Estimates of the Magnitude of Financial and Tax Reporting Conflicts

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I examine the tax reporting consequences of financial reporting discretion. Using a matched sample of financial statements with tax returns, I provide estimates of the accuracy of tax return information inferred from financial statements. To examine the trade-offs between financial and tax reporting, I model the relation discretionary financial accounting accruals have to discretionary federal tax accruals. The methodology takes advantage of the contemporaneous nature of reporting to mitigate the econometric problems identified in earnings management studies. I find the extent tax reporting reflects discretionary financial reporting varies dramatically by industry, profitability, and the sign of discretionary accruals measured under the tax system. Further, focusing on tax reporting, I find managers are able to undertake tax reducing activities with less of an effect on financial reporting than tax increasing accruals, consistent with recent evidence on the differential growth of book and tax income, and with tax avoidance activities.

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Companies face inherently conflicting interests in their reporting for financial and tax purposes. While higher financial reporting earnings are generally viewed as favorable, higher taxable income can result in additional tax liabilities. Although differences in the amounts of income reported under each system have existed since the inception of the corporate income tax (Smith and Butters, 1949), over the past decade an increasing disparity has developed between both the levels, and growth rates, of each income measure. In an analysis of the tax returns of large corporations, the U.S. Treasury (1999) reported income for financial and tax accounting purposes diverged sharply during the latter part of the 1990s, a pattern also found in an analysis of publicly-available data by Plesko (2000b) and Manzon and Plesko (2002), and in comparisons of national income account data with tax collections (Sullivan 1999). Plesko (2002) documents that aggregate pretax book income reported by U.S. corporations on their 1996 tax returns was 14 percent higher than its tax accounting equivalent - a difference that increased to more than 24 percent in 1998, nearly $150 billion in the aggregate. This divergence in the amount of income reported under each system has been taken as *prima facie* evidence of increases in tax avoidance activities of firms, and of a breakdown in the tax system.[1] Increasing book tax differences, coupled with concerns about corporate tax compliance generally, also prompted recent hearing by the Senate Finance Committee which included a discussion on the merits of requiring the disclosure of corporations' tax return information to improve the public's knowledge of firms tax

[1]See, generally, Bankman (1999, 2003), Schler (2002) Weisbach (2002), Yin (2002).

position. Such an argument is implicitly predicated on the assumption that the tax information that would be useful to the public cannot be inferred from the published financial statements.[2]

This paper empirically addresses the conflicting financial and tax reporting incentives for earnings management. I begin by analyzing the ability of tax information inferred from financial statements to accurately characterize the tax return values. Then, utilizing a standard model of discretionary accruals, I estimate the extent the tax reporting system reflects discretionary actions taken for financial reporting purposes. Differences in accounting rules will yield differences in both the levels, and patterns, of accruals under each reporting system, even though each is driven by the same underlying economic activities. I employ an empirical approach to exploit these differences in order to obtain more precise estimates of discretionary accruals, mitigating concerns over omitted variables and simultaneity. Further, the correlation of the estimated discretionary accruals from each system will provide a measure of the extent to which discretionary actions in one system, such as those taken to increase financial reporting income, will be reflected in the accruals of the other.

The intuitive motivation for this paper is as follows. If tax and financial reporting were based on identical rules, any change in income or expense under one system would be perfectly reflected in the other. Under identical rules, tax reports could not escape being affected by financial reporting-motivated activities and financial accounting choices would have immediate tax consequences. At the other extreme, if tax and financial measures of income were unrelated (e.g., both random draws from some underlying distribution) then tax accounting income measures would not be affected by the financial reporting amounts. Any action taken to change

[2]See Grassley (2006) for an overview of the hearing and Kleinbard (2006) for a discussion of the merits of partial disclosure of the corporate income tax return.

reported book income would not be contemporaneously reflected in the firm's tax accounts, and will result in no tax reporting cost.[3]

In practice, and design, the U.S. tax system is between these two extremes. Although both accounting systems report income measures derived from the same underlying economic transactions, the patterns, and magnitudes, of income and expenses recognized under each system vary. Some aspects of reporting may be identical under both (e.g., LIFO conformity), while others are disparate (e.g., non-qualified stock options). This latter category is inclusive of numerous transactions that have generated concern over companies' abilities to greatly reduce tax liabilities without any financial reporting consequences.

I find that financial reporting information does not allow a user to infer important information about a firm's tax attributes, a finding that potentially supports greater disclosure of some tax information by firms. With respect to firms ability to differentially report income to tax authorities and in financial reports, I find the degree to which financial reporting reflects discretionary tax activities varies significantly by industry, profitability, and by the sign of discretionary accruals measured under the tax system. These results imply that some managers are able to recognize significant financial reporting income without tax consequences and undertake substantial tax reducing activities without being subject to financial reporting costs. Both of these results are consistent with recent evidence on the differential growth of book and tax income and with tax sheltering activities.

Prior Research

[3]Deferred tax accounting is ignored for the sake of this example. So long as a system based upon random draws treated all differences as permanent the example would still hold.

The tension between financial reporting and other firm objectives is a common research theme in accounting choice generally (Fields et. al 2001) and in tax (Shackelford and Shevlin 2001). In examining the financial-tax reporting tradeoff specifically, the empirical literature has not been consistent in its assumptions regarding the linkage of the two, and studies have made conflicting assumptions.[4] For example, in examining the effects of various aspects of the Tax Reform Act of 1986, Scholes, Wilson and Wolfson (1992) test whether firms deferred income to take advantage of declining tax rates, implicitly assuming such deferrals are reflected in taxable income in each period. By contrast, the earnings management literature surrounding the adoption of the book income preference of the corporate alternative minimum tax (Gramlich 1991, Boynton et al. 1992, Manzon 1992) implicitly assumes reductions in book income were generally independent of the amount of contemporaneous taxable income, since only such reductions would affect the book-tax difference of a firm.

In an attempt to directly measure the link between accounting choices, Erickson et al. (2002) analyzed a small sample of firms subject to SEC actions for overstating revenue. They conclude these firms also increased their reported taxable income, with firms apparently willing to pay approximately 11 cents per each dollar of overstated earnings, based on revisions to the tax expense. There is no indication these results can be generalized beyond their small and unique sample, given these firms not only aggressively overstated earnings, but did so in a way so as to attract regulatory scrutiny. Further, given their reliance on the tax expense, they cannot quantify the extent to which additional taxes were actually paid beyond some disclosures of

[4]Certain transactions have transparent effects that appear to influence behavior, such as inventory methods (e.g. Hunt et al 1996), the management of stock options (Matsunaga et al 1992) and financing methods (Engel et al 1999). Shackelford and Shevlin (2002), Maydew (2002) and Scholes, et al (2002) chapter 6, all discuss the importance of non-tax considerations in the tax planning process.

expected tax refunds.

Other evidence of potential costs is found in Mills (1998), who reports firms with greater book-tax differences are subject to greater scrutiny by the IRS and to greater proposed adjustments in their returns. The full extent of the cost of differential reporting cannot be inferred from her results, however, given that final change in taxes paid are only a small percentage of such adjustments. Nonetheless, large book tax differences will draw the attention of auditors, to the extent that they are reflected in the tax return. Mills and Plesko (2003), however, document significant shortcomings in the reporting of book income for tax purposes, leaving open the possibility that many reporting differences can go undetected by tax authorities.

Even if explicit tax sheltering is not the goal, other accounting practices, such as the treatment of non-qualified stock options, can cause substantial differences in the amount of income reported for financial and tax purposes - differences not necessarily reflected in the tax accounts of a company's financial reports[5] and supported by recent analyses of aggregate financial and tax return data. In addition to these accounting differences, methodological concerns have been raised over the empirical approaches used to test for tax and non-tax costs (Shackelford and Shevlin, 2001).

Methodology

To examine the reporting relation between the two accounting systems I focus on differences in accruals under each system as the amount of cash collected by a company in any given period is independent of the accounting method.

[5]Hanlon and Shevlin (2000) and Manzon and Plesko (2001) both discuss the accounting treatment of stock options and their distortionary effects on the tax accounts of financial statements.

Pretax financial reporting total accruals for company *i* in period *t* ($TA_{i,t}^{F}$) can be written as:

$$TA_{i,t}^{F} = RBI_{i,t} - CF_{i,t} \quad \textbf{(1)}$$

where $RBI_{i,t}$ is pretax reported book income and $CF_{i,t}$ equals pretax cash flows.

Similarly, tax reporting total accruals for company *i* in period *t* can be defined as:

$$TA_{i,t}^{T} = TI_{i,t} - CF_{i,t} \quad \textbf{(2)}$$

where $TI_{i,t}$ equals reported taxable income. Assuming cash flows are the same under each system, tax accruals will differ from pretax book accruals to the extent pretax book income differs from taxable income, that is

$$TA_{i,t}^{F} - TA_{i,t}^{T} = RBI_{i,t} - TI_{i,t} \quad \textbf{(3)}$$

As a result, tax accounting accruals can be estimated from financial accounting accruals if one knows the difference between reported book and taxable income. Such differences will depend on both timing differences (such as the differences in depreciation patterns) and scope (such as the inclusion or exclusion of unrepatriated foreign income).[6]

Following McNichols and Wilson (1988) total accruals under each accounting system

[6]"Tax accounting accruals" is a bit of a misnomer in that firms are not as easily able to affect taxable income through non-cash means. However, actions a firm might engage in to manipulate taxable income without affecting book income would exploit the differential treatment of a transaction by the accounting systems. For example, repatriating foreign earnings will not affect the total amount of pre-tax cash a firm has, but will increase tax net income without affecting pretax book income.

can be decomposed into their non-discretionary (NDA) and discretionary (DA) components:

$$TA_{i,t}^{F} = NDA_{i,t}^{F} + DA_{i,t}^{F} \quad \textbf{(4)}$$

$$TA_{i,t}^{T} = NDA_{i,t}^{T} + DA_{i,t}^{T} \quad \textbf{(5)}$$

where the estimate of NDA_i is defined as the predicted value from an accruals equation, and DA_i is defined as the equation's residual.

The specification and estimation of accruals models has been the subject of significant discussion, with critical reviews of earnings management methodologies performed by Dechow et al. (1995), Thomas and Zhang (1999), McNichols (2000), Fields (2001), and Kothari (2001). Thomas and Zhang (1999) compare a number of empirical approaches to estimating accruals models, inclusive of the specifications tested by Dechow et al. (1995). While they conclude none of the models are particularly strong, an the industry level version of the Jones (1991) model was found to outperform the original Jones (1991). As a result, a modification of the Jones (1991) specification is used to estimate financial accruals:

$$\frac{TA_{i,t}^{F}}{A_{i,t-1}} = \alpha_{F0} + \alpha_{F1}\frac{1}{A_{i,t-1}} + \beta_{F}\frac{\Delta Sales_{i,t-(t-1)}}{A_{i,t-1}} + \gamma_{F}\frac{PPE_{i,t}}{A_{t-1}} + \rho_{F}\frac{TA_{i,t-1}^{F}}{A_{i,t-2}} \quad \textbf{(6)}$$

where *ΔSales* is the change in sales from the past year (adjusted for changes in accounts receivables) , *PPE* is gross property, plant and equipment, and A_{t-1} is prior year total assets. A lag of total accruals is included to capture mean reversion. For tax accruals, the empirical

model is specified as

$$\frac{TA_{i,t}^{T}}{A_{i,t-1}} = \alpha_{T0} + \alpha_{T1}\frac{1}{A_{i,t-1}} + \beta_{T}\frac{\Delta GrossReceipts_{i,t}}{A_{i,t-1}} + \gamma_{T}\frac{PPE_{i,t}}{A_{i,t-1}} + \rho_{T}\frac{TA_{i,t-1}^{T}}{A_{i,t-2}} \qquad \textbf{(7)}$$

with the explanatory variables the same as those used in equation (6) with the exception of *ΔGross Receipts,* which is the tax accounting equivalent of sales. The predicted values from these models are taken as estimates of nondiscretionary accruals, and the residuals as estimates of discretionary accruals (DA).

An important concern highlighted in the reviews of empirical accruals models has been the extent to which the estimation of total accruals equations, such as (6) and (7), using ordinary least squares (OLS) are affected by omitted variables and the simultaneity of the explanatory variables with the methods available to manage earnings.[7] In this setting, pretax total accruals under each accounting system are driven by the same underlying economic activity of the firm. Under the assumption that total accruals are determined contemporaneously, rather than simultaneously, a more efficient approach is to jointly estimate the two equations using a system of seemingly unrelated regressions.[8] In such a setting, cross-correlations and the omitted variables affecting each equation will be captured in the covariance matrix, and the independence of the errors across the two equations can be explicitly tested. Further, unlike the residuals from OLS, the residuals from FGLS will not be jointly correlated with the omitted

[7]Kang and Sivaramakrishnan (1995), in particular, propose an instrumental variables approach to address these issues. McNichols (1999) suggests that additional variables be included to control for long-term growth.

[8]Greene (1997) discusses Zellner's method of estimating a feasible generalized least squares regression (FGLS) of seemingly unrelated regressions.

variables affecting both equations, eliminating any induced correlation of concern to previous authors. Finally, any correlated regularity in the two different accruals processes will lead to more efficient estimates of the parameters. Thus, the use of FGLS residuals in place of OLS residuals addresses the same set of econometric issues as Kang and Sivaramakrishnan (1995), but potentially provides an easier to implement alternative to both their instrumental variables approach, and the need to search for additional covariates to include in Jones (1991) based models.

After obtaining the discretionary accruals (DA) estimates from the joint estimation of (6) and (7) the relation between discretionary accruals across the two accounting systems can be estimated as

While φ will capture mean differences in accruals across the two systems, ω provides an estimate

$$\frac{D\hat{A}_i^T}{A_{i,t-1}} = \phi + \omega \frac{D\hat{A}_i^F}{A_{i,t-1}} \qquad \textbf{(8)}$$

of the amount by which estimated discretionary accruals for financial reporting are contemporaneously related to discretionary accruals related to taxable income. If ω=0, then discretionary tax accruals are unrelated to discretionary financial accruals. If ω≠0 the size of the coefficient will capture the change in the tax accrual associated with a change in pretax book accruals, and provides a measure of the extent of tax reporting costs associated with earnings management.

Additional covariates can be added to the model to test for difference due to other characteristics. In order to test for asymmetry in the effects of the sign of discretionary accruals and of the tax status of the firm the equation is specified as:

$$\frac{D\hat{A}_i^T}{A_{i,t-1}} = \alpha_0 + \alpha_1 + \beta_1\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} > 0\right) + \beta_2\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} < 0\right) + \gamma_1\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} > 0 * NEGTI\right) + \gamma_2\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} < 0 * NEGTI\right) \quad (9)$$

where the discretionary accruals variable is split into two, depending on the sign of *DA*, and two additional variables are created by multiplying each *DA* variable by a binary variable equal to one if the firm has negative tax net income in the current year. The addition of an interaction for negative tax net income allows for testing whether discretionary accruals are affected by the current period's tax cost (or benefit) of a change in reported taxable income.

Data

I use a matched sample of firms' financial statement and tax return data for tax years 1994 to 2001. To construct the sample, I begin with the Internal Revenue Service's Statistics of Income's (SOI) corporation file, containing tax return information annually for more than 80,000 corporations. Tax return data are recorded as filed, and validated for accuracy, but do not reflect any subsequent amendments or audit adjustments. Firms filing 1120-A, the corporate short form, as well as pass-through entities, such as subchapter S corporations, REITs and RICs were dropped.

Financial statement information was drawn from Compustat[9] and matched to the tax return data by employer identification number. Non-matched firms were deleted, as were firms with missing or zero assets, yielding 43,320 firm-year observations. Of this group, 37,853 had sufficient financial statement data to allow a simple comparison to the matched tax return.

[9]Scaled pretax total accruals were calculated as pretax book income (data123+data16) less cash flows from operations adjusted for deferred taxes (data308-data126). Other Compustat variables used in the regressions are assets (6), the change in sales (data 12) adjusted for the change in accounts receivables (data302), and gross property plant and equipment (7).

Summary statistics for this set of firms is provided in Table 1, column (A).

To reduce the effects of consolidation, and focus solely on accounting differences, the value of total assets on the tax return balance sheet were compared to that reported in the financial statements. The balance sheet of the tax return (Schedule L) should reflect the assets and liabilities of the tax filing entity, regardless of GAAP consolidation.[10] If the difference between the two values exceeded 0.01 of the smaller value the record was deleted, reducing the sample to 17,617 firm-years. Additional restrictions were imposed on the sample in order to estimate equations (6) and (7) yielding a final sample of 6,062 firm-year observations in the 1996 to 2001. Observations for 1994 and 1995 were lost owing to the need to have lagged values in the construction of the variables, and the presence of a lagged dependent variable in the regression.

The tax return contains two different measures of income. Tax net income (LINE28) is conceptually equivalent to pretax book income while income subject to tax (IST) is determined after the deduction for net operating losses and dividends received. Unlike tax net income, IST cannot be negative. I modify line 28 by subtracting special deductions (dividends received and net operating losses) to obtain a measure of taxable income that can be negative.[11]

Because tax return information is not publicly available, I include an estimate of taxable

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[10]See Dworin (1985), Manzon and Plesko (1996, 2002), Mills (1998), Hanlon (2003), Plesko (2003), and Mills and Plesko (2003) for discussions of consolidation issues. The effect of imposing a consolidation rule should be to bias the estimation towards finding close links between the two systems. With more complicated firms, particularly those with multiple tax and financial entities, the ability of either set of data to capture changes in the other will be reduced.

[11]Arguably, any change in IST as defined in the tax code will be the result of a change in tax net income. However, the opposite need not be true as any decrease in net income for a company with negative net income would not affect IST, and an increase in net income would only change IST if it were large enough to make it positive. The modified definition allows for the possibility that firms could increase the amount of income reported to the IRS without affecting their taxable income.

income, GROSS63, defined as the grossed-up amount of federal income taxes, (data item 63), plus the change in net operating loss carryforwards (item 52) and test its ability to proxy for tax return information.[12] Descriptive statistics for this sample are presented in column (C) of Table 1.

To obtain total accruals under tax accounting the difference between pretax book and taxable income was subtracted from book total accruals. For tax accruals based on Compustat item 63, GROSS63, the difference between estimated taxable income and book income was subtracted from book total accruals. Table 2, Panel A provides descriptive statistics for the variables used in the estimation. Panel B of Table 2 provides the correlations between pretax book income, tax net income (line28) and the financial statement-based equivalent. The first column provides the correlations between pretax book income and the two measures of taxable income. The correlation for GROSS63 is higher than for modified taxable income (line 28), with correlations of 0.78 and 0.70, respectively, but this is not surprising since GROSS63 and pretax book income are drawn from the same data source. The second column of the panel shows that the correlation between tax net income and GROSS63, the financial statement measure of the same item, ,is 0.67. All correlations are significant in excess of 1 percent. The third panel of Table 2 provides the correlations of scaled total accruals for each definition. Of the two tax income accruals, GROSSS63 is more highly correlated with pretax book income accruals - not a surprising result given that both are drawn from the same set of financial statements.

The next section presents an analysis of the matched samples of tax and financial

[12]Plesko (2000a, 2003) discusses the limits of financial statement information to capture different attributes of the tax return and the efficacy of alternative financial statement constructs. Mills, Newberry, and Novack (2003) evaluate the ability of Compustat to capture the correct amount of net operating loss carryforwards.

statement data, and is followed by a discussion of the results of the estimation of the accruals models.

The Financial Statement as a Source of Tax Information

The summary statistics provided in Table 1 allow for a test of a basic question of interest to a broad group of financial statement users: how well does the financial statement represent the tax characteristics of a firm? For the larger sample of 37,853 firms, Column (B) of Table 1 provides the results of a t-test for whether we can accept the hypothesis that the difference in the two series (book minus tax) is statistically different from zero.. The first cell in Column (B), reports that the test of whether book assets less tax assets is equal to zero cannot be accepted (t = -9.67). While this result is not surprising given the issues of consolidation discussed earlier, it is surprising that mean assets reported on the tax return are *greater* than those reported on financial statements. The next cell presents the results of the same test between reported receipts, and again rejects that their difference is zero. Mean sales reported on financial statements are more than 10 percent larger than those reported on the tax return.

While the first test rejected the hypothesis that reported assets were the same for each type of report, the next cell shows the results of testing whether the amount of book income reported to shareholders is similar to the amount reported to tax authorities on the Schedule M-1. In contrast to the asset result, the values for pretax book income are not statistically different from each other (t=0.71). Further, the next two cells report a similar result in comparisons of the financial statement estimate of taxable income, GROSSS63, to both Tax Net Income and Income Subject to Tax - in neither case can the hypothesis be rejected. This suggests that, in large

samples, the financial statement provides informative data regarding firms' taxable income.

However, while grossing-up the current tax expense appears to approximate taxable income, it does appear to provide a statistically reliable estimate of a firm's actual tax liability, either before or after credits. The mean of the current tax expense (18.23) falls between the reported amount of tax before credits (20.16) and tax after credits (14.88), and t-tests reject the hypotheses that the difference between the book amount and the tax amounts are zero.

Column (D) provides a similar analysis for the smaller sample of 6,062 firm-year observations retained because of the similarity in reported assets and their use in testing the central question of this paper. For this matched sample, gross receipts are not statistically different from each other, an unsurprising result given the similarity in assets. However, in contrast to the full sample, the measures of pretax book income are estimated to have a non-zero difference (t=1.87), with pretax book income reported on the financial statement larger than that reported on the Schedule M-1.

The rejection of the hypothesis that the difference in the series are significant continues throughout the rest of the table. The mean value of taxable income estimated from GROSSS63 is larger than both tax net income and income subject to tax. Worth noting here is that income subject to tax is larger than tax net income since tax net income can be negative while income subject is bounded below by zero. The financial statement measures of tax liability, either before or after credits, are both smaller than the amount reported as the current tax expense, and each is statistically different from the value inferred from the financial statements.

The general conclusion from Table 1 is that while financial statement information my be able to provide information about some aspects of firms' tax situation, it does not convey

statistically unbiased information about tax liabilities.

Estimation Results

Table 3 provides a description of the sample's industry distribution along with the correlations of the residuals in the two equations.[13] Two sets of systems of equations are estimated: System 1 utilizes tax return information to measure the effects on tax reporting while System 2 substitutes tax return information inferred from financial statements. While it is usual for both regulated industries and financial services to be omitted from accruals models, I include both as benchmarks. Regulated industries are often excluded because the nature of the regulatory process makes them less interesting to study. In this setting, however, regulated industries should have relatively high correlations, and their inclusion allows for this hypothesis to be examined. Similarly, while the Jones (1992) model is viewed as less representative for non-manufacturing industries, the applicability of the model can be directly tested. Further, any mis-specification due to omitted variables will be mitigated through the use of FGLS.

The correlation of the residuals provides information on whether the assumptions of the ordinary least squares model are violated and an improvement can be made via joint estimation. A Breusch-Pagan test of the independence of each set of residuals was performed for each set of equations, and independence of the residuals can be rejected in all but one case (Public Administration for GROSS63), confirming the appropriateness of the FGLS approach over OLS with either set of data.[14]

[13]Coefficient estimates from the accruals equations have been omitted in the interest of spaces.

[14]Here and throughout the rest of the text, accepting or rejecting statistical tests are relative to a 1 percent significance level.

Table 4 provides the Pearson correlation coefficients of the FGLS discretionary accruals estimated at the industry level, and then pooled. Coefficients in bold were estimated within the same system of equations. Within the first system, which uses tax return information, the correlation of financial and tax discretionary accruals is 0.472 and statistically significant. GROSS63, however, yields a much lower correlation (0.071) within sample. The estimates of BOOKDA across the two systems are highly correlated (0.993), and LINE28DA is nearly equally correlated with BOOKDA in each model (0.472 and 0.466). Of note, the correlation between LINE28DA and GROSS63DA is only 0.072.[15]

Tables 5 and 6 present the results from estimating equation (8), the relation between DA across the two systems. Because firms potentially face immediate costs in recognizing income increasing accruals for tax and immediate benefits in recognizing income decreasing accruals, the variables in equation (8) allow for the explicit testing of this asymmetry. While α_0 provides the intercept for the entire sample, α_1 is the coefficient on a separate binary variable equal to one if the observation has negative taxable income, and controls for any difference in mean discretionary accruals of negative taxable income firms. To allow for differences in the pattern of income increasing and income decreasing accruals the discretionary accruals variable, BOOK28DA is split into two based on sign, BOOK28DA>0 and BOOK28DA<0, and potential differences in their effects can be tested by comparing the coefficients on each variable, β_1 and β_2. Since the tax costs of a taxable income increasing accrual are smaller for firms with negative tax net income an additional variable is included that interacts the discretionary accrual variables

[15]iven the difference in total accruals is derived from the amount of the book-tax income difference it is possible that the difference in discretionary accruals is also determined by the magnitude of reported income difference. For System 1, the correlation of the difference in discretionary accruals between book and tax to the aggregate book-tax income difference is only 0.140, and 0.090 for System 2.

(BOOK28DA>0 and BOOK28DA<0) with a binary variable equal to one if the firm has negative tax net income. The coefficients on these variables, γ_1 and γ_2, are estimates of the additional effect tax status has on the reflection of book discretionary accruals in tax discretionary accruals. The combined effects of $\beta_1 + \gamma_1$ and $\beta_2 + \gamma_2$ can be compared to test if tax status has a statistically different effect on accruals behavior.

The first column of Table 5, Panel A, provides the results for non-manufacturing firms from the pooled tax return sample. The estimated coefficient for BOOK28DA>0 suggests that for each dollar of income increasing discretionary accrual recognized for financial reporting purposes, taxable income is increased by 0.348 dollars. By contrast, firms with income decreasing accruals are estimated to reduce taxable income by 1.042 of the amount. The relative magnitude of these coefficients suggests that firms either take advantage of opportunities to recognize greater financial reporting income when the tax reporting effects are small, or that firms are able to minimize the tax effects of increased financial reporting income through other mechanisms.[16] Similarly, to the extent that firms recognize income decreasing accruals, they appear to be able to take advantage of the tax system to concurrently reduce taxable income.

The effect of tax status is shown by coefficients γ_1 and γ_2 which yield the incremental effect of a firm having negative taxable income on the magnitude of discretionary accruals. In the case of book income increasing accruals, the value of γ_1 is 0.578, implying that a much greater share of each dollar of additional income, a total of 0.926 (0.348 + 0.578), is reflected in taxable income when a firm is able to recognize the additional taxable income with little or no change in their current tax liability. In the case of income decreasing accruals, γ_2 is -0.705,

[16]The estimated coefficient for taxable firms, 0.348, when multiplied by the statutory tax rate of 35 percent, is 12.2, similar to the value found by Erickson et al (2002).

implying that less of the decrease in book income is reflected on a firm's tax return when they are unable to benefit from the reduction in taxable income. The F-tests of the equality of coefficients are given at the bottom of the table, and show that the differences in the coefficients on the accruals variables, β_1 and β_2, and the accruals variables interacted with tax status, $\beta_1 + \gamma_1$ and $\beta_2 + \gamma_2$, are statistically significant. In summary, the results show that income increasing book accruals are reflected more on the tax return when the tax costs are low, and income decreasing book accruals are reflected more on the return when the tax benefits are the greatest.

Columns 2 through 10 of Panel A provide the results for each two-digit SIC industry other than manufacturing. In all cases, β_1, the coefficient on BOOK28DA>0 is positive and statistically significant, and ranges from 0.230 (services) to 1.034 (wholesale trade). Consistent with expectations, regulated industries has a coefficient close to one (0.985), suggesting a close tie between financial and tax reporting of positive accruals. For β_2, the coefficient on income decreasing accruals, all but two of the coefficients are significant (Mineral Industries and Public Administration), and all are positive. For regulated firms, negative accruals of taxable firms are less likely to be reflected on the tax return.

Differences in the estimated effects of the sign of the accrual and tax status can be seen across the industries. Four of the nine industry groups are estimated as having statistically significant differences in the amount of the accruals that are reflected on the tax return based on whether it is income increasing or decreasing (Agriculture, Mineral Industries, Regulated Industries, and Services) , and the remaining five are not.

The effects of negative taxable income also show differences across the industries. For income increasing accrual firms γ_1 is significant in five of the nine industries, but positive in

only one, Services, suggesting that the aggregate result may be strongly influenced by this industry (Services comprise 30 percent of the sample) . The coefficient on the interaction of negative taxable income with income decreasing accruals is negative and significant in two of the industries (Construction and Services) and positive and significant in Regulated Industries. With respect to the combined coefficients, $\beta_1 + \gamma_1$ and $\beta_2 + \gamma_2$, only two of the industries' combined coefficients are estimated to be statistically different, Regulated Industries and Services. For Regulated Industries, income increasing accruals of firms with positive taxable income ($\beta_1 = 0.985$), and income decreasing accruals of firms with negative taxable income ($\beta_2 + \gamma_2 = 1.025$) are statistically indistinguishable.

Panels B and C of Table 5 provide estimates for the manufacturing sector in total, and separately for each of the 19 sub-industries. Examining the aggregate results in column (1), although the coefficients β_1 and β_2 are not statistically distinguishable, the sum of the coefficients of $\beta_1 + \gamma_1$ and $\beta_2 + \gamma_2$ are significantly different, and are consistent with the results in Panel A. In sum, for the manufacturing sector as a whole, as for the aggregate non-manufacturing sector, income decreasing accruals are reflected differently on the tax return than income increasing accruals, with income increasing accruals reflected on the tax return to a greater extent when the tax cost of doing so is small. As in the non-manufacturing industries, income decreasing accruals are reflected less on the tax return when the firm has a tax loss than when it is currently taxable.

Examining the individual industries, all but one of the estimates of β_1 are positive and significant, the exception being Leather which is not significant. All but three of the estimates of β_2 (Leather, Instruments, and Paper) are significant, and all are positive. Comparing β_1 to β_2, in

eight of the 19 industries β_1 and β_2 are estimated to be significantly different from each other, and in all but one industry (Electrical Equipment) β_1 is larger than β_2, opposite the result found in the aggregate, and implying that for these industries increases in book income are reflected to a greater degree in taxable income than decreases.

Examining the effects of the interaction with tax status, $\beta_1 + \gamma_1$ and $\beta_2 + \gamma_2$, the sums of the coefficients are estimated to be statistically different in 5 of the 19 industries, but in all but one of the five the results are consistent with the aggregate results for manufacturing: book income increasing accruals are reflected in taxable income to a greater extent when the tax cost is small. The exception, Transportation Equipment, yields a large *negative* coefficient on γ_1, implying that increases in book accruals are associated with contemporaneous decreases in taxable income of firms that already have negative taxable income.

Taken together, the results of Table 5 provide evidence that financial reporting discretionary accruals and tax discretionary accruals are related, that the relation varies significantly by industry, and that income increasing book accruals are reflected less in taxable income than income decreasing accruals unless the tax costs are small.

Eliminating the use of proprietary data, Table 6 examines the relation between book and tax accruals when a financial statement based measure of taxable income is used in place of the tax return data. For this table, the same methodology used in Table 5 was repeated with GROSS63 substituted for the tax return measure of tax net income, beginning with the joint estimation of equations (6) and (7). From the estimation of the system of equations, the correlation matrix of the residuals are reported in the last column of Table 3, along with their significance. Similar to System 1, the statistical significance of the correlation of the residuals

suggests that FGLS is a more appropriate method to estimate the total accruals model than single equation OLS.

The contrast to the results presented in Table 5 can be seen by comparing the aggregate results for non-manufacturing and manufacturing from Panels A and B of each table. Qualitatively, and quantitatively, the results for non-manufacturing industries are quite similar, with , $\beta_1 < \beta_2$ and , $(\beta_1 + \gamma_1) > (\beta_2 + \gamma_2)$. For manufacturing, the aggregate results are more difficult to compare, with significant differences in both the magnitude of the coefficients (especially those on the terms interacted with negative taxable income) and the F-tests of the differences in coefficients. It is also worth noting that the adjusted R^2 of the non-manufacturing and manufacturing totals are substantially lower in Table 6 than in Table 5.

The most important conclusion from examining Table 6 is not related to the significance of individual coefficient estimates in each industry, but the general result that financial statement-based measures of tax discretionary accruals may not provide the same infrences abut firm behavior as suggested by the underlying tax return data. To summarize, while the joint estimation of a financial statement -based tax accruals model with a financial statement measure of book accruals yields more efficient estimates of the parameters of an accruals model, a result that has methodological implications for estimating accruals models generally, the residuals from the tax equation will not generally yield comparable results to those that would be obtained from the use of tax return data.

Reverse Regressions: The financial reporting costs of tax minimizing behavior

Up to this point, I have focused on the relation of financial reporting to tax reporting.

However, from a tax policy perspective, the increase in book-tax differences over time, evidence of increased tax sheltering activities, and most recently the Joint Committee on Taxation's (2003) report on Enron, have highlighted the abilities of firms to aggressively manage their tax reporting income using transactions that affect only taxable income, with no (or very little) consequence for the amount of pretax income reported to shareholders. Bankman (1999) provides anecdotal evidence on a variety of tax shelter schemes that do not reduce book income. Weisbach (2001), in commenting on the proliferation of tax reduction activities of concern to the U.S. Treasury argues that "[v]irtually no shelters in the current market reduce book income." According to the JCT (2003) report, twelve Enron transactions between 1995 and 2001 yielded more than $2 billion in additional financial accounting income through a reduction in the tax expense.

While Enron's ability to separately manipulate its book and taxable income is striking, it might be considered an outlier given the spectacular collapse of the company. However, from both a financial and tax reporting perspective, the mechanisms used by Enron are not particularly exotic, and many are widely marketed "retail" schemes. Bankman (2003) reports that the ability to engage in aggressive tax shelters has not only become more available to the masses but that such tax sheltering activities, even those with a very high chance of detection, remain profitable after a settlement agreement is reached with the IRS.

This anecdotal evidence on firm behavior suggests the statistical relations documented above for the contemporaneous behavior of the tax return to financial statements may not be symmetric in reverse. While the incentive to report less income to tax authorities leads to the prediction that income increasing book accruals will have smaller coefficients than income

decreasing book accruals, the opposite will be true of tax motivated transactions. If the tax return is the starting point, then recent experience with tax shelters suggests that tax income increasing discretionary accruals will be reflected in financial statements, while discretionary accruals that decease taxable income will not.

To test this, equation (8) is run in reverse, with BOOKDA as the dependent variable and LINE28DA as the explanatory variable with the results presented in Table 7. In contrast to Table 5, where the coefficient on income increasing book accruals was found to have a smaller effect on taxable income than income decreasing accruals, the magnitude of the estimates of β_1 and β_2 for the non-manufacturing industries are reversed, with $\beta_1 > \beta_2$ (1.445 >0.466), with all but two of the estimated values of β_1 and β_2 significant. These coefficients imply that income tax increasing accruals are reflected to a higher degree in book income than accruals that decrease taxable income. This relation is consistent with the firms being willing to pay higher taxes if they are concurrently reporting higher income to their shareholders, or, alternatively, that firms that increase their taxable income are able to do so in a manner than conforms with financial reporting.

Firms with negative taxable income can increase their current year taxable income without generating additional tax liability, and decreases to their income will not provide immediate additional tax savings. However, for negative taxable income firms, taxable income increasing accruals are reflected less in current book income than taxable income decreasing accruals (0.328 versus 0.999). This implies that the nature of income decreasing accruals taken by firms with negative taxable income are generally more conforming with financial accounting rules than other accruals. However, this aggregate result may be largely driven by the

experience of the Services industry, which has a large negative value for γ_1 (-2.426) and a large positive estimate for γ_2 (1.131).

In contrast to the results for the non-manufacturing sector, the point estimates for the manufacturing sector suggest that taxable income increasing accruals are reflected to a greater degree in book income for firms that are both currently taxed or currently untaxed, but the coefficients between the groups are not statistically distinguishable. Similar to Table 5, eight of the 19 manufacturing industries have statistically different coefficients on β_1 and β_2 and five on $(\beta_1 + \gamma_1) > (\beta_2 + \gamma_2)$. Point estimates for twelve of the nineteen industries are consistent with there being greater conformity for taxable income increasing accruals when firms have negative taxable income (and therefore face lower costs to increase taxable income), including the five industry groups contributing sixty-eight percent of the observations (Chemicals, Electrical Equipment, Instruments, Industrial Machinery, and Food)

The general conclusions to be drawn from Table 7 is that accruals that increase taxable income, and for which there is an additional tax cost, tend to be highly conforming, with an increase in book income of 0.887 of the amount for manufacturing firms, and 1.445 for non-manufacturing firms. With respect to decreases in income, manufacturing firms appear to be more conforming than non-manufacturing (0.827 versus 0.466). While there are significant exceptions within the manufacturing sector, the effects of tax status on accruals appears to be more pronounced in non-manufacturing industries than in manufacturing.

Conclusions

The extent of the trade-offs between financial and tax reporting is an important issue in

understanding firms' behavior, and in the current policy debate over the adequacy of firms' disclosures of tax related information. Using a matched sample of financial statements with tax returns, I estimate the extent to which discretionary financial reporting accruals are correlated with discretionary tax accruals. The methodology takes advantage of the contemporaneous nature of financial and tax reporting to mitigate the econometric problems identified in earlier earnings management studies. There are two broad conclusions from this work.

First, with respect to recent policy discussions regarding the need for greater disclosure of tax return information, the results suggest that financial statement disclosures under FAS 109 do not effectively convey sufficient information to adequately estimate key aspects of a firm's tax attributes, such as the current year tax liability. While the release of some aspects of the tax return might address this issue, changes to the financial accounting disclosures may be equally effective.[17]

Second, I find the degree to which tax reporting is affected by discretionary financial activities varies significantly by industry, profitability, and by the sign of discretionary accruals measured under the tax system. These results imply that managers may be able to undertake substantial income increasing activities without being subject to immediate tax reporting costs, consistent with recent evidence on the differential growth of book and tax income, and with tax sheltering activities. Further, the extent to which tax discretionary accruals are affected by book discretionary accruals varies by both the sign of the accrual and the firms tax status, consistent with the nature of discretionary accruals being are such that many managers can

[17]See Kleinbard (2006) for an argument in favor of requiring firms to disclose their Schedule M-3, the replacement for the Schedule M-1. Hanlon (2003) provides a detailed description of shortcomings of current disclosure rules and suggestions for improvements.

opportunistically mitigate the tax consequences of such activities, such as by recognizing more earnings that would be taxed when the tax costs are low.

There are a number of extensions to these results for future research to address. First, industry-based studies are commonplace, and the results here show differences by industry, the specific characteristics of individual firms are likely to be important in determining the reporting trade-offs of firms. As a result, future research on the magnitude and components of book tax differences may shed light on where reporting tradeoffs are likely to be high or low.

Second, evidence of earnings management has been derived from the distribution of earnings (Burgstahler and Dichev, 1997), and Phillips et al. (2003) have shown the deferred tax expense is incrementally useful in detecting earnings management. The results of this paper, while addressing the link between income reported under each system, does not address how such differences affect the reporting of current and deferred tax expenses. The paper does provide a start for such research, however, by documenting the similarity in results when financial reporting data is used in place of tax return information.

Separately, the paper suggests a new methodological approach to address concerns with discretionary accruals-based earnings management. Easier to implement than the instrumental variables approach suggested by Kang and Sivaramakrishnan (1995), it takes advantage of the contemporaneous determination of financial and tax income to control for omitted variables.

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Table 1
Comparison of Financial Statement and Tax Return Data

	(A)	(B)		(C)	(D)
	N = 37,853			N = 6,062	
	Mean (Standard Deviation)	H_0: book - tax = 0		Mean (Standard Deviation)	H_0: book - tax = 0
Book Total Assets	1,348.06 (10,255.12)	-9.67***		612.27 (3,125.30)	
Tax Total Assets	1,552.34 (11682.14)				
Book Total Revenues (data12)	1045.59 (4831.29)	14.00***		489.30 (1,798.83)	0.38
Tax Gross Receipts	904.68 (4082.94)			487.24 (1,763.03)	
Pre-Tax Book Income (data 170)	64.41 (600.23)	0.71		23.81 (244.66)	1.87*
Pre-Tax Book Income (Schedule M-1)	62.78 (636.05)			22.08 (225.13)	
Estimated Taxable Income (data63/rate)	52.10 (288.81)			23.59 (108.30)	
Tax Net Income (LINE28)	50.25 (404.24)	1.45		15.74 (165.56)	9.84***
Income Subject to Tax	50.51 (362.53)	1.25		20.04 (125.84)	6.00***
Current Tax Expense (data 63)	18.23 (101.08)			8.26† (37.91)	
Tax Before Credits	20.16 (134.19)	-4.64***		7.92 (31.82)	1.65†*
Tax After Credits	14.88 (86.03)	33.59***		7.39 (29.86)	4.25†***

Column (A) presents the means and standard deviation of the book and tax variables from the unconstrained sample. Column (B) presents the results of t-tests where H_0 tests that the book value - the tax value is equal to zero. Column (C) presents the means and standard deviations from the constrained sample used in the remainder of the paper's estimation., and column (D) the t-tests of the means of the constrained sample variables. Significance levels: ***1 percent, **5 percent, *10 percent. †Only 5,392 observations were used for this set of tests. The smaller sample is caused by firms in the final sample missing data 63.

Table 2
Descriptive Statistics for the Accrual Sample

Panel A: Means and Standard Deviations (6,062 observations)

Variable (Compustat data item)	**Mean**	**Std. Dev.**
Total Assets (6)	612.27	3,125.30
Sales (12)	489.30	1,798.83
Gross PP&E (7)	424.07	1,989.67
Book Pretax Income (170)	23.81	244.66
Tax Net Income	15.74	165.56
Cash Flows	41.970	249.300
Book Total Accruals, scaled	-0.067	0.375
Tax Total Accruals, scaled	-0.052	0.230

Panel B: Pretax Income Correlations

	Pretax Book Income (data170)	Tax Net Income (LINE28)
Tax Net Income (LINE28)	0.700	
Grossed-up Federal Income Taxes (data63/.35)	0.780	0.670

Panel C: Total Accruals Correlations

	Book Total Accruals (BOOKTA)	Tax Net Income Total Accruals (LINE28TA)
LINE28TA	0.523	
GROSS63TA	0.593	0.718

Correlations between pretax book income and tax net income are for 6,062 observations, 5,392 for grossed-up federal income taxes; all correlations are significant at 1%
Definitions: *data170* pretax income, *GROSS63* federal income taxes grossed-up by the statutory tax rate, *LINE28* tax net income (net income before net operating loss deduction and special deductions).

Table 3
Correlation of Accruals Residuals, Pooled and by Industry
(Standard deviations in parentheses)

Mnemonic	Industry	SIC	Observations	Correlation matrix of residuals from the total accruals regressions	
				System 1 Book Income and Tax Net Income	System 2 Book Income and Grossed-up Federal Taxes
All	Complete Sample		6,062	0.503	0.116
Agric	Agriculture, Forestry and Fisheries	01 - 09	20	0.962	-0.435
Mineral	Mineral Industries	10-14	304	0.667	0.377
Constr	Construction Industries	15-17	77	0.891	0.741
Mfg	Manufacturing	20-39	2,638	0.625	0.584
RegInds	Transportation, Communication, and Utilities	41-49	766	0.603	0.696
Whole	Wholesale Trade	50-51	320	0.920	0.903
Retail	Retail Trade	52-59	663	0.741	0.570
FIRE	Finance, insurance, and Real Estate	60-67	226	0.870	0.665
Service	Service Industries	70-89	1,028	0.647	0.443
PubAdm	Public Administration	91-97	20	0.460	-0.332

A total of 64 2-digit SIC industry regressions were estimated. The correlations in the table are average for the 2-digit SIC estimates within each 1-digit SIC industry. For System 1, all but two of the 2-digit correlations are statistically significant at at least 10 percent (SIC 31 Leather, SIC 47 transportation Services) and only 2 are not significant at at least 0.001. For System 2, all but four of the 2-digit correlations are statistically significant at at least 10 percent (SIC 29 Petroleum, SIC 38 Instruments, SIC 75 Auto Repair, SIC 90 not elsewhere classified) and of the remaining all but 6 are significant at at least 0.001.

Table 4
Pearson Correlation Coefficients of Discretionary Accruals Estimates

		System 1		System 2	
		BOOKDA	LINE28DA	BOOKDA	GROSS63DA
System 1	BOOKDA	**1.000**			
	LINE28DA	**0.472*****	**1.000**		
System 2	BOOKDA	0.993***	0.466***	**1.000**	
	GROSS63DA	-0.070***	0.072***	**0.071*****	**1.000**

***Significant at 1 percent. Bold entries are correlations from within the same estimation system sizes 6062 for System 1, 5226 for remaining.

Table 5
The Reflection of Book Discretionary Accruals in Tax Discretionary Accruals

$$\frac{D\hat{A}_i^T}{A_{i,t-1}} = \alpha_0 + \alpha_1 + \beta_1\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} > 0\right) + \beta_2\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} < 0\right) + \gamma_1\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} > 0 * NEGTI\right) + \gamma_2\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} < 0 * NEGTI\right)$$

PANEL A: NON-MANUFACTURING INDUSTRIES

	(1) All	(2) Agric	(3) Mineral	(4) Constr	(5) RegInds	(6) Whole	(7) Retail	(8) FIRE	(9) Service	(10) PubAdmin
α_0 INTERCEPT	0.032***	-0.001	-0.025*	-0.006	-0.010***	0.006	0.000	0.017**	0.046***	0.104
	(0.009)	(0.012)	(0.014)	(0.007)	(0.003)	(0.008)	(0.006)	(0.007)	(0.007)	(0.113)
α_1 Negative Taxable Income (NEGTI)	-0.086***	-0.026	0.004	-0.010	0.039***	-0.005	-0.028	-0.023	-0.132***	-0.158
	(0.016)	(0.016)	(0.020)	(0.015)	(0.011)	(0.017)	(0.020)	(0.017)	(0.022)	(0.129)
β_1 BOOK28DA>0	0.348***	1.018***	0.843***	0.917***	0.985***	1.034***	0.753***	0.918***	0.230***	0.353***
	(0.122)	(0.095)	(0.118)	(0.042)	(0.073)	(0.112)	(0.145)	(0.046)	(0.041)	(0.099)
β_2 BOOK28DA<0	1.042***	0.540***	0.203	1.012***	0.361***	1.161***	0.735***	1.050***	1.190***	0.068
	(0.104)	(0.162)	(0.159)	(0.140)	(0.128)	(0.085)	(0.087)	(0.166)	(0.251)	(0.192)
γ_1 (BOOK28DA>0)*NEGTI	0.578***	-0.316*	-0.371**	-0.730***	-0.655***	-0.096	-0.107	-0.044	0.882***	-0.186
	(0.204)	(0.168)	(0.180)	(0.250)	(0.173)	(0.204)	(0.217)	(0.078)	(0.225)	(0.113)
γ_2 (BOOK28DA<0)*NEGTI	-0.705***	0.115	0.185	-0.492**	0.664***	-0.107	-0.382	-0.073	-0.958***	0.000
	(0.148)	(0.277)	(0.180)	(0.195)	(0.153)	(0.133)	(0.278)	(0.188)	(0.270)	(0.000)
Observations	3424	20	304	77	766	320	663	226	1028	20
Adjusted R-squared	0.39	0.93	0.42	0.81	0.85	0.87	0.48	0.77	0.34	0.18
Robust standard errors in parentheses										
* significant at 10%; ** significant at 5%; *** significant at 1%										
$\beta_1 + \gamma_1$	0.926	0.702	0.472	0.187	0.330	0.938	0.646	0.874	1.112	0.167
$\beta_2 + \gamma_2$	0.337	0.655	0.388	0.520	1.025	1.054	0.353	0.977	0.232	0.068
F-tests of coefficients:										
$\beta_1 = \beta_2$	12.11***	5.32**	7.56***	0.41	15.53***	0.59	0.01	0.49	13.54***	1.74
$\beta_1 + \gamma_1 = \beta_2 + \gamma_2$	7.97***	0.02	0.19	1.05	13.71***	0.29	0.52	0.87	12.08***	0.21

PANEL B: MANUFACTURING INDUSTRIES, SIC 2000 - 2999

	(1) All	(2) Food	(3) Textile	(4) Apparel	(5) Lumber	(6) Furniture	(7) Paper	(8) Printing	(9) Chemicals	(10) Petroleum
α_0 INTERCEPT	0.035**	0.004	0.013*	-0.002	-0.008	0.005	-0.027*	0.008*	0.002	-0.016
	(0.014)	(0.005)	(0.007)	(0.006)	(0.012)	(0.011)	(0.016)	(0.004)	(0.025)	(0.012)
α_1 Negative Taxable Income (NEGTI)	-0.120***	-0.110	-0.022*	-0.001	-0.047***	-0.117**	0.022	-0.035	-0.077**	-0.005
	(0.018)	(0.076)	(0.013)	(0.037)	(0.012)	(0.045)	(0.027)	(0.051)	(0.034)	(0.041)
β_1 BOOK28DA>0	0.314*	0.844***	0.682***	1.073***	0.965***	0.984***	0.613***	0.892***	0.879***	1.054***
	(0.190)	(0.028)	(0.115)	(0.100)	(0.188)	(0.135)	(0.159)	(0.122)	(0.126)	(0.327)
β_2 BOOK28DA<0	0.571***	0.513***	0.804**	0.839***	0.620**	1.254***	-0.256	0.875***	0.379***	0.707***
	(0.124)	(0.147)	(0.334)	(0.085)	(0.231)	(0.291)	(0.277)	(0.023)	(0.092)	(0.149)
γ_1 (BOOK28DA>0)*NEGTI	0.558**	-0.293*	0.280	0.096	0.009	1.820***	-0.461**	-1.876	-0.228	-1.060
	(0.229)	(0.151)	(0.168)	(0.230)	(0.188)	(0.593)	(0.225)	(1.139)	(0.310)	(1.107)
γ_2 (BOOK28DA<0)*NEGTI	-0.482***	-0.417	0.106	0.435*	-0.414*	-1.186***	0.649*	-0.936	-0.352***	-0.937**
	(0.140)	(0.359)	(0.350)	(0.227)	(0.231)	(0.421)	(0.325)	(0.570)	(0.098)	(0.365)
Observations	2638	170	44	55	31	32	68	96	630	32
Adjusted R-squared	0.18	0.27	0.87	0.92	0.69	0.84	0.31	0.42	0.13	0.25

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

$\beta_1 + \gamma_1$	0.872	0.551	0.962	1.169	0.974	2.804	0.152	-0.984	0.651	-0.006
$\beta_2 + \gamma_2$	0.089	0.096	0.910	1.274	0.206	0.068	0.393	-0.061	0.027	-0.230
F-tests of coefficients:										
$\beta_1 = \beta_2$	0.92	4.34**	0.11	2.42	0.85	0.50	4.81**	0.02	7.80***	0.61
$\beta_1 + \gamma_1 = \beta_2 + \gamma_2$	26.55***	1.19	0.07	0.07	21.16***	10.08***	0.90	0.45	4.59**	0.03

PANEL C: MANUFACTURING INDUSTRIES, SIC 3000 - 3999

	(1) Rubber	(2) Leather	(3) Stone	(4) Primary Metals	(5) Fabricated Metals	(6) Industrial Machinery	(7) Electrical Equipment	(8) Transportation Equipment	(9) Instruments	(10) Misc Mfg
α_0 INTERCEPT	0.003	-0.018	-0.003	-0.008	-0.001	-0.025*	0.046***	-0.011*	-0.027**	0.000
	(0.008)	(0.050)	(0.006)	(0.006)	(0.006)	(0.015)	(0.010)	(0.006)	(0.010)	(0.009)
α_1 Negative Taxable Income (NEGTI)	-0.003	-0.171**	-0.036	-0.017	-0.019*	0.007	-0.108**	0.023*	-0.056**	0.019
	(0.014)	(0.071)	(0.047)	(0.013)	(0.011)	(0.030)	(0.049)	(0.014)	(0.024)	(0.023)
β_1 BOOK28DA>0	0.976***	0.039	1.107***	0.886***	0.977***	1.042***	0.109*	1.022***	1.006***	0.932***
	(0.178)	(0.931)	(0.121)	(0.054)	(0.080)	(0.103)	(0.057)	(0.055)	(0.121)	(0.080)
β_2 BOOK28DA<0	0.995***	-0.875	0.875***	0.475**	0.882***	0.116*	0.499***	0.691***	0.289	0.890***
	(0.140)	(0.938)	(0.120)	(0.207)	(0.106)	(0.068)	(0.163)	(0.121)	(0.190)	(0.231)
γ_1 (BOOK28DA>0)*NEGTI	-0.176	0.000	0.000	-0.005	-0.255	-0.031	0.957***	-3.199***	-0.105	-1.028
	(0.221)	(0.000)	(0.000)	(0.295)	(0.255)	(0.107)	(0.180)	(0.985)	(0.255)	(0.715)
γ_2 (BOOK28DA<0)*NEGTI	0.037	0.000	-0.408	-0.056	-0.155	0.759***	-0.114	0.273*	-0.251	0.115
	(0.154)	(0.000)	(0.522)	(0.232)	(0.177)	(0.119)	(0.421)	(0.159)	(0.205)	(0.320)
Observations	63	13	37	139	74	254	443	103	296	58
Adjusted R-squared	0.83	0.00	0.80	0.68	0.89	0.64	0.17	0.87	0.18	0.76

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

$\beta_1 + \gamma_1$	0.800	0.039	1.107	0.881	0.722	1.011	1.066	-2.177	0.901	-0.096
$\beta_2 + \gamma_2$	1.032	-0.875	0.467	0.419	0.727	0.875	0.385	0.964	0.038	1.005
F-tests of coefficients:										
$\beta_1 = \beta_2$	0.01	0.31	1.37	2.84*	0.33	39.72***	4.83**	4.92**	7.82***	0.03
$\beta_1 + \gamma_1 = \beta_2 + \gamma_2$	2.05	0.31	1.50	1.82	0.00	1.42	2.03	9.66***	12.35***	1.76

Table 6
The Reflection of Book Discretionary Accruals in Tax Discretionary Accruals - Financial Statement Measures

$$\frac{D\hat{A}_i^T}{A_{i,t-1}} = \alpha_0 + \alpha_1 + \beta_1\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} > 0\right) + \beta_2\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} < 0\right) + \gamma_1\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} > 0 * NEGTI\right) + \gamma_2\left(\frac{D\hat{A}_i^F}{A_{i,t-1}} < 0 * NEGTI\right)$$

PANEL A: NON-MANUFACTURING INDUSTRIES

	(1) All	(2) Agric	(3) Mineral	(4) Constr	(5) RegInds	(6) Whole	(7) Retail	(8) FIRE	(9) Service	(10) PubAdmin
α_0 INTERCEPT	0.009**	0.033	-0.058**	-0.011	-0.003	-0.004	-0.013***	0.026*	-0.003	-0.268***
	(0.004)	(0.032)	(0.028)	(0.010)	(0.003)	(0.006)	(0.004)	(0.014)	(0.012)	(0.000)
α_1 Negative Taxable Income (NEGTI)	-0.061***	-0.009	0.074**	-0.015	0.013	-0.005	0.003	-0.081	-0.080	0.094
	(0.022)	(0.046)	(0.034)	(0.018)	(0.012)	(0.015)	(0.016)	(0.076)	(0.054)	(0.118)
β_1 BOOK63DA>0	0.243***	-1.012	0.665***	0.883***	0.444***	0.815***	0.790***	0.858***	0.200***	0.056***
	(0.038)	(0.775)	(0.221)	(0.078)	(0.081)	(0.085)	(0.060)	(0.105)	(0.009)	(0.000)
β_2 BOOK63DA<0	1.028***	0.609*	1.391***	1.039***	0.731***	0.737***	0.668***	0.988***	1.643***	-19.102***
	(0.136)	(0.327)	(0.530)	(0.208)	(0.130)	(0.082)	(0.074)	(0.113)	(0.419)	(0.000)
γ_1 BOOK63DA>0*NEGTI	0.738**	0.406	-0.103	0.010	0.052	-0.149	-0.161	0.175	1.056*	-0.049
	(0.352)	(0.880)	(0.275)	(0.172)	(0.110)	(0.101)	(0.306)	(0.140)	(0.564)	(0.103)
γ_2 BOOK63DA<0*NEGTI	-0.982***	-1.112	-1.124**	-0.722***	-0.305**	-0.067	-0.432**	-0.300	-1.655***	18.385***
	(0.152)	(0.654)	(0.552)	(0.226)	(0.146)	(0.104)	(0.210)	(0.234)	(0.424)	(0.718)
Observations	2913	16	221	68	696	270	563	175	884	20
Adjusted R-squared	0.06	-0.06	0.24	0.67	0.49	0.80	0.28	0.28	0.05	0.13

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

$\beta_1 + \gamma_1$	0.981	-0.606	0.562	0.893	0.496	0.666	0.629	1.033	1.256	0.007
$\beta_2 + \gamma_2$	0.046	-0.503	0.267	0.317	0.426	0.670	0.236	0.688	-0.012	-0.717
F-tests of coefficients:										
$\beta_1 = \beta_2$	28.74***	2.39	1.41	0.44	2.93*	0.34	1.28	0.54	11.71***	
$\beta_1 + \gamma_1 = \beta_2 + \gamma_2$	6.69***	0.04	1.12	9.26***	0.46	0.00	0.96	1.60	4.91**	0.92

PANEL B: MANUFACTURING INDUSTRIES, SIC 2000 - 2999

	(1) All	(2) Food	(3) Textile	(4) Apparel	(5) Lumber	(6) Furniture	(7) Paper	(8) Printing	(9) Chemicals	(10) Petroleum
α_0 INTERCEPT	0.013	0.012	0.006	0.199***	0.004	0.001	-0.014	-0.003	-0.022	-0.391***
	(0.010)	(0.012)	(0.008)	(0.065)	(0.006)	(0.007)	(0.011)	(0.015)	(0.119)	(0.127)
α_1 Negative Taxable Income (NEGTI)	-0.267**	-0.007	-0.054*	-0.150	-0.022	-0.175***	0.056	0.109	-0.165	0.552
	(0.122)	(0.023)	(0.027)	(0.233)	(0.018)	(0.007)	(0.038)	(0.119)	(0.190)	(0.400)
β_1 BOOK63DA>0	0.187	0.429***	0.604***	-1.635	0.724***	0.935***	1.167***	0.496	-0.127	11.111**
	(0.121)	(0.134)	(0.129)	(1.259)	(0.127)	(0.146)	(0.339)	(0.451)	(0.980)	(4.557)
β_2 BOOK63DA<0	0.560***	0.738*	0.757***	3.153***	1.023***	0.998***	0.531**	1.019***	0.294	-1.500
	(0.150)	(0.442)	(0.086)	(1.014)	(0.194)	(0.135)	(0.202)	(0.327)	(0.195)	(1.314)
γ_1 BOOK63DA>0*NEGTI	1.128**	0.086	0.849***	3.225	0.000	0.000	-0.539	0.491	0.141	-12.958
	(0.468)	(0.136)	(0.293)	(2.073)	(0.000)	(0.000)	(0.435)	(0.940)	(1.170)	(8.222)
γ_2 BOOK63DA<0*NEGTI	-2.106*	-0.178	-0.621**	0.407	-0.474**	-2.443***	0.750	0.099	-2.122*	2.963
	(1.089)	(0.480)	(0.252)	(3.870)	(0.204)	(0.135)	(0.679)	(0.960)	(1.227)	(5.380)
Observations	2313	128	39	55	28	29	56	81	582	24
Adjusted R-squared	0.10	0.36	0.72	0.26	0.92	0.83	0.51	0.25	0.14	-0.04

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

$\beta_1 + \gamma_1$	1.315	0.515	1.453	1.590	0.724	0.935	0.628	0.987	0.014	-1.847
$\beta_2 + \gamma_2$	-1.546	0.560	0.136	3.560	0.549	-1.445	1.281	1.118	-1.828	1.463
F-tests of coefficients:										
$\beta_1 = \beta_2$	3.17*	0.41	0.76	6.31**	1.10	0.08	1.68	0.62	0.13	5.06**
$\beta_1 + \gamma_1 = \beta_2 + \gamma_2$	4.02**	0.05	8.61***	0.15	1.51	265.83***	0.52	0.01	1.14	0.08

PANEL C: MANUFACTURING INDUSTRIES, SIC 3000 - 3999

	(1) Rubber	(2) Leather	(3) Stone	(4) Primary Metals	(5) Fabricated Metals	(6) Industrial Machinery	(7) Electrical Equipment	(8) Transportation Equipment	(9) Instruments	(10) Misc Mfg
α_0 INTERCEPT	-0.007	0.008	0.002	-0.028*	-0.005	-0.054	0.033***	-0.007	-0.093**	-0.009
	(0.017)	(0.016)	(0.005)	(0.014)	(0.007)	(0.041)	(0.012)	(0.009)	(0.038)	(0.012)
α_1 Negative Taxable Income (NEGTI)	0.024	-0.011	-0.024***	0.036	0.009	-0.177	-0.090**	-0.025	-0.194	0.073***
	(0.027)	(0.020)	(0.006)	(0.024)	(0.023)	(0.151)	(0.038)	(0.037)	(0.192)	(0.027)
β_1 BOOK63DA>0	0.704*	1.015***	0.784***	1.065***	0.949***	1.265***	0.075**	0.815***	0.836**	0.899***
	(0.354)	(0.142)	(0.075)	(0.116)	(0.087)	(0.260)	(0.031)	(0.108)	(0.409)	(0.172)
β_2 BOOK63DA<0	0.733*	1.204***	0.989***	0.546**	0.884***	-0.202	0.466***	0.819***	0.603**	0.626***
	(0.406)	(0.247)	(0.034)	(0.275)	(0.142)	(0.546)	(0.142)	(0.104)	(0.306)	(0.220)
γ_1 BOOK63DA>0*NEGTI	0.421	0.000	1.526***	-0.652	0.159	1.073***	0.899***	0.631	3.585*	-0.736*
	(0.394)	(0.000)	(0.226)	(0.460)	(0.406)	(0.321)	(0.306)	(1.178)	(1.852)	(0.393)
γ_2 BOOK63DA<0*NEGTI	0.221	0.000	-0.595***	-0.256	-0.159	0.210	-0.212	-0.521***	-1.172	0.826**
	(0.431)	(0.000)	(0.043)	(0.288)	(0.334)	(0.787)	(0.322)	(0.178)	(0.840)	(0.325)
Observations	52	13	29	108	55	226	401	83	273	51
Adjusted R-squared	0.57	0.97	0.96	0.36	0.79	0.09	0.12	0.64	0.04	0.73

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

$\beta_1 + \gamma_1$	1.125	1.015	2.310	0.413	1.108	2.338	0.974	1.446	4.421	0.163
$\beta_2 + \gamma_2$	0.954	1.204	0.394	0.290	0.725	0.008	0.254	0.298	-0.569	1.452
F-tests of coefficients:										
$\beta_1 = \beta_2$	0.00	0.25	4.41**	2.51	0.11	4.98**	7.01***	0.00	0.15	0.68
$\beta_1 + \gamma_1 = \beta_2 + \gamma_2$	0.43	0.25	67.50***	0.06	0.37	15.14***	2.65*	0.84	5.34**	6.42

Table 7
Financial Reporting Effects of Tax Discretionary Accruals

$$\frac{D\hat{A}_i^F}{A_{i,t-1}} = \alpha_0 + \alpha_1 + \beta_1\left(\frac{D\hat{A}_i^T}{A_{i,t-1}} > 0\right) + \beta_2\left(\frac{D\hat{A}_i^T}{A_{i,t-1}} < 0\right) + \gamma_1\left(\frac{D\hat{A}_i^T}{A_{i,t-1}} > 0 * NEGTI\right) + \gamma_2\left(\frac{D\hat{A}_i^T}{A_{i,t-1}} < 0 * NEGTI\right)$$

PANEL A: NON-MANUFACTURING INDUSTRIES

	(1) All	(2) Agric	(3) Mineral	(4) Constr	(5) RegInds	(6) Whole	(7) Retail	(8) FIRE	(9) Service	(10) PubAdmin
α_0 INTERCEPT	-0.022	0.006	0.034**	0.006	0.002	-0.003	-0.004	-0.014**	-0.103	-0.102
	(0.023)	(0.016)	(0.014)	(0.007)	(0.003)	(0.005)	(0.005)	(0.007)	(0.071)	(0.251)
α_1 Negative Taxable Income (NEGTI)	0.031	-0.014	-0.058**	0.013	-0.004	-0.009	-0.002	-0.021	0.120	0.285
	(0.033)	(0.030)	(0.028)	(0.024)	(0.011)	(0.013)	(0.019)	(0.019)	(0.087)	(0.315)
β_1 LINE28DA>0	1.445***	0.905***	0.681***	1.008***	0.924***	0.893***	0.965***	0.929***	2.697***	2.094***
	(0.413)	(0.056)	(0.121)	(0.052)	(0.067)	(0.058)	(0.048)	(0.071)	(0.964)	(0.586)
β_2 LINE28DA<0	0.466***	1.828***	0.514*	0.790***	0.673***	0.772***	0.559**	0.738***	-0.005	1.885
	(0.129)	(0.328)	(0.273)	(0.133)	(0.152)	(0.056)	(0.227)	(0.069)	(0.288)	(1.125)
γ_1 LINE28DA>0*NEGTI	-1.117***	2.129**	0.195	-1.759***	-0.353	-0.161	-0.765	0.105	-2.426**	-2.778**
	(0.432)	(0.873)	(0.385)	(0.583)	(0.314)	(0.202)	(0.707)	(0.104)	(0.972)	(1.200)
γ_2 LINE28DA<0*NEGTI	0.533*	-0.935*	0.346	0.532	0.206	0.006	0.195	-0.127	1.131**	0.000
	(0.302)	(0.441)	(0.370)	(0.385)	(0.153)	(0.086)	(0.261)	(0.178)	(0.565)	(0.000)
Observations	3424	20	304	77	766	320	663	226	1028	20
Adjusted R-squared	0.41	0.93	0.41	0.79	0.84	0.87	0.49	0.79	0.38	0.16
Robust standard errors in parentheses										
* significant at 10%; ** significant at 5%; *** significant at 1%										
$\beta_1 + \gamma_1$	0.328	3.034	0.876	-0.751	0.571	0.732	0.200	1.034	0.271	-0.684
$\beta_2 + \gamma_2$	0.999	0.893	0.860	1.322	0.879	0.778	0.754	0.611	1.126	1.885
F-tests of coefficients:										
$\beta_1 = \beta_2$	3.41*	5.80**	0.24	1.98	2.02	1.82	2.40	2.99*	4.82**	0.03
$\beta_1 + \gamma_1 = \beta_2 + \gamma_2$	4.41**	3.45*	0.00	6.11**	0.98	0.05	0.49	4.58**	2.60	2.23

PANEL B: MANUFACTURING INDUSTRIES, SIC 2000 - 2999

	(1) All	(2) Food	(3) Textile	(4) Apparel	(5) Lumber	(6) Furniture	(7) Paper	(8) Printing	(9) Chemicals	(10) Petroleum
α_0 INTERCEPT	0.004	-0.016**	-0.005	0.005	-0.021**	-0.003	-0.016	0.001	0.092***	0.037**
	(0.006)	(0.008)	(0.007)	(0.006)	(0.009)	(0.007)	(0.022)	(0.005)	(0.020)	(0.014)
α_1 Negative Taxable Income (NEGTI)	-0.048***	-0.098***	0.017	0.001	0.230***	-0.083	-0.017	-0.085***	-0.114***	-0.063
	(0.017)	(0.028)	(0.015)	(0.027)	(0.025)	(0.077)	(0.041)	(0.031)	(0.038)	(0.037)
β_1 LINE28DA>0	0.887***	1.057***	1.050***	0.833***	1.425***	0.851***	1.194***	0.867***	0.471***	0.397***
	(0.110)	(0.130)	(0.148)	(0.042)	(0.160)	(0.129)	(0.433)	(0.068)	(0.122)	(0.130)
β_2 LINE28DA<0	0.827***	0.947***	0.957***	1.106***	0.207	0.617***	0.258	1.105***	1.512***	1.321***
	(0.199)	(0.142)	(0.060)	(0.111)	(0.195)	(0.184)	(0.383)	(0.055)	(0.494)	(0.398)
γ_1 LINE28DA>0*NEGTI	-0.479***	0.407	-0.216	-0.071	0.000	0.781	0.132	-0.588	-0.211	-0.559
	(0.180)	(0.769)	(0.301)	(0.117)	(0.000)	(0.783)	(1.071)	(0.806)	(0.184)	(0.393)
γ_2 LINE28DA<0*NEGTI	-0.594***	-0.924***	0.124	-0.336**	4.045***	-0.421	0.417	-1.444***	-1.292**	-1.485**
	(0.219)	(0.169)	(0.146)	(0.157)	(0.309)	(0.936)	(0.580)	(0.119)	(0.510)	(0.666)
Observations	2638	170	44	55	31	32	68	96	630	32
Adjusted R-squared	0.13	0.49	0.85	0.92	0.87	0.77	0.24	0.59	0.04	0.33

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

$\beta_1 + \gamma_1$	0.408	1.464	0.834	0.762	1.425	1.632	1.326	0.279	0.260	-0.162
$\beta_2 + \gamma_2$	0.233	0.023	1.081	0.770	4.252	0.196	0.675	-0.339	0.220	-0.164
F-tests of coefficients:										
$\beta_1 = \beta_2$	0.06	0.25	0.28	4.33**	15.54***	0.79	1.71	6.07**	3.62***	3.34*
$\beta_1 + \gamma_1 = \beta_2 + \gamma_2$	0.89	3.46*	0.48	0.00	96.43***	0.72	0.32	0.55	0.03	0.00

PANEL C: MANUFACTURING INDUSTRIES, SIC 3000 - 3999

	(1) Rubber	(2) Leather	(3) Stone	(4) Primary Metals	(5) Fabricated Metals	(6) Industrial Machinery	(7) Electrical Equipment	(8) Transportation Equipment	(9) Instruments	(10) Misc Mfg
α_0 INTERCEPT	0.009	0.034	0.005	-0.005	0.003	-0.009	-0.033	0.011*	0.030**	-0.001
	(0.007)	(0.030)	(0.005)	(0.007)	(0.004)	(0.014)	(0.031)	(0.006)	(0.012)	(0.009)
α_1 Negative Taxable Income (NEGTI)	-0.013	-0.132**	-0.055*	0.012	-0.013	-0.071***	-0.024	-0.032*	-0.069**	-0.009
	(0.012)	(0.042)	(0.030)	(0.013)	(0.024)	(0.027)	(0.040)	(0.017)	(0.027)	(0.026)
β_1 LINE28DA>0	0.667***	-0.669*	0.801***	1.084***	0.928***	0.926***	1.484**	0.885***	0.634***	0.915***
	(0.100)	(0.331)	(0.046)	(0.071)	(0.050)	(0.104)	(0.618)	(0.048)	(0.142)	(0.109)
β_2 LINE28DA<0	0.946***	0.051	1.078***	0.857***	1.045***	0.077	0.801*	1.099***	0.933***	0.708***
	(0.118)	(0.430)	(0.116)	(0.145)	(0.090)	(0.158)	(0.461)	(0.096)	(0.144)	(0.146)
γ_1 LINE28DA>0*NEGTI	0.360**	0.000	0.775	-1.091**	4.431*	0.068	-1.155*	-0.596***	-0.238	-0.245
	(0.179)	(0.000)	(1.058)	(0.432)	(2.593)	(0.114)	(0.676)	(0.218)	(0.224)	(0.349)
γ_2 LINE28DA<0*NEGTI	-0.099	0.000	-0.983**	0.084	-0.176	0.421*	-0.638	-0.241*	-0.749***	0.118
	(0.147)	(0.000)	(0.362)	(0.308)	(0.231)	(0.237)	(0.487)	(0.129)	(0.164)	(0.211)
Observations	63	13	37	139	74	254	443	103	296	58
Adjusted R-squared	0.84	0.10	0.85	0.68	0.89	0.69	0.19	0.87	0.11	0.75

Robust standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

$\beta_1 + \gamma_1$	1.027	-0.669	1.576	-0.007	5.359	0.994	0.329	0.289	0.396	0.670
$\beta_2 + \gamma_2$	0.847	0.051	0.095	0.941	0.869	0.498	0.163	0.858	0.184	0.826
F-tests of coefficients:										
$\beta_1 = \beta_2$	2.54	1.48	4.42**	1.41	1.08	17.39***	0.58	3.18*	1.49	0.96
$\beta_1 + \gamma_1 = \beta_2 + \gamma_2$	0.96	1.48	1.23	2.76*	2.62	5.94**	0.25	4.16**	1.15	0.12