Abstract: We examine whether the informativeness of earnings is inversely related to the degree of conformity between financial accounting income and taxable income. Our inquiry exploits a natural experiment first examined by Guenther et al. (1997) in which a set of U.S. firms faced increased book-tax conformity as a result of a change in the tax law. We measure the informativeness of earnings as the long-window earnings response coefficient (ERC) from a regression of returns on earnings. The data are consistent with this long-window ERC decreasing for the set of firms in Guenther et al. (1997) after the tax law required greater book-tax conformity. This result is consistent with the increase in book-tax conformity reducing the usefulness of financial accounting earnings as a measure of firms’ economic performance. We find that the decline is significantly larger than the changes in the same measure for an industry-matched sample of firms not facing an increase in conformity. These results add to the academic literature on the interaction of taxes and financial reporting as well as to the policy debate about whether the U.S. should conform the tax law to GAAP, a debate that has recently intensified.

*Corresponding author: 701 Tappan Street, Ann Arbor, MI 48109. Phone: 734-647-4954 Fax: 734-936-0282 email: mhanlon@umich.edu

Hanlon acknowledges financial support from an Ernst & Young Faculty Fellowship and the Bank One Corporation. Maydew acknowledges financial assistance from the David E. Hoffman Chair. Shevlin acknowledges financial assistance from the Paul Pigott/Paccar Professorship. We thank Scott Dyreng, Dave Guenther, Kyle Peterson, Ross Watts, and workshop participants at Columbia University, Massachusetts Institute of Technology, and the University of California Los Angeles for comments on an earlier draft. We also thank Nader Hafzalla for research assistance. We appreciate Dave Guenther and Sarah Nutter sharing the identification of the firms required to switch to accrual basis accounting for tax purposes.
1. **Introduction**

This paper examines the effect of book-tax conformity on the informativeness of financial accounting earnings. We use a natural experiment first examined by Guenther, Maydew, and Nutter (1997, hereafter GMN) in which a set of publicly traded firms were required to switch for tax purposes from the cash method of accounting to the accrual method thereby increasing the level of conformity between book and taxable incomes. GMN find that after the required change in the tax rules these firms deferred more income for financial reporting purposes because of the increased trade-off between financial accounting and tax. In other words, once the two incomes were more closely aligned, the firms reported lower financial accounting earnings, all else constant, in order to save (defer) tax dollars.

Book-tax conformity and its effects on the informativeness of reported earnings is an important topic of inquiry to both policy makers and academic researchers. The difference between reported book and taxable incomes grew substantially in the 1990s according to estimates made by several governmental agencies and researchers (e.g., Plesko, 2000 and 2002; Treasury, 1999). While the reason for this divergence is not known with certainty, many argue that one or both of the income measures were being opportunistically reported by management. One suggestion to curb this behavior is to conform the two income measures into one, thereby forcing firms to trade-off high accounting earnings against lower taxes, which some believe would discourage aggressive financial and tax reporting. For example, Desai (2005) argues that because the system of dual reporting allows (indeed, requires) different computations of income for book and tax purposes, the quality of earnings reported to both the capital markets and tax authorities is reduced by opportunistic behavior by
managers. In other words, because managers attempt to maximize financial accounting income and minimize taxable income and are ‘unconstrained’ by the rules in the other system (i.e., the tax and book rules are not conformed) they can act opportunistically thereby reporting lower income to the tax authorities and also misleading shareholders

Another commentator states “The [book-tax] gap can and should be narrowed…The result would be a stronger incentive for companies to tell it like it is. If executives want to overstate income to fool shareholders, they’ll pay higher taxes as a result. If they are tempted to understate income in order to escape taxes, they’ll suffer with their shareholders. That kind of change in incentives would do far more to clean up corporate accounting than any amount of regulatory oversight” (Murray 2002). John Buckley, Democratic tax council for the House Ways and Means Committee, claimed: “If you had greater book/tax conformity, Enron probably would never have happened” (Carnahan and Novack 2002). Professor Mihir Desai summarized the sentiment of proponents of book-tax conformity in recent testimony before the House Ways and Means Committee:

The reporting system used in corporate taxation should be restructured to bring reporting to tax authorities in line with reporting to capital markets. Currently, corporations must characterize their income in two significantly different ways to tax authorities and capital markets. Unsurprisingly, this has resulted in two completely different portraits of profitability. This dual system creates significant confusion as it is impossible to infer corporate tax payments from public financial statements or to truly understand corporate profitability. This system also creates latitude for opportunistic managers to take advantage of this discrepancy in a way that does not advance the interests of shareholders. At a minimum, reporting taxes paid in public financial statements is advisable. More ambitiously, if corporations simply paid taxes on reported GAAP income, significant compliance costs would be nearly eliminated, the top marginal corporate tax rate could be reduced significantly to 15% without a loss of revenue, and actions designed to exploit differences between these two reporting systems would be eliminated. (May 9, 2006)
Indeed, increased book-tax conformity was one of the alternatives considered by President Bush’s Tax Reform Panel. The Panel’s report states that “The Panel also evaluated a proposal to tax large entities based on net income reported on financial statements instead of requiring a separate calculation of income for tax purposes. Although the Panel has decided not to include that proposal as part of the Simplified Income Tax Plan, the Panel recommends that it be studied further” (President’s Advisory Panel on Federal Tax Reform, page 131).

While it is possible that book-tax conformity could be a partial cure for some problems of aggressive tax and financial reporting, book-tax conformity could have unintended consequences. One unintended consequence is how firms respond to book-tax conformity in reporting their income and any resulting changes in the informativeness of the earnings number that is reported. GMN investigate the former and report that firms deferred income in their financial accounting reporting in response to a change in the tax law that required more conformity. We examine the latter, i.e. do investors find the earnings more or less informative when tax is conformed more closely to book income?

There are several methods by which conformity can be implemented. One could conform tax to follow book rules either partially (the case in our paper’s setting because some, but not all, items are accrued in the same manner for book and for tax) or more completely (which is similar to the proposals considered recently). Alternatively, as in some

---

1 See also Harris (2005) and Graetzk (2005).
2 For example, in TRA 86 the requirement to switch to the accrual basis for tax purposes for the firms previously on the cash basis involved a switch to the accrual basis for non-inventory sales (e.g., accounts receivable) and payables (e.g., accounts payable). However, as under the current system, accounting for items like warranty reserve or bad debt reserve remained on the cash basis. Thus, we label this partially conformed – where the tax books are a hybrid cash basis and accrual basis rather than a pure cash basis (except for inventory related revenue and expenses) as they were prior to TRA 86. The accrual basis firms (the control firms in our tests) are also hybrid cash and accrual in a similar manner (and all firms are still today if they have sales in excess of $5 million). GMN provide an example of the magnitude of such conformity. In the 1996 US Tax Court case of
foreign countries, one could conform book to tax so that the tax rules determine financial accounting. In our setting some might question why the informativeness of the accounting data would change if the financial accounting rules stay the same and the tax rules change (i.e., it is not financial accounting that is conforming to tax rules). The reasoning is as follows. Even if the financial accounting rules do not explicitly change, how the same rules are applied by firms will change in order to minimize taxes thus increasing after-tax cash flows to shareholders. Indeed, GMN report results consistent with firms changing their financial reporting where an increase in conformity was required even though the financial accounting rules did not change.

How taxes affect financial reporting has been the subject of extensive research (see Shackelford and Shevlin (2001) for a review). In settings with a high degree of book-tax conformity, deferral of taxable income can lead to tax-induced lower financial accounting income (i.e., tax-induced conservatism). Prior studies obtain variation in book-tax conformity by looking across countries (for example, Ball, Kothari, and Robin, 2000; Guenther and Young, 2000). These studies report that the informativeness of earnings is lower in countries with a high degree of book-tax conformity than it is in countries with little book-tax conformity. Our paper holds the country constant (i.e., the United States) and obtains variation in book-tax conformity by examining a natural experiment in which a set of firms was required to increase their book-tax conformity as a result of a change in the tax law. The sample consists of firms originally identified in GMN that were required to switch for tax purposes from the cash method to the accrual method (hereafter referred to as converting

---

Hospital Corporation of America (HCA) (TC Memo 1996-105) the Internal Revenue Service (IRS) attempted to force HCA to use the (hybrid) accrual method for the period 1981-1986 rather than the cash method that the firm was using for tax purposes. Over the six year period the IRS computed that the use of the accrual method would increase taxable income by a total of $588 million. HCA’s pre-tax financial statement earnings over this same period were approximately $2,142 million (GMN page 226).
firms) as a result of the Tax Reform Act of 1986 (TRA 86). Before they were required to
switch, these firms faced relatively low levels of book-tax conformity because they used the
accrual method for financial reporting purposes but the cash method for tax purposes. Once
they were required to use the accrual method for both book and tax purposes, their degree of
book-tax conformity increased.

We test the implications of increased book-tax conformity (and the resulting change in
financial reporting income) for the informativeness of earnings by examining long-window
earnings response coefficients from regressions of returns on earnings changes and
regressions of returns on both earnings levels and changes. Because any results obtained
regarding the informativeness of earnings of the converting firms before TRA 86 compared to
after TRA 86 could be due to other factors that affected all firms during that time period, we
obtain a ‘matched’ set of firms that did not face increased conformity from the same four-digit
industries (SIC codes) as the converting firms (hereafter, accrual basis firms).3 We then
employ a difference-in-differences approach comparing the converting firms before and after
TRA 86 to the accrual basis firms before and after TRA 86. We find evidence consistent with
earnings becoming less informative to the market for the converting firms and this decrease
being significantly different from the observed change for the accrual basis sample.
Specifically, the long window earnings response coefficient (ERC) declines for the converting
firms and significantly more so than for the accrual basis firms. These results are robust to
different measures of earnings (earnings before extraordinary items and pre-tax earnings) and
to the inclusion of other control variables in the returns - earnings regressions.

The paper proceeds as follows. In the next section we review the prior literature, with
specific attention to the sample, tests, and findings of GMN. In section 3 we develop our

3 We discuss possible control samples in detail later.
hypotheses. In section 4 we discuss our sample, variable measurement, and empirical tests. Section 5 presents our results and section 6 concludes.

2. Related Research

2.1 Guenther, Maydew, and Nutter (1997)

GMN examine the impact of book-tax conformity on firms’ financial reporting and tax planning activities (but do not conduct any market returns tests). They identify a small set of publicly traded firms (66 firms with available data) that prior to the Tax Reform Act of 1986 (TRA 86) were allowed to use the cash method of accounting (other than for purchases and sales of inventory items) for tax purposes and the accrual method of accounting for financial reporting purposes. As a result, for these firms the year-end acceleration of financial statement income imposed no tax costs as long as cash collections were not also accelerated. In addition, by deferring (accelerating) cash collections (payments) firms could defer taxable income without affecting book income. TRA 86 required all large firms (sales in excess of $5 million) to use the accrual accounting method for tax purposes, strengthening the degree of book-tax conformity for these firms.

GMN show that the converting firms recognized (reported) book income sooner than accrual basis firms prior to TRA 86. Specifically, GMN examine three financial statement ratios indicative of the degree to which firms accelerate or defer earnings and cash flows: 1) the ratio of accounts receivable to accounts payable, which they interpret as an overall measure of accrual and/or cash flow management, 2) the ratio of cash receipts to cash disbursements, their measure of receipts and payments management, and 3) the ratio of sales to expenses (both measured under the accrual method for financial reporting), their measure
of revenue and expense management. They compare the cash firms to a matched set of accrual firms (matched by 4 digit industry membership) prior to TRA 86 and then compare how the converting firms changed their financial reporting after TRA 86 relative to the accrual basis firms.

Using both univariate and multivariate analysis, GMN report results generally consistent with their hypotheses that converting firms recognized greater income before TRA 86 and that they decreased the level of revenue recognized relative to the accrual basis firms after TRA 86. More specifically, prior to TRA 86 the converting firms had significantly higher ratios of accounts receivable to accounts payable and sales to expenses, indicating that the converting firms accrued revenues and deferred expenses to a greater degree than did the accrual basis firms. GMN also find that the converting firms reduced these same ratios to a greater extent than the accrual basis firms after TRA 86, indicative of a greater decrease in the acceleration of income and deferral of expenses as a result of the tax costs of these actions constraining this behavior. The authors conduct robustness checks for self-selection (because the group of converting firms chose to use the cash method of accounting for tax purposes prior to TRA 86), profitability, and growth and report results inconsistent with these factors adversely affecting the results of their empirical tests. Overall, GMN conclude that their results suggest that increasing the extent of book-tax conformity led firms to defer financial statement income, but again do not conduct any tests regarding the informativeness of the earnings numbers after TRA 86.4

---

4 We also note two other cases where sub-samples of firms have been affected by an increase in conformity as a result of tax law changes in the U.S. One case was the implementation of the Alternative Minimum Tax in 1986, which required a link to book income in the calculation of the alternative tax (see Gramlich 1991, Dhaliwal and Wang 1992, Choi et al. 2001, and Dhaliwal 2001). Another example is the LIFO conformity rules. While much of the early evidence was mixed on the market reaction to a LIFO adoption, Kang (1993) and Hand (1993) provide plausible explanations for the observed negative reaction for LIFO adoptions: firms that adopt LIFO expect input prices to rise. However, to our knowledge there are no studies that examine the informativeness of
2.2 Other Related Research

Watts (2003a, b) argues that there are four economic determinants of conservatism; contracting, litigation, regulation, and taxation. Conservative accounting generally requires a higher degree of verification to recognize good news as gains than to recognize bad news as losses (Basu 1997, Watts 2003a, b). Watts (2003a) defines conservatism as “the cumulative financial effects represented in the balance sheet and to income or earnings cumulated since the firm began operation” (page 208). By tax-induced conservatism we are referring to unconditional conservatism in the overall reporting of income and balance sheet accounts that results because firms are trying to lower their taxes (e.g., GMN results) rather than conditional conservatism (i.e., conditional upon a loss occurring then the accounting system recognizing that particular loss sooner rather than later, or in other words more timely recognition of economic losses). Watts (2003a, b) predicts and GMN provide evidence that unconditional conservatism is greater with higher levels of book-tax conformity because firms will report a lower book income in order to minimize their taxes. However, what is not clear or explored in the literature is how this reporting of lower income occurs. Some say the conservatism arising from book-tax conformity is because the firms will no longer be able to manage earnings upward (thus increasing earnings surrounding these two tax law changes. Testing for any change in earnings’ informativeness of AMT firms is problematic because it is difficult to identify firms likely affected by the AMT Book Income Adjustment (AMTBIA) ex ante. In addition, because the income effect of being on LIFO must be disclosed in the firm’s financial statements, the loss in informativeness because of conformity in this case is likely not comparable to other types of book-tax conformity requirements where disclosure of the low conformity outcome is not required. An increase in book-tax conformity that affected firms’ reported earnings has been identified for a small sample of firms by GMN. This small sample of firms from GMN offers a unique opportunity to study the capital market effects of requiring an increase in book-tax conformity in a U.S. setting.

5 Tax-induced conservatism is a response to tax policy and tax laws rather than an effort on the part of management to report economic losses in a more timely fashion to provide investors more information or ward off potential investor litigation. Thus, we are not talking about conditional conservatism.
informativeness; see, for example, Desai 2005) and some say firms will manage earnings downward to save taxes (thus decreasing earnings informativeness, see, for example, Hanlon, Laplante and Shevlin 2005). Which explanation is descriptive is not explored in the literature, nor is the question as to what tax-induced conservatism means for the informativeness of the earnings number.

Some indirect evidence is provided on our research question by Hanlon, Laplante and Shevlin (2005; hereafter HLS). HLS, using a large sample of U.S. firms, predict and find that financial accounting earnings provide more information to the market than estimated taxable income but that both income measures provide incremental information to investors. Thus, they argue that if book and taxable incomes are conformed to one measure, the capital markets in the U.S. will suffer an information loss. Further, if book income is conformed to follow the tax rules, they estimate a loss of approximately 50% of the current explanatory power of earnings. However, this is necessarily an indirect estimate because conformity on a large scale has not been implemented in the U.S. and thus, any resulting change in the reporting of financial accounting earnings cannot be incorporated in their setting. Note also that HLS have to estimate taxable income from financial statement information (and this information is only disclosed and not recognized), which raises concerns about measurement error in their taxable income estimate. In contrast, our study examines financial accounting earnings for a set of firms where an increase in conformity was required, thus eliminating the need to estimate taxable income.

---

6 We note in value relevance tests comparing cash flows and accounting earnings, accounting earnings exhibit greater relative informativeness than cash flows (Dechow 1994) in spite of this potential for earnings management. Taxable income is generally based on accrual concepts but some of the rules for revenue recognition are based on cash flows such that taxable income is a mixture of accrual and cash flow basis of computing income (HLS (2005)).
Although the U.S. has not implemented a regime that closely links the two income measures, making large sample evidence unavailable using U.S. data, several international studies have examined these issues. Ali and Hwang (2000) examine the relation between measures of informativeness of financial accounting data and several country specific factors, which include the degree to which tax rules influence financial accounting measurements, the involvement of a private sector body in the standard setting process, and whether the country has a bank-oriented or market-oriented financial system. Ali and Hwang (2000) find that the informativeness of earnings is lower when tax rules significantly influence financial accounting measurements. This result is consistent with tax laws being influenced by political, social, and economic objectives rather than the information needs of investors. This evidence would lead to the prediction that if book and tax incomes are conformed in the U.S., there would be a loss of information in the capital markets.\footnote{In addition, Harris, Lang, and Moller (1994) examine the value relevance of German accounting measures over a period in which the German accounting rules were considered by many to be particularly deficient in the information disclosed to investors. The German system included a closer link between book and taxable incomes, and a greater emphasis on both detailed prescriptive regulations and the needs of debtholders. Harris et al. (1994) also examine an earnings number calculated by the German financial analyst society, which was meant to represent the “permanent earnings” of the companies. The study reports that the correlation between 18-month returns and annual earnings for German firms is generally similar to that in the U.S. They also report that the earnings number produced by the analysts have more explanatory power for returns relative to the reported earnings, thus providing an example of an alternative form of information acquisition that arises when financial accounting does not provide the type of information demanded by investors (i.e., analyst groups calculating alternative measures of earnings).}

Ball, Kothari and Robin (2000) also find that valuation in code-oriented countries (i.e., where tax and book incomes are very closely linked) is much less related to reported earnings, consistent with the findings of Ali and Hwang (2000). Similarly, Guenther and Young (2000) report evidence consistent with accounting earnings in the U.K. and the U.S. being more closely related to underlying economic activity than accounting earnings in France and Germany. They predict these results because of differences in legal systems and
the demand for accounting information, differences in legal protection for external
stakeholders, and differences in the degree of tax conformity in the different countries.\(^8\)
Hung (2001) reports evidence consistent with the use of accrual accounting (versus cash
accounting) negatively affecting the value relevance of financial statements in countries with
weak shareholder protection. Hung (2001) uses book-tax conformity as a control variable in
her tests; however, book-tax conformity is not significant (inconsistent with Joos and Lang
(1994) and Ali and Hwang (2000)).

Overall, some of the studies comparing countries with differing degrees of book-tax
conformity find evidence consistent with high book-tax conforming countries having lower
value relevance of earnings. However, using international data does not directly answer the
question of what would happen in the U.S. because earnings quality is an endogenous
function of market demands, political influences, and the incentives of involved parties that
are specific to each country (Ball, Robin, and Wu 2003). Watts (2003b) makes clear that the
implications of tax induced conformity are not settled when he states, “…there is a lack of
time-series studies of changes in taxes and regulation…” (page 298). In addition, Watts
(2003b) states, “The cross-country evidence, particularly the Ball et al. (2000) evidence
directly comparing firms in code law and common law countries, supports the contracting
explanation [for conservatism]. Implications for the tax explanation are not as apparent”
(page 294). Thus, we examine the question directly using a unique set of U.S. firms at a time
when their level of book-tax conformity increased as a result of a tax law change. We view

\(^8\) Note that Guenther and Young (2000) do not isolate which of the 3 reasons they give for their prediction drives
their results because the US and UK (France and Germany) are each classified the same on each dimension. In
another study, Young and Guenther (2003) use the degree of book-tax conformity as one of two proxies for the
informativeness of financial accounting in a country (low book-tax conformity, higher informativeness) and test
whether capital flows into a country are decreasing with increased book-tax conformity. Their results are
consistent with this prediction. Thus, another cost of book-tax conformity documented by Young and Guenther
(2003) is decreased capital mobility.
our study as triangulating and extending the evidence in Hanlon et al. (2005) and the international studies described above.

We note that there have also been several recent studies regarding book-tax differences and earnings quality. Although not directly related, a discussion regarding how those studies relate to our predictions and findings is warranted. One example is Hanlon (2005), which presents results consistent with firms that have relatively large book-tax differences in a cross-section of firms also having lower earnings persistence. Thus, one may be tempted to conclude that if we just eliminate these differences and conform book and taxable income that earnings quality will improve because firms will not be able to manage earnings anymore. However, this presumes that the majority of book-tax differences are driven by earnings management of book income on which firms could avoid paying taxes. As stated in Hanlon (2005) there are many reasons why firms can have book-tax differences—1) different rules governing the calculation of the incomes because the two measures are intended for different purposes, 2) firms being tax aggressive, 3) firms managing earnings, and 4) a combination of these factors. Thus, if prior to TRA 86 the converting firms were opportunistically reporting financial accounting earnings and then could not do so after TRA 86 because of the tax constraint and they did not manage financial accounting earnings downward after TRA 86 in spite of the tax incentives to do so, we would likely see an increase in the informativeness of earnings after TRA 86. However, because there are many reasons for the book-tax differences to exist (both prior to and after TRA 86) and there was likely a behavioral response by firms after the required increase in conformity to attempt to manage financial accounting earnings downward (the market knew their conformity increased
and lowering book income would reduce taxes and increase cash flows) this setting is not the same as that in Hanlon (2005).  

3. **Hypothesis Development**

   Book and tax incomes are intended to have two separate purposes. Financial accounting income is reported under Generally Accepted Accounting Principles (GAAP) and is intended to provide outside stakeholders (investors, creditors, regulators, etc.) with reliable and relevant information regarding firm performance. In contrast, taxable income is calculated in accordance with the Internal Revenue Code (IRC) to determine corporate tax liabilities. The objectives of the IRC are multifaceted, depending on the many objectives of Congress, and include the efficient and equitable determination of tax liabilities and subsequent collection of revenue, and to provide incentives for firms to engage in, or not engage in, particular activities, and to reward particular constituencies (Scholes et al. 2005; Manzon and Plesko 2002).

   GAAP provides managers with considerable discretion in their choice of accounting procedures (Watts and Zimmerman 1986, p. 215). Accruals can be used by management to convey private information useful to external stakeholders (Dechow 1994). However, accruals can also be used opportunistically, thus distorting the information provided by management. HLS argue that conforming book income and taxable income would reduce the informativeness of earnings because managers would report earnings to minimize taxes rather than reporting earnings in a manner which conveys relevant and

---

reliable information regarding firm performance through earnings. In contrast, proponents of book-tax conformity argue that in an unconformed system firms manage accounting earnings upward and that book-tax conformity would force them to stop, resulting in more honest reporting which would make earnings more (not less) informative. In sum, the increased (unconditional) conservatism in reported earnings that GMN report as a consequence of increased book-tax conformity could have two possible effects depending on management’s reporting both before and after the increase in conformity (TRA 86 in our setting). The increased conservatism that results from conformity could result from firms no longer being able to manage earnings upward (thus increasing earnings informativeness) or it could arise from firms managing earnings downward after the rule change to save taxes (thus decreasing earnings informativeness). Although advocates on both sides of the debate argue strongly with regard to their predictions, the existing literature does not directly test these predictions. We test H1 directly using the unique setting of firms required to switch from cash basis to accrual basis accounting for tax purposes after TRA 86. Our first hypothesis is as follows, stated in the alternative form consistent with predictions made in Hanlon and Shevlin (2005) and HLS (2005):

H1: The informativeness of earnings for the converting firms decreases after TRA 86.

By informativeness of earnings we mean the slope coefficient relating returns to earnings in a long-window returns regression.

We also test a second hypothesis regarding the two groups of firms (converting and accrual) prior to TRA 86. Our main test is the test of H1 which examines whether earnings of converting firms become less informative after the firms are required to use the accrual
method of accounting for tax purposes (i.e., after their tax accounting becomes more conformed with financial accounting). We use the accrual firms as a control group because we conduct an interrupted time series test and there could have been macroeconomic effects which affected the earnings informativeness of all firms. Thus, if we did not use a control group for comparison we may mistakenly attribute an effect that happened to all firms to the increase in book-tax conformity. As a result, our main test is whether the informativeness of earnings for converting firms decreased more than for accrual firms. This is the strongest test because it is a difference-in-differences test. However, because the converting firms are less conformed prior to TRA 86 than accrual firms are prior to TRA 86, we also test whether the informativeness of earnings is different between the two groups of firms prior to TRA 86. Our second hypothesis is as follows, in the alternative form:

H2: Prior to TRA 86, the informativeness of earnings for the converting firms is greater than the informativeness of earnings for the accrual firms.

We have no ex ante prediction about whether the accrual firms’ earnings will become more or less informative after TRA 86 relative to before but include these firms only as a control sample in the event that all firms’ earnings became less informative around TRA 86 due to some factor other than an increase in book-tax conformity. We also do not propose a formal hypothesis regarding the difference in informativeness in earnings between the two groups after TRA 86; however, our prediction is that there is likely no difference between the two groups because they now have an equal degree of conformity between tax and book accounting.
4. **Sample, Descriptive Statistics, and Empirical Design**

4.1 *Sample*

Our sample selection criteria are described in Table 1. We begin with the sample of 94 firms identified by GMN as using the cash method of accounting for tax purposes prior to TRA 86.\(^{10}\) We delete observations with missing data for our tests, firms with fiscal year end changes, and firms which have 1985 sales of $5 million or less because firms with less than $5 million in sales were not required to change accounting methods under TRA 86.\(^{11}\) We also require firms to have available data in at least both the years 1985 and 1988 to be retained in the sample.\(^{12}\) Our final sample consists of 56 firms that used the cash method for tax purposes prior to TRA 86 and were then required to switch to the accrual for tax purposes. We refer to these firms as the “converting firms.”\(^{13}\)

We also gather a sample of control firms from the same four digit SIC codes that used the accrual method for tax purposes during the entire period of the study; referred to as the “accrual basis firms.” We use this control sample for two reasons. First, this is the same control sample as used in GMN. Second, this control sample provides a large number of firms to be used in our tests. Ideally we would want to test the informativeness of the earnings of the cash basis firms that converted compared to what they would look like had they not converted. Of course this is not possible. The following table identifies the various

---

\(^{10}\) GMN use a keyword search of financial statement tax footnotes on the NAARS file of the LEXIS/NEXIS data base for 1985 using the terms ‘cash basis’ and ‘cash method’. They exclude firms in the commercial banking and savings and loan industries because these firms have special tax and financial accounting rules not applicable to the majority of firms.

\(^{11}\) IRC §448.

\(^{12}\) Similar to GMN, we exclude observations from the years 1986 and 1987 because TRA86 was phased in over those two years.

\(^{13}\) We note that GMN’s final sample in their paper consisted of only 66 firms. We have additional data requirements (the use of returns) and are using Compustat tapes ten years later and thus expect to have a smaller sample than GMN.
samples of firms potentially available along with their method of tax accounting both pre-TRA 86 and post-TRA 86.

<table>
<thead>
<tr>
<th></th>
<th>Pre-TRA 86</th>
<th>Post-TRA 86</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converting Firms</td>
<td>Cash</td>
<td>Accrual</td>
</tr>
<tr>
<td>Accrual Method Firms</td>
<td>Accrual</td>
<td>Accrual</td>
</tr>
<tr>
<td>Cash Method Firms</td>
<td>Cash</td>
<td>Cash</td>
</tr>
<tr>
<td>Small Sales Firms</td>
<td>Cash/Accrual</td>
<td>Cash/Accrual</td>
</tr>
</tbody>
</table>

The converting firms are those that are the subject of our analysis – firms that experience a required increase in book-tax conformity. We use the accrual basis firms as the control sample in our main analysis – firms from the same industries as the converting firms that were accrual for tax purposes both before and after TRA 86 (these firms experienced no change in the required level of book-tax conformity). The third grouping, cash method firms, consists of those firms on the cash method of accounting for tax purposes both before and after TRA 86. Thus, these firms would be like our ‘treatment’ sample pre-TRA 86 but not subject to the increase in the conformity requirement (i.e., they must have sales less than $5 million). While this group would also make a useful control sample, we cannot obtain a reasonable size sample of cash method firms. GMN conducted a thorough search of financial statements on the NAARs database and only found 94 firms in total that were on the cash basis method for tax accounting prior to TRA 86. Of course, this small number is likely not the population of firms that were on the cash basis but is the sample of firms that GMN could identify from searching the financial statements. Out of this sample of 94 firms for which we can still link to Compustat (91 firms) we find only 3 firms with sales less than or equal to $5
million in 1985. Thus the control sample of cash basis firms that did not convert would consist of at most 3 firms. This does not make for a plausible test. As a result, we utilize the accrual basis firms as our control group in our main analysis.

We also employ an alternative control sample of firms, labeled the Small Sales Firms above, and describe the results of using this sample in our sensitivity analysis below. These firms have sales less than $5 million and thus could have remained on the cash basis if they were on the cash basis prior to TRA 86. We cannot identify (any better than GMN) which of these are cash or accrual basis either before or after but instead use the entire group as an alternative control for our interrupted time series tests.

As noted, for our main analysis, we compare the converting sample to the accrual basis sample. We include firm-years with available data in the time period from 1981-1985 for the pre-TRA 86 period and firm-years with available data in the time period from 1988-1992 for the post-TRA 86 period. In total, we have 3,576 firm-years of data consisting of 450 converting firm-years and 3,126 accrual basis firm-years.

4.2 Descriptive Statistics

Table 2 contains descriptive statistics for the sample. Our measure of earnings is the change in earnings before extraordinary items (ΔE, Compustat data #18) from year t-1 to year t, scaled by the market value of equity (MVE, data #199 * data #25) at the end of year t-1.\textsuperscript{14} Our measure of returns (R) is the raw buy and hold 12 month return beginning in the fourth month after the fiscal year end of t-1 and ending 3 months after the fiscal year-end of year t. ASSETS are the total assets of the firm at year-end (data #6), SALES GROWTH is defined as

\textsuperscript{14} We also test earnings defined as pre-tax earnings and find similar results described below in section 5.4.
the percentage increase in current-year sales over the prior year sales (data #12), and
LEVERAGE is defined as the long-term debt of the firm scaled by total assets (data (#9+#34)/#6). Return on assets (ROA) is defined as earnings before extraordinary items divided by average total assets (data #18/average data #6), earnings-to-price (E/P) is earnings before extraordinary items divided by market value of equity at year-end (data #18/MVE), and book-to-market (B/M) is defined as the book value of equity at year-end divided by MVE (data #60/MVE).

Comparing converting firms to accrual firms, the data indicate that the converting firms tend to be smaller than the accrual firms both before and after TRA 86, whether measured by MVE or by ASSETS. There is no difference between the two groups’ returns or change in earnings in either the pre-TRA 86 or post-TRA 86 periods. The converting firms exhibit higher sales growth, E/P and M/B (proxies for growth) pre-TRA but there is no discernable difference post-TRA. Converting firms also exhibit significantly higher leverage post-TRA but there is no difference pre-TRA – the leverage of converting firms increased. The tests of differences for ROA between the groups are mixed depending on whether significance tests are based on means or medians. Where variables changed pre/post TRA (e.g., growth and leverage) we check in sensitivity analysis that these changes are not driving the observed results (see Section 5.3.c).

The fact that there are some differences between converting and accrual firms underscores the importance of utilizing a natural experiment with an interrupted time series design as opposed to a pure cross-sectional approach. If there had been no exogenous change in book-tax conformity and we had merely compared converting firms to accrual method firms, it would be difficult to isolate effects of book-tax conformity on reporting behavior
given the other differences across the firms. With the 2 x 2 design in the current study, we are able to observe the same converting firms under two different book-tax conformity regimes, essentially giving us a within-firm test. To control for time-varying industry or macroeconomic effects we also compare the converting firms to a set of accrual method firms that were not affected by the change in book-tax conformity in the same pre and post-time periods.

4.3  *Empirical Design*

We examine the difference-in-differences in the long-window earnings response coefficient between the converting and accrual basis firms. Following Francis et al. (2005) and others, we interpret the slope coefficient relating returns to earnings obtained from regressions of annual returns on annual earnings changes as a measure of the informativeness of earnings (we also estimate regressions of annual returns on annual earnings levels and changes).

The interpretation of the slope coefficient in a returns-earnings regression as a measure of the informativeness of earnings is common in the accounting literature. For example, Lev and Zarowin (1999) state “We use statistical associations between accounting data and capital market values (stock prices and returns) to assess the usefulness of financial information to investors” (page 354). “A different perspective on the informativeness of earnings is provided by the combined ERC (earnings response coefficient), defined as the sum of the slope coefficients of the level and change of earnings…A low slope coefficient suggests that reported earnings are not particularly informative to investors, perhaps because they are perceived as transitory or subject to managerial manipulation. In contrast, a high
slope coefficient indicates that a large stock price change is associated with reported earnings...” (page 356). Francis and Schipper (1999) describe different interpretations of value relevance. Two of their interpretations are based on value relevance as indicated by a statistical association between financial information and prices or returns. One of these (their interpretation number 3) measures whether investors actually use the information in earnings in setting prices. “This interpretation implies that value relevance is measured in terms of “news,” implying that value-relevant information changes stock prices because it causes investors to revise their expectations” (page 326). However, as they state, implementing this type of interpretation requires taking into account the linked concepts of timeliness and expectations formation. In our setting, we do not have a good expectations model for the converting or accrual basis firms. Analysts forecast coverage would be very small, if at all, for all the firms in 1986 especially for the converting firms which are on average smaller firms.

Francis and Schipper’s (1999) fourth interpretation (the one they use—long window association tests) of value relevance is measured by the ability of financial statement information to capture or summarize information, regardless of source, that affects share values. This interpretation does not require that financial statements be the earliest source of information. This is the interpretation of informativeness that we use in our paper.

Thus, we interpret differences in the slope coefficients between our sub-samples of firms as providing evidence on differences in the credibility or informativeness of accounting information. In our case, this difference, if any, is associated with each of the sub-sample’s
level of book-tax conformity.\textsuperscript{15} We use the following difference-in-difference regression model:

\[ R_t = \alpha + \beta_1\text{CONVERTING} + \beta_2\text{POST}_t + \beta_3\Delta E_t + \beta_4\text{CONVERTING}^*\Delta E_t + \beta_5\text{POST}^*\Delta E_t + \beta_6\text{CONVERTING}^*\text{POST}_t + \beta_7\text{CONVERTING}^*\text{POST}_t^*\Delta E_t + \varepsilon \]

(1)

where CONVERTING is an indicator variable set equal to 1 if the firm is a converting firm and zero if the firm is an accrual basis firm; POST is an indicator variable set equal to 1 if the year of the observation is post-TRA 86 (1988-1992) and zero if the observation is prior to TRA 86 (1981-1985); \( \Delta E_t \) and \( R_t \) are as defined above. Using this specification we can investigate whether converting firms’ average ERC declined post-TRA 86 more so than the average ERC of the accrual firms. This approach controls for any differential in the post-TRA period for all firms attributable to other factors and for any differential in returns between the converting and accrual basis firms not attributable to earnings.

The coefficient on \( \Delta E_t, \beta_3 \), represents the ERC for accrual firms prior to TRA 86 and consistent with prior ERC research, we predict a positive sign. The coefficient on \( \text{CONVERTING}^*\Delta E_t, \beta_4 \), represents the incremental effect of being on the cash basis of accounting for tax purposes and should have a positive sign if converting firms prior to TRA 86 have reported earnings that are more informative than earnings of accrual basis firms prior to TRA 86. This coefficient is the relevant test of H2. The coefficient on \( \text{POST}^*\Delta E_t, \beta_5 \), is the change in the ERC for the accrual basis firm post-TRA 86, which controls for any change in the return-earnings relation for all firms attributable to something other than the increase in book-tax conformity required by TRA 86. We have no prediction on the sign of this

\textsuperscript{15} Francis et al. (2005) cite other papers that capture the informativeness of earnings using the coefficient relating returns to earnings (e.g., Teoh and Wong, 1993; Imhoff and Lobo, 1992; Warfield et al., 1995; Subramanyam and Wild, 1996; Fan and Wong, 2002; and Yeo et al., 2002).
coefficient. The main coefficient of interest for H1 is the coefficient on $CONVERTING^{*}POST_t^{*}\Delta E_t$, $\beta_7$. This represents the incremental ERC for a converting firm after TRA 86 relative to being a converting firm before TRA 86 and relative to being an accrual basis firm before and after TRA 86. Our predicted sign for this coefficient is negative—consistent with the informativeness of earnings declining for the converting firms from the pre- to post-TRA 86 period after controlling for any change in the ERC over the same time period for accrual basis firms.\textsuperscript{16, 17}

We also estimate an alternative specification, including both changes and levels of earnings in the regression. This specification is as follows:

$$R_t = \alpha + \beta_1CONVERTING + \beta_2POST_t + \beta_3E_t + \beta_4\Delta E_t + \beta_5CONVERTING^{*}E_t + \beta_6CONVERTING^{*}\Delta E_t$$
$$+ \beta_7POST^{*}E_t + \beta_8POST^{*}\Delta E_t + \beta_9CONVERTING^{*}POST_t^{*}E_t + \beta_{10}CONVERTING^{*}POST_t^{*}\Delta E_t + \beta_{11}CONVERTING^{*}POST_t^{*}\Delta E_t + \varepsilon$$

(2)

where $E_t$ is earnings before extraordinary items (Compustat data #18), scaled by the market value of equity ($MVE$, data #199 * data #25) in year t-1 and all other variables are as defined

\textsuperscript{16} At first blush, estimating a Basu (1997) type regression may seem to be another plausible way to test our research question. A Basu (1997) regression tests whether accounting earnings are conservative, that is whether accounting earnings incorporate economic losses more quickly than economic profits, by testing the return response coefficient (under the assumption that returns reflect economic earnings) for loss firms (negative returns firms—economic losses) as compared to firms with positive returns. However, one must be careful because in our setting, while we predict that the cash firms become more unconditionally conservative (consistent with the findings in GMN), we would \textit{not} predict they become more conditionally conservative in the sense that they would recognize economic losses more quickly. Rather the converting firms in our setting would become more conservative only in an effort to reduce tax liabilities and not to reflect a better measure of performance or to reduce the chance of a lawsuit. Thus, the prediction in a Basu (1997) type regression would be that of no difference between the converting and accrual basis firm-years and due to the small sample and resulting low power in our study, testing a null hypothesis prediction is not a strong test. (Indeed, when we estimate a Basu (1997) regression we find no difference between the cash and accrual basis firm-years but because of the low power of the tests we do not place much weight on these results.)

\textsuperscript{17} We note that while Francis et al. (2005) call tests of $R^2$s an alternative measure of informativeness, they do not test the explained variability of the returns-earning relation. They cite problems comparing $R^2$s across samples (see also Gu (2002) and Cramer (1987)) and the lack of a model that maps signal credibility into the explained variability of the earnings return relation. In addition, Lev and Zarowin (1999) explain that changes in $R^2$s might be driven by changes in the relative importance of nonaccounting information, with no change in the informativeness of earnings on a stand alone basis, whereas the “…declining slope coefficients indicate a deterioration in the value relevance of earnings to investors, irrespective of the effects of other information sources” (page 356). Thus, we rely on the slope coefficient and do not conduct tests on the $R^2$s.
above. The combined ERCs, defined as the sum of the slope coefficients of the level and change of earnings, are the items of interest in this regression. Thus, the sum of the coefficients $\beta_{10}$ and $\beta_{11}$ is the main ERC of interest analogous to $\beta_7$ in equation (1). As with $\beta_7$ in equation (1), we predict the sum of $\beta_{10}$ and $\beta_{11}$ to be negative indicating that the informativeness of earnings declined after TRA 86 more for the converting firms than for the accrual basis firms. The sum of coefficients, $\beta_5$ and $\beta_6$, are analogous to $\beta_4$ in equation (1) and are the coefficients of interest for our H2. We predict this sum to be significantly positive consistent with the converting firms having more informative earnings relative to the accrual firms prior to TRA 86.

Our analysis is predicated on efficient markets. When we say loss of information we mean a loss of information in earnings as a measure of economic performance for the period. What our tests examine is whether the increase in conformity for the converting firms results in accounting earnings which contain less information useful to the market. While an efficient market can and will get information from other sources, these other sources may be more costly and not equally available to everyone. In a conformed system, firms or analysts may disclose some type of pro-forma earnings measures to better approximate performance. However, it is important to consider how (or whether) this information dissemination would be regulated and whether everyone would have access to this alternative source of information in a manner that the SEC and FASB have worked so hard to make true of accounting earnings (e.g., Reg FD).

5. **Empirical Results**

5.1 *Difference-in-Differences ERC Regression Test – Earnings Changes Specification*
Table 3 presents the results of estimating regression equation (1). Recall that our first hypothesis is that the converting firms will have a greater decline in informativeness (as measured by ERCs) than accrual firms following TRA 86. The coefficient of interest for this hypothesis is, CONVERTING*POST*∆Et, \( \beta_7 \). The results in Table 3 reveal that \( \beta_7 \) is negative and significant (p-value = 0.0005, one-tailed test) indicating that the converting firms exhibit a decline in their ERC after TRA 86 that is significantly greater than the decline in the ERC for the accrual basis firms over the same period. Thus, the evidence is consistent with an increased level of book-tax conformity reducing the informativeness of earnings as predicted in our first hypothesis.

Our second hypothesis is that the converting firms have more informative earnings pre-TRA 86 than accrual firms pre-TRA 86. The main coefficient of interest for H2 is, \( \beta_4 \). Consistent with our hypothesis, the coefficient on CONVERTING*∆Et, \( \beta_4 \), is significantly positive (p=0.0005, one-tailed test) indicating that the converting firm-years exhibit a greater ERC relative to the accrual basis firm-years in the pre-TRA 86 period. This result is consistent with greater information content of earnings for firms allowed to use different accounting methods for book and tax (the converting firms) relative to firms where the income measures are conformed to a greater degree (the accrual basis firms). This result is also similar to the cross-country findings that the informativeness of earnings is greatest in countries with low degrees of book-tax conformity. However, the \( \beta_4 \) result could be caused by other differences between these two samples for reasons unrelated to the method of accounting used for tax which is why our primary hypothesis (H1) focuses on the difference-in-difference test, \( \beta_7 \).

---

18 All standard errors for this regression estimation are robust standard errors using the Huber-White correction with clustering at the firm level.
We also note that the coefficient on the change in earnings, $\beta_3$, is significant and positive as expected, indicating that the ERC is positive for accrual firms prior to TRA 86. The coefficient on POST*$\Delta$E, $\beta_5$, is designed to capture any broad changes in informativeness after TRA 86 and is marginally significant (p=0.09, two-tailed test) indicating that the ERC declined for the accrual basis firms post-TRA 86.

Panel B of Table 3 presents the separate sub-group coefficients and how these coefficients are derived from the difference-in-difference regression. Panel B Table 3 also reports tests of the coefficient differences between all four sub-groups of firm years. The first and third rows repeat the estimated coefficients, $\beta_4$ and $\beta_5$, from Panel A and the F statistic is the square of the t statistic from panel A and these results are discussed above. The second and fourth rows present new information. The second row compares converting firm years pre-TRA 86 to converting firm years post-TRA 86 and shows that there is a statistically significant decline in informativeness after these firms were required to increase their degree of book-tax conformity (difference in ERCs pre-to-post TRA 86 is -2.008, significant at 0.0001). The fourth row of Panel B reveals that there is no statistically significant difference between the ERCs of converting firms and accrual firms post-TRA 86. We did not present a formal hypothesis with regard to this comparison but our informal prediction was that there would be no difference between these groups because they now have the same level of book-tax conformity. The results are consistent with this conjecture.

Overall our results are consistent with both of our hypothesis. The converting firms experienced a decline in the informativeness of earnings after their degree of book-tax conformity increased. This result is unlikely to be caused by factors other than the increase in book-tax conformity because this decline in informativeness is greater than the decline
experienced by other firms in the same industries over the same time period. In addition, the firms on the cash basis method of accounting for tax purposes have more informative earnings before TRA 86 relative to accrual basis firms which also supports our conjecture that book-tax conformity reduces the informativeness of earnings. While this latter result could be caused by other factors that differ between the groups of firms (i.e., a self-selection problem), this concern is mitigated because we find that the decrease after TRA 86 is greater for the converting firms than the accrual firms and because these sub-groups of firms are not significantly different in terms of the informativeness of earnings after TRA 86 when their degree of book-tax conformity is the same. In sum, the inference from our results is that earnings management downward to minimize taxes in a conformed system is more costly in terms of decline in informativeness of earnings than earnings management upward in an unconformed system.19

5.2 Difference-in-Differences ERC Regression Test - Alternative Specification with Earnings Changes and Earnings Levels

Table 4 presents the results of estimating equation (2). The coefficients of interest are the sums of the coefficients on the level and change of earnings. Analogous to the coefficient $\beta_7$ in equation (1), our main variable of interest for the difference-in-difference test of H1, is the sum of the coefficients $\beta_{10}$ and $\beta_{11}$. The sum of these coefficients represents the incremental effect of being a converting firm after TRA 86 relative to being an accrual firm and relative to being a converting firm prior to TRA 86. The sum of these coefficients is -1.35 and an F test reveals that the sum is significantly different from zero (p-value of 0.0303)

19 Further evidence consistent with our hypotheses is that using the pre-TRA estimates as a base, the ERC for converting firms fell more than 5 standard deviations while the ERC for accrual firms fell 2.7 standard deviations.
consistent with our first hypothesis. The coefficients of interest for our second hypothesis are $\beta_5$ and $\beta_6$. The data reveal that the sum of these two coefficients is 1.56 and an F test indicates that this sum is significantly different from zero with a p-value of 0.0087.

In Panel B we present data analogous to Table 3. In the first part of Panel B we show the separate sub-group ERCs and how each of these can be derived from the regression results in Panel A. In the second part of Panel B we present tests of differences between each of the four sub-groups. The results are very similar to those in Table 3 with the exception of the accrual firms no longer having a significant decline in the informativeness of earnings after TRA 86 indicating less of a need for the control group in this specification. However, the comparisons reveal, similar to Table 3, that converting firms have a higher ERC prior to TRA 86 than accrual firms (p-value = 0.0087) and the converting firms have a significant decline in ERC after TRA 86 (p-value = 0.0062). Also similar to Table 3 results, following TRA 86 there is no discernable difference (p-value = 0.1917) between the converting firms and the accrual firms in terms of ERC as would be expected now that the level of conformity is the same for the two sub-groups.

Thus, as with the changes only specification, the results from this specification are consistent with both our hypotheses. The converting firms have more informative earnings than accrual firms prior to TRA 86 consistent with less book-tax conformity leading to more informative earnings. In addition, after the required increase in conformity the converting firms have a decline in informativeness and this decline is greater than the decline for accrual basis firms.

5.3 Additional Analysis
5.3.a Alternative Control Sample

Because of the importance of controlling for macroeconomic events and the possibility that the accrual basis firms do not properly control for these events, we also conduct our main tests (difference-in-differences regression as specified in Table 3) on an alternative control sample of all firms with sales less than $5 million in 1985 (labeled small sales firms) as described above. To conduct this analysis, we pull all firms with 1985 sales less than $5 million. This provides a relatively large sample of 1,504 firms in 1985. We then restrict the sample to observations in the same industries as our converting basis firms which reduces the control sample to 425 observations from 1985. (We note that this sample only includes 19 of the 38 industries from our converting sample. As a result we keep only the firms in our converting sample that have firms in these 19 industries resulting in a sample of only 33 firms from the original converting sample.) We then restrict our new control sample to only firms that have 1985 change in earnings data available which results in 289 firms. We then eliminate observations not available in CRSP resulting in only 105 firms. Finally, we retain only firms with available data in 1985 and 1988 and end up with a sample of only 89 firms. Over the five years prior to TRA86 (1981-85) and the five years after (1988-92) these 89 firms provide an alternative control sample of 583 observations and a new converting sample of 33 firms and 263 observations, respectively. Thus, this alternative control sample yields a considerably smaller N than our original sample. However, we continue to estimate the same difference-in-difference regression as shown in Table 3.

The results using this alternative control sample are presented in Table 5. The coefficient on our main test variable, $\beta_7$, (Cash*Post*AE) is -2.54 (significant at 0.002). The coefficient, $\beta_4$, is 2.48 and continues to be significantly positive (p-value of 0.001). Thus, the
converting firms have a higher ERC prior to TRA 86 than the small sales firms.\textsuperscript{20} We again present the ERC for each sub-group separately and the tests of ERC differences between each of the four sub-groups. The converting firms have a significant decline in ERC after these firms are required to increase their level of conformity (F statistic = 9.17, p-value of 0.0030). Again we find that the converting firms and the small sales firms have no discernable difference in the informativeness of earnings after TRA 86 indicating that once the level of book-tax conformity is similar between the groups the difference in terms of informativeness of earnings is eliminated. In sum, the results of tests using the alternative control sample of firms with sales of less than $5 million are consistent with our prior results and with both of our hypotheses.

5.3.b. The Effect of Loss Firms

Our first hypothesis predicts and the main results show that greater book-tax conformity is associated with a loss of informativeness in reported financial accounting earnings. The results in GMN are consistent with this lower informativeness in earnings occurring as a result of management reporting lower financial accounting earnings in order to save taxes rather than providing information through earnings. Because the tax incentives are to lower reported financial accounting income, increasing conformity could result in more reported financial accounting losses. Indeed, in the sub-samples of firm-years, 18 (20) percent of the converting (accrual) basis firm-years prior to TRA 86 report a loss, 30 (28) percent of the converting (accrual) basis firm-years after TRA 86 report a loss, indicating a greater increase in reported losses for the converting firms relative to the accrual basis firms.

\textsuperscript{20} This difference suggests this alternative control sample likely contains mostly accrual firms as expected based on the very small number of cash basis firms identified by GMN in their search of financial statements.
This differential in rates of loss observations could affect the results. Hayn (1995) shows that the explanatory power and earnings response coefficients are lower for loss observations. To investigate the effect of loss firm observations on our study we re-estimate equation (1) after excluding loss observations from the sample and find that the difference-in-differences interaction term coefficient, \( \beta \), (the coefficient on the interaction of \( \text{CASH} \times \text{POST} \times \Delta \text{E} \)), is still negative and is significant at a p-value of 0.024 (one-tailed). Thus, the results are not simply driven by converting firms adopting more conservative accounting and thus reporting more losses, which have lower ERCs, but also by ERCs for firms with positive earnings actually declining after conformity increases.\(^{21}\)

5.3.c. Additional Control Variables

In the main specification we do not include additional control variables because our tests are difference-in-differences tests. However, to provide additional evidence that the results in Table 3 are not affected by correlated omitted variables we include several additional control variables in the regression, each interacted with the \( \Delta \text{E} \) variable. The variables we include are 1) SIZE (measured as the natural log of total assets (data #6)), 2) B/M (book-to-market ratio) (data #60/ (data #199 * data #25)), 3) ROA (return on assets) (data #18/ the average of data #6 in years t and t-1), 4) LEVERAGE ((data #34 + data #9)/ data #6)), and 5) SALES GROWTH from year t-1 to year t (data #12 in year t – data #12 in year t-1/data #12 in year t-1).

\(^{21}\) However, if one believes the greater incidence of losses for the converting firms is a result of the increase in book-tax conformity and the resulting change in incentives for firm management, then even if our results were due to the increase in loss observations for the converting-basis firm-years this would not be problematic but rather would further exemplify that a consequence of book-tax conformity is that there will be a lowering of earnings informativeness to market participants.
In untabulated tests that include these additional control variables we find that the coefficient on 1) SIZE interacted with ΔE is significantly negative (p-value of <0.001), 2) B/M interacted with ΔE is insignificant (p-value of 0.444)\textsuperscript{22}, 3) ROA interacted with ΔE is marginally significantly positive (p-value of 0.068), 4) LEVERAGE interacted with ΔE is insignificantly different from zero (p-value of 0.962), and 5) SALES GROWTH interacted with ΔE is significantly positive (p-value of 0.044). With regard to the main variable of interest in the difference-in-differences specification (\(\beta_7\) in equation (1)) we find that it remains significantly negative (p-value of 0.0015, one-tailed) as predicted.\textsuperscript{23} The remaining coefficients in the regression are of similar significance to the reported results in Table 3.

5.3.e. Alternative Definition of Earnings

Because the definition of earnings we use in our analysis, earnings before extraordinary items, is after the tax expense on the firm’s income statement, we conduct a sensitivity tests using pre-tax earnings (data #170) in place of earnings before extraordinary items to make sure the accounting for income taxes before and after TRA 86 does not induce our results. Although there was no explicit change in the accounting standard regarding the accounting for income taxes during our sample period, firms’ tax expense could have changed significantly because of tax law changes in TRA 86. Using the revised definition of earnings, our results are qualitatively unchanged. In the ERC difference-in-differences regression (Table 3) the coefficient on the main variable of interest, \(\beta_7\), is negative and significant (p-

\textsuperscript{22} If SALES GROWTH interacted with ΔE is removed from the regression, the book to market interaction term becomes significantly negative indicating both proxy for growth.

\textsuperscript{23} Again, all standard errors for this regression estimation are robust standard errors using the Huber-White correction with clustering at the firm level.
value of 0.0012, one-tailed). Thus, the results are robust to the use of pre-tax earnings rather than earnings before extraordinary items.

5.3.f. Controls for Income Shifting

Finally, because there is some evidence of firms shifting income into post-TRA 86 tax years in order to take advantage of lower tax rates (Guenther, 1994; Scholes, Wilson and Wolfson, 1992), we estimate the difference-in-differences regression by excluding data for the tax year 1988 to ensure that the results are not somehow driven by this income shifting. Again, we find results consistent with Table 3, the coefficient on the difference-in-difference term, $\beta_7$, is negative and significant with a p-value of 0.0005, one-tailed. Overall, the main inferences of the analysis are unaffected by the inclusion of control variables, the use of pre-tax earnings as the main regressor, or by the exclusion of tax years to which income may have been shifted by firms in response to the lower tax rates implemented in TRA 86.

5.4. Discussion of Self-Selection

Because firms could choose to be either cash-basis or accrual-basis firms prior to TRA 86, the reasons why firms chose to be one or the other could affect how they respond to increased conformity and perhaps then affect our results (i.e., a self-selection problem). GMN conduct a test for the effects of self-selection using a two stage switching regression and find that their results are robust.

In our empirical tests we use a difference-in-differences approach to examine our research question. This means that, in effect, we are using the same converting firm as its own control (creating the first difference) while at the same time using a sample of accrual
basis firm-years as a control for any macroeconomic effects occurring around TRA 86 that would have caused our results (the second difference). Because we use a difference-in-differences design the reasons why the firm chose (or did not choose) the tax accounting method cannot be affecting our results because the firm acts as its own control. The only case in which the firm would not provide a good control for itself would be if the firm changed around the same time as TRA 86 and it changed in such a way to affect a factor that impacts earnings response coefficients. From our statistics (Table 2) we note that growth could be one of these characteristics. Our converting firms experience significantly greater SALES GROWTH and lower B/M before TRA 86 than after TRA 86. Because growth is positively associated with earnings response coefficients (Collins and Kothari, 1989), the higher growth pre-TRA 86 could cause the ERCs to be greater pre-TRA 86 and the decrease in growth post-TRA 86 could cause the ERCs to be lower post-TRA 86.

However, sensitivity analysis discussed above includes two different proxies for growth (both the book-to-market ratio as in Collins and Kothari (1989) and sales growth) in the regression as control variables to control for their effect on the earnings response coefficient. Even after including these controls the main results are still significant – meaning that the converting firms have a significant decrease in their earnings response coefficient from the years prior to TRA 86 to the years after TRA 86 and this decrease is bigger than any decrease the accrual firms experienced over the same time period even after controlling for the effect of growth on the earnings response coefficients. In addition, as stated above, the result showing that the ERCs of the two groups of firms (converting and accrual basis firms) are not significantly different after TRA 86 should mitigate concerns over self-selection. The firms do not appear to be inherently different in terms of their return-earnings relation for
reasons other than the level of conformity because once the degree of conformity is the same, their ERCs are the same as well.

6. Conclusions

This paper examines the effect of book-tax conformity on the informativeness of financial accounting earnings. We use a natural experiment in which a sample of publicly traded firms were required to switch from the cash method of accounting to the accrual method for tax purposes, thereby increasing the level of conformity between book and taxable incomes. GMN examine this same set of firms and find that after the required change in the tax rules these firms deferred more income for financial reporting purposes because of the increased trade-off between financial accounting and tax. In other words, once the two incomes were more closely aligned, the firms reported lower financial accounting earnings, all else constant, in order to save (defer) tax dollars.

We examine the market’s use of this more closely aligned earnings number. We predict that earnings that are more closely linked to taxable income will be less informative to market participants. We predict that increased conformity reduces the informativeness of earnings because managers will report earnings to minimize taxes rather than convey private information about firm performance.

We find evidence consistent with our predictions. Firms that were required to convert to the accrual basis method for tax purposes, which increased the level of conformity between tax and financial accounting reporting, experience a decline in long-window ERCs following TRA 86. In order to ensure that this decline was not caused by a macroeconomic event that affected all firms, not just those subject to the increased conformity requirement of TRA 86,
we compare the decline in the ERC to the change in the ERC for a sample of industry-matched firms not subject to the conformity changes imposed by TRA 86. We find that the sample of firms required to switch to the accrual basis method for tax purposes had significantly greater declines in the long-window ERC over the same time period. Thus, the evidence indicates that increasing book-tax conformity tends to result in a degradation of the informativeness of financial reporting earnings.

Many proponents of increased book-tax conformity have claimed the easy fix for corporate financial misreporting is to eliminate or reduce the differences between book and taxable incomes. From the tax side, another set of proponents makes the same argument in terms of constraining aggressive tax reporting. In both cases the idea is that with stronger conformity firms will have less ability to simultaneously engage in aggressive tax reporting and aggressive financial reporting. While even this claim is debatable (see Hanlon and Shevlin 2005), our study provides evidence that the behavioral response to an increase in book-tax conformity will result in less informative earnings being reported to shareholders. A loss of information in earnings appears likely even if the tax law is changed to conform with GAAP because that is exactly what occurred in the small sample of firms in this study.
References


Table 1
Sample Selection

Converting Sample
List of converting firms from Guenther, Maydew, and Nutter (1997) sample
94
Less:
Firms with missing lagged market value of equity and with fiscal year end change
7
Firms with Compustat data in only 1985 or 1988
18
Firms with missing earnings data for either year
2
Firms not on CRSP or with missing returns for either year
8
Firms that have no matching accrual basis firms in the same four digit sic code
3
Total Converting Sample - number of firms
56

Number of firm-years available for the sample of 56 firms for the years
450

Accrual Basis Sample
Firm-years in the Compustat file matching four digit industries as the cash sample with
1985 sales > $5 million, and observations in both years 1985 and 1988,
4,162
Less:
Firm-years with missing earnings or return data
586
Less Converting firm observations
450
Total Accrual Basis Sample - firm-years (377 firms)
3,126

Total Sample -- Converting and Accrual Firm-Year Observations
3,576

Converting sample includes the firms required to switch from the cash method of accounting for tax purposes to the accrual basis method following TRA 86. Guenther, Maydew, and Nutter (1997) provide evidence with these firms deferring more financial accounting income as a result of the increase in book-tax conformity after this change. The accrual basis sample includes firms in the same industries as the converting firms but were already on the accrual basis of accounting for tax purposes prior to TRA 86.
<table>
<thead>
<tr>
<th></th>
<th>Pre-TRA 1986</th>
<th></th>
<th>Post-TRA 1986</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=211</td>
<td></td>
<td>n=239</td>
</tr>
<tr>
<td></td>
<td>n=1,475</td>
<td></td>
<td>n=1,651</td>
</tr>
<tr>
<td></td>
<td>mean</td>
<td>st. dev.</td>
<td>mean</td>
</tr>
<tr>
<td></td>
<td>25%</td>
<td>median</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>75%</td>
<td></td>
<td>75%</td>
</tr>
<tr>
<td><strong>R_t</strong></td>
<td>0.213</td>
<td>0.608</td>
<td>-0.191</td>
</tr>
<tr>
<td></td>
<td>0.477</td>
<td></td>
<td>0.361</td>
</tr>
<tr>
<td><strong>ΔE_t</strong></td>
<td>0.00002</td>
<td>0.099</td>
<td>-0.171</td>
</tr>
<tr>
<td></td>
<td>0.027</td>
<td></td>
<td>0.036</td>
</tr>
<tr>
<td><strong>MVE_t</strong></td>
<td>137.651</td>
<td>174.253</td>
<td>28.704</td>
</tr>
<tr>
<td></td>
<td>170.965</td>
<td></td>
<td>22.200</td>
</tr>
<tr>
<td><strong>MVE_t-1</strong></td>
<td>130.638</td>
<td>190.462</td>
<td>26.690</td>
</tr>
<tr>
<td></td>
<td>144.381</td>
<td></td>
<td>22.080</td>
</tr>
<tr>
<td><strong>ASSETS_t</strong></td>
<td>163.739</td>
<td>232.343</td>
<td>31.779</td>
</tr>
<tr>
<td></td>
<td>194.013</td>
<td></td>
<td>28.746</td>
</tr>
<tr>
<td><strong>SALES GROWTH_t</strong></td>
<td>0.216</td>
<td>0.329</td>
<td>0.034</td>
</tr>
<tr>
<td></td>
<td>0.338</td>
<td></td>
<td>0.301</td>
</tr>
<tr>
<td><strong>E/P_t</strong></td>
<td>0.037</td>
<td>0.109</td>
<td>0.029</td>
</tr>
<tr>
<td></td>
<td>0.091</td>
<td></td>
<td>0.059</td>
</tr>
<tr>
<td><strong>B/M_t</strong></td>
<td>0.632</td>
<td>0.421</td>
<td>0.334</td>
</tr>
<tr>
<td></td>
<td>0.803</td>
<td></td>
<td>0.604</td>
</tr>
<tr>
<td><strong>ROA_t</strong></td>
<td>0.057</td>
<td>0.073</td>
<td>0.023</td>
</tr>
<tr>
<td></td>
<td>0.106</td>
<td></td>
<td>0.055</td>
</tr>
<tr>
<td><strong>LEVERAGE_t</strong></td>
<td>0.215</td>
<td>0.200</td>
<td>0.041</td>
</tr>
<tr>
<td></td>
<td>0.338</td>
<td></td>
<td>0.180</td>
</tr>
<tr>
<td><strong>R_t</strong></td>
<td>0.101</td>
<td>0.532</td>
<td>-0.262</td>
</tr>
<tr>
<td></td>
<td>0.361</td>
<td></td>
<td>0.303</td>
</tr>
<tr>
<td><strong>ΔE_t</strong></td>
<td>0.043</td>
<td>0.336</td>
<td>-0.039</td>
</tr>
<tr>
<td></td>
<td>0.046</td>
<td></td>
<td>0.009</td>
</tr>
<tr>
<td><strong>MVE_t</strong></td>
<td>165.050</td>
<td>335.299</td>
<td>18.950</td>
</tr>
<tr>
<td></td>
<td>180.348</td>
<td></td>
<td>23.475</td>
</tr>
<tr>
<td><strong>MVE_t-1</strong></td>
<td>152.630</td>
<td>283.043</td>
<td>21.556</td>
</tr>
<tr>
<td></td>
<td>179.142</td>
<td></td>
<td>23.144</td>
</tr>
<tr>
<td><strong>ASSETS_t</strong></td>
<td>271.256</td>
<td>499.650</td>
<td>47.154</td>
</tr>
<tr>
<td></td>
<td>259.721</td>
<td></td>
<td>37.060</td>
</tr>
<tr>
<td><strong>SALES GROWTH_t</strong></td>
<td>0.075</td>
<td>0.221</td>
<td>-0.044</td>
</tr>
<tr>
<td></td>
<td>0.168</td>
<td></td>
<td>-0.026</td>
</tr>
<tr>
<td><strong>E/P_t</strong></td>
<td>-0.101</td>
<td>0.414</td>
<td>-0.044</td>
</tr>
<tr>
<td></td>
<td>0.074</td>
<td></td>
<td>-0.021</td>
</tr>
<tr>
<td><strong>B/M_t</strong></td>
<td>0.791</td>
<td>0.691</td>
<td>0.353</td>
</tr>
<tr>
<td></td>
<td>1.064</td>
<td></td>
<td>0.360</td>
</tr>
<tr>
<td><strong>ROA_t</strong></td>
<td>0.008</td>
<td>0.104</td>
<td>-0.024</td>
</tr>
<tr>
<td></td>
<td>0.630</td>
<td></td>
<td>-0.012</td>
</tr>
<tr>
<td><strong>LEVERAGE_t</strong></td>
<td>0.286</td>
<td>0.235</td>
<td>0.086</td>
</tr>
<tr>
<td></td>
<td>0.426</td>
<td></td>
<td>0.189</td>
</tr>
</tbody>
</table>

This table contains descriptive statistics for the sample. Our measure of earnings (ΔE) is the change in earnings before extraordinary items (Compustat data #18) from year t-1 to year t, scaled by the market value of equity (MVE, data #199 * data #25) at the end of year t-1. Our measure of returns (R) is the raw buy and hold 12 month return beginning in the fourth month after the fiscal year end of t-1 and ending 3 months after the fiscal year-end of year t. ASSETS are the total assets of the firm at year-end (data #6), SALES GROWTH is defined as the percentage increase in current-year sales over the prior year sales (data #12), and LEVERAGE is defined as the long-term debt of the firm scaled by total assets (data (#9+#34)/#6). Return on assets (ROA) is defined as earnings before extraordinary items divided by average total assets (data #18/average data#6), earnings-to-price (E/P) is earnings before extraordinary items divided by market value of equity at year-end (data#18/MVE), and book-to-market (B/M) is defined as the book value of equity at year-end divided by MVE (data #60/MVE).
Table 3
Earnings Response Coefficient Tests – Earnings Changes Specification

**Panel A: Difference-in-Differences Regression**

\[ R_t = \alpha + \beta_1 \text{CONVERTING} + \beta_2 \text{POST} + \beta_3 \Delta E_t + \beta_4 \text{CONVERTING} \times \Delta E_t + \beta_5 \text{POST} \times \Delta E_t + \beta_6 \text{CONVERTING} \times \text{POST} + \beta_7 \text{CONVERTING} \times \text{POST} \times \Delta E_t + \varepsilon \]  

<table>
<thead>
<tr>
<th>Predicted Sign</th>
<th>Robust Coefficient</th>
<th>Robust St. Err</th>
<th>T-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>(\alpha)</td>
<td>0.158</td>
<td>0.0144</td>
<td>10.96</td>
</tr>
<tr>
<td>CONVERTING</td>
<td>(\beta_1)</td>
<td>0.054</td>
<td>0.0370</td>
<td>1.47</td>
</tr>
<tr>
<td>POST</td>
<td>(\beta_2)</td>
<td>-0.032</td>
<td>0.0176</td>
<td>-1.82</td>
</tr>
<tr>
<td>(\Delta E)</td>
<td>(\beta_3)</td>
<td>0.763</td>
<td>0.1327</td>
<td>5.75</td>
</tr>
<tr>
<td>CONVERTING*(\Delta E)</td>
<td>(\beta_4)</td>
<td>1.712</td>
<td>0.5207</td>
<td>3.29</td>
</tr>
<tr>
<td>POST*(\Delta E)</td>
<td>(\beta_5)</td>
<td>-0.268</td>
<td>0.1577</td>
<td>-1.17</td>
</tr>
<tr>
<td>CONVERTING*POST</td>
<td>(\beta_6)</td>
<td>-0.100</td>
<td>0.0503</td>
<td>-1.98</td>
</tr>
<tr>
<td>CONVERTING<em>POST</em>(\Delta E)</td>
<td>(\beta_7)</td>
<td>-1.740</td>
<td>0.5356</td>
<td>-3.25</td>
</tr>
</tbody>
</table>

N | 3,576

R squared | 0.069

**Panel B: Separate Group Coefficients and Tests of Coefficient Differences**

<table>
<thead>
<tr>
<th>Separate group coefficients</th>
<th>(N)</th>
<th>(\beta)</th>
<th>Derivation from Panel A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accrual basis firm-years pre-TRA 86</td>
<td>1,475</td>
<td>0.763</td>
<td>(\beta_3)</td>
</tr>
<tr>
<td>Converting firm-years pre-TRA 86</td>
<td>211</td>
<td>2.475</td>
<td>(\beta_3 + \beta_4)</td>
</tr>
<tr>
<td>Accrual basis firm years post-TRA 86</td>
<td>1,651</td>
<td>0.495</td>
<td>(\beta_3 + \beta_5)</td>
</tr>
<tr>
<td>Converting firm-years post-TRA 86</td>
<td>239</td>
<td>0.467</td>
<td>(\beta_3 + \beta_4 + \beta_5 + \beta_7)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficient differences between groups</th>
<th>Coefficients</th>
<th>Difference</th>
<th>F statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converting pre-TRA 86 vs Accrual pre-TRA 86</td>
<td>2.475 - 0.763</td>
<td>1.712</td>
<td>10.81</td>
<td>0.001</td>
</tr>
<tr>
<td>Converting post-TRA 86 vs Converting pre-TRA 86</td>
<td>0.467 - 2.475</td>
<td>-2.008</td>
<td>15.39</td>
<td>0.000</td>
</tr>
<tr>
<td>Accrual post-TRA 86 vs Accrual pre-TRA 86</td>
<td>0.495 - 0.763</td>
<td>-0.268</td>
<td>2.88</td>
<td>0.091</td>
</tr>
<tr>
<td>Converting post-TRA 86 vs Accrual post-TRA 86</td>
<td>0.467 - 0.495</td>
<td>-0.028</td>
<td>0.03</td>
<td>0.863</td>
</tr>
</tbody>
</table>

**Panel A notes:** Converting is an indicator variable set equal to one if the firm is a converting firm as defined in Table 1, and zero otherwise. Post is an indicator variable set equal to one for years 1988-1992 (post-TRA 86) and zero otherwise. The pre-TRA 86 period is 1981-1985. All other variables are as defined previously or interactions of previously defined terms. P-values are one tailed if we have a predicted sign and two-tailed where no sign is predicted. Robust standard errors are computed using Stata's robust command and specifying each firm as a cluster. This statistic is the Huber-White standard errors and fixing within cluster correlation because we have the same firm in the sample repeated times.
Table 4  
Earnings Response Coefficient Tests – Alternative Specification:  
Earnings Changes and Levels

\[ R_t = \alpha + \beta_1 \text{CONVERTING} + \beta_2 \text{POST}_t + \beta_3 E_t + \beta_4 \Delta E_t + \beta_5 \text{CONVERTING} \ast E_t + \beta_6 \text{CONVERTING} \ast \Delta E_t + \beta_7 \text{POST} \ast E_t + \beta_8 \text{POST} \ast \Delta E_t + \beta_9 \text{CONVERTING} \ast \text{POST} \ast E_t + \beta_{10} \text{CONVERTING} \ast \text{POST} \ast \Delta E_t + \epsilon \]

**Panel A: Difference-in-Differences Regression**

<table>
<thead>
<tr>
<th>Predicted</th>
<th>Robust</th>
<th>Sign</th>
<th>Coefficient</th>
<th>St. Err</th>
<th>T-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>α</td>
<td></td>
<td>0.136</td>
<td>0.0137</td>
<td>9.88</td>
<td>0.000</td>
</tr>
<tr>
<td>CONVERTING</td>
<td>β₁</td>
<td></td>
<td>0.046</td>
<td>0.0506</td>
<td>0.91</td>
<td>0.362</td>
</tr>
<tr>
<td>POST</td>
<td>β₂</td>
<td></td>
<td>-0.001</td>
<td>0.0169</td>
<td>-0.03</td>
<td>0.974</td>
</tr>
<tr>
<td>E</td>
<td>β₃</td>
<td></td>
<td>0.645</td>
<td>0.1060</td>
<td>6.09</td>
<td>0.000</td>
</tr>
<tr>
<td>ΔE</td>
<td>β₄</td>
<td></td>
<td>0.452</td>
<td>0.1290</td>
<td>3.50</td>
<td>0.000</td>
</tr>
<tr>
<td>CONVERTING*E</td>
<td>β₅</td>
<td></td>
<td>-0.091</td>
<td>0.6502</td>
<td>-0.14</td>
<td>0.889</td>
</tr>
<tr>
<td>CONVERTING*ΔE</td>
<td>β₆</td>
<td></td>
<td>1.651</td>
<td>0.6240</td>
<td>2.65</td>
<td>0.008</td>
</tr>
<tr>
<td>POST*E</td>
<td>β₇</td>
<td></td>
<td>-0.227</td>
<td>0.1353</td>
<td>-1.68</td>
<td>0.094</td>
</tr>
<tr>
<td>POST*ΔE</td>
<td>β₈</td>
<td></td>
<td>-0.058</td>
<td>0.1565</td>
<td>-0.37</td>
<td>0.712</td>
</tr>
<tr>
<td>CONVERTING*POST</td>
<td>β₉</td>
<td></td>
<td>-0.073</td>
<td>0.0592</td>
<td>-1.23</td>
<td>0.219</td>
</tr>
<tr>
<td>CONVERTING<em>POST</em>E</td>
<td>β₁₀</td>
<td></td>
<td>0.285</td>
<td>0.6764</td>
<td>0.42</td>
<td>0.673</td>
</tr>
<tr>
<td>CONVERTING<em>POST</em>ΔE</td>
<td>β₁₁</td>
<td></td>
<td>-1.635</td>
<td>0.6473</td>
<td>-2.53</td>
<td>0.012</td>
</tr>
</tbody>
</table>

Σ = +

Σ = -

<table>
<thead>
<tr>
<th>Predicted</th>
<th>Sum of</th>
<th>F tests:</th>
<th>Sign</th>
<th>Coefficient</th>
<th>F-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>E + ΔE</td>
<td>β₃+β₄</td>
<td>+</td>
<td>1.097</td>
<td>49.19</td>
<td>0.0001</td>
<td></td>
</tr>
<tr>
<td>CONVERTING<em>E + CONVERTING</em>ΔE</td>
<td>β₅+β₆</td>
<td>+</td>
<td>1.560</td>
<td>6.95</td>
<td>0.0087</td>
<td></td>
</tr>
<tr>
<td>CONVERTING<em>POST+E + CONVERTING</em>POST*ΔE</td>
<td>β₁₀+β₁₁</td>
<td>-</td>
<td>-1.350</td>
<td>4.72</td>
<td>0.0303</td>
<td></td>
</tr>
</tbody>
</table>

N = 3,576
R squared = 0.098
Table 4 (continued)
Earnings Response Coefficient Tests – Alternative Specification:
Earnings Changes and Levels

Panel B: Separate Group Coefficients and Tests of Coefficient Differences

<table>
<thead>
<tr>
<th>Separate group coefficients</th>
<th>N</th>
<th>β</th>
<th>Derivation from Panel A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accrual basis firm-years pre-TRA 86</td>
<td>1,475</td>
<td>1.097</td>
<td>β₃ + β₄</td>
</tr>
<tr>
<td>Converting firm-years pre-TRA 86</td>
<td>211</td>
<td>2.657</td>
<td>β₃ + β₄ + β₅ + β₆</td>
</tr>
<tr>
<td>Accrual basis firm years post-TRA 86</td>
<td>1,651</td>
<td>0.812</td>
<td>β₃ + β₄ + β₇ + β₈</td>
</tr>
<tr>
<td>Converting firm-years post-TRA 86</td>
<td>239</td>
<td>1.022</td>
<td>β₃ + β₄ + β₅ + β₆ + β₇ + β₁₀ + β₁₁</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coefficient differences between groups</th>
<th>Coefficients</th>
<th>Difference</th>
<th>F statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converting pre-TRA 86 vs Accrual pre-TRA 86</td>
<td>2.657 - 1.097</td>
<td>1.560</td>
<td>6.95</td>
<td>0.009</td>
</tr>
<tr>
<td>Converting post-TRA 86 vs Converting pre-TRA 86</td>
<td>1.022 - 2.657</td>
<td>-1.635</td>
<td>7.58</td>
<td>0.006</td>
</tr>
<tr>
<td>Accrual post-TRA 86 vs Accrual pre-TRA 86</td>
<td>0.812 - 1.097</td>
<td>-0.285</td>
<td>2.45</td>
<td>0.118</td>
</tr>
<tr>
<td>Converting post-TRA 86 vs Accrual post-TRA 86</td>
<td>1.022 - 0.812</td>
<td>0.210</td>
<td>1.71</td>
<td>0.192</td>
</tr>
</tbody>
</table>

Notes: E is earnings before extraordinary items (Compustat data #18). All other variables are defined as in Tables 2 and 3. Robust standard errors are computed using Stata's robust command and specifying each firm as a cluster. This statistic is the Huber-White standard errors and fixing within cluster correlation because we have the same firm in the sample repeated times.
Table 5
Earnings Response Coefficient Tests – Earnings Changes Specification
Alternative Control Sample: All firms with sales less than $5 million in 1985 with available data.

**Panel A: Difference-in-Differences Regression**

\[ R_t = \alpha + \beta_1 \text{CONVERTING} + \beta_2 \text{POST}_t + \beta_3 \Delta E_t + \beta_4 \text{CONVERTING} \times \Delta E_t + \beta_5 \text{POST} \times \Delta E_t + \beta_6 \text{CONVERTING} \times \text{POST}_t + \beta_7 \text{CONVERTING} \times \text{POST} \times \Delta E_t + \epsilon \]

<table>
<thead>
<tr>
<th>Predicted</th>
<th>Coefficient</th>
<th>Robust</th>
<th>T-stat</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign</td>
<td>Sign</td>
<td>St. Err</td>
<td>T-stat</td>
<td>p-value</td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.006</td>
<td>0.0434</td>
<td>-0.14</td>
<td>0.892</td>
</tr>
<tr>
<td>CONVERTING</td>
<td>0.206</td>
<td>0.0598</td>
<td>3.44</td>
<td>0.001</td>
</tr>
<tr>
<td>POST</td>
<td>0.115</td>
<td>0.0532</td>
<td>2.16</td>
<td>0.033</td>
</tr>
<tr>
<td>\Delta E</td>
<td>+</td>
<td>0.123</td>
<td>0.0707</td>
<td>1.74</td>
</tr>
<tr>
<td>CONVERTING*\Delta E</td>
<td>2.484</td>
<td>0.7609</td>
<td>3.26</td>
<td>0.001</td>
</tr>
<tr>
<td>POST*\Delta E</td>
<td>0.200</td>
<td>0.1292</td>
<td>1.55</td>
<td>0.124</td>
</tr>
<tr>
<td>CONVERTING*POST</td>
<td>-0.253</td>
<td>0.0782</td>
<td>-3.24</td>
<td>0.002</td>
</tr>
<tr>
<td>CONVERTING<em>POST</em>\Delta E</td>
<td>-2.540</td>
<td>0.7833</td>
<td>-3.24</td>
<td>0.002</td>
</tr>
</tbody>
</table>

N = 846
R squared = 0.040

**Panel B: Separate Group Coefficients and Tests of Coefficient Differences**

Separate group coefficients

<table>
<thead>
<tr>
<th>Derivation from</th>
<th>Panel A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small sales firm-years pre-TRA 86</td>
<td>( \beta_3 )</td>
</tr>
<tr>
<td>Converting firm-years pre-TRA 86</td>
<td>( \beta_3 + \beta_4 )</td>
</tr>
<tr>
<td>Small sales firm-years post-TRA 86</td>
<td>( \beta_3 + \beta_5 )</td>
</tr>
<tr>
<td>Converting firm-years post-TRA 86</td>
<td>( \beta_3 + \beta_4 + \beta_5 + \beta_7 )</td>
</tr>
</tbody>
</table>

Coefficient differences between groups

<table>
<thead>
<tr>
<th>Relevant</th>
<th>Coefficients</th>
<th>Difference</th>
<th>F statistic</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converting pre-TRA 86 vs Small sales firms pre-TRA 86</td>
<td>2.607 - 0.123</td>
<td>2.484</td>
<td>10.65</td>
<td>0.001</td>
</tr>
<tr>
<td>Converting post-TRA 86 vs Converting pre-TRA 86</td>
<td>0.267 - 2.607</td>
<td>-2.340</td>
<td>9.17</td>
<td>0.003</td>
</tr>
<tr>
<td>Small sales firms post-TRA 86 vs Small sales firms pre-TRA 86</td>
<td>0.324 - 0.123</td>
<td>0.200</td>
<td>2.40</td>
<td>0.124</td>
</tr>
<tr>
<td>Converting post-TRA 86 vs Small sales firms post-TRA 86</td>
<td>0.267 - 0.324</td>
<td>-0.056</td>
<td>0.10</td>
<td>0.758</td>
</tr>
</tbody>
</table>

Notes: See notes to Tables 3 and 4.