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Abstract

Following Basu's (1995, 1997) seminal work[1], accounting literature adopted the Basu coefficient to measure conditional conservatism (among others, Ball et al. 2003; Ball et al. 2000; Ball et al. 2005; Ball and Shivakumar 2005; Lobo and Zhou 2006; Chandra et al. 2004). However, Basu's choice of proxy for measuring the arrival of good/bad news, stock returns, introduces inaccuracy in the measure of conditional conservatism (Dietrich et al. 2007; Roychowdhury and Watts 2007; Givoly et al. 2007).

To address the problem, I introduce a new measure of conditional conservatism, which results from a Least Absolute Deviation (LAD) piecewise regression and adopts the number of changes in financial analysts' EPS forecasts as a proxy for good/bad news about future earnings and extends the analysis to two-year and three-year time horizons.

I use this new measure to test three determinants that prior literature suggested to explain the presence of accounting conservatism. Results show that companies with (1) high debt-to-assets ratio – closer to default on their debt covenants, with large portion of executives' compensation tied to the firm's performance, and in the year prior to a going concern opinion from their auditors report aggressively, recognizing future good news in annual earnings more quickly than bad news.

Keywords: Conservatism, Asymmetric Timeliness, EPS, Financial Analysts.
Data Availability: All data are available from public sources.

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[1] As of October 1, 2007, 120 citations for Basu (1997) are recorded on Thomson ISI's Social Sciences Citation Index (http://portal.isiknowledge.com) and 412 are on Google Scholar (http://scholar.google.com)

1. Introduction

The conservative principle, defined as the more timely recognition of unrealized losses vs. gains in annual earnings, has characterized for centuries the practice of accounting reporting (Basu 1997). Despite its widespread adoption over time and in different countries, however, the concept is somewhat counter-intuitive. Why do we have rules mandating the prompt recognition of expected losses, but delay the recognition of gains until they are (1) realized or realizable and (2) earned[2]? Instead, would a timely recognition of all the available news be more informative to users of financial statements, and thus preferred? Indeed, recently the US Financial Accounting Standard Board (FASB), jointly with the International Accounting Standard Board (IASB), stated:

> *Neutrality is incompatible with conservatism, which implies a bias in financial reporting information. […] Conservative or otherwise biased financial reporting information is equally unacceptable.*[3]

This issue has been the basis for eminent academic research since Basu's influential work (Givoly et al. 2007; Roychowdhury and Watts 2007; LaFond and Watts 2007; Guay 2006; Ryan 2006; Choi et al. 2006; Guay and Verrecchia 2006; Bushman and Piotroski 2006; Watts 2003a, 2003b; Ryan and Zarowin 2003). Indeed, the understanding of the motivations and determinants of conditional conservatism is central to gaining insights in the role of financial reporting in debt contracting, managerial compensation, firm valuation, and institutional settings.

However, many important questions remain unanswered and more empirical issues need to be addressed. Has the analysis of conditional conservatism been exhaustive in identifying all the factors that might explain its widespread adoption? Is Basu's coefficient the appropriate measure of

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[2] FASB Concept Statement No. 5.

[3] FASB, Preliminary Views, Conceptual Framework for Financial Reporting: Objective of Financial Reporting and Qualitative Characteristics of Decision-Useful Financial Reporting Information, July 6, 2006, No. 1260-001, p. 29, underlying added.

conditional conservatism to study its variation over time, firms, and countries? The term timeliness refers to the interval of time that intercurs between the time a given piece information – news - about a firm's future increase/decrease in earnings become available and the time the same information appears in the firm's periodic financial statements. Prior research found an asymmetric difference in the information timeliness, conditionally to its content: good news (i.e., information associated with a future increase in earnings) takes longer than bad news (i.e., information associated with a future decrease in earnings) to appear in the firm's financial statements.

The empirical problem is that it is not possible to track directly each single piece of public information about a company. Researchers need to find a measurable and observable variable to use as a proxy. So far, following Basu, many researchers adopted stock returns as a proxy to measure the public flow of firms' good/bad news. Specifically, Basu uses "negative and positive unexpected annual stock returns to proxy for 'bad news' and 'good news', respectively" (1997). If the price of the stock at the end of a period is greater than the price at the beginning of the period, then Basu assumes that over the period good news (somehow quantified) about the company is greater than bad news.

Despite its widespread adoption, as recent literature highlights, there are economic and econometric limits of Basu's model and measure of conservatism (Dietrich et al. 2007; Givoly et al. 2007; Roychowdhury and Watts 2007). The problems stem from the choice of stock returns as proxy for good/bad news. Many of the factors that trigger a reaction in Basu's proxy variable– i.e. stock price increases or decreases - are related to events that a firm's accounting system cannot and will not record, because general market factors, or because not associated with the firm's under analysis. Hence, they will not appear as an increase or decrease of earnings in the firm's actual financial statement, nor will it happen in the future. These "non accounting" factors act only as a disturbance term – noise – in the attempt to measure the differential timeliness of good/bad news about the firm's future earnings, introducing a noisy signal in the measure of asymmetric timeliness, hence in the measure of conditional conservatism (Roychowdhury and Watts 2007).[4]

To reduce the noise, hence increasing the accuracy of the measure, I propose to adopt the number of revisions in financial analysts' EPS forecasts as a new proxy of the flow of good/bad news about a company. Financial analysts gather all available information, but use only the part that is going to be recognized in future earnings (Nichols and Wahlen 2004) to revise their EPS estimates.[5] Acting as a filter, analysts reduce the noise that characterizes stock returns as a proxy for good/bad news. The new proxy, able to capture the arrival of good and bad "accounting[6]" news about the firm's future earnings, together with the use of a Lease Absolute Deviation (LAD) regression and the extension of the analysis time horizon to three years will result in a more precise, *a priori*, measure of conditional conservatism.

Once I demonstrate that this measure of asymmetric timeliness is, *a priori*, less noisy (thus more precise), I can test whether determinants suggested by previous literature - managerial, debt contracting, and auditor's choice - are still able to explain the reasons for conditional conservatism. I test (1) whether companies with a higher debt-to-asset ratio, where bondholders detain more power, are characterized by higher conditional conservatism. Next, I test (2) whether companies in which executives' compensation is more heavily based on firms' accounting performances are characterized by higher conditional conservatism. Finally, I test (3) whether there is an association between auditors, auditor opinions, and the company's lagged conditional conservatism.

[4] Let's assume, for example, that over a given period there is only one piece of information about firm A's future earnings, and that the content of the information suggests that firm A's earnings will grow in the next period (for instance, a positive net present value project that firm A will start in the following period). If in the current period the market experiences a decrease, then the variable adopted as a proxy for good/bad news flow – stock returns – might also decrease, suggesting the arrival of a flow of bad news for firm A. Instead, the only real "accounting" news about firm A is good news. In the following period firm A will recognize the increase of earnings in its financial statement coming from the positive NPV project, but the traditional conservatism model will not be able to measure the timeliness of good news, because the proxy variable adopted signaled the arrival of bad news instead.

[5] I adopt here the three theoretical links between earnings and share prices developed by Beaver (1998): current period earnings provide information to predict the future periods' earnings, which provide information to forecast dividends in future periods, which provide information to determine stock prices, equal to the present value of future dividends.

Results of the paper provide evidence supporting the results obtained adopting a modified version of the Basu's measure (Ball and Kothari 2007; Roychowdhury and Watts 2007), indirectly confuting the conceptual and econometric criticism to the Basu's model, mainly by Dietrich, Muller, and Riedl (2007). More specifically, the paper provides evidence that that (1) companies characterized by a high debt-to-asset ratio, contrary to expectations, recognize good news about future earnings as quickly as bad news. These companies, which are closer to default in debt provisions than companies with low leverage ratio, are more likely to take higher risks and "manage" earnings through a relatively faster recognition of expected gains (good news), in order to reduce the chances of defaulting the requirements of debt indentures, thus reducing the asymmetric timeliness that I find for the rest of the sample. Additionally, (2) companies with executives compensations more heavily based on the company's accounting performances do consistently exhibit aggressive accounting, defined as expected gains recognized in annual earnings faster than losses. This provide evidence consistent with a relative higher power of the firm's executives (who have incentives to adopt aggressive accounting to increase an annual compensation package based on the firm's accounting performance) over shareholders, who have incentives to enforce conservative accounting to reduce the chances of overpaying the firm's management. Furthermore, (3a) companies that in the previous year were audited by one of the big 7 auditing firms, and (3b) firms that received an unqualified auditor opinion show a higher conditional conservative behavior than the rest of the sample. Finally, over a reduced sample of 6,282 firm-year observations, I find that companies receiving an auditors' opinion qualified with a going concern assumption applied aggressive accounting in the year prior to the going concern opinion but became highly conservative in the year the qualified opinion was issued and the following year. Significantly, during the year of the going concern opinion and the following year, these firms turned around to adopt conservative accounting, even stronger than the other firms in the sample.

The paper is organized as follows: Chapter 2 reviews prior research. Chapter 3 describes the hypotheses tested in the paper. Chapter 4 provides a short description of the sample and details its descriptive statistics. Chapter 5 outlines the research design and provides results. Chapter 6 performs some sensitivity analyses. Chapter 7 concludes and points to future avenues for research.

2. Prior Research

2.1 Conservatism Determinants

Previous literature (LaFond and Watts 2007; Watts 2003a; Ball et al. 2005) suggests five alternative explanations for conservatism in financial reporting. The first explanation is its use as *efficient technology employed in firm governance*. A conservative accounting approach is used to deal with the moral hazard determined by the asymmetric information, limited liability, and asymmetric payoffs of the different parties involved in the firms, e.g. management compensation and debt contracts. The second possible explanation for accounting conservatism is limiting *shareholders' litigation*. Overstating a firm's net assets is more likely to increase the litigation costs for the firm than understating net assets. Thus, with conservatism, the firm reduces its expected litigation costs. The third possible explanation is *taxation*; in profitable firms, conservatism reduces the present value of taxes[7], thus increasing the value of the firm. The fourth possible explanation of conservatism in financial reporting is *standard setters' and regulators' incentives*. Both standard setters and regulators are exposed to asymmetric loss functions because they would be more criticized if they adopt accounting standards that favor overstatement of net assets instead of understatement of net assets. Finally, the fifth reason for conservatism in financial accounting is theoretically introduced and

[7] Deferring revenues recognition and accelerating expenses recognition.

empirically tested recently by LaFond and Watts (2007)[8]. They argue that conditional conservatism may serve as a *corporate governance mechanism to reduce the information asymmetry* among the various parties (managers, shareholders, investors, stakeholders in general) involved in firms' contracts, litigation, taxation, and regulation processes. Much of the information asymmetry arises from the firm's investment opportunity sets, but it also occurs because of the way the firm's management, more informed about events and investment opportunities, formally collects and reports information to stakeholders. The two common denominator factors in the economic explanation of accounting conditional conservatism are the asymmetry of both the loss functions and information sets that characterize the different categories of stakeholders.

2.2 Empirical Research Results

Basu (1997, 1995) tests conditional conservatism by regressing annual accounting earnings on stock returns for the same year separately for companies with negative returns and positive returns, adopting returns as a proxy for bad/good news. He predicts, and actually finds, a higher coefficient and a higher R square for the bad news sample than for the good news sample. Following Basu (1997), a great body of literature analyzing accounting conservatism adopted his framework in identifying and measuring conditional conservatism in its most important consequence, namely the asymmetric timeliness of expected gains and losses in reported earnings.

Among the early researchers, Ryan and Zarowin (2003) investigate the reasons for a decline in the linear relation between annual stock returns and accounting earnings over the past 30 years. They

[8] LaFond and Watts adopt the PIN score developed by Easley, Hvidkjaer and O'Hara (2002) to proxy for equity investors asymmetric information. The PIN score is the probability of an information-based trade derived from a structural market microstructure model and it has been adopted by numerous papers to capture the difference in the information asymmetries between informed and uninformed investors.

found evidence supporting two related explanations: 1) earnings reflect news with a lag with respect to stock prices, and 2) earnings increasingly over time reflect good and bad news in an asymmetric way.

On the same issue Pope and Walker (1999) present evidence of growing asymmetry over time in accounting earnings.

More recently, Roychowdhury and Watts (2007) propose a theory and provide supporting empirical results to explain the relation between asymmetric timeliness (conditional conservatism) and market-to-book ratio (unconditional conservatism). When returns are driven by changes in rents and unverifiable net assets changes, then the measure of conservatism introduced by Basu (1997) is not very accurate. Roychowdhury and Watts suggest that asymmetric timeliness is a better measure of conservatism when it is estimated cumulatively over multiple years.

Ryan (2006) argues that, despite the limitations documented in the literature and highlighted at the end of this section, asymmetric timeliness is the most direct consequence of conditional conservatism. Hence, asymmetric timeliness should retain its primacy in the literature investigating conditional conservatism. The author offers four specific suggestions for estimating asymmetric timeliness and for interpreting it as a measure of conditional conservatism. Among them, Ryan (2006) suggests to filter returns when they are used as a proxy to assess asymmetric timeliness, in order to mitigate the proxy biases arising from sampling of an endogenous variable. (Dietrich et al. 2007).

Lobo et al. (Lobo and Zhou 2006) document an increase in conservatism in financial reporting after the enactment of the Sarbanes-Oxley Act (SOX) in 2002.[9] Others (Ball et al. 2000; Givoly and Hayn 2000; Ryan and Zarowin 2003) offer consistent evidence that the asymmetric timeliness series varies across time and explaining the variation with changes in legal liability.

[9] SOX, among other requirements, provide that CEOs and CFOs certify the firm's financial statements.

Moreover, many papers in this stream of literature present evidence of a positive association between accounting conservatism and:

- U.S. high-tech firms (Chandra et al. 2004), because they are subject to more stringent accounting standards (SFAS 2) and higher shareholders' litigation risk;
- public and larger firms in the U.K. (Ball and Shivakumar 2005);
- firms audited by one of the Big "X" (Krishnan 2005), with longer auditor tenure (Jenkins and Velury 2006), after an audit partner rotation (Hamilton et al. 2005) and with the accounting expertise (but not with non-accounting expertise) of the audit committee members (Krishnan and Gnanakumar 2006).

Starting with the critique that Basu's approach lacks an equilibrium pricing model, Callen, Hope et al. (2005) approach the study of conservatism in accounting by adopting the Callen and Segal asset pricing model (2004). This model expresses unexpected changes in stock returns as a function of unexpected changes in accruals (accruals news), unexpected shocks to current and expected future cash flow (cash flow news), and expected return (discount rate). They find empirical evidence of a significant increasing concave relation between unexpected changes in stock returns and earnings news.[10]

Dietrich et al. (Dietrich et al. 2007) criticize the use of the asymmetric timeliness measure to test the hypothesis that reported accounting earnings are "conservative." The authors identify econometric properties of the asymmetric timeliness estimation procedure that cause biases in the test statistics, unless restrictive conditions are met. These biases arise from the sampling formation procedure on an endogenous variable[11] - returns - and the consequent distributional properties of the truncated sample. They conclude that because the biases originate in the asymmetric timeliness specification design itself, alternative measures such as negative non-operating accruals (Givoly and Hayn 2000), market-

[10] The model assumes earning news equal to the sum of cash flow news and accruals news.

[11] Returns, indeed, can be affected by earning information, generating endogeneity in the Basu regression.

to-book ratio (Feltham and Ohlson 1995), and change in cash investments (Easton and Pae 2004) should be adopted to further investigate accounting conservatism.

2.3 Adoption of Number of Analysts' EPS Estimate Revisions as a Replacement of Market Returns Proxy

To measure conditional conservatism I will adopt Basu's definition - the accountants' tendency to require a higher degree of verification for the recognition of good news in earnings than bad news - within the framework based on the theory of conservatism in accounting illustrated by Watts (2003b, 2003a) and Roychowdhury and Watts (2007)[12].

However, following Basu and using stock returns as a proxy for good and bad news about firms' future earnings creates two main economic and econometric problems.

First, if returns on the market are driven by the value or changes in the value (good and bad news) of rents[13] or unobservable increases in the value of separable net assets, these changes will never be included in reported earnings. Indeed, accounting recognizes increases in separable asset values when they are completely verifiable but does not recognize changes in rents, nor increases in unobservable separable net assets (Roychowdhury and Watts 2007). If this is true, then the asymmetric timeliness approach that Basu adopts will measure conditional conservatism with error (Roychowdhury and Watts 2007), because of the noise introduced by the choice of the variable market returns as a measure of good/bad news about firms' future earnings. Basu's regression approach, indeed, works only if returns summarize news from sources other than accounting earnings and the news can be, at least in

[12] In this framework, the objective of accounting is to assess, at a point in time, the firm's value available for interim distribution to the company's claimants (shareholders, bondholders, employees, other stakeholders), and not to measure the market value of the shareholders' equity. The accounting system, as we can observe in practice, pursues this objective through the adoption of rules that recognize increases in separable asset values only when they are completely verifiable. This definition of the object of measure is key to understanding why the variable traditionally used as a proxy of good/bad news about the firm's future earnings (returns to investors) introduces noise in the assessment of conditional conservatism.
[13] Where rents are defined, following the guidance of Roychowdhury and Watts (2007), as growth options and monopoly returns.

principle, recognized in earnings in the same period (Ryan 2006). Rents, however, are only recognized in the accounting system when they are acquired, not when they are generated inside the firm. Additionally, changes in rents are recognized only for decreases in acquired rents, and not always consistently (cfr. SFAS 142). Returns, finally, may not reflect all non-accounting information available, may reflect good and bad news depending on the firm's disclosure policies, or may be driven by the information content of earnings, creating an endogeneity problem in the Basu regression. Ryan's conclusion is that: "it would be preferable to estimate asymmetric timeliness using measures of news other than returns" (Ryan 2006).

The second problem with Basu's framework has been highlighted in Dietrich et al. (2007). They argue that Basu's model, reversing the relation of accounting (reported earnings) and non-accounting information driving the firm's stock price, and adopting instead accounting information as the dependent variable in the regression of reported earnings on changes in the firm's stock price (returns), causes two types of biases: sample-variance-ratio bias and sample truncation bias. The regression coefficient estimates suffer from these two biases, one arising from the regression specification and one arising from sampling on an endogenous and asymmetrically distributed variable (returns). Although those biases can be negligible, as Ryan (2006) points out, at least one of the two is related to the adoption of returns, an endogenous variable, as a measure of news and treated in the model as an independent variable.

Ball and Shivakumar (2006), in an attempt to deal with the problem of using market returns as a proxy for good/bad news, adopt instead cash flow from operations as a proxy for good/bad news about future firm's earnings. However, cash flow from operations shows (i) asymmetric timeliness, (ii) is affected by different accounting choices, (iii) is part of earnings (causing an endogeneity problem more serious than the returns proxy), and (iv) is highly correlated with accruals.

To address these problems I adopt the number of financial analysts' estimates of earnings per share (EPS) raised/lowered over the period as a new proxy. Every time an accounting or non-accounting piece of information reaches the market, financial analysts evaluate the impact of the good/bad news on future EPS and revise (or not) their EPS estimates. This measure of news offers a few advantages over the traditional returns proxy:

- There is no reason to believe, *a priori*, that the distribution of the number of analysts' estimate revisions is non symmetric, which would address, partially, the issues raised by Dietrich et al. (2007). Indeed, *ex post*, the symmetry plot of the change in analysts' estimates suggests that the variable exhibits a symmetric distribution around a mean value of –1, confirmed by the skewness value of the distribution equal to –0.049.
- Adopting the number of analysts' estimate revisions in EPS does attenuate the endogeneity problem of using returns as a proxy. Changes in EPS estimates for year *t+1* from one day after the end of the fiscal year *t* until the end of fiscal year *t+1* should not, indeed, influence the annual reported earnings of year *t*. This will address Ryan's suggestion (Ryan 2006) of using measures of news that do not involve returns, or filtering returns removing the portion in windows around earnings announcements to limit the endogeneity problem.
- The number of changes in EPS estimates should be less noisy than the returns on the market in measuring the good/bad news. This measure will reflect all, and only, the pieces of information (news) that will impact the firm's future earnings and that will have a chance to be recorded in annual earnings over the years, based on the analysts' professional judgment.
- Finally, this addresses the concerns of Roychowdhury and Watts (2007) about empiricists measuring the asymmetric timeliness over horizons not including the firm's IPO, thus ignoring that the composition of the shareholders equity at the start of the year influences the annual timeliness

measure. The new variable that I propose to adopt is a change variable that include in its initial value (current forecasted EPS) all the pieces of information available at that time.

The new approach uses the new proxy in association with a quantile (or Least Absolute Deviation) regression. This allows for a more precise measure of conditional conservatism, capturing the underlying asymmetry in the timeliness in the recognition of good/bad news in annual reported earnings. Indeed, quantile regression assumes that analysts deal with a linear loss function, trying to minimize their absolute forecast error instead of the square of the forecast error, as in the OLS case.[14]

3. Hypotheses

3.1 New Measure of Conservatism

The first hypothesis that I test in the paper is whether, using a different proxy for good/bad news within the Basu intuitive framework, I still find asymmetric timeliness in the recognition of good/bad news in reported earnings. If, by adopting the new proxy, the asymmetry disappears, then Dietrich et al. (2007) were correct in attributing the results found with the Basu model to the econometric biases highlighted above. However, if by using the new proxy (which reduces the magnitude of the two biases related to the adoption of returns as a proxy for good/bad news), the asymmetric timeliness persists, then the asymmetric timeliness research design cannot be considered invalid.

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[14] The LAD estimator, β_{LAD} (n-element column vector), minimizes the sum of the absolute errors. While the OLS regression provides unbiased estimators of the mean of the dependent variable conditional on the independent variables, the LAD regression (or, more generally, quantile regression (Koenker and Bassett 1978)) provides unbiased estimates of the median (n quantile) of the dependent variable conditional on the independent variables. When the dependent variable and the model errors are distributed symmetrically and the errors are independent from the explanatory variables adopted, both OLS and LAD yield estimates of the same parameter vector. In this case, researchers usually choose the estimator with the lower variance. The variance of the estimator depends on the kurtosis of the error distribution. OLS provides a lower variance estimator in the case of normal distribution, while the LAD estimator is characterized by lower variance with fat tails distributions (Basu and Markov 2004; Newey and Powell 1987). Prior literature (Basu 1995; Frecka and Hopwood 1983) provides evidence that scaled earnings distribution is left-skewed, which might suggest that the conditional distribution of the dependent variable in model (1), scaled earnings, is skewed too.

To test for asymmetric timeliness, I use the piecewise regression approach of Model (1), with a dummy equal to one when the number of EPS revisions downward over the period is higher than the number of revisions upward, which means that over the fiscal year, analysts received more bad news about future earnings than good news. However, since the independent variable is now related to the analysts' forecast revisions, a quantile regression is more appropriate than the traditional OLS regression. Indeed, previous literature found that analysts seem to process public information regarding their earnings forecasts in a somewhat biased way, due to "analysts' optimism" (Ramnath et al. 2006). Because of their optimism, I expect analysts to overvalue the good news and include it fairly quickly in their forecast revisions. Hence, upon running a traditional OLS regression, I expect the interaction variable coefficient (β_1) in the model to be statistically equal to zero. This analysts' inefficiency disappears if, instead of an OLS regression, researchers use a quantile (or least absolute deviation, LAD) regression (Basu and Markov 2004). Thus, I expect to find the interaction coefficient β_1 positive when I run a quantile regression. Hence, the first hypothesis:

Hypothesis 1: The value of the interaction variable coefficient in the model adopted (1) is significant and positive when I run a quantile regression, while not significantly different from zero (or even negative) when I run an OLS regression.

3.2 Conditional Conservatism Determinants

Previous literature (Watts 2003a; LaFond and Watts 2006) offers five alternative explanations for conservatism in financial reporting: (1) debt and managerial contracting, (2) taxation, (3) asymmetric information among investors, (4) asymmetric loss function of standard setters, and (5) shareholders' litigation.

The explanation for conditional conservatism due to debt contracting implies that debt-holders require the firm to adopt high conservative accounting standards to avoid the distribution of a firm's wealth to other claimholders in case of the firm's financial default. If this is the correct theory to explain conservatism in accounting, then, all else equal, I would expect a higher conservatism for firms with high leverage (higher proportion of debt over equity) than for firms with low leverage. This leads to the second hypothesis tested in this paper:

Hypothesis 2: Firms with high leverage exhibit higher asymmetric timeliness than firms with low leverage.

The managerial contracting theory explains the adoption of conditional conservative accounting standards and practice as an attempt by the shareholders to avoid overcompensating the firm's managers based on future expected gains before these gains actually translate into positive cash flow for the firm. The more the executives' compensation packages are based on the firm's accounting performances, the more I would expect shareholders to ask for the adoption of more conservative accounting practices. On the other hand, the more executives' compensation packages are based on the firm's accounting performances (in the form of bonuses), the more I would expect the executives to use aggressive accounting, recognizing expected gains more quickly than losses in earnings, to increase their compensation. Then, the third hypothesis I test in the paper is:

Hypothesis 3: Firms with compensation contracts for executives highly dependent on the firm's accounting performance exhibit higher asymmetric timeliness than firms with compensation contracts not based on the firm's accounting performance .

Previous literature (Basu 1997) also found that changes in the level of conservatism over time were likely due to a change in the auditors' legal liability exposure. When auditors are more exposed to the risk of being sued in relation to their work, they tend to require the client firms to be more conservative. After auditors state a going concern opinion, then, I would expect the clients to adopt very rigorous conservative accounting standards, to reduce the risk of legal liability for the auditors and for the management. This leads to the fourth hypothesis that I test in the paper:

Hypothesis 4: Firms that the previous year (a) has been audited by one of the Big 7 firm, and (b) received a going concern opinion or a clear opinion with explanatory language from auditors exhibit higher asymmetric timeliness than other firms in the sample.

4. Sample and Descriptive Statistics

I gather market data from CRSP monthly files and accounting data from Compustat North America annual industrial for the period between 1963 and 2005. Data about analysts' EPS forecasts from 1989 to 2005 come from the First Call database. Data about auditors' going-concern opinions from 2000 to 2005 come from the Audit Analytics database. Finally, executive compensation data from 1991 to 2005 are taken from ExecuComp database.

I calculate the value of earnings deflated by the beginning of the period market value, $X/P_{it,}$ and winsorized at the first and 99th percentile values, $X/Pwin_{it}$, as earnings before extraordinary items (Compustat *DATA18*) for firm *i* in fiscal year *t*, divided by the market value of equity ($MktVal_{it}$, equal to the number of shares outstanding, Compustat *DATA25*, times price per share, Compustat *DATA199*) for firm *i* at the beginning of the fiscal year *t*. I compute $Diff_{it}$ as the difference between the sum of the upward (f_up_{it}) and the sum of the downward revisions (f_down_{it}) in the analysts' EPS forecast for firm *i* over the fiscal period *t* (from First Call database). Moreover, to compare the results with the Basu model, I calculate cumulative buy-and-hold annual returns (R_{it}, and winsorized at the first and 99th percentile values, $Rwin_{it}$) as the increase in the price of stock ($P_{it,}$ from CRSP) over the period starting

9 months before and ending 3 months after the fiscal end of the year[15], divided by the stock price at the beginning of the period $R_{it} = \left(\frac{P_t}{P_{t-1}}\right) - 1$. I also run the analysis calculating cumulative buy-and-hold annual returns for the fiscal period to make sure the results are not driven by the time horizon adopted. I collect compensation information for all the executives of the company from the ExecuComp database. In particular, I sum for each company and each year the total salary[16] ($SALARY_{it}$) the total bonus[17] ($BONUS_{it}$), and other annual compensation[18] ($SUMOTH_{it}$) paid to the firm's executives. The executive ratio (Exe_{it}) is calculated as ExecuComp $SALARY_{it}$ + all other annual compensation ($SUMOTH_{it}$), divided by total current compensation (*SALARY+BONUS)* plus all other annual compensation (*SUMOTH*) for each year and each firm. Data are at a firm level, as I sum salary, bonus, and all other annual compensation for all the executives of the company for each year. Market-to-book ratio (MB_{it}) is calculated as Compustat *DATA25*DATA199*, divided by *DATA60*. Leverage (Lev_{it}) is calculated as Compustat *DATA9+DATA34*, divided by *DATA6*. I use the total number of analysts following a given firm in the year (data from First Call) as a control variable in the regression. The information about auditors' opinions for each company and each year come from Compustat (*DATA149*) and from Audit Analytics (*going_concern* field). As a control for heteroskedasticity, the OLS regressions report White t-statistics (White 1980).

Descriptive statistics of the sample show that the sample mean of total assets is $8,971 million, the average market-to-book ratio is 3.50, and the average leverage ratio is 0.23. The mean of the scaled net income before extraordinary items is positive (1.71), even when I winsorize the variable at the first

[15] To ensure that the market reaction to a previous year's earnings is excluded from the analysis.
[16] The dollar value of the base salary (cash and non-cash) earned by the firm's executive officers during the fiscal year.
[17] The dollar value of a bonus (cash and non-cash) earned by the firm's executive officers during the fiscal year.
[18] This is the amount listed under "All Other Compensation" in the Summary Compensation Table. This includes items such as: 1) Severance Payments; 2) Debt Forgiveness; 3) Imputed Interest; 4) Payouts for cancellation of stock options; 5) Payment for unused vacation; 6) Tax reimbursements; 7) Signing bonuses; 8) 401K contributions; 9) Life insurance premiums.

and 99th percentile values (0.037). Positive is also the average value of the buy and hold returns, both when I do not winsorize the variable (12.63%) and when I do winsorize at the first and 99th percentile values (10.68%), suggesting that the companies in the sample are profitable and deliver positive return to investors. The variable adopted as a proxy of good/bad news about earnings, *Diff*, is symmetrically distributed around the mean value that is approximately –1, suggesting that, on average, there is more bad news than good news over the fiscal period. For the average company, there are 15 upward and 16 downward revisions in the analysts' EPS estimates over 12 months. These descriptive statistics for the sample are consistent with other recent studies (LaFond and Watts 2006).

The correlation table, reporting Pearson correlation coefficients, shows that returns (both winsorized and non-winsorized) exhibit a significant positive correlation with the *Diff* variable, and with the number of upward revisions in the analysts' EPS forecast. Returns, as expected, are negatively correlated with the downward revisions in the analysts' EPS forecast. The proxy variable for good/bad news, *Diff*, is positively correlated with the size of the company, as measured by total assets value (*DATA6* of Compustat), with the scaled earnings variable after winsorizing (*X/Pwin*) and with the firm's market value of equity, while it is negatively correlated with the leverage ratio (*Lev*).

5. Research Design and Empirical Results

I propose to analyze accounting conservatism with a model of earnings deflated by beginning-of-period market value on the difference in the number of upward and downward revisions in analysts' EPS estimates over the fiscal year (Model 1):

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 D_{it} + \beta_0 Diff_{it} + \beta_1 Diff_{it} * D_{it} + \beta_2 NumEst_{it} \qquad (1)$$

where:

X_{it} denotes the earnings before extraordinary items (Compustat data18) for firm *i* in fiscal year *t*; P_{it-1} is the market value of equity (number of shares outstanding times price on the market from CRSP) at the beginning of the fiscal year *t*; $Diff_{it}$ is the difference between upward and downward revisions in the analysts' EPS forecast for firm *i* and period *t* (from First Call database); D_{it} is a dummy variable equal to 1 if $Diff_{it} < 0$, and equal to zero otherwise. $NumEst_{it}$ is the number of analysts that are following the company throughout the year, which I adopt as a control variable to make sure a higher number in the variable *Diff* is not coming from the size of the company or the number of analysts following it, but from the amount of good/bad news about the company's future cash flow. The model builds from Basu's intuition of testing the different timeliness of good/bad news reported in annual earnings. There are four important differences respect to the original Basu's model (1997). First, I use the cumulative difference between the sum of the upward and the downward revisions in the analysts' EPS forecast to measure good/bad news. Second, I run a LAD regression instead of an OLS regression. Third, following the findings in previous literature (Roychowdhury and Watts 2006), I extend the analysis to two-year and three-year time horizons. Fourth, I control in the regression for $NumEst_{it-j,t}$, the number of analysts that are following the company throughout the year, as an indirect control of the firm's size, or visibility.

5.1 Hypothesis 1

To test the first hypothesis I estimate Model (1) winsorizing the variable $X_{it-j,t}/P_{it-j-1,t-1}$ and returns to investors at the first and 99th percentile values to reduce the influence of outliers. [19]

[Insert table 2 about here]

[19] Non-tabulated regression results for non-winsorized variables show qualitatively similar evidence.

I compare the results obtained estimating Model (1) using OLS and LAD regressions with the original Basu model/variables regression results, for the three time horizons corresponding to j=0, j=1, and j=2. As expected, Table 2 shows that, when I estimate Model (1) with a pooled cross-sectional OLS regression, the analysts' optimism (Ramnath et al. 2006) overcomes the conservative accounting standards and the model fails to detect any asymmetry in the timeliness of recognition of good/bad news about future earnings over the sample (interaction coefficient positive but not statistically different from zero) when the analysis is limited to a one year period (j=0). Expanding the time horizon with an OLS regression to two and three years (j=1 and j=2) shows evidence of conditional conservatism (interaction coefficient β_1 positive and statistically significant). These results provide indirect support for expanding the time horizon to two/three years when adopting an OLS regression, because, as previous literature suggested, Basu's single-period asymmetry is just an implication of accounting standards requiring asymmetric verification for the recognition of good and bad news in accounting earnings, and not a measure of the aggregate conditional conservatism at the firm level (Roychowdhury and Watts 2006).

When I adopt a LAD regression, to take into consideration the linear loss function that previous research identified as more appropriate for financial analysts (Basu and Markov 2004; Clatwhrthy et al. 2006), I consistently find, as expected, a positive and significant value for the coefficient of the interaction term over all the time horizons (equal to 0.000289, t value of 7.31 for j=0, 0.000268, t value of 5.14 for j=1, and equal to 0.000260, t value of 3.93 for j=2). Results for the LAD regression show a consistent presence of conditional conservatism over the three time horizons. If I adopt the relative measure of asymmetry that has been used in the accounting literature since Basu (1997), calculating the ratio of $(\beta_1+\beta_0)/\beta_0$ to measure how much faster bad news is recognized in reported annual earning than good news, I find that bad news is recognized in reported earnings respectively 7.1 times (for j=0), 4.5 times (for j=1) and 3.0 times (for j=2) faster than good news. There is an evident decreasing trend in the asymmetric timeliness[20] when the analysis is extended from one to three-year horizon, suggesting, again, that the extension of the time horizon recommended by Roychowdhury and Watts (2006) is appropriate. If I run the traditional Basu model over the sample (with returns as a proxy for good/bad news), I find results consistent with the presence of conservatism as in the original Basu model, thereby indirectly validating the sample adopted in this study.

5.2 Hypothesis 2

To test the hypothesis of increase in conditional conservatism associated with increase in the importance of debt as a source of financing for the company operations, I subdivide the sample in quartiles based on the leverage ratio (Lev_{it}) for firm *i* at time *t*, calculated as firm's total debt (*DATA9+DATA34* of Compustat) divided by total assets (*DATA6* of Compustat). Then, I measure the conditional conservatism in the lowest and highest quartile with Model (1) running a LAD regression (Table 3 Panel A and B).

[Insert table 3 about here]

Furthermore, I run the model, based on Model (1) with the new variable *Lev*, to measure the leverage ratio (Model 2):

$$X_{it-j,t} / P_{it-j-1,t-1} = \alpha_0 + \alpha_1 D_{it-j,t} + \beta_0 Diff_{it-j,t} + \beta_1 Lev_{it-j,t} + \beta_2 Diff_{it-j,t} * D_{it-j,t} + \beta_3 Lev_{it-j,t} * D_{it-j,t} + \beta_4 Lev_{it-j,t} * Diff_{it-j,t} + \beta_5 Lev_{it-j,t} * Diff_{it-j,t} * D_{it-j,t} + \beta_2 NumEst_{it-j,t} \quad (2)$$

[20] Although I do not formally run cross-equation tests for the statistical difference of the ratio values among the different time horizons, I do run simple F tests for a range of constant values to see which values each ratio is statistically different from. This creates a confidence interval for each ratio. The ratio of 7.1 for j=0 is statistically different from the value 3 (F value of 5.12, p value of 0.0237) but not statistically different from the value 4.5 (F value of 1.01, p value of 0.3143). The ratio of 4.5 for j=1 is not statistically different from either 3 or 7.1 (respectively F value of 2.10, p value of 0.1470 and F value of 0.55, p value of 0.4596). Finally, The ratio of 3 is statistically different (at 10% confidence level) from the value of 7.1 (F value of 3.60, p value of 0.0579) but not different from the value of 4.5 (F value of 1.10, p value of 0.2933).

where all the variables are defined above, and $Lev_{it-j,t}$ is the leverage ratio. Consistent with results from previous literature (LaFond and Watts 2006), I expect to find a higher level of conservatism (higher coefficient estimate for $\beta_{1)}$ from Model (1) for companies with high leverage ratio (Table 3 Panel B) than for companies with low leverage ratio (Table 3 Panel A). I also expect a significant and positive value for the estimate of the coefficient β_5, in Model (2), which shows how bad news is recorded in annual reported earnings more quickly than good news for companies with higher leverage ratio (Table 3 Panel C).

Results for firms in the lowest quartile (Table 3 Panel A), with a low annual debt-to-assets ratio (leverage ratio mean value equal to 0.0158), show for Model (1) a positive and significant interaction coefficient estimate β_1 (equal to 0.00025, T value of 1.96 for j=2), providing evidence of conditional conservatism, i.e. bad news recognized in annual earnings more quickly than good news. Results for firms in the highest leverage ratio quartile (Table 3 Panel B), with leverage ratio mean value of 0.5042, show for Model (1) an interaction coefficient estimate β_1 non-statistically different from zero (-0.000017, T value of 0.08 for j=2), exhibiting, rather surprisingly, symmetric timeliness in the recording of good/bad news in annual reported earnings. For firms with high debt-to-assets ratio, then, there is no evidence of the use of conservative accounting, with good news recognized in annual reported earnings as fast as bad news. Table 3 Panel C reports the results of the estimation of Model (2). Contrary to the expectations originating from previous literature's suggestion that debt contracting is an economic reason for the presence of conditional conservatism, results show a positive association between the level of leverage ratio and the speed of recognition in annual reported earnings of good news, instead of bad news. Although these results are not consistent with the findings in the conservative accounting stream of literature (LaFond and Watts 2006; Roychowdhury and Watts 2007), they are consistent with results provided by the earnings management literature. Companies with a high leverage ratio (closer to default in debt provisions than companies with low leverage ratio) are more likely to take higher risks and "manage" earnings, through a relatively faster recognition of expected gains, in order to reduce the chances of not meeting the requirements included in the debt indentures. This behavior would cause a reduction in the level of conservatism in their annual reported earnings.

5.3 Hypothesis 3

To test the third hypothesis, I gather data from the Executive Compensation (ExecuComp) section of Compustat for firms between 1992 and 2005. First, I measure the amount of annual compensation that does not depend on firm accounting performance: *SALARY*, equal to the dollar value of the base salary (cash and non-cash) earned by the firm's executive officers during the fiscal year and all other annual compensation (*ALLOTHTOT*), which includes items such as severance payments, debt forgiveness, imputed interest, payouts for cancellation of stock options, payment for unused vacation, tax reimbursements, signing bonuses, 401K contributions, and life insurance premiums.

Second, I measure the amount of total current compensation (*SALARY+BONUS)* from ExecuComp and add all other annual compensation (*ALLOTHTOT*) to calculate the total annual compensation[21].

Third, I compute *Exe* as the ratio of *SALARY+ALLOTHTOT* divided by the total annual compensation *(SALARY+BONUS+ALLOTHTOT)* and use it as an index of the incentives for executives to use an aggressive accounting practice, recognizing unrealized gains more quickly than unrealized losses in the annual reported earnings, with the aim to increase their total annual compensation. The lower the index, the higher the incentives for executives to adopt aggressive accounting practice. Managers can increase their total annual compensation, for example, by

[21] I do not use the variable total annual compensation (*TDC2*) from ExecuComp because *TDC2* includes items such as the net value of stock options exercised. The inclusion of stock options and other stock-based compensation incentives rather than earnings based incentive would confound my results.

accelerating the recognition in actual earnings of future unrealized gains, within GAAP rules. On the other side of the coin, shareholders know about these incentives. In fact, previous literature provided evidence that shareholders enforce more stringent conservative accounting rules as the firm executives' incentives to adopt aggressive accounting practices increase (Watts 2003a, 2003b). The aim is to reduce the probability of overpaying the firm's managers.

To test the hypothesis that firms with compensation contracts for executives highly dependent on the firm's accounting performance exhibit higher asymmetric timeliness than firms with compensation contracts not dependent on a firm's performance, I adopt the following model, modifying Model (1) with the introduction of a new variable *Exe* to measure the incentives of the firm's executives to adopt a more timely recognition of unrealized gains than losses in annual earnings (Model 3):

$$X_{it-j,t} / P_{it-j-1,t-1} = \alpha_0 + \alpha_1 D_{it-j,t} + \beta_0 Diff_{it-j,t} + \beta_1 Exe_{it-j,t} + \beta_2 Diff_{it-j,t} * D_{it-j,t} + \beta_3 Exe_{it-j,t} * D_{it-j,t} + \beta_4 Exe_{it-j,t} * Diff_{it-j,t} + \beta_5 Exe_{it-j,t} * Diff_{it-j,t} * D_{it-j,t} + \beta_6 NumEst \quad (3)$$

All the variables are defined above. I expect to find the coefficient of the interaction term β_5 negative and statistically significant, indicating that, as previous literature pointed out (Watts 2003a; LaFond and Watts 2006), one of the determinants of conditional conservatism in accounting is its use by shareholders as an efficient form of firm governance, particularly in management compensation contracts. The higher the executive ratio index value (*Exe*), the higher the portion of the total annual compensation that *does not* depend on firm accounting performances. Hence, I would expect the incentives for shareholders to ask for a rigorous enforcement of conditional conservatism to decrease in response to the decrease in the executives' incentives to recognize good news more quickly than bad news in the annual reported earnings.

[Insert table 4 about here]

Table 4 shows that, contrary to the expectations, the coefficient estimate for the interaction term β_5 for Model (3) is positive and significant at 5% level in the two-year time horizon (j=1), and in the three-year time horizon (j=2), while it is not statistically different from zero in the one-year time horizon (j=0). This provides evidence that firms implementing executive compensation more dependent on a firm's accounting performances recognize unrealized gains in earnings in a more timely manner than losses, i.e. aggressive accounting. The results seem to confirm the relative power of the firm's executives over shareholders. Indeed, executives have incentives to adopt aggressive accounting to increase their annual compensation package, particularly when the annual package heavily depends on bonuses based on the firm's accounting performance, while shareholders have incentives to enforce conservative accounting rules to reduce the chances of overpaying the firm's management.

5.4 Hypothesis 4

Hypothesis 4 (a) and (b) tests the association between the auditors' firm and opinion at the time *t-1*, and the level of conditional conservatism at time *t*. Moreover, it tests the association between auditors' going concern opinion at time *t-1*, *t*, and *t+1* and the level of conditional conservatism at time *t*.
Among firms with auditors' opinion code 4, we find companies that just changed their accounting policies from the previous year and companies where auditors qualify their opinion with a going concern assumption. Data about auditors' opinions qualified with a going concern assumption (*GCO*) come from the Audit Analytics database.

To test this hypothesis, I adapt Model (1) adding the new variable *Code1* to test for differences in conditional conservatism for companies who receive a Code 1 (clear) auditor opinion with respect to other companies in the sample (Model 4):

$$X_{it}/P_{it} = \alpha_0 + \alpha_1 D_{it} + \beta_0 Diff_{it} + \beta_1 Code1_{it} + \beta_2 Diff_{it} * D_{it} + \beta_3 Code1_{it} * D_{it} + \beta_4 Code1_{it} * Diff_{it} + \beta_5 Code1_{it} * Diff_{it} * D_{it} + \beta_6 NumEst_{it} \quad (4)$$

where all the variables are defined above and *Code1* is a dummy variable equal to 1 for companies that received Code 1 the previous year and zero otherwise. Indeed, no company in the sample reports an auditor opinion Code of 3 or 5. In fact, there are only 4 observations for companies receiving an audit opinion Code 2 and 7 observations for companies with unaudited financial statements (Code 0).

[Insert Table 5 Panel A about here]

To test the association between going concern opinions and conditional conservatism, I adopt Model (4b):

$$X_{it}/P_{it-1} = \alpha_0 + \alpha_1 D_{it} + \beta_0 Diff_{it} + \beta_1 GCO_{it+j} + \beta_2 Diff_{it} * D_{it} + \beta_3 GCO_{it+j} * D_{it} + \beta_4 GCO_{it} * Diff_{it} + \beta_5 GCO_{it+j} * Diff_{it} * D_{it} + \beta_6 NumEst_{it} \quad (4b)$$

Where all the variables are defined as above and the variable GCO_{it+j}, with data from the database Audit Analytics between 2000 and 2005, is equal to 1 if the firm *i* received a going concern opinion from the auditors: (1) one year before (j=-1), (2) the same year (j=0), or (3) will receive a going concern opinion the next year (j=+1), zero otherwise.

[Insert Table 5 Panel B about here]

Furthermore, I estimate model (5) to assess hypothesis 4 (b), whether the level of conservatism varies with the choice of one of the BigX audit firms vs. smaller audit firms. I introduce in Model (1) a variable (*BigX*) to characterize the companies in the sample with an audit opinion from one of the big 4/7 audit firms vs. the other companies. (Model 5) is:

$$X_{it}/P_{it-1} = \alpha_0 + \alpha_1 D_{it} + \beta_0 Diff_{it} + \beta_1 BigX_{it} + \beta_2 Diff_{it} * D_{it} + \beta_3 BigX_{it} * Diff_{it} + \beta_4 BigX_{it} * D_{it} + \beta_5 BigX_{it} * D_{it} * Diff_{it} + \beta_6 NumEst_{it} \quad (5)$$

where the variables are defined as above and *BigX* is a dummy variable equal to 1 if the company was audited the previous year by one of the big 4/7 audit companies, 0 otherwise.

[Insert Table 5 Panel C about here]

I would expect that, after receiving a clear opinion with explanatory language (Code 4), a company will exhibit a higher conditional conservatism than other companies in the sample, to lower the legal liability risk for the firm's auditor and managers. However, it should be noted that "better" companies, who received a clear opinion from auditors the previous year (Code 1) might already start from a higher level of conditional conservatism than companies that receive a clear opinion but with explanatory language. In this case, indeed, the auditor acknowledges that something in the firm's financial reporting might raise concerns, and feels the need to explain why. I would expect, furthermore, that companies with aggressive accounting behaviors (recognizing annual earnings of expected gains faster than losses) would switch their behavior to a more rigorous accounting conservatism after receiving a going concern opinion from their auditors, to reduce the risk of legal liability for both the auditors and the management in case of bankruptcy or default on debt provisions.

Table 5 Panel A reports the results of the estimation of Model (4) for companies that received an audit opinion code 1 the previous year. Panel B reports results of the estimation of Model (4b) for companies that received an opinion qualified with a going concern assumption, and Panel C reports the results for the LAD regression adopting Model (5). Finally, Panel D reports the list of auditors from Compustat with the relative number of observations in the sample.

There is evidence (the coefficient estimate for the interaction coefficient β_5 in Model (4) is positive and significant at the 10% confidence level) of more timely recognition of bad news than good news in reported earnings for companies that received an unqualified opinion (Code 1) than for companies that received an unqualified opinion with explanatory language. Again, if I adopt the relative measure of asymmetry and calculate the ratio of $(\beta_1+\beta_0)/\beta_0$ to measure how much faster bad news is recognized in reported annual earning than good news, I find that firms that received a Code 1 audit opinion recognize bad news in financial statements 11.6 times faster than good news, while firms that received a Code 4 opinion from their auditors recognize bad news in financial statements only 3.6 times faster than good news[22]. The results are not surprising because firms that received a clear audit opinion (Code 1) already exhibit a starting higher level of conditional conservatism than other firms, as shown when I use the contemporaneous auditor opinion variable instead of the lagged value in Model (4) (untabulated results).

Table 5 Panel B reports the results for the sample of 6,282 firm-year observations, from 2000 to 2005, with information from the Audit Analytics database about whether the auditors' opinion has been qualified with the going concern assumption. Results show that companies that in the next year will receive an auditor's opinion qualified with the going concern assumption were less conservative, i.e. more aggressive from an accounting point of view, than the rest of the companies in the sample, with a coefficient β_5 in column (3) negative and statistically significant, equal to –0.007 (T value of 2.06). In other words, these companies were recognizing unrealized gains faster than unrealized losses in annual earnings. However, the accounting behavior of these firms changes the year they receive a going concern opinion from the auditors (and the year following it) with bad news recognized in the annual earnings more quickly than good news (the estimate of coefficient β_5 for column 1 and 2 is positive and highly significant).

Table 5 Panel C reports results for companies that hired one of the Big 7 audit firms vs. companies that were audited by a smaller audit firm. Results provide evidence of the presence of conditional conservatism. Companies audited by one of the Big 7 audit firms (the Big 4 plus other three firms) recognize bad news in reported earnings two times faster than good news. Companies who were audited the previous year by one of the Big 4 audit firms (untabulated results) recognize bad news in

[22] The value of the ratio of 11.6 for Code 1 companies is, at the 10% level, significantly different for the value of the ratio for companies receiving a Code 4 opinion from the auditors. Indeed, if I test for the difference between the value of the ratio of 11.6 from a constant value of 3.6, I obtain an F value of 2.94, with a p value of 0.0862.

reported earnings 6.2 times faster than good news. When I compare the conservative behavior of companies that the previous year were audited by one of the Big 7 audit firms vs. smaller audit firms, I find strong evidence that companies audited by one of the Big 7 audit firms are characterized by higher levels of conditional conservatism than companies that were audited by smaller firms. Indeed, the estimate of the interaction coefficient β_5 for model (5) is positive and statistically significant (0.000247, T value of 2.00).

6. Sensitivity Checks

In this section I will run again a few data analyses to ensure the results in the previous section are not dependent on the specific methodology adopted in the paper.

6.1 Fiscal Year Return

I run the Basu model again, calculating returns over the fiscal year instead of for the period between nine months before and three months after the fiscal year end. Model (1a) is:

$$X_{it-j,t} / P_{it-j-1,t-1} = \alpha_0 + \alpha_1 D_{it-j,t} + \beta_0 R_{it-j,t} + \beta_1 R_{it-j,t} * D_{it-j,t} + \beta_2 NumEst_{it-j,t} \qquad (1a)$$

where all the variables are defined as in chapter 4, and $R_{it-1,t}$, is the buy-and-hold returns of the stock over fiscal years *t-j* to *t*, winsorized at the first and 99th percentile values, calculated as the increase in the price of stock ($P_{it,}$ from CRSP) over the period starting the beginning of fiscal year *t-j* and ending at the end of the fiscal year *t*, divided by the stock price at the end of the period, *t-j-1*. Results, untabulated, are similar and consistent with the results for the Basu model described above in Chapter 4 and tabulated in Table 2, column (3), (6), and (9).

6.2 Fama-Macbeth Regression

To check if results presented in the paper are dependent on the particular regression model adopted (LAD regression), I run the analysis again adopting a Fama-Macbeth regression model, consistent with previous literature (LaFond and Watts 2007; Roychowdhury and Watts 2007). This approach runs an OLS regression for each year across the firms in the sample, and averages the estimated regression coefficient over the time series considered. As expected, since the Fama-Macbeth regression uses an OLS approach, results over the one-year horizon (j=0) show a non-significant coefficient estimate for the interaction term β_1 in Model (1a), consistent with the results tabulated in Table 2 column (3).

6.3 Change in the Cut-off Point to Create the Dummy Variable

One of the problems previous literature (Dietrich et al. 2007) finds in the asymmetric timeliness approach to measuring conditional conservatism is that the sub-samples good/bad news about future cash flow are not created at the mean value of the proxy variable adopted. In my findings, the mean value for the variable *Diff* is –0.96 across the sample for the one-year, -1.95 for the two-year, and –2.95 for the three-year time horizon. I run the analysis redefining the dummy variable *D* as $D_{it-j,t}$=1 for $Diff_{it}$<–0.96 with j=0, $D_{it-j,t}$=1 for $Diff_{it-1,t}$ <–1.95 with j=1, and $D_{it-2,t}$=1 for $Diff_{it-j,t}$<–2.95 with j=2.[23] When I run this analysis, I obtain results qualitatively consistent with the values presented in Chapter 4, except for hypothesis 4. With the new cut-off point, there is no statistical difference in the level of conditional conservatism between companies that in the previous year have been audited by one of the

[23] This new cut-off point does not make, in my opinion, economic sense. When a company received, over the two-year period, one more EPS downward forecast revision than upward revision, even if this result is better than the average of the value of *Diff* for all the companies in the sample, it still means that the market received one more negative news about the firms future earnings than positive news. It would be a mistake to consider that company in the "good news" sample if we stick to the definition of good news as having more news about unrealized gains than losses.

big 4/7 audit firms and the other companies in the sample (interaction coefficient β_5 in Model (5) is equal to 0,00002, T value equal to 0.2).

7. Conclusion and Future Research

Following Basu's (1997) seminal work, accounting literature adopted the Basu single-period model to measure conditional conservatism. However, the proxy chosen to measure the arrival of good/bad news about firms' future earnings, the price of the stock, can vary due to factors that will never be recorded in firms' reported earnings over the years. This unreliability introduces economic and econometric biases into the analysis (Dietrich et al. 2007) and causes inaccuracy in the measure of conditional conservatism. To overcome the problem, I introduce a new measure of conditional conservatism, applying a Least Absolute Deviation (LAD) piecewise regression and adopting the number of changes in financial analysts' EPS forecasts as a proxy for good/bad news about future earnings and extending the analysis to two-year and three-year time horizons.

Results of the paper provide evidence supporting the recent results obtained adopting a modified version of the Basu measure, confuting the conceptual and econometric criticism to the Basu model, mainly by Dietrich, Muller, and Riedl (2007). The study provides evidence that that (1) companies characterized by a high debt-to-asset ratio, contrary to expectations, recognize good news about future earnings as quickly as bad news. Additionally (2) companies with executives compensated more heavily based on the company's accounting performances do consistently exhibit an aggressive accounting behavior, recognizing expected gains in annual earnings faster than losses. Furthermore (3a) companies that in the previous year were audited by one of the big 7 audit and (3b) firms that received an unqualified auditor opinion without explanatory language show a more conditional conservative behavior than the rest of the sample. Finally, over a reduced sample of 6,282 firm-year observations, I find that companies receiving an auditors' opinion qualified with the going concern assumption applied an aggressive accounting behavior in the year prior to the going concern opinion but became highly conservative in the year the qualified opinion was issued and the following year.

Future avenues of research include further testing the conditional conservative determinants highlighted by previous literature with the new measure based on Model (1). Furthermore, it would be interesting to apply the new measure of conditional conservatism described in this paper to analyze the interaction and the preemptive role of unconditional and conditional conservatism, as highlighted in recent literature (Beaver and Ryan 2005; Ryan 2006). Finally, the adoption of a different regression model that allows for asymmetric loss function should be explored. Indeed, it is not clear what form of loss function investors and financial analysts face. If, as it might be likely, they are more concerned with overestimated than underestimated earnings, then a linear or square loss function may not be the appropriate form to use because they both reflect symmetric losses. How to specify a plausible and non arbitrary asymmetric loss function, however, is not clear. One possible solution is to follow the method developed first by Elliot (2003), who illustrates a general class of asymmetric loss functions nesting the symmetric linear and the quadratic loss functions. With such a general model, which encompasses different forms of loss functions, researchers will not be constrained by assumptions about a specific functional form, and would be more likely to closely model the complexity of the real world.

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Table 1 Panel A Summary Statistics

	Obs	Mean	Std. Dev.	Min	Max
X/P	17656	1.717104	191.9707	-10.79757	25285.71
X/Pwin	17656	.0366615	.1036586	-.571178	.2420474
Diff	21201	-.9603321	26.24441	-238	204
foreup	21201	15.6253	21.50789	0	245
foredown	21201	16.58563	22.4067	0	278
R	18787	.1263371	.6991903	-1	27.29412
Rwin	18787	.106855	.5175039	-.7849463	2.421277
SALARY	21201	2180.806	18597.96	0	2705195
BONUS	21201	1904.259	3980.28	0	196710.9
SUMOTH	21201	485.5704	4622.145	-111.731	603851.9
Lev	20864	.2331752	.9548152	0	135.25
MB	19989	3.503217	42.40155	-876.9447	5603.074
MktVal	19990	5270.543	18168.66	.0325	467092.9
data6	20963	8971.586	43301.18	0	1291803
data25	20818	136.1432	419.1405	0	10862

Where:

$X/P_{it,}$ and $X/Pwin_{it}$ (winsorized at the first and 99th percentile values) is the value of earning deflated by the beginning of the period market value, calculated as earnings before extraordinary items (Compustat *DATA18*) for firm *i* in fiscal year *t*, divided by the market value of equity ($MktVal_{it}$ equal to the number of share outstanding, Compustat *DATA25*, times price per share, Compustat *DATA199*). $Diff_{it}$ is the difference between the sum of the upward (f_up_{it}) and the sum of the downward revisions (f_down_{it}) in the analysts' EPS forecast for firm *i* over the fiscal period *t* (from First Call database). R_{it}, and $Rwin_{it}$ (winsorized at the first and 99th percentile values) is the buy-and-hold annual returns, calculated as the increase in the price of stock ($P_{it,}$ from CRSP) over the period starting 9 months before and ending 3 months after the fiscal end of the year, divided by the stock price at the beginning of the period $R_{it} = \left(\frac{P_t}{P_{t-1}}\right) - 1$. $SALARY_{it}$ is the sum of the total salary, $BONUS_{it}$ is the sum of the total bonus, and $SUMOTH_{it}$ is the sum of all other annual compensation paid to the executives for firms *i* in year *t*. Lev_{it} is the leverage ratio and it is calculated as Compustat *DATA9+DATA34*, divided by *DATA6* for each firm and each year. MB_{it} is the Market-to-book ratio calculated as Compustat *DATA25*DATA199*, divided by *DATA60*. Finally, $data6_{it}$ is the total value of assets and $data25_{it}$ is the number of shares outstanding for each company i in year t, from Compustat.

Table 1 Panel B Correlation Table

	X/P	X/Pwin	Diff	f_up	f_down	R	Rwin	SALARY	BONUS	SUMOTH	Lev	MB	MktVal	data6	data25
X/P	1.000														
X/Pwin	0.018	1.000													
	(0.015)														
Diff	-0.024	0.207	1.000												
	(0.001)	(0.000)													
f_up	-0.003	0.124	0.575	1.000											
	(0.691)	(0.000)	(0.000)												
f_down	0.026	-0.125	-0.619	0.286	1.000										
	(0.001)	(0.000)	(0.000)	(0.000)											
R	0.002	0.129	0.151	0.054	-0.126	1.000									
	(0.797)	(0.000)	(0.000)	(0.000)	(0.000)										
Rwin	0.003	0.171	0.188	0.076	-0.150	0.871	1.000								
	(0.694)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)									
SALARY	-0.001	0.004	0.007	0.029	0.020	0.001	0.003	1.000							
	(0.945)	(0.608)	(0.341)	(0.000)	(0.004)	(0.859)	(0.651)								
BONUS	-0.003	0.120	0.150	0.301	0.113	0.012	0.022	0.023	1.000						
	(0.685)	(0.000)	(0.000)	(0.000)	(0.000)	(0.112)	(0.003)	(0.001)							
SUMOTH	-0.002	-0.013	-0.009	0.094	0.101	-0.014	-0.013	0.016	0.146	1.000					
	(0.803)	(0.089)	(0.185)	(0.000)	(0.000)	(0.062)	(0.072)	(0.019)	(0.000)						
Lev	-0.006	-0.131	-0.032	-0.006	0.032	-0.015	-0.019	0.000	0.021	0.010	1.000				
	(0.391)	(0.000)	(0.000)	(0.398)	(0.000)	(0.046)	(0.011)	(0.982)	(0.002)	(0.148)					
MB	-0.004	-0.027	0.009	0.009	-0.002	0.022	0.029	-0.000	0.001	-0.002	0.001	1.000			
	(0.626)	(0.000)	(0.187)	(0.193)	(0.775)	(0.003)	(0.000)	(0.993)	(0.860)	(0.748)	(0.940)				
MktVal	0.006	0.036	0.109	0.339	0.201	-0.021	-0.019	0.023	0.312	0.151	-0.004	0.016	1.000		
	(0.453)	(0.000)	(0.000)	(0.000)	(0.000)	(0.006)	(0.010)	(0.001)	(0.000)	(0.000)	(0.566)	(0.024)			
data6	0.008	0.068	0.038	0.195	0.143	-0.017	-0.016	0.017	0.484	0.126	0.023	-0.004	0.425	1.000	
	(0.268)	(0.000)	(0.000)	(0.000)	(0.000)	(0.020)	(0.026)	(0.013)	(0.000)	(0.000)	(0.001)	(0.601)	(0.000)		
data25	0.010	-0.009	0.033	0.333	0.282	-0.041	-0.046	0.024	0.278	0.157	-0.003	0.009	0.840	0.357	1.000
	(0.172)	(0.244)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.692)	(0.202)	(0.000)	(0.000)	

The table includes Pearson correlation coefficients. Variables are defined as in panel A.

Table 2 Hypothesis 1

LAD and OLS: $X_{it-j,t} / P_{it-j-1,t-1} = \alpha_0 + \alpha_1 D_{it-j,t} + \beta_0 Diff_{it-j,t} + \beta_1 Diff_{it-j,t} * D_{it-j,t} + \beta_2 NumEst_{it-j,t}$

and Basu: $X_{it-j,t} / P_{it-j-1,t-1} = \alpha_0 + \alpha_1 D_{it-j,t} + \beta_0 R_{it-j,t} + \beta_1 R_{it-j,t} * D_{it-j,t} + \beta_2 NumEst_{it-j,t}$

	(1) LAD j=0	(2) OLS j=0	(3) Basu j=0	(4) LAD j=1	(5)OLS j=1	(6)Basu j=1	(7)LAD j=2	(8)OLS j=2	(9)Basu j=2
D	-0.015904	-0.033642	0.018729	-0.023991	-0.050599	0.036636	-0.025886	-0.056992	-0.006039
	(16.95)**	(16.70)**	(7.98)**	(12.98)**	(13.02)**	(7.51)**	(8.64)**	(9.62)**	(1.14)
Diff/ [R]	0.000047	0.000374	[-0.005015]	0.000075	0.000350	[-0.018171]	0.000128	0.000346	[-0.009125]
	(1.78)	(9.53)**	(2.00)*	(2.23)*	(7.09)**	(8.53)**	(3.04)**	(5.71)**	(2.20)*
Diff*D/[R]*D	0.000289	0.000060	[0.201470]	0.000268	0.000259	[0.263361]	0.000260	0.000417	[0.022782]
	(7.31)**	(0.82)	(21.74)**	(5.14)**	(2.51)*	(17.42)**	(3.93)**	(3.25)**	(2.62)**
NumEst	-0.000328	0.000129	0.000174	-0.000437	0.000477	0.000379	-0.000486	0.000622	0.000462
	(3.99)**	(0.84)	(1.26)	(4.64)**	(2.72)**	(2.19)*	(4.42)**	(3.17)**	(2.39)*
Constant	0.066130	0.053636	0.053705	0.127787	0.098705	0.100208	0.186367	0.141826	0.111801
	(91.81)**	(37.13)**	(37.32)**	(82.41)**	(32.72)**	(32.08)**	(70.51)**	(28.70)**	(20.03)**
Observations	17656	17656	17646	13548	13548	11995	10302	10302	9062
[Pseudo] R Square	[0.034]	0.059	0.097	[0.025]	0.053	0.066	[0.022]	0.050	0.003

For OLS regression, robust t statistics in parentheses
* significant at 5%; ** significant at 1%

Where:
The dependent variable, $X_{it-j,t}/P_{it-j-1,t-1}$, is the cumulative value of earning deflated by the beginning of the period market value during year *t-j* to *t*, winsorized at the first and 99th percentile values. It is calculated as earnings before extraordinary items (Compustat *DATA18*), divided by the market value of equity, where market value of equity ($MktVal_{it}$) is equal to the number of share outstanding, Compustat *DATA25*, times price per share, Compustat *DATA199*). $Diff_{it-j,t}$ is the cumulative difference between the sum of the upward ($f\_up_{it-j,t}$) and the sum of the downward revisions ($f\_down_{it-j,t}$) in the analysts' EPS forecast for firm *i* between fiscal year *t-j* and *t* (from First Call database). $D_{it-j,t}$ is a dummy variable equal to 1 if $Diff_{it-j,t}$ <0, equal to zero otherwise. $NumEst_{it-j,t}$ is the number of analyst that are following the company throughout the year. For the OLS models based on Basu framework, (model 3, 6, and 9), $R_{it-j,t}$, is the buy-and-hold returns of the stock over fiscal years *t-j* to *t*, winsorized at the first and 99th percentile values, calculated as the increase in the price of stock ($P_{it,}$ from CRSP) over the period starting 9 months before the beginning of fiscal year *t-j* and ending 3 months after the end of the fiscal year *t*, divided by the stock price at the beginning of the period, *t-j-1*, and $D_{it-j,t}$ is a dummy variable equal to 1 if $R_{it-j,t}$<0, equal to zero otherwise. Columns (1), (2), and (3) report results for the 1 year

LAD regression, OLS regression and Basu model regression. Columns (4), (5), and (6) report results for the 2 year LAD regression, OLS regression and Basu model regression. Columns (7), (8), and (9) report results for the 3 year LAD regression, OLS regression and Basu model regression.

Table 3 Hypothesis 2

$$X_{it-j,t} / P_{it-j-1,t-1} = \alpha_0 + \alpha_1 D_{it-j,t} + \beta_0 Diff_{it-j,t} + \beta_1 Diff_{it-j,t} * D_{it-j,t} + \beta_2 NumEst_{it-j,t}$$

Table 3 Hypothesis 2 Panel A Low Leverage Group Mean Lev=0.0158

	(1)LAD j=0	(2)LAD j=1	(3)LAD j=2
D	-0.016892 (10.55)**	-0.023323 (6.21)**	-0.029246 (5.93)**
Diff	-0.000061 (1.39)	0.000075 (1.11)	0.000060 (0.84)
Diff*D	0.000319 (4.42)**	0.000110 (0.94)	0.000250 (1.96)*
NumEst	-0.000891 (6.19)**	-0.001099 (5.65)**	-0.001149 (6.15)**
Constant	0.060561 (53.22)**	0.114899 (38.92)**	0.168393 (41.29)**
Observations	4434	3372	2494
Pseudo R Square	0.035	0.023	0.029

Table 3 Hypothesis 2 Panel B High Leverage Group Mean Lev=0.5042

	(1)LAD j=0	(2)LAD j=1	(3)LAD j=2
D	-0.019893 (8.90)**	-0.032671 (6.60)**	-0.028973 (3.06)**
Diff	0.000380 (4.81)**	0.000598 (5.32)**	0.000699 (4.37)**
Diff*D	0.000064 (0.61)	-0.000065 (0.43)	-0.000017 (0.08)
NumEst	-0.000058 (0.27)	0.000308 (1.11)	0.000204 (0.53)
Constant	0.065021 (35.77)**	0.123288 (28.06)**	0.179368 (20.29)**
Observations	4171	3107	2331
Pseudo R square	0.040	0.039	0.035

Absolute value of t statistics in parentheses
* significant at 5%; ** significant at 1%

The tables present result of LAD regressions estimated over the 1992-2005 time horizon. The low and high leverage groups represent the first (lowest) and the fourth (highest) quartile of firms ranked annually on the leverage ratio ($Lev_{it-j,t}$) calculated as Compustat *DATA9+DATA34*, divided by *DATA6* for each firm and each year. Panel A report the results of the LAD regression for companies in the lowest quartile while panel B report the results for companies in the highest quartile. The dependent variable, $X_{it-j,t}/P_{it-j-1,t-1}$, is the cumulative value of earning deflated by the beginning of the period market value during year *t-j* to *t*, winsorized at the first and 99th percentile values. It is calculated as earnings before extraordinary items (Compustat *DATA18*), divided by the market value of equity, where market value of equity ($MktVal_{it}$) is equal to the number of share outstanding, Compustat *DATA25*, times price per share, Compustat *DATA199*. $Diff_{it-j,t}$ is the cumulative difference between the sum of the upward ($f\_up_{it-j,t}$) and the sum of the downward revisions ($f\_down_{it-j,t}$) in the analysts' EPS forecast for firm *i* between fiscal year *t-j* and *t* (from First Call database). $D_{it-j,t}$ is a dummy variable equal to 1 if $Diff_{it-j,t}$ <0, equal to zero otherwise. $NumEst_{it-j,t}$ is the number of analyst that are following the company throughout the year.

Table 3 Hypothesis 2 Panel C Method b)

$$X_{it-j,t}/P_{it-j-1,t-1} = \alpha_0 + \alpha_1 D_{it-j,t} + \beta_0 Diff_{it-j,t} + \beta_1 Lev_{it-j,t} + \beta_2 Diff_{it-j,t} * D_{it-j,t}$$
$$+ \beta_3 Lev_{it-j,t} * D_{it-j,t} + \beta_4 Lev_{it-j,t} * Diff_{it-j,t} + \beta_5 Lev_{it-j,t} * Diff_{it-j,t} * D_{it-j,t} + \beta_6 NumEst_{it-j,t}$$

	(1)LAD j=0	(2)LAD j=1	(3)LAD j=2
D	-0.012102	-0.019229	-0.017313
	(9.87)**	(7.72)**	(4.00)**
Diff	-0.000151	-0.000094	-0.000128
	(4.73)**	(2.97)**	(2.29)*
Lev	0.007795	0.035253	0.072238
	(2.63)**	(5.59)**	(6.27)**
Diff*D	0.000455	0.078746	0.000290
	(8.94)**	(25.66)**	(3.03)**
Lev*D	-0.017043	-0.026517	-0.044621
	(4.06)**	(2.93)**	(2.78)**
Lev*Diff	0.001238	0.001325	0.001658
	(10.35)**	(9.26)**	(7.72)**
Lev*Diff*D	-0.001137	0.000110	-0.000682
	(6.55)**	(0.70)	(2.02)*
NumEst	-0.000381	-0.000512	-0.000550
	(5.34)**	(6.75)**	(5.65)**
Constant	0.064295	0.127512	0.172233
	(74.51)**	(69.10)**	(52.45)**
Observations	17541	13404	10175
Pseudo R square	0.038	0.043	0.030

Absolute value of t statistics in parentheses
* significant at 5%; ** significant at 1%

Where:
The dependent variable, $X_{it-j,t}/P_{it-j-1,t-1}$, is the cumulative value of earning deflated by the beginning of the period market value during year *t-j* to *t*, winsorized at the first and 99th percentile values. It is calculated as earnings before extraordinary items (Compustat *DATA18*), divided by the market value of equity, where market value of equity ($MktVal_{it}$) is equal to the number of share outstanding, Compustat *DATA25*, times price per share, Compustat *DATA199*. $Diff_{it-j,t}$ is the cumulative difference between the sum of the upward ($f\_up_{it-j,t}$) and the sum of the downward revisions ($f\_down_{it-j,t}$) in the analysts' EPS forecast for firm *i* between fiscal year *t-j* and *t* (from First Call database). $D_{it-j,t}$ is a dummy variable equal to 1 if $Diff_{it-j,t}$ <0, equal to zero otherwise. The leverage ratio ($Lev_{it-j,t}$) is calculated as Compustat *DATA9+DATA34*, divided by *DATA6* for each firm and each year. For j=1, it's the average of the leverage ratio over the two-year period, and for j=2 it's the average of the leverage ratio for the company for the three-year period. $NumEst_{it-j,t}$ is the number of analyst that are following the company throughout the year.

Table 4 Hypothesis 3

$$X_{it-j,t} / P_{it-j-1,t-1} = \alpha_0 + \alpha_1 D_{it-j,t} + \beta_0 Diff_{it-j,t} + \beta_1 Exe_{it-j,t} + \beta_2 Diff_{it-j,t} * D_{it-j,t}$$
$$+ \beta_3 Exe_{it-j,t} * D_{it-j,t} + \beta_4 Exe_{it-j,t} * Diff_{it-j,t} + \beta_5 Exe_{it-j,t} * Diff_{it-j,t} * D_{it-j,t} + \beta_6 NumEst_{it-j,t}$$

	(1) LAD j=0	(2) LAD j=1	(3)LAD j=2
D	0.002629 (0.80)	0.003980 (0.55)	0.001075 (0.09)
Diff	0.000036 (0.52)	0.000218 (2.16)*	0.000406 (3.05)**
Exe	-0.054391 (16.80)**	-0.114888 (15.53)**	-0.073033 (13.64)**
Diff*D	0.000325 (2.88)**	-0.000037 (0.22)	-0.000225 (0.97)
Exe*D	-0.020689 (4.46)**	-0.035600 (3.44)**	-0.016487 (2.16)*
Exe*Diff	-0.000090 (0.74)	-0.000339 (1.94)	-0.000265 (2.72)**
Exe*D*Diff	-0.000026 (0.16)	0.000504 (2.00)*	0.000353 (2.37)*
NumEst	-0.000717 (9.32)**	-0.000896 (10.33)**	-0.001015 (10.09)**
Constant	0.101810 (47.32)**	0.206789 (41.96)**	0.307979 (36.91)**
Observations	17656	13603	10419
Pseudo R square	0.0574	0.0542	0.0623

Absolute value of t statistics in parentheses
* significant at 5%; ** significant at 1%

Where:

The dependent variable, $X_{it-j,t}/P_{it-j-1,t-1}$, is the cumulative value of earning deflated by the beginning of the period market value during year *t-j* to *t*, winsorized at the first and 99^{th} percentile values. It is calculated as earnings before extraordinary items (Compustat *DATA18*), divided by the market value of equity, where market value of equity ($MktVal_{it}$) is equal to the number of share outstanding, Compustat *DATA25*, times price per share, Compustat *DATA199*. $Diff_{it-j,t}$ is the cumulative difference between the sum of the upward ($f\_up_{it-j,t}$) and the sum of the downward revisions ($f\_down_{it-j,t}$) in the analysts' EPS forecast for firm *i* between fiscal year *t-j* and *t* (from First Call database). $D_{it-j,t}$ is a dummy variable equal to 1 if $Diff_{it-j,t}$ <0, equal to zero otherwise. The executive ratio ($Exe_{it-j,t}$) is calculated as ExecuComp *SALARY* + all other annual compensation *(SUMOTH)*, divided by total current compensation (*SALARY+BONUS)* + all other annual compensation (*SUMOTH*) for each year. Data are at firm level, as I sum the salary, all other annual compensation, and total annual compensation for all the executives in the company for each year. For j=1, it's the average of the executive ratio over the two-year period, and for j=2 it's the average of the executive ratio for the company for the three-year period. $NumEst_{it-j,t}$, finally, is the number of analyst that are following the company throughout the year, that I adopt as a control variable to make sure a higher number in the variable *Diff* is not coming from the size of the company or the number of analysts following it, but from the number of good/bad news about the company future earnings.

Table 5 Hypothesis 4 Panel A Audit opinion

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 D_{it} + \beta_0 Diff_{it} + \beta_1 Code1_{it-1} + \beta_2 Diff_{it} * D_{it} + \beta_3 Code1_{it-1} * D_{it}$$
$$+ \beta_4 Code1_{it} * Diff_{it} + \beta_5 Code1_{it-1} * Diff_{it} * D_{it} + \beta_6 NumEst_{it}$$

	(1) LAD Code1 vs. Code4	t value
D	-0.015576	(12.00)**
Diff	0.000119	(3.35)**
Code1	-0.005365	(4.45)**
Diff*D	0.000227	(4.49)**
Code1*D	-0.00088	(0.51)
Code1*Diff	-0.000112	(2.49)**
Code1*D*Diff	0.000105	(1.65)
NumEst	-0.000326	(4.34)**
Constant	0.069289	(72.50)**
Observations	17656	
Pseudo R Square	0.036	

Absolute value of t statistics in parentheses
* significant at 5%; ** significant at 1%
Where:
The dependent variable, $X_{it}/P_{i,t-1}$, is the value of earning deflated by the beginning of the period market value for year *t*, winsorized at the first and 99th percentile values. It is calculated as earnings before extraordinary items (Compustat *DATA18*), divided by the market value of equity, where market value of equity ($MktVal_{it}$) is equal to the number of share outstanding, Compustat *DATA25*, times price per share, Compustat *DATA199*). $Diff_{it}$ is the difference between the sum of the upward (f_up_{it}) and the sum of the downward revisions (f_down_{it}) in the analysts' EPS forecast for firm *i* in fiscal year *t* (from First Call database). D_{it} is a dummy variable equal to 1 if $Diff_{it} < 0$, equal to zero otherwise. $NumEst_{it-j,t}$, finally, is the number of analyst that are following the company throughout the year.
Audit opinion codes are:

0. Financial statements are unaudited
1. Unqualified Opinion. Financial statements reflect no unresolvable restrictions and auditor has no significant exceptions as to the accounting principles, the consistency of their application, and the adequacy of information disclosed
2. Qualified Opinion. Financial statements reflect the effects of some limitation on the scope of the examination or some unsatisfactory presentation of financial information, but are otherwise presented fairly. We assign this code when a company is in the process of liquidating (even if opinion is not actually qualified) or when an opinion states that the financial statements do not present fairly the financial position of the company
3. Disclaimer of or No Opinion. Auditor refuses to express an opinion regarding the company's ability to sustain operations as a going concern
4. Unqualified Opinion With Explanatory Language. Auditor has expressed an unqualified opinion regarding the financial statements but has added explanatory language to the auditor's standard report
5. Adverse Opinion. Auditor has expressed an adverse

Columns (1) reports the results of the LAD regression for companies that received an auditor opinion code 1 vs. code 4 at time *t-1*. No company in the sample reports a code equal to 3 or 5, and there are only 4 observations for companies receiving an audit opinion code 2 and 7 observation for companies with unaudited financial statements (code 0).

Table 5 Hypothesis 4 Panel B Auditors' Going Concern Opinion

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 D_{it} + \beta_0 Diff_{it} + \beta_1 GCO_{it+j} + \beta_2 Diff_{it} * D_{it} + \beta_3 GCO_{it+j} * D_{it}$$
$$+ \beta_4 GCO_{it} * Diff_{it} + \beta_5 GCO_{it+j} * Diff_{it} * D_{it} + \beta_6 NumEst_{it}$$

	(1) One Year Lag (j=-1)	(2) Contemporaneous (j=0)	(3) One Year Ahead (j=+1)
D	-0.017657 (10.28)**	-0.017113 (10.32)**	-0.017428 (10.28)**
Diff	0.000115 (2.97)**	0.000116 (3.11)**	0.000119 (3.10)**
GCO	-0.350510 (21.88)**	-0.381728 (22.32)**	-0.065795 (1.56)
Diff*D	0.000127 (2.10)*	0.000130 (2.23)*	0.000119 (1.99)*
GCO*D	0.222471 (9.05)**	0.023430 (1.11)	-0.300983 (6.71)**
GCO*Diff	-0.017224 (20.93)**	-0.021131 (3.40)**	0.006607 (1.91)
GCO*Diff*D	0.041935 (27.47)**	0.026000 (4.18)**	-0.007147 (2.06)*
NumEst	-0.000420 (3.25)**	-0.000423 (3.40)**	-0.000428 (3.35)**
Constant	0.061399 (46.65)**	0.061391 (48.38)**	0.061214 (47.19)**
Observations	6282	6282	6282

Absolute value of t statistics in parentheses
* significant at 5%; ** significant at 1%

Where:
The dependent variable, $X_{it}/P_{i,t-1}$, is the value of earning deflated by the beginning of the period market value for firm *i* in year *t*, winsorized at the first and 99^{th} percentile values. It is calculated as earnings before extraordinary items (Compustat *DATA18*), divided by the market value of equity, where market value of equity ($MktVal_{it}$) is equal to the number of share outstanding, Compustat *DATA25*, times price per share, Compustat *DATA199*). $Diff_{it}$ is the difference between the sum of the upward (f_up_{it}) and the sum of the downward revisions (f_down_{it}) in the analysts' EPS forecast for firm i in fiscal year t (from First Call database). D_{it} is a dummy variable equal to 1 if $Diff_{it} <0$, equal to zero otherwise. $NumEst_{it}$, is the number of analyst that are following the company throughout the year. GCO_{it+j}, from the database Audit Analytics between 2000 and 2005, is equal to 1 if the firm *i* received a going concern opinion from the auditors: (1) one year before (j=-1), (2) the same year (j=0), or (3) will receive a going concern opinion the next year (j=+1), zero otherwise.

Table 5 Hypothesis 4 Panel C Big7

$$X_{it} / P_{it-1} = \alpha_0 + \alpha_1 D_{it} + \beta_0 Diff_{it} + \beta_1 BigX_{it} + \beta_2 Diff_{it} * D_{it} + \beta_3 BigX_{it} * Diff_{it}$$
$$+ \beta_4 BigX_{it} * D_{it} + \beta_5 BigX_{it} * D_{it} * Diff_{it} + \beta_6 NumEst_{it}$$

	LAD Big7
D	-0.017185 (20.15)**
Diff	0.000132 (2.94)**
BigX	-0.010895 (11.35)**
Diff*D	0.000153 (2.21)*
BigX*Diff	-0.000085 (1.81)
BigX*D	0.002531 (2.89)**
BigX*D*Diff	0.000147 (2.00)*
NumEst	-0.000322 (5.05)**
Constant	0.074802 (78.31)**
Observations	17656
Pseudo R Square	0.039

Absolute value of t statistics in parentheses
* significant at 5%; ** significant at 1%

Where:
BigX includes the following audit firms: Arthur Andersen, Coopers & Lybrand (Coopers & Lybrand Deloitte in the United Kingdom since April 29, 1990) (Coopers & Lybrand merged with Price Waterhouse on July 1, 1998), Ernst & Young (Ernst & Whinney from July 1, 1979 to September 29, 1989; Ernst and Ernst prior to July 1, 1979), Deloitte & Touche (Deloitte, Haskins & Sells prior to December 4, 1989; Haskins & Sells prior to May 1, 1978), Peat, Marwick, Main (Peat, Marwick, Mitchell prior to April 1, 1987) (known as KPMG internationally), and PriceWaterhouseCoopers (Price Waterhouse prior to July 1, 1998 merger with Coopers & Lybrand). The dependent variable, $X_{it}/P_{i,t-1}$, is the value of earning deflated by the beginning of the period market value for firm *i* in year *t*, winsorized at the first and 99th percentile values. It is calculated as earnings before extraordinary items (Compustat *DATA18*), divided by the market value of equity, where market value of equity ($MktVal_{it}$) is equal to the number of share outstanding, Compustat *DATA25*, times price per share, Compustat *DATA199*). $Diff_{it}$ is the difference between the sum of the upward (f_up_{it}) and the sum of the downward revisions (f_down_{it}) in the analysts' EPS forecast for firm *i* in fiscal year *t* (from First Call database). D_{it} is a dummy variable equal to 1 if $Diff_{it} < 0$, equal to zero otherwise. *BigX* is a dummy variable equal to 1 if the firm was audited by one of the big 7 audit firms the previous year, 0 otherwise. $NumEst_{it}$, finally, is the number of analyst that are following the company throughout the year. Column (1) reports the results of the estimation of the model for companies with one of the Big 7 auditors at year t-1 vs. all the other companies in the sample.

Table 5 Hypothesis 4 Panel D Auditors from Compustat *DATA149*

Code	Auditor	# Obs.
0	Unaudited	19
1	Arthur Andersen	2299
2	Arthur Young (prior to October 1, 1989) (merged with Ernst & Whinney on October 1, 1989)	0
3	Coopers & Lybrand (Coopers & Lybrand Deloitte in the United Kingdom since April 29, 1990) (Coopers & Lybrand merged with Price Waterhouse on July 1, 1998)	939
4	Ernst & Young (Ernst & Whinney from July 1, 1979 to September 29, 1989; Ernst and Ernst prior to July 1, 1979)	4232
5	Deloitte & Touche (Deloitte, Haskins & Sells prior to December 4, 1989; Haskins & Sells prior to May 1, 1978)	2995
6	Peat, Marwick, Main (Peat, Marwick, Mitchell prior to April 1, 1987) (known as KPMG internationally)	2614
7	PriceWaterhouseCoopers (Price Waterhouse prior to July 1, 1998 merger with Coopers & Lybrand)	3784
8	Touche Ross (merged with Deloitte, Haskins & Sells on December 4, 1989)	0
9	Other	115
10	Altschuler, Melvoin, and Glasser	0
11	BDO Seidman (Seidman and Seidman prior to September 1, 1988	118
12	Baird, Kurtz, and Dobson	3
13	Cherry, Bekaert, and Holland	0
14	Clarkson, Gordon	0
15	Clifton, Gunderson	0
16	Crowe Chizek	0
17	Grant Thornton	144
18	J.H. Cohn	0
19	Kenneth Leventhal	0
20	Laventhol and Horwath	0
21	McGladrey & Pullen (McGladrey, Hendrickson, and Pullen prior to May 1988)	19
22	Moore Stephens	2
23	Moss Adams	2
24	Pannell Kerr Forster (Pannell, Kerr, MacGillivray in Canada)	3
25	Plante and Moran	0
26	Richard A. Eisner	6
27	Spicer and Oppenheim	0
	Missing value	3907