able to identify the total fees that the firms paid to the tax shelter purveyors to implement the tax shelter, which on average amounted to \$8 million or 7.92% of the federal tax savings generated from the shelter. Examining 365 large U.S. corporations Mills, Erickson, and Maydew (1998) find that an additional \$1 investment in tax planning results in a \$4 reduction in tax liabilities. While my findings suggest a larger return to tax planning costs for these firms, I do not include the in-house costs associated with implementing these shelters which are also likely to be economically significant.

c. Tax Shelter Firms and Control Firms

The next step in examining BTDs as a signal of tax sheltering activity is a comparison of the BTDs of the identified tax shelter firms and a set of matched control firms. The primary control sample is composed of a set of firms matched to the tax shelter sample based on size, industry, and year. Specifically, I select the control sample using the following three criteria: (1) fiscal year, (2) two-digit SIC code, and (3) nearest total assets (data 6) in the current year. I

choose to match on size because size is a key condition for engaging in most of the tax shelters examined in this sample because of the scale and complexity of the shelters. For the primary analysis of tax shelter firm characteristics, I collapse the years a firm was alleged to have been engaged in tax sheltering into a single “event year.” This is accomplished by averaging the corporate data for a given firm over all the years a shelter occurred. Graham and Tucker (2006) note this approach helps to address concerns about the lack of independence between multiple observations from the same firm. The control firms are matched to the tax shelter firms in the initial year of tax sheltering and, consistent with the shelter firms, the corporate data for each control firm is averaged over the same years its matched shelter firm was actively sheltering.

Panel A of Table 3 presents the descriptive statistics for the 33 tax shelter firms where I was able to identify the amount of the federal tax savings generated by the tax shelter and the set of matched control firms. The descriptive statistics are intended to provide a comparison of the tax shelter and matched control firms on a range of characteristics including size and profitability. The results in Table 3 indicate the control firms hold significantly more debt and have lower BTDs, than the sample of tax shelter firms. The control firms are also marginally significantly ($p < 0.15$) less profitable and incur marginally significantly less research and development expenses than the identified tax shelter firms. There is however no significant difference between the tax shelter firms and control firms in terms of the level of foreign income, or the level of discretionary accruals.

The results in Panel A of Table 3 also indicate the median ETRs of the tax shelter firms are lower than those of the matched control firms. However, it is interesting to note that when the affects of the tax shelter activity are removed from the calculation of the ETR for the shelter firms, the median adjusted ETR of those firms is almost identical to the median ETR reported by

the matched control firms of 37%. Similarly, when the scaled BTDs of the tax shelter firms are adjusted for the affects of the tax sheltering activity, the results in Panel A indicate they are no longer significantly greater than the BTDs of the matched control firms. This finding suggests the difference in the BTDs of the tax shelter firms and control firms is largely a function of the tax sheltering activity. Panel B of Table 3 reports the Pearson and Spearman correlation coefficients for key variables. The results in Panel B indicate significant associations between many of the variables that will be used in the tax shelter model discussed in the following section.

Figure 1 depicts the median aggregate BTDs of the 33 identified tax shelter firms with available tax savings data and the set of 33 matched control firms in the years surrounding the period of active tax sheltering. In Figure 1, Year 0 represents the active tax shelter years and is the median book-tax difference for the firms during those years. Years -3 through -1 represent the years immediately preceding the initial year of tax shelter participation, and Years + 1 and +2 represent the years immediately following the final year of active tax sheltering. Consistent with the scaled BTD results reported in Table 3, the median aggregate BTDs of the tax shelter firms exceed those of the matched control firms during the years of active tax sheltering as well as the years immediately preceding and following the tax sheltering activity. Interestingly, there is a clear spike in the BTDs of the tax shelter firms during active tax shelter years represented by Year 0. This is consistent with the analysis in Table 2 indicating that tax sheltering activity has a significant impact on BTDs.

Figure 1 also depicts the median aggregate BTDs of the tax shelter firms adjusted for the impact of the tax shelter activity during the year of active sheltering. Adjusting for the effect of the tax sheltering activity leads to a clear drop in the BTDs of the median tax shelter firm even

relative to the years preceding and following the tax shelter activity. The fact that the BTDs of the tax shelter firms exceed those of the matched control firms and exceed the adjusted BTDs during the years of tax sheltering suggest that these firms might have been involved in other types of tax shelter activity in the years surrounding the tax shelter identified in this study.

III. Developing a model to identify tax shelter participants

The above analysis suggests that tax shelter firms exhibit characteristics such as large BTDs that might be useful in attempting to identify active tax shelter participants. The next step in this analysis is to utilize the sample of identified tax shelter firms to develop a model that can be used to help identify active tax shelter participants from a broader sample of firms. To investigate the characteristics associated with tax shelter participation I estimate a logistic regression of a binary variable (*SHELTER* = 1 or 0) on a set of variables hypothesized to be associated with tax sheltering. The estimation equation is:

$$\ln \frac{P_{Shelter}}{1 - P_{Shelter}} = \beta_0 + \beta X + \varepsilon \quad (1)$$

where $\ln \frac{P_{Shelter}}{1 - P_{Shelter}}$ is the probability the firm is identified as currently engaged in tax sheltering.

$$\beta X = \beta_1 BTD_{it} + \beta_2 DAP_{it} + \beta_3 LEV_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 FOREIGN INCOME_{it} + \beta_7 R\&D_{it}$$

where:

BTD_{it} = is calculated as the difference between book income and taxable income, scaled by total assets,

DAP_{it} = is the average discretionary accruals from the modified performance-adjusted cross-sectional Jones Model developed by Kothari et al. (2005),

LEV_{it} = long-term debt (data 9) divided by total assets,

$SIZE_{it}$ = the log of total assets (data 6),
 ROA_{it} = pre-tax earnings (data 170) divided by total assets,
 $FOREIGN\ INCOME_{it}$ = an indicator variable set equal to one for firm observations reporting foreign income, and set to zero for all other observations,
 $R\&D_{it}$ = total research and development expenditures (data 46), divided by total assets.

The above model of tax shelter participation is a non-standard model because it does not attempt to predict which firms will enter into tax shelters in the future. Rather, all of the variables are measured during the period of actual tax shelter participation because the purpose of the model is to identify characteristics that can be used to identify firms that are actively engaged in tax sheltering.

The first variable included in the model of tax sheltering is BTDs. If large positive BTDs are a signal of aggressive tax reporting, then I expect a positive and significant relation between BTDs and incidence of tax sheltering.¹⁶ The BTD variable used in the model is calculated as described in the previous section.

Hanlon (2003) and Hanlon et al. (2005) identify a number of problems associated with estimating taxable income from the financial statements. First, the current tax expense under GAAP is not reduced by the tax benefit the firm receives from employee stock options.¹⁷ As a result, for firms with tax benefits related to stock options my estimation of the firm's taxable income would be overstated by the amount of the tax deduction associated with stock options.

¹⁶ An alternative explanation for a positive association between BTDs and actual incidence of tax sheltering is that I am simply modeling the process used by the IRS to detect tax sheltering. Mills (1998) documents a positive association between IRS proposed audit adjustments and the level of a firm's book-tax differences. She also notes that the IRS includes firms in their coordinated examination program on the basis of a point system that measures the size and complexity of their tax return and that firms in this program are usually audited every year by the IRS. Given that my sample of tax shelter firms and matched firms from Control Group (1) are large firms, it is reasonable to assume many of these firms are likely subject to annual audits by the IRS. As a result, the IRS likely uses much more detailed information to audit these firms than aggregate measures such as BTDs that can be calculated from a firm's financial statement disclosures. Nonetheless, it is difficult to completely rule out this alternative explanation.

¹⁷ See Hanlon and Shevlin (2002) for a detailed discussion of the accounting for the tax benefit associated with employee stock options.

Second, firms often book contingencies for tax positions that may be reversed upon examination. These contingencies often referred to as tax cushion, increase the tax expense reported on a firm's financial statements relative to the actual expense reported on the firm's return. Similar to the benefit from stock options, failure to account for these contingencies would lead to an overstatement in my estimation of taxable income. Third, tax expense is reported after credits, such as the R&D and foreign tax credits. Because I gross up the entire current tax expense I will be understating taxable income for firms with tax credits. Fourth, it is difficult to identify the appropriate rate to use for grossing up the foreign current tax expense. To the extent foreign rates differ from the U.S. rate, this will add measurement error to my BTM measure. Finally, for firms with negative taxable income, the current tax expense is truncated at zero or is reported as a negative in the case of a refund. I attempt to address this issue by subtracting the change in the NOL carryforward.

Each of the above items could introduce measurement error into my estimate of taxable income. Plesko (1999 and 2003) examines how well financial statement numbers correlate with actual tax return numbers. As a part of his analyses, he reports a regression coefficient of 0.986 when actual tax liability before tax credits is regressed on the reported current federal tax expense.¹⁸ This provides some support for using financial statement information to calculate a firm's taxable income.

a. The association between aggressive tax and financial reporting

¹⁸ I should note that Plesko (1999) conducts this analysis on a set of carefully selected U.S.-based firms with 1992 financial statement data that was then matched to 1992 tax return data potentially biasing upward the correlation. Plesko limits the sample to firms with consolidated financial statement assets close to the assets reported on Schedule L of their Form 1120 in an effort to identify firms with limited or no consolidation differences. More recently, using a matched tax return-Compustat-Execucomp sample from 2000-2004, Lisowsky (2007) finds that SFAS 109 financials statement disclosures are significantly related to the total tax reported on firms' tax returns. However, consistent with the concerns described above, he finds that for every dollar of current federal tax expense reported in the financial statements only approximately \$0.55 is reported in Total Tax on the tax return.

The second variable included in the above model, DAP, is a measure of discretionary accruals. Discretionary accruals are calculated using a cross-sectional modified Jones Model with lagged return-on-assets (Kothari et al. 2005).¹⁹ Many managerial decisions involve “weighing the tax incentives to lower taxable income against the financial reporting incentives to increase book income. [However] neither consideration appears to consistently dominate the other in decision-making” (Shackelford and Shevlin 2001). For example, Erickson et al. (2004) find 27 firms cited by the SEC for financial reporting fraud paid additional taxes in order to overstate their book income. In contrast, Guenther et al. (1997) examine a set of cash-basis firms that deferred income recognition around the Tax Reform Act of 1986 in order to reduce their tax burden.

Researchers have also documented costs associated with nonconforming book and tax income. Hanlon (2005) finds evidence consistent with large positive BTDs being associated with less persistent earnings. Mills (1998) finds that proposed IRS adjustments are positively associated with large BTDs.^{20,21} These findings indicate that BTDs can be a signal of both tax aggressiveness and financial reporting aggressiveness. However, little research has been done on the connection between aggressive financial and tax reporting. Frank et al. (2007) hypothesize

¹⁹ In calculating discretionary accruals, I use a measure of total accruals based on cash flow from operations (data 308) when that data item is available. Specifically, I calculate total accruals as net income before extraordinary items (data 123) minus cash flow from operations scaled by beginning of the year total assets. For all other observations, total accruals are calculated using a balance sheet approach.

²⁰ It is important to note that while Mills (1998) provides evidence that proposed IRS audit adjustments increase as the excess of book income over taxable income increases, Mills and Sansing (2000) find that conditional on being selected for audit, whether a transaction generates a book-tax difference is unrelated to the final settlement. This is an important distinction, because as discussed in the previous section, this study focuses on proposed IRS adjustments associated with identified tax shelter activity.

²¹ Mills (1998) uses three alternative measures of BTDs. Her full sample analysis utilizes IRS data and measures BTDs as the difference between pre-tax book income and taxable income. This measure more closely matches the measure of BTDs used in this study because it captures both permanent and temporary book-tax differences. She also uses the difference between the federal tax expense for books less the declared tax on the tax return as alternative measure of BTDs and finally the deferred tax expense from Compustat as a third measure. Mills (1998) limits the sample to firms with book income in excess of taxable income.

that some firms have a tendency toward aggressive corporate behavior which simultaneously affects financial and tax reporting choices. Using performance-matched discretionary accruals as their proxy for financial reporting aggressiveness and the unexplained portion of permanent BTDs as a proxy for tax reporting aggressiveness, Frank et al. (2007) find that firms choosing to report aggressively for book purposes also report aggressively for tax purposes. My examination of the connection between aggressive financial reporting and aggressive tax reporting differs from the analysis conducted in Frank et al. (2007). Frank et al. (2007) use a measure of aggressive tax reporting based only on permanent BTDs. While many tax shelters do result in permanent BTDs, several of the prominent tax shelters from the late 1990s such as the LILO and CLAS tax shelters give rise to temporary BTDs. By using actual cases of tax sheltering, I am able to examine incidences of aggressive tax reporting that cause both permanent and temporary differences.

Brown (2006) also examines the connection between aggressive tax and financial reporting by examining whether there is an association between firms that adopted corporate-owned life insurance (COLI) policies and a measure of discretionary accruals. Her results are consistent with firms with higher discretionary accruals being more likely to have adopted a COLI shelter. This study extends the work of Brown (2006) by examining a broader sample of firms engaged in a variety of tax shelters. Specifically, I examine a sample of tax shelter firms that employed 16 distinct types of tax shelter vehicles (including COLIs), which allows for a more generalizable analysis of the relationship between aggressive tax and financial reporting. If the decision to engage in corporate tax sheltering is a signal of an overall aggressive corporate environment, then I would expect discretionary accruals to be positively associated with incidences of tax sheltering.

b. Other characteristics associated with tax sheltering

In addition to testing the association between the incidence of tax sheltering, BTDs and aggressive financial reporting, I also control for several additional firm-specific characteristics that previous research has suggested could be associated with aggressive tax reporting. Dyreng et al. (2006) find that long-run tax avoidance is positively associated with firm size.²² Because tax shelters represent an extreme case of aggressive tax avoidance, I investigate whether firm size is associated with tax shelter participation. Graham and Tucker (2006) find that tax shelter participants use less debt, on average, than does a set of size and industry matched control firms. This result is consistent with firms using tax shelter deductions as a substitute for the interest deduction associated with debt. For this reason, I include a firm's leverage ratio in modeling tax shelter participation. I expect the leverage ratio to be negatively associated with incidence of tax sheltering.

Mills and Newberry (2005) provide an alternative explanation for the negative association between leverage and tax shelter participation suggesting that tax sheltering itself could act to remove debt from a firm's financial statements therefore lowering leverage. In other words, it is the desire to create off-balance sheet financing via the tax shelter that causes this negative association rather than tax shelters acting as an additional form of non-debt tax shield. Consistent with this conjecture, Drucker (2005) reports that one of the benefits of the Merck off-shore intellectual property haven tax shelter included in this study was the ability of Merck to use the tax shelter to prevent significant sums of money raised from being recorded as debt on the firms books.

²² Dyreng et al. (2006) use a firm's cash effective tax rate (cash taxes paid over financial accounting income), calculated over periods ranging from one to ten years, as their measure of long-run tax avoidance.

In an effort to distinguish between these two alternative explanations for the negative association between tax sheltering and leverage I examine the leverage of the tax shelter firms in the three years preceding their tax shelter participation. If one of the motivations for the tax shelter firms to employ the identified tax shelters was to remove debt from their books then I would expect these firms to report significantly higher leverage ratios prior to engaging in tax sheltering. The results (untabulated) indicate the median leverage ratio was not significantly different during the active tax shelter years from any of the three preceding years. Further, in each of the years examined the median leverage ratio of the tax shelter firms was below the leverage ratio of the matched control firms. This finding does not rule out off-balance sheet financing as a possible contributing factor for entering into these tax shelters, but it suggests that the identified tax shelter firms were not highly leveraged firms seeking to remove debt from their balance sheet.

Hanlon et al. (2005) use IRS operational audit and appeals data to examine tax noncompliance and find that multinational firms have greater deficiencies relative to non-multinational firms. This result is consistent with multinational firms having more opportunities to develop tax shelter strategies associated with their foreign activities. In a contemporaneous paper Lisowsky (2008) uses confidential tax shelter data obtained from the IRS and finds that tax shelter likelihood is positively related to the extent of foreign operations. As a result, I test for the association between the existence of foreign income and incidence of tax sheltering. In addition, Hanlon et al. (2005) predict that firms with greater intangible assets will have more opportunities for aggressive tax planning. Consistent with this argument they find a positive association between a firm's intangible assets and the size of the firm's tax deficiency. Because only firms that use purchase accounting record intangible assets, I use the level of research and

development scaled by total assets as an alternative proxy for intangibles in an effort to better reflect the level of a firm's self-created intangibles.²³

IV. Results

Table 4 reports the results of logistic regressions examining the determinants and characteristics of incidence of tax sheltering using the matched pair control group. Table 4 presents both the estimated coefficients from the logistic regressions and the marginal changes (ΔProb) in the probability of using a tax shelter vehicle, implied by the estimated logit coefficients, which result from a unit change in the explanatory variables. The results of the full-sample analysis in Table 4 indicate that a one percent increase in BTDs leads to a statistically significant 2.78% increase in the probability the firm engages in tax sheltering. The results also indicate that, consistent with the findings of Graham and Tucker (2006), tax sheltering is negatively associated with the level of a firm's debt holdings. However, I do not find a significant association between incidences of tax sheltering and ROA, the existence of foreign income, or the level of research and development expenditures. Not surprisingly, the coefficient on the SIZE variable is also not significant, which is consistent with the control firms being effectively matched to the tax shelter firms on the basis of size. Goodness-of-fit statistics are consistent with a good fit for this empirical model of tax sheltering with correct prediction rates for the full sample model of 70%.

Column (2) of Table 4 adds a measure of earnings management, DAP, as an additional explanatory variable. The results indicate that a one percent increase in discretionary accruals leads to a statistically significant 3.45% increase in the probability the firm engages in tax

²³ I am grateful to an anonymous referee for suggesting the use of R&D as an alternative proxy for intangibles.

sheltering. This result suggests that aggressive accrual-based earnings management is positively associated with tax aggressiveness. This result is consistent with the argument that tax sheltering is one signal of an aggressive corporate environment. The coefficient on the BTD variable remains positive and significant with the addition of the DAP variable to the regression in Column (2). This result suggests the association between tax sheltering and BTDs is not driven by their common association with accrual based earnings management. Rather, this finding suggests BTDs contain information about aggressive tax reporting.

The next column in Table 4 presents the regression results for the sub-sample of the tax shelter firms with identified tax savings data and the associated matched control firms. Consistent with the results for the broader sample of tax shelter firms, BTDs remain positively and significantly associated with incidences of tax sheltering. However, in Column (4) of Table 4 I replace the BTD variable for the tax shelter firms with the ADJUSTED-BTD variable. The ADJUSTED-BTD variable is the estimated book-tax difference modified to remove the effect of the tax shelter activity. As discussed previously, this leads to a significant reduction in the BTDs of the mean tax shelter firm. For the matched control firms, the ADJUSTED-BTD variable is the same as the BTD variable. The results in Column (4) indicate that the ADJUSTED-BTD variable is still positively associated with tax shelter activity, but the association is no longer significant. This finding suggests that the tax sheltering activity itself is an important driver of the significant association between tax sheltering and BTDs and that when the effects of tax sheltering are removed the BTDs have limited use as a signal of tax sheltering.

Table 5 presents the results of a robustness check on the results reported in Table 4 using an expanded sample of control firms. Rather than limiting the control sample to one matched firm per tax shelter firm, I match firms on the basis of two-digit SIC code, year, and assets

(return on assets) within +/- 25 percent (+/- 50 percent) of the sheltering firm's assets (return on assets). This procedure results in numerous matched control firms for each tax shelter firm observation. Not surprisingly, the most dramatic difference between Tables 4 and 5 relates to the SIZE variable. Because the control firms in Table 5 are not matched as closely to the tax shelter firms on the basis of size, the SIZE variable is positive and significant in each estimated regression in Table 4. This result is consistent with the tax shelter firms being very large firms relative to the other firms in their industries. In contrast to Table 4, the results in Table 5 also indicate that both ROA and the existence of foreign income are both positively and significantly associated with tax sheltering in each specification of the regression reported in Table 5. The results for the other variables are generally consistent with those reported in Table 4.

Mills (1998, p. 350) limits her primary analysis to firms where book income exceeds taxable income, based on the assumption that BTDs "are most "suspicious" when book income exceeds taxable income." Consistent with this conjecture, in supplemental analysis Mills (1998) finds that for firms with negative BTDs, the magnitude of the BTD is not associated with the proposed audit adjustments. I extend this analysis to examine whether it is only positive BTDs that are associated with tax sheltering activity. To test this conjecture I include an indicator variable (which equals one if BTDs are < 0 , and zero otherwise) in the regression described in equation (1) and interact the indicator variable with BTDs. In untabulated results, I find the association between BTDs and tax sheltering remains positive and significant for firms with positive BTDs, but there is not a significant association between the magnitude of negative BTDs and incidence of tax sheltering. This finding is robust to the use of either set of control firms, however it should be noted that there are only 12 firms in the tax shelter sample with negative BTDs which significantly limits the power of this test.

I also test the association between the incidence of tax sheltering and two additional proxies for tax aggressiveness. I separately added the long-run cash effective tax rate measure developed by Dyreng et al. (2006) and an estimate of changes in tax cushion developed by Blouin and Tuna (2006) into the model of tax shelter participation in place of BTDs to test their association with the incidence of tax sheltering. The results (not tabulated) do not indicate a significant association between these two alternative measures of tax aggressiveness and my sample of actual tax shelter cases. However, cash taxes paid, which is only available on the Compustat database beginning in 1988 is required to calculate both these measures. As a result, this leads to a significant reduction in the sample of test firms ($N = 32$) available to examine these alternative proxies. This reduction in sample size leads to a corresponding reduction in test power.

V. Tax Sheltering and Managerial Opportunism

This section examines whether tax sheltering is associated with wealth creation for shareholders or whether it is associated with managerial opportunism. The purpose of this section is to provide a preliminary empirical analysis of predictions based on the theoretical framework developed by Desai and Dharmapala (2006a). This examination also provides an example of an application of the model of tax shelter participation developed in this study. Desai and Dharmapala (2006a) note that a critical element of a tax shelter is to design a transaction so as to obscure the underlying purpose of the transaction. Desai and Dharmapala (2006a) examine the decision by managers to engage in tax sheltering within the principal agent framework and

conjecture that the desire by managers to engage in actions not in the interest of shareholders and the desire to shield income from tax authorities could be complementary.²⁴

Hanlon and Slemrod (2006) directly test investors' perception of tax shelter participation by examining the stock market reaction to news of tax sheltering. They find that the average company's stock price declines when there is news about its involvement in a tax shelter. Hanlon and Slemrod (2006) acknowledge that in general this finding is not surprising given that news about expected tax shelter related penalties will almost certainly be viewed as negative. However, they do find some interesting cross-sectional variation in their results and note that the stock price decline associated with news about sheltering is much smaller than for accounting related misdeeds such as being accused of violating Generally Accepted Accounting Principles (GAAP) by the Securities and Exchange Commission (SEC). Hanlon and Slemrod (2006) suggest an additional explanation for the negative reaction to tax sheltering news could be that shareholders believe that if management is willing to cheat the IRS, then management might also be willing to cheat them. Consistent with this argument, they find that the stock price decline is smaller for firms with strong corporate governance. For these firms, news about tax shelter participation is less likely to cause shareholders to be concerned about management opportunism. Further, they find that for well-governed firms with especially high effective tax rates, news about tax shelter involvement is received favorably by the market. They contend that for firms where ex ante public information made it less likely investors would perceive the firm

²⁴ Desai and Dharmapala (2006a) provide a detailed examination of one specific tax shelter employed by Dynegy Inc. that helped managers manipulate the firm's reported operating cash flows and minimize taxes. In this particular case, management was specifically interested in the tax shelter because it would help obscure the firm's financial performance.

as tax aggressive, news about the firm's involvement in a tax shelter is received positively. This is consistent with investors viewing aggressive tax reporting positively for well-governed firms.

I extend this analysis by examining the stock return performance of tax shelter firms during the period they were actively engaged in tax sheltering, as well as the 24 month period prior to the initial year of tax sheltering, and the 24 month period following the final year of sheltering. Evidence of value destruction in tax shelter firms with poor corporate governance during the period of active tax shelter participation would be consistent with the argument that managers of poorly-governed firms use tax shelters as a means of engaging in diversionary activities. In contrast, if corporate governance mediates the extent to which tax shelters are used in a diversionary manner, then I would expect tax shelter firms with strong-governance characteristics to outperform those with poor-governance.

I use the Gompers et al. (2003) index of shareholder rights as a measure of corporate governance characteristics. This measure is constructed based on 24 different provisions which can be classified into five categories – tactics for delaying hostile bidders, voting rights, director and officer protection, other takeover defenses, and state laws. Each of these categories represents potential determinants of a firm's takeover vulnerability. The Gompers et al. (2003) index ranges from 0-24, where low scores indicate a lower degree of insulation for managers from hostile takeovers and therefore a higher quality of corporate governance. I expect that more insulated managers from poorly-governed firms will be better able to use tax shelters in an opportunistic manner.²⁵ Gompers et al. (2003) construct values of G for a large sample of firms

²⁵ Gompers et al (2003) provide results consistent with their G variable being correlated with factors such as firm size, institutional ownership, and past sales growth. Differing effects for well-governed and poorly-governed control firms could be a result of these factors and not their governance characteristics. However, to the extent I observe no difference in the performance of the well-governed versus poorly-governed control firms this helps to mitigate this concern.

for various years beginning in 1990. As a result, I limit my analysis to tax shelter and control firm observations with fiscal years beginning in 1990. I include a matched set of control firms in these regressions in order to help alleviate the concern that differences in performance between the well-governed and poorly-governed tax shelter firms are simply the result of differences in governance quality. Control firms are matched to the tax shelter firms on the basis of fiscal year and two-digit SIC code. Within the same industry, the matched firms are those with assets (return on assets) within +/- 25 percent (+/- 50 percent) of the tax shelter firm's assets (return on assets).²⁶

The indicator variable *POOR GOVERNANCE – CONTROL* is set equal to one for control firms with a corporate governance score above the sample median and set to zero for all other observations. The indicator variable *GOOD GOVERNANCE – CONTROL* is set equal to one for control firms with corporate governance scores equal to or below the sample median and to zero for all other observations. I do not expect a significant difference between the returns of the well-governed and the poorly-governed control firms. In other words, I do not expect governance quality alone to drive abnormal returns, but rather the combination of poor-governance and active tax shelter participation.

The indicator variable *POOR GOVERNANCE - SHELTER* is set to one for tax shelter firms with governance scores above the median score in my sample, and all other observations are set to zero. The regressions are conducted using monthly stock return data for the tax shelter firms. The monthly data for each of the Fama-French factors was drawn from Ken French's website. It is important to note that not all of the tax shelter firms have complete monthly stock return data for the periods examined. The abnormal return for the tax shelter firms with strong-

²⁶ In untabulated regressions I find the results are generally unchanged when a single size and industry matched set of control firms is used rather than the broader set of control firms described above.

governance is reflected in the intercept of the Fama-French regressions. Including the dummy variables in the Fama-French regressions allows me to interpret the coefficient on those variables as the abnormal monthly return attributable to those sets of firms incremental to the abnormal return for the well-governed tax shelter firms. If the combination of good-governance and tax sheltering is associated with wealth creation for shareholders then I would expect the coefficient on the *POOR GOVERNANCE - SHELTER* indicator variable to be negative and significant. This would indicate that the returns for the poor-governance firms are significantly lower than those for the good-governance tax shelter firms. I also interact the factor loadings with each of the indicator variables to allow the risk loadings to vary by group membership. The coefficients for these interaction variables are not tabulated.

a. Stock Return Performance of Identified Tax Shelter Firms

In interpreting the results of the stock return performance tests, I make the assumption that investors are aware that the tax shelter firms are aggressive corporate taxpayers. This does not necessarily imply investors are aware of the particulars of a firm's tax sheltering arrangement, or that news of a firm's tax shelter involvement does not convey some new information about the extent of the firm's tax reporting aggressiveness or potential penalties associated with the sheltering. However, I do assume that investors are aware that the tax shelter firms are engaged in aggressive corporate tax reporting schemes and incorporate this information into their valuation of the firm. Because it is difficult to discern when investors become aware the firm is planning to engage in aggressive corporate tax reporting I examine the 24 month periods surrounding the tax sheltering activity as well as the period when the firm was actively engaged in sheltering.

Table 6 reports the stock return performance of the tax shelter firms and a set of matched control firms. The intercept term representing the abnormal stock return of the well-governed tax shelter firms is positive and significant in each of the three periods examined. This result is consistent with tax sheltering creating wealth in firms with strong corporate governance. In contrast, the *POOR GOVERNANCE - SHELTER* variable is negative and significant during the period of active tax shelter participation and the 24 months following the period of active sheltering. This result indicates that the tax shelter firms with poor-governance provided significantly lower abnormal returns than the strong-governance tax shelter firms. The coefficients on both the *POOR GOVERNANCE – CONTROL* and *GOOD GOVERNANCE – CONTROL* variables are also negative and significant during the period of active tax shelter participation and the 24 months following the period of active sheltering indicating that each of the sets of control firms significantly underperformed the well-governed tax shelter firms. There was not a significant difference in performance between the well-governed and poorly-governed control firms in any of the periods examined. This is consistent with my conjecture that the quality of corporate governance alone will not drive a difference in abnormal returns, but rather it is the interaction of corporate governance characteristics and active tax shelter participation leads to a difference in abnormal returns.

Note that only the well-governed tax shelter firms exhibit significant abnormal returns during any of the periods examined. The combined coefficient for the intercept term and each of the respective indicator variables is not significantly different than zero for any of the variables during any of the periods examined. While the tax shelter firms with poor-governance underperformed the tax shelter firms with strong-governance, they did not exhibit negative abnormal returns. In general, the results are consistent with the assertion that tax sheltering is a

wealth creating activity for shareholders, but that this benefit is mitigated for firms with poor corporate governance. However, while these results are consistent with tax sheltering being associated with wealth creation in well-governed firms, it is impossible to determine whether the actual act of tax sheltering is the cause of those positive abnormal returns. It is entirely possible that tax sheltering is simply associated with other actions by management that produce positive abnormal returns.²⁷

In an effort to determine whether the abnormal returns are reasonable in light of the tax savings generated by the tax sheltering activity, I calculated the abnormal returns (not tabulated) for the sub-set of tax shelter firms with good governance and available tax savings data. For these firms using the traditional four-factor Fama-French (1993) model I calculated mean monthly abnormal returns of 0.47% during the period of active tax sheltering. Compounding these monthly returns over 12 months implies a one-year abnormal return performance of 5.8%. This level of abnormal returns would have increased the market value of this subset of tax shelter firms by an average of \$212.8 million. This compares to an average annual federal tax savings generated by the tax shelters of \$76.5 million for this subset of well-governed tax shelter firms. This result indicates that while the tax sheltering activity might be an important determinant of the observed abnormal returns it is unlikely to be the sole cause of the strong performance of these firms.

b. Stock return performance of predicted tax shelter firms

²⁷ To avoid some of the difficulties associated with long-window stock return tests and the assumptions regarding when investors incorporate information about firm's tax reporting behavior, I also examine the operating performance of the actual tax shelter firms and matched control firms during the period of active tax sheltering. The results (not tabulated) indicate that the mean after-tax earnings of the tax shelter firms are significantly greater than those of the matched control firms. I also examine the after-tax earnings of sub-samples of the well-governed and poorly-governed tax shelter firms during the period of active tax sheltering. Consistent with the stock return performance tests, the well-governed tax shelter firms report the strongest operating results of any of the sub-samples examined. Also consistent with the stock return tests, the poorly-governed tax shelter firms significantly under-perform the well-governed tax shelter firms, but not the matched control firms.

In order to examine the association between tax sheltering and managerial opportunism over a broader set of firms, I perform a two-stage analysis in which I use my model of tax shelter firm characteristics to predict which firms are likely to be currently engaged in tax sheltering. I then examine the stock return performance of these predicted tax shelter firms using an approach consistent with the analysis described above for the identified tax shelter firms. The purpose of this analysis is to provide a robustness check for the tests examining the stock return performance of the identified tax shelter firms, and to demonstrate the usefulness of a model which can identify firms currently engaged in tax sheltering.

I use the model from Column (2) of Table 4 to predict which firms are currently engaged in tax sheltering. This model includes the absolute value of discretionary accruals as a determinant of tax sheltering, and was estimated on 59 tax shelter observations and 251 matched control firm observations. Predicted values are obtained by plugging in each hold-out firm's characteristics into the model and using the estimated coefficients to determine a predicted value. The predicted probability of tax sheltering is calculated as follows:

$$P(\textit{Sheltering}) = \frac{e^{(\textit{PredictedValue})}}{(1 + e^{(\textit{PredictedValue})})}$$

The hold-out sample is composed of all firm-year observations not used in the first-stage estimation with the necessary data available to calculate each of the hypothesized tax shelter firm characteristics used in the model. In addition, I limit the hold-out sample to firm-year observations occurring after 1990 with available Gompers et al. (2003) governance data. Next, I rank the hold-out sample firm-year observations into quintiles based on the probability the firm is currently engaged in tax sheltering. Firm-year observations ranked in the top quintile are then designated as predicted tax shelter firms.

Table 7 reports the stock return performance of the predicted tax shelter firms and associated control firms. Consistent with the tests examining the stock return performance of the identified tax shelter firms, the predicted tax shelter firms with strong-governance significantly outperform both the poorly-governed predicted tax shelter firms and the well-governed and poorly-governed control firms. This result further supports the conjecture that the combination of strong-governance and active tax shelter participation is associated with wealth creation for shareholders.²⁸

VI. Conclusion

The purpose of this study is to develop a profile of the type of firm likely to be actively engaged in tax sheltering. This study also examines the circumstances in which tax sheltering is associated with wealth creation for shareholders and those in which tax sheltering might be used as a vehicle for rent extraction by management. I conduct this analysis by examining a set of firms identified in Tax Court records and press articles as having participated in corporate tax shelters. The results of my first analysis indicate that in the majority of the cases examined in this study, tax sheltering activity significantly increases a firm's BTDs. I also find that the identified tax shelter firms exhibit significantly higher BTDs than two alternative sets of matched control firms. This finding is consistent with BTDs being a useful signal of tax sheltering. However, when the effects of tax sheltering on the BTDs of the identified tax shelter firms are

²⁸ In untabulated tests I replicated the regressions reported in Tables 5 and 6 using the percentage of 5% block-holder ownership of the firm obtained from Compact Disclosure as an alternative measure of corporate governance. In replicating the tests from Table 5 using the actual tax shelter firms I did not find significant differences in the abnormal returns of any of the groups of firms using this alternative governance measure. However, because the block-holder data is only available for the years from 1996-2001, I was only able to match 22 of the tax shelter firm year observations to this data, which significantly reduced the sample size and therefore the power of this test. For the predicted tax shelter tests, which have a larger sample, the tests using this alternative proxy for corporate governance were generally consistent with those reported in Table 6.

removed, the tax shelter firms no longer exhibit significantly higher BTDs than the matched control firms. This result indicates the difference in BTDs between the tax shelter firms and the matched control firms is largely a function of the tax shelter activity.

This result provides support for previous research that attributes the growth in BTDs during the 1990's to increased tax sheltering. In addition, I find that tax sheltering is positively associated with firm size and the existence of foreign income. Consistent with Graham and Tucker (2006), I also find that firms engaged in tax sheltering tend to hold less debt.

As a part of my examination of tax shelter firm characteristics, I investigate whether there is a connection between aggressive book and tax reporting. The results of this analysis indicate that firms accused by the government of engaging in tax sheltering also appear to report aggressively for financial statement purposes. This finding is consistent with the theory that aggressive corporate behavior can lead to aggressive reporting for both book and tax purposes.

The final set of tests examine whether tax sheltering is associated with effective tax planning that creates wealth for shareholders or whether tax shelters are associated with managerial opportunism. The results indicate that tax shelter firms with strong corporate governance exhibit significant positive abnormal returns during the period of active tax shelter participation. In contrast, the tax shelter firms with poor-governance significantly under-perform the strong-governance tax shelter firms during the period of active tax shelter participation. These results are consistent with tax sheltering being associated with wealth creation for shareholders, while the benefit of tax sheltering is mitigated for firms with poor corporate governance. These results are supported by additional analyses that examine the performance of a broader set of firms predicted to be engaged in tax sheltering based on the model of tax shelter participation developed in the first part of this study. Consistent with the performance of the

actual tax shelter firms, the predicted tax shelter firms with strong-governance also significantly outperform the poorly-governed predicted tax shelter firms and control firms. While it is possible that tax sheltering itself is the source of the wealth creation, it is also possible that the combination of good-governance and active tax sheltering are simply a signal of strong incentive alignment between managers and shareholders that leads to superior performance.

There are several limitations to this study. I examine a set of tax shelter firms that were successfully identified and investigated by the IRS. While the use of tax shelters may be pervasive, this set of firms could represent a unique subset of tax shelter participants. As a result, it is possible the findings from this study will not generalize to a broader set of tax shelter participants. In addition, many of the specific types of tax shelters in which these firms participated have been curtailed by subsequent legislation and IRS investigation. Consequently, these findings may not generalize to newer forms of tax sheltering being employed by firms currently or in the future.

Appendix A: Tax Shelter Descriptions

1. Lease-in, lease-out (LILO)

In a LILO transaction a U.S. corporation leases long-lived property, such as a building, from a tax-indifferent party (such as a municipality) and then immediately subleases the property back to the same party. The lease calls for the U.S. corporation to prepay its rental obligation. This prepayment generates a significant deduction in the early years of the lease for tax purposes. For financial reporting purposes, the U.S. corporation is able to amortize the costs over the life of the lease. The early tax deduction is offset by income recognized by the U.S. corporation in the final year of the lease. However, the early net deduction can be used by the U.S. corporation to offset other unrelated income and provides a significant time-value benefit.

There were a total of four LILO transactions examined in this study, Graham and Tucker (2006) note that these shelters were popular from 1995 to 1999. Because the cost of the lease is amortized over a much longer period for financial reporting purposes than for tax purposes LILO shelters should generate a significant temporary book-tax difference. This difference would result in a deferred tax liability in the early years of the lease, but would not reduce the firm's effective tax rate.

2. Corporate-owned life insurance (COLI)

In a basic COLI transaction, the corporation purchases numerous cash value life insurance policies on the lives of its employees. The corporation will then borrow funds to pay the premiums on the policies. The anticipated build-up inside the policy is substantially offset by the interest expense from the borrowing so there is little net non-tax benefit associated with the policy. However, for tax purposes, the inside-buildup on the cash-value life insurance is not

included in income, but the interest on the debt used to fund the policy is deductible. This mismatch creates a significant tax benefit for the corporation.

The investment return inside a COLI policy would result in a permanent book-tax difference that would lead to a reduced effective tax rate. This would occur regardless of whether the firm borrowed to pay the premiums on the policy. There are a total of 12 COLI tax shelters examined in this study.

3. Contested liability acceleration strategy (CLAS)

The CLAS tax shelter was developed by KPMG and according to *The Wall Street Journal* (2004), the IRS reported the shelter generated \$1.7 billion in tax savings for several dozen companies. KPMG devised the CLAS shelter to help clients accelerate the timing of tax deductions for settlements of lawsuits and other claims against the corporation. Typically, deductions for these claims are not allowable until the claim is paid. However, one exception to this rule involves transferring money or other property to a contested liability trust before the claims are resolved. A firm would establish a trust with itself as the beneficiary, and then transfer noncash assets such as company stock or some type of intercompany note to the trust. The transferred items were intended to correspond to amounts owed related to a particular claim, and the firm would then take a deduction when the items were transferred to the trust. The CLAS shelter likely results in a timing difference between book and tax reporting, but the nature of this difference is dependent on when the deduction is taken for financial reporting purposes. There are seven CLAS shelters, all from the year 2000, included in the sample of tax shelter firms.

4. Contingent-payment installment sales (CPIS)

The purpose of the CPIS shelter is to generate a paper capital loss to offset a real capital gain generated by the corporation. A typical CPIS transaction would involve a U.S. corporation

forming a partnership with a tax-exempt foreign entity. In the beginning the foreign partner would have the overwhelming majority partnership interest. The partnership would then purchase short-term private placement notes eligible for the installment method of accounting. The partnership would then sell the notes for a large cash down payment with the balance made up of a comparatively small amount of debt instruments. The gain from the sale would be allocated according to partnership interests with the foreign entity receiving the majority of the gain. The partnership would then claim a large basis in the remaining debt instruments. At the end of the tax-year the partnership interests would be reversed and the partnership would distribute the cash to the foreign entity and the notes to the U.S. company in redemption of their partnership interests. The U.S. company would then sell the notes to a third party and because the basis in the notes greatly exceeds their value, the sale would create a large paper loss that could be used to offset existing capital gains. This type of shelter would lead to a permanent reduction in a firm's effective tax rate. There are seven CPIS shelters in the tax shelter sample.

5. Cross-border dividend capture (CBDC)

Under this tax shelter a corporation purchases foreign stock after a dividend has been declared immediately prior to the record date, and then it sells the stock ex dividend immediately after the record date capturing the dividend and the foreign withholding tax credit. The corporation realizes a short-term capital loss on the sale because of the price decline associated with the payment of the dividend, which offsets the dividend received by the corporation. This transaction allows the U.S. firm to capture the foreign tax credit to offset U.S. income tax liability from foreign shareholders who could not have used the credits because they have no U.S. income tax to offset. This type of shelter would lead to a permanent reduction in a firm's

effective tax rate through the use of increased foreign tax credits. There were two CBDC shelters in the Graham and Tucker (2006) sample.

6. Transfer Pricing

This type of shelter occurs when a U.S. corporation with a foreign subsidiary in a low-tax jurisdiction produces an asset at the foreign subsidiary and then has the subsidiary sell the asset back to the U.S. corporation at an above market price. Selling the asset to the U.S. parent at an above market price enables the company to subject most of the profit on the asset to the low foreign tax rate. To the extent that the company chooses to designate profits earned in the foreign subsidiary as permanently reinvested, a transfer pricing shelter will result in a reduction in its effective tax rate. There are 16 transfer pricing shelters in the Graham and Tucker (2006) sample.

7. Offshore intellectual property havens (OIPH)

In this type of shelter a U.S. multinational corporation establishes a subsidiary in a low-tax foreign jurisdiction such as Bermuda. The subsidiary then buys a portion of valuable intellectual property from the U.S. parent, such as trademarks and patents. The offshore subsidiary will then collect the royalties from sales of the parent company's products overseas. The IRS requires that royalties collected be reported, but payments made back to the U.S. are subject to discretion and are often set artificially low, limiting the extent to which royalties are subject to U.S. taxation. The firm can then use the remaining untaxed profits to expand operations overseas. Similar to the transfer pricing shelter, the OIPH shelter will result in a reduction in the participating firm's effective tax rate. There are two OIPH shelters included in the sample.

8. 401(k) Deduction Acceleration Strategy

Similar to CLAS, 401(k) Accel was developed by KPMG during the late 1990s. On October 14, 2005 *The Wall Street Journal* reported that KPMG sold the 401(k) Accel to at least 143 companies, which together "claimed undisclosed millions in accelerated tax deductions." The 401(k) Accel strategy requires a company's tax year to end on a different day than its 401(k) plan's fiscal year, which would be changed if necessary. The firm's board would then pass a resolution on or before the last day of the tax year -- but at the start of the 401(k) plan's new fiscal year -- fixing the company's minimum 401(k) contribution for the coming year. The firm would then record a tax deduction composed of both the prior year's contribution and a large portion of the next year's contribution. The 401(k) Accel strategy would likely result in a timing difference between book and taxable income. There were a total of two 401(k) Accel tax shelters examined in this study.

9. Other

There were seven tax shelters that only appeared in the sample one time. All of these observations were categorized as other tax shelters. This set of shelter observations includes interest rate swaps, money market principal strips, and sham transactions.

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Table 1: Panel A
Summary of sample selection criteria

Total sample of tax shelter firm observations from Graham and Tucker (2006)	43
Additional tax shelter firm observations obtained from Factiva database search	18
Less firm observations without the necessary data to calculate book-tax differences	<u>(2)</u>
Firms with an active tax shelter and complete data	<u><u>59</u></u>

Table 1: Panel B
Fiscal year firms engaged in tax sheltering

Fiscal Years	Number of Firm-years
1975-1979	22
1980-1984	36
1985-1989	23
1990-1994	64
1995-1999	54
2000-2002	16
Total	215

Table 1: Panel C
Industry distribution of sample firms

SIC Code	Industry Type	Number of Firms
1-999	Agriculture, Forestry, Fishing	0
1000-1999	Mining, Building	0
2000-2999	Construction	20
3000-3999	Manufacturing	15
4000-4999	Transportation, Communication, Electric, Gas	8
5000-5999	Wholesale, Retail	6
6000-6999	Financial Services	5
7000-7999	Hotels, Services	3
8000-8999	Services	1
9000-9999	International, Non-Operating	1
Total		59

Table 2: Panel A
 Estimated federal tax savings and financial reporting effects of tax shelter activity

Obs.	Firm	Shelter Type	Tax Shelter Years	Federal Tax Savings	Reported BTD	Revised BTD	Reported ETR	Revised ETR	Recognized Benefit	Source
1	IES Industries	CBDC	1991-1992	25,977	-12,740	-89,142	33%	51%	Yes	253 F.3d 350
2	Compaq Computer	CBDC/TP	1991-1992	79,338	175,630	-57,718	23%	37%	Uncertain	T.C. Memo. 1999-220
3	American Electric Power	COLI	1990-1996	319,000	635,510	-284,682	29%	35%	Yes	136 F. Supp. 2d 762
4	CM Holdings Inc.	COLI	1991-1994	4,400	-1,940	-14,694	27%	36%	Uncertain	No. 00-3875
5	Dow Chemical Co.	COLI	1989-1991	30,304	-683,590	-772,721	35%	35%	Yes	No. 03-2360
6	Ruddick Corp.	COLI	1993-1998	25,000	113,330	41,901	34%	40%	Yes	2000 Quarterly Report
7	Winn-Dixie	COLI	1993	1,599	57,770	53,201	35%	35%	Yes	113 T.C. 254
8	Donnelley RR and Son Inc.	COLI	1990-1998	185,000	410,590	-123,064	32%	37%	Yes	2001 Annual Report
9	W.R. Grace & Co.	COLI	1989-1998	53,500	-650,670	-805,742	23%	24%	Yes	2002 Form 8-K
10	AlliedSignal	CPIS	1990-1992	183,048	214,000	-324,375	9%	18%	Uncertain	76 T.C.M. (CCH) 325
11	American Home Products	CPIS	1990-1993	261,800	2,330,480	1,566,100	29%	33%	Uncertain	No. 01-5429
12	Black & Decker	CPIS	1998	113,000	-871,160	-871,160	45%	45%	No	Leone, 2004
13	Brunswick	CPIS	1990-1991	66,476	-105,090	-105,090	53%	53%	No	T.C. Memo. 1999-359
14	Colgate-Palmolive	CPIS	1988	33,320	-87,440	-185,440	27%	30%	Uncertain	73 T.C.M. (CCH) 2189
15	Coltec Industries Inc.	CPIS	1996	82,800	52,050	52,050	29%	29%	No	No. 06-659
16	BB&T Corp.	LILLO	1996-1998	3,296	921,300	921,300	27%	27%	No	No. 1:04CV00941
17	Florida Power and Light	OTHER	1992-1994	114,580	260,240	-70,279	35%	40%	Uncertain	80 T.C.M. (CCH) 686
18	Bmc Software Inc.	OIPH	1993	24,125	-17,020	-17,020	28%	28%	No	73 F. Supp. 2d 751
19	Merck	OIPH	1993-2001	1,600,000	10,133,470	10,133,470	30%	30%	No	Drucker, 2007
20	UPS	OTHER	1983-1984	67,201	684,800	538,710	43%	47%	Yes	T.C. Memo. 1999-268
21	Yum Brands	OTHER	1999	39,375	-70,571	-183,071	38%	41%	Uncertain	(Browning, 2005)
22	Bausch & Lomb	TP	1983-1987	41,574	211,530	118,730	33%	41%	Uncertain	T.C. Memo. 1996-57
23	Boeing Co.	TP	1979-1987	419,000	3,658,500	3,658,500	28%	28%	No	258 F.3d 958
24	Computervision Corp.	TP	1981	9,460	52,570	32,004	31%	49%	Uncertain	T.C. Memo. 1996-131
25	Exxon Corp.	TP	1980-1982	6,535,479	9,402,500	-4,805,063	52%	52%	Uncertain	T.C. Memo. 1993-616
26	Texaco Inc.	TP	1979-1982	1,575,870	1,359,570	-2,066,234	47%	58%	Uncertain	T.C. Memo. 1993-616
27	General Electric Capital Corp	TP	1993-1998	62,212	21,750,970	21,750,970	30%	30%	No	342 F. Supp. 2d 94
28	Intel Corp.	TP	1978-1980	35,877	77,920	1,041	48%	57%	Uncertain	76 F.3d 976
29	National Semiconductor	TP	1976-1981	75,952	116,300	-44,615	45%	71%	Yes	T.C. Memo 1994-195
30	Microsoft Corp.	TP	1987-1989,1991	45,138	89,890	-37,260	32%	35%	Yes	T.C. Memo. 1998-54
31	Phillips Petroleum	TP	1979-1982	173,666	-2,817,280	-3,194,815	66%	67%	Uncertain	104 T.C. 256
32	Chevron Corp.	TP	1977-1978	77,896	4,921,840	4,759,556	42%	43%	Uncertain	104 T.C. 719
33	Perkin -Elmer Corp.	TP	1975-1981	26,137	90,320	34,539	41%	45%	Uncertain	T.C. Memo 1993-414
Mean				375,497	1,587,987	897,269	35%	40%		
Median				66,476	113,330	-37,260	33%	37%		

See notes regarding Table 2: Panel A on the following page. All dollar amounts are in thousands.

Table 2: Panel B
 Additional descriptive statistics for tax shelter sample

	<u>Obs.</u>	<u>Mean</u>	<u>Median</u>	<u>Mean % of Tax Savings</u>
Estimated percentage reduction in effective tax rate resulting from tax shelter activity	33	5.10%	3.62%	n/a
Estimated percentage increase in book-tax differences resulting from tax shelter activity	33	101.98%	43.87%	n/a
Interest assessed on tax shelter deficiency	14	154,486	43,500	40.00%
Penalties assessed on tax shelter deficiency	5	33,624	14,524	9.26%
Fees paid to tax shelter purveyors as indicated in court documents	7	8,084	6,229	7.92%

Panel A presents descriptive statistics for the sub-sample of tax shelter firms where I was able to identify the federal tax savings resulting from the tax shelter. The Source column indicates the source of the tax savings data. In most cases this information was gathered from court documents and does not include additional potential state income tax savings that likely resulted from these tax shelters. Reported BTDs are calculated using financial reporting data as described in the text (unscaled) and represent the sum of BTDs for the firm over the entire tax shelter period. The Revised BTB column represents an estimate of what the firm's BTBs would have been had management not recorded the tax benefit associated with the identified tax shelter. Reported ETR represents the traditional effective tax rate measured as the total tax expense divided by pre-tax book income. The Revised ETR represents an estimate of what the firm's reported ETR would have been had management not recorded the tax benefits associated with the identified tax shelter. The recognized benefit column indicates whether the firm recorded the full tax benefit from the identified tax shelter during the period of active tax sheltering. The tax benefit recognition information was gathered from a search of annual reports for the firm during the years of active tax sheltering as well as subsequent years. If the financial statements clearly indicated the firm did not record the tax benefit of the identified tax shelter then the estimated effect of the tax shelter on the firm's BTBs and ETR during the period of active tax sheltering is zero. Tax shelters resulting in temporary BTBs will also have no effect on the firm's reported effective tax rate. For the above firms only the LILLO tax shelter employed by BB&T Corp. is expected to result only in a temporary BTB.

Panel B presents additional descriptive statistics for sub-samples of the tax shelter firms. Interest and penalty data was gathered for a sub-sample of firms using a combination of court documents and the notes from their financial reports. Fees paid to tax shelter purveyors were all gathered from court documents associated with the identified tax shelter. Interest, penalty, and fee amounts are all reported in thousands.

Table 3: Panel A
Summary statistics

	Tax Shelter Sample						Matched Control Sample						Prob* (Median Control: Median Test)
	N	Mean	Median	Std D	Min	Max	N	Mean	Median	Std D	Min	Max	
SIZE	33	3.54	3.60	0.69	2.18	4.57	33	3.44	3.49	0.72	2.18	4.57	0.59
LEV	33	0.18	0.14	0.17	0.00	0.86	33	0.29	0.22	0.23	0.05	1.14	0.00
ROA	33	0.15	0.13	0.14	-0.11	0.61	33	0.10	0.09	0.12	-0.18	0.36	0.12
FOREIGN PRE-TAX INCOME	33	0.02	0.00	0.03	0.00	0.10	33	0.01	0.00	0.03	-0.04	0.10	0.17
R&D	33	0.05	0.02	0.07	0.00	0.23	33	0.03	0.01	0.05	0.00	0.22	0.10
BTD	33	0.02	0.01	0.07	-0.16	0.23	33	-0.01	0.00	0.07	-0.25	0.09	0.02
ETR	33	35.10%	32.79%	10.71%	8.92%	65.65%	33	37.66%	37.89%	22.55%	-16.30%	9.33%	0.11
Adjusted ETR	33	40.20%	37.37%	12.15%	17.52%	70.74%	33	n/a	n/a	n/a	n/a	n/a	0.46 ^a
Adjusted BTD	33	0.01	0.00	0.07	-0.23	0.23	33	n/a	n/a	n/a	n/a	n/a	0.61 ^a
DAP	33	-0.01	-0.01	0.04	-0.07	0.12	33	-0.02	-0.01	0.06	-0.27	0.04	0.18

*Wilcoxon test (two-tailed). SIZE is the log of total assets (data 6); LEV is total long term debt (data 9) divided by total assets; ROA is pre-tax earnings (data 170) in the event year divided by lagged total assets. FOREIGN PRE-TAX is (data 273) divided by lagged total assets; R&D is (data 46) divided by lagged total assets. BTD is book income less taxable income scaled by lagged total assets. Book income is pre-tax income (data 170). Taxable income is calculated by grossing up the sum of the current federal tax expense (data 63) and the current foreign tax expense (data 64) and subtracting the change in NOL Carryforward (data 52). If the current federal tax expense is missing, total current tax expense is calculated by subtracting deferred taxes (data 50), state income taxes (data 173) and other income taxes (data 211) from total income taxes (data 16). DAP is discretionary accruals from the performance-adjusted modified cross-sectional Jones Model. All variables are calculated as the average value of the variable reported by the firm during the active tax shelter years. All variables have been winsorized and the 1 and 99th percentile.

^aFor the Adjusted ETR and Adjusted BTD variables the test of the difference in medians compares the median adjusted ETR and BTDs for the tax shelter firms to the median un-adjusted ETR and BTDs for the control firms.

Table 3: Panel B
 Pearson and Spearman correlation coefficients

	<u>SIZE</u>	<u>LEV</u>	<u>ROA</u>	<u>FOREIGN INCOME</u>	<u>R&D</u>	<u>BTD</u>	<u>DAP</u>
SIZE		-0.11	-0.29	-0.07	-0.25	-0.26	0.12
LEV	-0.09		-0.35	-0.16	-0.29	-0.16	-0.12
ROA	-0.32	-0.33		0.48	0.50	0.49	0.04
FOREIGN INCOME	-0.11	-0.06	0.29		0.54	0.30	0.03
R&D	-0.25	-0.29	0.46	0.53		0.19	-0.12
BTD	-0.22	-0.19	0.50	0.10	0.15		0.17
DAP	0.20	0.08	-0.10	-0.10	-0.25	0.06	

In Panel B, upper (lower) diagonal reports Pearson (Spearman) correlations and all reported correlations that are significant at $p < 0.10$, two tailed, are bolded. All variables are as defined above.

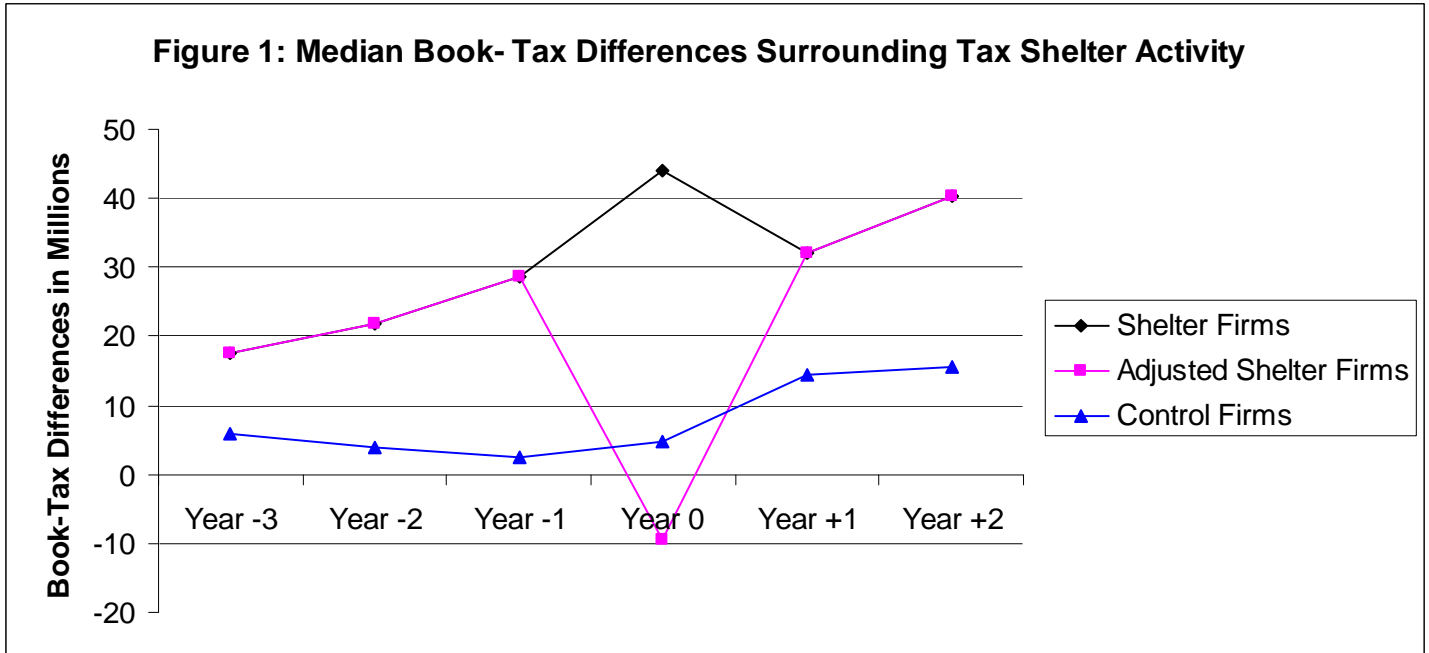


Figure 1 depicts the median aggregate book-tax differences calculated using financial reporting data for the sample of tax shelter firms and the matched control firms. Year 0 represents the active tax shelter years and is the median book-tax difference for the firms during those years. Note this is the median aggregate BTD per year of tax sheltering. The BTD figures reported in Table 2 are the sum of BTDs for all the years of tax sheltering. Years -3 through -1 represent the years immediately preceding the initial year of tax shelter participation, and Years + 1 and +2 represent the years immediately following the final year of active tax sheltering. The book-tax difference for the adjusted tax shelter firms represents an estimate of what the reported book-tax differences would have been had management chosen not to record the tax benefit associated with the identified tax shelter during the years of active tax shelter participation. Consequently, this adjustment only effects Year 0 for the adjusted tax shelter firms and the years preceding and following the tax shelter activity are unchanged.

Table 4

Regression examining determinants and characteristics of tax shelter firms - matched control sample

	Pred. Sign	Full Sample			Full Sample			Tax Savings Sample			Tax Savings Sample		
		Coeff	ΔProb.	t-stat	Coeff	ΔProb.	t-stat	Coeff	ΔProb.	t-stat	Coeff	ΔProb.	t-stat
INTERCEPT	?	-0.67	-0.17	0.55	-0.13	-0.03	0.10	-0.16	-0.04	0.09	-0.25	-0.06	0.14
BTD	+	11.11	2.78	2.26 **	9.57	2.39	1.84 **	8.82	2.20	1.70 **			
ADJUSTED - BTD	+										3.22	0.80	0.71
DAP	+				13.80	3.45	2.18 **						
LEV	-	-2.32	-0.58	1.72 **	-2.30	-0.58	1.60 *	-2.90	-0.72	1.59 *	-2.63	-0.66	1.44 *
SIZE	?	0.22	0.06	0.83	0.09	0.02	0.30	0.16	0.04	0.40	0.14	0.04	0.36
ROA	+	0.48	0.12	0.19	0.41	0.10	0.16	-0.21	-0.05	0.07	1.12	0.28	0.42
FOREIGN INCOME	+	0.55	0.14	1.19	0.53	0.13	1.12	0.50	0.12	0.83	0.40	0.10	0.69
R&D	+	-0.81	-0.20	0.17	1.75	0.44	0.36	0.07	0.02	0.01	0.96	0.24	0.16
Observations			118			118				66			66
<u>Goodness of Fit Statistics</u>													
Pseudo R-squared			0.13			0.17				0.15			0.11
Chi-Square Test			15.61			21.77				10.29			7.38
% Correct			0.70			0.72				0.72			0.69

Logit regression estimates of the relation between the likelihood that a firm engages in tax sheltering and proxies for firm characteristics hypothesized to be associated with tax sheltering. The dependent variable, SHELTER, is an indicator variable set equal to one for firm-year observations where the firm is identified as having an active tax shelter, and set to zero for all other firm-year observations. FOREIGN INCOME is an indicator variable set equal to one for firm observations reporting foreign income, and set to zero for all other observations. ADJUSTED BTD is an estimate of the book-tax difference the firm would have reported had management not recorded the tax benefit associated with the identified tax shelter. All other variables are calculated as reported in Table 2. All variables are calculated as the average value of the variable reported by the firm during the active tax shelter years. ΔProb. measures the marginal change in the probability of using a tax shelter resulting from a change in the independent variable. The t-statistics are for the logit coefficients with *, **, *** indicating statistical significance at the 0.10, 0.05, and 0.01 levels (one-tailed tests). Tests include an equal number of test and control firms. The regressions in columns (1) and (4) contain 59 tax shelter observations and the regression in columns (2) and (3) contain 33 tax shelter observations. The control sample is selected using the following three criteria: (1) fiscal year, (2) two-digit SIC code, and (3) nearest total assets (data 6) in the current year.

Table 5

Regression examining determinants and characteristics of tax shelter firms - expanded control sample

	Pred.	Full Sample			Full Sample			Tax Savings Sample			Tax Savings Sample		
	Sign	Coeff	ΔProb.	t-stat	Coeff	ΔProb.	t-stat	Coeff	ΔProb.	t-stat	Coeff	ΔProb.	t-stat
INTERCEPT	?	-4.30	-1.08	4.09 ***	-4.86	-1.22	4.38 ***	-4.29	-1.07	2.99 ***	-4.00	-1.00	2.85 ***
BTD	+	6.63	1.66	2.02 **	5.20	1.30	1.54 *	8.49	2.12	1.53 *			
ADJUSTED - BTD	+										-0.47	-0.12	0.09
DAP	+				4.08	1.02	1.63 *						
LEV	-	-1.72	-0.43	1.39 *	-1.41	-0.35	1.18	-0.76	-0.19	0.46	-0.63	-0.16	0.38
SIZE	?	0.66	0.16	2.77 ***	0.76	0.19	3.05 ***	0.51	0.13	1.51 *	0.44	0.11	1.34 *
ROA	+	2.26	0.57	1.31 *	3.51	0.88	1.75 **	4.59	1.15	1.63 *	5.79	1.45	2.23 **
FOREIGN INCOME	+	1.62	0.41	4.17 ***	1.72	0.43	4.35 ***	1.28	0.32	2.58 ***	1.09	0.27	2.20 **
R&D	+	1.56	0.39	0.39	2.43	0.61	0.58	5.24	1.31	1.05	5.69	1.42	1.12
Observations			319			319			166			166	
<u>Goodness of Fit Statistics</u>													
Pseudo R-squared			0.12			0.13			0.15			0.14	
Chi-Square Test			40.87			45.63			27.17			24.63	
% Correct			0.78			0.79			0.80			0.80	

Logit regression estimates of the relation between the likelihood that a firm engages in tax sheltering and proxies for firm characteristics hypothesized to be associated with tax sheltering. The dependent variable, SHELTER, is an indicator variable set equal to one for firm-year observations where the firm is identified as having an active tax shelter, and set to zero for all other firm-year observations. FOREIGN INCOME is an indicator variable set equal to one for firm observations reporting foreign income, and set to zero for all other observations. ADJUSTED BTD is an estimate of the book-tax difference the firm would have reported had management not recorded the tax benefit associated with the identified tax shelter. All other variables are calculated as reported in Table 2. All variables are calculated as the average value of the variable reported by the firm during the active tax shelter years. ΔProb. measures the marginal change in the probability of using a tax shelter resulting from a change in the independent variable. The t-statistics are for the logit coefficients with *, **, *** indicating statistical significance at the 0.10, 0.05, and 0.01 levels (one-tailed tests). Tests include an equal number of test and control firms. The regressions in columns (1) and (4) contain 59 tax shelter observations and the regression in columns (2) and (3) contain 33 tax shelter observations. The control sample is composed of firms with the same two-digit SIC code, year, and assets (return on assets) within +/- 25 percent (+/- 50 percent) of the sheltering firm's assets (return on assets).

Table 6

Fama French (1993) abnormal return regressions for the periods both before, during, and after tax shelter participation

	24 MONTHS PRIOR TO FIRST SHELTER YEAR	ACTIVE SHELTER YEARS	24 MONTHS AFTER FINAL SHELTER YEAR
INTERCEPT	1.124 (2.12) **	2.32 (2.47) ***	1.738 (3.09) ***
POOR GOVERNANCE - SHELTER	-1.256 (-1.75) **	-2.09 (-1.80) **	-2.313 (-2.83) ***
POOR GOVERNANCE - CONTROL	-1.415 (-2.46) ***	-2.40 (-2.37) ***	-1.562 (-2.50) **
GOOD GOVERNANCE - CONTROL	-0.881 (-1.38) *	-2.00 (-1.75) **	-1.485 (-2.03) ***
MKTRF	1.021 (14.50) ***	1.10 (9.35) ***	0.970 (11.91) ***
SMB	-0.400 (-4.19) ***	-0.55 (-3.60) ***	-0.612 (-6.76) **
HML	-0.166 (-1.53) *	-0.02 (-0.13)	-0.038 (-0.33) ***
UMD	-0.328 (-0.30)	-1.65 (-0.94)	-1.628 (-1.45) *
Adjusted R-squared	23.37%	27.11%	24.63%
Total Firm – Year Observations	793	395	755

Regression of monthly returns (less the risk free rate) on the four factor Fama-French (1993) model. POOR GOVERNANCE - SHELTER is an indicator variable set equal to 1 for tax shelter firms with governance scores above the sample median. POOR GOVERNANCE – CONTROL is an indicator variable set equal to 1 for matched control firms with governance scores above the sample median. GOOD GOVERNANCE – CONTROL is an indicator variable set equal to 1 for matched control firms with governance scores equal to or below the sample median. The governance score is a continuous governance variable from Gompers et al. (2003). All other variables are as defined in Fama and French (1993). The factor loadings are interacted with each of the indicator variables to allow the risk loadings to vary by group membership. The coefficients for these interaction variables are not tabulated. Values in parenthesis represent t-statistics with *, **, *** indicating statistical significance at the 0.10, 0.05, and 0.01 levels (one-tailed tests). F-tests (not tabulated) indicate that there is not a significant difference in the abnormal returns reported by the POOR GOVERNANCE – SHELTER firms, the POOR GOVERNANCE – CONTROL firms, or the GOOD GOVERNANCE – CONTROL firms in any of the periods examined. Control firms are matched to the tax shelter firms on the basis of fiscal year and two-digit SIC code. Within the same industry, the matched firms are those with assets (return on assets) within +/- 25 percent (+/- 50 percent) of the tax shelter firm's assets (return on assets).

Table 7

Fama French (1993) abnormal return regressions for predicted tax shelter and control firms

	Predicted Active Shelter Years
INTERCEPT	0.451 (5.87)***
POOR GOVERNANCE - SHELTER	-0.504 (-6.43)***
POOR GOVERNANCE - CONTROL	-0.764 (-10.40)***
GOOD GOVERNANCE - CONTROL	-0.455 (-6.32)***
MKTRF	1.232 (75.66)***
SMB	0.482 (22.14)***
HML	0.193 (7.94)***
UMD	2.277 (14.21)***
Adjusted R-squared	11.43%
Total Firm – Year Observations	32,676

Regression of monthly returns (less the risk free rate) on the four factor Fama-French (1993) model. POOR GOVERNANCE - SHELTER is an indicator variable set equal to 1 for predicted tax shelter firms with governance scores above the sample median. POOR GOVERNANCE – CONTROL is an indicator variable set equal to 1 for predicted non-tax shelter firms with governance scores above the sample median. GOOD GOVERNANCE – CONTROL is an indicator variable set equal to 1 for predicted non-tax-shelter control firms with governance scores equal to or below the sample median. I use the model from Column (2) of Table 4 to predict which firms are currently engaged in tax sheltering. Predicted values are obtained by plugging in each hold-out firm’s characteristics into the model and using the estimated coefficients to determine a predicted value. The hold-out sample is composed of all firm-year observations not used in the first-stage estimation with the necessary data available to calculate each of the hypothesized tax shelter firm characteristics used in the model. The hold-out sample firm-year observations are then ranked into quintiles based on the probability the firm is currently engaged in tax sheltering. Firm-year observations ranked in the top quintile are then designated as predicted tax shelter firms. The governance score is a continuous governance variable from Gompers et al. (2003). All other variables are as defined in Fama and French (1993). The factor loadings are interacted with each of the indicator variables to allow the risk loadings to vary by group membership. The coefficients for these interaction variables are not tabulated. See text for a complete discussion of how the predicted tax shelter firms are identified. Values in parenthesis represent t-statistics with *, **, *** indicating statistical significance at the 0.10, 0.05, and 0.01 levels (one-tailed tests).