

# The Components of Accounting Conservatism: Accelerated “Bad News” Recognition and Delayed “Good News” Recognition\*

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## **Abstract:**

The purpose of this paper is to investigate the mechanism of accounting conservatism, more specifically, the acceleration of loss recognition versus the delay of gain recognition. Based on an extension of Basu model (1997), I investigate the relation between these two components that contribute to the accounting conservatism. I show that both components have contributed to the overall accounting conservatism, as a consequence of tradeoff between timeliness and verifiability of financial reporting. Moreover, cross-sectional variation reflects such weighing. Empirical evidences are consistent with the hypotheses.

*Keywords:* Conservatism; Asymmetric timeliness; Earnings-return relations; Negative returns; Capital markets; Accounting

*JEL classifications:* M41; G30; D21

*Data availability:* Data used in this study are available from public sources identified in the study

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## 1. Introduction

Previous studies have consistently shown that conservatism phenomenon is important and prevalent in financial reporting (for example, Basu [1997], Givoly and Hayn [2000], Holthausen and Watts [2001], Ryan and Zarowin [2003]). Albeit the official definition of conservatism in accounting remains obscure (Givoly and Hayn [2000]), in academic research, it is generally understood as a stronger verifiability requirement for the recognition of gains than for the recognition of losses, (Watts 2003a)<sup>1</sup> where gains and losses are in real economic terms, associated with contemporaneous and expected future cash inflows and outflows. To the extent that stock prices reflect the present value of expected future cash flows, market capitalization (stock returns) provides a proxy for accumulated economic gains and losses since the initial public offering (temporal economics gains and losses over the corresponding period), when compared with book value of equity (earnings).

The four most widely used types of conservatism measurements, namely, (1) the accumulation over time of negative non-operating accruals; (2) measures based on the differential earnings-return association for gains versus losses; (3) measures based on the time-series properties of earnings and cash flows, i.e. the skewness of the earnings distribution relative to that of the cash flows distribution; and (4) the market-to-book ratio (see Givoly and Hayn [2000], Watts [2003b]), focus on different aspects of conservatism in financial reporting. Over each accounting period (fiscal quarter, fiscal year, etc.), conservatism requires higher verifiability in recognition of gains than in recognition of losses, leading to the consequence that losses are reflected in a more timely fashion than are gains (Basu [1997]). Looked at in a different perspective, this also indicates that negative (positive) earnings are more transitory (persistent) in nature. The cumulative effects of such phenomenon are: (1) persistent existence of negative accruals; (2) lower book value, compared with market pricing, i.e. higher market-to-book ratios; (3) negative skewness in time-series distribution of earnings, in excess of that in time-series distribution of cash flows.<sup>2</sup>

In this paper, I choose to use Basu (1997) method, i.e. earnings/stock returns relation measure, for at least following three reasons. First, the piece-wise linear regression used in Basu's (1997) paper is econometrically sound, and has been put to enormous tests and yet shown to be effective (for example,

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<sup>1</sup> The only definition is given in the glossary of Statement of Concepts No. 2 of the FASB, which defines conservatism as "a prudent reaction to uncertainty to try to ensure that uncertainty and risks inherent in business situations are adequately considered" (see Givoly and Hayn [2000]).

<sup>2</sup> Some researches define, as conditional measures, the conservatism based on the asymmetric accounting treatment of *contemporaneous* economic losses and gains, whereas the measures based on the *cumulative* effects on the financial statements of accounting decisions, as unconditional conservatism measures,(for example, see Qiang [2007], Basu [2005]) such as book to market ratio and total operating accruals. (Beaver and Ryan [2005])

Watts [2003b], Roychowdhury and Watts [2007], Holthausen and Watts [2001]). Second, unlike other accounting conservatism measures, the earnings/stock returns relation measure mainly focuses on the *temporal* effect, rather than *cumulative* effect of conservatism. This feature provides (a) a more fundamental understanding of the role of conservatism in financial reporting, and (b) the opportunity to investigate into the trend of accounting conservatism, without compounding effects accumulated from previous periods (Srivastava and Tse [2008]). Finally, and a very appealing aspect of this measure, a simple extension of the Basu (1997) model allows one to separate *both* “good news” *and* “bad news”, hence able to assess their impact on financial reporting respectively, in other words, how accounting earnings numbers incorporate “good news” and “bad news” in different manners, relative to “neutral news”.

Prior literature, no matter what measure of accounting conservatism is used, is mostly dedicated to the effect of conservatism’s asymmetric recognition of gains and losses on reported accounting numbers, in particular net assets, earnings, and accruals (Watts [2003b]). However, to date, the relative importance of delayed gains recognition versus that of advanced losses recognition, has received scant attention. Nonetheless, I posit that this issue is likely important, to many, in at least the following ways.

For researchers, this is likely an important topic because (a) this allows for a decomposition of overall conservatism into two separate parts, which would provide different implication<sup>3</sup>; (b) Bushman and Piotroski (2006) proposes that it is useful for researchers to further assess how accounting practice is affected by legal origin, judicial environment and regulation of capital market; (c) it deepens the understanding of Basu (1997) piecewise linear model (see Ball and Kothari [2007] for a discussion of its validity), and therefore better describes the asymmetric earnings/stock returns relation.

For managers, the issue has significant meanings: (a) the earnings management decision is to be made based on not only *how much* conservatism to achieve, but also *how* to attain the optimal conservatism level; (b) financial reporting has significant influence on the cost of capital, especially during major events, such as initial public offerings (Ball and Shivakumar [2008]); (c) managers’ weighing of short-term performance-based compensation versus long-term effects of conservatism in the financial reporting leads to differential timeliness in reporting both good news and bad news.<sup>4</sup>

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<sup>3</sup> Most previous literature focuses on the role of timely losses recognition (e.g. Watts [2003b], Ball and Shivakumar [2005]), while this paper responds to the call by Guay (2006) and Guay and Verrecchia (2006) for more research on the role of delayed gains recognition in accounting conservatism.

<sup>4</sup> See section 2 for more detailed analysis on how managers choose *either* accelerated bad news recognition *or* delayed good news recognition, *or both*.

For investors, the importance of this issue includes: (a) asymmetric return function demands higher timeliness in losses recognition, more than less timely recognition of gains (Basu [1997], Watts [2003a]), to reduce their default risks; (b) shareholders also demand timely losses recognition to disengage management from unprofitable projects (LaFond and Roychowdhury [2007]), as well as to avoid overpaying or even to fire poorly performing managers promptly (Kothari, Shu and Wysocki [2007]).

Last but not least, this issue is likely important to regulators and standard setters because: (a) they prefer to constrain managers' tendency to be unduly optimistic (Sterling [1967], Balachandran and Mohanram [2006]), while keeping financial reporting sufficiently timely (e.g. Statement of Financial Accounting Standards [SFAS] 121 and 142); (b) accounting regulations and standards have imposed more stringent conditions for recognizing gains early (e.g. the American Institute Certified Public Accountants' SOP 81-1, SOP 91-1 and Securities and Exchange Commission's SAB 101), and the effects of the regulatory changes depend on the roles of gains recognition and losses recognition in determining financial reporting conservatism.

Srivastava and Tse (2008) use accrual-based conservatism measure to assess the contribution of accelerated loss recognition and delayed gain recognition to the *trends* in conservatism, and separate their sample into high-tech firms and other firms. They find that conservatism has increased more rapidly in high-technology industries than in other industries, driven mainly by gains recognition rather than by loss recognition. Instead of looking at the *trends* in conservatism, I am focusing on a *static* analysis of the two components of accounting conservatism, i.e. gain recognition and loss recognition.

I hypothesize and find empirical evidences that both "good news" recognition and "bad news" recognition contribute to the overall conservatism. This is consistent with managers trying to avoid "exhausting" one approach, which would increase the hazard of extreme low timeliness or verifiability. Moreover, the variation in managers' responses to different importance of "timeliness" suggests that managers determine the reporting decision by weighing the tradeoff between timeliness and verifiability.

This study makes at least two contributions to the literature. First, I develop, from the perspective of financial reporting preparers, i.e. the management, a framework of choice of accounting conservatism. This static view is a unique perspective yet fundamental in assessing the comprehensive mechanism of accounting conservatism. Second, this study supplements the returns-based measure used in prior literature and breaks the measure into more detailed and likely more informative measures.

The remainder of the paper is organized as follows: I develop the analytical framework and present hypotheses in section 2. Section 3 presents the sample selection procedures, variables definition, and present descriptive statistics. Research design and empirical results are explained and discussed in section 4, and section 5 concludes the paper.

## **2. Analytical framework and hypotheses development**

The goal of this study is to investigate the relation between the role of accelerated loss recognition and that of decelerated gain recognition in determining financial reporting conservatism. In this section, I develop a simple framework to understand this relation, partly based on the theory of conservatism in Watts (2003a, b). The appeal of Watts' theory lies in that it explains why conservatism exists, why it is necessary and important, and predicts when it will be observed.

Following Srivastava and Tse (2008), who argue that the overall level of conservatism emerges endogenously from the interplay of various stakeholder groups who possess disparate and often conflicting preferences on the timeliness of losses and gains recognition, I base my analysis from the perspective of the financial reporting preparers, i.e. the managers. The intricate interplay of different influences is therefore reflected as costs and benefits (or expected costs and benefits, if assuming uncertainty) in the managers' utility function.

### **2.1 Alternative theories and managers' decision**

Previous literature presents various views on the theory of conservatism (e.g. Givoly and Hayn [2000], Roychowdhury and Watts [2007], Srivastava and Tse [2008]), while Watts' (2003a, b) theory is most cited and widely regarded as most influential. All competing theories would likely become reflected, to various degrees, in the financial reporting, as the preparers produce financial information to the public. In this subsection, I attempt to translate these theories as determinants of the managers reporting decisions.

Watts (2003a) attributes accounting conservatism to the following reasons, descending in terms of importance: (1) contracting explanations, which involves dealing with information asymmetry between the firm and its executives, creditors, investors and so on; (2) shareholder litigation explanations, which argues that litigation is much more likely when accounting numbers are overstated (not understated) and only applies recently in the U.S. due to the Securities Acts; (3) taxation and regulation explanations; (4) earnings management explanations. Subsequent research further enriches and deepens the explanations

for accounting conservatism, by investigation the impact on conditional conservatism versus unconditional conservatism (e.g. Qiang 2007).

Overall, the explanations proposed and documented in the literature have the common feature of asymmetric loss function. Overstatement of earnings and net assets often leads to higher risks and lower net benefits. This naturally leads to the idea that the accounting conservatism is determined by weighing the risks and benefits of financial reporting, on the set of financial reporting discretion allowed by Generally Accepted Accounting Principles (GAAP), which is discussed below.

## 2.2 Conservatism choice: A two-level analysis

The various explanations discussed above mainly focus on the *demand* for accounting conservatism. This demand comes from creditors, shareholders, auditors, government, regulators and so on. If conservative accounting can be achieved at no cost, one would observe lower earnings and net assets numbers, *ceteris paribus*, to the extent that these demand for conservatism is satisfied. However, as preparers of the financial reporting, the management may not *want* to provide that level of conservatism, simply because this does not generate the optimal outcome in its own interests. Therefore, the level of conservatism would be determined both by the *supply* of the management, which is shaped by its incentives and costs of providing financial reporting of different level of conservatism, and by the *demand* of the users of financial reporting, such as creditors, shareholders, analysts, auditors, government and regulators, etc.

Given the optimal level of accounting conservatism, as determined by the interplay of the providers and users of financial reporting, a second-level issue is *how* to achieve this optimal level. If conservatism is defined as the differential verifiability required for recognition of profits versus losses, (Watts [2003a]) then conservatism can be achieved *either* through more timely recognition of losses *or* through delayed recognition of gains, or a combination of *both*. The timeliness of recognition negatively corresponds to verifiability, as higher verifiability requires more uncertainty to be resolved before a gain or loss is recognized, and the resolution of uncertainty takes time. The timeliness of recognition also positively corresponds to the magnitude of earnings response to contemporaneous gains or losses. For example, to report a given unexpected drop of \$10,000 in the value of a piece of equipment, more timely reporting, say immediately rather than to amortize over 5 years, implies a currently loss of \$10,000 rather than \$2,000. Therefore, timeliness of recognition of gains and losses captures different aspects of accounting conservatism, thus likely to be a proxy for conservatism.

The two levels of conservatism, combined together, jointly specify the level *and* the structure of accounting conservatism. I make no claim that the two levels are independent. On the contrary, they are likely correlated, since when managers make decisions based on their costs and the demand of conservatism that they are facing, they weigh between accelerating losses recognition and delaying gains recognition to estimate their costs for booking at certain conservative level. This is analogous to the relation between short term supply and long term supply, where the long term supply curve is the envelope of the different short term supply curves. The total cost of providing a certain level of conservatism is determined by the minimum attainable cost by weighing between accelerating losses recognition and delaying gains recognition. In this paper, I focus on this second level of conservatism choice because (a) it is the more fundamental issue because the overall level is determined by the optimal solution at this level; (b) in addition, the general equilibrium level of conservatism is likely subject to many other influences, such as regulations, which are beyond the scope of this study.

### 2.3 Hypotheses development

As argued above, both the *level* of accounting conservatism and the *structure* of conservatism depend on a tradeoff of the economic benefit and cost associated with financial reporting. As producers of financial reporting, managers directly or indirectly incorporate the various factors into their decision. For parsimony, let's name the latent variable underlying this decision function as (managers') utility function (denoted as  $U^*$ ), which I further decompose into  $U_d^*$  and  $U_i^*$ , representing direct and indirect utility (one way to understand this direct portion is to think of it as short-term or current utility and the indirect portion as long-term or future utility). Managers are trying to maximize their utility with the tools available to them. The essence of accrual accounting is the timing issue (see Dechow [1994]), which suggests that what managers basically have to do is to decide on how timely a certain realization of cash flows (proxy for real economic event) is booked in the financial reporting. Put in a more general sense, managers have to determine recognition timeliness for any real economic "news", *good or bad*.

Following Watts' (2003a, b) definition of conservatism, by requiring higher "verifiability" of "good news" to be recognized in financial reporting than of "bad news", "bad news" is overall reflected in financial reports on a more timely basis. Therefore, holding total level of conservatism unchanged, firms that report "bad news" more aggressively than delaying recognition of "good news" would attain higher timeliness in financial reporting. On the other hand, firms that provide conservative financial reporting mainly through delaying recognition of "good news", *ceteris paribus*, would display less timeliness. More rigorous formulation and more details are described in Appendix A.

Nonetheless, by definition, higher timeliness results from lower verifiability of “bad news”. In a contingency context, for instance, this suggests that a contingent loss with probability of 50% gets recognized immediately, whereas a contingent gain with probability of 50% does not get recognized until the certainty reaches a higher threshold. Moreover, timeliness is also likely to come at the cost of relevance. In the previous example of an unexpected gain/loss in asset value, the “good news” is spread out over 5 years, which is economically closer to reality since the asset is still under employment for the five-year useful life, while the “bad news” hits the accounting books once and not in the following periods. Hence, the decision between recognizing “bad news” more aggressively and recognizing “good news” more conservatively is essentially a tradeoff between timeliness and a combination of verifiability and relevance. To the extent that the marginal consequences of lower timeliness and lower relevance or verifiability are increasing in the severity of low quality (in terms of timeliness, verifiability), in equilibrium, managers would try to avoid solely using *either* accelerated recognition of “bad news” *or* decelerated recognition of “good news”, but rather a combination of *both*. Hypothesis 1 hence follows (in null form):

**H1(null):** *Either* “good news” recognition is delayed *or* “bad news” recognition is advanced in financial reporting, but not *both*.

Alternatively, if the null hypothesis fails to be rejected, there are many potential possibilities: (a) the convexity cost function of financial accounting quality, in terms of timeliness, relevance, and verifiability, is violated; (b) managers are not maximizing the overall quality of financial reporting; (c) the optimal quality of financial reporting by users’ criteria does not coincide with the optimal quality intrinsic in managers’ utility maximization, and so on.

<Insert Figure 1>

This is illustrated in Figure 1. On the horizontal axis is the annual stock return; while on the vertical axis is the contemporaneous annual earning. The slope represents the timeliness of financial reporting capturing the contemporaneous stock return, which in turn measures the real economic activities of the firm. Segment BC measures the timeliness in financial reporting for a small interval around 0. Under the assumption of efficient markets, small magnitude of returns indicates the market valuation of the firm is little changed over the period. In other words, over this interval, there are neither good surprises nor negative shocks, thus representing “neutral news”. Segment AB shows reporting timeliness for the “bad news”, whereas segment CD indicates reporting timeliness for the “good news”.

What the previous literature has documented is that the slope of segment AB is higher than that of segment CD, i.e. “bad news” are reported on a more timely fashion than are “good news”. However, all three panels in Figure 1 share this common feature, while the reporting scheme could differ significantly across the three panels. If a firm reports conservatively only by waiting to report “good news” until it becomes more certain or is realized (as in Panel B), still the relative timeliness of “bad news” is higher than that of “good news” (as shown by the higher slope of segment AB than that of segment CD), but the recognition of “bad news” *de facto* is not accelerated (segment AB is no steeper than segment BC). Likewise, if a firm’s conservative reporting is solely due to precipitating disclosure of “bad news”, it still appears that “good news” is reported less promptly than is “bad news” even though the recognition of “good news” is not actually delayed (shown in Panel C). In contrast, Panel A illustrates the case where both “bad news” and “good news” recognitions contribute to accounting conservatism, which is the prediction of the alternative hypothesis of H1. Another point worth noting in Figure 1 is that the research design in the previous literature (e.g. Basu [1997]) masks the relative roles of “bad news” and “good news” recognition in accounting conservatism, and this paper seeks to investigate into this question.

Furthermore, weighing the tradeoff between timeliness and verifiability (and relevance, since both verifiability and relevance are weighed together as against timeliness, in the remainder of the paper, I use verifiability to mean both verifiability and relevance), the managers across firms and industries may be subject to different binding constraints. For example, industry A may systematically enjoy higher timeliness in financial reporting (e.g. as an industry practice custom) than industry B; therefore, verifiability would be the major binding concern for firms in industry A on average, compared with firms in industry B. Hence, firms in industry A would predictably try to achieve conservatism more via “good news” recognition while less via “bad news” recognition, because an even lower level of verifiability would hurt the quality of financial reporting more than less timely recognition. Hereby, hypothesis 2 is proposed (in null form):

**H2(null):** When overall timeliness in financial reporting is higher, accounting conservatism is achieved more through “bad news” recognition rather than through “good news” recognition.

In contrast, the null hypothesis would be consistent with a competing explanation that higher timeliness in financial reporting, instead of suggesting timeliness is nonbinding in firm’s disclosure decision, implicitly suggests *ex post* timeliness is more important for industry A than for industry B (e.g. the analysts and/or investors following industry A require higher timeliness in financial reporting). Therefore, firms in industry A would on average achieve reporting conservatism mainly through “bad

news” recognition compared with firms in industry B, which would on average do so via “good news” recognition.

In summary, the classical accounting conservatism is indeed a two-level process: first being the overall level and second being the mixture of its two components: (a) accelerated “bad news” recognition; and (b) delayed “good news” recognition. To the extent that conservatism requires “bad news” to be recognized on a more timely basis with lower verifiability threshold, whereas “good news” recognized with higher verifiability requirement but in a less timely fashion, the choice between “good news” recognition and “bad news” recognition is essentially a tradeoff between timeliness and relevance/verifiability. Assuming that managers are maximizing the accounting quality in a sense to minimize the cost of poor accounting quality, two hypotheses are put forward. First, both components should contribute to the overall conservatism; and second, the role of one component increases in its importance (taking timeliness as an example).

### **3. Sample, variable definitions and data**

I obtain all data from the 2006 tape CRSP/Compustat Merged Database (CCM). Financial data are from Fundamentals Annual database, and stock prices from Security Annual. My sample covers the 44-year period from 1963 to 2006. For this sample period, I keep all the firm-year observations that satisfy: (1) sufficient data to calculate size-adjusted buy-and-hold abnormal return (BHAR); (2) earnings per share data available, also with lagged stock price deflator available. The requirement of available data potentially excludes smaller and unsuccessful firms, thus leading to possible survivorship bias. Therefore, when generalizing to the population, it is important to be aware of this potential bias. I briefly describe below the process in which my sample is formed.

There are 3,066,194 firm-month return observations in the raw dataset. Excluding observations in which monthly total return is missing reduces the sample to 1,903,509 firm-month observations. Similarly, I require the firm-year observation in Compustat dataset to have EPS ready and have the corresponding deciles assignment data available, which reduces the number of firm-year observations from 243,381 to 157,247. I match the observations from CRSP with Compustat observations by Standard and Poor’s identifier (GVKEY). I then aggregate monthly returns to arrive at annual adjusted returns. To be consistent with the literature, I winsorize the sample by both top and bottom 1% on all continuous

variables (i.e. size-adjusted stock returns and beginning-price-deflated EPS)<sup>5</sup>. After this adjustment, the sample size is 79,023 firm-year observations.<sup>6</sup>

Following the prior literature (e.g. Basu [1997], Ball et al. [2000], Roychowdury and Watts [2007]), earnings is measured by basic EPS, excluding extraordinary items (Compustat item #58). The accounting variable is deflated by the opening stock price to control for heteroskedasticity (Christie, 1987). Buy-and-hold annual returns are calculated to end three months after the fiscal year-end to ensure that the market response to the previous year's earnings is excluded (Givoly and Palmon, 1982; Easton and Harris, 1991). CRSP equally weighted market portfolio (including distributions) returns are subtracted to calculate BHAR. *Neg* is a dummy variable, which equals 1 when the adjusted stock returns are negative and 0 otherwise.

<Insert TABLE 1>

Descriptive statistics and correlation coefficients are reported in Table 1. The median annual earnings per share (annual adjusted stock returns) is 1.79% (-0.61%) of the beginning stock price. There is significant variation across firms and years. Earnings are negatively skewed, consistent with Givoly and Hayn (2000), indicating conservatism in financial reporting. On the other hand, stock returns are also negatively skewed. Earnings and adjusted stock returns are significantly correlated by both Pearson and Spearman correlation coefficients. As expected, Negative returns dummy variable is significantly negatively correlated with adjusted returns.

#### 4. Research design and empirical results

The basic research design follows Basu (1997) model of the following form (firm subscript suppressed for clarity):

$$\frac{X_t}{P_{t-1}} = \beta_0 + \beta_1 Ret_t + \beta_2 Neg_t + \beta_3 Ret_t * Neg_t + \varepsilon_t \quad (1)$$

The dependent variable is a firm's reporting earnings over period t (measured per share) deflated by beginning period stock price, and the dependent variables are  $Ret_t$ , which is contemporaneous stock returns over period t (ending 3 months after fiscal-year end to allow for post earnings announcement drift,

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<sup>5</sup> The tenor of the results does not change if the extreme observations are included in the sample.

<sup>6</sup> As expected, the sample size in this study (79,023 firm-year observations) is larger than that in Basu's (1997) study (43,321 firm-year observations), due to longer period. However, the subsample that covers exactly the same period in Basu's sample period consists of 48,677 observations. This is likely because the database has been updated.

Bernard and Thomas [1990]), a dummy variable  $Neg_t$  which is set to 1 if  $Ret_t < 0$ , and 0 otherwise, and lastly, an interaction term.

Under the assumption of efficient markets, stock returns should capture the underlying real economic changes in firm valuation. On average, stock returns reflect public available information fairly quickly, and unlike earnings which have to wait until a certain accounting period end, stock returns would assimilate information such as conference calls, management announcements and so on once it becomes available. Therefore, stock returns are used as an independent variable proxy for actual economic information.

One of the coefficients of interest is  $\beta_1$ , which is the inverse of earnings response coefficient (ERC) and measures the extent to which reported earnings capture contemporaneous stock returns, which in turn capture the real economic activities over the corresponding period. In other words,  $\beta_1$  reflects the timeliness of financial reporting for positive stock returns, in which case  $Neg_t = 0$ . By allowing for an interaction term in the regression, the timeliness coefficient is allowed to differ between “good news” recognition and “bad news” recognition. While  $\beta_1$  measures the timeliness for “good news” recognition, as a base benchmark,  $\beta_3$  measures the *incremental* timeliness for “bad news” recognition. The dummy variable itself is not interesting in the regression, but serves as a control variable to pick up the effects caused by negative stock returns that would otherwise have left in the interaction term.

In order to be comparable to previous literature, and also partly in order to address the concern of changes in data, I replicate Basu (1997) results using panel data over longer time period in section 4.1. Then I test hypothesis 1 in section 4.2 and hypothesis 2 in section 4.3.

#### 4.1 Replication of Basu (1997)

Because Compustat and CRSP update old data, even for the same sample period, there would still exist difference for dataset downloaded at different years. Therefore, to address concerns about the data consistency, I rerun Basu’s regression. Results are reported in TABLE 2.

<Insert TABLE 2>

For the sample period 1963-1990, which corresponds to the sample period studies in Basu (1997), the results in general closely mirror those in Basu’s. The reporting earnings capture approximately 2.5% of contemporaneous stock returns for “good news” (defined as stock returns being positive, and similarly defined for “bad news”), while earnings capture approximately 26% (2.5%+23.5%) of contemporaneous stock returns for “bad news”. The incremental timeliness in “bad news” recognition is statistically

significant (t-statistic is 47.59). For the sample period after Basu's, the incremental timeliness coefficient for "bad news" is 21.3% and is still significant (t-statistic is 34.48). However interestingly, the coefficient for "good news" recognition actually becomes significantly negative (t-statistic is -2.59) while the economically unimportant with a magnitude of less than 1%. Comparing both coefficient of post-Basu period with Basu period suggests that overall timeliness has decreased both for "good news" and "bad news" recognition, and following the argument in section 2, this is likely because more emphasis has been placed on verifiability requirement rather than timeliness.

Over the entire sample period 1963-2006, the "good news" recognition captures about 0.7% of contemporaneous stock returns, a fairly negligible amount; however, "bad news" go through into financial reporting with a much larger magnitude of about 23% (0.7% + 21.9%). This is consistent with a scenario where "good news", for example, a decision to engage in a positive NPV project is made in the current year and stock returns are largely positive to reflect higher value, but reported earnings do not include this change immediately. Instead, the "good news" recognition is postponed into future period where the gains from this positive NPV are generated and harvested. This leads to a rather small corresponding relation between reported earnings and contemporaneous stock returns for "good news". On the other hand, "bad news" is immediately booked into financial reporting, resulting in a much higher timeliness for "bad news" recognition *beyond* that for "good news".

#### 4.2 Testing Hypothesis 1: accelerating loss recognition vs. delaying gains recognition

One problem with Basu's model is that it masks the two components of *overall* conservatism: accelerated "bad news" recognition and decelerated "good news" recognition. The two parts are mingled in the sense that we only observe that "bad news" are recognized faster than "good news" are, but as argued in section 1 and section 2, the two possible methods are fundamentally different. To disentangle the two distinct components, "good news" and "bad news" should be defined against some "neutral news", instead of being defined relative to each other.

In the context of a Basu regression, "news" is proxied by stock returns. Therefore naturally, "neutral news" should also be defined in terms of stock returns. In economic terms, "neutral news" implies neither positive shocks nor negative surprises, thus being neutral. Under rationality assumption and efficient market hypothesis, absence of both positive and negative disturbances would leave the rational expectation unchanged, thus the valuation of firm value unchanged. With efficient market, stock prices would barely change, yielding insignificant capital gains. Thus, I define "neutral news" as small interval around 0 in terms of stock returns. Accordingly, "good news" is defined as stock returns beyond the *positive* side of the interval; "bad news" is defined as returns *below* the *negative* side of the interval.

Therefore, I modify Basu's model to incorporate this two-component feature of accounting conservatism, and the empirical model is given below:

$$\frac{X_t}{P_{t-1}} = \beta_0 + \beta_1 Ret_t + \beta_2 Neg_t + \beta_3 Pos_t + \beta_4 Ret_t * Neg_t + \beta_5 Ret_t * Pos_t + \varepsilon_t \quad (2)$$

The variables  $\frac{X_t}{P_{t-1}}$ , and  $Ret_t$  follow the previous definition, and the two dummy variables are  $Neg_t$  which is set equal to 1 if the  $Ret_t$  is less than the minimum of the “neutral news” range and equal to 0 otherwise, and  $Pos_t$  which is set equal to 1 if the  $Ret_t$  is more than the maximum of the “neutral news” range and equal to 0 otherwise.

This specification allows for *both* “good news” and “bad news” to have a different timeliness coefficient compared with “neutral news”. Following previous literature, conservatism requires firms to recognize losses on a more timely basis, which predicts  $\beta_4 > 0$ , and to recognize gains on a less timely basis, which predicts  $\beta_5 < 0$ . Whether these two mechanisms are present in conjunction is often not answered in the literature. Hypothesis 1 explicitly tests this issue.

As illustrated in Figure 1, the existence of a combination of both accelerated “bad news” recognition and delayed “good news” recognition would suggest that both  $\beta_4 > 0$  and  $\beta_5 < 0$ . The sum of timeliness recognition coefficient of “neutral news”  $\beta_1$  and the incremental timeliness recognition coefficient of “bad news”  $\beta_4$  corresponds to  $\gamma_b$ , which measures the timeliness of recognizing “bad news”. Similarly, the sum of timeliness recognition coefficient of “neutral news”  $\beta_1$  and the incremental timeliness recognition coefficient of “good news”  $\beta_5$  corresponds to  $\gamma_g$ , which measures the timeliness of recognizing the “good news”. Simply,  $\beta_1$  corresponds to  $\gamma_n$ , measuring the timeliness of recognizing “neutral news”.

<Insert TABLE 3>

Results pertaining to testing hypothesis 1 are reported in Table 3. Panel A reports the number of observations (percentages in italics) that fall into categories of “good news”, “neutral news” and “bad news” for each of the three specifications. As the “neutral news” range expands, more observations fall into this category, with corresponding decreases in observations in the other two categories. In every case, there are more observations in the “Neg” category than in the “Pos” category, which is consistent with the results in descriptive statistics in Table 1 that stock returns are negatively skewed. When “neutral news” is defined as (-1%, +1%), there are only 2.36% of the observations fall into this category. This would likely introduce spurious results in the regression analysis where other observations are benchmarked

against these few observations. I report the results using this specification as comparison for the other specifications.

Regression results are reported in Panel B of Table 3. The first two columns show the results for 1% interval of “neutral news”. Due to the problems discussed previously, the coefficient on stock returns, as well as those on interaction terms (incremental timeliness coefficient), is not statistically significant. When I define the “neutral news” to be within the range of +/- 5% per annum, all coefficients become significant. Moreover, the signs are consistent with predicted ones. For the “neutral news”, the reported earnings capture approximately 11.4% of the contemporaneous stock returns, while “bad news” is recognized by a magnitude of about 24% (0.114 plus 0.123), much faster than “neutral news” is (t-statistic 2.42). On the other hand, “good news” are almost not recognized in the concurrent period with timeliness coefficient of about 0.3% (0.114 plus -0.111), which is significantly less than that of “neutral news” (t-statistic -2.18). The tenor of the results becomes more pronounced when the “neutral news” interval is extended to +/- 10%, with all the coefficients significant. The “neutral news” is recognized on average about 8.8% in the financial reporting, with “bad news” timeliness coefficient about 25% (0.088 plus 0.16), almost tripling that of “neutral news”. The difference is significant at 1% level (t-statistic 8.63). In contrast, the “good news” is barely recognized in the contemporaneous reporting with net timeliness coefficient of -0.1% (0.088 plus -0.089), significantly more slowly than “neutral news” is captured (t-statistic -4.88).

These results are overall consistent with the scenario in which managers choose to employ *both* accelerated losses recognition *and* delayed gains recognition to report financial performance conservatively. Both statistical significance and magnitude of the increment “bad news” recognition has increased when the neutral interval is expanded from 5% to 10%. The t statistic (coefficient) increased from 2.42 (0.123) to 8.63 (0.160), which suggests that for more extreme losses, firms are reporting on a more timely basis. Although the magnitude of incremental timeliness of “good news” recognition has decreased in absolute value, the statistic significance has improved considerably. In either case, both the magnitude and significance of “bad news” recognition are greater than those of “good news” recognition, consistent with Basu (1997) who argue that “bad news” recognition overall contributes more to the overall conservatism. However, the approach in Basu’s study does not disentangle “bad news” recognition from “good news” recognition, but defines one against the other.

In summary, the results revealed in Table 3 suggest that both “good news” recognition and “bad news” recognition contribute to the overall conservatism. Moreover, the contribution from “bad news” recognition is slight bigger than that from “good news” recognition. Furthermore, the more extreme losses

are reported on a more timely basis compared with milder losses, whereas gains are less delayed for more extreme cases. This is consistent with the notion that managers balance the choice between timeliness and verifiability, resulting in an interior solution which avoids depleting one approach while leaving another approach unharnessed.

#### 4.3 Testing Hypothesis 2: timeliness as a consideration in financial reporting

If managers use both “good news” recognition and “bad news” recognition in conservative reporting, weighing timeliness and verifiability to reach an optimal middle point, then the variation in this equilibrium level across firms should, at least partly, reflect the variation in the benefits (or costs) associated with (or lack of) timeliness, verifiability.

Following the discussion in the previous subsection, I use the research design in section 4.2 to investigate the roles of “good news” recognition and “bad news” recognition in accounting conservatism. An interesting feature emerges as an advantage of this design: the timeliness of the baseline information can be proxied by the timeliness of “neutral news” recognition (the coefficient of  $Ret_t$ ,  $\beta_1$ ). If a firm belongs to certain industry where information is generally captured in the concurrent financial statement on a more timely basis, then  $\beta_1$  is expected to be greater, and vice versa. Therefore, by investigating the cross sectional correlation between the coefficient  $\beta_1$  and  $\beta_4$  ( $\beta_5$ ), I can observe whether “timeliness” has been a consideration factor in firm’s recognition of “bad news” (“good news”) recognition. More specifically, as hypothesized, if “timeliness” is not much as a major consideration in the tradeoff against “relevance” and “verifiability”, in other words, “timeliness” is abundant thus not binding, as indicated by higher value of  $\beta_1$ , then management would give priority to “verifiability” in reporting, by requiring a higher verifiability threshold for recognizing “good news”, thus generally delaying its recognition ( $\beta_5$  expected to be more negative) and/or by accelerating “bad news” to a lesser degree ( $\beta_4$  expected to be less positive). Either case suggests a negative correlation between  $\beta_1$  and  $\beta_4$  or  $\beta_5$ .

In order to estimate regression (2) on a firm level, I first require firms to have at least 10 years annual observation. This reduces the sample to 2,909 firms with 61,456 firm-year observations. Moreover, some firms may have experienced an unusual stream of good years or bad years so that they have no year observation or only a few observations classified as a “good news” year or a “bad news” year. In those cases, the dummy variables  $Neg_t$  and  $Pos_t$  are all 0’s or close to null vectors, making the regression estimators undefined or spurious. In order to address this issue, I remove all the firms that do not have any good year or bad year across all observations over time and require the ratio of the number

of classified good years and the number of classified bad years to be between 0.15 and 0.85<sup>7</sup>. The regression results are reported in Table 4.

<Insert TABEL 4>

The main results in Table 4 show that the timeliness coefficient on “neutral news” is highly negatively correlated with the incremental “timeliness” coefficients on both “good news” and “bad news”. This negative correlation is statistically significant (at 0.01% level) and economically considerable. When I measure the “neutral news” with +/- 5% interval, the incremental timeliness coefficients on “good news” and on “bad news” are almost perfectly negatively correlated with the proxy for “slackness” of “timeliness”. That is to say, for firms that overall report information on a more timely basis, they delay “good news” recognition further and put off acceleration of “bad news” recognition to boost overall “verifiability”. The results remain the same when I change the interval to 10%.

A caveat on interpretation of the results in Table 4 is that it appears that the conservatism (defined in the sense of Basu measure) is not consistently observable at firm level, even after winsorizing firms with extreme performances and/or with short time series data. For example, in the 5% specification case, the coefficients on both the interaction terms are widely spread across firms from -2.5 (-2.7) to 2.8 (2.8) for incremental timeliness in recognizing “bad news” (“good news”). The mean t-stats are very insignificant and the t-stats using cross sectional standard errors are insignificant either. This is very likely because the nature of *overall* level of conservatism reflects the demand of conservatism by the judicial, political and capital market environment. This leads to the mixed results in the cross section when I run the modified Basu model at firm level. However, the overall insignificance of the firm level regression coefficients does not affect the correlation test, because even though the incremental timeliness may not be significant for a firm in a time series setting, the large cross sectional sample (1,807 firms in the 5% specification case, and 2,490 firms in the 10% specification case) ensures that the cross-sectional asymptotic property be well maintained.

## 5. Conclusions and future research

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<sup>7</sup> The 2,909 firms all have at least one year of "Neg" and at least one year "Pos", in order to remove extreme performers, I trimmed the firms with ratio of Pos/(Pos+Neg) outside of (0.15, 0.85). In the 5% specification, this reduces the number of firms to 2,861 and 60,842 firm-year observations. Further requiring the regression to be well defined the sample size reduces to 1807 firms. In the 10% specification, this reduces the number of firms to 2,833 corresponding to 60,488 firm-years; further identification requirement reduces the sample size to 2490.

In this study, I analyze the financial reporting decision and integrate the individual explanations for conservatism into a united model. Moreover, I argue that conservatism is a two-level concept: the *level* of conservatism is determined by the demand and cost of reporting firm performance conservatively; the *structure/composition* of conservatism is further determined by a tradeoff between timeliness and verifiability.

Using a modified Basu model, I investigate the relative roles of “good news” recognition and “bad news” recognition in overall accounting conservatism. The coexistence of both accelerated “good news” recognition and delayed “bad news” recognition suggest that timeliness and verifiability are both considered in determining the speed at which real economic information flows into financial reporting, consistent with managers choosing an interior solution when weighing between timeliness and verifiability. Furthermore, I take “timeliness” as a major consideration factor to assess the cross sectional variation in responses to differential importance of “timeliness”. Consistent with the notion that managers are weighing between timeliness and verifiability, giving priority to the binding constraint, when “timeliness” is less likely to bind, managers would increase overall relevance by reporting both “good news” and “bad news” on a more verifiable basis. Using a large sample of Compustat firms and long time series data, I find evidence consistent with the above hypotheses.

The paper extends the literature in three ways. First, the roles of the two components of conservatism are often neglected in the literature. This study sheds light on the interplay of the underlying decision and its effects on the composition of overall conservatism. Second, I propose the modified Basu model to estimate the relative importance of “good news” recognition and “bad news” recognition. I also show that this modified model provides some opportunities to investigate into the cross sectional variation in firm’s conservatism. Third, I advance a synthetic model for firms’ disclosure decision, which offers some insight into the mechanism of conservatism.

This study also suggests some potential fruitful avenues for future research. The most interesting question is to assess the cross sectional variation in both “good news” recognition and “bad news” recognition in terms of real economic terms such as industry characteristics, analyst following, corporate governance structure and multi-segment vs. stand-alone, to name just a few. Also, I leave to future research to identify other approaches to measuring the relative roles of “good news” recognition and “bad news” recognition, such as accrual-cash flow model, or time-series properties of earnings and so on.

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## Appendix A. modeling the financial reporting decision

This section provides an analytical model which attempted to incorporate various explanations for accounting conservatism (mainly summarized in Watts [2003a,b]) into the decision process of managers, who are the preparers, i.e. producers of financial reports.

To begin with, let  $\Pi_t = (\pi_t, \pi_{t+1}, \pi_{t+2}, \dots)$  denote a cash flow generating process indicating a firm's future economic activities in real terms (firm subscript suppressed for clarity). Each element represents the cash inflows and outflows at time  $\tau$  ( $\tau=t, t+1, \dots$ ). All future economic activities is subject to uncertainty, therefore not observable at any  $t < \tau$ .

The financial representation of the real economic activities, denoted as  $F_t = (f_t, f_{t+1}, f_{t+2}, \dots)$ , is a set of the financial reports, which is mapping “disclosure” from  $\Pi_t$  to  $F_t$ . Thus,

$$F_t = D(\Pi_t)$$

As discussed in section 2, this mapping is essentially captured by the timeliness of recognizing components in  $\pi_t$  into  $f_t$ , and the question of interest in this study is the differential timeliness in recognizing “good news” versus recognizing “bad news”. To facilitate the comparison of the roles of the two components of accounting conservatism, namely, accelerated recognition of “bad news” and delayed recognition of “good news”, I denote the timeliness coefficients of good, neutral and bad news as  $\gamma_g, \gamma_n, \gamma_b$  respectively (definition is given later), and characterize the disclosure decision with these coefficients as parameters. Hence,

$$F_t = D(\Pi_t, \gamma_g, \gamma_n, \gamma_b)$$

The overall timeliness of the financial reports is simply a weighted average of the timeliness coefficients of good, neutral and bad news:

$$\bar{\gamma} = \alpha_g \gamma_g + \alpha_n \gamma_n + \alpha_b \gamma_b$$

where  $\alpha_g, \alpha_n, \alpha_b$  are positive and sum to one.

As producers of financial reporting, managers directly or indirectly incorporate the various factors into their decision. For parsimony, call the latent variable underlying this decision function as (managers') utility function (denoted as  $U^*$ ), which I further decompose into  $U_d^*$  and  $U_i^*$ , representing and indirect utility direct (one way to understand this direct portion is to think of it as short-term or current utility and the indirect portion as long-term or future utility). Managers are trying to maximize their utility with the tools available to them.

$U_d^*$  contains the payoff to the managers which is usually associated with firm's performance by aligning managers' incentives with firm's interest through compensation contract. On one hand, managers would like to improve firm's reported performance to increase their performance-related bonuses (i.e.  $\gamma_g > \gamma_b$ ). On the other hand, managers would try to minimize the extra costs associated with litigation and taxation, which either increases managers' workload or reduces firm value.

The contracting consideration requires that  $\gamma_g < \gamma_b$ . If "bad news" is not disclosed promptly, the managers are running the risks of breaching the contract. This effect runs through into  $U_d^*$  as a disincentive to accelerate recognition of "good news" and suppress that of "bad news". Similarly, the shareholder litigation explanation suggests that litigation risks are higher is the earnings are "overstated" rather than "understated". This leads to  $\gamma_g < \gamma_b$  as well. Last but not least, by taxation explanation, in order to minimize the current value of total tax burden, it is more to the firm's interest to delay earnings into future periods, thus delaying the taxes payment.

$U_i^*$  contains the payoff to the managers in the longer term, such as reputation. In this regard, the contracting and litigation consideration would also give rise to managers' career concern. Managers would have less incentive to manipulate earnings overly aggressive, even if the corresponding consequences would not occur until after a while, as potential litigation resulted from this would adversely affect managers' reputation.

Graham et al. (2005) survey corporate CFOs and find evidence that majority of the responding managers strongly agree with the arguments that disclosing bad news faster enhances reputation for transparent and accurate reporting and reduces out risk of potential lawsuits (76.8%). They also show that this agreement is robust to firm characteristics such as size, P/E ratios, sales growth, debt-to-asset ratio, credit ratings, being in tech industry or not.

While I argue that the overall timeliness is a desirable quality for financial reporting both for firm's sake and for managers' interests, timeliness likely comes at the expense of relevance. With timeliness increasing, economic events are recognized more hastily in contingent settings, and/or are recognized in capitalized volume rather than in installment. These are likely to reduce the relevance of financial reporting. Denote relevance as  $\lambda = \lambda(\gamma_g, \gamma_n, \gamma_b)$ , which decreases in its arguments. As accounting quality is increasing in both relevance and timeliness, whereas relevance and timeliness are negatively related. Therefore, building in the accounting quality into managers' utility function, the maximization problem below would have an interior solution, by choosing timeliness coefficient to balance out the tradeoff between timeliness and relevance.

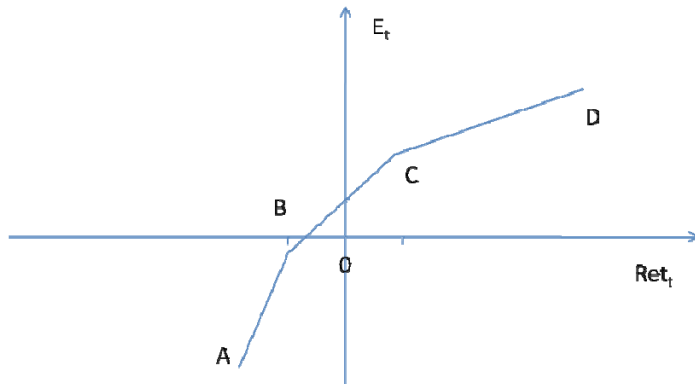
$$(\gamma_g, \gamma_n, \gamma_b) = \underset{\gamma_g, \gamma_n, \gamma_b}{\operatorname{argmax}} (U_d^* + U_i^*) \text{ s. t. } \bar{\gamma} = \alpha_g \gamma_g + \alpha_n \gamma_n + \alpha_b \gamma_b$$

## Appendix B. Variable definitions

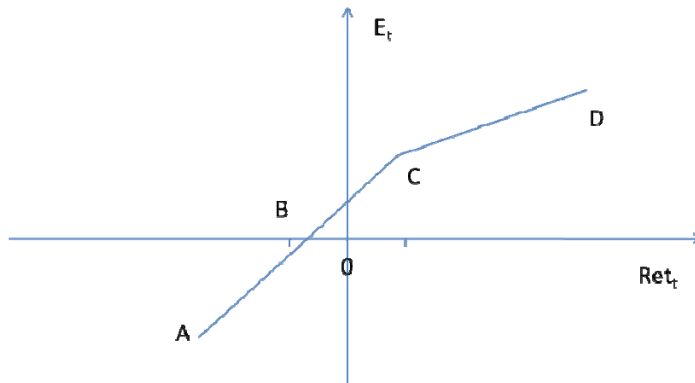
Variable	Measurement
$E_t$	Annual EPS basic excluding extraordinary items and discontinued operations (Compustat Data #58) deflated by $P_{t-1}$
$Ret_t$	Annual total stock returns measured by 12-month compounding returns ending 3 months after fiscal year end
$P_t$	Closing stock price at time t
$Pos_t$	A dummy variable equal to 1 if $Ret_t$ is greater than a threshold specified in the paper, and 0 otherwise
$Neg_t$	A dummy variable equal to 1 if $Ret_t$ is less than a threshold specified in the paper, and 0 otherwise

Figure 1 Asymmetric timeliness of “bad news” and “good news” recognition

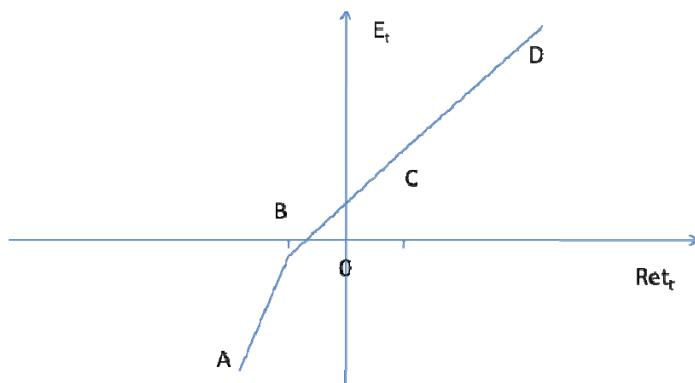
Panel A: Asymmetric timeliness achieved via both “bad news” and “good news” recognition



Panel B: Asymmetric timeliness achieved via only “good news” recognition



Panel C: Asymmetric timeliness achieved via only “bad news” recognition



Annual stock returns on horizontal axis, contemporaneous annual earnings on vertical axis. Variable definitions are in Appendix B.

TABLE 1 Descriptive Statistics and Correlation Coefficients								
Panel A: descriptive statistics								
	Mean	st. dev.	10%	25%	50%	75%	90%	% negative
E	0.0000	0.1476	-0.1052	-0.0276	0.0179	0.0612	0.1112	0.3865
Ret	-0.0253	0.4069	-0.4832	-0.2796	-0.0061	0.1738	0.4511	0.5724
Panel B: correlation coefficients								
	E	Ret	Neg					
E	1.0000	0.2553 <i>0.0033</i>	-0.2064 <i>0.0033</i>					
Ret	0.3504 <i>0.0031</i>	1.0000	-0.7416 <i>0.0016</i>					
Neg	-0.2813 <i>0.0032</i>	-0.8569 <i>0.0009</i>	1.0000					

N=79,023

All variables in Panel A are measured per share, and deflated by beginning-of-year stock prices. All variables are winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentile.

Pearson (Spearman) correlation coefficients are reported above (below) the diagonal of Panel B, with standard errors below the correlation coefficient estimates.

#### Variables definitions

E = Annual basic EPS, excluding extraordinary items (Compustat item #58), deflated by beginning stock prices

Ret = Buy-and-hold annual returns calculated to end three months after the fiscal year-end, adjusted by subtracting the size decile portfolio returns. Size is determined at the beginning of the fiscal year by market capitalization

Neg = Dummy variables which equal 1 when Ret is negative and 0 otherwise

TABEL 2 Replicate Basu Model

	Basu's Sample		New Sample					
	(1963 - 1990)		(1963 - 1990)		(1990 - 2006)		(1963 - 2006)	
	Coefficients	<i>t-stats</i>	Coefficients	<i>t-stats</i>	Coefficients	<i>t-stats</i>	Coefficients	<i>t-stats</i>
Constant	0.030	22.62	0.032	25.71	0.031	16.69	0.033	31.26
Ret	0.047	11.03	0.025	8.66	-0.009	-2.59	0.007	3.22
Neg	0.014	6.07	0.007	3.98	0.013	4.63	0.006	3.62
Ret*Neg	0.256	27.14	0.235	47.59	0.213	34.48	0.219	57.09
N	43,321		48,677		30,346		79,023	
Adj-R <sup>2</sup>	0.1248		0.1382		0.0726		0.1028	

Pooled OLS regressions for different sample periods; Basu's results for comparison

Regression model:

$$\frac{X_t}{P_{t-1}} = \beta_0 + \beta_1 Ret_t + \beta_2 Neg_t + \beta_3 Ret_t * Neg_t + \varepsilon_t$$

$Neg_t$  is set to 1 if  $Ret_t < 0$  and 0 otherwise.

Other variable definitions in Appendix B

TABLE 3 Testing H1: accelerating loss recognition vs. delaying gains recognition

Panel A Distribution of dummy variables						
	Neg	Neutral	Pos	Total		
1%	44,291	1,863	32,869	79,023		
	<i>56.05%</i>	<i>2.36%</i>	<i>41.59%</i>	<i>100.00%</i>		
5%	40,501	9,178	29,344	79,023		
	<i>51.25%</i>	<i>11.61%</i>	<i>37.13%</i>	<i>100.00%</i>		
10%	35,725	18,196	25,102	79,023		
	<i>45.21%</i>	<i>23.03%</i>	<i>31.77%</i>	<i>100.00%</i>		

Panel B Regression results						
	1%		5%		10%	
	Coefficients	<i>t-stats</i>	Coefficients	<i>t-stats</i>	Coefficients	<i>t-stats</i>
Constant	0.022	<i>6.93</i>	0.023	<i>15.42</i>	0.022	<i>20.79</i>
Ret	-0.094	<i>-0.17</i>	0.114	<i>2.25</i>	0.088	<i>4.88</i>
Neg	0.017	<i>4.87</i>	0.021	<i>10.70</i>	0.027	<i>14.71</i>
Pos	0.011	<i>3.28</i>	0.013	<i>6.85</i>	0.017	<i>9.99</i>
Ret*Neg	0.322	<i>0.58</i>	0.123	<i>2.42</i>	0.160	<i>8.63</i>
Ret*Pos	0.100	<i>0.18</i>	-0.111	<i>-2.18</i>	-0.089	<i>-4.88</i>
-----						
N	79,023		79,023		79,023	
Adj-R <sup>2</sup>	0.1029		0.1036		0.1044	

Pooled OLS regressions for different “neutral news” ranges, (-1%, +1%), (-5%, +5%) and (-10%, +10%) respectively

Regression model:

$$\frac{X_t}{P_{t-1}} = \beta_0 + \beta_1 Ret_t + \beta_2 Neg_t + \beta_3 Pos_t + \beta_4 Ret_t * Neg_t + \beta_5 Ret_t * Pos_t + \varepsilon_t$$

Variable definitions in Appendix B

Panel A reports the distribution of the observations that fall into “good news”, “bad news” and “neutral news” categories. Percentages in italics are reported under the number of observations in each category for each of the three specifications.

Panel B reports regression results.

TABLE 4 Testing H2: Timeliness as a consideration in financial reporting

Panel A: 5% Window									
	mean	st. dev.	t-stat	mean t-stat	10%	25%	50%	75%	90%
Constant	-0.0020	0.0230	-0.0852	0.0928	-0.0492	-0.0019	0.0317	0.0627	0.1066
Ret	1.1198	0.8848	1.2656	0.8588	-2.6403	-0.8093	0.0840	0.9532	2.7097
Neg	0.0334	0.0230	1.4483	-0.0296	-0.0933	-0.0379	-0.0010	0.0384	0.1027
Pos	0.0356	0.0236	1.5051	0.0639	-0.1067	-0.0393	0.0034	0.0441	0.1150
Ret*Neg	-1.0079	0.8851	-1.1388	-0.0393	-2.5099	-0.8357	0.0071	0.9245	2.7969
Ret*Pos	-1.0847	0.8851	-1.2254	-0.0583	-2.7015	-0.9298	-0.0331	0.8608	2.8226
			estimate	p-value					
corr(Ret, Ret*Pos)		Pearson	-0.99991	<0.0001					
		Spearman	-0.98399	<0.0001					
corr(Ret, Ret*Neg)		Pearson	-0.99997	<0.0001					
		Spearman	-0.98721	<0.0001					
N=	1807								

Panel B: 10% Window									
	mean	st. dev.	t-stat	mean t-stat	10%	25%	50%	75%	90%
Constant	0.0212	0.0103	2.0527	1.0607	-0.0458	0.0005	0.0284	0.0567	0.0900
Ret	0.0338	0.1663	0.2032	0.1583	-0.9106	-0.2573	0.0637	0.3853	1.0343
Neg	0.0064	0.0106	0.6035	-0.0178	-0.1057	-0.0413	-0.0028	0.0417	0.1196
Pos	-0.0078	0.0311	-0.2497	0.1133	-0.1114	-0.0402	0.0055	0.0540	0.1280
Ret*Neg	0.0758	0.1665	0.4551	-0.0208	-0.9430	-0.3473	0.0037	0.3987	1.1375
Ret*Pos	0.0146	0.1793	0.0812	-0.0755	-1.0882	-0.3901	-0.0309	0.3262	1.0833
			estimate	p-value					
corr(Ret, Ret*Pos)		Pearson	-0.99991	<0.0001					
		Spearman	-0.98399	<0.0001					
corr(Ret, Ret*Neg)		Pearson	-0.99997	<0.0001					
		Spearman	-0.98721	<0.0001					
N=	2490								

Firm level OLS regressions for different “neutral news” ranges (-5%, +5%) and (-10%, +10%) respectively

Regression model:

$$\frac{X_t}{P_{t-1}} = \beta_0 + \beta_1 Ret_t + \beta_2 Neg_t + \beta_3 Pos_t + \beta_4 Ret_t * Neg_t + \beta_5 Ret_t * Pos_t + \varepsilon_t$$

Mean, stand deviation and t-stats are calculated from the cross sectional estimators. Mean t-stats are the means of t-statistics in regressions for each firm. The distributions of parameter estimations are also reported. Firms are required to have at least 10 years observation to be included in the regression and are winsorized by the ratio of Pos/(Pos+Neg) to be within (0.15, 0.85).

Variable definitions in Appendix B