Regulation and Accounting Conservatism

Steven S. Crawford, Richard A. Price, Brian R. Rountree*

Jones Graduate School of Business, Rice University

April 2011

Abstract

This study documents an increase in conservatism in response to the Securities and Exchange Commission's Staff Accounting Bulletin No. 101, which altered the regulation concerning revenue recognition for registrants. We further illustrate the increase in conservatism primarily relates to companies that were forced to delay cash revenues. Given the benefits of conservatism surround the asymmetric recognition of hard-to-verify gains versus losses, the deferral of easily verifiable cash revenues calls into question the contracting benefits resulting from the regulation. Instead, we suggest the regulation may have primarily served to benefit the reputation of the Securities and Exchange Commission as a conservative regulatory body, especially in light of the corporate scandals that followed soon after the issuance of the regulation in 1999. Our results illustrate the influence of regulation on conservatism providing some initial evidence called for by Watts (2003b).

Keywords: Conservatism, revenue recognition, timely gain recognition, deferred revenues, SAB101.

We would like to thank Wayne Landsman, Karen Nelson, Steve Ryan, James Weston, workshop participants at Boston College, University of Minnesota, Texas A&M, Michigan State, Stanford University, New York University, University of Michigan, University of Iowa, University of Illinois, University of California at Berkeley, University of Oregon, Harvard University, and Rice University for helpful comments.

* Corresponding author: Brian Rountree, Jones Graduate School of Business, Rice University, Houston, TX, 77005, rountree@rice.edu.

1 Introduction

Accounting conservatism is a well documented feature of financial reporting with estimates indicating it has existed for at least the past 500 years (Basu 1997). Studies have found that conservatism has been generally increasing over time (Givoly and Hayn, 2000; Ryan and Zarowin, 2003). Explanations for this generally increasing trend include changes in the litigation environment over time (Basu 1997; Seetharaman 2005), accounting choices, market related forces, non-earnings related information among others (see Ryan and Zarowin 2003 for a discussion). Generally speaking, there is little evidence on the influence of regulation on conservatism (Watts 2003) either in isolation or over time. As such, we investigate the nature of conservatism surrounding Securities and Exchange Commission's (SEC) issuance of Staff Accounting Bulletin No. 101, *Revenue Recognition in Financial Statements* (SAB101) to better understand firm and market responses to the change in financial reporting policies and their associated implications for accounting conservatism.

SAB101 forced several hundred firms across a variety of industries to alter their revenue recognition policies and record cumulative adjustments for all revenues deemed to be recognized prematurely by the SEC. The SEC effectively charged SAB101 firms with recognizing revenues aggressively, with the concern that investors may have been misled by the pre-SAB101 revenue recognition policies. The result of the regulation was to force firms to delay the recognition of revenues to future periods thereby increasing conservatism. In this paper, we define conservatism consistent with Watts (2003a) as "the differential verifiability required for recognition of profits versus losses" (p. 207). In

this particular instance, gain recognition was delayed (deferral of revenues) thus creating a larger gap between the recognition of gains and losses.

We predict and find the asymmetry between the recognition of gains and losses, measured using the Basu (1997) framework, increases in the post-SAB101 period. The conservatism results are subject to the concerns raised in Dietrich et al. (2007), Givoly et al. (2007), and Patatoukas and Thomas (2010) that the Basu (1997) framework measures conservatism with error or is in fact biased. In addition, the increase in conservatism that we document relies on the assumption that the market obtains earnings related news through means other than earnings; otherwise, we would not expect a shift in the coefficients since neither earnings nor returns would reflect the economic events until they were reported in the financial statements. Noting these concerns, we maintain that one advantage of our setting is that the provisions in SAB101 clearly increased the amount of expected conservatism in financial statements, and therefore the observed changes can be more directly tied to conservatism, as opposed to random fluctuations or bias in coefficients.

To further address concerns that our results simply reflect bias in the Basu (1997) measure of conservatism and to tie our results to the actual changes required by SAB101 we examine the footnotes of the sample firms to identify the changes made to revenue recognition practices. Our detailed data collection reveals that approximately 60 percent of the sample was forced to delay the recognition of cash revenues with the remaining 40 percent delaying accrued revenues. This distinction allows us to vary our predictions about the behavior of conservatism in the pre and post-SAB101 periods based on the type of revenue that was delayed.

In particular, given SAB101 does not alter actual cash flows, we expect gain recognition to become less timely for companies delaying the recognition of cash revenues relative to those delaying accrued revenues. Following Collins et al. (1994) and Lundholm and Myers (2002), we express annual returns as a function of past, current and future earnings, along with future returns and firm size. We expect and find a shift from current earnings to future earnings in their association with current returns. That is, we find a decrease in the coefficient on current earnings, which is expected given the deferral of revenues, while the coefficient on future earnings increases. When we allow the coefficients to vary based on the type of delayed revenue, cash or accrued, we find the cash-related revenues are primarily responsible for this shift. Clearly, SAB101 has delayed the timely recognition of gains in net income, but since the primary driver of the change relates to easily verified gains (i.e., cash revenues) we provide evidence consistent with the conjecture in Watts (2003a) that SAB101 resulted in a level of conservatism greater than expected under contracting (p. 217).

In order to ensure our explanation for the increase in conservatism truly relates to the deferral of cash-related revenues as opposed to some alternative uncontrolled for explanation, we investigate the relation between seasonal quarterly changes in accruals and cash flows. Given the documented changes in cash versus accrued revenues, we expect and find that the association between cash flows and accruals will become more negative in the post period because of the delayed recognition of cash revenues until future periods. Specifically, in the pre-SAB101 period, cash revenues were included in both net income and cash flows indicating cash flow and earnings were closely aligned for the majority of the sample. In the post-SAB101 period this situation reversed

essentially making cash flows a predictor of future net income, as opposed to the more common relation where accruals lead to future cash flows (Dechow, 1994; Dechow et al. 1998; Barth et al. 2001). This leads to the prediction of a more negative correlation in the post-SAB101 period, which we find is entirely related to the companies forced to delay the recognition of cash revenues. This evidence provides assurance that our explanation for the change in conservatism stems from the change in revenue recognition policies.

Overall, the results illustrate the effects of gain deferrals on the conservative nature of financial statements in a clean setting. Our results are primarily driven by the sub-sample of firms being forced to delay the recognition of cash revenues. Given cash revenues are easily verifiable and thus are more likely to be included in contracts (see Watts, 2003a, p. 211), it is not clear how SAB101 served to improve the contracting environment and thus the efficiency of financial statements. Watts (2003a) notes that the SEC appears to have been very conservative in constructing the requirements of SAB101, which suggests that political costs of financial reporting scandals were perhaps a motivating force underlying the issuance of the guidance. That is, given the contracting benefits of SAB101 are not clear, ex post, it appears that at least a portion of the benefits of the guidance are related to the reputation of the SEC as a conservative regulatory body protecting the interests of investors. Arthur Levitt has recently been described as a prophet in predicting the scandals that led to the creation of the Sarbanes Oxley Act (Sterlicchi, 2002; International Economy, 2002). Given the SEC relegates accounting standard setting to the FASB, actions like SAB101 can be viewed as a mechanism to influence standard setting and financial accounting practice that has benefits outside the

confines traditionally investigated by accounting researchers. We leave it to future research to determine the exact cost and benefits of regulatory actions like SAB101.

The remainder of the paper is organized as follows: Section 2 summarizes SAB101 and develops predictions. Section 3 documents sample selection criteria and descriptive statistics. Section 4 presents results and section 5 concludes.

2 Background and predictions

The Office of the Chief Accountant and Division of Corporate Finance at the SEC issued SAB101 on December 3, 1999.[1] The document summarizes general revenue recognition guidelines that are scattered among a collection of authoritative pronouncements. In its most general form, "the staff believes that revenue generally is realized or realizable and earned when all of the following criteria are met:

- Persuasive evidence of an arrangement exists,
- Delivery has occurred or services have been rendered,
- The seller's price to the buyer is fixed or determinable,
- Collectibility is reasonably assured" (Staff Accounting Bulletin 101).

In addition to these general guidelines, SAB101, along with a Frequently Asked Questions (FAQ) document issued in October of 2000, provides a series of hypothetical scenarios and explains what the staff believes to be proper revenue recognition for each situation. Figure 1 represents a summary of changes required by SAB101 that was adapted from PricewaterhouseCoopers materials concerning SAB101. Below the summary are examples of actual changes made by sample firms.

SAB101 provides a rare opportunity to investigate the effect of gain deferrals on the degree of conservatism in financial statements. Guay and Verrechia (2006) indicate

[1] The SEC does not officially endorse Staff Accounting Bulletins. The guidance represents interpretations by the staff, but the bulletins are essentially de facto standards because the Office of the Chief Accountant and Division of Corporate Finance are responsible for reviewing filings and bringing about enforcement actions.

there is a lack of evidence on timely gain recognition. We use the change in revenue recognition policies created by SAB101 to provide some initial evidence to fill this void. Further, Watts (2003b) indicates it is important to investigate the behavior of conservatism over periods of varying regulation to examine how regulation affects conservatism similar to the manner in which Basu (1997) investigates changes in litigation risk and conservatism.

SAB101 always results in the deferral of revenues to future periods, which means the guidance serves to make financial statements more conservative, ceteris paribus. Ryan (2006) dichotomizes conservatism into conditional and unconditional, noting that the Basu (1997) model is aimed at measuring conditional conservatism. Ryan (2006) defines conditional conservatism as involving "firms writing down book value of net assets in a timely fashion upon receiving sufficiently bad news but not writing up net assets as quickly as possible upon receiving correspondingly good news." (page 513). In the case of SAB101, firms have been forced to delay the recognition of good news thereby increasing the probability that an asymmetry exists between the recognition of good and bad news. Ryan (2006) alternatively defines unconditional conservatism as a commitment to understate net asset values at their inception and continue this understatement over the net asset lives. If SAB101 served to increase unconditional conservatism then we bias against finding results using the Basu (1997) model, which measures conditional conservatism. Furthermore, SAB101 only serves to delay the recognition of revenue, which will eventually be recognized at its full sales price in the financial statements thereby leading to the recognition of net assets at their market values eventually (as opposed to a perpetual understatement).

In terms of the Basu (1997) model, which measures the relative response of earnings to good and bad news, we expect greater asymmetry between the recognition of good and bad news in earnings after the adoption of SAB101. Givoly et al. (2007) present evidence that is consistent with the Basu (1997) model measuring conservatism with error. As a result, we adopt a changes model to eliminate the concern of correlated omitted variables that are constant through time and predict there should be a greater asymmetry between the association of earnings and good versus bad news in the post-SAB101 era. Measurement error in the Basu (1997) model will reduce the ability to detect significant differences across time in the degree of conservatism.

Given SAB101 defers the recognition of gains, an alternative research design to capture this feature is to utilize the Collins et al. (1994) model which expresses returns as a function of past, current, and future earnings, along with future returns to capture measurement error in earnings expectations. Within this framework, we expect the relation between current returns and earnings to be diminished in the post SAB101 period, while the relation between current returns and future earnings will increase if the market has a mechanism for anticipating the gains. These tests provide evidence of timely gain recognition by illustrating a shift from current earnings to future earnings in a valuation context that is not subject to the same measurement error concerns as the Basu (1997) model.[2]

Other papers that have investigated revenue recognition issues include Altamuro et al. (2005), Forester (2008), which both investigate SAB101, and Zhang (2005) and Kasznik (2001), which study the effects of the AICPA's Statement of Position (SOP) 91-

[2] The forward regression analysis also helps to mitigate concerns of bias in the Basu (1997) model as expressed by Patatoukas and Thomas (2010) and Dietrich et al. (2007).

1 on software revenue recognition. Altamuro et al. (2005) documents an increased likelihood of SAB101 firms meeting certain benchmarks (i.e. small positive net income and earnings changes) relative to a control sample of firms. The authors interpret this evidence as suggesting SAB101 firms may have been utilizing flexibility in their revenue recognition policies to meet these benchmarks. Altamuro et al. (2005) further illustrate in a logistic framework that firms with bank debt, which often incorporates performance pricing measures, and lower outside board member shareholdings were more likely to be affected by SAB101. The authors conclude this is consistent with SAB101 firms having greater incentives to manage earnings.

Altamuro et al. (2005) also documents a decrease in the ability of current quarterly earnings to explain one and two quarter ahead cash flows in the post period for SAB101 firms, but find that SAB101 firms exhibit a stronger correlation with four quarter ahead cash flows. Earnings also marginally loses its significance (at the 10% level) in its ability to explain two day cumulative market-adjusted returns surrounding earnings announcements dates in the post-SAB101 period. From this information, the authors conclude that the post-SAB101 revenues are less informative.[3] Forester (2008) finds that the Altamuro et al. (2005) cash flow results are an artifact of the period immediately following the adoption of SAB101, which he terms a transition period. Once the year after adoption is dropped from the analysis, he finds an *increase* in the relation between earnings and future cash flows.

[3] Tests of the information content of earnings (i.e., short window tests) are quite distinct from returns-earnings association tests over long windows. See Kothari (2001) for a further discussion of the differences. To be clear, the information content tests in Altamuro et al. (2005) cannot be directly related to our findings which involve annual returns and earnings (as opposed to earnings surprises and short window announcement returns).

Although our tests focus directly on changes in conservatism, it is important to note that the changes resulting from the adoption of SAB101 do not provide clear predictions for the relation between net income and future cash flows (i.e., the tests utilized in Altamuro et al. 2007 and Forester, 2008). In particular, approximately 60 percent of our sample delayed the recognition of cash revenues, meaning cash flows and net income were recognized in the same period prior to the adoption of SAB101. In the post-SAB101 period, these same firms still receive cash flows, but earnings are deferred to future periods. In other words, cash flows precede earnings thereby creating a relation between current cash flows and future earnings, rather than necessarily saying anything about current earnings and future cash flows. For the remaining 40 percent of companies delaying accrued revenues, cash flows and earnings are likely more closely aligned in the post period suggesting there is perhaps a slight reduction in the relation between current earnings and future cash flows. Given the sample is split on the implications for the relation between earnings and future cash flows, there is not a clear prediction, which is consistent with the findings in Forester (2008) that the relationship varies over time without necessarily any clear explanation.

We capitalize on the split between cash and accrued revenues for sample firms and investigate the change in conservatism over time separately for each sub-sample. Conservatism is often defined as the asymmetric recognition of hard-to-verify gains and losses, where hard-to-verify losses are more likely to be recognized (Basu 1997; Watts 2003a among others). Given cash revenues are not difficult to verify, it is unclear what benefit an increase in conservatism would provide to contracting parties (Watts 2003a). As a result, any contracting benefits of SAB101 in terms of increased conservatism must

stem from the accrued revenue sub-sample. It is important to note that we are not arguing simply because cash is received, firms should be allowed to recognize revenue. The guidance provided by SAB101 is meant to clarify when the earnings process has been completed and thus it can be verified that revenues are truly earned. Nevertheless, the receipt of cash will result in either the recognition of revenue or deferred revenue from which investors can assess the implied gain from the transaction. In contrast, a previously recognized accrued revenue is now deferred to future periods and thus investors have less information about the nature of any gain. This distinction between the two types of revenues provides a quasi-experimental setting to investigate the implications of deferring differentially verifiable gains on the financial statements of sample firms.

Two other papers, Zhang (2005) and Kasznik (2001), investigate firms in the software industry that were forced to consider changing their revenue recognition policies in conjunction with SOP 91-1 on software revenue recognition. Both papers document pre-SOP 91-1 accelerated revenues were deemed relevant by investors. Zhang (2005) further illustrates that the time series predictability of revenues for SOP 91-1 firms increased in the post period, as well as the reliability of accounts receivable accruals. She concludes that early revenue recognition results in financial statements that are more relevant, but less reliable. She does not investigate the conservative nature of the standard nor its implications for financial reporting over time.

Kasznik (2001) also investigates changes in the information content of earnings and voluntary disclosure policies of affected firms. In a regression of annual returns on annual earnings, he finds SOP 91-1 firms experienced a significant reduction in the

information content of earnings in the post era. At the same time, sample firms also exhibit increased voluntary disclosure activity. He concludes that SOP 91-1 restricted the ability of managers to utilize financial statements to signal future prospects and therefore had to resort to alternative forms of communication. Both SOP 91-1 studies focus on the deferral of accrued revenues, which can be characterized as hard-to-verify gains in accordance with the definition in Guay and Verrechia (2006). As such, these studies are associated with conservatism, but neither one directly investigates the implications of the regulation for the degree of conservatism. Further, the SAB101 sample is dramatically different given the deferral of cash related revenues for the majority of sample firms, making the predictions and implications for changes in conservatism different.

3 Sample Selection and Descriptive Statistics

The initial sample was collected from a Bear Stearns Report, which was developed by reviewing 7,666 10Qs filed between October 1, 2000 and November 22, 2000 for SAB 101 announcements (McConnell et al. 2000).[4] In addition, we also performed a keyword search of the LexisNexis and Dow Jones News Retrieval databases utilizing the key words "Staff Accounting Bulletin," "SAB 101," and "Cumulative Effect". We also investigated the source of all cumulative adjustments reported by Compustat in data item 183 (accounting changes – cumulative effect) for all fiscal years ending 1999-2001.[5] These efforts result in a sample of 194 firms with the necessary data

[4] The purpose of the Bear Stearns Report was to investigate the potential influence of SAB101 on public companies. As such, Bear Stearns reviewed every filing with the SEC during this period providing assurance that SAB101 firms are properly identified. Nevertheless, we conduct a number of additional search techniques in order to maximize the sample size.

[5] All public companies filing with the SEC had to conform to SAB101 by the first fiscal year ending after December 15, 2000. Although earlier compliance was allowed, the majority of sample firms (98 percent) opted to wait until the fourth quarter to adopt the guidance. Results are not sensitive to excluding early adopters from the sample.

for subsequent tests, whose industries and reasons for adopting are detailed in Panels A and B of Table 1, respectively.

Panel A of Table 1 indicates there is some industry clustering in Durables and Pharmaceuticals relative to the corresponding Compustat sample. In general, there is a significant degree of cross-sectional variation in the types of firms influenced by the guidance. Panel B shows that all of the adjustments represent accelerated forms of revenue recognition, however many of these accelerated policies coincide with the receipt of cash (i.e. over the life of contract rather than when received, delivery rather than receipt of payment, and some installation and customer acceptance).[6] The deferral of cash revenues would actually be considered ultra conservative given these are not hard-to-verify gains. As a result, it is not clear how companies that are forced to delay cash revenues in order to comply with SAB101 can experience contracting benefits from this form of increased conservatism. Finally, the panel also provides links to Figure 1, which summarizes the primary changes required by SAB101 and provides specific examples of changes made by sample firms.

Table 1, Panel C documents descriptive statistics for SAB101 sample firms, where we winsorize all continuous variables at the upper and lower 1 percent level. All variables are recorded as of the fiscal year prior to adoption. The corresponding means and medians for the Compustat population as of fiscal year 1999 are also provided for

[6] The deferral of cash or accrued revenues is determined by examining the financial statement disclosures related to the adoption of SAB101 for each sample firm. We also investigated changes in deferred revenue balances recorded on the balance sheet or reported in footnote disclosures providing detailed information on liability balances that are combined on the balance sheet, as well as examining the deferred tax footnote for changes in deferred revenue balances. If a determination was not possible we characterize the observation as accrued revenue related, which likely introduces measurement error into our classification scheme thereby biasing against finding a significant difference in terms of conservatism behavior between the sub-samples.

reference purposes.[7] The results suggest sample firms were larger on average than the Compustat population with greater means and medians for market value of equity (*MVE*) and sales (*SALES*). Performance, as measured by median return on assets (*ROA*) and cash flow from operating activities scaled by assets (*CFO_TA*), is greater than the Compustat population. Table 1, Panel C also provides information concerning the effect of the cumulative adjustment on sample firms illustrating that as a percentage of *MVE*, the adjustments are large with a mean (median) adjustment of 3% (1%) of market value of equity. This figure underestimates the actual effect on revenues since the cumulative adjustment reflects the net income charge related to prematurely recognized revenues rather than the revenue adjustment. As such, SAB101 represented a significant change in financial reporting on average for sample firms.

4 SAB101 and Conservatism

4.1 Estimation with the Basu Model

We use the Basu (1997) model to measure the extent of asymmetry in timely gain and loss recognition over time. We include industry fixed effects and allow the coefficients to vary pre- and post-SAB101 thereby providing an assessment of the degree of conservatism in each period. The pre-SAB101 period is defined as the 3 years prior to the adoption of SAB101, while the post-period is the 3 years after the adoption of SAB101, excluding the adoption year. Forester (2008) illustrates the adoption year is dramatically different than the years following the adoption of the guidance therefore we exclude the adoption year. However, inferences are unchanged if we include the adoption year in our analysis. Further, because cash flows are unchanged we present

[7] The Compustat figures are after trimming the sample at the upper and lower 1% points on all the variables in Table 1, excluding those related to the cumulative adjustment from SAB101.

results using cash flows from operating activities, instead of earnings, to ensure any observed changes are actually a reflection of the change in revenue recognition policy as opposed to changes in the economic environment over time (Givoly et al. 2007). We estimate the following regression.

$$X_{it} = \sum_{i=1}^{n} \alpha_I + \gamma_1 POST\ 101 + \gamma_2 * DR_{it} + \gamma_3 DR_{it} * POST\ 101 + \beta_1 R_{it} + \beta_3 R_{it} * DR_{it} + \beta_4 R_{it} * POST\ 101 + \beta_5 R_{it} * DR_{it} * POST\ 101 + \varepsilon_t \quad (1)$$

where

X_{it}	=	Realized Annual Net Income before extraordinary items per the statement of cash flows *(NI_{it},* data123) or Cash Flow from Operations (CFO_{it}) scaled by market value of equity 3 months after the prior fiscal year end.
R_{it}	=	The 12 month buy and hold return per CRSP beginning 3 months after the prior fiscal year end less the corresponding 12 month buy and hold return for the CRSP value weighted index (Basu 1997).[8]
α_I	=	Industry fixed effect.
POST101	=	1 if in the post SAB101 period, 0 otherwise.
DR_{it}	=	1 if $R_{it} < 0$, 0 otherwise.

Our initial set of results is presented in Table 2, Panel A. The coefficient on R_{it} is negative but not significantly different from 0, which is consistent with the literature documenting conservatism in general during this period (Ryan and Zarowin, 2003, Table 2, Panel B; Givoly et al., 2007, Table 2). The incremental bad news coefficient (R_{it}*DR_{it}) is positive and significant indicating that losses are recognized in a more timely fashion than gains in the pre-SAB101 period. Turning to the post-SAB101 period, we find a reduction in earnings' response to good news as evidenced by the -0.05 coefficient on R_{it}*$POST101$ (p-value = 0.00). This is not perfectly consistent with our predictions

[8] Inferences are unchanged if we use raw returns instead of market-adjusted returns. We report the market-adjusted returns since this is more closely aligned with the measurement of good and bad news. The use of market-adjusted returns is consistent with the arguments of Basu (1997) and Ryan and Zarowin (2003). Further, this controls for different economic performance over time which Givoly et al. (2007) show can influence measures of conservatism.

however, since our expectations were that there should have been a significantly positive coefficient in the pre-SAB101 period followed by the observed significant decline.[9] As a result, we focus on the relative asymmetry between good and bad news as measured by the difference in the total coefficients within each period similar to Basu (1997). The results indicate that the relative difference moves from 0.13 (0.12 ─ -0.01) in the pre-period to 0.30 (0.24 ─ -0.06) after the adoption of the SAB101. This shift is statistically significant as evidenced by the significant coefficient on R_{it}*DR_{it}* *POST101*.

Another reason to focus on the relative asymmetry between good and bad news and not simply on earnings' response to good news stems from Givoly et al (2007). They describe how the presence of certain economic events that will never (or only marginally) affect current earnings can influence the Basu (1997) measure of conservatism. In the context of SAB101, the SEC mandated that the receipt of cash for some sales (a positive economic event) not be recorded in current earnings. Givoly et al (2007) show, using simulated data, that when there is an increase in positive economic events that do not affect current earnings timely gain recognition decreases as expected, and timely loss recognition *increases* even though they do not change how earnings responds to negative events. As a result, we also examine the relative asymmetry between good and bad news to draw inferences regarding the effect of SAB101 on reported conservatism.[10]

Turning to the cash flow regression presented in the last two columns of Panel A, the results are consistent with Basu (1997) which illustrates cash flows also exhibit an

[9] A negative coefficient on good news is routinely found in the literature including Basu (1997).
[10] Givoly et al. (2007) note that changing the nature of the economic events alters the estimation of conservatism and point out that research investigating the choice of conservatism needs to control for these economic events since these are not necessarily choice variables. In our setting, we are interested in the effect of a change in regulation concerning revenue recognition that results in positive economic events being excluded from earnings. We do use market-adjusted returns, which help to mitigate concerns about the influence of differences in economy wide performance on changes in conservatism.

asymmetric response to good and bad news. The results reveal that the coefficient on good news decreases in a similar fashion for cash flows. This suggests that the change in response to good news for earnings may be related to changes in the economic environment rather than necessarily a true change in conservatism. However, there is not a similar increase in asymmetry in the post-SAB101 period for cash flows as witnessed by the reduced difference in total coefficients between good and bad news across the two periods. This indicates that the observed increase in asymmetry in earnings response to good and bad news is a direct reflection of the change in revenue recognition policies required by the SEC. Overall, the cash flow regressions provide assurance that differences in economic events cannot explain the change in the relative difference in the response to good and bad news in the pre- versus post-SAB101 period.

Conservatism is generally recognized as beneficial to contracting given the asymmetric concerns of some contracting parties (i.e., bondholders, shareholders, etc.). As a result, some contracting parties have a preference for deferring hard-to-verify gains, and at the same time are more likely to prefer companies recognize hard-to-verify losses. For 60% of our sample, companies were forced to delay cash revenues, which are less difficult to verify than accrued revenues. As a result, the benefit from increased conservatism for this sample of firms is not clear. In Table 2, Panel B we allow the coefficients from the Basu (1997) model in Panel A to vary based on whether the delayed revenues from SAB101 were cash- or accrual-related.

The results do not reveal any significant differences in coefficients across the samples (i.e., the p-values in the 'Difference' column are not significant at conventional levels using two-tailed tests). However, these tests split the sample and therefore

somewhat limit the power to detect differences. Nevertheless, there are some tendencies in the results to suggest that the cash revenue sub-sample is actually driving the results in Panel A. Both sub-samples exhibit significant asymmetry to good and bad news in the pre-period. However, there is not a significant increase in asymmetry in the post period for the accrued revenue sample as witnessed by the insignificant coefficient on $R_{it}*DR_{it}*POST101$ (coefficient estimate = 0.01, p-value 0.90), whereas there is a significant increase in the response to bad news and a decrease in the response to good news for the cash revenue sample. Overall, the results from these sub-sample tests indicate the cash revenue sample is primarily responsible for the change in conservatism observed for the whole sample. In fact, it appears conservatism has not changed much for the accrued revenue sample indicating SAB101 did not have much of an affect on this aspect of financial reporting.

These results are important in light of the fact that the benefits of increased conservatism for the cash revenue sample are not clear. As Watts (2003) notes, it seems optimal for regulators to enforce conservative applications of accounting in order to protect their reputations. Ex post, the Arthur Levitt led SEC regime has experienced significant reputation benefits as a result of taking strong stances on earnings management, of which SAB101 has been described as the 'crown jewel' (Osterland, 2002).

4.2 Estimation with Forward Regressions of Returns on Earnings

Given the results are primarily related to delayed recognition of cash revenues and because there are concerns about reverse regression measures of conservatism, we now turn to a forward regression of annual returns on earnings using the framework in

Lundholm and Myers (2002), which was adapted from Collins et al. (1994).[11] Accruals are ordinarily viewed as forecasts of future cash flows (e.g. Barth et al., 2001), but in the case of upfront fees, payment prior to delivery/installation, etc. SAB101 reversed this relation turning cash flows into forecasts of future earnings for a majority of sample firms. Investors will value the revenue stream upon the receipt of cash thereby potentially creating a disconnect between current earnings and contemporaneous returns.

As a result, we expect the relation between current returns and current earnings to decrease in the post-SAB101 period, and at the same time we expect the relation between current returns and future earnings to increase in the post-SAB101 period. That is, if investors value the revenue stream upon receipt of cash flows, then current returns will exhibit a natural relation with future earnings realizations as the revenue related to the cash flows is brought into the income statement. In order to test for these relations, we estimate the following regression based on Lundholm and Myers (2002)[12]:

$$R_{it} = \sum_{I=1}^{n} \alpha_I + \gamma POST\ 101 + \beta_1 MVE_{i,t-1} + \beta_2 R_{i,t+1} + \sum_{j=-1}^{1} \beta_{3i} NI_{i,t+j} + \sum_{j=-1}^{1} \beta_{4j} (NI_{i,t+j} * POST\ 101) + \varepsilon_t \quad (2)$$

where

$R_{i,t+i}$	=	The continuously compounded 12 month buy and hold return per CRSP beginning 3 months after prior fiscal year end.
α_I	=	Industry fixed effect.
POST101	=	1 if in the post SAB101 period, 0 otherwise.
$MVE_{i,t-1}$	=	Natural log of market value of equity per CRSP at beginning of return

[11] We do not incorporate an alternative measure of conservatism like the one in Ball and Shivakumar (2005) because it is difficult to predict how SAB101 would affect the differential relationship between accruals and positive/negative cash flows. Instead, we make specific predictions in section 4.3 concerning the more general relation between changes in accruals and cash flows since SAB101 has clear implications for this relationship.

[12] This test is fundamentally different from the returns tests included in Altamuro et al. (2005) which examines the association of earnings surprises and 2 day announcement returns. Their study examines the information content of earnings announcements whereas our tests investigate the degree to which returns and earnings are correlated over a long window (earnings association coefficients as opposed to earnings response coefficients). For further discussion of the differences in information content versus association see the summary article Kothari (2001).

		accumulation period.
$NI_{i,t+j}$	=	Realized Annual Net Income before extraordinary items per the statement of cash flows (data123) scaled by market value of equity 3 months after the prior fiscal year end.

We limit the analysis to only a single future period to maximize the sample size, but inferences are unaltered in robustness tests that include earnings and returns two years ahead. The sample is limited to the two years pre/post the adoption of SAB101, excluding the year of and prior to adoption. We exclude these two years since the current, past, and future net income variables would span different revenue recognition regimes for a single observation. Inferences are the same if we include these years, as well as if we estimate the regression using the same years as in Table 2. $MVE_{i,t-1}$ controls for size effects, while $R_{i,t+1}$ controls for potential bias in the earnings variables arising from the use of realized earnings as expectations (Collins et al., 1994). Since future unexpected earnings will result in future returns, $R_{i,t+1}$ will help mitigate concerns about bias in the future earnings coefficient.

As in Lundholm and Myers (2002), the levels of one year lagged, current and one year ahead future earnings scaled by beginning market value of equity are utilized in the analyses. Including the past and current levels of earnings allows the regression to determine the best representation of the expectations of current earnings rather than requiring the two to have equivalent coefficients (in absolute value terms) as is the case with earnings change analyses. We expect the coefficient on NI_{it} to be positive and significant in both periods and more significant in the pre period if the market valued the non-SAB101 compliant earnings streams. We expect the coefficient on $NI_{i,t+1}$ to be positive and significant in both periods as well, but predict the relation to become

stronger in the post period illustrating the effects of less timely recognition of cash revenues in the post period that drove the results in Table 2.

The results are presented in Table 3. The coefficient on $MVE_{i,t-1}$ is negative and significant suggesting larger firms had lower returns over the subsequent year consistent with the findings in Lundholm and Myers (2002) (and others that have investigated cross-sectional variation in earnings association coefficients). $R_{i,t+1}$ is negative and significant consistent with the interpretation in Collins et al. (1994) that realized future earnings contain measurement error that is absorbed by future returns. Turning to the earnings variables, $NI_{i,t-1}$ is not significantly different from zero in either period. NI_{it} is positive and marginally significant (p-value 0.10) in pre-SAB101 period, but is insignificant in the post period with a significant decrease in the association between current returns and earnings. This is consistent with the hypothesis that current earnings in the pre period exhibited a stronger relation because SAB101 firms were incorporating future revenues (and hence earnings) in the current period.

The final coefficient of interest is that on future earnings, $NI_{i,t+1}$, which is positive and significant in both periods, but exhibits an increase in its association with current returns in the post-SAB101 period ($NI_{i,t+1}$*$POST101$). This is consistent with SAB101 moving previously recognized earnings to the future, which is again consistent with less timely gain recognition in the post-SAB101 period. The results also indicate that the market is able to anticipate future earnings in the post-SAB101 period. Given the results in Table 2 related to cash revenues, we expect this change in coefficients is likely related to the deferral of cash revenues in the post period.

Table 3, Panel B allows the coefficients to vary based on the type of delayed revenue as in Table 2, Panel B. The results indicate the coefficient on $NI_{i,t-1}$ remains insignificant for all firms in all periods and NI_{it} is only significantly different from 0 for cash revenue firms in the post period. Once again, the cash revenue sample is driving the results for the whole sample, however, the result on NI_{it} is strange in that it actually becomes negative and marginally significant in the post period indicating the better the current earnings the lower the current annual return for cash revenue companies. However, this needs to be interpreted in conjunction with the coefficient on $NI_{i,t+1}$, which is insignificant in the pre- period for these same companies and becomes positive and significant in the post-SAB101 period. This is consistent with SAB101 delaying cash revenues to future years, but the market valuing them when the cash is received. In contrast, the results for the accrued revenue sample do not exhibit significant changes over time indicating SAB101 did not have a large effect on the relation between current returns and annual earnings realizations. Overall, the majority of changes in the timely recognition of gains stem from the delay of cash related revenues, which as previously discussed does not provide any clear improvements in the contracting environment.

4.3 The Relation between Cash Flows and Accruals

Our final set of tests are not direct tests of conservatism, but rather provide further evidence on the effects of SAB101 that are related to the changes observed in Tables 2 and 3. We estimate the relation between seasonal quarterly changes in accruals and cash flows to investigate whether our explanation for the changes observed in Tables 2 and 3 are truly related to the differing types of revenue deferrals, cash and accrued, versus an alternative uncontrolled for explanation (i.e., economic conditions). In particular, the

evidence thus far is consistent with the deferral of cash revenues leading to a majority of the results. If the change in revenue recognition policy to comply with the regulation had a large effect on companies, we expect there to be a more negative relation in the post-SAB101 period between changes in accruals and cash flows for cash revenue companies. In the pre-SAB101 period, earnings and cash flows were aligned for cash revenue companies indicating the association between accruals and cash flows should be less negative. SAB101 forced this set of companies to record deferred revenue, a negative accrual, when cash is received for certain contracts which translates into a greater negative association between accruals and cash flows in the post period. Note, this is a mechanical result stemming from the accrual accounting process. However, if the affect of SAB101 was insignificant or if companies altered their contracts to avoid the deferral then this result would not obtain and it would call into question the origin of our earlier findings.

In order to evaluate the change in the association between cash flows and accruals we use the following model adapted from Dechow (1994):

$$\Delta ACC_{it} = \sum_{i=1}^{n} \alpha_I + \gamma_1 POST101 + \beta_1 \Delta CFO_{it} + \beta_2 (\Delta CFO_{it} * POST101) + \varepsilon \qquad (3)$$

where

POST101	=	1 if in the post SAB101 period, 0 otherwise.
ΔACC_{it}	=	Seasonal quarterly change in accruals, calculated as net income per statement of cash flows (#76) less cash flows from operations (#108) scaled by total assets (#44).
ΔCFO_{it}	=	Seasonal quarterly change in cash flows from operations (#108) scaled by total assets (#44).

In equation (3) we require sample firms to have at least 8 quarterly observations in both the pre and post SAB101 periods to ensure results are not sensitive to changes in sample

composition. We use the three years pre- and post-SAB101, excluding the adoption year for these tests, but the results are insensitive to using only the two years pre- and post-SAB101 as in Table 3.

The results are presented in Table 4. Panel A reports the regression results for the entire sample, and Panel B provides estimates for the cash and accrued revenue sub-samples. As in Dechow (1994) and numerous other studies, accruals and cash flows are negatively related in both periods. There is a large incremental negative coefficient in the post period (ΔCFO_{it}*$POST101$) indicating the relationship became even more negative after adoption of the guidance. Turning to Panel B, this large negative change stems from the cash revenue sample as predicted, whereas the accrued revenue sample does not illustrate a significant change over time. These results confirm our conclusion that the change in revenue recognition policies that forced firms to delay the recognition of cash-related revenues is primarily responsible for the changes in conservatism over time.

5 Robustness

Although our research design controls for changes in the economic environment, we perform additional robustness tests using a matched sample. This is particularly important in our setting given the pre- and post-SAB101 periods are markedly different in terms of economic performance with the pre-period generally representing a boom and the post-period a downturn. We match on 2-digit SIC code and total assets as of 1999. Because of data related issues, we obtain a matched sample that contains 1,124 (735) observations for the corresponding tests in Table 2 (3). If we eliminate the sample observations without corresponding matches, inferences from all tables are unchanged. In Table 5, we report estimates from the Panel A regressions from both Table 2 and 3

using the matched sample. The Basu (1997) regressions in Panel A reveal that the matched sample does experience a shift in the response to good and bad news similar to the shift observed for the SAB101 sample. However, when we estimate the regression using cash flows from operations as the dependent variable there is a similar shift in the response indicating economic events are driving the changes. Recall the results in Table 2, Panel A reveal there are no changes in the cash flow model for SAB101 firms indicating the revenue recognition policy change is driving the results.

Consistent with this explanation, Table 5, Panel B reports the results from the forward regression of current returns on past, current, and future earnings for the matched sample. Unlike the SAB101 sample, there is no shift in the valuation of current or future net income providing even greater assurance that the observed changes for the SAB101 sample are related to revenue recognition as opposed to changes in the economic environment. In untabulated findings there is also no shift in the correlation between cash flows and accruals for the matched sample providing further evidence the shift observed for sample firms relates to the change in revenue recognition policies. Overall, the evidence indicates SAB101 forced more conservative reporting by deferring the recognition of primarily easily verified gains, which calls into question the financial reporting and contracting benefits of the regulation.

6 Conclusion

This study documents a significant shift in the degree of conservatism in financial statements as a result of compliance with SEC guidance on revenue recognition. We view the pre- and post-SAB101 period as exhibiting varying degrees of regulation and assess the importance of this change in regulation for conservatism. As such, we provide

important evidence concerning the effects of regulation on conservatism, which addresses one of the important questions raised in Watts (2003b).

Our results illustrate the deferral of gains required by SAB101 resulted in a significant increase in conservatism measured as the asymmetry between the timely recognition of good and bad news. Further, we illustrate that this increase is primarily related to the delayed recognition of cash revenues. Given cash revenues are easier to verify, it is not clear how SAB101 served to improve the contracting environment for sample companies. The only clear ex post benefit we can identify is that the reputation of the Arthur Levitt led SEC was protected after the subsequent eruption of a number of large accounting standards. In light of the scandals beginning with the collapse of Enron, the popular press touted Arthur Levitt's SEC regime as a prime example of having investors best interest at heart (see for example Akst 2002; Labaton 2002; among others). SAB101's conservative accounting helped bolster this image as evidenced by the claim it was the "crown jewel" of the SEC's crackdown on earnings management during this period (Williams 2000). It helped to bolster the image that the SEC was attempting to do everything in its power to improve financial reporting and transparency. Although the financial reporting and contracting benefits of SAB101 are unclear, our results help to better understand the political nature of the context in which it was issued and thus documents one aspect of increasing conservatism over time that relates to regulation.

References

Altamuro, J., A. Beatty and J. Weber. 2005. The effects of accelerated revenue recognition on earnings management and earnings informativeness: Evidence from SEC Staff Accounting Bulletin No. 101. *The Accounting Review* 80: 373-401.

Askt, D. 2002. On the contrary; why business needs a strong S.E.C. *The New York Times* November 3, section 3: 4.

Ball, R., and L. Shivakumar. 2005. Earnings quality in U.K. private firms. *Journal of Accounting and Economics* 39: 83-128.

Barth, M., W. Beaver and W. Landsman. 1998. Relative valuation roles of equity book value and net income as a function of financial health. *Journal of Accounting and Economics* 25: 1-34.

Barth, M. E. , D. P. Cram and K. K. Nelson. 2001. Accruals and the prediction of future cash flows. *The Accounting Review* 76: 27-58.

Basu, S. 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics* 24: 3-37.

Collins, D.W., S.P. Kothari, J.A. Shanken, and R.G. Sloan. 1994. Lack of Timeliness and Noise as Explanations for the Low Contemporaneous Return-Earnings Association. *Journal of Accounting and Economics* 18 (3): 289-324.

Dechow, P.M. 1994. Accounting Earnings and Cash Flows as Measures of Firm Performance: The Role of Accounting Accruals. *Journal of Accounting and Economics* (July): 3-42.

Dechow, P.M., S.P. Kothari, and R.L. Watts. 1998. The relation between earnings and cash flows. *Journal of Accounting and Economics* 25:133-168.

Dietrich, J.R., K.A. Muller, E.J. Riedl. 2007. Asymmetric timeliness tests of accounting conservatism. *Review of Accounting Studies* 12 (1): 95-124.

Forester, C. 2008. Does more conservative revenue recognition improve the informativeness of earnings? Working paper, University of Minnesota.

Givoly, D. and C. Hayn. 2000. The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? *Journal of Accounting and Economics* 29: 287-320.

Givoly, D., C.K. Hayn, and A. Natarajan. 2007. Measuring reporting conservatism. *The Accounting Review* 82 (1): 65-106.

Guay, W. and R. Verrecchia. 2006. Discussion of an economic framework for conservative accounting and Bushman and Piotroski (2006). *Journal of Accounting and Economics* 42 (1+2): 149-165.

International Economy. 2002. The Prophet. 16 (4): 12, 60-61.

Kasznik, R. 2001. Financial reporting discretion and corporate voluntary disclosure: evidence from the software industry. Working paper, Stanford University.

Kothari, S. P. 2001. Capital markets research in accounting. *Journal of Accounting and Economics* 31: 105-231.

Labaton, S. 2002. Now who, exactly, got us into this? *The New York Times* February 3, section 3: 1.

Lev, B. and P. Zarowin. 1999. The boundaries of financial reporting and how to extend them. *Journal of Accounting Research* 37 (2): 353-385.

Lundholm, R. and L.A. Myers. 2002. Bringing the future forward: the effect of disclosure on the returns-earnings relation. *Journal of Accounting Research* 40(3): 809-839.

McConnell, P., J. Pegg and D. Zion, 2000, SAB 101: Revenue recognition changes do not appear to be as widespread or significant as feared, *Bear Sterns Accounting Issues*, December 21, 1-63.

Osterland, A. 2000. Hard lesseson. *CFO Maganize* (September 28).

Patatoukas, P., and J. Thomas. 2011. More evidence of bias in differential timeliness estimates of conditional conservatism. *The Accounting Review* (forthcoming)

PricewaterhouseCoopers. 2001. Revenue recognition: SEC staff accounting bulletin 101 and related interpretations. *PricewaterhouseCoopers*, January: 1-105.

Ryan, S. 2006. Identifying conditional conservatism. *European Accounting Review* 15 (4): 511-525.

Ryan, S., and P. Zarowin. 2003. Why Has the Contemporaneous Returns-Earnings Relation Declined? *The Accounting Review* 78(2):523-553.

Seetharaman, A., B. Srinidhi, and Z. Swanson, 2005. The effect of the private securities litigation reform act of 1995 on accounting conservatism. *Journal of Accounting and Finance Research* 13(4): 11-26.

Sterlicchi, J. 2002. Levitt: Prophet finds homes. *Financial Director* (February 27), http://www.financialdirector.co.uk/financial-director/feature/1742731/levitt-prophet-homes

Watts, R.L. 2003a. Conservatism in accounting part I: Explanations and implications. *Accounting Horizons* 17 (3): 207-221.

Watts, R.L. 2003b. Conservatism in accounting part II: Evidence and research opportunities. *Accounting Horizons* 17 (4): 287-301.

Williams, E. 2000. Baby out with the bath water. *Forbes* (October 16): 88-89.

Zhang, Y. 2005. Revenue recognition timing and attributes of reported revenues: The case of software industry's adoption of SOP 91-1. *Journal of Accounting and Economics* 39: 535-561.

FIGURE 1
Summary of SAB101

1) No revenue before title and risks and rewards of ownership transfer.

2) No revenue that is contingent on meeting performance factors during the period that services are being provided.

3) No revenue for which there is not an enforceable claim that requires payment.

4) No immediate revenue recognition with respect to activities that do not constitute a "separate earnings process."

5) No revenue for individual elements of a multiple-element arrangement that do not satisfy certain criteria.

Sample Examples of Above Violations

1) Goods that are shipped freight on board (FOB) shipping point, might not qualify as revenues until delivery because of transfer of title issues. Alternatively, if title does transfer, and something happens during the shipping process, revenue might still not be recognized if the corporation would not enforce this claim upon the customer.

2) Commissions from agents that meet certain sales levels are not enforceable until the level has actually been met. Previously, firms would make a probability assessment of the likelihood of meeting the target and begin accruing costs and revenues accordingly.

3) If a contract contains a customer acceptance clause, the revenue cannot be recognized until there is evidence that the clause has been met. Previously, semiconductor equipment manufacturers would recognize revenue upon shipment, but now must delay until installation and customer acceptance are satisfied.

4) Pharmaceutical companies that perform research for other firms often require nonrefundable upfront fees to access their particular technology (license fees). These fees must now be recognized over the estimated life of the research collaboration.

5) If a corporation sells equipment that requires the firm to install it and installation cannot be performed by any other company, then revenue is delayed until installation is complete. On the other hand, if there is objective verifiable evidence that installation could be performed by others, then only the fair market value of the installation need be deferred.

TABLE 1
Observations Detail

Panel A: Industry Composition

Industry	Number	Freq. (%)	Compustat Freq. (%)
Chemicals	4	2.1	2.0
Computers	22	11.3	13.6
Durables	52	26.3	18.9
Extractive	2	1.0	3.2
Finance	6	2.6	17.0
Food	1	0.5	2.3
Insurance	8	3.6	4.3
Mining	1	0.5	2.2
Other	2	1.0	1.0
Pharmaceuticals	40	20.1	3.7
Retail	18	6.7	9.5
Services	18	9.3	8.9
Textiles	6	3.1	4.4
Transportation	12	6.2	5.7
Utilities	2	1.0	3.3
Total	194	100.0	100.0

Panel B: Required Changes in Revenue Recognition Policies

Adoption Reason	Figure 1 Category	Number
Over life of contract rather than when received	4	72
Installation and customer acceptance	3 & 5	44
Delivery rather than shipment	1	38
Delivery rather than receipt of payment	1	27
When contingency is alleviated	2	9
Other	--	4
Total		194

TABLE 1
Observations Detail Continued

Panel C: Descriptive Statistics

Variable	Mean	Median	Std Deviation	Compustat 1999 Mean	Compustat 1999 Median
MVE	7,492	684	23,872	1,350	134
BOOKMKT	0.47	0.30	0.55	0.74	0.58
ROA	-0.01	0.04	0.25	-0.15	0.01
CFO_TA	0.03	0.08	0.24	-0.05	0.04
DEBT_TA	0.20	0.15	0.21	0.25	0.22
SALES	3,248	295	11,717	910	113
CUMMVE	0.03	0.01	0.10	N/A	N/A

Panel A provides details concerning the industry composition of sample firms as well as the corresponding frequencies for the Compustat population as a whole as of fiscal year 1999. Industry categorizations were taken from Barth et al. (1998). Industry membership is determined by primary SIC code as follows: Agriculture (0100 – 0999), Mining and construction (1000 – 1999, excluding 1300 – 1399), Food (2000 – 2111), Textiles and printing/publishing (2200 – 2780), Chemicals (2800 – 2824, 2840 – 2899), Pharmaceuticals (2830 – 2836), Extractive (2900 – 2999, 1300 – 1399), Durable manufacturers (3000 – 3999, excluding 3570 – 3579 and 3670 – 3679), Computers (7370 – 7379, 3570 – 3579, 3670 – 3679), Transportation (4000 – 4899), Utilities (4900 – 4999), Retail (5000 – 5999), Services (7000 – 8999, excluding 7370 – 7379), and Other (> 9000).

Panel B provides a detailed account of the reasons firms were forced to alter their revenue recognition policies that correspond to the changes noted in Figure 1.

Panel C documents descriptive statistics for sample firms as well as the corresponding Compustat population as of fiscal year 1999. *MVE* is defined as total shares outstanding (data25) times price at fiscal year end (data199). *BOOKMKT* is the ratio of book value of equity (data216) to *MVE*. *ROA* is annual net income (data237) divided by total assets (data6). *CFO_TA* is annual cash flows from operations (data308) divided by total assets (data6). *DEBT_TA* is current (data34) and long term debt (data9) divided by total assets (data6). *SALES* is total sales (data12). *CUMSALES* is the ratio of the magnitude of the cumulative adjustment to the *SALES*. *CUMMVE* is the ratio of the cumulative adjustment from the adoption of SAB101 to *MVE*.

TABLE 2

Regression of Current Earnings on Good and Bad News

$$NI_{it} / CFO_{it} = \sum_{i=1}^{n} \alpha_I + \gamma_1 POST\ 101 + \gamma_2 * DR_{it} + \gamma_3 DR_{it} * POST\ 101 + \beta_1 R_{it} + \beta_3 R_{it} * DR_{it} + \beta_4 R_{it} * POST\ 101 + \beta_5 R_{it} * DR_{it} * POST\ 101 + \varepsilon_t$$

Panel A: Basu (1997) Coefficients – Dependent variable NI_{it} and CFO_{it}

	Dependent Variable NI_{it}		Dependent Variable CFO_{it}	
Variable	Coeff. Est.	p-value	Coeff. Est.	p-value
Intercept	0.03	0.15	0.15	0.00
POST101	-0.01	0.46	0.04	0.01
DR_{it}	0.04	0.07	0.02	0.38
DR_{it} *POST101*	-0.02	0.57	-0.04	0.18
R_{it}	-0.01	0.42	0.00	0.71
R_{it} * DR_{it}	0.13	0.00	0.09	0.01
R_{it} * *POST101*	-0.05	0.00	-0.04	0.00
R_{it} * DR_{it} * *POST101*	0.17	0.01	-0.04	0.47
R_{it} + R_{it} * DR_{it}	0.12	0.00	0.09	0.00
R_{it} + R_{it} * *POST101*	-0.06	0.00	-0.04	0.00
R_{it} + R_{it} * DR_{it} * *POST101*	0.24	0.00	0.00	0.94
Number of Obs.		1,135		1,135
Adj. R^2		0.13		0.27

Panel B: Coefficients by Type of Delayed Revenue – Dependent variable NI_{it}

	Cash		Accrued		
Variable	Coeff. Est.	p-value	Coeff. Est.	p-value	Difference
Intercept	0.03	0.19	0.05	0.07	0.48
POST101	-0.03	0.26	0.00	0.99	0.47
DR_{it}	0.03	0.26	0.05	0.14	0.70
DR_{it} *POST101*	0.02	0.69	-0.07	0.15	0.18
R_{it}	-0.01	0.34	0.00	0.93	0.55
R_{it} * DR_{it}	0.11	0.04	0.16	0.01	0.54
R_{it} * *POST101*	-0.05	0.00	-0.05	0.05	0.83
R_{it} * DR_{it} * *POST101*	0.24	0.00	0.01	0.90	0.12
R_{it} + R_{it} * DR_{it}	0.10	0.05	0.16	0.01	0.44
R_{it} + R_{it} * *POST101*	-0.06	0.00	-0.05	0.01	0.45
R_{it} + R_{it} * DR_{it} * *POST101*	0.28	0.00	0.13	0.19	0.18
Number of Obs.		672		463	
Adj. R^2		0.13			

TABLE 2 – Continued

Regression of Current Earnings on Good and Bad News

This table presents pooled regression results for observations three years before and after the adoption of SAB101, excluding the year of adoption. Industry fixed effects (α_I) are not reported. Variable definitions are as follows: NI_{it} is the realized annual net income before extraordinary items per the cash flow statement (data123) scaled by market value of equity at the end of the fiscal year. CFO_{it}, is cash flows from operating activities (data308) scaled by market value of equity at the end of the fiscal year. R_{it} is the 12 month buy and hold return per CRSP beginning 3 months after the prior fiscal year end less the 12 month buy and hold return on the CRSP value weighted index during the same period. α_I is an industry fixed effect. *POST101* is an indicator equal to 1 if in the post SAB101 period, 0 otherwise. DR_{it} is an indicator variable equal to 1 if R_{it} is less than 0, 0 otherwise.

Panel B allows coefficient estimates from the regression in Panel A to vary based on whether the revenue delayed by SAB101 was cash or accrual related.

TABLE 3

Regression of Current Returns on Past, Current, and Future Earnings

$$R_{it} = \sum_{I=1}^{n} \alpha_I + \gamma POST\ 101 + \beta_1 MVE_{i,t-1} + \beta_2 R_{i,t+1} + \sum_{j=-1}^{1} \beta_{3i} NI_{i,t+j} + \sum_{j=-1}^{1} \beta_{4j} (NI_{t+j} * POST\ 101) + \varepsilon_t$$

Panel A: Earnings Association Coefficients

Variable	Coeff. Est.	p -value
$MVE_{i,t-1}$	-0.21	0.00
$R_{i,t+1}$	-0.21	0.00
$NI_{i,t-1}$	0.08	0.79
$NI_{i,t-1}$ * *POST101*	-0.20	0.57
$NI_{i,t}$	0.43	0.10
$NI_{i,t}$ * *POST101*	-0.74	0.02
$NI_{i,t+1}$	0.79	0.00
$NI_{i,t+1}$* *POST101*	0.84	0.01
$NI_{i,t-1} + NI_{i,t-1}$* *POST101*	-0.12	0.12
$NI_{i,t} + NI_{i,t}$ * *POST101*	-0.31	0.55
$NI_{i,t+1} + NI_{i,t+1}$* *POST101*	1.63	0.00
Number of Obs.		743
Adj. R^2		0.44

Panel B: Earnings Association Coefficients by Type of Delayed Revenue

	Cash		Accrued		
Variable	Coeff. Est.	p-value	Coeff. Est.	p-value	Difference
$MVE_{i,t-1}$	-0.24	0.00	-0.15	0.00	0.00
$R_{i,t+1}$	-0.20	0.00	-0.27	0.00	0.31
$NI_{i,t-1}$	0.20	0.56	-0.64	0.22	0.18
$NI_{i,t-1}$ * *POST101*	-0.40	0.34	0.76	0.25	0.14
$NI_{i,t}$	0.20	0.55	0.41	0.39	0.71
$NI_{i,t}$ * *POST101*	-0.66	0.11	-0.14	0.81	0.47
$NI_{i,t+1}$	0.33	0.35	1.23	0.00	0.08
$NI_{i,t+1}$* *POST101*	1.38	0.00	0.47	0.30	0.09
$NI_{i,t-1} + NI_{i,t-1}$* *POST101*	-0.19	0.41	0.12	0.76	0.50
$NI_{i,t} + NI_{i,t}$ * *POST101*	-0.46	0.06	0.27	0.41	0.41
$NI_{i,t+1} + NI_{i,t+1}$* *POST101*	1.71	0.00	1.70	0.00	0.96
Number of Obs.		446		309	
Adj. R^2		0.47			

TABLE 3 – Continued

Regression of Current Returns on Past, Current, and Future Earnings

This table presents pooled regression results for observations two years before and after the adoption of SAB101, excluding the year before and year of adoption because these periods involve the estimation of coefficients on net income that spans different revenue recognition regimes. Industry fixed effects (α_I) *are* not reported. Variable definitions are as follows: $R_{i,t+j}$ is the continuously compounded 12 month buy and hold return per CRSP beginning 3 months after prior fiscal year end. α_I is an industry fixed effect. *POST101* is an indicator equal to 1 if in the post SAB101 period, 0 otherwise. $MVE_{i,t-1}$ is the natural log of market value of equity per CRSP at beginning of return accumulation period. $NI_{i,t+j}$ is the realized annual net income before extraordinary items per the cash flow statement (data123) scaled by CRSP market value of equity 3 months after the prior fiscal year end.

Panel B allows coefficient estimates to vary based on whether the revenue delayed by SAB101 was cash or accrual related.

TABLE 4

Accruals and Cash Flows

$$\Delta ACC_{it} = \sum_{i=1}^{n} \alpha_I + \gamma_1 POST101 + \beta_1 \Delta CFO_{it} + \beta_2 (\Delta CFO_{it} * POST101) + \varepsilon$$

Panel A: Accrual and Cash Flow Changes

Variable	Coeff. Est.	p-value
Intercept	0.00	0.82
POST101	0.00	0.22
ΔCFO_{it}	-0.28	0.00
ΔCFO_{it}*POST101	-0.30	0.00
$\Delta CFO_{it}+\Delta CFO_{it}$*POST101	-0.58	0.00
Number of Obs.		4,118
Adj. R^2		0.26

Panel A: Accrual and Cash Flow Changes by Type of Delayed Revenue

	Cash		Accrued		
Variable	Coeff. Est.	p-value	Coeff. Est.	p-value	Difference
Intercept	0.00	0.69	0.00	0.60	0.26
POST101	0.00	0.46	0.00	0.31	0.76
ΔCFO_{it}	-0.21	0.00	-0.79	0.00	0.00
ΔCFO_{it}*POST101	-0.36	0.00	0.10	0.36	0.00
$\Delta CFO_{it}+\Delta CFO_{it}$*POST101	-0.57	0.00	-0.69	0.00	0.16
Number of Obs.		2,437		1,681	
Adj. R^2		0.29			

TABLE 4 – Continued
Accruals and Cash Flows

Panel A presents coefficient estimates from a regression of seasonal changes in quarterly accruals (ΔACC_{it}) scaled by total assets on seasonal changes in quarterly cash flows (ΔCFO_{it}) scaled by total assets controlling for industry fixed effects (α_I). Sample firms are required to have at least 8 quarterly observations in both SAB101 sub-periods, which are limited to the three years pre and post the adoption of SAB101 excluding the year of adoption. *POST101* is an indicator equal to 1 if in the post SAB101 period, 0 otherwise.

Panel B allows coefficient estimates to vary based on whether the revenue delayed by SAB101 was cash or accrual related.

TABLE 5

Matched Sample Results

Panel A: Basu (1997) Coefficients – Dependent variable NI_{it} and CFO_{it}

	Dependent Variable NI_{it}		Dependent Variable CFO_{it}	
Variable	Coeff. Est.	p-value	Coeff. Est.	p-value
Intercept	0.14	0.03	0.34	0.04
POST101	-0.01	0.78	0.17	0.22
DR_{it}	0.04	0.53	0.08	0.65
DR_{it} *POST101*	0.01	0.92	0.07	0.79
R_{it}	-0.02	0.39	-0.06	0.38
R_{it} * DR_{it}	0.18	0.09	0.25	0.79
R_{it} * *POST101*	0.00	0.96	0.03	0.74
R_{it} * DR_{it} * *POST101*	0.36	0.06	0.89	0.09
R_{it} + R_{it} * DR_{it}	0.16	0.13	0.19	0.51
R_{it} + R_{it} * *POST101*	-0.02	0.42	-0.03	0.75
R_{it} + R_{it} * DR_{it} * *POST101*	0.52	0.00	1.11	0.01
Number of Obs.		1,124		1,124
Adj. R^2		0.09		0.08

Panel B: Earnings Association Coefficients

Variable	Coeff. Est.	p -value
$MVE_{i,t-1}$	-0.05	0.00
$R_{i,t+1}$	-0.40	0.00
$NI_{i,t-1}$	-0.48	0.04
$NI_{i,t-1}$ * *POST101*	0.17	0.41
$NI_{i,t}$	0.26	0.00
$NI_{i,t}$ * *POST101*	-0.13	0.31
$NI_{i,t+1}$	0.23	0.03
$NI_{i,t+1}$* *POST101*	-0.08	0.57
$NI_{i,t-1}$ + $NI_{i,t-1}$* *POST101*	-0.31	0.15
$NI_{i,t}$ + $NI_{i,t}$ * *POST101*	0.13	0.00
$NI_{i,t+1}$+ $NI_{i,t+1}$* *POST101*	0.15	0.05
Number of Obs.		735
Adj. R^2		0.21

This table presents pooled regression results for a match sample of observations. We match on 2-digit SIC code and total assets as of 1999. All variables in Panel A (Panel B) are defined in Table 2 (Table 3). The *POST101* indicator is determined based on the SAB101 firm and then applied to the matched firm.