Unexpected Accruals and Conditional Accounting Conservatism

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Abstract

This paper examines the impact of management discretion over accruals on conditional accounting conservatism, defined as the tendency of accountants to recognize bad news on a timelier basis than good news. Prior research suggests that conditional accounting conservatism reflected in earnings is mainly due to the accrual component of earnings, not the cash flow component of earnings. After decomposing total accruals into expected and unexpected accruals, I find that (1) conditional accounting conservatism reflected in accruals is mainly due to unexpected accruals; (2) the negative association between unconditional and conditional accounting conservatism is mainly attributable to unexpected accruals; and (3) firms with higher leverage exhibit conditionally more conservative accounting primarily through unexpected accruals. These results are robust to accrual models that take into account the systematic association between accruals and cash flows and their non-linearity, and to the asymmetric persistence of earnings changes specification of conditional accounting conservatism. Taken together, these results suggest that managers exercise their discretion over accruals to expedite the recognition of bad news rather than good news.

Keywords: Accounting Conservatism; Unexpected Accruals; Conditional and Unconditional Accounting Conservatism

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1. Introduction

This paper examines the impact of management discretion over accruals (measured by unexpected accruals estimated from the Jones model and its variants) on conditional accounting conservatism, defined as the tendency of accountants to recognize bad news on a timelier basis than good news (Basu, 1997). Watts (2003) explains that the accounting reporting system has evolved into a conservative reporting regime in response to contracting, legal, tax, and regulatory demands. Consistent with this view of accounting conservatism, many studies (e.g., Basu, 1997; Pope and Walker, 1999; Givoly and Hayn, 2000; Holthausen and Watts, 2001; Giner and Rees, 2001; and Ryan and Zarowin, 2003) document that accounting recognizes bad news (proxied by negative stock returns) in earnings more quickly than it does good news (proxied by positive stock returns). Pope and Walker (2003), Pae et al. (2005), and Roychowdhury and Watts (2006) find that accounting conservatism reflected in earnings (measured by the difference in timeliness of earnings between good and bad news) is negatively correlated with the market-to-book ratio, and that the negative correlation between the market-to-book ratio and earnings conditional conservatism is mainly due to the accrual component of earnings, not the operating cash flow component of earnings (Pae et al., 2005). This paper extends the accounting conservatism literature by decomposing total accruals into the expected and unexpected components and examining the relative contribution of expected and unexpected accruals to conditional accounting conservatism.

The documented conditional accounting conservatism reflected in earnings and accruals is consistent with generally accepted accounting principles replete with the asymmetric treatment of good news versus bad news; however, it is unclear whether

management discretion over accruals (measured by unexpected accruals) increases or decreases the degree of conditional accounting conservatism. The earnings management literature suggests that managers have incentives to expedite the recognition of good news when their compensation depends on the reported earnings, and have incentives to postpone or hide bad news when the recognition of bad news endangers their tenure. In those cases, management discretion over accruals will decrease the level of conditional accounting conservatism. On the other hand, if the efficient debt contract instigates the timelier recognition of bad news than good news (Ball et al., 2005) and the overstatement of earnings entails higher litigation costs than the understatement of earnings (Watts, 2003), managers will exercise their discretion over accruals to enhance the degree of conditional accounting conservatism. Therefore, it is an empirical question whether unexpected accruals increase or decrease the level of conditional accounting conservatism.

Empirical tests are performed on a sample of 63,041 firm-year observations over the period 1988 to 2003. Consistent with prior research, conditional accounting conservatism is reflected in both earnings and accruals; however, I find that conditional accounting conservatism reflected in accruals is mainly due to unexpected accruals rather than expected accruals. This result is robust to accrual models that take into account the systematic association between accruals and cash flows and their non-linearity, to the asymmetric persistence of earnings changes specification of conditional accounting conservatism, and to a group of firms in which the Jones models are correctly identified.

Next, I examine the impact of unconditional (ex-ante or news-independent) accounting conservatism on conditional (ex-post or news-dependent) accounting

conservatism. Extant research suggests a negative association between unconditional and conditional accounting conservatism because unconditional accounting conservatism preempts the application of conditional accounting conservatism (Pope and Walker 2003; Richardson and Tinaikar, 2004; Beaver and Ryan, 2005; Pae et al., 2005; and Roychowdhury and Watts, 2006). Using the market-to-book ratio and an estimated balance sheet reserve as proxies for unconditional accounting conservatism, I find that the negative association between unconditional and conditional accounting conservatism is mainly due to accruals, not operating cash flows, and that unexpected accruals rather than expected accruals lead to the negative association.

Finally, I examine the roles of expected and unexpected accruals when accounting conservatism is in demand with respect to efficient debt contracting (Watts, 2003; and Ball et al., 2005). Using beginning-of-year leverage as a proxy for the demand for conditional accounting conservatism with respect to efficient debt contracting, I posit and find that accounting is conditionally more conservative for firms with higher leverage than those with lower leverage, and that unexpected accruals rather than expected accruals make accounting conditionally more conservative as leverage increases.

This paper contributes to the accounting conservatism literature by providing empirical evidence that (1) conditional accounting conservatism and the negative association between beginning-of-year market-to-book ratios and conditional accounting conservatism are primarily attributable to the unexpected component of accruals; (2) conditional accounting conservatism is negatively associated with beginning-of-year estimated balance sheet reserves as well as market-to-book ratios, suggesting a general negative association between unconditional and conditional accounting conservatism; and

(3) unexpected accruals make accounting conditionally more conservative when accounting conservatism is in greater demand with respect to efficient debt contracting. These results also provide some perspective on the choice of a flexible accounting regime versus a rigid accounting regime: it would be better to keep the flexibility of accounting rather than to eliminate such opportunities since managers exercise their discretion over accruals to recognize changes in equity value on a timely basis, in particular during bad news periods when the timely recognition of losses is important in protecting debt holders and naive investors.

The rest of the paper proceeds as follows: the next section discusses prior research and the impact of unexpected accruals on accounting conservatism. Section 3 explains research design. Section 4 describes sample selection procedures and presents empirical results. Conclusion is reached in Section 5.

2. Related Literature and Hypothesis

Prior Research on Accounting Conservatism

Watts (2003) defines accounting conservatism as "the asymmetric verification requirements for gains and losses" and provides four explanations of demand for accounting conservatism: (1) conservatism reduces moral hazard problems caused by contracting parties with asymmetric information, asymmetric payoffs, limited horizons, and limited liability; (2) conservatism reduces the expected costs of litigation because litigation is more likely when net assets and earnings are overstated than they are understated and the expected litigation costs of overstatement are higher than those of understatement; (3) conservatism reduces the present value of tax liabilities when taxable

income is influenced by reported income; and (4) conservatism helps regulatory bodies such as the SEC and the FASB to reduce political costs associated with overstatement of net assets and earnings.

Many studies (e.g., Basu, 1997; Pope and Walker, 1999; Givoly and Hayn, 2000; Giner and Rees, 2001; Holthausen and Watts, 2001; and Ryan and Zarowin, 2003) document that accounting recognizes bad news (proxied by negative stock returns) in earnings on a timelier basis than it does good news (proxied by positive stock returns). Accounting conservatism documented in the literature is not entirely due to extraordinary and discontinued items (Basu, 1997) and special items excluded from analysts' forecasts (Pae and Thornton, 2006). Basu (1997) and Holthausen and Watts (2001) report that the level of accounting conservatism reflected in earnings is higher in the periods of higher litigation risk than in the periods of lower litigation risk: auditors increase their audit quality in response to an increase in expected litigation costs, which, in turn, leads to a higher degree of accounting conservatism.

Recent studies on accounting conservatism distinguish unconditional accounting conservatism from conditional accounting conservatism. Consistent with Richardson and Tinaikar (2004) and Beaver and Ryan (2005), the adoption of accounting methods and polices that reduce earnings and book value of net assets independent of economic news is referred to as unconditional (ex-ante or news-independent) accounting conservatism. Examples of unconditional accounting conservatism include the immediate expensing of advertising and research and development expenditures, and the historical cost accounting for positive net present value projects. On the other hand, the application of accounting methods and policies that recognize bad news in earnings on a timelier basis

than good news is referred to as conditional (ex-post or news-dependent) accounting conservatism. Examples of conditional accounting conservatism include the application of the lower of cost or market rule for inventory, the impairment test of long-lived assets, and the asymmetric treatment of contingent losses versus contingent gains.

Consistent with unconditional accounting conservatism preempting the application of conditional accounting conservatism (Richardson and Tinaikar, 2004; and Beaver and Ryan, 2005), recent research (Pope and Walker, 2003; Pae et al., 2005; and Roychowdhury and Watts, 2006) finds that conditional accounting conservatism is more pronounced for firms with lower beginning-of-year market-to-book ratios (a measure of unconditional accounting conservatism) than those with higher beginning-of-year market-to-book ratios.

Unexpected Accruals and Accounting Conservatism

Accounting earnings differ from operating cash flows due to accrual adjustments. If accounting is conservative, conservatism in earnings is implemented through accruals; however, relatively little attention has been paid to accruals *per se*. Basu (1997) and Pae et al. (2005) report that the documented asymmetric timeliness of earnings is influenced by the asymmetric timeliness of operating cash flows, implying that extant studies focusing on earnings may not accurately capture the effect of accruals on accounting conservatism due to the confounding effect of the asymmetric timeliness of operating cash flows. To avoid the confounding effect of operating cash flows, I focus on the asymmetric timeliness of accruals rather than that of earnings.[1] Moreover, I decompose

[1] Basu (1997) takes an indirect approach by comparing the degree of accounting conservatism reflected in earnings with that reflected in operating cash flows. He argues that the negative correlation between

total accruals into unexpected and expected accruals, and examine the relative contribution of unexpected and expected accruals to the documented accounting conservatism reflected in earnings and accruals.

Generally accepted accounting principles are asymmetric in the treatment of good news versus bad news: the recognition of unrealized good news is generally prohibited, but the recognition of unrealized bad news is permitted through, for example, the lower of cost or market rule for inventory, impairment tests of long-lived assets and goodwill, and treatments of contingent losses and gains.[2] If impartially applied, current accounting rules replete with the asymmetric treatment of good news versus bad news will lead to conditional accounting conservatism. However, the determination of accrual estimates and the choice of alternative accounting methods are subject to management discretion.

When a timelier recognition of bad news is in demand with respect to efficient debt contracting (Ball et al., 2005) and the overstatement of earnings entails higher litigation costs than the understatement of earnings (Watts, 2003), managers have incentives to expedite the recognition of bad news than good news. In those cases, management discretion over accruals will increase the degree of conditional accounting conservatism. On the other hand, the earnings management literature suggests that managers have incentives to expedite the recognition of good news when their bonuses and stock options are tied to reported earnings and have incentives to postpone or hide bad news when the recognition of bad news in earnings endangers their tenure. In those

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accruals and operating cash flows could complicate the direct test on accruals (his footnote 9). Note that the indirect test is not free of potential problems arising from the negative correlation between accruals and operating cash flows. This paper explicitly takes into account the negative correlation between accruals and operating cash flows when estimating expected accruals.

[2] An exception is the accounting for the unrealized gains and losses for marketable securities. Unrealized gains of trading securities are reported as part of net income on the income statement. Unrealized gains of available-for-sale securities are not reported on the income statement, but reported as part of comprehensive income.

cases, management discretion over accruals will decrease the degree of conditional accounting conservatism. Therefore, the impact of unexpected accruals on conditional accounting conservatism is an empirical question. The hypothesis regarding the contribution of management discretion over accruals or unexpected accruals to conditional accounting conservatism reflected in earnings and accruals is stated in null form.

Hypothesis*: Unexpected accruals do not contribute to conditional accounting conservatism.*

3. Research Design

Measurement of Unexpected Accruals

Conceptually, total accruals are decomposed into expected and unexpected accruals. Unexpected accruals of firm *i* in year *t* (UEA_{it}) are measured by the difference between total accruals (ACC_{it}) and expected accruals (EA_{it}) estimated from an accrual model:

$$UEA_{it} = ACC_{it} - EA_{it}.$$

I estimate expected accruals using the Jones (1991) model and its variants such as the modified Jones model (Dechow et al., 1995), the Jones model with cash flows, the modified Jones model with cash flows, the Jones model with non-linear cash flows, the modified Jones model with non-linear cash flows, the Jones model with non-linear cash flow changes, the modified Jones model with non-linear cash flow changes, the Jones model with non-linear industry adjusted cash flows and the modified Jones model with

non-linear industry adjusted cash flows (see Appendix for details). The augmentation of the Jones model with cash flows is intended to capture the systematic association between accruals and cash flows (e.g., Kasznik, 1999; McNichols, 2002; and Pae, 2005) and the non-linearity of accruals with respect to cash flows (Ball and Shivakumar, 2006).[3] I report empirical results based on the modified Jones model and the modified Jones model with non-linear cash flows because test results are insensitive to the adopted accrual models.

Measurement of Conditional Accounting Conservatism and the Relative Contribution of Earnings Components

The timeliness of earnings with respect to stock returns is inferred from the cross-sectional regression of accounting earnings (E_{it}) deflated by beginning-of-fiscal-year market value of equity (P_{it-1}) on concurrent stock returns (R_{it}) of firm i in year t:

$$\frac{E_{it}}{P_{it-1}} = \alpha_t + \beta_t R_{it} + \varepsilon_{it} . \quad (1)$$

The coefficient estimate on R_{it} (β_t) serves as the measure of earnings timeliness in year t. Regression (1) is estimated separately for firms experiencing negative stock returns ("bad news") and those experiencing positive stock returns ("good news"). The level of conditional accounting conservatism reflected in earnings or earnings conservatism (c_t^E) is measured by the difference between the timeliness of earnings to bad news (β^{BN}) and the timeliness of earnings to good news (β^{GN}):

[3] These models differ from Ball and Shivakumar (2006) in that the non-linearity of accruals is considered after combining the Jones model and the Dechow and Dichev (2002) model. Ball and Shivakumar (2006) consider the non-linearity of accruals with respect to cash flows separately for the Jones model and the Dechow and Dichev (2002) model. They do not consider a model to combine the Jones model and the Dechow and Dichev model.

$$c_t^E \equiv \beta_t^{BN} - \beta_t^{GN}.$$

Following Basu (1997), the level of conditional accounting conservatism is inferred by estimating the following piecewise cross-sectional regression of earnings on concurrent stock returns with indicator variable D_{it}, which equals one for bad news, zero otherwise.[4]

$$\frac{E_{it}}{P_{it-1}} = a_{0t} + a_{1t}D_{it} + b_t R_{it} + c_t\left(R_{it} \times D_{it}\right) + \varepsilon_{it}. \quad (2)$$

The contribution of earnings components to the level of conditional accounting conservatism reflected in earnings can be inferred by substituting operating cash flows (CF_{it}) or accruals (ACC_{it}) for E_{it} in regression (2). c_t^{ACC} and c_t^{CF} denote the asymmetric timeliness of the accrual and cash flow components of earnings, respectively. Note that the asymmetric timeliness of earnings is the sum of the asymmetric timeliness of operating cash flows and the asymmetric timeliness of accruals: $c_t^E = c_t^{CF} + c_t^{ACC}$.[5] The relative contribution of the accrual component of earnings to the level of conditional accounting conservatism reflected in earnings can be measured by the ratio of c_t^{ACC} to c_t^E. Similarly, the relative contribution of expected and unexpected accruals can be inferred by substituting expected and unexpected accruals for E_{it} in regression (2).

[4] In regression (2), the timeliness of earnings to good news and that to bad news are $\beta_t^{GN} = b_t$ and $\beta_t^{BN} = b_t + c_t$, respectively.

[5] In a regression of E on X, the coefficient estimate on X is expressed by $\beta(E) = (X'X)^{-1}X'E$. Since $E = ACC + CF$, it is easily seen that $\beta(E) = \beta(ACC) + \beta(CF)$. However, this decomposition does not work for R^2.

Alternative Specification of Conditional Accounting Conservatism: Asymmetric Persistence of Earnings Changes

Basu (1997) notes that timelier earnings lead to less persistent earnings or earnings changes because timelier earnings reflect more concurrent value relevant news and news is uncorrelated each other over periods. If earnings recognize bad news on a timelier basis than good news, by the same token earnings changes would be less persistent for bad news than good news. Following Basu (1997), I estimate the following piecewise cross-sectional regression of next year's earnings changes on current year's earnings changes to examine the implication of conditional accounting conservatism for the asymmetric persistence of earnings changes.

$$\frac{\Delta E_{it+1}}{P_{it}} = a_{0t} + a_{1t} D_{it}^{\Delta E} + b_t \frac{\Delta E_{it}}{P_{it-1}} + c_t \left(\frac{D_{it}^{\Delta E} \times \Delta E_{it}}{P_{it-1}} \right) + \varepsilon_{it}, \qquad (3)$$

where ΔE_{it} is earnings changes of firm i in year t and $D_{it}^{\Delta E}$ is an indicator variable equal to one if earnings changes (ΔE_{it}) are negative, zero otherwise. A reversal of earnings changes implies a negative coefficient b_t. Conditional accounting conservatism implies a negative coefficient c_t: that is, earnings changes are less persistent for earnings decreases (alternate proxy for bad news) than earnings increases (alternate proxy for good news).

Unlike Eq. (2) in which the coefficient estimate on ($D \times R$) of total accruals as the dependent variable equals the sum of coefficient estimates on ($D \times R$) of expected and unexpected accruals as the dependent variables, it is not straightforward to decompose the coefficient estimate on ($D^{\Delta E} \times \Delta E$) in Eq. (3) into the expected and unexpected accrual components. To circumvent this difficulty, I partition the sample into portfolios based on the absolute values of expected and unexpected accruals. If unexpected accruals contribute to the asymmetric reversal of earnings changes, *ceteris paribus*, earnings

changes would be less persistent for firms with larger absolute unexpected accruals than those with smaller absolute unexpected accruals. The asymmetric persistence of earnings changes specification of Eq. (3) would provide additional evidence on the role of expected and unexpected accruals in conditional accounting conservatism. It is used as a supplementary test of the primary test of asymmetric timeliness of earnings and its components of Eq. (2).

Measurement of Unconditional Accounting Conservatism

I use two measures of unconditional (ex-ante or news independent) accounting conservatism: (1) the market-to-book ratio (Pope and Walker, 2003; Easton and Pae, 2004; Pae et al., 2005; and Roychowdhury and Watts, 2006) and (2) an estimated balance sheet reserve due to conservative accounting method and policy choices (Penman and Zhang, 2002; and Pae and Thornton, 2006). The market-to-book ratio (*MTB*) is measured as the ratio of the market value to the book value of common equity at the end of fiscal year *t-1*. The estimated balance sheet reserve (*RES*) is measured as the level of estimated hidden reserve on the balance sheet deflated by net operating assets at the end of fiscal year *t-1* resulting from adopting the LIFO inventory method rather than the FIFO inventory method and immediate expensing of advertising and research and development expenditures rather than capitalizing and depreciating them over their useful life.[6]

[6] $RES \equiv ER/NOA$, where *ER* equals the sum of (1) the LIFO reserve (#240), (2) the estimated amortized R&D assets that would have been on the balance sheet if R&D expenditures (#46) are capitalized and amortized using the sum-of-the-years-digits method over five years, and (3) the estimated advertising assets if advertising expenditures (#45) are capitalized and amortized using the sum-of-the-years-digits method over two years; *NOA* is net operating assets measured by common equity (#60 + #227 - #242) minus net financial assets (#1 + #32 - #34 -#9 - #130 + #227 - #242) plus minority interest (#38). See Penman and Zhang (2002) for details.

4. Data and Empirical Results

Expected Accrual models

Expected and unexpected accruals are estimated from the Jones model and its variants (see Appendix for details). Accrual models are estimated for each Fama-French (1997) industry-year pair with at least 30 firms. I exclude financial firms since the nature of accruals of these firms differs from those in other industries. Accounting data and the market value of common equity are obtained from annual COMPUSTAT database. Earnings (E_t) are net income from the income statement (# 172), and are decomposed into operating cash flows and accruals. Operating cash flows (CF_t) are from the cash flow statement (#308). Accruals (ACC_t) are calculated as the difference between earnings and operating cash flows. The availability of operating cash flows restricts the sample to the post 1986 period; however, this restriction reduces measurement errors of accruals (Hribar and Collins, 2002). Variables used to estimate accrual models are deflated by beginning-of-fiscal-year total assets (A_{t-1}).

Table 1 reports estimation results of the modified Jones model (denoted by [*MJ*]) and the modified Jones model with non-linear cash flows (denoted by [*MJNC*]). Other accruals models are not reported because subsequent empirical test results are insensitive to the adopted accrual models. Panel A reports mean coefficient estimates of annual cross-sectional regressions of the modified Jones model for 527 Fama-French (1997) industry-year pairs. As expected, the mean coefficient estimate on change in revenue (ΔREV) is positive and the mean coefficient estimate on property, plant and equipment (*PPE*) is negative. 62.24 percent of the coefficient estimates on change in revenue

(Δ*REV*) and 87.86 percent of the coefficient estimates on property, plant and equipment (*PPE*) are of the predicted sign. The mean adjusted R^2 is 0.435.

[*Table 1 here*]

Panel B reports mean coefficient estimates of annual cross-sectional regressions of the modified Jones model with non-linear cash flows. Consistent with Ball and Shivakumar (2005), the mean coefficient estimate on (*DCF*×*CF*) is positive due to timely recognition of losses. The mean adjusted R^2 increases from 0.435 to 0.667 with the inclusion of non-linear cash flow terms. Untabulated estimation results of other accrual models (described in Appendix) indicate that there is no significant difference in the explanatory power among accrual models that take into account the non-linearity of accruals with respect to a variety of cash flow measures: that is, adjusted R^2s are similar across accrual models with non-linear cash flows, non-linear cash flow changes, and non-linear industry adjusted cash flows.

Sample and Descriptive Statistics

Annual stock returns (*R*) are calculated by compounding the CRSP monthly stock returns over the fiscal year, which exclude the market reaction to the current year's earnings announcement (Basu, 1997). Earnings, operating cash flows, total accruals and expected and unexpected accruals are deflated by beginning-of-fiscal-year market value of common equity (#199 × #25). To mitigate potential outlier problems, returns, earnings, operating cash flows, total accruals, and unexpected accruals are winsorized at their

respective first and 99th percentile values each year. The final sample consists of 63,041 firm-year observations over the fiscal year from 1988 to 2003.[7]

Table 2 reports descriptive statistics of key variables. Median market value of common equity is $117.51 million. Average and median annual stock returns over the sample period 1988 to 2003 are 16.9 percent and 2.4 percent. Median total accruals (*ACC*) are negative 5.3 percent of beginning-of-fiscal-year market value of common equity. Median expected accruals ($EA[_{MJ}]$ and $EA[_{MJNC}]$) are negative (-0.049 and -0.053), whereas median unexpected accruals ($UEA[_{MJ}]$ and $UEA[_{MJNC}]$) are close to zero (0.002 and 0.004).

[*Table 2 here*]

In Panel B of Table 2, I partition the full sample into a good news sub-sample (firms experiencing positive stock returns) and a bad news sub-sample (firms experiencing negative stock returns). The good news sample contains 32,838 firm-year observations (52.1 percent), and the bad news sample contains 30,203 firm-year observations (47.9 percent). Firms in the good news sample have on average larger market capitalization, higher earnings and bigger operating cash flows than those in the bad news sample. Accruals are on average more negative for firms in the bad news sample than those in the good news sample. Median unexpected accruals ($UEA[_{MJ}]$ and $UEA[_{MJNC}]$) are positive for the good news sample (0.008 and 0.012), but negative for the bad news sample (-0.003 and -0.006). It is consistent with firms using unexpected accruals to expedite the recognition of future cash flows.

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[7] Following the COMPUSTAT year convention, I treat fiscal years ending between January 1 and May 31 of year $t+1$ as year t observations. The sample starts in 1988 because the requirement of lagged operating cash flows in expected accrual models restricts the sample to the post 1987 period.

The Pearson correlation coefficient between unexpected accruals from the modified Jones model ($UEA_{[MJ]}$) and those from the modified Jones model with non-linear cash flows ($UEA_{[MJNC]}$) is 0.054 (not reported). It is significantly positive, but small, implying that estimated unexpected accruals from the modified Jones model quite differ from those from the modified Jones model with non-linear cash flows.[8]

Unexpected Accruals and Conditional Accounting Conservatism

Table 3 presents regression results of earnings and its components on concurrent stock returns. The level of conditional accounting conservatism is measured by the difference in timeliness of earnings or its components between the bad news and good news samples, i.e., the coefficient estimate on ($R \times D$). Consistent with Basu (1997), the mean differential timeliness estimate of earnings (E) from annual cross-sectional regressions is 0.397, which is significant at the 0.01 level. Mean differential timeliness estimates of cash flows (CF) and accruals (ACC) are 0.154 and 0.249, respectively. Consistent with Basu (1997) and Pae et al. (2005), approximately 63 percent of differential timeliness of earnings with respect to concurrent stock returns ($0.63 \approx 0.249/0.397$) is explained by the accrual component of earnings.

[*Table 3 here*]

[8] Unexpected accruals from the Modified Jones models, which adjust changes in receivables, are in general highly correlated with those from the related base models. For example, the Pearson correlation coefficient is 0.993 between the Jones and modified Jones models and 0.998 between the Jones and modified Jones models with non-linear industry adjusted cash flows. Unexpected accruals estimated from the Jones model are positively correlated with those from other models, but the correlations are modest ranging from 0.02 to 0.19, with the highest Pearson correlation with the modified Jones model with cash flows: it appears that the augmentation of the Jones model with cash flows results in unexpected accruals that are quite different from those from the Jones model. The Pearson correlation coefficients among the Jones model with cash flows, the Jones model with non-linear cash flows and the Jones model with non-linear cash flow changes are quite high, ranging from 0.503 to 0.712. However, unexpected accruals from the Jones model with industry adjusted cash flows are not highly correlated with those from other expected accrual models, with correlation coefficients ranging from 0.026 to 0.247.

The remainder of Table 3 reports means of differential timeliness estimates of the expected and unexpected components of accruals. By construction, the differential timeliness estimate of accruals is the sum of the differential timeliness estimates of expected and unexpected accruals. For the modified Jones model [*MJ*], the mean differential timeliness estimate on ($R \times D$) of unexpected accruals is 0.232: that is, about 93 percent of the differential timeliness of accruals ($0.93 \approx 0.232/0.249$) is explained by unexpected accruals. For the modified Jones model with non-linear cash flows [*MJNC*], about 86 percent of the differential timeliness of accruals ($0.86 \approx 0.213/0.249$) is explained by unexpected accruals.

In contrast, the coefficient estimate on ($R \times D$) of expected accruals is much smaller than the corresponding coefficient estimate of unexpected accruals. The differential timeliness of expected accruals is 0.017 for the modified Jones model ($EA_{[MJ]}$) and 0.036 for the modified Jones model with non-linear cash flows ($EA_{[MJNC]}$). In fact, mean differential timeliness coefficients of unexpected accruals are significant at the 0.01 level, whereas mean differential timeliness coefficients of expected accruals are insignificant.

The test results of the impact on conditional accounting conservatism of unexpected accruals are similar between the modified Jones model and the modified Jones model with non-linear cash flows. It appears that controlling for the non-linearity of accruals with respect to cash flows in estimating expected accruals has little impact on the extent to which unexpected accruals exhibit evidence of conditional accounting conservatism measured with respect to concurrent fiscal year stock returns.

On the other hand, Table 1 indicates that the coefficient estimates are on average of the predicted sign, but there are cases in which the estimated coefficients are of the wrong sign. As a robustness check, I repeat the analyses by restricting to firms in the industry-year pairs for which the coefficient estimates of the Jones model are of the predicted sign: that is, the coefficient estimate on changes in revenue (ΔREV) is positive and the coefficient estimate on property, plant and equipment (PPE) is negative. Empirical results are, however, robust to the sample of firms in which the coefficient estimates of the Jones model explanatory variables are of the predicted sign (untabulated).

In sum, when accruals are further decomposed into expected and unexpected accruals, unexpected accruals exhibit the asymmetry with respect to stock returns, but expected accruals do not, indicating that the asymmetric timeliness of accruals with respect to concurrent stock returns is mainly due to unexpected accruals.

Alternative Measure of Conditional Accounting Conservatism: Asymmetric Persistence of Earnings Changes

So far, I have used the asymmetric timeliness of earnings with respect to concurrent stock returns as a measure of conditional accounting conservatism. In this section, I employ the asymmetric persistence of earnings changes specification as an alternate measure of conditional accounting conservatism. Use of different measures of conditional accounting conservatism will provide more confidence about the role of expected and unexpected accruals in conditional accounting conservatism.

Panel A of Table 4 replicates Basu's regression of next year's earnings changes (ΔE_{it+1}) on current year's earnings changes (ΔE_{it}). Consistent with earnings changes being

less persistent for earnings decreases (alternate proxy for bad news) than earnings increases (alternate proxy for good news), the coefficient estimate of −1.087 on ($D^{\Delta E} \times \Delta E$) is significantly negative at the 0.01 level.

[*Table 4 here*]

In Panel B, I partition the sample into quintiles each year based on the absolute values of earnings, operating cash flows, total accruals and expected and unexpected accruals. For quintiles based on the absolute values of earnings ($|E|$), the coefficient estimate on ($D^{\Delta E} \times \Delta E$) is significantly negative (–1.045 with a t-value of –8.59) for firms with the largest absolute earnings (Q5), but insignificant (0.202 with a t-value of 1.55) for firms with the smallest absolute earnings (Q1), indicating that the negative coefficient on ($D^{\Delta E} \times \Delta E$) for the full sample is driven by firms with the largest absolute earnings (Q5). A similar pattern is observed for quintiles based on the absolute values of total accruals ($|ACC|$): earnings changes are less persistent for firms with larger absolute accruals than those with smaller absolute accruals. For quintiles based on the absolute values of operating cash flows (|CF|), the coefficient estimates on ($D^{\Delta E} \times \Delta E$) are significantly negative across quintiles; however, the variation in the asymmetric persistence of earnings changes across quintiles is much smaller compared to that of accruals. In fact, unlike quintiles based on the absolute values of accruals, earnings changes are less asymmetrically persistent for firms with smaller absolute operating cash flows than those with larger absolute operating cash flows.

For quintiles based on the absolute values of expected accruals (|EA|), the coefficient estimates on ($D^{\Delta E} \times \Delta E$) are significantly negative across quintiles; but, there is no significant difference in the magnitude of the coefficient estimates on ($D^{\Delta E} \times \Delta E$)

between firms with the largest absolute expected accruals (Q5) and those with the smallest absolute expected accruals (Q1). That is, earnings changes are no less asymmetrically persistent for firms with larger absolute expected accruals than those with smaller absolute expected accruals, indicating that the magnitude of expected accruals does not explain the variation in the asymmetric persistence of earnings changes across quintiles. In sharp contrast, earnings changes are less asymmetrically persistent for firms with larger absolute unexpected accruals than those with smaller absolute unexpected accruals: for example, when the modified Jones model [*MJ*] is used, the coefficient estimate on ($D^{\Delta E} \times \Delta E$) is –1.236 for firms with the largest absolute unexpected accruals (Q5) and –0.269 for those with the smallest absolute unexpected accruals (Q1).

In sum, earnings changes are less asymmetrically persistent for firms with larger absolute unexpected accruals than those with smaller absolute unexpected accruals, whereas there is no difference in the asymmetric persistence of earnings changes between firms with larger absolute expected accruals and those with smaller absolute expected accruals. These results are consistent with unexpected accruals rather than expected accruals making earnings changes less asymmetrically persistent for earnings decreases than earnings increases.

Unconditional Accounting Conservatism and Conditional Accounting Conservatism

Extant research suggests a systematic negative relation between unconditional and conditional accounting conservatism (Richardson and Tinaikar, 2004; and Beaver and Ryan, 2005). Using the market-to-book ratio (*MTB*) and an estimated balance sheet reserve deflated by net operating assets (*RES*) at the beginning of the fiscal year as

proxies for unconditional (ex-ante or news-independent) conservatism, I examine whether firms with lower unconditional conservatism exhibit a greater degree of conditional conservatism than those with higher unconditional conservatism.

In Panel A of Table 5, I partition the sample into quintiles based on the beginning-of-year market-to-book ratio (*MTB*). The analysis is restricted to 60,606 firm-year observations with positive book value of equity. Consistent with extant studies (Pope and Walker, 2003; Pae et al., 2005; and Roychowdhury and Watts, 2006), the level of conditional conservatism decreases as *MTB* increases: the coefficient estimate on ($R \times D$) is 0.760 for firms with the lowest *MTB* (Q1) and 0.129 for those with the highest *MTB* (Q5). Operating cash flows (*CF*) do not display such a decreasing pattern, even though the asymmetric timeliness of operating cash flows for firms in Q1 is greater than that for firms in Q5 (0.137 versus 0.098). In contrast, total accruals (*ACC*) exhibit a decreasing pattern as in earnings (0.623 in Q1 versus 0.024 in Q5), indicating that the negative association between unconditional and conditional accounting conservatism for earnings is mainly due to the accrual component of earnings (Pae et al., 2005).

[*Table 5 here*]

Next, I examine the relative contribution of expected and unexpected accruals to the negative association between unconditional and conditional accounting conservatism. Unexpected accruals from the modified Jones model exhibit the negative association, whereas expected accruals do not: for the unexpected accruals, the difference in the coefficient estimates on ($R \times D$) between Q1 and Q5 is 0.689 (= 0.686 + 0.003), whereas the corresponding difference of expected accruals is –0.091 (= –0.063 – 0.028). This pattern is, however, less obvious for the modified Jones model with non-linear cash

flows: both expected and unexpected accruals exhibit the negative association between unconditional and conditional accounting conservatism.

In Panel B, I partition the sample into quintiles based on the estimated balance sheet reserve at the beginning of the fiscal year (*RES*). The analysis is based on 12,842 firm-year observations for which *RES* can be estimated. As in the market-to-book ratio, the asymmetric timeliness of earnings decreases as the estimated balance sheet reserve (*RES*) increases. This pattern is observed for total accruals, but not for operating cash flows, indicating that the negative association between *RES* and conditional accounting conservatism is mainly due to the accrual component of earnings. It is a generalization of the documented negative association between unconditional accounting conservatism proxied by *MTB* and conditional accounting conservatism (Pope and Walker, 2003; Pae et al., 2005; and Roychowdhury and Watts, 2006) to the case of the estimated balance sheet reserve (*RES*) as a proxy for unconditional accounting conservatism.

Next, total accruals are decomposed into expected and unexpected accruals. Unexpected accruals exhibit the negative association between unconditional and conditional accounting conservatism, whereas expected accruals do not. In fact, there is a positive association between the level of *RES* and asymmetric timeliness of expected accruals. It appears that the negative association between *RES* as the proxy for unconditional accounting conservatism and conditional accounting conservatism is driven by unexpected accruals.

In sum, consistent with prior research, there is a negative association between unconditional conservatism (proxied by the market-to-book ratio and the estimated balance sheet reserve) and conditional conservatism. The negative association between

unconditional and conditional conservatism is primarily due to accruals rather than operating cash flows, and mainly due to the unexpected component of accruals rather than the expected component of accruals.

Demand for Conditional Accounting Conservatism: Efficient Debt Contracting Perspective

In this section, I examine the demand for conditional accounting conservatism with respect to efficient debt contracting. Watts (2003) suggests that demand for conditional conservatism would be greater when there are more conflicts of interest over wealth distribution between stakeholders. Ball et al. (2005) examine the implications of the debt hypothesis versus the equity hypothesis for conditional accounting conservatism. Under the debt hypothesis, conditional accounting conservatism facilitates efficient contracting in debt markets, whereas there is no such demand for conditional accounting conservatism under the equity hypothesis because symmetric recognition of gains and losses better serves the information needs of shareholders than asymmetric recognition of gains and losses. Consistent with the debt hypothesis, Ball et al. (2005) find that conditional accounting conservatism is more pronounced for countries with bigger debt markets than countries with smaller debt markets. In line with this finding, Ahmed et al. (2002) find that accounting is on average more conservative for firms with more severe conflicts over dividend policy between debt-holders and equity-holders.

I examine the implications of the debt hypothesis for conditional accounting conservatism by comparing the degree of conditional accounting conservatism between firms with more debt and those with less debt. First, I examine the relative roles of

accruals and operating cash flows for efficient debt contracting. I predict that accruals rather than cash flows make accounting conditionally more conservative when accounting conservatism is in greater demand: that is, the asymmetric timeliness of accruals increases as leverage increases. Next, I examine the relative roles of expected and unexpected accruals for efficient debt contracting. Building on the finding that conditional conservatism is mainly driven by unexpected accruals, I predict that the impact of unexpected accruals on conditional conservatism is more pronounced for firms with more debt than those with less debt.

In Table 6, I partition the sample into quintiles based on beginning-of-year leverage (LEV) measured by long-term debts divided by total assets. I use leverage as a proxy for the demand for conditional accounting conservatism with respect to efficient debt contracting. The analysis is based on 62,935 firm-year observations for which LEV can be calculated. Consistent with Ball et al. (2005), the asymmetric timeliness of earnings increases as leverage increases. The coefficient estimate on ($R \times D$) is 0.306 in Q1 where the demand for conditional accounting conservatism is deemed the lowest, and 0.572 in Q5 where the demand for conditional accounting conservatism is deemed the highest. Decomposition of earnings into accruals and operating cash flows shows that there is a little variation in conditional accounting conservatism across quintiles when operating cash flows are used as the dependent variable, whereas there is a sizable variation in conditional accounting conservatism when accruals are used as the dependent variable, indicating that the variation in the conditional accounting conservatism of earnings is mainly due to the accrual component rather than the operating cash flow component.

[*Table 6 here*]

Next, accruals are decomposed into expected and unexpected accruals. Most of the variations in the asymmetric timeliness of accruals are explained by unexpected accruals rather than expected accruals. Conditional accounting conservatism increases as leverage increases for unexpected accruals, but not for expected accruals. For unexpected accruals from the modified Jones model ($UEA_{[MJ]}$), the coefficient estimate on ($R \times D$) is 0.234 in Q1 where the demand for conditional conservatism is deemed the lowest, and 0.408 in Q5 where the demand for conditional accounting conservatism is deemed the highest. A similar pattern is observed for unexpected accruals from the modified Jones model with non-linear cash flows ($UEA_{[MJNC]}$). In contrast, this increasing pattern is much weaker for expected accruals from the modified Jones model ($EA_{[MJ]}$): the coefficient estimate on ($R \times D$) is –0.047 in Q1 and 0.047 in Q5. Moreover, expected accruals from the modified Jones model with non-linear cash flows ($EA_{[\mathrm{MJNC}]}$) do not display such a monotonic positive relationship between leverage and the degree of conditional accounting conservatism: the coefficient estimate on ($R \times D$) is 0.107 in Q1 and 0.100 in Q5.

In sum, accruals rather than operating cash flows drive the positive association between leverage and the conditional accounting conservatism of earnings, and unexpected accruals rather than expected accruals drive the positive association between leverage and the conditional accounting conservatism of accruals. This evidence is consistent with firms using accruals, especially discretion over accruals (or unexpected accruals) when efficient debt contracting requires conditionally more conservative accounting.

5. Conclusion

This paper examines the impact of management discretion over accruals on conditional accounting conservatism. Empirical results suggest that conditional accounting conservatism is primarily attributable to unexpected accruals rather than expected accruals; however, this conclusion should be interpreted with a caution since inferences about the relative contribution of expected and unexpected accruals to conditional accounting conservatism critically depend on adopted accrual models.

One may argue that accrual models should incorporate all aspects that potentially influence accruals including conditional accounting conservatism. If one successfully develops such an accrual model, then by construction the resulting residuals or unexpected accruals would be unrelated to conditional accounting conservatism: in that case, there would be no room for unexpected accruals in conditional accounting conservatism. However, it would be very difficult (if not impossible) to incorporate all aspects of conditional accounting conservatism into accrual models, for there is no consensus on how to measure conditional accounting conservatism and there are many factors influencing conditional accounting conservatism (for example, the ex-ante level of accounting conservatism, the quality of accounting standards, etc.). In fact, controlling for the non-linearity of accruals with respect to cash flows in estimating expected accruals has little impact on the extent to which unexpected accruals exhibit evidence of conditional accounting conservatism measured with respect to concurrent fiscal year stock returns.

Appendix: Expected Accrual models

Decomposition of total accruals into the expected and unexpected components is made using the Jones model and its variants. Accrual models considered are as follows: (1) the Jones (1991) model, (2) the modified Jones model (Dechow, Sloan, and Sweeny, 1995), (3) the Jones model with cash flows, (4) the modified Jones model with cash flows, (5) the Jones model with non-linear cash flows, (6) the modified Jones model with non-linear cash flows, (7) the Jones model with non-linear cash flow changes, (8) the modified Jones model with non-linear cash flow changes, (9) the Jones model with non-linear industry adjusted cash flows and (10) the modified Jones model with non-linear industry adjusted cash flows. These accrual models are estimated separately for each Fama-French industry in each year to allow for structural changes over time and differences in accrual structures across industries.

The Jones and modified Jones models regress total accruals (ACC_{it}) on change in revenues (ΔREV_{it}) and gross property, plant and equipment (PPE_{it}) deflated by beginning-of-fiscal-year total assets (A_{it-1}).

$$\frac{ACC_{it}}{A_{it-1}} = \alpha_{0t}\frac{1}{A_{it-1}} + \alpha_{1t}\frac{\Delta REV_{it}}{A_{it-1}} + \alpha_{2t}\frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it}. \qquad \text{(A1)}$$

Prior research suggests that the coefficient on changes in revenues (ΔREV_{it}) is positive and the coefficient on gross property, plant and equipment (PPE_{it}) is negative since changes in revenues are correlated with changes in working capital and gross property, plant and equipment is correlated with depreciation expenses.

Unexpected accruals of the Jones model ($UEA_{[J]}$) are measured by the residuals of regression (A1).

$$UEA_{[J]it} = ACC_{it} - \left[a_{0t} + a_{1t}\Delta REV_{it} + a_{2t}PPE_{it}\right],$$

where a_{jt} is the coefficient estimate of α_{jt} from regression (A1).

The modified Jones model further adjusts changes in receivables (ΔREC_{it}) to control for manipulation of revenues through credit sales. Unexpected accruals of the modified Jones model ($UEA_{[MJ]}$) are

$$UEA_{[MJ]it} = ACC_{it} - \left[a_{0t} + a_{1t}\left(\Delta REV_{it} - \Delta REC_{it}\right) + a_{2t} PPE_{it}\right].$$

Prior research suggests that accruals are negatively correlated with concurrent operating cash flows and positively correlated with past and future operating cash flows (Dechow, 1994; Barth et al., 2001; and Dechow and Dichev, 2002); however, the Jones and modified Jones models do not take into account the systematic associations between operating cash flows and accruals. Dechow et al. (1995) find that extant unexpected accrual models are likely to overestimate (underestimate) unexpected accruals of firms with high (low) operating cash flows. To control for the systematic associations between accruals and operating cash flows, the Jones model is augmented with past, current and future operating cash flow variables. Consistent with McNichols' (2002) augmentation of the Jones model with cash flows in the Dechow and Dichev's (2002) accrual quality model, lagged, current and future operating cash flows are added to the Jones model.[9]

$$\frac{ACC_{it}}{A_{it-1}} = \alpha_{0t}\frac{1}{A_{it-1}} + \alpha_{1t}\frac{\Delta REV_{it}}{A_{it-1}} + \alpha_{2t}\frac{PPE_{it}}{A_{it-1}} + \gamma_{0t}\frac{CF_{it-1}}{A_{it-1}} + \gamma_{1t}\frac{CF_{it}}{A_{it-1}} + \gamma_{2t}\frac{CF_{it+1}}{A_{it-1}} + \varepsilon_{it}, \quad \text{(A2)}$$

[9] (A2) differs from McNichols (2002) in that the dependent variable is total accruals rather than working capital accruals: that is, the Jones model is augmented with cash flow variables, whereas McNichols (2002) augments the Dechow and Dichev (2002) model with the Jones variables. There are several models augmenting the Jones model with cash flow variables. For example, Kasznik (1999) augments the Jones model with change in cash flows. The inclusion of change in cash flows implicitly assumes that the implications of the current and lagged operating cash flows for current accruals are the same. However, Barth et al. (2001) and Dechow and Dichev (2002) suggest that the current operating cash flows have a stronger association with the current accruals than the lagged operating cash flows. Pae (2005) includes the current and lagged operating cash flows rather than the change in cash flows. His model allows the current and lagged operating cash flows to differ in their implications for current accruals.

where CF_{it} is operating cash flows of firm i in year t. Prior research suggests that the coefficient on current operating cash flows (CF_{it}) is negative and the coefficients on lagged and future operating cash flows (CF_{it-1} and CF_{it+1}) are positive.

Unexpected accruals of the Jones model with cash flows ($UEA_{[JC]}$) are measured by the residuals of regression (A2).

$$UEA_{[JC]it} = ACC_{it} - \left[a_{0t} + a_{1t}\Delta REV_{it} + a_{2t}PPE_{it} + r_{0t}CF_{it-1} + r_{1t}CF_{it} + r_{2t}CF_{it+1}\right],$$

where a_{jt} and r_{jt} are coefficient estimates of α_{jt} and γ_{jt}, respectively from regression (A2). Unexpected accruals of the modified Jones model with cash flows ($UEA_{[MJC]}$) are calculated after adjusting changes in receivables (ΔREC_{it}).

$$UEA_{[MJC]it} = ACC_{it} - \begin{bmatrix} a_{0t} + a_{1t}\left(\Delta REV_{it} - \Delta REC_{it}\right) + a_{2t}PPE_{it} \\ + r_{0t}CF_{it-1} + r_{1t}CF_{it} + r_{2t}CF_{it+1} \end{bmatrix}.$$

Ball and Shivakumar (2005) argue that accruals not only reduce the noise in operating cash flows, but also expedite the timely recognition of unrealized losses compared to unrealized gains. To control for the non-linearity of accruals with respect to cash flows (Ball and Shivakumar, 2006), the following piece-wise modifications of the Jones model with cash flows are estimated.[10]

$$\begin{aligned} \frac{ACC_{it}}{A_{it-1}} = {} & \alpha_{0t}\frac{1}{A_{it-1}} + \alpha_{1t}\frac{\Delta REV_{it}}{A_{it-1}} + \alpha_{2t}\frac{PPE_{it}}{A_{it-1}} + \gamma_{0t}\frac{CF_{it-1}}{A_{it-1}} + \gamma_{1t}\frac{CF_{it}}{A_{it-1}} + \gamma_{2t}\frac{CF_{it+1}}{A_{it-1}} \\ & + \gamma_{3t}\frac{DCF_{it}}{A_{it-1}} + \gamma_{4t}\frac{DCF \times CF_{it}}{A_{it-1}} + \varepsilon_{it}, \end{aligned} \tag{A3}$$

[10] Ball and Shivakumar (2006) also consider a model that takes into account the non-linearity of accruals with respect to concurrent market adjusted abnormal returns. Since this paper uses market returns in measuring conditional accounting conservatism, expected accrual models that incorporate the non-linearity of accruals with respect to market adjusted abnormal returns are not considered. Ball and Shivakumar (2006) discuss advantages and disadvantages of the model.

$$\frac{ACC_{it}}{A_{it-1}} = \alpha_{0t}\frac{1}{A_{it-1}} + \alpha_{1t}\frac{\Delta REV_{it}}{A_{it-1}} + \alpha_{2t}\frac{PPE_{it}}{A_{it-1}} + \gamma_{0t}\frac{CF_{it-1}}{A_{it-1}} + \gamma_{1t}\frac{CF_{it}}{A_{it-1}} + \gamma_{2t}\frac{CF_{it+1}}{A_{it-1}} + \gamma_{3t}\frac{D\Delta CF_{it}}{A_{it-1}} + \gamma_{4t}\frac{D\Delta CF \times \Delta CF_{it}}{A_{it-1}} + \varepsilon_{it}, \quad \text{(A4)}$$

$$\frac{ACC_{it}}{A_{it-1}} = \alpha_{0t}\frac{1}{A_{it-1}} + \alpha_{1t}\frac{\Delta REV_{it}}{A_{it-1}} + \alpha_{2t}\frac{PPE_{it}}{A_{it-1}} + \gamma_{0t}\frac{CF_{it-1}}{A_{it-1}} + \gamma_{1t}\frac{CF_{it}}{A_{it-1}} + \gamma_{2t}\frac{CF_{it+1}}{A_{it-1}} + \gamma_{3t}\frac{DCFind_{it}}{A_{it-1}} + \gamma_{4t}\frac{DCFind \times CFind_{it}}{A_{it-1}} + \varepsilon_{it}, \quad \text{(A5)}$$

where DCF_{it} is an indicator variable equal to one if operating cash flows (CF_{it}) are negative, zero otherwise; $D\Delta CF_{it}$ is an indicator variable equal to one if operating cash flow changes (ΔCF_{it}) are negative, zero otherwise; and $DCFind_{it}$ is an indicator variable equal to one if industry adjusted operating cash flows ($CFind_{it}$) are negative, zero otherwise. $CFind_{it}$ is measured by operating cash flows of firm *i* minus average operating cash flows of firms in the industry in which firm *i* operates.

Unexpected accruals of the Jones model with non-linear cash flows ($UEA_{[JNC]}$) are measured by the residuals of regression (A3).

$$UEA_{[JNC]it} = ACC_{it} - \begin{bmatrix} a_{0t} + a_{1t}\Delta REV_{it} + a_{2t}PPE_{it} + r_{0t}CF_{it-1} + r_{1t}CF_{it} + r_{2t}CF_{it+1} \\ + r_{3t}DCF_{it} + r_{4t}DCF \times CF_{it} \end{bmatrix},$$

where a_{jt} and r_{jt} are coefficient estimates of α_{jt} and γ_{jt}, respectively from regression (A3). Unexpected accruals of the modified Jones model with non-linear cash flows ($UEA_{[MJNC]}$) are

$$UEA_{[MJNC]it} = ACC_{it} - \begin{bmatrix} a_{0t} + a_{1t}\left(\Delta REV_{it} - \Delta REC_{it}\right) + a_{2t}PPE_{it} + r_{0t}CF_{it-1} + r_{1t}CF_{it} \\ + r_{2t}CF_{it+1} + r_{3t}DCF_{it} + r_{4t}DCF \times CF_{it} \end{bmatrix}.$$

Similarly, unexpected accruals of the Jones model with non-linear cash flow changes ($UEA_{[JNCC]}$) and the modified Jones model with asymmetric cash flow changes ($UEA_{[MJNCC]}$) are measured by the residuals of regression (A4).

$$UEA_{[JNCC]it} = ACC_{it} - \begin{bmatrix} a_{0t} + a_{1t}\Delta REV_{it} + a_{2t}PPE_{it} + r_{0t}CF_{it-1} + r_{1t}CF_{it} + r_{2t}CF_{it+1} \\ + r_{3t}D\Delta CF_{it} + r_{4t}D\Delta CF \times \Delta CF_{it} \end{bmatrix}.$$

$$UEA_{[MJNCC]it} = ACC_{it} - \begin{bmatrix} a_{0t} + a_{1t}\left(\Delta REV_{it} - \Delta REC_{it}\right) + a_{2t}PPE_{it} + r_{0t}CF_{it-1} + r_{1t}CF_{it} \\ + r_{2t}CF_{it+1} + r_{3t}D\Delta CF_{it} + r_{4t}D\Delta CF \times CF_{it} \end{bmatrix}.$$

Unexpected accruals of the Jones model with non-linear industry adjusted cash flows ($UEA_{[JNCind]}$) and the modified Jones model with non-linear industry cash flows ($UEA_{[MJNCind]}$) are measured by the residuals of regression (A5).

$$UEA_{[JNCind]it} = ACC_{it} - \begin{bmatrix} a_{0t} + a_{1t}\Delta REV_{it} + a_{2t}PPE_{it} + r_{0t}CF_{it-1} + r_{1t}CF_{it} + r_{2t}CF_{it+1} \\ + r_{3t}DCFind_{it} + r_{4t}DCFind \times CFind_{it} \end{bmatrix}.$$

$$UEA_{[MJNCind]it} = ACC_{it} - \begin{bmatrix} a_{0t} + a_{1t}\left(\Delta REV_{it} - \Delta REC_{it}\right) + a_{2t}PPE_{it} + r_{0t}CF_{it-1} + r_{1t}CF_{it} \\ + r_{2t}CF_{it+1} + r_{3t}DCFind_{it} + r_{4t}DCFind \times CFind_{it} \end{bmatrix}.$$

A potential concern about the above expected accrual models is that these models depend on future cash flows, which are not known until year *t+1*. To check out the sensitivity of the results to the exclusion of future cash flows in estimating expected accruals, I repeat all tests after dropping the year *t+1* cash flow variable (CF_{it+1}). However, the results based on expected accrual models that exclude future cash flows are similar to those reported in the paper.

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Table 1: Expected Accrual models

The modified Jones model and the modified Jones model with non-linear cash flow are estimated for each Fama-French (1997) industry in each year (527 industry-year pairs). Each industry-year pair is required to have at least 30 firms. Financial firms are excluded. *ACC* is total accruals, ΔREV is changes in revenue, ΔREC is changes in receivables, *PPE* is property, plant and equipment, *A* is total assets, and *CF* is operating cash flows.

The modified Jones model is $\frac{ACC_{it}}{A_{it-1}} = \alpha_{0t}\frac{1}{A_{it-1}} + \alpha_{1t}\frac{\Delta REV_{it}}{A_{it-1}} + \alpha_{2t}\frac{PPE_{it}}{A_{it-1}} + \varepsilon_{it}$.

Unexpected accruals under the modified Jones model (denoted by *UEA*[*MJ*]) are estimated by

$$UEA_{[MJ]it} = ACC_{it} - \left[a_{0t} + a_{1t}\left(\Delta REV_{it} - \Delta REC_{it}\right) + a_{2t}PPE_{it}\right].$$

Panel A: Coefficient Estimates of the Modified Jones Model

Variable	Predicted	Mean	Standard Deviation	First Quartile	Median	Third Quartile	% of the Pred. sign
$1/A_{it-1}$	(?)	-0.306	1.111	-0.331	-0.092	0.015	
$\Delta REV_{it}/A_{it-1}$	(+)	0.059	1.487	-0.044	0.035	0.133	62.24%
PPE_{it}/A_{it-1}	(−)	-0.131	1.603	-0.121	-0.072	-0.040	87.86%
Adj. R^2		0.435	0.310	0.178	0.352	0.658	

The modified Jones model with non-linear cash flows is

$$\frac{ACC_{it}}{A_{it-1}} = \alpha_{0t}\frac{1}{A_{it-1}} + \alpha_{1t}\frac{\Delta REV_{it}}{A_{it-1}} + \alpha_{2t}\frac{PPE_{it}}{A_{it-1}} + \gamma_{0t}\frac{CF_{it-1}}{A_{it-1}} + \gamma_{1t}\frac{CF_{it}}{A_{it-1}} + \gamma_{2t}\frac{CF_{it+1}}{A_{it-1}}$$

$$+ \gamma_{3t}\frac{DCF_{it}}{A_{it-1}} + \gamma_{4t}\frac{DCF_{it}\times CF_{it}}{A_{it-1}} + \varepsilon_{it},$$

where *DCF* is an indicator variable equal to one when *CF* is negative.

Unexpected accruals under the modified Jones model with non-linear cash flows (denoted by *UEA*[*MJNC*]) are estimated by

$$UEA_{[MJNC]it} = ACC_{it} - \begin{bmatrix} a_{0t} + a_{1t}\left(\Delta REV_{it} - \Delta REC_{it}\right) + a_{2t}PPE_{it} + r_{0t}CF_{it-1} \\ + r_{1t}CF_{it} + r_{2t}CF_{it+1} + r_{3t}DCF_{it} + r_{4t}DCF\times CF_{it} \end{bmatrix}.$$

Panel B: Coefficient Estimates of the Modified Jones Model with Non-linear Cash Flows

Variable	Predicted	Mean	Standard Deviation	First Quartile	Median	Third Quartile	% of the Pred. sign
$1/A_{it-1}$	(?)	0.007	2.840	-0.229	-0.011	0.150	
$\Delta REV_{it}/A_{it-1}$	(+)	0.052	0.511	-0.007	0.062	0.138	73.62%
PPE_{it}/A_{it-1}	(−)	-0.057	0.544	-0.088	-0.040	-0.006	79.51%
CF_{it-1}/A_{it-1}	(+)	0.145	1.657	0.020	0.267	0.460	76.47%
CF_{it}/A_{it-1}	(−)	-0.566	2.915	-0.900	-0.659	-0.394	89.94%
CF_{it+1}/A_{it-1}	(+)	0.084	0.956	-0.041	0.107	0.241	70.02%
DCF/A_{it-1}	(?)	-0.277	3.204	-0.489	-0.105	0.253	
$DCF\times CF/A_{it-1}$	(+)	0.512	3.581	-0.048	0.377	0.819	72.68%
Adj. R^2		0.667	0.259	0.471	0.694	0.915	

Table 2: Descriptive Statistics of Key Variables

MV is the market value of common equity (#199 × #25) at fiscal year end. *R* is annual stock returns for the fiscal year. *E* is net income (#172). *CF* is operating cash flows from the cash flow statement (#308). *ACC* is accruals, calculated as the difference between *E* and *CF*. *ACC* is decomposed into expected accruals (*EA*) and unexpected accruals (*UEA*), which are estimated using the modified Jones model (denoted by [*MJ*]) and the modified Jones model with non-linear cash flows (denoted by [*MJNC*]). See Table 1 for details of how *EA* and *UEA* are estimated. *NI*, *ACC*, *CF, EA* and *UEA* are deflated by the market value of equity at the beginning of fiscal year. *R*, *E*, *ACC*, *CF*, *EA* and *UEA* are winsorized at their respective first and 99th percentile values each year. The sample consists of 63,041 firm-year observations over the period 1988 to 2003 and excludes financial firms.

Panel A: Full Sample – 63,041 observations

Variable	Mean	Standard Deviation	First Quartile	Median	Third Quartile
MV	1,917.03	11,089.31	26.62	117.51	625.09
R	0.169	0.822	-0.288	0.024	0.377
E	-0.038	0.274	-0.064	0.036	0.079
CF	0.085	0.228	-0.011	0.072	0.160
ACC	-0.126	0.316	-0.152	-0.053	-0.004
$EA_{[MJ]}$	-0.135	1.477	-0.145	-0.049	-0.008
$EA_{[MJNC]}$	-0.089	0.854	-0.144	-0.053	-0.002
$UEA_{[MJ]}$	0.009	1.494	-0.078	0.002	0.081
$UEA_{[MJNC]}$	-0.036	0.875	-0.074	0.004	0.057

Panel B: Good News (positive stock returns) versus Bad News (negative stock returns)

Variable	Good News (32,838 observations)		Bad News (30,203 observations)	
	Mean	Median	Mean	Median
MV	2,513.34	218.67	1,268.75	60.08
R	0.641	0.357	-0.344	-0.304
E	0.015	0.063	-0.097	-0.001
CF	0.121	0.103	0.047	0.040
ACC	-0.108	-0.051	-0.145	-0.054
$EA_{[MJ]}$	-0.148	-0.056	-0.121	-0.044
$EA_{[MJNC]}$	-0.111	-0.062	-0.066	-0.043
$UEA_{[MJ]}$	0.040	0.008	-0.023	-0.003
$UEA_{[MJNC]}$	0.002	0.012	-0.079	-0.006

Table 3: Asymmetric Timeliness of Earnings, Operating Cash Flows, Accruals and Expected and Unexpected Accruals

$$\frac{X_{it}}{P_{it-1}} = a_{0t} + a_{1t}D_{it} + b_t R_{it} + c_t\left(R_{it} \times D_{it}\right) + \varepsilon_{it}$$

X_{it} is earnings (E_{it}), operating cash flows (CF_{it}), accruals (ACC_{it}), expected accruals (EA_{it}) or unexpected accruals (UEA_{it}), which are deflated by beginning-of-fiscal-year market value of common equity (P_{it-1}). R_{it} is annual stock returns for the fiscal year. D_{it} is an indicator variable equal to 1 if R_{it} is negative, zero otherwise. *EA* and *UEA* are estimated using the modified Jones model (denoted by [*MJ*]) and the modified Jones model with non-linear cash flows (denoted by [*MJNC*]). See Table 1 for details of how *EA* and *UEA* are estimated. *R*, *E*, *ACC*, *CF*, *EA* and *UEA* are winsorized at their respective first and 99th percentile values each year. Regressions of earnings, operating cash flows, total accruals and expected and unexpected accruals are estimated each year. Means of the coefficient estimates from annual regressions are reported with Fama-MacBeth (1973) t-statistics of estimated coefficients in parentheses.

Dependent Variable	*Intercept*	*D*	*R*	*R × D*	*Adj. R^2*
E	0.025*** (4.12)	-0.004 (-0.59)	-0.002 (-0.26)	0.397*** (12.40)	0.125
CF	0.116*** (21.12)	-0.014** (-2.19)	0.023** (2.25)	0.154*** (18.88)	0.060
ACC	-0.092*** (-10.32)	0.010* (1.76)	-0.028** (-2.24)	0.249*** (7.07)	0.023
$EA_{[MJ]}$	-0.101*** (-3.50)	-0.046 (-1.48)	-0.048** (-2.80)	0.017 (0.53)	0.006
$EA_{[MJNC]}$	-0.084*** (-4.39)	0.015 (1.32)	-0.017 (-0.66)	0.036 (1.01)	0.006
$UEA_{[MJ]}$	0.010 (0.31)	0.057* (1.90)	0.019 (1.34)	0.232*** (5.66)	0.017
$UEA_{[MJNC]}$	-0.007 (-0.31)	-0.005 (-0.47)	-0.012 (-0.36)	0.213*** (6.04)	0.029

*** (**, *) Significant at the 0.01 (0.05, 0.1) level (two-tailed tests).

Table 4: Alternative Specification of Accounting Conservatism: Asymmetric Persistence of Earnings Changes

$$\frac{\Delta E_{it+1}}{P_{it}} = a_{0t} + a_{1t} D_{it}^{\Delta E} + b_t \frac{\Delta E_{it}}{P_{it-1}} + c_t \left(\frac{D^{\Delta E} \times \Delta E_{it}}{P_{it-1}} \right) + \varepsilon_{it}$$

ΔE_{it} is earnings change. $D_{it}^{\Delta E}$ is an indicator variable equal to 1 if ΔE_{it} is negative, zero otherwise. *EA* and *UEA* are estimated using the modified Jones model (denoted by [*MJ*]) and the modified Jones model with asymmetric cash flows (denoted by [*MJNC*]). See Table 1 for details of how *EA* and *UEA* are estimated. ΔE, *EA* and *UEA* are winsorized at their respective first and 99th percentile values each year. Regressions of earnings changes are estimated each year. Means of the coefficient estimates from annual regressions are reported with Fama-MacBeth (1973) t-statistics of estimated coefficients in parentheses.

Panel A: Full Sample

Dependent Variable	*Intercept*	$D_{it}^{\Delta E}$	ΔE_{it}	$D^{\Delta E} \times \Delta E_{it}$	*Adj.* R^2
ΔE_{it+1}	-0.007 (-1.32)	-0.052*** (-8.15)	-0.052 (-1.35)	-1.087*** (-7.76)	0.159

*** Significant at the 0.01 level (two-tailed tests).

Panel B: Means of Coefficient Estimates (t-statistics) on $D^{\Delta E} \times \Delta E_{it}$: Partitioned into Quintiles Based on the Absolute Values of Earnings, Operating Cash Flows, Total Accruals and Expected and Unexpected Accruals

Partitioning Variable	*Q1 (Small)*	*Q2*	*Q3*	*Q4*	*Q5 (Large)*	*P-value for test of Q1=Q5*
$\|E\|$	0.202 (1.55)	0.330*** (3.24)	0.025 (0.24)	0.114 (0.70)	-1.045*** (-8.59)	<.0001
$\|CF\|$	-1.419*** (-5.87)	-1.210*** (-4.98)	-1.173*** (-6.58)	-1.179*** (-7.86)	-0.956*** (-6.62)	<0.001
$\|ACC\|$	0.071 (0.52)	0.066 (0.30)	-0.008 (-0.07)	-0.171 (-0.72)	-1.206*** (-8.21)	<0.001
$\|EA_{[MJ]}\|$	-1.126*** (-3.61)	-1.273*** (-5.19)	-1.166*** (-6.41)	-0.969*** (-6.68)	-1.085*** (-7.33)	0.906
$\|EA_{[MJNC]}\|$	-1.119*** (-5.39)	-1.112*** (-5.79)	-1.040*** (-5.35)	-1.006*** (-6.15)	-1.139*** (-7.27)	0.940
$\|UEA_{[MJ]}\|$	-0.269** (-2.42)	-0.268 (-1.39)	-0.433** (-2.51)	-0.741*** (-5.31)	-1.236*** (-7.62)	<0.001
$\|UEA_{[MJNC]}\|$	-0.298 (-1.28)	-0.254 (-1.74)	-0.406** (-2.71)	-0.432* (-2.01)	-1.236*** (-8.09)	0.002

*** (**, *) Significant at the 0.01 (0.05, 0.1) level (two-tailed tests).

Table 5: The Impact of Unconditional Accounting Conservatism on Conditional Accounting Conservatism

$$\frac{X_{it}}{P_{it-1}} = a_{0t} + a_{1t}D_{it} + b_t R_{it} + c_t\left(R_{it} \times D_{it}\right) + \varepsilon_{it}$$

X_{it} is earnings (E_{it}), operating cash flows (CF_{it}), accruals (ACC_{it}), expected accruals (EA_{it}) or unexpected accruals (UEA_{it}), which are deflated by beginning-of-fiscal-year market value of common equity (P_{it-1}). R_{it} is annual stock returns for the fiscal year. D_{it} is an indicator variable equal to 1 if R_{it} is negative, zero otherwise. *EA* and *UEA* are estimated using the modified Jones model (denoted by [*MJ*]) and the modified Jones model with non-linear cash flows (denoted by [*MJNC*]). See Table 1 for details of how *EA* and *UEA* are estimated. *R*, *E*, *ACC*, *CF*, *EA* and *UEA* are winsorized at their respective first and 99th percentile values each year. Regressions of earnings, operating cash flows, total accruals and expected and unexpected accruals are estimated each year. The sample is partitioned into quintiles based on beginning-of-fiscal-year market-to-book ratios or estimated balance sheet reserves. Means of the coefficient estimates from annual regressions are reported.

Panel A: Means of Coefficient Estimates on $R_{it} \times D_{it}$ (60,606 observations)

Dependent Variable	Market-to-Book Ratios at the Beginning of the Fiscal Year				
	Q1 (Low)	*Q2*	*Q3*	*Q4*	*Q5 (High)*
E	0.760	0.457	0.310	0.229	0.129
CF	0.137	0.191	0.186	0.138	0.098
ACC	0.623	0.266	0.119	0.090	0.024
$EA_{[MJ]}$	-0.063	0.143	0.020	0.062	0.028
$EA_{[MJNC]}$	0.313	-0.011	-0.091	0.046	-0.048
$UEA_{[MJ]}$	0.686	0.123	0.099	0.028	-0.003
$UEA_{[MJNC]}$	0.310	0.277	0.211	0.045	0.073

Panel B: Means of Coefficient Estimates on $R_{it} \times D_{it}$ (12,842 observations)

Dependent Variable	Estimated Balance Sheet Reserves Due to Conservative Accounting at the Beginning of the Fiscal Year				
	Q1 (Small)	*Q2*	*Q3*	*Q4*	*Q5 (Large)*
E	0.470	0.451	0.353	0.271	0.222
CF	0.057	0.079	0.098	0.137	0.090
ACC	0.395	0.375	0.235	0.139	0.143
$EA_{[MJ]}$	-0.485	0.059	0.126	0.122	0.383
$EA_{[MJNC]}$	-0.232	-0.057	0.028	-0.049	0.053
$UEA_{[MJ]}$	0.880	0.317	0.109	0.018	-0.240
$UEA_{[MJNC]}$	0.627	0.432	0.206	0.188	0.089

Table 6: Efficient Debt Contracting and Conditional Accounting Conservatism

$$\frac{X_{it}}{P_{it-1}} = a_{0t} + a_{1t}D_{it} + b_t R_{it} + c_t\left(R_{it} \times D_{it}\right) + \varepsilon_{it}$$

X_{it} is earnings (E_{it}), operating cash flows (CF_{it}), accruals (ACC_{it}), expected accruals (EA_{it}) or unexpected accruals (UEA_{it}), which are deflated by beginning-of-fiscal-year market value of common equity (P_{it-1}). R_{it} is annual stock returns for the fiscal year. D_{it} is an indicator variable equal to 1 if R_{it} is negative, zero otherwise. *EA* and *UEA* are estimated using the modified Jones model (denoted by [*MJ*]) and the modified Jones model with asymmetric cash flows (denoted by [*MJNC*]). See Table 1 for details of how *EA* and *UEA* are estimated. *R*, *E*, *ACC*, *CF*, *EA* and *UEA* are winsorized at their respective first and 99th percentile values each year. Regressions of earnings, operating cash flows, total accruals and expected and unexpected accruals are estimated each year. The sample is partitioned into quintiles based on leverage, which is measured as long-term debts divided by total assets at the beginning of the fiscal year. Means of the coefficient estimates from annual regressions are reported.

Dependent Variable	Leverage at the Beginning of the Fiscal Year				
	Q1 (Low)	*Q2*	*Q3*	*Q4*	*Q5 (High)*
E	0.306	0.349	0.337	0.406	0.572
CF	0.132	0.115	0.147	0.156	0.125
ACC	0.188	0.241	0.186	0.254	0.456
$EA_{[MJ]}$	-0.047	0.011	0.002	0.120	0.047
$EA_{[MJNC]}$	0.107	0.041	0.022	-0.067	0.100
$UEA_{[MJ]}$	0.234	0.231	0.184	0.134	0.408
$UEA_{[MJNC]}$	0.080	0.200	0.164	0.321	0.355