AN EXAMINATION OF THE THEORETICAL LINKS BETWEEN SYMMETRIC TIMELINESS, ASYMMETRIC TIMELINESS, AND CONDITIONAL CONSERVATISM

by

GEORGE W. RUCH

GARY K. TAYLOR, COMMITTEE CHAIR
SUBHA CHAKRABORTI
JUNSOO LEE
THOMAS J. LOPEZ
AUSTIN L. REITENGA

A DISSERTATION

Submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy
in the Department of Accounting
in the Graduate School of
The University of Alabama

TUSCALOOSA, ALABAMA

2015

ABSTRACT

Prior research has considered the ability of earnings recognition tendencies to proxy for conditional conservatism, but has yet to fully explore the validity of the theoretical link between these tendencies and conditional conservatism. This study analytically and empirically examines the extent to which two common earnings recognition tendencies, symmetric timeliness and asymmetric timeliness, are consistent with the theoretical definition of conditional conservatism. First, I demonstrate how symmetric and asymmetric timeliness contribute to the understatement of accounting net asset value. Second, I evaluate the extent to which symmetric and asymmetric timeliness are observable through their respective empirical estimates. I find that the extent to which symmetric timeliness and asymmetric timeliness meet the theoretical definition of conditional conservatism is dependent on the relative accumulations of economic gains and losses. Additionally, I find that asymmetric timeliness is only partially observable within the Basu (1997) Asymmetric Timeliness measure.

DEDICATION

To Mom and Dad

LIST OF ABBREVIATIONS AND SYMBOLS

AT	Asymmetric Timeliness
BV	Book Value of Equity
CAV	Conservative Accounting Value
CRSP	The Center for Research in Security Prices
F-Stat	Computed Value of the f-statistic
GAAP	Generally Accepted Accounting Principles
MV	Market Value of Equity
P-Value	Probability of Test Statistic
R&D	Research and Development
ST	Symmetric Timeliness
T-Stat	Computed value of the t-statistic
ω_A	Asymmetric Timeliness Parameter
ω_S	Symmetric Timeliness Parameter

ACKNOWLEDGMENTS

I would like to first acknowledge my dissertation chair and advisor, Gary Taylor, for all of his support, guidance, and encouragement throughout the development of this dissertation and throughout my time in the PhD program at the University of Alabama. I am also grateful to my dissertation committee members for their support and helpful comments: Subha Chakraborti, Junsoo Lee, Tom Lopez, and Austin Reitenga. Additionally, I would like to collectively thank the faculty of the Culverhouse School of Accountancy for fostering a supportive and encouraging environment in which to work. I would also like to thank Bradley Bennett, Kelsey Brasel, Ben Commerford, Megan Cosgrove, Mary Hill, Curtis Mullis, Matt Rogers, Trevor Sorenson and all of the other doctoral students with whom I have shared this experience for their moral support, friendship, and countless hours of debate and discussion. Lastly, I gratefully acknowledge my parents, Martha and John Ruch, my sisters, Margaret and Annie Ruch, and all of my friends in California and Alabama for their support and encouragement in undertaking this journey.

CONTENTS

ABSTRACT ii

DEDICATION iii

LIST OF ABBREVIATIONS AND SYMBOLS iv

ACKNOWLEDGMENTS v

LIST OF TABLES viii

I INTRODUCTION 1

II BACKGROUND AND RELATED LITERATURE 9

Defining Conditional Conservatism 9

Measuring Conditional Conservatism 13

Causes and Consequences of Conditional Conservatism 19

III A MODEL OF CONDITIONAL CONSERVATISM 23

Conditional Conservatism Yields a Conservative Bias 23

The Empirical Observability of Symmetric and Asymmetric Timeliness 30

IV HYPOTHESIS DEVELOPMENT 36

V RESEARCH DESIGN 39

Tests of Hypotheses 1 and 2 39

Test of Hypothesis 3 41

Test of Hypothesis 4 42

VI SAMPLE DATA AND RESULTS 44

Sample Data 44

Results of Hypothesis Tests 51

VII CONCLUDING REMARKS..76

REFERENCES 78

LIST OF TABLES

1.1 Descriptive Statistics and Pairwise Correlations (1-Year Accumulation Sample)...........47

1.2 Descriptive Statistics and Pairwise Correlations (3-Year Accumulation Sample)...........48

1.3 Descriptive Statistics and Pairwise Correlations (5-Year Accumulation Sample)...........49

1.4 Descriptive Statistics and Pairwise Correlations (7-Year Accumulation Sample)...........50

1.5 Frequency of Conservative Accounting Value Increases and Decreases 51

2.1 Estimates of Symmetric Timeliness and Asymmetric Timeliness for Increases in Conservative Accounting Value (1-year Accumulation) 53

2.2 Estimates of Symmetric Timeliness and Asymmetric Timeliness for Increases in Conservative Accounting Value (3-year Accumulation) 55

2.3 Estimates of Symmetric Timeliness and Asymmetric Timeliness for Increases in Conservative Accounting Value (5-year Accumulation) 57

2.4 Estimates of Symmetric Timeliness and Asymmetric Timeliness for Increases in Conservative Accounting Value (7-year Accumulation) 59

3.1 Estimates of Symmetric Timeliness and Asymmetric Timeliness for Decreases in Conservative Accounting Value (1-year Accumulation) 62

3.2 Estimates of Symmetric Timeliness and Asymmetric Timeliness for Decreases in Conservative Accounting Value (3-year Accumulation) 64

3.3 Estimates of Symmetric Timeliness and Asymmetric Timeliness for Decreases in Conservative Accounting Value (5-year Accumulation) 66

3.4 Estimates of Symmetric Timeliness and Asymmetric Timeliness for Decreases in Conservative Accounting Value (7-year Accumulation) 68

4 Descriptive Statistics (Observability of Asymmetric Timeliness Sample) 71

5 Estimates of Asymmetric Timeliness with Volatility and Conservative Accounting Value 72

6.1 Estimates of Asymmetric Timeliness and Leverage w/o Conservative Accounting Value 74

6.2 Estimates of Asymmetric Timeliness and Leverage w/ Conservative Accounting Value 75

CHAPTER I

INTRODUCTION

This study examines the relationship between the timeliness with which economic news events are recognized in accounting earnings and conditional conservatism.[1] In general, the timeliness of economic news recognition is determined by two recognition tendencies: (1) symmetric timeliness ("ST"), which determines the timeliness of both good news and bad news recognition and (2) asymmetric timeliness ("AT"), which determines the timeliness of bad news recognition, but not that of good news recognition. I examine how each of these recognition tendencies contribute to a conservative bias in accounting value, or in other words, are theoretically consistent with conditional conservatism. While prior research has exclusively focused on AT as the theoretical representation of conditional conservatism, I provide a more comprehensive model of conditional conservatism that considers *both* ST and AT. Specifically, I demonstrate that ST, in addition to AT, contributes to a conservative bias in accounting value, and more importantly, that the manner in which ST and AT contribute to the conservative bias differs between good news and bad news contexts.

ST and AT represent accounting recognition tendencies, arising from the mandatory and/or discretionary applications of accounting standards, that determine the portion of economic news events recognized in earnings (i.e., recognition timeliness). ST determines both the timeliness with which good news and bad news are recognized. AT determines the timeliness

---

[1] Economic news events represent *ex ante* unexpected changes in the market value of equity, resulting from changes in expectations about future cash flows or risk. News events that result in economic good news (bad news) are referred to collectively as "good news" ("bad news"). The "timeliness" of the recognition of a news event is the portion of that news event recognized in earnings during the period in which it occurs.

with which bad news is recognized, but not the timeliness with which good news is recognized. Taken together, ST determines the timeliness of good news recognition (i.e., good news timeliness), whereas both ST and AT determine the timeliness of bad news recognition (i.e., bad news timeliness).

To illustrate how ST and AT affect the timely recognition of economic news events, consider a firm that experiences a positive shock to sales of one of its products (i.e., good news). The shock to sales results in an increase to the market value of the firm related to the increase in current-period sales and the potential increase in future sales. However, Generally Accepted Accounting Principles (GAAP) permits only the contemporaneous recognition of the increase in current-period sales. In this instance, ST is represented by the portion of the increase in market value related to the increase in current-period sales.

Contrast this with a situation where there is a negative shock to sales of the same product (i.e., bad news). Similar to the good news event, the decrease to market value results from decreases in current-period and future sales. In addition to recognizing the decrease in current-period sales, however, GAAP requires the recognition of a portion of the decrease in future sales in the form of a write-down to the product inventory.[2] In this instance, ST is represented by the portion of the decrease in market value related to current sales, and AT is represented by the portion of the decrease in market value related to future sales.

In this study, I interpret ST and AT to be theoretically consistent with conditional conservatism if and when they contribute to a conservative bias in accounting book value. Prior research only considers the role of AT, and not ST, in the conservative bias in book value, and therefore, considers AT to be theoretically synonymous with conditional conservatism. Empirical

[2] This assumes that the negative shock to sales is of sufficient magnitude to indicate that the market value of the inventory is less than the unadjusted book value of the inventory.

evidence, however, raises questions about the link between AT and conditional conservatism. Most notably, prior research has observed empirical estimates of AT to be *negatively* associated with the conservative bias in book value, contrary to the theorized association.[3] While an extensive body of research has used this counterintuitive association to motivate questions about the validity of empirical estimates of AT, [4] I contend that this association raises questions about the validity of the theoretical model of conditional conservatism put forth in prior research.

At first glance, it appears logical that the asymmetric treatment of good news and bad news (i.e., AT) contributes to a conservative bias in book value, and that the symmetric treatment of good news and bad news (i.e., ST) would have no effect on this conservative bias. AT triggers accounting recognition of bad news, but not good news. Non-recognition of good news causes economic value to increase without an increase to accounting book value, whereas the recognition of bad news causes both economic value and book value to decrease. The symmetric recognition or non-recognition of good news and bad news, however, would offset one another, thereby having no effect on the difference between economic value and accounting book value. However, two important points should be noted about these characterizations of ST and AT.

First, in spite of an implicit assumption to the contrary, AT actually has no effect on the timeliness with which good news is recognized. Rather, AT partially determines the timeliness with which bad news is recognized. In comparing firms with different levels of AT, one would be able to infer differences in the timeliness with which the firms recognize bad news, but unable to infer differences in the timeliness with which the firms recognize good news. As such, making

[3] Studies that document this association include Beaver and Ryan (2005), Pae et al. (2005), Roychowdhury and Watts (2007), and Givoly et al. (2007). The market-to-book ratio is a common empirical proxy for the downward bias in accounting value. The most common empirical measure of asymmetric timeliness is the Basu (1997) Asymmetric Timeliness measure.

[4] Studies that have examined the ability of AT estimates to measure conditional conservatism include Givoly et al. (2007), Dietrich et al. (2007), Roychowdhury and Watts (2007), Patatoukas and Thomas (2011; 2014), Ball et al. (2013a; 2013b), and Caskey and Peterson (2014).

inferences about AT is only partially sufficient for making inferences about conditional conservatism.

Second, the assumed effect of ST on the conservative bias is reliant on the assumption that the accumulated magnitudes of good news and bad news are equal, which, I contend, is a highly restrictive and likely unrealistic assumption. That is, firms typically experience unequal mixes of good news and bad news. For example, there is a survivorship bias in the empirical data used in accounting research, which implies that, on average, firms that have accumulated conservatively biased book values are likely to have done so primarily through the deferred recognition of good news.[5] Additionally, researchers may observe firms during economic expansions and contractions, which may result in imbalances in the magnitudes of good news and bad news. Accordingly, it is important to consider different contexts with respect to the occurrence of good news and bad news when defining and measuring conditional conservatism.

To illustrate how the relative frequencies of good news and bad news affect the association between ST/AT and the conservative bias in book value, I provide a model of the relationship between market value of equity and book value of equity. The model shows that ST contributes to the conservative bias in book value when the accumulated magnitudes of good news and bad news are unequal. Specifically, low (high) ST contributes to a conservative bias when the accumulated magnitude of good news (bad news) exceeds that of bad news (good news), but not when the accumulated magnitudes of good news and bad news are equal. The intuition behind this relationship is that deferred recognition of good news increases the conservative bias, whereas the timely recognition of bad news maintains the conservative bias. For example, A firm that experiences an excess of good news will see *greater increases* to the conservative bias in book value as its degree of ST *decreases*, whereas a firm that experiences an

[5] See Ball and Watts (1979) and Kothari (2001).

excess of bad news will see *smaller decreases* to its conservative bias in accounting value as its degree of ST *increases*.

The model shows that high AT contributes to a conservative bias in book value when the accumulated magnitudes of good news and bad news are equal, as assumed in the model of conditional conservatism offered in prior research. Additionally, AT contributes to the conservative bias when the accumulated magnitude of bad news exceeds that of good news, but not when the accumulated magnitude of good news exceeds that of bad news. Because AT only triggers accounting recognition in the presence of bad news, it does not have an effect on the conservative bias in the presence of good news. Overall, the model suggests the low ST is consistent with conditional conservatism in predominantly good news environments, high AT is consistent with conditional conservatism in balanced news environments, and both high ST and AT are consistent with conditional conservatism in predominantly bad news environments.

In the second phase of the study, I perform an econometric analysis of the Basu (1997) Asymmetric Timeliness measure ("AT measure") to examine the empirical observability of ST and AT. In general, the AT measure allows researchers to make inferences about ST and AT by measuring the accounting "response" to economic news events, which is accomplished primarily through a piece-wise linear earnings-return regression. Using regression coefficients to estimate ST and AT implies that ST and AT can be estimated simply by observing the proportion of a news event captured in accounting earnings. In this study, I demonstrate that observing the proportion of news events captured in earnings is sufficient for estimating ST, but insufficient for estimating AT.

AT is only observable when bad news events are of sufficient magnitude to induce a write-down of assets. For a write-down to be recognized, an economic loss resulting from a bad news event must be large enough to cause the market value of an asset to fall below its recognized book value. The difference between the market value and book value of the asset immediately prior to the bad news event preempts the recognition of a write-down and is referred to as the "write-down buffer". Even if this condition is met, however, the value of the write-down recognized is equal to the amount by which the loss exceeds the write-down buffer, and not simply the total value of the loss.[6] Said another way, the write-down buffer and the presence and magnitude of the loss, in addition to AT, determine the presence and magnitude of write-down recognition. Consequently, it is unclear as to whether the proportion of a loss recognized as a write-down (i.e., the AT regression coefficient) is indicative of the level of AT or the magnitudes of the write-down buffer and the loss.

I test the assertions of the market value model and the econometric analysis using empirically observable financial statement and stock return data. I estimate ST and AT using a modified version of the Basu (1997) AT measure and sort firms into quintiles of increases and decreases in the conservative bias in book value over 1, 3, 5, and 7-year periods. Consistent with expectations, I find significant evidence that estimates of ST are negatively associated with the magnitude of both increases and decreases in the conservative bias, and that estimates of AT are negatively associated with the magnitude of decreases in the conservative bias. These findings provide support for the analytical assertions that low ST is theoretically consistent with conditional conservatism when the accumulation of good news exceeds that of bad news, and that high ST and AT are theoretically consistent with conditional conservatism when the accumulation of bad news exceeds that of good news.

[6] As a simple example, consider a firm with an historical cost asset with a market value of 10 and a book value of 7. If the firm experiences a loss to the asset equal to 5, the write-down recognized would be equal to 2. The write-down is equal to the difference between the total loss of 5 and the write-down buffer of 3 (i.e., market value of 10 less book value of 7).

The second set of empirical tests examines the assertions of the econometric analysis of the AT measure. The econometric analysis predicts that estimates of AT are associated with factors other than AT: (1) the magnitude of bad news, and (2) the write-down buffer. I use the volatility of stock returns to proxy for the magnitude of bad news and the beginning balance of the difference between market value of equity and book value of equity to proxy for the size of the write-down buffer. Consistent with expectations, I find that estimates of AT are increasing in the volatility of returns and decreasing in the estimate of the write-down buffer. These findings support the notion that estimates of AT proxy for the presence and magnitude of write-downs rather than AT.

As a final empirical test, I demonstrate a potential limitation in using estimates of AT to proxy for the theoretical construct of conditional conservatism. Prior research has noted a positive association between estimates of AT and leverage (LaFond and Watts, 2008; Khan and Watts, 2009), consistent with the contracting theory of conservatism (Watts, 2003a). In other words, this association is interpreted to be a manifestation of the theoretical association between conditional conservatism and debt contracting incentives. An alternative explanation for this association, however, is that high leverage firms are more likely to record write-downs because they have smaller write-down buffers. Theoretically, leverage is likely to be negatively associated with the magnitude of the write-down buffer, a component of market value that is positively associated with the denominator of the leverage ratio. After controlling for the write-down buffer, I am unable to find evidence of a positive association between leverage and estimates of asymmetric timeliness. While this finding is not meant to challenge the theoretical connection between conditional conservatism and debt contracting incentives, it does raise questions as to whether the observed association between leverage and estimates of AT is indicative of such a theoretical link.

This study contributes to the literature by refining the way in which conditional conservatism is defined and operationalized. The results demonstrate that both ST and AT are theoretically consistent with conditional conservatism, and that the relative frequencies of good news and bad news determine the manner in which ST and AT are consistent with conditional conservatism. Contrary to prior research, AT is not theoretically equivalent to conditional conservatism, and therefore, should not be exclusively relied upon to operationalize conditional conservatism. Additionally, ST is observable in empirical estimates in all contexts, whereas, AT is only observable when bad news events are of sufficient magnitude to induce write-downs. Researchers should consider the relative frequencies of good news and bad news over the time period in which they are measuring conditional conservatism to determine which timeliness tendency best operationalizes conditional conservatism. Additionally, researchers should take care not to mistake the lack of observability of AT for a lack of conditional conservatism.

The remainder of this study is organized as follows: Chapter II provides background and summarizes the related literature. Chapter III provides the analyses on the theoretical links between ST, AT, and conditional conservatism. Chapter IV provides hypothesis development. Chapter V details the design of the empirical tests. Chapter VI describes the sample data and reports empirical results. Chapter VII provides concluding remarks.

CHAPTER II

BACKGROUND AND RELATED LITERATURE

Defining Conditional Conservatism

Conditional conservatism represents a specific form of accounting conservatism characterized by accounting recognition policies or tendencies related to economic news events (Ball and Shivakumar, 2005; Beaver and Ryan, 2005; Ryan, 2006). Because conditional conservatism is a specific form of accounting conservatism, the definition of conditional conservatism must be derived from the definition of accounting conservatism. Prior research has generally defined accounting conservatism from two different perspectives. From one perspective, accounting conservatism is defined as the state of accounting numbers at a particular point in time. Specifically, accounting is deemed to be "conservative" if the net asset value reported on the balance sheet ("book value") is understated relative to the economic or market value of net assets ("market value") (Feltham and Ohlson, 1995; Ahmed et al., 2000; Easton and Pae, 2004).

From another perspective, accounting conservatism is defined in terms of specific accounting policies or tendencies. Prior research has identified many distinct accounting policies and tendencies that fall under the umbrella of accounting conservatism. These policies and tendencies include the asymmetric recognition standards for gains and losses (Basu, 1997; Watts, 2003a), the immediate expensing of research & development costs (Penman and Zhang, 2002; Monahan, 2005), accelerated depreciation methods (Beaver and Ryan, 2000), LIFO inventory accounting (Beaver and Ryan, 2000; Penman and Zhang, 2002), and over-accrued allowance or reserve balances (Jackson and Liu, 2010). The common link between all of these accounting tendencies is that they are assumed to produce book values that are understated relative to market values. Consequently, a comprehensive definition of accounting conservatism that links these two perspectives can be expressed as follows: accounting conservatism is accounting policies or tendencies that result in the accumulated understatement of book values relative to market values. In this study, I refer to the accounting tendencies as "conservatism" and the accumulated understatement of accounting net asset value as "conservative bias."

Conservatism research has generally grouped conservative accounting tendencies into two broad groups: (1) conditional conservatism and (2) unconditional conservatism (Ball and Shivakumar, 2005; Beaver and Ryan, 2005). Conditional conservatism describes conservative accounting tendencies that are dependent on economic news events to affect book values, whereas unconditional conservatism describes accounting tendencies that are not dependent on economic news events to affect book values. Accounting tendencies that are grouped into conditional conservatism include the tendency to record bad news in a timelier manner than good news. Accounting tendencies that are grouped into unconditional conservatism include the aforementioned R&D expense, accelerated depreciation, and LIFO inventory accounting.

To derive a definition of conditional conservatism from the general definition of accounting conservatism that incorporates both of the aforementioned perspectives of accounting conservatism, I define conditional conservatism as accounting policies or tendencies related to the recognition of economic news events that result in the accumulated understatement of book value relative to market value. In other words, conditional conservatism is news recognition tendencies that result in the accumulation of a conservative bias.

News recognition tendencies are characterized in terms of the temporal relationship between the accounting recognition of a news event in earnings and the occurrence of the news event (i.e., recognition timeliness). Prior research has generally noted two distinct timeliness tendencies: (1) good news timeliness and (2) bad news timeliness (e.g., Roychowdhury and Watts, 2007). Simply put, good (bad) news timeliness represents the proportion of a news event that is contemporaneously recognized when the news event represents an economic gain (loss). Conditional conservatism is characterized by the deferral of good news recognition to future accounting periods (i.e., deferred gain recognition) and/or the timely recognition of bad news in the current period (i.e., timely loss recognition). That is, conditional conservatism is low good news timeliness and/or high bad news timeliness. To encompass both low good news timeliness and high bad news timeliness in defining and measuring conditional conservatism, researchers commonly observe the difference between bad news timeliness and good news timeliness, which is referred to as "asymmetric timeliness" (Basu, 1997).

From this perspective, good news timeliness and bad news timeliness are separate recognition tendencies and AT merely captures the relationship between the two tendencies. In this study, however, I take a slightly different approach in characterizing earnings recognition tendencies. The portion of a news event recognized in earnings (i.e., recognition timeliness) is comprised of two components. The first component contemporaneously recognizes a portion of a news event in earnings regardless of whether the news event is good or bad. For example, a news event that results in a change to current-period cash flows is recognized in current-period earnings whether or not that news is good or bad. I refer to this component of recognition timeliness as "symmetric timeliness" or "ST".

The second component contemporaneously recognizes a portion of a news event in earnings when news is bad, but not when news is good. For example, a news event that results in an increase to the market value of inventory is not recognized in current-period earnings, whereas a news event that results in a decrease to the market value of inventory may be recognized in current-period earnings if the decrease in market value is large enough to induce a write-down. I refer to this component of recognition timeliness as “asymmetric timeliness” or “AT.” Relating ST and AT to good news and bad news timeliness, good news timeliness is determined by ST, whereas, bad news timeliness is determined by the sum of ST and AT.

Prior research defines conditional conservatism synonymously with AT. (Basu, 1997; Ball and Shivakumar, 2005; Ryan, 2006). At first glance, the definition of conditional conservatism offered in prior research seems consistent with the definition offered in this study, as it is assumed that AT results in a conservative bias to accounting book value (Watts, 2003a; Roychowdhury and Watts, 2007). Contrary to the definition of conditional conservatism, however, prior research has observed a *negative* association between empirical estimates of AT and the conservative bias (Beaver and Ryan, 2005; Roydchowdhury and Watts, 2007). While a large body of literature has investigated whether this negative association is indicative of shortcomings in the empirical measure of AT (e.g., Givoly et al., 2007; Roychowdhury and Watts, 2007), I examine whether this negative association is indicative of a misalignment between AT and conditional conservatism.

Contrary to the counterintuitive association between estimates of AT and the conservative bias, Roychowdhury and Watts (2007) find a negative association between estimates of ST and the conservative bias.[7] This negative association suggests that there may be a theoretical link between ST and conditional conservatism. However, prior research has yet to

[7] ST is referred to as good news timeliness in Roychowdhury and Watts (2007).

address the theoretical link between ST and conditional conservatism. Consistent with the above definition of conditional conservatism, ST and AT can be considered accounting tendencies that are representative of conditional conservatism if they contribute to the accumulation of a conservative bias in book value.

Measuring Conditional Conservatism

There is a large body of research that attempts to empirically measure accounting conservatism, and specifically, conditional conservatism.[8] The most prominent and influential empirical measure of conditional conservatism is the Basu (1997) Asymmetric Timeliness measure ("AT measure"). According to Google Scholar, Basu (1997) has been cited 2,788 times as of February 2015. Additionally, a search on the Business Source Premier database reveals 112 publications in peer-reviewed scholarly journals with the phrases "conditional conservatism", "asymmetric timeliness", or "differential timeliness" in the title or abstract.

The AT measure captures the association between annual earnings and returns for both positive and negative returns. Positive (negative) returns serve as a proxy for good (bad) news, and the difference between the bad news and good news associations with earnings (i.e., the difference between bad news timeliness and good news timeliness) represents the measure of asymmetric timeliness, and in turn, conditional conservatism. The AT measure is employed by estimating a regression of earnings on returns with an indicator variable interaction for negative returns:

$$X_{i,t}/P_{i,t-1} = \alpha_0 + \alpha_1 D_{it} + \beta_0 R_{it} + \beta_1 D_{it} * R_{it} + \varepsilon_{it} \quad (1)$$

Where:
X_{it} = Earnings per share for firm *i* in year *t*.

[8] See Watts (2003b) and Wang et al. (2009) for a review of conservatism measures commonly used in accounting research.

P_{it} = Stock price per share for firm *i* at the end of year *t-1*.
R_{it} = Annual buy-and-hold stock return for firm *i* in year *t*.
D_{it} = Indicator variable equal to 1 if return for firm *i* in year *t* is negative; 0 otherwise.

In Equation (1), the β_0 coefficient equivalently serves as the estimate of ST and good news timeliness, and the β_1 coefficient serves as the estimate of AT. The sum of the β_0 and β_1 coefficients serves as the estimate of bad news timeliness (i.e., the sum of ST and AT). In effect, the coefficient estimates serve as estimates of the proportion of the annual return (i.e., annual news) that is contemporaneously recognized in accounting earnings. Asymmetric recognition causes the proportion of negative returns (i.e., bad news) recognized contemporaneously in accounting earnings to exceed that of positive returns (i.e., good news).

Since its introduction in 1997, the AT measure has been and continues to be extensively used in accounting research in part because of its intuitive appeal, ease of estimation, and tendency to produce empirical observations that are largely consistent with conservatism theory. However, the measure has also faced extensive criticism. Studies that criticize or identify shortcomings of the AT measure range from recommending corrections or modifications to the measure (e.g., Roychowdhury and Watts, 2007; Ball et al., 2013a; Caskey and Peterson, 2014) to recommending the measure cease to be used in accounting research (e.g., Givoly et al., 2007, Dietrich et al., 2007; Patatoukas and Thomas, 2011).

Givoly et al. (2007) identify several shortcomings in the AT measure. First, they note that the AT measure does not account for the aggregation of good and bad news events within an accounting period. Second, they note that the AT measure does not account for the effect of economic events that are not eligible for accounting recognition under conventional accounting rules. Third, they note that firm-level disclosure policies, which are unrelated to the theoretical degree of reporting conservatism, can affect AT estimates. Finally, they provide evidence that the AT measure produces estimates of AT that are theoretically inconsistent with accounting conservatism, including the negative association between AT estimates and the market-to-book ratio. They conclude that exclusive reliance on the AT measure to capture conditional conservatism can produce erroneous conclusions.

Dietrich et al. (2007) identifies econometric shortcomings of the AT measure. Under the notion that the AT regression represents a "reverse regression", they demonstrate that the AT measure produces bias in the estimated covariance-variance ratio of earnings and returns ("sample-variance-ratio bias") and that conditioning the regression on the sign of the return produces a "sample truncation bias". They further demonstrate that these biases produce evidence of asymmetric timeliness in earnings recognition even when asymmetric timeliness is known to be absent. The authors conclude that estimates of AT using the AT measure cannot be interpreted as evidence of conditional conservatism.

Patatoukas and Thomas (2011) identify additional sources of bias in the AT measure. They demonstrate that the AT measure suffers from biases resulting from using stock price to scale earnings per share in the regression. Specifically, they demonstrate that this scale is negatively related to the likelihood that firms report losses in earnings ("loss effect") and the variance of returns ("return variance effect"). They provide empirical evidence for these sources of bias by demonstrating that AT appears to exist in a regression of lagged earnings on current returns, despite the fact that lagged earnings should be unrelated to current period news. They conclude that researchers should avoid using the AT measure to measure the degree of conditional conservatism.

While the above studies identify significant issues with the AT measure, some researchers do not share the sentiment that the AT measure is hopelessly flawed. Roychowdhury and Watts (2007) examine the negative association between AT estimates and the market-to-book ratio, and find that the negative association disappears when AT is measured over windows longer than a year. They conclude that the negative relationship between AT and the end-of-period market-to-book ratio is induced by the negative relationship between AT and the beginning-of-period market-to-book ratio, which is *positively* associated with end-of-period market-to-book ratio.

Ball et al. (2013a) examine the findings of Patatoukas and Thomas (2011), discussed above, and note that there are several adjustments that can be made to the AT measure to correct for the biases identified in their study. Most notably, they posit that the non-zero relationship between lagged earnings and current returns is the result of the relationship between the expected components of each. They propose an adjustment to stock returns to capture the portion that represents unexpected returns and show that bias in AT estimates is reduced to an extent that it is economically insignificant.

Caskey and Peterson (2014) propose a way to control for differences in the relative compositions of assets-in-place and expected future rents, which, like Roychowdhury and Watts (2007), addresses the negative association between estimates of AT and the market-to-book ratio. The authors suggest two options for correcting for the effect of asset composition. First, they suggest estimating asymmetric timeliness as a ratio of the AT coefficient to the sum of the AT and ST coefficients. Second, they suggest interacting beginning-of-period market-to-book ratio with returns in the AT regression.

Cano Rodríguez and Núñez-Nickel (2015) suggest a modification to the AT measure that addresses the aggregation bias noted by Givoly et al. (2007). They measure good news and bad news as summations of positive and negative daily or monthly returns. Under this method, good (bad) news events that are offset by larger bad (good) news events that occur during the fiscal year are considered in measuring the news content for the fiscal year, whereas the Basu (1997) specification of the AT measure only takes into account the net news content of events that occur during the fiscal year.

Collins et al. (2014) note that AT measured with earnings captures two sources of asymmetry with respect to returns: (1) accrual asymmetry and (2) cash flow from operations (CFO) asymmetry. They posit that the asymmetric recognition standards between gains and losses that characterizes conditional conservatism only appears in accruals and not CFO. Therefore, an observed asymmetric relationship between CFO and returns must be the result of something other than conditional conservatism. As a result of the overlap between earnings and CFO, estimates of AT using earnings are likely biased by CFO asymmetry. They propose using accrual asymmetry to measure conditional conservatism. Additionally, they find evidence that CFO asymmetry explains many of the biases documented in the above studies.

While research on conditional conservatism has primarily used the AT measure to estimate conditional conservatism, alternative measures have been proposed. Givoly and Hayn (2000) offer a measure the accumulation of negative non-operating accruals over time as an estimate of the degree of conservatism. Because non-operating accruals include write-downs, this measure likely captures conditional conservatism to a greater degree than it captures unconditional conservatism. However, it lacks a way of determining whether negative non-operating accruals are recognized contemporaneously with news events, and therefore, does not necessarily provide a measure of timeliness.

Ball and Shivakumar (2005) provide a measure of conditional conservatism that is especially useful for private firms. Because the AT measure requires stock returns data, asymmetric timeliness can only be estimated for publicly traded firms. For private firms, Ball and Shivakumar (2005) propose a measure that estimates asymmetry in accrual recognition. To proxy for economic news, they use the sign of current period cash flow from operations. In other words, negative (positive) cash flow from operations in a fiscal year is indicative of bad (good) news in that year. The authors modify the AT regression from Basu (1997) and use accruals in place of earnings and cash flow from operations in place of returns.

Khan and Watts (2009) develop a method to estimate asymmetric timeliness on a firm-year level. Using characteristics that are commonly associated with conditional conservatism, they are able to estimate firm-year specific coefficients from the AT measure in Equation (1). They refer to the firm-year specific β_1 and β_0 coefficients as "C-Score" and "G-Score", respectively. Estimating firm-year specific values for AT and ST provides more flexibility for researchers interested in examining the association of AT and ST with other phenomena. However, these firm-specific estimates are essentially a function of firm-specific characteristics. The measure is likely of little use to researchers interested in examining the associations between AT/ST and those firm specific characteristics (e.g., market-to-book ratio).

Callen et al. (2010) suggest a way of measuring conditional conservatism at the firm-year level by estimating the portion of returns and earnings that represent news events. They suggest that the ratio of unexpected current earnings to total earnings news ("conservatism ratio" or "CR") represents the estimate of conditional conservatism. Consistent with the theoretical concept of conditional conservatism, they find that CR is greater in bad news periods than in good news periods. The Callen et al. (2010) essentially provides an approach to measuring conditional conservatism that is similar to that of the AT measures, in that, the authors attempt to capture the proportion of news events that are recognized in earnings. For this reason, it is likely that the conservatism ratio may suffer from observability problems that are similar to those that plague the AT measure, as noted in this study.

Overall, research on measuring AT and conditional conservatism demonstrates that accounting researchers have been and continue to be interested in studying conditional conservatism. While the above studies offer credible criticisms and modifications to the AT measure, they also show that there is considerable controversy in how to measure conditional conservatism, and that research on measuring conditional conservatism, while extensive, is far from conclusive.

Causes and Consequences of Conditional Conservatism

Because accounting conservatism is so prevalent in accounting practice, there is a significant body of research that investigates both the origins or causes of accounting conservatism, as well as the consequences of accounting conservatism. Perhaps the most influential study on the origins of accounting conservatism is Watts (2003a), which offers four primary explanations for the existence of accounting conservatism: (1) contracting, (2) litigation, (3) taxation, and (4) regulation.

The contracting explanation arises from the idea that contracting parties (e.g., lenders in a debt contract) have asymmetric payoffs, whereby the cost of net asset overstatement exceeds the cost of net asset understatement. Watts (2003a) notes that, of the four explanations, the contracting explanation is likely the most significant, as accounting likely originated as a contracting mechanism. Accounting information is often used to evaluate the performance of contractual obligations. For example, lenders in a debt agreement might use accounting information to assess the borrower’s ability to meet debt payment obligations. If the lender deems it more costly to overestimate the borrower's ability to pay than it is to underestimate the borrower's ability to pay, the lender would likely prefer that the borrower report accounting information that is conservative.

Watts (2003a) notes that the other three explanations for accounting conservatism are the result of relatively recent phenomena. The litigation explanation suggests that conservatism arises as a result of litigation costs being higher for net asset overstatements than for net asset understatements. The taxation explanation suggests that conservatism may arise as the result of incentives to minimize tax liability, as financial accounting standards sometimes mirror tax accounting standards. The regulation explanation suggests that regulators set accounting standards that are more conservatively biased, perhaps as some function of the other three explanations. Constituents may apply pressure to regulators to affect accounting standards that meet their preferences, which may be consistent with conservative accounting.

Applying these explanations to conditional conservatism, empirical research has primarily examined whether conditional conservatism arises in contracting settings. Ball and Shivakumar (2005) posit that conditional conservatism, and not unconditional conservatism, improves contracting efficiency, and is therefore, the most relevant form of conservatism in contracting settings. They note that unconditional conservatism produces predictable biases that can be adjusted for *ex ante* by contracting parties. Qiang (2007) examines which specific form of accounting conservatism (i.e., conditional or unconditional) arises under each of the four conservatism explanations offered by Watts (2003a). She finds that conditional conservatism arises in the contracting and litigation explanations, but not in the taxation and regulatory explanations. The Qiang (2007) study suggests that conditional conservatism serves as an efficient contracting mechanism, as well as an accounting convention that minimizes legal liability.

Echoing the contracting explanation for conditional conservatism, several studies have examined the association between conditional conservatism and attributes of debt contracting. These studies generally show that conditional conservatism is associated with a lower cost of debt (e.g., Wittenberg-Moerman, 2008, Zhang, 2008, Ahmed et al., 2002), which suggests that lenders will accept a lower cost of debt for firms that are more conservative in their financial reporting. Beatty et al. (2008) find that lenders demand conservatively biased information in debt contracts. However, they note that lenders can meet their demands for conservatism either through proposing conservative debt covenants in the contract or demanding conservative financial reporting. While these findings may raise questions as to how relevant conservative financial reporting is to debt contracts, the authors note that conservative debt covenants may not completely fulfill lenders' demands for conservatism. Overall, studies on conservatism and debt contracting seem to support the notion that lenders prefer more conservative accounting as a means of mitigating contracting risks.

While a significant body of research is dedicated to examining the conditions under which conditional conservatism arises, there are several studies that examine the potential costs and benefits of conditional conservatism.[9] Consistent with the contracting benefits of conservatism, research shows that conditional conservatism reduces information asymmetry in both the debt and equity markets (Wittenberg-Moerman, 2008; LaFond and Watts, 2008), results in executive compensation that is more sensitive to firm performance (Iyengar and Zampelli,

[9] See Ruch and Taylor (2015) for a comprehensive review of the effects of accounting conservatism, including conditional conservatism.

2010), and incentivizes management to make more efficient investment decisions (Francis and Martin, 2010; Ahmed and Duellman, 2011; Louis et al., 2012).

Conversely, some studies have expressed concern that conditional conservatism represents a bias in accounting information that can be detrimental to users of accounting information. The FASB has stated that conservatism, in general, is inconsistent with neutrality, a preferred qualitative characteristic of financial reporting (FASB, 2010). Research has also noted that conditional conservatism reduces earnings persistence and predictability (Kim and Kross, 2005; Bandyopadhyay et al., 2010; Chen et al., 2014), which are commonly viewed as measures of earnings quality (see Dechow et al., 2010). Additionally, research provides evidence that conditional conservatism is associated with lower analyst forecast accuracy (Helbok and Walker, 2004; Louis et al., 2008; Pae and Thornton, 2010), but provides mixed evidence on its association with equity cost of capital (Francis et al., 2004; Chan et al., 2009; García Lara et al., 2011). Overall, the research on the origins, costs, and benefits of conditional conservatism indicates that conditional conservatism is a prevalent accounting convention with implications for debt contracting, earnings quality, equity market users, executive compensation, and investment decisions.

CHAPTER III

A MODEL OF CONDITIONAL CONSERVATISM

Conditional Conservatism Yields a Conservative Bias

In this chapter, I provide a model for the relationship between the market value and book value of equity. The model describes how symmetric and asymmetric timeliness relate to the incorporation of news events into market value and book value. The market value of equity of a firm at a point in time is comprised of value currently recognized in accounting book value and value not recognized in accounting book value. The value not recognized in book value represents the conservative bias, which I refer to as "conservative accounting value" or "CAV" in the both the model and empirical estimations:[10]

$$MV_t = BV_t + CAV_t \tag{2}$$

Where:
MV_t = Market value of equity at time *t*.
BV_t = Book value of equity at time *t*.
CAV_t = Conservative accounting value at time *t*.

Book value of equity can be further divided into assets whose changes in market value are recognized symmetrically, with respect to the sign of the changes, in book value ("symmetrically recognized assets"), assets whose changes in market value are recognized asymmetrically in book value ("asymmetrically recognized assets"), and debt claims on those assets:

[10] Describing market value of equity in this manner borrows from the residual income valuation model introduced by Ohlson (1995). Feltham and Ohlson (1995) refer to the unrecognized portion of market value as "economic goodwill", which represents the concept of conservative accounting value.

$$BV_t = X_t + Y_t - D_t \tag{3}$$

Where:
X_t = Symmetrically recognized assets.
Y_t = Asymmetrically recognized assets.
D_t = Debt claims on assets.

Borrowing from finance theory, most notably Myers (1977), CAV can be further divided into a conservative bias of assets in place and the value of growth opportunities:

$$CAV_t = C_t + F_t \tag{4}$$

Where:
C_t = Conservative accounting value related to assets in place.
F_t = Conservative accounting value related to future assets (i.e., growth opportunities).[11]

Substituting Equations (3) and (4) into Equation (2) yields a representation of market value in terms of the components of book value and CAV:

$$MV_t = X_t + Y_t - D_t + C_t + F_t \tag{5}$$

Symmetrically recognized assets are reported on the balance sheet at market value and include working capital (other than inventory) and long-term investments. Asymmetrically recognized assets are historical cost assets, including property, plant & equipment, inventory, and intangible assets. These assets are recognized in book value at their cost, or initial investment. Any appreciation in value is allocated to CAV for assets in place (C_t). However, if the market value of these assets falls below the initial investment value, the decrease in value is

[11] Roychowdhury and Watts (2007) refer to the growth opportunities component of the market value of equity as "rents".

recognized in book value as a write-down. The market value of asymmetrically recognized assets is equal to the sum of the Y and C components.[12]

Changes to market value during a time period of arbitrary length can be divided into three components: (1) expected appreciation of market value at the equity cost of capital, including depreciation, (2) unexpected changes in market value (i.e., news events), and (3) equity financing, including issuances of common stock and payment of dividends.

$$\Delta MV_t = rMV_{t-1} - depr_t + S_t + e\_fin_t \tag{6}$$

Where:
r = Expected return (i.e., equity cost of capital)
$depr_t$ = Depreciation in period t.[13]
S_t = Unexpected change in market value during period t (news event).
e_fin_t = Equity financing in period t (equity issuances if > 0; dividends if < 0).

Of relevance to this study is the manner in which economic news events are allocated between book value and conservative accounting value. ST and AT determine the amount of each news event that is recognized to book value and allocated to CAV. ST represents a recognition tendency that contemporaneously recognizes a portion of both good news and bad news events. An example of the application of ST under GAAP is the recognition of positive and negative shocks to cash sales. ST determines the proportion of news events booked to the symmetrically recognized assets component (X).

AT represents a recognition tendency that contemporaneously recognizes a portion of bad news events but not good news events. An example of the application of AT under GAAP is the accounting for asset impairment, which requires the recognition of a write-down when the

[12] The decomposition of market value in this manner originates from the decomposition of returns proposed by Ball et al. (2013b), which divides returns into symmetric (x), asymmetric (y), and unrecognized components (g).
[13] Depreciation is denoted separately because it represents the consumption of the investment in asymmetrically recognized assets. When market value is broken into the components in Equation (2), depreciation reduces the Y component. The remaining expected change in book value is assumed to be an approximation of net cash flow from operating activities, and is therefore added to the X component.

market value of an asset falls below its cost but does not permit the recognition of a write-up when the market value of an asset appreciates above its cost. AT determines the proportion of news events booked to the market value of asymmetrically recognized assets (Y + C). The proportion of news events not dictated by ST or AT is allocated to growth opportunities (F).

The news events modeled herein represent an aggregation of unexpected market value changes over an accounting period (i.e., fiscal quarter or year). Although multiple news events of differing sign and magnitude could occur in each accounting period, accounting is likely to incorporate news events on an aggregate basis at the end of an accounting period. This notion is theoretically consistent with Basu (1997) and subsequent research on conditional conservatism.[14] As a result, accounting periods in the model are treated as either "good news periods" or "bad news periods". The change in market value for good news periods and bad news periods can be expressed in terms of its five components as follows:

Good news periods:

$$\begin{aligned}
\Delta X_t^+ &= rBV_{t-1} + \omega_S S_t^+ + b_lags_t + d_fin_t + e_fin_t - inv_t \qquad (7a)\\
\Delta Y_t^+ &= inv_t - depr_t\\
\Delta D_t^+ &= d_fin_t\\
\Delta C_t^+ &= rC_{t-1} + \omega_A S_t^+ + g_lags_t - b_lags_t\\
\Delta F_t^+ &= rF_{t-1} + (1 - \omega_A - \omega_S) S_t^+ - g_lags_t
\end{aligned}$$

Bad news periods:

$$\begin{aligned}
\Delta X_t^- &= rBV_{t-1} + \omega_S S_t^- + b_lags_t + d_fin_t + e_fin_t - inv_t \qquad (7b)\\
\Delta Y_t^- &= B_t(\omega_A S_t^- + C_{t-1}) + inv_t - depr_t\\
\Delta D_t^- &= d_fin_t\\
\Delta C_t^- &= rC_{t-1} + \omega_A S_t^- - B_t(\omega_A S_t^- + C_{t-1}) + g_lags_t - b_lags_t\\
\Delta F_t^- &= rF_{t-1} + (1 - \omega_A - \omega_S) S_t^- - g_lags_t
\end{aligned}$$

Where:

[14] Some researchers have noted that the aggregation of news events over an accounting period creates biased estimates of conditional conservatism, which has been labeled the "aggregation bias" (See Givoly et al., 2007 and Cano Rodríguez and Núñez-Nickel, 2015). I address the potential for bias due to the aggregation of news events in Section 3.

S_t^+ = Good news event.
S_t^- = Bad news event (signed).
ω_S = Symmetric timeliness.
ω_A = Asymmetric timeliness.
B_t = Indicator variable equal to 1 if bad news event is sufficiently negative to induce a write-down (i.e., $|\omega_A S_t^-| > C_{t-1}$); 0 otherwise.
b_lags_t = Prior period news events recognized in period *t* accounting earnings (i.e., market value transfer from C component to X component).
g_lags_t = Growth opportunities that become assets in place but remained unrecognized in accounting value (i.e., market value transfer from F component to C component).
inv_t = Net investing cash outflows (liquidation of investments if < 0).
e_fin_t = Equity financing in period *t* (equity issuances if > 0; dividends if < 0).
d_fin_t = Debt financing in period *t* (debt issuance if > 0; debt repayment if < 0).
Other variables are as previously defined.

The indicator variable in the bad news period equations (B_t) illustrates the write-down of book value. If the magnitude of the bad news event to asymmetrically recognized assets ($\omega_A S_t^-$) exceeds the previously unrecognized market value related to assets in place at the beginning of the event period (C_{t-1} or "write-down buffer"), a write-down is recognized to the book value of asymmetrically recognized assets (Y) for the amount by which the magnitude of the news event exceeds C_{t-1}. If the bad news event is not sufficiently large so as to induce a write-down, C_{t-1} is reduced by the amount of the news event and no write-down is recognized to asymmetrically recognized assets. The above equations allow for the transfer of market value between components, which offset one another as changes to total market value (e.g., inv_t, g_lags_t, b_lags_t).

The accumulation of CAV occurs as news events accumulate over multiple event periods. At the inception of the firm, equity investors provide capital equal to the present value of expected future cash flows. At this point, the market value of equity equals the book value of equity ($MV_0 = BV_0$) and CAV is equal to zero ($C_0 = F_0 = 0$). CAV arises when portions of news events, as determined by ST and AT, are not contemporaneously recognized in accounting earnings, and in turn, book value. Consequently, the accumulation of CAV from the end of accounting period *j* to end of accounting period *k* can be expressed in terms of changes in the C and F components in Equations (7a) and (7b) over the *N* accounting periods between period *j* and period *k*:

$$\Delta CAV_{j\to k} = \Delta C_{j\to k} + \Delta F_{j\to k} \tag{8a}$$

$$\Delta C_{j\to k} = \textstyle\sum_{n=1}^{N}(rC_{n-1} + \omega_A(S_n^+ + S_n^-) - B_t(\omega_A S_n^- + C_{n-1}) + g\_lags_n - b\_lags_n) \tag{8b}$$

$$\Delta F_{j\to k} = \textstyle\sum_{n=1}^{N}(rF_{n-1} + (1 - \omega_A - \omega_S)(S_n^+ + S_n^-) - g\_lags_n) \tag{8c}$$

Where:
$\Delta CAV_{j\to k}$ = Change in conservative accounting value from time *j* to time *k*.
$\Delta C_{j\to k}$ = Change in conservative accounting value related to assets in place from time *j* to time *k*.
$\Delta F_{j\to k}$ = Change in conservative accounting value related to growth opportunities from time *j* to time *k*.
Other variables are as previously defined.

Equations (8b) and (8c) demonstrate how ST and AT affect changes to the two components of CAV. Substituting equations (8b) and (8c) into Equation (8a) and cancelling terms shows the overall effect of ST and AT on the accumulation of CAV:

$$\Delta CAV_{j\to k} = \textstyle\sum_{n=1}^{N}(rCAV_{n-1} + (1 - \omega_S)(S_n^+ + S_n^-) - B_n(\omega_A S_n^- + C_{n-1}) - b\_lags_n) \tag{9}$$

Equation (9) shows how ST (ω_S) and AT (ω_A) are consistent with the theoretical definition of conditional conservatism, which can be assessed by examining the associations between ST and AT and the change in CAV. Equation (9) shows that the association between ω_S /ω_A and the change in CAV, and therefore, the theoretical consistency between ST/AT and conditional conservatism is dependent on the accumulated magnitudes of good news and bad news over the N accounting periods from period *j* to period *k* (i.e., $\sum_{n=1}^{N}(S_n^+ + S_n^-)$). ST is negatively (positively) associated with the change in CAV when the accumulation of good (bad) news exceeds the accumulation of bad (good) news over the accumulation period. This association indicates that low (high) ST is consistent with conditional conservatism when good (bad) news dominates bad (good) news over the accumulation period. Additionally, Equation (9) demonstrates that ST has no effect on changes in CAV, and is therefore inconsistent with conditional conservatism when the accumulations of good news and bad news are equal.

AT is associated with changes in CAV through its effect on the presence and magnitude of write-downs. As previously noted, write-downs mitigate decreases to CAV resulting from bad news. However, AT has two competing effects on the presence and magnitude of write-downs. First, AT is positively associated with the magnitude of write-downs when sufficiently bad news occurs, as indicated by Equation (9). Second, AT is positively associated with the magnitude of the write-down buffer, and therefore, negatively associated with the presence and magnitude of write-downs, as indicated by Equation (8b). The manner in which these positive and negative associations offset one another depends on the relative accumulations of good news and bad news.

When accumulation of good news exceeds the accumulation of bad news, the incidence of bad news is low and the magnitude of the write-down buffer is large, all else equal, which limits both the presence and magnitude of write-downs. In this case, the write-down term in Equation (9) approaches zero and AT has little to no effect on changes in CAV. When the accumulation of bad news exceeds or is equal to the accumulation of good news, the incidence of bad news is high and the magnitude of the write-down buffer is small, all else equal, which increases both the presence and magnitude of write-downs. In this case, AT is positively associated with changes in CAV. Simply put, AT is consistent with conditional conservatism when the accumulation of bad news exceeds or is equal to the accumulation of good news, but inconsistent with conditional conservatism when the accumulation of good news exceeds the accumulation of bad news.

The Empirical Observability of Symmetric and Asymmetric Timeliness

In this section, I examine the empirical observability of ST and AT by performing an econometric analysis of the Basu (1997) asymmetric timeliness (AT) measure. The AT measure is the most prominent and influential empirical measure of conditional conservatism, and therefore, evaluating its ability to estimate ST and AT, and in turn, conditional conservatism is of great significance to researchers. The AT measure is a piecewise linear regression of annual accounting earnings on annual stock returns, conditioned on the sign of the returns. The measure interprets positive (negative) returns for the period as good news (bad news). The incremental association of earnings and bad news returns over the association of earnings and good news returns represents the estimate of asymmetric timeliness.

In terms of the previously discussed market value model, the sign of the news is represented by the sign of the news event (S^+ or S^-) and earnings are the changes in the book value components of market value other than financing and investing cash flows:

$$E_t^+ = rBV_{t-1} + \omega_S S_t^+ + b\_lags_t - depr_t \tag{10a}$$

$$E_t^- = rBV_{t-1} + \omega_S S_t^- + B_t(\omega_A S_t^- + C_{t-1}) + b\_lags_t - depr_t \tag{10b}$$

Where:
E_t^+ = Accounting earnings in good news periods
E_t^- = Accounting earnings in bad news periods
Other variables are as previously defined

Applying these terms to the piecewise linear AT regression yields the following:[15]

$$E_{i,t} = \alpha_0 + \alpha_1 D_{it} + \beta_0 S_{it} + \beta_1 D_{it} * S_{it} + \varepsilon_{it} \tag{11}$$

Where:
E_{it} = Accounting earnings for firm *i* in period *t*.
S_{it} = News event for firm *i* in period *t*.
D_{it} = Indicator variable equal to 1 if news event for firm *i* in period *t* is negative; 0 otherwise.

The coefficient β_0 represents an estimate of ST for the cross-section of firms, and is commonly referred to as the good news timeliness coefficient. The coefficient β_1 represents an estimate of AT for the cross-section of firms, which is commonly used to make inferences about the degree of conditional conservatism. The regression coefficients, β_0 and β_1, can be considered appropriate estimates of ST and AT, respectively, if they are econometrically equivalent to the parameters that represent ST and AT in Equations (10a) and (10b).

First, I examine the ability of the AT measure to provide an estimate of ST. Econometrically, the β_0 coefficient can be expressed as follows:[16]

$$\beta_0 = \frac{Cov(E, S|S>0)}{\sigma^2_{S|S>0}} \tag{12a}$$

Substituting Equation (10a) into Equation (12a) yields:

$$\beta_0 = \frac{Cov(rBV_{t-1} + \omega_S S + b\_lags - depr, S|S>0)}{\sigma^2_{S|S>0}} \tag{12b}$$

Under the assumption that current period news events are uncorrelated with prior and future period news events, the expected portion of earnings (rBV_{t-1}), lagged news events (b_lags_t), and depreciation ($depr_t$) are uncorrelated with news events in period *t*. Therefore, the

[15] The AT measure regresses earnings per share scaled by beginning-of-period price per share on annual buy-and-hold returns. In the interest of brevity and consistency of notation, I model the AT measure using the regression of unscaled earnings on unscaled changes in market value. All inferences from the model are mathematically equivalent to using scaled earnings and unexpected returns. Scaled variables are used in all empirical tests.
[16] All period *t* subscripts are suppressed. Variables relate to period *t* unless otherwise noted.

covariance terms of these components and news events equal zero. Treating the ST parameter as a constant across the cross-section of firms reduces Equation (10b) to:

$$\beta_0 = \frac{Cov(\omega_S S, S|S>0)}{\sigma^2_{S|S>0}} = \omega_S \tag{12c}$$

Equation (12c) demonstrates that the β_0 coefficient provides an accurate estimate of ST for a cross-section of firms.

Second, I examine the ability of the AT measure to provide estimates of AT. The β_1 coefficient represents the difference between the timeliness of earnings for bad news and the timeliness of earnings for good news:

$$\beta_1 = \frac{Cov(E,S|S<0)}{\sigma^2_{S|S<0}} - \frac{Cov(E,S|S>0)}{\sigma^2_{S|S>0}} \tag{13a}$$

Substituting Equations (10a) and (10b) into Equation (13a) yields the following:

$$\beta_1 = \frac{Cov\left(rBV_{t-1} + \omega_S S_t^- + B_t(\omega_A S_t^- + C_{t-1}) + b_{lags_t} - depr_t, S\middle|S<0\right)}{\sigma^2_{S|S<0}} - \frac{Cov\left(rBV_{t-1} + \omega_S S + b_{lags} - depr, S\middle|S>0\right)}{\sigma^2_{S|S>0}} \tag{13b}$$

Using the assumption that earnings components other than news events are uncorrelated with current period news events and splitting covariance terms yields:

$$\beta_1 = \frac{Cov(\omega_S S, S|S<0)}{\sigma^2_{S|S<0}} + \frac{Cov(B(\omega_A S + C_{t-1}), S|S<0)}{\sigma^2_{S|S<0}} - \frac{Cov(\omega_S S, S|S>0)}{\sigma^2_{S|S>0}} \tag{13c}$$

As noted in Equation (12c), the first and third terms reduce to an estimate of the symmetric timeliness parameter, which offset one another in Equation (13c):

$$\beta_1 = \frac{Cov(B(\omega_A S + C_{t-1}), S|S<0)}{\sigma^2_{S|S<0}} \tag{13d}$$

Equation (13d) demonstrates that the estimate of AT is the association between write-downs and news events. However, the presence and magnitude of write-downs is not necessarily equivalent to AT. Treating the AT parameter as a constant over the cross-section of firms, distributing the write-down indicator (B), and splitting covariance terms yields:

$$\beta_1 = \omega_A \frac{Cov(B*S, S|S<0)}{\sigma^2_{S|S<0}} + \frac{Cov(B*C_{t-1}, S|S<0)}{\sigma^2_{S|S<0}} \tag{13e}$$

Equation (13e) demonstrates that the estimates of AT (i.e., the β_1 coefficient) vary with three factors that determine the presence and magnitude of a write-down: (1) AT (ω_A), (2) the write-down buffer (C_{t-1}), and (3) the magnitude of bad news events (S_t^-). The first factor demonstrates a direct positive association between AT and the presence and magnitude of write-downs. The second factor, on the other hand, implies an indirect *negative* association between AT and the presence and magnitude of write-downs. Recall from the previous section that the write-down buffer is positively associated with AT when the accumulation of good news exceeds the accumulation of bad news. If the accumulation of good news exceeds the accumulation of bad news, the write-down buffer will be large and the β_1 coefficient will be small. However, if the accumulation of bad news exceeds or is equal to the accumulation of good news, the write-down buffer will be small and the β_1 coefficient will be large.

The third factor that determines the presence and magnitude of write-downs, and therefore, the magnitude of the β_1 coefficient is the magnitude of bad news events. Holding the write-down buffer and AT constant, larger bad news events will result in larger write-downs and larger estimates of the β_1 coefficient. To illustrate how the β_1 coefficient varies with the three factors listed above, consider three cross-sections of firms: Group A, Group B, and Group C. All three groups have identical AT tendencies (ω_A). The firms in Group A have accumulated a relatively equal mix of good news and bad news and tend to experience highly volatile news events. As a result, firms in Group A have write-down buffers (C_{t-1}) that approximate zero. The firms in Group B have accumulated a significant excess of good news relative to bad news and also tend to experience highly volatile news events. As a result, firms in Group B have large write-down buffers. The firms in Group C have also accumulated a significant excess of good news relative to bad news, but tend to experience low volatility in news events. As a result, firms in Group C have large write-down buffers. The presence and magnitude of write-downs is highest for Group A, next highest for Group B, and lowest for Group C.

Referring to Equation (13e), Group A would have the highest β_1 coefficient of the three groups. The first covariance term approaches 1 as substantially all of the bad news firms in Group A likely have sufficiently bad news to record write-downs (i.e., $B_t = 1$ for most firms). Additionally, the second covariance term approaches zero as the write-down buffers are near zero.[17] The firms in Group B would have a smaller β_1 coefficient than the firms in Group A. While the high volatility of news events likely triggers a significant number of write-downs for the bad news firms in Group B (i.e., first covariance term approaches 1), the size of the write-down buffer reduces the magnitude of these write-downs. The β_1 coefficient for Group B firms is reduced by the second covariance term in Equation (13e). The firms in Group C would have the smallest β_1 coefficient of the three groups. Low volatility of news events and large write-down buffers make the probability of write-downs for these firms remote. As a result, the first and the second covariance terms in Equation (13e) approach zero because the expected value of B_t approaches zero, causing the estimate of the β_1 coefficient to approach zero.

In spite of the fact that the firms in each of the three groups have identical AT tendencies, the estimates of AT are determined by the presence and magnitude of write-downs. It is

[17] Note that the second covariance term is negative, as $C_{t-1} > 0$ and $S_t^- < 0$.

important to note, however, that the news accumulation context under which AT is unobservable (i.e., good news > bad news) is the same context under which AT is conceptually inconsistent with conditional conservatism. In other words, AT is unobservable when observing it would be of little use in estimating conditional conservatism. For this reason, it is appropriate to consider the accumulations of good and bad news in identifying the appropriate estimate of conditional conservatism.

CHAPTER IV

HYPOTHESIS DEVELOPMENT

The first two sets of hypotheses test the association between estimates of ST and AT and changes in CAV. Equation (9) in Chapter III provides the basis for the predicted associations. First, I test how estimates of ST and AT are associated with the magnitude of increases in CAV. Firms that accumulate good news over a time period will see an increase in CAV, all else equal. Equation (9) indicates that ST is negatively associated with changes in CAV when the accumulation of good news exceeds the accumulation of bad news. Additionally, the excess accumulation of good news decreases the presence and magnitude of write-downs, resulting in lower estimates of AT. Consequently, my first set of hypotheses relates to the association between estimates of ST/AT and increases in CAV:

H1a: Estimates of <u>symmetric timeliness</u> are <u>negatively associated</u> with the magnitude of <u>increases in conservative accounting value</u> over time.

H1b: Estimates of <u>asymmetric timeliness</u> are <u>negatively associated</u> with the magnitude of <u>increases in conservative accounting value</u> over time.

Turning to decreases in CAV, Equation (9) demonstrates that write-downs mitigate decreases to CAV. If bad news events are recognized as write-downs that reduce book value, CAV remains unchanged, all else equal. As a result, I expect the magnitude of decreases in CAV to be negatively associated with estimates of AT. Similarly, Equation (9) demonstrates that ST is negatively associated with the magnitude of decreases in CAV.[18] Accordingly, my second set of hypotheses is as follows:

H2a: Estimates of asymmetric timeliness are negatively associated with the magnitude of decreases in conservative accounting value over time.

H2b: Estimates of symmetric timeliness are negatively associated with the magnitude of decreases in conservative accounting value over time.

Next, I examine the factors that affect the observability of AT. As demonstrated in Equation (13e), the observability of AT is determined by the presence and magnitude of write-downs, which increases with the magnitude of bad news events incurred during the period and decreases with the size of the write-down buffer at the beginning of the period. I expect firms with highly volatile news events to have large bad news events that induce write-downs, and therefore, have higher estimates of AT. Additionally, I expect firms with large accumulations of CAV to have larger write-down buffers, and therefore, have lower estimates of CAV. Accordingly, my third set of hypotheses offers predictions for the relationship between estimates of AT and the factors that affect the probability of write-downs:

H3a: Estimates of asymmetric timeliness are negatively associated with the magnitude of conservative accounting value.

H3b: Estimates of asymmetric timeliness are positively associated with the volatility of news events.

[18] A signed analysis would predict estimates of symmetric and asymmetric timeliness would be positively associated with negative changes in CAV.

As a final test of the observability of AT, I examine the relationship between estimates of AT and financial leverage. Conservatism theory posits that highly leveraged firms are under contracting demands from lenders to provide conservatively reported financial statements (Watts, 2003a). Consequently, prior research has noted a positive association between estimates of AT and leverage (LaFond and Watts, 2008; Khan and Watts, 2009). Pae et al. (2005) posit that such an association may explain the negative association between the market-to-book ratio and estimates of AT, as highly leveraged firms are more likely to have low market-to-book ratios. Under their interpretation, the contracting demands of debt agreements induce an ancillary negative association between estimates of AT and the market-to-book ratio. An alternative interpretation of this association, however, is that highly leveraged firms have a higher likelihood of recording write-downs, as they have smaller write-down buffers, and it is the likelihood of write-downs that induces an ancillary positive association between estimates of AT and leverage.

If the contracting interpretation drives the association between leverage and estimates of AT, I expect leverage to be positively associated with estimates of AT, even when controlling for beginning-of-period CAV. Alternatively, if the write-down buffer interpretation drives the association between leverage and estimates of AT, I do not expect leverage to be positively associated with estimates of AT after controlling for beginning-of-period CAV. As a result of these competing theories, I state the fourth hypothesis in the null form:

H4: Controlling for the beginning balance of conservative accounting value, estimates of <u>asymmetric timeliness</u> are <u>not significantly associated</u> with <u>financial leverage</u> measured at the beginning of the period.

CHAPTER V

RESEARCH DESIGN

Tests of Hypotheses 1 and 2

To test H1 and H2, changes in CAV, news events, and earnings are measured over four accumulation periods of differing length (1, 3, 5, and 7 years). There exists a tradeoff in choosing the length of the accumulation period. A short accumulation period results in noisy estimates of ST and AT, as the shorter time period makes it much less likely that earnings and returns align contemporaneously. However, a long accumulation period increases the likelihood of aggregating good news and bad news in the same period, resulting in an aggregation bias (Givoly et al., 2007; Cano Rodríguez and Núñez-Nickel, 2015). For example, the AT measure defines a good news firm as one that has a positive annual return. However, this annual return could be a mix of good news and bad news events that net to a positive return. Since bad news events are sometimes recognized in earnings as write-downs, firms could recognize write-downs but still be classified as good news firms in the AT measure if the annual return is positive. Such write-downs would bias estimates of symmetric timeliness.

On the other hand, it could be argued that the periodic nature of accounting incorporates news events in aggregate at the end of reporting periods. For example, an asset impairment decision might be made at the end of a fiscal year or quarter based on the aggregate change in the market value of the asset, which could include multiple good and bad news events. The intraperiod news events would likely create noise in estimating the earnings-return association for the accounting period in question.

I attempt to offer a compromise between these points of view by estimating aggregate news events for a fiscal quarter. Because financial information is typically reported on a quarterly basis, aggregate quarterly news events likely have a stronger link with accounting recognition than do daily, weekly, or monthly news events. However, estimating quarterly news events allows for multiple news events of differing signs and magnitudes over an accumulation period, which should reduce the effects of the aggregation bias.

I employ a modified version of the Basu (1997) AT measure, introduced by Cano Rodríguez and Núñez-Nickel (2015), to mitigate the effects of the aggregation bias. Rather than relying on annual returns to proxy for news events, the authors attempt to capture individual news events by summing monthly and daily returns to proxy for good news and bad news events. Positive (negative) returns represent a good (bad) news event. I employ their model using quarterly returns as follows:

$$E_{it} = \alpha_0 + \beta_0 R_{it}^{+} + \beta_1 R_{it}^{-} + \varepsilon_{it} \tag{14}$$

Where:
E_{it} = Income before extraordinary items for firm *i* in year *t*.[19]
R_{it}^{+} = The sum of positive quarterly stock returns for firm *i* in year *t*.
R_{it}^{-} = The sum of negative quarterly stock returns for firm *i* in year *t*.

The estimate of the β_0 coefficient represents the estimate of good news timeliness, which is equivalent to the estimate of ST, consistent with Equation (12c). The estimate of the β_1 coefficient represents the estimate of bad news timeliness, which is equivalent to the sum of ST and AT. The estimate of AT in Equation (14) is provided by subtracting the estimate of the β_0 coefficient from the estimate of the β_1 coefficient.

[19] Scaled by market value at the end of year *t-1*.

I employ the regression in Equation (14) and interact the good news and bad news variables with quintile ranks of changes in CAV. CAV in period *t* is measured as the difference between market value of equity and book value of equity in period *t*. The change in CAV for period *t-k* (where k = 0, 2, 4, 6) to period *t* is calculated as the difference between CAV at period *t* and CAV at period *t-k-1*, scaled by market value of assets at period *t-k-1*:

$$E_{t-k,t} = \alpha_0 + \beta_0 R_{t-k,t}^{+} + \beta_1 R_{t-k,t}^{-} + \beta_2 R_{t-k,t}^{+} \text{ x } \Delta CAV_{t-k,t} + \beta_3 R_{t-k,t}^{-} \text{ x } \Delta CAV_{t-k,t} + \beta_4 \Delta CAV_{t-k,t} + \varepsilon_{t-k,t} \quad (15)$$

Where:
$\Delta CAV_{t,t-k}$ = Quintile rank of the increase or decrease in conservative accounting value during the years ended *t-k* to the end of year *t* (where *k* = 0, 2, 4, 6).
Other variables are as previously defined.

When the change in CAV is positive, H1a predicts that the β_2 coefficient will be negative and significant and H1b predicts that the difference between the β_3 coefficient and the β_2 coefficient will be negative and significant. When the change in CAV is negative, H2a predicts that the difference between the β_3 coefficient and the β_2 coefficient will be negative and significant, and H2b predicts that the β_2 coefficient will be negative and significant.

Test of Hypothesis 3

To test H3, I interact the good news and bad news variables with quintile ranks of beginning CAV and volatility, measured as the standard deviation of monthly stock returns during the period:

$$E_t = \alpha_0 + \beta_0 R_t^{+} + \beta_1 R_t^{-} + \beta_2 R_t^{+} \text{ x } CAV_{t-1} + \beta_3 R_t^{-} \text{ x } CAV_{t-1} + \beta_4 R_t^{+} \text{ x } VOL_t + \beta_5 R_t^{-} \text{ x } VOL_t + \beta_6 CAV_{t-1} + \beta_7 VOL_t + \varepsilon_t \quad (16)$$

Where:

CAV_{t-1} = Quintile rank of conservative accounting value at the end of period *t-1* scaled by market value of assets at the end of period *t-1*.
VOL_t = Quintile rank of stock return volatility in period *t* (standard deviation of monthly stock returns).
Other variables are as previously defined.

H3a predicts that the difference between the β_3 coefficient and the β_2 coefficient will be negative and significant, consistent with the negative association between estimates of AT and the market-to-book ratio noted in prior research (e.g., Beaver and Ryan, 2005; Pae et al., 2005; Roychowdhury and Watts, 2007). Consistent with Roychowdhury and Watts (2007), I expect the β_2 coefficient to be negative and significant. This association indicates that firms with high levels of CAV exhibit low levels of ST, and are therefore, more likely to be observed with low estimates of ST in subsequent periods. H3b predicts that the difference between the β_5 coefficient and the β_4 coefficient will be positive and significant. I do not have any theoretical reason to expect a relationship between estimates of ST and volatility, and therefore, I do not make a prediction regarding the β_4 coefficient.

Test of Hypothesis 4

To understand whether the association between estimates of AT and leverage is the result of a mechanical negative association between leverage and CAV, I interact quintile ranks of beginning-of-period leverage and CAV with the AT regression:

$$E_t = \alpha_0 + \beta_0 R_t^+ + \beta_1 R_t^- + \beta_2 R_t^+ \text{ x } LEV_{t-1} + \beta_3 R_t^- \text{ x } LEV_{t-1} + \beta_4 R_t^+ \text{ x } CAV_{t-1} + \beta_5 R_t^- \text{ x } CAV_{t-1} + \beta_6 LEV_{t-1} + \beta_7 CAV_{t-1} + \varepsilon_t \quad (17)$$

If the contracting interpretation drives the association between leverage and estimates of AT, I expect the difference between the β_3 coefficient and the β_2 coefficient to be positive and significant, resulting in a rejection of H4. Alternatively, if the write-down buffer interpretation drives the association between leverage and estimates of AT, I expect the difference between the β_3 coefficient and the β_2 coefficient not to be significantly different from zero, resulting in a failure to reject H4.

CHAPTER VI

SAMPLE DATA AND RESULTS

Sample Data

The sample data consists of firm-year observations from 1975 to 2012 with available financial statement and stock returns data to estimate AT measure regressions. Financial statement data is obtained from the Compustat Fundamentals Annual database and includes data necessary to observe income before extraordinary items (IB), current and lagged market value of equity (PRCC_F x CSHO), current and lagged book value of equity (CEQ), and current and lagged book value of debt (DLTT + DLC). I delete firms with a closing stock price (PRCC_F) less than 1, negative book value (CEQ < 1), negative total assets (AT < 1), financial service firms (SIC: 6000-6999), and utility firms (SIC: 4900-4999). CAV is calculated as the difference between market value of equity and book value of equity, scaled by lagged market value of total assets. Change in CAV is calculated as the change in the unscaled difference between market value of equity and book value of equity, scaled by market value of total assets at the beginning of the relevant accumulation period.

Stock return data is obtained from the CRSP Monthly Stock File. I estimate the AT regressions using buy-and-hold quarterly stock returns. Annual good (bad) news returns are computed as the sum of positive (negative) quarterly returns scaled by price at the beginning of the corresponding accumulation period. As in Basu (1997) and subsequent studies, news is comprised of returns beginning in the fourth fiscal month of the year and ending in the third fiscal month of the following year.

In this study, I choose to use raw returns to proxy for news events. The limitation with using raw returns is that they include the expected portion of returns, which is positively correlated with the expected portion of earnings. Prior research has attempted to estimate unexpected returns by using market-adjusted returns or, more recently, portfolio-adjusted returns, as suggested in Ball et al. (2013a). Specifically, Ball et al. (2013a) use 5x5 reference portfolios sorted on quintile ranks of size and the market-to-book ratio to estimate unexpected returns. However, market-adjusted and portfolio-adjusted returns do not account for news events that affect the entire market or portfolio. Furthermore, Patatoukas and Thomas (2014) note that the proxies for unexpected returns proposed by Ball et al. (2013a) are estimated relative to *ex post* expectations of returns, which is inconsistent the conceptual notion of conditional conservatism that relies on *ex ante* expectations of returns (i.e., news events). I have no theoretical reason to expect the correlation between expected earnings and returns to drive the results of this study, and therefore, conclude that the use of raw returns is appropriate.

The sample data used to test H1 and H2 includes relevant financial statement and return data, as well as sufficient lagged data for the applicable accumulation period (1, 3, 5, or 7 years). Tables 1.1 through 1.4 provide pairwise correlations (Pearson and Spearman) in Panel A and univariate descriptive statistics in Panel B for the sample data in each accumulation period. The sample sizes for the 1-year, 3-year, 5-year, and 7-year accumulation periods are 72,097, 44,982, 35,300, and 28,273 firm-year observations, respectively.[20] Panel A in each table displays the pairwise correlations for each of the variables used in the regression models to test H1 and H2. The tables show that the change in CAV is positively correlated with total earnings for the

[20] Observations in the top and bottom 1% of earnings, positive returns, and negative returns are removed.

accumulation period, and this correlation increases as the length of the accumulation period increases. Additionally, the correlation between total news and changes in CAV remains relatively stable across accumulation periods. These correlations are consistent with the notion that accounting earnings become more "timely" as the accumulation period increases.

Table 1.5 displays the frequency of CAV increases relative to decreases for each accumulation period. Consistent with the survivorship bias in empirical data, a substantial percentage of firms experience good news accumulations in excess of bad news accumulations, resulting in increases in CAV. The frequency of CAV increases becomes greater as the accumulation period increases in length (55.27% for 1-year; 61.91% for 7-year), indicating that good news accumulation seems to dominate bad news accumulation over longer periods of time. Additionally, univariate statistics in Panel B of Tables 1.1 through 1.4 show that mean net news accumulation ($R_t^+ + R_t^-$) becomes increasingly positive as the accumulation period lengthens.

Table 1.1

Descriptive Statistics and Pairwise Correlations (1-Year Accumulation Sample)

Panel A: Pairwise Correlations - Pearson (Spearman) above (below) Diagonal

Variable	$\Delta CAV_{t-0,t}$	$E_{t-0,t}$	$R^{+}_{t-0,t}$	$R^{-}_{t-0,t}$	$R^{+}_{t-0,t} + R^{-}_{t-0,t}$
$\Delta CAV_{t-0,t}$	-	0.014	0.632	0.177	0.638
$E_{t-0,t}$	0.232	-	0.011	0.309	0.131
$R^{+}_{t-0,t}$	0.628	0.187	-	0.054	0.920
$R^{-}_{t-0,t}$	0.450	0.372	0.255	-	0.441
$R^{+}_{t-0,t} + R^{-}_{t-0,t}$	0.704	0.335	0.835	0.673	-

Panel B: Univariate Statistics

Variable	N	Mean	Std Dev	10th Pct	25th Pct	Median	75th Pct	90th Pct
$\Delta CAV_{t-0,t}$	72,097	0.133	0.612	(0.355)	(0.154)	0.037	0.269	0.639
$E_{t-0,t}$	72,097	0.037	0.122	(0.088)	0.008	0.053	0.089	0.143
$R^{+}_{t-0,t}$	72,097	0.470	0.577	0.051	0.149	0.313	0.582	1.005
$R^{-}_{t-0,t}$	72,097	(0.293)	0.252	(0.638)	(0.434)	(0.239)	(0.097)	(0.005)
$R^{+}_{t-0,t} + R^{-}_{t-0,t}$	72,097	0.176	0.642	(0.427)	(0.184)	0.081	0.387	0.806

Definitions: $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (*k* = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive quarterly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative quarterly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the change in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period *t* and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

Table 1.2

Descriptive Statistics and Pairwise Correlations (3-Year Accumulation Sample)

Panel A: Pairwise Correlations - Pearson (Spearman) above (below) Diagonal

Variable	$\Delta CAV_{t-2,t}$	$E_{t-2,t}$	$R^{+}_{t-2,t}$	$R^{-}_{t-2,t}$	$R^{+}_{t-2,t} + R^{-}_{t-2,t}$
$\Delta CAV_{t-2,t}$	-	0.103	0.582	(0.124)	0.651
$E_{t-2,t}$	0.320	-	0.137	0.232	0.322
$R^{+}_{t-2,t}$	0.658	0.275	-	(0.613)	0.860
$R^{-}_{t-2,t}$	0.189	0.347	(0.309)	-	(0.124)
$R^{+}_{t-2,t} + R^{-}_{t-2,t}$	0.803	0.501	0.771	0.265	-

Panel B: Univariate Statistics

Variable	N	Mean	Std Dev	10th Pct	25th Pct	Median	75th Pct	90th Pct
$\Delta CAV_{t-2,t}$	44,982	0.327	1.278	(0.445)	(0.208)	0.085	0.487	1.182
$E_{t-2,t}$	44,982	0.177	0.309	(0.144)	0.055	0.177	0.301	0.494
$R^{+}_{t-2,t}$	44,982	1.412	1.387	0.426	0.648	1.021	1.663	2.731
$R^{-}_{t-2,t}$	44,982	(0.909)	0.712	(1.581)	(1.106)	(0.769)	(0.492)	(0.305)
$R^{+}_{t-2,t} + R^{-}_{t-2,t}$	44,982	0.504	1.105	(0.463)	(0.141)	0.275	0.824	1.636

Definitions: $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (*k* = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive quarterly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative quarterly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the change in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period *t* and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

Table 1.3

Descriptive Statistics and Pairwise Correlations (5-Year Accumulation Sample)

Panel A: Pairwise Correlations - Pearson (Spearman) above (below) Diagonal

Variable	$\Delta CAV_{t-4,t}$	$E_{t-4,t}$	$R^{+}_{t-4,t}$	$R^{-}_{t-4,t}$	$R^{+}_{t-4,t} + R^{-}_{t-4,t}$
$\Delta CAV_{t-4,t}$	-	0.196	0.566	(0.177)	0.660
$E_{t-4,t}$	0.383	-	0.243	0.120	0.438
$R^{+}_{t-4,t}$	0.620	0.344	-	(0.727)	0.841
$R^{-}_{t-4,t}$	0.065	0.231	(0.515)	-	(0.240)
$R^{+}_{t-4,t} + R^{-}_{t-4,t}$	0.799	0.593	0.752	0.077	-

Panel B: Univariate Statistics

Variable	N	Mean	Std Dev	10th Pct	25th Pct	Median	75th Pct	90th Pct
$\Delta CAV_{t-4,t}$	35,300	0.538	1.913	(0.489)	(0.234)	0.122	0.688	1.738
$E_{t-4,t}$	35,300	0.385	0.534	(0.122)	0.135	0.331	0.573	0.947
$R^{+}_{t-4,t}$	35,300	2.286	2.059	0.775	1.114	1.685	2.689	4.375
$R^{-}_{t-4,t}$	35,300	(1.489)	1.148	(2.622)	(1.728)	(1.204)	(0.839)	(0.583)
$R^{+}_{t-4,t} + R^{-}_{t-4,t}$	35,300	0.798	1.456	(0.441)	(0.059)	0.475	1.197	2.278

Definitions: $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (*k* = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive quarterly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative quarterly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the change in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period *t* and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

Table 1.4

Descriptive Statistics and Pairwise Correlations (7-Year Accumulation Sample)

Panel A: Pairwise Correlations - Pearson (Spearman) above (below) Diagonal

Variable	$\Delta CAV_{t-6,t}$	$E_{t-6,t}$	$R^{+}_{t-6,t}$	$R^{-}_{t-6,t}$	$R^{+}_{t-6,t} + R^{-}_{t-6,t}$
$\Delta CAV_{t-6,t}$	-	0.248	0.474	(0.161)	0.602
$E_{t-6,t}$	0.418	-	0.297	0.021	0.494
$R^{+}_{t-6,t}$	0.579	0.374	-	(0.806)	0.823
$R^{-}_{t-6,t}$	(0.015)	0.129	(0.647)	-	(0.328)
$R^{+}_{t-6,t} + R^{-}_{t-6,t}$	0.778	0.641	0.748	(0.073)	-

Panel B: Univariate Statistics

Variable	N	Mean	Std Dev	10th Pct	25th Pct	Median	75th Pct	90th Pct
$\Delta CAV_{t-6,t}$	28,273	0.827	2.776	(0.507)	(0.209)	0.213	0.963	2.375
$E_{t-6,t}$	28,273	0.665	0.841	(0.064)	0.252	0.537	0.931	1.557
$R^{+}_{t-6,t}$	28,273	3.275	2.911	1.149	1.616	2.414	3.846	6.241
$R^{-}_{t-6,t}$	28,273	(2.101)	1.749	(3.817)	(2.412)	(1.609)	(1.151)	(0.827)
$R^{+}_{t-6,t} + R^{-}_{t-6,t}$	28,273	1.174	1.823	(0.358)	0.102	0.754	1.670	3.007

Definitions: $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (k = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive quarterly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative quarterly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the change in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period *t* and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

Table 1.5

Frequency of Conservative Accounting Value Increases and Decreases

	1 Year	3 Years	5 Years	7 Years
CAV Increases	39,847	25,877	20,528	17,505
CAV Decreases	32,250	19,105	14,772	10,768
Total	72,097	44,982	35,300	28,273
% CAV Increases	55.27%	57.53%	58.15%	61.91%

This table displays the frequency of increases and decreases in conservative accounting value for each of the four accumulation samples.

Results of Hypothesis Tests

Tables 2.1 through 2.4 present the regression results from the model in Equation (15) for increases in CAV using annual Fama-Mcbeth cross-sectional regressions. The coefficients of interest are the β_2 coefficient, which tests how increases in CAV are associated with estimates of ST, and the difference between the β_3 coefficient and the β_2 coefficient, which tests how increases in CAV are associated with estimates of AT. In each of the four accumulation periods, the results show a negative association between quintile ranks of increases in CAV and estimates of ST. The β_2 coefficient for the 1, 3, 5, and 7-year accumulation periods is -0.007 (t-stat: 4.04), -0.042 (t-stat: 12.51), -0.065 (t-stat: 12.89), and -0.069 (t-stat: 9.48), respectively. These results show that the magnitude of the estimates of ST as well as the association between estimates of ST and changes in CAV increase as the accumulation period increases. As further evidence of this effect, the estimates of ST range from 0.065 in quintile 1 to 0.041 in quintile 5 for the 1-year accumulation and 0.551 in quintile 1 to 0.200 quintile 5 for the 7-year accumulation period. Overall, the results in Tables 2.1 through 2.4 consistently support H1a and are consistent with the notion that symmetric timeliness is a proxy for conditional conservatism.

Examining the test of H1b, Tables 2.1 and 2.2 show that estimates of AT in the 1 and 3-year accumulation periods are *negatively* associated with increases in CAV in the 1-year and 3-year accumulation – periods ($\beta_3 - \beta_2$ for 1-year: -0.036; $\beta_3 - \beta_2$ for 3-year: -0.011), consistent with the increases in CAV being associated with a lower presence and magnitude of write-downs. However, the results in Tables 2.3 and 2.4 for the 5 and 7-year accumulation periods indicate no significant association and a *positive* association, respectively, between increases in CAV and estimates of asymmetric timeliness, inconsistent with H1b. As a result, H1b is only partially supported. A likely explanation for these results is that the observed degree of asymmetry in accounting recognition is likely to decrease as the accumulation period lengthens. Notably, the main-effect estimate of AT ($\beta_1 - \beta_0$) decreases significantly from Table 2.1 to Table 2.4. Overall, the results in Tables 2.1 to 2.4 provide strong evidence that estimates of ST are negatively associated with increases in CAV and some evidence that estimates of AT (i.e., write-downs) are negatively associated with increases in CAV.

Table 2.1

Estimates of Symmetric Timeliness and Asymmetric Timeliness for Increases in Conservative Accounting Value (1-year Accumulation)

Model:

$$E_{t-k,t} = \alpha_0 + \beta_0 R^{+}_{t-k,t} + \beta_1 R^{-}_{t-k,t} + \beta_2 R^{+}_{t-k,t} \times \Delta CAV_{t-k,t} + \beta_3 R^{-}_{t-k,t} \times \Delta CAV_{t-k,t} + \beta_4 \Delta CAV_{t-k,t} + \varepsilon$$

	1 Year (k=0)	
	Coefficient	***t-stat***
Constant	0.092	*15.94****
Good News (R^{+}_{t})	0.071	*6.80****
Bad News (R^{-}_{t})	0.289	*12.81****
Good News x ΔCAV	(0.007)	*4.04****
Bad News x ΔCAV	(0.043)	*8.88****
ΔCAV	(0.009)	*4.10****
N	39,847	
Average R-squared	0.132	
	Estimate	***f-stat***
AT ($\beta_1 - \beta_0$)	0.218	*120.82^^^*
AT x ΔCAV ($\beta_3 - \beta_2$)	(0.036)	*59.17^^^*

This table reports the results of annual Fama-Macbeth regression estimates of Equation (15) from 1975 to 2012. $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (k = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive monthly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative monthly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the quintile rank of the absolute value of the increase in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period t and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 2.1 continued

Estimates of ST and AT by ΔCAV Quintile Rank (1-year Accumulation)		
	Coefficient	***t-stat***
Good News:		
Quintile 1	0.065	*6.22****
Quintile 2	0.072	*6.72****
Quintile 3	0.058	*5.14****
Quintile 4	0.056	*3.42****
Quintile 5	0.041	*6.98****
Bad News:		
Quintile 1	0.289	*12.17****
Quintile 2	0.254	*9.65****
Quintile 3	0.189	*10.11****
Quintile 4	0.170	*8.57****
Quintile 5	0.110	*6.06****
	Estimate	***f-stat***
Asymmetric Timeliness:		
Quintile 1	0.224	*116.57*^^^
Quintile 2	0.182	*57.04*^^^
Quintile 3	0.130	*54.25*^^^
Quintile 4	0.114	*28.07*^^^
Quintile 5	0.069	*15.33*^^^

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 2.2

Estimates of Symmetric Timeliness and Asymmetric Timeliness for Increases in Conservative Accounting Value (3-year Accumulation)

Model:

$$E_{t-k,t} = \alpha_0 + \beta_0 R^{+}_{t-k,t} + \beta_1 R^{-}_{t-k,t} + \beta_2 R^{+}_{t-k,t} \text{ x } \Delta CAV_{t-k,t} + \beta_3 R^{-}_{t-k,t} \text{ x } \Delta CAV_{t-k,t} + \beta_4 \Delta CAV_{t-k,t} + \varepsilon$$

	3 Years (k=2)	
	Coefficient	***t-stat***
Constant	0.205	*10.54****
Good News (R^{+}_{t})	0.287	*17.97****
Bad News (R^{-}_{t})	0.423	*18.90****
Good News x ΔCAV	(0.042)	*12.51****
Bad News x ΔCAV	(0.053)	*9.01****
ΔCAV	0.004	*1.04*
N	25,877	
Average R-squared	0.234	
	Estimate	***f-stat***
AT ($\beta_1 - \beta_0$)	0.136	*75.81*^^^
AT x ΔCAV ($\beta_3 - \beta_2$)	(0.011)	*6.75*^^

This table reports the results of annual Fama-Macbeth regression estimates of Equation (15) from 1975 to 2012. $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (*k* = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive monthly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative monthly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the quintile rank of the absolute value of the increase in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period t and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 2.2 continued

Estimates of ST and AT by ΔCAV Quintile Rank (3-year Accumulation)		
	Coefficient	***t-stat***
Good News:		
Quintile 1	0.299	*14.90****
Quintile 2	0.240	*12.70****
Quintile 3	0.248	*9.56****
Quintile 4	0.187	*12.15****
Quintile 5	0.100	*9.61****
Bad News:		
Quintile 1	0.414	*15.97****
Quintile 2	0.387	*11.89****
Quintile 3	0.355	*12.05****
Quintile 4	0.285	*11.05****
Quintile 5	0.191	*7.83****
	Estimate	***f-stat***
Asymmetric Timeliness:		
Quintile 1	0.116	*40.04*^^^
Quintile 2	0.147	*46.77*^^^
Quintile 3	0.107	*33.54*^^^
Quintile 4	0.098	*31.36*^^^
Quintile 5	0.091	*24.36*^^^

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 2.3

Estimates of Symmetric Timeliness and Asymmetric Timeliness for Increases in Conservative Accounting Value (5-year Accumulation)

Model:

$$\mathbf{E}_{t\text{-}k,t} = \alpha_0 + \beta_0 \mathbf{R}^{+}_{t\text{-}k,t} + \beta_1 \mathbf{R}^{-}_{t\text{-}k,t} + \beta_2 \mathbf{R}^{+}_{t\text{-}k,t} \times \Delta\mathbf{CAV}_{t\text{-}k,t} + \beta_3 \mathbf{R}^{-}_{t\text{-}k,t} \times \Delta\mathbf{CAV}_{t\text{-}k,t} + \beta_4 \Delta\mathbf{CAV}_{t\text{-}k,t} + \varepsilon$$

	5 Years (*k* =4)	
	Coefficient	***t-stat***
Constant	0.239	*10.15****
Good News (R^{+}_{t})	0.430	*18.82****
Bad News (R^{-}_{t})	0.502	*18.43****
Good News x ΔCAV	(0.065)	*12.89****
Bad News x ΔCAV	(0.059)	*8.61****
ΔCAV	0.060	*6.51****
N	20,528	
Average R-squared	0.311	
	Estimate	***f-stat***
AT ($\beta_1 - \beta_0$)	0.072	*17.99*^^^
AT x ΔCAV ($\beta_3 - \beta_2$)	0.006	*1.21*

This table reports the results of annual Fama-Macbeth regression estimates of Equation (15) from 1975 to 2012. $E_{t\text{-}k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (*k* = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t\text{-}k,t}$ is the sum of positive monthly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t\text{-}k,t}$ is the sum of negative monthly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t\text{-}k}$ is the quintile rank of the absolute value of the increase in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t\text{-}k,t}$ is computed as the difference between conservative accounting value at the end of period t and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 2.3 continued

Estimates of ST and AT by ΔCAV Quintile Rank (5-year Accumulation)

	Coefficient	*t-stat*
Good News:		
Quintile 1	0.467	*17.48****
Quintile 2	0.373	*12.82****
Quintile 3	0.348	*15.59****
Quintile 4	0.238	*12.66****
Quintile 5	0.148	*10.35****
Bad News:		
Quintile 1	0.531	*19.37****
Quintile 2	0.465	*12.63****
Quintile 3	0.440	*12.45****
Quintile 4	0.332	*9.11****
Quintile 5	0.234	*10.22****
	Estimate	***f-stat***
Asymmetric Timeliness:		
Quintile 1	0.064	*9.15^^^*
Quintile 2	0.092	*21.61^^^*
Quintile 3	0.092	*23.72^^^*
Quintile 4	0.094	*16.67^^^*
Quintile 5	0.086	*47.36^^^*

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 2.4

Estimates of Symmetric Timeliness and Asymmetric Timeliness for Increases in Conservative Accounting Value (7-year Accumulation)

Model:

$$\mathbf{E}_{t-k,t} = \alpha_0 + \beta_0 \mathbf{R}^{+}_{t-k,t} + \beta_1 \mathbf{R}^{-}_{t-k,t} + \beta_2 \mathbf{R}^{+}_{t-k,t} \times \Delta \mathbf{CAV}_{t-k,t} + \beta_3 \mathbf{R}^{-}_{t-k,t} \times \Delta \mathbf{CAV}_{t-k,t} + \beta_4 \Delta \mathbf{CAV}_{t-k,t} + \varepsilon$$

	7 Years (k=6)	
	Coefficient	***t-stat***
Constant	0.272	*8.88****
Good News (R^{+}_{t})	0.509	*15.51****
Bad News (R^{-}_{t})	0.545	*17.08****
Good News x ΔCAV	(0.069)	*9.48****
Bad News x ΔCAV	(0.055)	*5.83****
ΔCAV	0.125	*8.18****
N	17,505	
Average R-squared	0.339	
	Estimate	***f-stat***
AT ($\beta_1 - \beta_0$)	0.036	*7.98^^^*
AT x ΔCAV ($\beta_3 - \beta_2$)	0.014	*5.60^^*

This table reports the results of annual Fama-Macbeth regression estimates of Equation (15) from 1975 to 2012. $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (k = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive monthly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative monthly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the quintile rank of the absolute value of the increase in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period t and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 2.4 continued

Estimates of ST and AT by ΔCAV Quintile Rank (7-year Accumulation)

	Coefficient	***t-stat***
Good News:		
Quintile 1	0.551	*14.53****
Quintile 2	0.468	*15.07****
Quintile 3	0.396	*13.17****
Quintile 4	0.307	*10.47****
Quintile 5	0.200	*11.32****
Bad News:		
Quintile 1	0.595	*17.71****
Quintile 2	0.541	*17.48****
Quintile 3	0.453	*9.32****
Quintile 4	0.390	*10.14****
Quintile 5	0.277	*7.71****
	Estimate	***f-stat***
Asymmetric Timeliness:		
Quintile 1	0.044	*5.94^^*
Quintile 2	0.072	*21.87^^^*
Quintile 3	0.057	*4.34^^*
Quintile 4	0.083	*22.48^^^*
Quintile 5	0.077	*11.30^^^*

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Turning to the tests of H2, Tables 3.1 through 3.4 present the regression results from the model in Equation (15) for decreases in CAV. As with estimates in Tables 2.1 through 2.4, the coefficients of interest are the β_2 coefficient and the difference between the β_3 coefficient and the β_2 coefficient. H2a predicts that decreases in CAV will be negatively associated with estimates of AT, consistent with the notion that the recognition of write-downs mitigates decreases in CAV. In all four accumulation periods, quintile ranks of decreases in CAV are negatively associated with estimates of AT. The difference between the β_3 coefficient and the β_2 coefficient for the 1, 3, 5, and 7-year accumulation periods is -0.009 (f-stat: 7.44), -0.013 (f-stat: 6.79), -0.017 (f-stat: 7.74), and -0.018 (f-stat: 5.01), respectively. Turning to H2b, quintile ranks of decreases in CAV are negatively associated with estimates of ST in three of the four accumulation periods (1, 5, and 7 years), which largely supports H2b. As with the results in Tables 2.1 through 2.4, this effect becomes more pronounced as the accumulation period lengthens. Overall, the results in Tables 3.1 through 3.4 provide support for H2a and H2b.

The results of the tests of H1 and H2 provide support for the assertions made by the model in Chapter III. Notably, estimates of ST are negatively associated with increases in CAV. As increases in CAV result from good news, this finding is consistent with the notion that ST contributes to the positive accumulation of CAV. Conversely, estimates of ST and AT are negatively associated with decreases in CAV. As decreases in CAV result from bad news, these findings are consistent with the notion that high levels of AT and ST mitigate decreases to CAV.

Table 3.1

Estimates of Symmetric Timeliness and Asymmetric Timeliness for Decreases in Conservative Accounting Value (1-year Accumulation)

Model:

$$E_{t-k,t} = \alpha_0 + \beta_0 R^{+}_{t-k,t} + \beta_1 R^{-}_{t-k,t} + \beta_2 R^{+}_{t-k,t} \text{ x } \Delta CAV_{t-k,t} + \beta_3 R^{-}_{t-k,t} \text{ x } \Delta CAV_{t-k,t} + \beta_4 \Delta CAV_{t-k,t} + \varepsilon$$

	1 Year (k=0)	
	Coefficient	***t-stat***
Constant	0.075	*14.20****
Good News (R^{+}_{t})	0.043	*4.52****
Bad News (R^{-}_{t})	0.137	*19.42****
Good News x ΔCAV	(0.006)	*2.49***
Bad News x ΔCAV	(0.015)	*5.24****
ΔCAV	(0.003)	*2.80****
N	32,250	
Average R-squared	0.179	
	Estimate	***f-stat***
AT ($\beta_1 - \beta_0$)	0.094	*62.93^^^*
AT x ΔCAV ($\beta_3 - \beta_2$)	(0.009)	*7.44^^^*

This table reports the results of annual Fama-Macbeth regression estimates of Equation (15) from 1975 to 2012. $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (*k* = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive monthly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative monthly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the quintile rank of the absolute value of the decrease in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period t and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 3.1 continued

Estimates of ST and AT by ΔCAV Quintile Rank (1-year Accumulation)		
	Coefficient	***t-stat***
Good News:		
Quintile 1	0.064	*6.78****
Quintile 2	0.059	*5.00****
Quintile 3	0.061	*5.17****
Quintile 4	0.051	*5.29****
Quintile 5	0.037	*4.58****
Bad News:		
Quintile 1	0.182	*19.87****
Quintile 2	0.203	*14.43****
Quintile 3	0.183	*15.10****
Quintile 4	0.133	*10.18****
Quintile 5	0.127	*15.31****
	Estimate	***f-stat***
Asymmetric Timeliness:		
Quintile 1	0.118	*121.78^^^*
Quintile 2	0.144	*97.67^^^*
Quintile 3	0.122	*86.24^^^*
Quintile 4	0.082	*19.69^^^*
Quintile 5	0.089	*55.04^^^*

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 3.2

Estimates of Symmetric Timeliness and Asymmetric Timeliness for Decreases in Conservative Accounting Value (3-year Accumulation)

Model:

$$E_{t-k,t} = \alpha_0 + \beta_0 R^{+}_{t-k,t} + \beta_1 R^{-}_{t-k,t} + \beta_2 R^{+}_{t-k,t} \text{ x } \Delta CAV_{t-k,t} + \beta_3 R^{-}_{t-k,t} \text{ x } \Delta CAV_{t-k,t} + \beta_4 \Delta CAV_{t-k,t} + \varepsilon$$

	3 Years (k=2)	
	Coefficient	***t-stat***
Constant	0.222	*13.82****
Good News (R^{+}_{t})	0.268	*12.35****
Bad News (R^{-}_{t})	0.300	*15.90****
Good News x ΔCAV	(0.008)	*1.56*
Bad News x ΔCAV	(0.021)	*3.38****
ΔCAV	0.001	*0.41*
N	19,105	
Average R-squared	0.312	
	Estimate	***f-stat***
AT ($\beta_1 - \beta_0$)	0.031	*5.41^^*
AT x ΔCAV ($\beta_3 - \beta_2$)	(0.013)	*6.79^^*

This table reports the results of annual Fama-Macbeth regression estimates of Equation (15) from 1975 to 2012. $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (k = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive monthly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative monthly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the quintile rank of the absolute value of the decrease in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period t and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 3.2 continued

Estimates of ST and AT by ΔCAV Quintile Rank (3-year Accumulation)		
	Coefficient	***t-stat***
Good News:		
Quintile 1	0.298	*11.62****
Quintile 2	0.293	*19.08****
Quintile 3	0.298	*11.73****
Quintile 4	0.277	*12.65****
Quintile 5	0.266	*11.17****
Bad News:		
Quintile 1	0.359	*17.44****
Quintile 2	0.387	*19.92****
Quintile 3	0.346	*14.19****
Quintile 4	0.318	*13.66****
Quintile 5	0.292	*13.05****
	Estimate	***f-stat***
Asymmetric Timeliness:		
Quintile 1	0.060	*10.23^^^*
Quintile 2	0.095	*39.30^^^*
Quintile 3	0.048	*5.31^^*
Quintile 4	0.041	*6.12^^*
Quintile 5	0.026	*4.11^^*

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 3.3

Estimates of Symmetric Timeliness and Asymmetric Timeliness for Decreases in Conservative Accounting Value (5-year Accumulation)

Model:

$$E_{t-k,t} = \alpha_0 + \beta_0 R^{+}_{t-k,t} + \beta_1 R^{-}_{t-k,t} + \beta_2 R^{+}_{t-k,t} \text{ x } \Delta CAV_{t-k,t} + \beta_3 R^{-}_{t-k,t} \text{ x } \Delta CAV_{t-k,t} + \beta_4 \Delta CAV_{t-k,t} + \varepsilon$$

	5 Years (k=4)	
	Coefficient	***t-stat***
Constant	0.320	*14.15****
Good News (R^{+}_{t})	0.356	*13.05****
Bad News (R^{-}_{t})	0.350	*13.36****
Good News x ΔCAV	(0.026)	*4.46****
Bad News x ΔCAV	(0.044)	*5.21****
ΔCAV	0.000	*0.02*
N	14,772	
Average R-squared	0.369	
	Estimate	***f-stat***
AT ($\beta_1 - \beta_0$)	(0.006)	*0.22*
AT x ΔCAV ($\beta_3 - \beta_2$)	(0.017)	*7.74^^^*

This table reports the results of annual Fama-Macbeth regression estimates of Equation (15) from 1975 to 2012. $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (*k* = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive monthly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative monthly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the quintile rank of the absolute value of the decrease in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period t and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 3.3 continued

Estimates of ST and AT by ΔCAV Quintile Rank (5-year Accumulation)		
	Coefficient	***t-stat***
Good News:		
Quintile 1	0.460	*12.71****
Quintile 2	0.442	*13.71****
Quintile 3	0.458	*11.99****
Quintile 4	0.417	*15.15****
Quintile 5	0.338	*11.12****
Bad News:		
Quintile 1	0.527	*13.40****
Quintile 2	0.469	*16.34****
Quintile 3	0.488	*13.04****
Quintile 4	0.475	*13.89****
Quintile 5	0.315	*10.23****
	Estimate	***f-stat***
Asymmetric Timeliness:		
Quintile 1	0.067	*7.85^^^*
Quintile 2	0.027	*1.31*
Quintile 3	0.030	*2.60*
Quintile 4	0.058	*10.60^^^*
Quintile 5	(0.023)	*2.01*

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 3.4

Estimates of Symmetric Timeliness and Asymmetric Timeliness for Decreases in Conservative Accounting Value (7-year Accumulation)

Model:

$$E_{t-k,t} = \alpha_0 + \beta_0 R^{+}_{t-k,t} + \beta_1 R^{-}_{t-k,t} + \beta_2 R^{+}_{t-k,t} \times \Delta CAV_{t-k,t} + \beta_3 R^{-}_{t-k,t} \times \Delta CAV_{t-k,t} + \beta_4 \Delta CAV_{t-k,t} + \varepsilon$$

	7 Years (k=6)	
	Coefficient	***t-stat***
Constant	0.442	*11.63****
Good News (R^{+}_{t})	0.434	*12.66****
Bad News (R^{-}_{t})	0.421	*11.30****
Good News x ΔCAV	(0.031)	*3.01****
Bad News x ΔCAV	(0.049)	*3.61****
ΔCAV	0.011	*0.78*
N	10,768	
Average R-squared	0.396	
	Estimate	***f-stat***
AT ($\beta_1 - \beta_0$)	(0.013)	*0.51*
AT x ΔCAV ($\beta_3 - \beta_2$)	(0.018)	*5.01^^*

This table reports the results of annual Fama-Macbeth regression estimates of Equation (15) from 1975 to 2012. $E_{t-k,t}$ is the cumulative income before extraordinary items (Compustat: IB) during the years ended *t-k* to *t* (k = 0, 2, 4, or 6) scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-k-1* ; $R^{+}_{t-k,t}$ is the sum of positive monthly raw returns during the years ended *t-k* to *t* ; $R^{-}_{t-k,t}$ is the sum of negative monthly raw returns during the years ended *t-k* to *t* ; $\Delta CAV_{t,t-k}$ is the quintile rank of the absolute value of the decrease in conservative accounting value during the years ended *t-k* to *t* . Conservative accounting value is computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). $\Delta CAV_{t-k,t}$ is computed as the difference between conservative accounting value at the end of period t and conservative accounting value at the end of period *t-k-1* , scaled by the market value of assets at the end of period *t-k-1* .

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 3.4 continued

Estimates of ST and AT by ΔCAV Quintile Rank (7-year Accumulation)		
	Coefficient	***t-stat***
Good News:		
Quintile 1	0.575	*12.91****
Quintile 2	0.524	*11.43****
Quintile 3	0.547	*14.18****
Quintile 4	0.481	*10.95****
Quintile 5	0.432	*11.38****
Bad News:		
Quintile 1	0.634	*13.19****
Quintile 2	0.558	*13.77****
Quintile 3	0.587	*13.06****
Quintile 4	0.496	*10.80****
Quintile 5	0.413	*9.90****
	Estimate	***f-stat***
Asymmetric Timeliness:		
Quintile 1	0.059	*4.53^^*
Quintile 2	0.034	*2.80*
Quintile 3	0.041	*4.65^^*
Quintile 4	0.015	*0.93*
Quintile 5	(0.019)	*0.89*

t-statistics
*** p<0.01, ** p<0.05, * p<0.10
f-statistics
^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Turning to the tests of H3 and H4, Table 4 presents descriptive statistics for the sample observations. The sample is comprised of 72,415 firm-year observations from 1975 to 2012. Volatility is calculated as the standard deviation of the monthly stock returns from the fourth fiscal month of the year to the third fiscal month of the following year. Leverage is calculated as the ratio of debt to the market value of total assets. Of note in Table 4, are the strong pairwise correlations between beginning CAV and leverage, which provides empirical justification for testing H4.

Table 5 presents the regression results for the tests of H3a and H3b. H3a predicts a negative and significant relationship between beginning-of-period CAV and estimates of AT, as the write-down buffer reduces the likelihood that a write-down is recognized. H3b predicts a positive and significant relationship between volatility of returns and estimates of AT, as the volatile bad news events increase the likelihood that a write-down is recognized. Consistent with expectations, estimates of AT are negatively associated with the quintile rank of beginning CAV ($\beta_3 - \beta_2$: -0.026; f-stat: 39.39) and positively associated with the quintile rank of volatility ($\beta_5 - \beta_4$: 0.023; f-stat: 45.10), providing support for both H3a and H3b. The results in Table 5 are consistent with the notion that estimates of AT capture the presence and magnitude of write-downs, which is not necessarily a proxy for AT.

Table 4

Descriptive Statistics (Observability of Asymmetric Timeliness Sample)

Panel A: Pairwise Correlations - Pearson (Spearman) above (below) Diagonal

	E_t	R^+_t	R^-_t	CAV_{t-1}	Vol_t	Lev_{t-1}
E_t	-	0.020	0.323	(0.091)	(0.320)	0.135
R^+_t	0.186	-	0.067	(0.108)	0.363	0.049
R^-_t	0.374	0.253	-	(0.148)	(0.588)	0.113
CAV_{t-1}	(0.244)	(0.105)	(0.153)	-	0.087	(0.603)
Vol_t	(0.321)	0.255	(0.586)	0.111	-	(0.089)
Lev_{t-1}	0.261	0.038	0.143	(0.646)	(0.156)	-

Panel B: Univariate Statistics

	N	**Mean**	**Std Dev**	**10th Pct**	**25th Pct**	**Median**	**75th Pct**	**90th Pct**
E_t	72,415	0.037	0.116	(0.088)	0.008	0.053	0.089	0.142
R^+_t	72,415	0.458	0.543	0.049	0.147	0.310	0.577	0.992
R^-_t	72,415	(0.293)	0.249	(0.638)	(0.435)	(0.240)	(0.097)	(0.006)
CAV_{t-1}	72,415	0.366	0.367	(0.107)	0.149	0.415	0.642	0.791
Vol_t	72,415	0.130	0.074	0.061	0.081	0.114	0.159	0.217
Lev_{t-1}	72,415	0.195	0.202	0.000	0.017	0.135	0.312	0.500

Definitions: E_t is income before extraordinary items (Compustat: IB) for the year *t* scaled by market value of equity (Compustat: PRCC_F x CSHO) at the end of year *t-1* ; R^+_t is the sum of positive quarterly raw returns for the year *t* ; R^-_t is the sum of negative quarterly raw returns for the year *t* ; CAV_{t-1} is conservative accounting value at the end of year *t-1*, computed as the difference between the market value of equity and the book value of equity (Compustat: CEQ). Vol_t is the volatility of stock returns during year *t* , computed as the standard deviation of monthly stock returns for year *t* . Lev_{t-1} is leverage at the end of year *t-1* , computed as the ratio of the sum of long-term debt (Compustat: DLTT) and debt in current liabilities (Compustat: DLC) to the market value of total assets (Compustat: [PRCC_F x CSHO] + DLTT + DLC).

Table 5

Estimates of Asymmetric Timeliness with Volatility and Conservative Accounting Value

Model:

$$E_t = \alpha_0 + \beta_0 R^+_t + \beta_1 R^-_t + \beta_2 R^+_t \text{ x } CAV_{t-1} + \beta_3 R^-_t \text{ x } CAV_{t-1} + \beta_4 R^+_t \text{ x } VOL_t + \beta_5 R^-_t \text{ x } VOL_t + \beta_6 CAV_{t-1} + \beta_7 VOL_t + \varepsilon$$

	Coefficient	*t-stat*
Constant	0.080	*9.29****
Good News (R^+_t)	0.099	*16.18****
Bad News (R^-_t)	0.141	*10.61****
Good News x CAV	(0.015)	*9.54****
Bad News x CAV	(0.041)	*9.55****
Good News x VOL	(0.003)	*2.05***
Bad News x VOL	0.020	*6.47****
CAV	(0.004)	*2.43***
VOL	(0.009)	*6.40****
Observations	72,415	
Average R-squared	0.207	

	Estimate	*f-stat*
AT	0.042	12.50^^^
AT x CAV	(0.026)	39.39^^^
AT x VOL	0.023	45.10^^^

This table reports the results of annual Fama-Macbeth regression estimates of Equation (16) from 1975 to 2012. CAV_{t-1} is the quintile rank of conservative accounting value at the end of year *t-1* . VOL_t is the quintile rank of volatility of stock returns during year *t* . Other variables are as previously defined.

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Tables 6.1 and 6.2 present the results for the tests of H4. Recall that H4 is presented in the null form and is intended to test whether the relationship between estimates of AT and leverage is driven by contracting incentives, consistent with conservatism theory, or driven by the size of the write-down buffer. A rejection of H4 would provide support for the contracting interpretation, whereas a failure to reject H4 would provide support for the write-down buffer interpretation.

Table 6.1 (6.2) displays AT regression estimates without (with) interactions of CAV quintiles. In the model without CAV interactions in Table 6.1, estimates of AT are positively associated with the quintile rank of leverage ($\beta_3 - \beta_2$: 0.022; f-stat: 17.96), consistent with prior research. In the model that includes the quintile rank of CAV, however, there is no evidence of a positive association between leverage and estimates of AT ($\beta_3 - \beta_2$: 0.008; f-stat: 1.68), which results in a failure to reject H4. However, the negative association between estimates of AT and CAV is still present. The failure to reject H4 lends support to the notion that the observed relationship between estimates of AT and leverage is largely driven by the relationship between leverage and the presence and magnitude of recording write-downs. It is important to note, however, that this finding does not necessarily indicate that conditional conservatism is unrelated to debt contracting incentives, but rather, that the empirical proxies used to measure these constructs may be confounded by other factors.

Table 6.1

Estimates of Asymmetric Timeliness and Leverage w/o Conservative Accounting Value

Model:

$$E_t = \alpha_0 + \beta_0 R^+_t + \beta_1 R^-_t + \beta_2 R^+_t \times LEV_{t-1} + \beta_3 R^-_t \times LEV_{t-1} + \beta_4 LEV_{t-1} + \varepsilon$$

	w/o CAV	
	Coefficient	***t-stat***
Constant	0.063	*12.80****
Good News (R^+_t)	0.022	*3.47****
Bad News (R^-_t)	0.099	*13.13****
Good News x LEV	0.009	*6.75****
Bad News x LEV	0.031	*6.37****
LEV	0.008	*5.57****
N	72,415	
Average R-squared	0.164	
	Estimate	***f-stat***
AT	0.078	58.49^^^
AT x LEV	0.022	17.96^^^

This table reports the results of annual Fama-Macbeth regression estimates of Equation (17) from 1975 to 2012. LEV_{t-1} is the quintile rank of leverage at the end of year *t-1* . CAV_{t-1} is the quintile rank of conservative accounting value at the end of year *t-1* . Other variables are as previously defined.

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

Table 6.2

Estimates of Asymmetric Timeliness and Leverage w/ Conservative Accounting Value

Model:

$$\mathbf{E}_t = \alpha_0 + \beta_0 R^+_t + \beta_1 R^-_t + \beta_2 R^+_t \times LEV_{t-1} + \beta_3 R^-_t \times LEV_{t-1} + \beta_4 R^+_t \times CAV_{t-1} + \beta_5 R^-_t \times CAV_{t-1} + \beta_6 LEV_{t-1} + \beta_7 CAV_{t-1} + \varepsilon$$

	w/ CAV	
	Coefficient	***t-stat***
Constant	0.067	*7.18****
Good News (R^+_t)	0.065	*7.14****
Bad News (R^-_t)	0.215	*13.41****
Good News x LEV	0.001	*0.80*
Bad News x LEV	0.009	*1.76**
Good News x CAV	(0.014)	*7.33****
Bad News x CAV	(0.034)	*8.57****
LEV	0.007	*5.07****
CAV	(0.001)	*0.48*
N	72,415	
Average R-squared	0.193	
	Estimate	***f-stat***
AT	0.150	68.48^^^
AT x LEV	0.008	1.68
AT x CAV	(0.020)	23.56^^^

This table reports the results of annual Fama-Macbeth regression estimates of Equation (17) from 1975 to 2012. LEV_{t-1} is the quintile rank of leverage at the end of year *t-1* . CAV_{t-1} is the quintile rank of conservative accounting value at the end of year *t-1* . Other variables are as previously defined.

t-statistics

*** p<0.01, ** p<0.05, * p<0.10

f-statistics

^^^ p<0.01, ^^ p<0.05, ^ p<0.10

CHAPTER VII

CONCLUDING REMARKS

This study examines the theoretical links between symmetric timeliness, asymmetric timeliness and conditional conservatism. The theoretical links between these timeliness tendencies and conditional conservatism are evaluated in two phases. First, I examine the manner in which ST and AT contribute to the accumulation of conservative accounting value, which provides a basis for assessing the theoretical consistency between ST, AT, and conditional conservatism. I find that the theoretical consistency between the timeliness tendencies and conditional conservatism is dependent on the accumulated magnitudes of good news and bad news. Specifically, a low level of ST is theoretically consistent with conditional conservatism when the accumulation of good news exceeds the accumulation of bad news, and a high level of ST is theoretically consistent with conditional conservatism when the accumulation of bad news exceeds the accumulation of good news. Additionally, a high level of AT is theoretically consistent with conditional conservatism when the accumulation of bad news exceeds or is equal to the accumulation of good news.

Second, I examine the extent to which ST and AT are observable using the Basu (1997) AT measure, a prominent and influential proxy for conditional conservatism. I find that ST is observable in all contexts within the AT measure, whereas AT can be obscured by the write-down buffer and the volatility of news events.

Future research interested in estimating conditional conservatism with the AT measure should focus on both symmetric and asymmetric timeliness estimates and carefully consider which of these tendencies is most appropriate for the firms being analyzed. Additionally, future research could examine ways to improve the observability of asymmetric timeliness. One way of approaching this issue is to develop a method to separate conservative accounting value into the assets in place component (C) and the growth opportunities component (F). This would allow researchers to estimate the magnitude of the write-down buffer and observe news events that are specific to asymmetrically recognized assets in place. Overall, the intent of this study is to build on the enormously influential body of research on conditional conservatism and to help improve the way in which conditional conservatism is measured.

REFERENCES

Ahmed, A., Morton, R., & Schaefer, T. (2000). Accounting conservatism and the valuation of accounting numbers: Evidence of the feltham-ohlson (1996) model. *Journal of Accounting, Auditing & Finance*, 15(3), 271-292.

Ahmed, A., Billings, B., Morton, R., & Stanford-Harris, M. (2002). The role of accounting conservatism in mitigating bondholder-shareholder conflicts over dividend policy and in reducing debt costs. *The Accounting Review*, 77(4), 867-890.

Ahmed, A. S., & Duellman, S. (2011). Evidence on the role of accounting conservatism in monitoring managers? investment decisions. *Accounting & Finance*, 51(3), 609-633.

Ball, R., Kothari, S., & Nikolaev, V. (2013a). On Estimating Conditional Conservatism. *The Accounting Review*, 88(3), 755-787.

Ball, R., Kothari, S., & Nikolaev, V. (2013b). Econometrics of the Basu Asymmetric Timeliness Coefficient and Accounting Conservatism. *Journal of Accounting Research*, 51(5), 1071-1097.

Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: Comparative loss recognition timeliness. *Journal of Accounting and Economics*, 39(1), 83-128.

Ball, R. & Watts, R. (1979). Some additional evidence on survival biases. *The Journal of Finance*, 34(1), 197-206.

Bandyopadhyay, S., Chen, C., Huang, A., & Jha, R. (2010). Accounting conservatism and the temporal trends in current earnings' ability to predict future cash flows versus future earnings: Evidence on the trade-off between relevance and reliability. *Contemporary Accounting Research*, 27(2), 413-460.

Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics*, 24(1), 3-37.

Beatty, A., Weber, J., & Yu, J. (2008). Conservatism and Debt. *Journal of Accounting and Economics*, 45(2-3), 154-174.

Beaver, W., & Ryan, S. (2000). Biases and lags in book value and their effects on the ability of the book-to-market ratio to predict book return on equity. *Journal of Accounting Research*, 38(1), 127-148.

Beaver, W., & Ryan, S. (2005). Conditional and unconditional conservatism: Concepts and modeling. *Review of Accounting Studies*, 10(2-3), 269-309.

Callen, J., Segal, D., & Hope, O. (2010). The pricing of conservative accounting and the measurement of conservatism at the firm-year level. *Review of Accounting Studies*, 15(1), 145-178.

Cano Rodríguez, M. & Núñez-Nickel, M. (2015). Aggregation Bias in Estimates of Conditional Conservatism: Theory and Evidence. *Journal of Business Finance & Accounting*, forthcoming.

Caskey, J., & Peterson, K. (2014). Conservatism measures that control for the effects of economic rents on stock returns. *Review of Quantitative Finance and Accounting*, 42(4), 731-756.

Chan, A. L. C., Lin, S. W. J., & Strong, N. (2009). Accounting conservatism and the cost of equity capital: UK evidence. *Managerial Finance*, 35(4), 325-345.

Chen, L. H., Folsom, D., Paek, W., & Sami, H. (2014). Accounting conservatism, earnings persistence, and pricing multiples on earnings. *Accounting Horizons*, 28(2), 233-260.

Collins, D., Hribar, P., & Tian, X. (2014). Cash flow asymmetry: Causes and implications for conditional conservatism research. *Journal of Accounting and Economics*, 58(2-3), 173-200.

Dechow, P., Ge, W., & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50(2/3), 344-401.

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

Easton, P., & Pae, J. (2004). Accounting Conservatism and the Relation Between Returns and Accounting Data. *Review of Accounting Studies*, 9, 495-521

Feltham, G., & Ohlson, J. (1995). Valuation and clean surplus accounting for operating and financial activities. *Contemporary Accounting Research*, 11(2), 689-731.

Francis, Jen., LaFond, R., Olsson, P. M., & Schipper, K. (2004). Costs of equity and earnings attributes. *The Accounting Review*, 79(4), 967-1010.

Francis, Jer., & Martin, X. (2010). Acquisition profitability and timely loss recognition. *Journal of Accounting and Economics*, 49(1/2), 161-178.

García Lara, J. M., Garcia Osma, B., & Penalva, F. (2011). Conditional conservatism and cost of capital. *Review of Accounting Studies*, 16(2), 247-271.

Givoly, D., & Hayn, C. (2000). The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative? *Journal of Accounting and Economics*, 29(3), 287-320.

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

Helbok, G., & Walker, M. (2004). On the nature and rationality of analysts' forecasts under earnings conservatism. *The British Accounting Review*, 36(1), 45-77.

Iyengar, R., & Zampelli, E. (2010). Does accounting conservatism pay? *Accounting & Finance*, 50(1), 121-142.

Jackson, S., & Liu, X. (2010). The allowance for uncollectible accounts, conservatism, and earnings management. *Journal of Accounting Research*, 48(3), 565-601.

Khan, M., & Watts, R. (2009). Estimation and empirical properties of a firm-year measure of accounting conservatism. *Journal of Accounting and Economics*, 48(2-3), 132-150.

Kim, M., & Kross, W. (2005). The ability of earnings to predict future operating cash flows has been increasing--not decreasing. *Journal of Accounting Research*, 43(5), 753-780.

Kothari, S. P. (2001). Capital markets research in accounting. *Journal of Accounting and Economics*, 31(1), 105-231.

LaFond, R., & Watts, R. (2008). The Information Role of Conservatism. *The Accounting Review,* 83(2), 447-478.

Louis, H., Lys, T., & Sun, A. X. (2008). Conservatism and analyst earnings forecast bias. Working Paper, Pennsylvania State University.

Louis, H., Sun, A. X., & Urcan, O. (2012). Value of cash holdings and accounting conservatism*. *Contemporary Accounting Research*, 29(4), 1249-1271.

Monahan, S. (2005). Conservatism, growth and the role of accounting numbers in the fundamental analysis process. *Review of Accounting Studies*, 10(2-3), 227.

Myers, S. (1977). Determinants of Corporate Borrowing. *Journal of Financial Economics* 5(2), 147-175.

Ohlson, J. (1995). Earnings, book values, and dividends in equity valuation. *Contemporary Accounting Research*, 11(2), 661-687.

Pae, J., & Thornton, D. B. (2010). Association Between Accounting Conservatism and Analysts' Forecast Inefficiency. *Asia-Pacific Journal of Financial Studies*, 39(2), 171-197.

Pae, J., Thornton, D., & Welker, M. (2005). The Link Between Earnings Conservatism and the Price-to-Book Ratio. *Contemporary Accounting Research*, 22(3), 693-717.

Patatoukas, P., & Thomas, J. (2011). More Evidence of Bias in the Differential Timeliness Measure of Conditional Conservatism. *The Accounting Review*, 86(5), 1795-1793.

Patatoukas, P., & Thomas, J. (2014). Revisiting Conditional Conservatism. Working Paper, University of California, Berkeley.

Penman, S. H., & Zhang, X. (2002). Accounting conservatism, the quality of earnings, and stock returns. *The Accounting Review*, 77(2), 237-264.

Qiang, X. (2007). The effects of contracting, litigation, regulation, and tax costs on conditional and unconditional conservatism: Cross-sectional evidence at the firm level. *The Accounting Review*, 82(3), 759-796.

Roychowdhury, S., & Watts, R. (2007). Asymmetric timeliness of earnings, market-to-book and conservatism in financial reporting. *Journal of Accounting and Economics*, 44(1/2), 2-31.

Ruch, G., & Taylor, G. (2015). Accounting Conservatism: A Review of the Literature. *Journal of Accounting Literature*, forthcoming.

Ryan, S. (2006). Identifying Conditional Conservatism. *European Accounting Review*, 15(4), 511-525.

Wang, R., Hógartaigh, C., & van Zijl, T. (2009). Measures of accounting conservatism: A construct validity perspective. *Journal of Accounting Literature* 28: 165-203.

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

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

Wittenberg-Moerman, R. (2008). The role of information asymmetry and financial reporting quality in debt trading: Evidence from the secondary loan market. *Journal of Accounting and Economics*, 46(2), 240-260.

Zhang, J. (2008). The contracting benefits of accounting conservatism to lenders and borrowers. *Journal of Accounting and Economics*, 45(1), 27-54.