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Conditional Conservatism: An Analysis of Nonlinearity and Lead-Lag Relations*

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ABSTRACT

Recent studies have provided evidence that the association between earnings and contemporaneous returns is stronger when returns are negative, reflecting accounting conservatism. In this paper, we investigate two important aspects in this asymmetric timeliness of earnings: (1) whether the contemporaneous earnings-return relation is concave and (2) whether earnings show asymmetric timeliness with respect to lagged returns. We show that the relation between earnings and stock returns is more salient for extreme negative returns, implying a concave relationship between earnings and returns. We also find asymmetric timeliness with respect to lagged returns. Moreover, we find similar results using earnings line items such as special items and discontinued items. Overall, our evidence suggests that the Basu-type regression without considering these two aspects biases the extent of conditional conservatism.

Keywords: Conservatism, Asymmetric timeliness, Nonlinearity, Asset write-offs

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1. INTRODUCTION

Conditional conservatism leads to the more timely recognition of negative news than positive news in earnings. Consistently, Basu (1997) finds that the contemporaneous earnings-return relation differs between good news and bad news, proxied by positive and negative stock returns respectively, and the coefficient on negative stock return is larger than the one on positive return. Since Basu (1997)'s seminal work, numerous papers have examined conditional conservatism using an asymmetric timeliness measure (i.e., asymmetric timeliness of earnings in reflecting negative news compared to positive news). Extant accounting literature shows that conditional conservatism plays an important role both in improving contracting efficiency in debt and executive compensation contracts and in reducing agency problems associated with managers' over-investments. For example, Beaver and Ryan (2009) and Gigler, Kanodia, and Venugopalan (2009) suggest that contracting efficiency in debt contracts due to conditional conservatism arises from the asymmetric incentives of bond-holders who prefer timely incorporation of unfavorable economic news in accounting numbers to protect their downside risk. Compensation committees also likely have incentives to factor in yet unrealized losses in determining executives' cash compensation to minimize ex-post setting up costs (Leone, Wu, and Zimmerman, 2006). Furthermore, timely incorporation of unrealized losses in accounting earnings can prevent managers from continuing negative NPV projects (Lara, Osma and Penalva, 2009).

Given the nature and importance of conditional conservatism in the literature, it is important to obtain confidence in the validity of the asymmetric timeliness coefficients. As Ball, Kothari, and Nikolaev (2013) indicate, the absence of a formal derivation of the Basu regression makes it difficult to interpret the conditional conservatism measure. In the paper, we posit and show that this piece-wise linear model (with the single 'kink') used extensively in prior studies patterned after Basu [1997] suffers from two specification concerns and consequently, empirical inferences in these prior studies are likely to be significantly biased. We suggest that researchers consider two aspects in the asymmetric timeliness estimates: (1) the contemporaneous earnings-return relation is concave and (2) earnings show asymmetric timeliness with respect

to lagged returns. A close examination of the single-kink, piece-wise linear, model reveals that two implicit assumptions underlie the model. First, the model assumes (at least implicitly) that managers have ability and incentives to reflect current period negative economic news in their accounting numbers regardless of the severity of the negative news. The piece-wise linear model considers only the binary states of the world (i.e., positive economic news vs. negative economic news) and does not specifically consider how negative the bad state of the world is. In other words, the model has only one 'kink' in the relation between current earnings and current stock returns. However, a better specified model likely has multiple 'kinks' in that managers are much more likely to reflect the 'severely' negative economic news (e.g., when current period stock return is -60%) in their earnings than they are to reflect the 'somewhat' negative economic news (e.g., current period stock return is -15%) in the current earnings numbers.

Further, managers are more likely to reflect the 'somewhat' negative economic news than 'mildly' negative economic news (e.g., current period stock return is -5%) in their earnings. The best example for this prediction can be found in managers' decisions to take impairment losses from their intangible assets (e.g., goodwill). Under current accounting standards, if the undiscounted value of future cash flows from the intangible asset is expected to exceed the book value of the asset, managers need no impairment loss. But when the undiscounted value falls short of the book value of the asset, the difference between the book value and the discounted present value of future cash flows from the asset should be written off as impairment loss. This example indicates that managers are not likely to reflect mild, or small, negative economic news in current earnings, but that they are highly likely to incorporate 'severely' negative economic news in current earnings. Riedl (2004) and Beatty and Weber (2006) provide evidence that the level of bad news influences the likelihood of write-off of long-lived assets and the amount of impairments, implying a concavity in the recognition of bad news in earnings. Ryan (2006) also indicates that bad news may not be immediately recognized in earnings because of buffers to impairment write-downs in GAAP (e.g., as substantiated by the fact that the average market-to-book ratio exceeds 1), practical difficulties in assessing impairment, and discretionary accounting behavior. Guay (2006) also questions the validity of a piecewise

linear specification with a single kink in his Discussion of Ball and Shivakumar (2006). Thus, to the extent that the piece-wise linear model, or the single-kink model, fails to fully recognize these managerial decision making processes, it will lead to biased inferences on the extent of conditional conservatism. Specifically, our prediction is that in the traditional Basu-type model (i.e., the single-kink, piece-wise linear), the degree of conditional conservatism is biased upwardly when the negative economic news is 'mild' and is biased downwardly when the negative economic news is 'severe.' We are not aware of any research that examines a concave relationship between earnings and returns to measure asymmetric timeliness.

Second, the traditional Basu-type model implicitly assumes that the current period bad news is incorporated into the earnings fully and completely during the same current period and that prior period bad news is therefore NOT reflected into the current period earnings. In other words, the traditional model implicitly assumes that while managers do reflect the current period negative economic news into the current period earnings, they ignore the information contained in prior period negative economic news in determining the current period earnings (since prior period negative news was already factored in the same period earnings). While this assumption holds truth when the earnings and returns measurement windows are long enough to fully capture the managers' decision horizons, many prior studies use a one-year window to measure both earnings and stock returns. When managers make decisions to incorporate negative economic news into their accounting numbers, they are likely to use not only the information about how negative the current period economic condition is, but also their assessment of the persistence and severity of prior period negative economic news. For example, managers are more likely to take the current period's negative economic news seriously (and reflect it in their current earnings as unrealized losses) if they experienced negative economic news in prior periods as well, compared to cases where they enjoyed favorable economic news in prior periods. Managerial decisions on impairment losses of long-term assets (both tangible and intangible assets) and discontinuation of loss making lines of business are likely to take into account whether and how long the current negative economic news will persist into the future. If managers determine that the current negative economic situation is short-lived, they are not likely to reflect that negative news into

current period earnings. However, when they face negative economic news during the current period after they already experienced negative economic news in prior periods, they are likely under increased pressure by the board and the investing communities to incorporate the current period negative economic news in their earnings (as impairment losses, write-offs, and restructuring charges). Therefore, to the extent that managers' decisions to incorporate negative economic news in earnings take a longer time period than one year, the typical Basu-type model using the one-year window likely produces a biased estimate of the extent of conditional conservatism. This bias is equivalent to the classical correlated, but omitted, variables-problem: while the estimate of the current period conditional conservatism is overstated, the estimate of the prior periods' conditional conservatism is either understated or ignored. Several papers allude that earnings show asymmetric timeliness with respect to lagged returns. Ryan and Zarowin (2003) and Roychowdhury and Watts (2007) imply that asymmetric timeliness over long horizons is a better measure for conditional conservatism. But their focus is quite different from our study. Ryan and Zarowin (2003) are interested in a decrease in the value-relevance of earnings over time while Roychowdury and Watts (2007) focus on the negative relation between market-to-book ratio and the Basu asymmetric timeliness measure. The work by Price (2008) directly examines the earnings response to lagged return to estimate conditional conservatism. However, he does not examine a concave relationship between earnings and returns (i.e., a quadratic term for negative news), and so does not provided as full a model for asymmetric timeliness of earnings.

Using a large sample of firms for the sample period of 1976-2006, we find that our model with a quadratic term for negative news supports our prediction. Specifically, while the coefficient on the interaction of returns and a dummy for negative returns is still significantly positive, its magnitude is reduced by 40% (from 0.41 to 0.24), on average. However, the coefficient on the interaction of the quadratic term for negative returns with a dummy for negative returns is significantly negative (-0.21). This evidence shows that the relation between current earnings and negative stock returns is not linear, as implicitly posited in the traditional Basu-type model, but that the relation is concave. This suggests that as the negative economic news becomes severer, earnings are more likely

to incorporate that negative news during the same period.

Moreover, we confirm that bad news is recognized in earnings earlier than good news, but not immediately. When we estimate an extended model with negative and positive economic news in two prior years, the estimate of the current period conditional conservatism is reduced by more than 30%, from 0.41 to 0.30, and the estimates of prior period conditional conservatism become highly significant (e.g., the conditional conservatism estimates of one year prior and two years prior are 0.42 and 0.24, respectively). Another interesting finding is the sum of the conditional conservatism estimates of the current period and two prior years is not significantly different from the value of 1. This evidence produces the following two inferences: first, managers do take into account the negative economic news of prior years, in addition to current period negative news, in determining the extent of conservative reporting for the current period, and second, it takes on average three years to fully reflect negative economic news into current period years. We also corroborate our finding by estimating the Basu-type model over the three-year period. These findings suggest that the use of one-year measurement windows for earnings and returns in a typical Basu-type model fails to fully capture managers' real decision-making processes that lead to conservative financial reporting.

As more direct evidence for conservatism accounting, we examine special items and discontinued operations and further find that these earnings line items also show a concave relation and asymmetric timeliness with respect to lagged returns, corroborating our argument.

We contribute to the literature in several ways. First, we shed light on voluminous literature examining the determinants of accounting conservatism using the Basu asymmetric timeliness measure. We show that prior research employing Basu's approach underestimates the extent of conditional conservatism due to a concave relation between earnings and returns and a slow recognition of prior period bad news and propose a more intuitive model. We also examine asymmetric timeliness of special items and discontinued operations and provide a fuller model to identify conditional conservatism. Thus, we improve our understanding of asymmetric timeliness based on earnings line items (for example, Callen, Hope, and Segal, 2009). Third, we improve our understanding of asymmetric timeliness. Givoly, Hayn, and Natarajan (2006), Patatukas and Thomas (2011),

Ball, Kothari, and Nikolaev (2013), and Kwon and Lim (2015) challenge the reliability of asymmetric timeliness measure developed by Basu (1997). However, these studies do not explicitly examine concavity and lead-lag relations. Our study contributes to this line of literature by documenting biases associated with concavity and lead-lag relations.

Our findings have meaningful implications for researchers and the financial regulators. Our evidence indicates that Basu's approach invokes considerable bias associated with its estimates. Researchers may draw unduly inferences about the extent of accounting conservatism when concavity and lead-lag relations are ignored. Thus, the asymmetric timeliness measure should be used with caution. Also, our findings should be of interest to regulators because we demonstrate that accounting standards may prevent firms from incorporating bad news promptly in their financial statements.

Several caveats are in order. We employ returns to proxy for good and bad news. However, returns may not reflect non-earnings news. Second, we demonstrate cross-sectional evidence of non-linearity and lead-lag relations in the asymmetric timeliness but stop short of providing evidence at the firm level. Also, we examine U.S. firms for limited time period. Our results may not be generalizable to Korean firms. We hope that future research can shed light on the issues.

The remainder of our study is organized as follows. In section 2, we provide a review of the related literature. In section 3, we describe the sample and the research design. Section 4 provides the empirical results. We conclude the study in section 5.

2. RELATED LITERATURE

2.1 Asymmetric Timeliness of Earnings

Basu (1997) identifies the extent of conditional conservatism using asymmetric timeliness. Using positive and negative returns as proxies for good and bad news, he estimates a regression of earnings on current returns. Basu shows that the coefficient on negative returns is four times more positive than that of positive returns, consistent with the more timely recognition of negative news than positive news in current earnings. Numerous papers

have extended Basu's analysis of what determines the extent of conditional conservatism. For example, LaFond and Watts (2008) and LaFond and Roychowdhury (2008) provide evidence that corporate governance affects conservatism accounting. Beaver and Ryan (2009) and Gigler, Kanodia, and Venugopalan (2009) show that conditional conservatism improves contracting efficiency in debt and reduces agency problems. Bushman and Piotroski (2006) and Chung and Wynn (2008) find that conditional conservatism varies in legal liability and legal systems (Bushman and Piotroski, 2006; Chung and Wynn, 2008).

Prior research also tests whether earnings line items exhibit asymmetric timeliness. Garrod, Pope, and Aljosa (2005) find that special items show asymmetric timeliness in the UK but not in the US. By contrast, Callen, Hope, and Segal (2009) find that special items exhibit asymmetric timeliness in the US. Several papers also distinguish operating cash flows and accruals and find the inferences similar to Basu (1997) (Dietrich, Muller, and Ridle, 2005).

2.2 Limitations of Basu's Measure for Conditional Conservatism

Given the widespread use of Basu-type regressions of earnings on returns to identify conditional conservatism (i.e., asymmetric timeliness measure), it is critical to demonstrate that the asymmetric timeliness coefficient is a valid measure for conservatism. Recently a few studies challenge the asymmetric timeliness coefficient as a valid measure of conditional conservatism (Detrich et al., 2007; Givoly et al., 2007; Patatoukas and Thomas 2011; Ball, Kothari, and Nikolaev 2013). Dietrich et al. (2007) criticize Basu's measure that is subject to biases arising from sampling of an endogenous variable and results of prior research using the asymmetric timeliness research design are in part attributable to biased test statistics. Givoly et al. (2007) suggest that the asymmetric timeliness measure is subject to considerable measurement error or a downward bias since the measure uses aggregated measures of earnings and returns. Patatoukas and Thomas (2011) show upward bias in the asymmetric timeliness measure by Basu (1997) due to scale issues. Ball, Kothari, and Nikolaeve (2013) and Collins, Hribar, and Tian (2014) propose revised measures to overcome the bias. Relatedly, Patatoukas and Thomas (2015) offers placebo tests of conditional conservatism. Using Korean firms, Kwon and Lim (2015) provide

evidence that Basu (1997) model causes a bias and suggest that correlated omitted variables are controlled to correct for bias.

Prior research suggests that the contemporaneous earnings-return relation is not necessarily a piece-wise linear model (with the single 'kink'). For example, previous studies on assets write-offs indicate that the severity of bad news affects managers' decisions to write-off and the magnitude of their write-offs (Beatty and Webber, 2006; Riedl, 2004). Also, Guay (2006) casts doubt about the reliability of the Basu's linear specification for the contemporaneous earnings-return relation. Bad news is not likely immediately impounded in earnings because of buffers to impairment write-downs in GAAP, practical difficulties in assessing impairment, and discretionary accounting behavior (Francis, Hanna, and Vincent, 1996; Ryan, 2006). Neither of these papers examines the concavity in the contemporaneous earnings-return relation.

Several papers allude that bad news is incorporated in earnings earlier than good news, but not timely. Alciatore, Easton, and Nasser (2000) examine write-offs from the oil and gas industry and find that write-offs have a significant relation with contemporaneous quarterly returns and an even stronger association with prior quarter returns. Ryan and Zarowin (2003) suggest the existence of the relation between earnings with lagged returns and relate it to a recent decline in the value-relevance of earnings. Roychowdhury and Watts (2007) suggest an alternative asymmetric timeliness measure computed cumulatively over multiple years. They have not focused on biases in the Basu measure. One notable exception is Price (2008). He shows that the incorporation of asymmetric timeliness with respect to lagged return results in a better measure of conservatism. However, he has not included the concave relationship of earnings to returns and has not provided as full a model for the earnings-return relation.

3. DATA AND RESEARCH DESIGN

3.1 Data

We use annual Compustat data to test for earnings conservatism. The sample consists of all firms on the intersection of Compustat annual and CRSP (Center for Research in Security Prices) and that

have sufficient earnings and return data to perform the tests for the period of 1976-2006. Our initial sample consists of 164,444 firm-years. We eliminate extreme observations of the earnings per share every year. We obtain a final sample of 161,180 firm years for our annual tests.

We find the annual number of observations having sufficient information on earnings and return is generally increasing in time from 3,654 in 1976 to 4,567 in 2006. We also obtain a sample of 134,003 observations for asymmetric timeliness using earnings and return over longer horizons (i.e., over the three years). For analyses that require information on special items and discontinued operations, we have 149,268 and 153,728 firm years respectively for the sample period.

Table 1, Panel A reports the descriptive statistics on the dependent and independent variables used in our analyses. The descriptive statistics in Table 1 indicate that mean NI (earnings before extraordinary items divided by beginning market cap) is 0.05%, while mean CUMNI (cumulative earnings divided by beginning market cap) over the three-year window is -0.08%. The table also reports the descriptive statistics on RET (annual buy and hold return), lagged returns (RET_{t-1}, RET_{t-2}), and cumulative returns (CUMRET). The average RET, RET_{t-1}, and RET_{t-2} in our sample are 17.5%, 20.1%, and 20.4%, respectively. In untabulated analysis, we also find that approximately 43% of the sample exhibits a negative annual buy-and-hold return for the sample period. The average cumulative buy and hold return over the three-year horizon is 55.4%.

Panel B of Table 1 reports the correlation matrix among the variables. The upper right hand portion of the table presents Pearson product-moment correlations, while the lower left hand portion presents the Spearman rank-order correlations. As expected, we find that contemporaneous returns and earnings are positively correlated (p-value <0.01), with a Pearson correlation coefficient of 0.13. The coefficients on earnings and lagged returns are significant 0.15 (at year t–1) and 0.07 (at year t–2), respectively, suggesting that lagged returns affect earnings. Also, we find that special items exhibit a significantly positive (Pearson) correlation with contemporaneous returns as well as lagged returns. We find that the Spearman rank order correlations are generally consistent with the Pearson correlations.

Table 1. Sample and Descriptive Statistics

The sample consists of 161,180 firm-years from the intersection of COMPUSTAT and CRSP for the period of 1976-2006. NI is net income before extraordinary items (Data#18) divided by beginning market value. CUMNI is cumulative net income before extraordinary items (Data#18) over the three years (from t–2 to t) divided by beginning market value. SI is special item (Data#17) divided by beginning market value. DISCON is discontinued operations (Data#66) divided by beginning market value. RET is one-year buy and hold return beginning the fourth month of fiscal year t. RET t–1 is one-year lagged RET. RET t–2 is two-year lagged RET. CUMRET is three-year buy and hold return beginning the fourth month of fiscal year t–2. Numbers in bold in Panel B are significant at the 10% level.

Panel A: Descriptive Stat

	N	Mean	Median	Std	Q1	Q3
NI	161,180	0.005	0.055	0.238	-0.020	0.105
CUMNI	134,003	-0.008	0.145	0.697	-0.084	0.276
SI	149,268	-0.015	0.00	0.072	-0.002	0.00
DISCON	153,728	-0.002	0.00	0.017	0.00	0.00
RET	161,180	0.175	0.069	0.797	-0.208	0.376
RET t–1	160,504	0.201	0.080	0.856	-0.190	0.391
RET t–2	151,282	0.204	0.075	0.852	-0.177	0.384
CUMRET	134,003	0.554	0.228	2.076	-0.309	0.889

Panel B: Pearson (top) and Spearman (bottom) Correlations

variable	NI	CUMNI	SI	CUMSI	DIS-CON	CUMDI-SCON	RET	RET t–1	RET t–2	CUM-RET
NI		0.577	0.490	0.288	0.061	0.061	0.131	0.153	0.069	0.181
CUMNI	0.783		0.228	0.511	0.043	0.079	0.050	0.017	0.126	0.161
SI	0.341	0.230		0.403	0.055	0.033	0.058	0.082	0.027	0.084
CUMSI	0.285	0.354	0.588			0.051	0.008	-0.022	0.084	0.060
DISCON	0.024	0.030	0.017	0.015		0.383	0.023	0.025	0.015	0.040
CUMDI-SCON	0.028	0.047	0.016	0.028	0.529		0.012	0.011	0.034	0.039
RET	0.401	0.262	0.132	0.091	0.037	0.036		-0.064	-0.009	0.424
RET t–1	0.308	0.359	0.110	0.102	0.036	0.047	-0.004		-0.073	0.284
RET t–2	0.155	0.282	0.054	0.145	0.021	0.048	0.051	-0.039		0.336
CUMRET	0.497	0.525	0.176	0.199	0.057	0.076	0.564	0.500	0.545	

3.2 Research Design

Many prior studies use the Basu (1997)-type reverse regression model to empirically operationalize the degree of conditional conservatism. The crux of the Basu-type model is to regress the current period's accounting earnings (deflated by beginning of period market equity value) against current period stock returns as the proxy for economic news, an indicator variable for negative returns, and the interaction between stock returns and the negative return dummy. Specifically, the model has the following piece-wise linear form:

$$NI_t = \beta_0 + \beta_1 RET_t + \beta_2 DR_t + \beta_3 RET_t \times DR_t + e_t \quad (1)$$

where NI_t is net income before extraordinary items (Compustat #18) reported in period t divided by beginning of fiscal year market value of equity (Compustat #25*Compustat*#199), RET_t is the buy and hold return over the fiscal year, and DR_t is equal to one if RET_t is negative, zero otherwise.

Basu's primary measure of conditional conservatism is based on the extent to which the earnings-return association is stronger during periods of negative news as compared with periods of positive news. In this piece-wise linear model, β_1 represents the extent of current earnings to reflect the current economic news in general (including the current period positive economic news) and β_3 indicates the incremental ability of current earnings to capture the current period negative economic news.

As discussed earlier, managers are much more likely to recognize "severe" bad news in earnings than they are to reflect "mild" bad news in earnings under the current GAAP (generally accepted accounting principles). This will lead to a concave relationship between earnings and returns. The likelihood and the amount of the recognition of bad news in earnings is increasing in the severity of bad news. To test whether the relation between stock returns and earnings is concave, we estimate the following model:

$$NI_t = \beta_0 + \beta_1 RET_t + \beta_2 DR_t + \beta_3 RET_t \times DR_t + \beta_4 RET_t \times RET_t \times DR_t + e_t \quad (2)$$

where all variables are previously defined.

To the extent that the contemporaneous earnings-return relation

is concave, we expect β_4 to be significantly positive. The significance and the magnitude of β_3 is more likely to be attenuated.

In addition, we test whether earnings show asymmetric timeliness with respect to lagged returns by including prior period returns. We estimate the following model:

$$NI_t = \beta_0 + \beta_1 RET_t + \beta_2 DR_t + \beta_3 RET_t \times DR_t + \beta_4 RET_{t-1} + \beta_5 DR_{t-1} + \beta_6 RET_{t-1} \times DR_{t-1} + \beta_7 RET_{t-2} + \beta_8 DR_{t-2} + \beta_9 RET_{t-2} \times DR_{t-2} + e_t \quad (3)$$

where NI_t is net income before extraordinary items (Compustat #18) reported in period t divided by beginning of fiscal year market value of equity (Compustat #25*Compustat*#199), RET_{t+x} is the buy and hold return over the fiscal year t+x, where x is one of the following-2, -1, 0, and DR_{t+x} is equal to one if RET_{t+x} is negative, where x is one of the following-2, -1, 0 zero otherwise.

If managers do recognize bad news in current earnings earlier than good news and the asymmetric timeliness in recognition does not occur immediately, we expect that β_6 and β_9 to be significantly positive. By contrast, the significance and the magnitude of β_3 will be reduced.

We also combine the above two models to incorporate both the nonlinearity in the relationship between earnings and returns and asymmetric timeliness with respect to lagged returns and estimate the model as follows:

$$NI_t = \beta_0 + \beta_1 RET_t + \beta_2 DR_t + \beta_3 RET_t \times DR_t + \beta_4 RET_{t-1} + \beta_5 DR_{t-1} + \beta_6 RET_{t-1} \times DR_{t-1} + \beta_7 RET_{t-2} + \beta_8 DR_{t-2} + \beta_9 RET_{t-2} \times DR_{t-2} + \beta_{10} RET_t \times RET_t \times DR_t + \beta_{11} RET_{t-1} \times RET_{t-1} \times DR_{t-1} + \beta_{12} RET_{t-2} \times RET_{t-2} \times DR_{t-2} + e_t \quad (4)$$

The models from (1) to (4) are all estimated using White (1980)'s correction for heteroskedasticity for the pooled sample. In untabulated analysis, we also compute the mean coefficient across thirty-two annual cross-sectional regressions using the specifications reported in Tables 2-5 over the period 1976 to 2006, along with Fama-Macbeth (1973) t-statistics. We find our results are qualitatively similar.

4. RESULTS

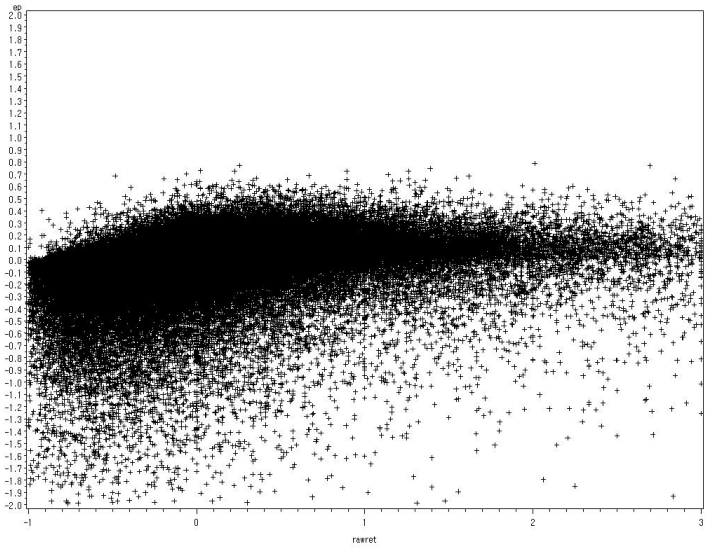
4.1 Preliminary Evidence on Nonlinearity and Lead-Lag Relations

Our underlying argument is that the early recognition of bad news in earnings relative to good news is likely more pronounced for extreme negative returns and earnings exhibit asymmetric timeliness with respect to lagged returns.

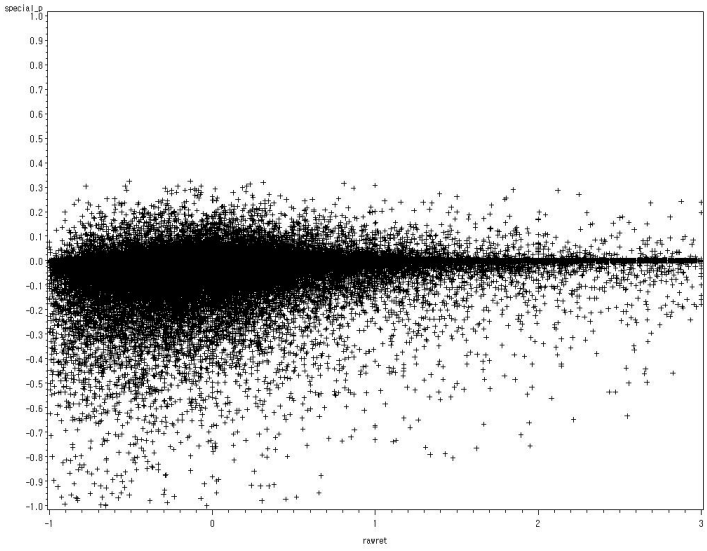
To check the relation between earnings and returns, we plot all the firm year observations. See Figure 1 for scatter plots in the relation between earnings and contemporaneous returns. This figure highlights that the relation between earnings and contemporaneous returns is nonlinear and is more positive when contemporaneous returns show large negative values. This contrasts with Basu's piece-wise regression with a single kink at zero stock return. Our evidence confirms Guay (2006)'s notion that there could exist multiple turning points in the relation between earnings and returns.

We next replicate the scatter plot using earnings line items such as special items and earnings from discontinued operations and obtain evidence similar to the relation between earnings and returns. In other words, special items and discontinued operations appear to exhibit large negative numbers in case of extreme negative news while there is no discernable pattern in the remaining area. This is consistent with Riedl and Srinivasan (2007) that the majority of special items are losses. In unreported analyses, we plot the relation between earnings and lagged returns (i.e., one-year lagged and two-year lagged returns) and find qualitatively similar results.

To examine the relation more clearly and measure the economic significance, we partition contemporaneous returns into 20 groups for the sample and plot the mean of price-deflated earnings (and price-deflated special items and earnings from discontinued operations) of each group in Figure 2. This figure shows a clear inversed U shape, a quadratic pattern with multiple kinks in the relation between earnings and returns. For example, when the average return is in the range between 0 and -20%, earnings are, on average, -0.05% of stock price. But when the average return is -60%, earnings increase to about -10% of stock price. We also obtain qualitative similar inferences for special items and discontinued items. In Figure 3, we repeat the analysis for the relation between earnings and returns over the three-year horizon. Economically

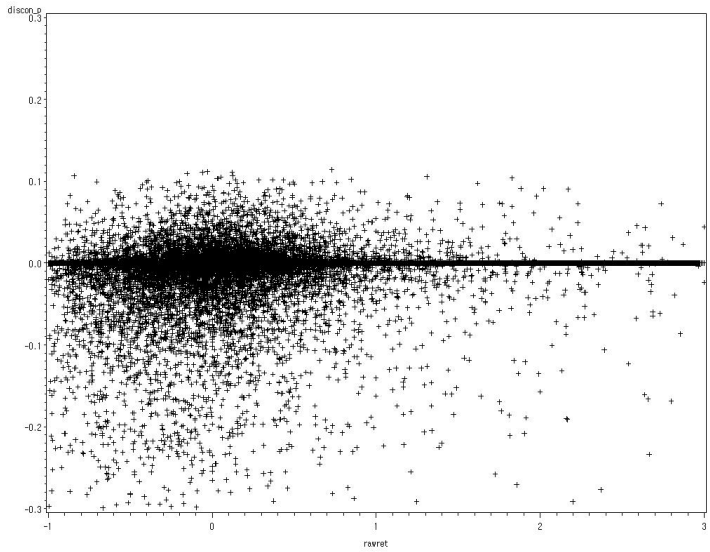


a) Earnings and Contemporaneous Returns



b) Special Items and Contemporaneous Returns

Figure 1. (continued)



c) Discontinued Operations and Contemporaneous Returns

Figure 1. Scatter Plot for Asymmetric Timeliness of Earnings for the Sample Period of 1976-2006

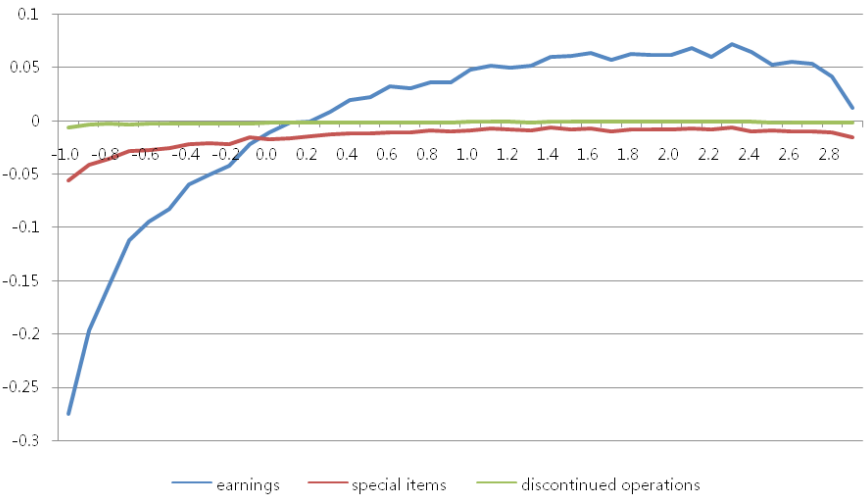


Figure 2. Asymmetric Timeliness of Earnings for Contemporaneous Returns for the Sample Period of 1976-2006

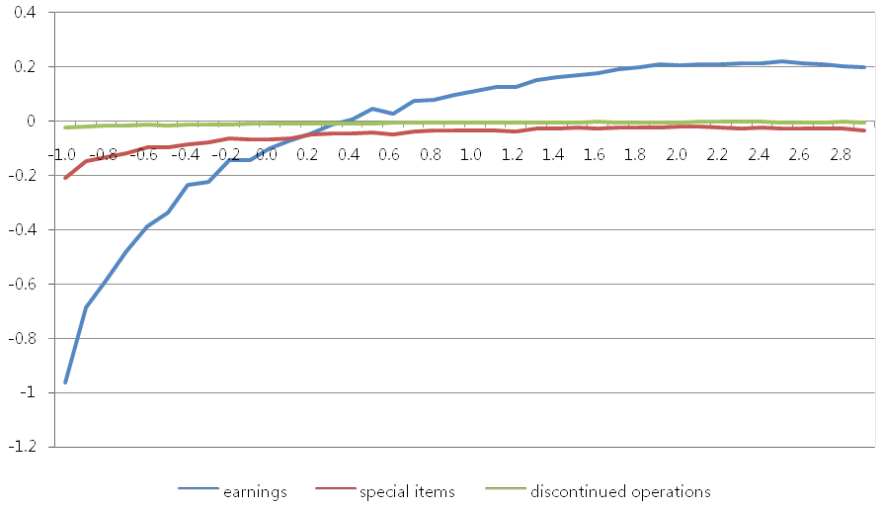


Figure 3. Asymmetric Timeliness of Earnings for the Three- Year Returns for the Sample Period of 1976-2006

significant write-downs and write-offs appear to occur in groups with large negative returns. We also find that the slope is increasing as returns become more negative, showing similar patterns to those of Figure 2.

4.2 Regression Results

Table 2 tests the association between earnings and contemporaneous returns. In the first column, we replicate Basu's regression. For the entire sample period, the adjusted R^2 is 2.6%. Consistent with Basu (1997), we find that the coefficient on the interaction between returns and a dummy for negative returns ($RET_t \times DR$) is negative and significant (coefficient = 0.41) at the less than 1% significance level, suggesting that bad news are recognized earlier in earnings than good news.

To test for a nonlinear relation between earnings and returns, we estimate equation (2) discussed earlier. The next column shows the regression results. The coefficient on $RET_t \times DR$ decreases to 0.23 (p-value <0.01) from 0.41, which is about half of the coefficient in the first regression and the coefficient on $RET_t \times RET_t \times DR_t$ is significantly negative, suggesting that firms with large negative

Table 2. Regressions of Earnings on Contemporaneous Returns

The sample consists of firm-years from the intersection of COMPUSTAT and CRSP for the period of 1976-2006. DR is 1 if RET is negative, and 0 otherwise. NI is net income before extraordinary items (Data#18) divided by beginning market value. RET is one-year buy and hold return beginning the fourth month of fiscal year t. Regressions are estimated using White (1980)'s correction for heteroskedasticity. The numbers in the parenthesis denote p-values for two-tail test.

	Dependent variable = NI			
	Coeff.	p-value	Coeff.	p-value
Intercept	0.067	<0.01	0.066	<0.01
DR	-0.007	<0.01	-0.027	<0.01
RET	-0.020	<0.01	-0.020	<0.01
*RET*DR*	0.409	<0.01	0.239	<0.01
*RET*RET*DR*			-0.214	<0.01
N	161,180		161,180	
$AdjR^2$	0.12		0.13	

returns are more timely in recognizing bad news. We also find that the results are quite similar using market-adjusted returns (untabulated).

To observe more direct evidence of conservative accounting, we examine special items and discontinued operations that are one of the means through which conservative accounting is implemented. In Table 3, we examine the asymmetric timeliness using these earnings line items. Panel A of Table 3 shows the results of the Basu-type model (i.e., the single-kink, piece-wise linear). The coefficient on $RET_t \times DR$ (coefficient = 0.06, p-value <0.01) in the first column confirms asymmetric timeliness of special items. These results are consistent with Callen, Segal, and Hope (2009). The significant and positive coefficient on discontinued operations also indicates that firms write down discontinued operations more timely in reporting bad news. The findings are also consistent with the GAAP's treatment of nonrecurring items.

In Panel B of Table 3, we include a quadratic term in the regressions for which special items or discontinued operations are the dependent variable. We find that the coefficients on $RET_t \times DR$ become insignificant while the coefficients on $RET_t \times RET_t \times DR$ are

Table 3. Regressions of Nonrecurring Items on Contemporaneous Returns

The sample consists of firm-years from the intersection of COMPUSTAT and CRSP for the period of 1976-2006. DR is 1 if RET is negative, and 0 otherwise. NI is net income before extraordinary items (Data#18) divided by beginning market value. RET is one-year buy and hold return beginning the fourth month of fiscal year t. SI is special item (Data#17) divided by beginning market value. DISCON is discontinued operations (Data#66) divided by beginning market value. Regressions are estimated using White (1980)'s correction for heteroskedasticity. The numbers in the parenthesis denote p-values for two-tail test.

Panel A: Basu (1997) regression

	Dependent variable = SI		Dependent variable = DISCON	
	coeff.	p-value	coeff.	p-value
Intercept	-0.007	<0.01	-0.001	<0.01
DR	0.003	<0.01	0.0001	0.52
RET	-0.002	<0.01	-0.000	0.09
*RET*DR*	0.063	<0.01	0.004	<0.01
N	149,268		153,728	<0.01
$AdjR^2$	0.03		0.003	

Panel B: Quadratic regression

	Dependent variable = SI		Dependent variable = DISCON	
	coeff.	p-value	coeff.	p-value
Intercept	-0.007	<0.01	-0.001	<0.01
DR	-0.003	<0.01	-0.0002	0.14
RET	-0.002	<0.01	-0.0001	0.09
*RET*DR*	0.003	0.57	0.001	0.15
*RET*RET*DR*	-0.075	<0.01	-0.0003	0.03
N	149,268		153,728	
$AdjR^2$	0.03		0.002	

negative and significant. These results highlight the importance of the quadratic term and further support our notion that asymmetric timeliness varies with the extent of bad news.

Overall, Tables 2 and 3 are consistent with our prediction that earnings are not only more timely in reporting bad news than good news, but also more timely in reporting severe bad news than the

Table 4. Regressions of Earnings on Contemporaneous and Lagged Returns

The sample consists of firm-years from the intersection of COMPUSTAT and CRSP for the period of 1976-2006. DR is 1 if RET is negative, and 0 otherwise. DR t–1 is 1 if RET t–1 is negative, and 0 otherwise. DR t–2 is 1 if RET t–2 is negative, and 0 otherwise. NI is net income before extraordinary items (Data#18) divided by beginning market value. RET is one-year buy and hold return beginning the fourth month of fiscal year t. RET t–1 is one-year lagged RET. RET t–2 is two-year lagged RET. Regressions are estimated using White (1980)'s correction for heteroskedasticity. The numbers in the parenthesis denote p-values for two-tail test.

	Dependent variable = NI			
	coeff.	p-value	coeff.	p-value
Intercept	0.108	<0.01	0.107	<0.01
DR	-0.005	<0.01	-0.029	<0.01
RET	0.005	<0.01	0.007	<0.01
*RET*DR*	0.299	<0.01	0.098	<0.01
DR t–1	0.019	<0.01	-0.038	<0.01
RET t–1	0.014	<0.01	0.015	<0.01
*RET t–1*DR t–1*	0.416	<0.01	-0.084	<0.01
DR t–2	0.012	<0.01	-0.010	<0.01
RET t–2	0.007	<0.01	0.009	<0.01
*RET t–2*DR t–2*	0.243	<0.01	0.039	0.01
*RET*RET*DR*			-0.258	<0.01
*RET t–1*RET t–1*DR t–1*			-0.660	<0.01
RET t–2 RET t–2*DR t–2*			-0.274	<0.01
N	151,282		151,282	
Adj R^2	0.28		0.30	

other type news.

Thus far, we have provided evidence on a nonlinear relation between earnings and contemporaneous returns. Turning to asymmetric timeliness with respect to past news, we incorporate prior period news in the Basu-type regression to examine whether bad news is recognized in earnings quicker than good news, and immediately. In Table 4, we provide the regression results. The first

column reports the estimation of equation (3). The coefficients on the interaction of returns and the dummy variables for negative returns are 0.30 (at year t), 0.42 (at year t–1), and 0.24 (at year t–2), respectively at the less than 1% significance level. This supports the existence of asymmetric timeliness of earnings with lagged returns. The sum of the three coefficients is almost 1, suggesting that the negative news is almost fully captured in earnings over the three-year window. This evidence suggests that bad news is incorporated in earnings quicker than good news, but not immediately. Our findings also imply that the typical Basu-type model using the one-year window underestimates the extent of conditional conservatism. This also means that the conventional tests using one-year window fail to capture the realism in managerial decision making on conservatism.

To provide a fuller model, we include the quadratic terms in the previous regression (see equation (4)). The next column of Table 4 shows the regression results. We find that the quadratic terms (i.e., $RET_t \times RET_t \times DR_t$, $RET_{t-1} \times RET_{t-1} \times DR_{t-1}$, and $RET_{t-2} \times RET_{t-2} \times DR_{t-2}$) are all negative and statistically significant at the less than 1% significance level. This result suggests that asymmetric timeliness of earnings exists with respect to lagged returns and this asymmetric timeliness in regard to lagged return is nonlinear. More important, we find that the explanatory power of the model is significantly higher than that of the Basu model. Specifically, while the Basu model's adjusted R^2 is 2.6% as shown in Table 3, the adjusted R^2 from the full model with the quadratic terms and lagged returns is 30.0%.

We also replicate the analysis using special items and discontinued items (see Table 5). Similar to the results in Table 4, we obtain evidence that firms are more asymmetrically timely in recognizing bad news than good news over the following three-year period and the asymmetric relation is concave. For example, in the regression using special item, we report that the quadratic terms are all negative at the less than 1% significance level (-0.08 at year t, -0.16 at year t–1, and -0.3 at year t–2, respectively). Also, the corresponding adjusted R^2 (adjusted R^2 = 8.0%) indicates that the explanatory power of the full model is significantly higher than the Basu-type model in Panel A of Table 3 (adjusted R^2 = 3.0%).

As an alternative specification, we compute earnings and returns over the past three-year period and test asymmetric timeliness

using earnings and return over the following three years. Using the relation between earnings and return over the three-year horizon, we find similar inferences as we draw from Table 5. Table 6, Panel A provides asymmetric timeliness over a longer horizon. The first column estimates the Basu regression over the following three-year window. We find the coefficient on the interaction between earnings and return is 1, as opposed to 0.4 from the one-year window, at the less than 1% significance level. In the second column, we find that the coefficient on the quadratic term is statistically significant (coefficient = -1.33). In Panel B of Table 6, we repeat the analysis after replacing the dependent variable with earnings line items. Again, we find the quadratic terms are all negative and significant, implying that the relation between special items (or discontinued operations) and returns over the three-year window is concave.

Overall, our findings from Tables 4, 5, and 6 support the argument that the relation between earnings and returns is concave and earnings exhibit asymmetric timeliness with respect to lagged returns.

To see inter-temporal trends, we run equations (1) and (2) annually and report the results in Table 7. The first column shows the results for equation (1) while the second column reports the results for equation (2). In the first column, we find that the coefficients on the interaction between earnings and returns are all positive and significant throughout the sample period, indicating asymmetric timeliness throughout. Similar to Ryan and Zarowin (2003), we also find that the interaction term shows decreasing asymmetry over the period of 1995-1999. However, the coefficients are increasing again in 2000's. In the second column, the table reports the estimates on the interaction term and the quadratic term. We find that the coefficients on the quadratic term are negative and significant in 23 years out of 31 years while they are insignificant in the remaining years, consistent with the concavity in the relation between earnings and returns through the sample period. Interestingly, we do not observe any discernable pattern from the estimates of the interaction term between returns and the negative dummy over the sample period, after including the quadratic term. Panel B of Table 7 reports the estimation of equation (3). The results confirm the importance of asymmetric timeliness with respect to prior period returns. In particular, the evidence suggests that prior year's returns play an important role in determining timely recognition.

Table 5. Regressions of Nonrecurring Items on Contemporaneous and Lagged Returns

The sample consists of firm-years from the intersection of COMPUSTAT and CRSP for the period of 1976-2006. DR is 1 if RET is negative, and 0 otherwise. DR t-1 is 1 if RET t–1 is negative, and 0 otherwise. DR t–2 is 1 if RET t–2 is negative, and 0 otherwise. NI is net income before extraordinary items (Data#18) divided by beginning market value. RET is one-year buy and hold return beginning the fourth month of fiscal year t. RET t–1 is one-year lagged RET. RET t–2 is two-year lagged RET. SI is special item (Data#17) divided by beginning market value. DISCON is discontinued operations (Data#66) divided by beginning market value. GW is goodwill write-off (Data#368) divided by beginning market value. REST is restructuring charge (Data#376) divided by beginning market value. WRITEOFF is write-off (Data#380) divided by beginning market value. Regressions are estimated using White (1980)'s correction for heteroskedasticity. The numbers in the parenthesis denote p-values for two-tail test.

	Dependent variable = SI				Dependent variable = DISCON			
	coeff.	p-value	coeff.	p-value	coeff.	p-value	coeff.	p-value
Intercept	-0.002	<0.01	-0.002	<0.01	-0.000	<0.01	-0.0004	<0.01
DR	0.004	<0.01	-0.004	<0.01	0.0001	0.32	-0.0003	0.08
RET	0.001	<0.01	0.001	<0.01	0.0001	0.09	0.0001	0.11
*RET*DR*	0.049	<0.01	-0.019	<0.01	0.003	<0.01	0.0000	0.98
*RET*RET*DR*			-0.088	<0.01			-0.005	<0.01
DR t–1	0.006	<0.01	-0.088	<0.01	-0.0004	<0.01	-0.0003	0.04
RET t–1	0.003	<0.01	0.003	<0.01	0.0002	<0.01	0.0002	<0.01
*RET t–1*DR t–1*	0.067	<0.01	-0.057	<0.01	0.003	<0.01	0.004	<0.01
*RET t–1*RET t–1*DR t–1*			-0.164	<0.01			0.001	0.44
DR t–2	0.001	0.05	-0.000	<0.01	-0.0003	<0.01	-0.0001	0.33
RET t–2	0.001	0.11	0.001	0.22	0.0001	<0.01	0.0001	<0.01
*RET t–2*DR t–2*	0.031	<0.01	0.011	0.05	0.001	<0.01	0.003	<0.01
*RET t–2*RET t–2*DR t–2*			-0.026	<0.01			0.002	0.13
N	139,772		139,772		143,975		143,975	
Adj R^2	0.06		0.08		0.006		0.006	

Table 6. Regressions of Asymmetric Timeliness of Earnings over a Long Window

The sample consists of firm-years from the intersection of COMPUSTAT and CRSP for the period of 1976-2006. DCR is 1 if CUMRET is negative, and 0 otherwise. CUMNI is cumulative net income before extraordinary items (Data#18) over the three years (from t–2 to t) divided by beginning market value. CUMSI is cumulative special items (data#17) over the three years (from 1–2 to t) divided by beginning market value. CUMDISCON is cumulative discontinued operations (data#66 over the three years (from t–2 to t) divided by beginning market value. CUMRET is three-year buy and hold return beginning the fourth month of fiscal year t–2. Regressions are estimated using White (1980)'s correction for heteroskedasticity. The numbers in the parenthesis denote p-values for two-tail test.

Panel A: Cumulative earnings and cumulative returns

	Dependent variable = CUMNI			
	coeff.	p-value	coeff.	p-value
Intercept	0.167	<0.01	0.167	<0.01
DCR	0.002	0.67	-0.195	<0.01
CUMRET	0.005	0.01	0.005	0.01
*CUMRET*DCR*	1.001	<0.01	-0.276	<0.01
*CUMRET*CUMRET*DCR*			-1.331	<0.01
N	134,003		134,003	
Adj R^2	0.17		0.18	

Panel B: Cumulative earnings and cumulative returns

	Dependent variable = CUMSI				Dependent variable = CUMDISCON			
	coeff.	p-value	coeff.	p-value	coeff.	p-value	coeff.	p-value
Intercept	-0.027	<0.01	-0.027	<0.01	-0.003	<0.01	-0.003	<0.01
DCR	0.016	<0.01	-0.029	0.25	-0.001	0.05	-0.004	<0.01
CUMRET	-0.0003	0.25	-0.0003	<0.01	0.0001	0.44	0.0001	0.44
*CUMRET*DCR*	0.172	<0.01	-0.124	<0.01	0.015	<0.01	-0.005	0.21
CUMRET CUMRET*DCR*			-0.308	<0.01			-0.021	<0.01
N	124,675		124,675		128,779		128,779	
Adj R^2	0.04		0.05		0.008		0.008	

Table 7. Asymmetric Timeliness of Earnings by Year

The sample consists of firm-years from the intersection of COMPUSTAT and CRSP for the period of 1976-2006. DR is 1 if RET is negative, and 0 otherwise. NI is net income before extraordinary items (Data#18) divided by beginning market value. RET is one-year buy and hold return beginning the fourth month of fiscal year t. Regressions are estimated using White (1980)'s correction for heteroskedasticity. The numbers in the parenthesis denote p-values for two-tail test. The symbols *, **, and *** denote significance at the ten, five, and one percent levels, respectively based on two-tailed tests.

Panel A: Basu Regression vs Quadratic Regression

Year	Coeff. (Basu Regression)	Coeff. (Quadratic Regression)	
	*RET*DR*	*RET*DR*	*RET*RET*DR*
1976	0.55***	0.41***	-0.26
1977	0.41***	-0.06	-0.96***
1978	0.34***	0.23**	-0.22
1979	0.40***	0.23***	-0.29***
1980	0.43***	0.36***	-0.12
1981	0.25***	0.19***	-0.08
1982	0.19***	0.11	-0.10
1983	0.42***	0.20**	-0.33**
1984	0.25***	0.13***	-0.16***
1985	0.40***	0.12*	-0.37
1986	0.49***	0.20***	-0.40***
1987	0.38***	0.06	-0.42***
1988	0.40***	0.26***	-0.19***
1989	0.45***	0.16***	-0.37***
1990	0.49***	-0.01	-0.64***
1991	0.71***	0.46***	-0.34**
1992	0.52***	0.24***	-0.35***
1993	0.41***	0.32***	-0.13
1994	0.33***	0.25***	-0.10**
1995	0.33***	0.15***	-0.26***
1996	0.30***	0.21***	-0.12***
1997	0.30***	0.19***	-0.13***
1998	0.30***	-0.06**	-0.44***
1999	0.31***	0.03	-0.39***
2000	0.28***	0.16***	-0.11***
2001	0.50***	0.51***	0.01
2002	0.51***	0.06	-0.50***
2003	0.60***	0.01	-0.78***
2004	0.35***	0.27***	-0.11**
2005	0.37***	0.23***	-0.20***
2006	0.36***	0.20***	-0.23***
1976-2006	0.41***	0.24***	-0.21***

Table 7. (Continued)

Panel B: Basu regression with lagged variables

Year	Coeff. (Basu regression with lagged variables)		
	*RET*DR*	*RETt-1*DR*	*RETt-2*DR*
1976	0.50***	0.54***	0.27***
1977	0.36***	0.35***	0.16***
1978	0.32***	0.24***	0.06**
1979	0.37***	0.38***	0.17***
1980	0.41***	0.37***	0.23***
1981	0.24***	0.35***	0.16***
1982	0.11***	0.25***	0.19***
1983	0.37***	0.26***	0.18***
1984	0.22***	0.22***	0.12***
1985	0.34***	0.23***	0.19***
1986	0.32***	0.43***	0.17***
1987	0.27***	0.29***	0.19***
1988	0.32***	0.25***	0.25***
1989	0.33***	0.28***	0.20***
1990	0.37***	0.41***	0.19***
1991	0.55***	0.57***	0.62***
1992	0.42***	0.46***	0.35***
1993	0.30***	0.32***	0.23***
1994	0.24***	0.22***	0.18***
1995	0.25***	0.25***	0.19***
1996	0.26***	0.26***	0.17***
1997	0.25***	0.27***	0.10***
1998	0.22***	0.25***	0.18***
1999	0.24***	0.30***	0.24***
2000	0.30***	0.30***	0.22***
2001	0.34***	0.73***	0.27***
2002	0.22***	0.50***	0.27***
2003	0.39***	0.52***	0.30***
2004	0.27***	0.33***	0.19***
2005	0.27***	0.26***	0.16***
2006	0.23***	0.27***	0.21***
1976-2006	0.30***	0.42***	0.24***

4.3 Discussion

Our findings indicate that the exclusion of a quadratic term and lagged returns biases the extent of conditional conservatism. This underestimation bias in conditional conservatism is important when the magnitude is compared. Indeed, the largest concentration of the papers on accounting conservatism test whether conditional conservatism differs across various firm characteristics and economic contexts (for example, corporate governance (Lara, Osma, and Penalval, 2009); information environments (Hui, Matsunaga, and Morse, 2009)). Our study cautions that empirical evidence will be biased unless a quadratic term and lagged returns are included to measure asymmetric timeliness. More importantly, the correlation between the partitioning variable and the underestimation bias confounds the tests. In other words, the research design to test for the magnitude of conditional conservatism makes it difficult to interpret empirical evidence to the extent that the partitioning variable is systematically related to large negative returns. For example, when the partitioning variable is positively correlated with extreme negative returns, the concavity of asymmetric timeliness (and thus a more positive relation between earnings and returns for firms with a large negative value) leads the researcher to conclude that the difference of conditional conservatism exists when it does not.

5. CONCLUSIONS

The primary goal of this paper is to improve Basu's reverse regression/returns-based approach as a proxy for conditional conservatism. Specifically, we consider two important aspects in asymmetric timeliness of earnings: (1) whether the relation between earnings and stock returns is nonlinear and (2) whether earnings show asymmetric timeliness with respect to lagged returns.

We find evidence that the relationship of earnings to returns is positive and concave, implying that conditional conservatism is most pronounced for extreme negative returns. Also, we find that earnings exhibit asymmetry with respect to lagged returns up to three years. We also draw similar inferences from the tests using earnings line items such as special items and discontinued operations.

Overall, our evidence indicates that a quadratic relation between earnings and returns, coupled with lagged returns mitigates biases to measure conditional conservatism. We hope that researchers consider these biases in measuring conditional conservatism and would be cautious in interpreting empirical evidence from the Basu measure.

REFERENCES

Alciatore, M., P. Easton, and S. Nasser (2000), "Accounting Conservatism and the Relation between Returns and Accounting Data," *Journal of Accounting and Economics*, 151–172.

Ball, R., S. Kothari, and V. Nikolaev (2013), "Econometrics of the Basu Asymmetric Timeliness Coefficient and Accounting Conservatism," *Journal of Accounting Research*, 51, 1071–1097.

Ball, R., and L. Shivakumar (2006), "The Role of Accruals in Asymmetrically Timely Gain and Loss Recognition," *Journal of Accounting Research*, 44, 207–242.

Basu, S. (1997), "Discussion of Ball and Shivakumar: The Role of Accruals in Asymmetrically Timely Gain and Loss Recognition," *Journal of Accounting Research*, 44, 243–255.

Beaver, W., and S. Ryan (2009), "Risky Debt, Mixed-Attribute Accounting, and the Identification of Conditional Conservatism," Working paper, New York University.

Beatty, A., and J. Weber (2006), "Accounting Discretion in Fair Value Estimates: An Examination of SFAS 142 Goodwill Impairments," *Journal of Accounting Research*, 44, 257–288.

Bushman, R. and P. Piotroski (2006), "Financial Reporting Incentives for Conservative Accounting: The Influence of Legal and Political Institutions," *Journal of Accounting and Economics*, 42, 107–148.

Callen, J., O. Hope, and D. Seagal (2009), "The Pricing of Conservative Accounting and the Measurement of Conservatism at the Firm-Year Level," *Review of Accounting Studies*, 15(1), 145–178.

Chung, H., and J. Wynn (2008), "Managerial Legal Liability Coverage and Earnings Conservatism," *Journal of Accounting and Economics*, 46, 135–153.

Collins, D., P. Hribar, and X. Tian (2014), "Cash Flow Asymmetry: Causes and Implications of Conditional Conservatism Research," *Journal of Accounting and Economics*, 58, 173–200.

Dietrich, J., R. Muller, and E. Riedl (2007), "Asymmetric Timeliness Tests of Accounting Conservatism," *Review of Accounting Studies*, 95–124.

Francis, J., J. D. Hanna, and L. Vincent (1996), "Causes and Effects of Discretionary Asset Write-offs," *Journal of Accounting Research,* 34, 117–134.

Garrod, N., P. Pope, and V. Aljosa (2005), "Asymmetric Timeliness, Conservatism, and Earnings Component: International Evidence," Working Paper, University of Ljubljana.

Gigler, F., C. Kanodia, and R. Venugopalan (2009), "Accounting Conservatism and the Efficiency of Debt Contract," *Journal of Accounting Research*, 47, 767–797.

Givoly, D., C. Hayn, and A. Natarajan (2007), "Measuring Reporting Conservatism," *The Accounting Review*, 82, 65-106.

Guay, W. (2006), "Discussion of Ball and Shivakumar: The Role of Accruals in Asymmetrically Timely Gain and Loss Recognition," *Journal of Accounting Research*, 44, 243–255.

Hui, K., S. Matsunaga, and D. Morse (2009), "The Impact of Conservatism on Management Earnings Forecasts," *Journal of Accounting and Economics*, 47, 192–207.

Kwon, S. and S. Lim (2015), "The Bias of the Asymmetric Timeliness Model: The measure of Conditional Conservatism in a Korean Sample," *Korean Management Review*, 44, 1241–1275.

LaFond, R. and R. Watts (2008), "The Information Role of Conservatism," *The Accounting Review* 83, 447–478.

LaFond, R. and S. Roychowdhury (2008), "Managerial Ownership and Accounting Conservatism," *Journal of Accounting Research*, 46, 101–135.

Lara. J., B. Osma, and F. Penalva (2009), "Accounting Conservatism and Corporate Governance," *Review of Accounting Studies*, 3, 169–173.

Leon, A., J. Wu, and J. Zimmerman (2006), "Asymmetric Sensitivity of CEO Cash Compensation to Stock Returns," *Journal of Accounting and Economics*, 42, 167–192.

Patatoukas, P. and J. Thomas (2011), "More Evidence of Bias in the Differential Timeliness Measure of Conditional Conservatism," *The Accounting Review*, 86, 1765–1793.

_____ (2015), "Placebo Tests of Conditional Conservatism," *The Accounting Review*, 91, 625–648.

Price, R. (2008), "Accounting Conservatism and the Asymmetry in the Earnings Response to Current and Lagged Returns," Working paper, Rice University.

Riedl, E. (2004), "An Examination of Long-Lived Asset Impairments," *The Accounting Review*, 79, 823–852.

Riedl, E. and S. Srinivasan (2010), "Signaling Firm Performance through Financial Statement Presentation: An Analysis using Special Items," *Contemporary Accounting Researc*h, 27, 289–332.

Roychowdhury, S. and R. L. Watts (2007), "Asymmetric timeliness of earnings, market-to-book and conservatism in financial reporting," *Journal of Accounting and Economics*, 44, 2–31.

Ryan, S. (2006), "Identifying Conditional Conservatism," *European Accounting Review*, 15, 511–525.

Ryan, S. and P. Zarowin, (2003), "Why has the contemporaneous linear returns-earnings relation declined?" *The Accounting Review*, 78, 523–553.

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