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Conditional Conservatism in Accounting: New Measures and Test of Determinants of the Asymmetric Timeliness in the Recognition of Good and Bad News in Reported Earnings

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To the Graduate Council:

I am submitting herewith a dissertation written by Giorgio Gotti entitled "Conditional Conservatism in Accounting: New Measures and Test of Determinants of the Asymmetric Timeliness in the Recognition of Good and Bad News in Reported Earnings." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Business Administration.

Bruce Behn, Major Professor

We have read this dissertation and recommend its acceptance:

Vladimir Protopopescu, Phillip Daves, Terry Neal

Accepted for the Council:
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Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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Conditional Conservatism in Accounting:

New Measures and Test of Determinants of the Asymmetric Timeliness in the Recognition of Good and Bad News in Reported Earnings

A Dissertation

Presented for the

Doctor of Philosophy Degree

The University of Tennessee, Knoxville

Giorgio Gotti

May 2007

Dedication

"When you set out on your journey to Ithaca
pray that the road is long,
full of adventure, full of knowledge.
[…]
Don't lose sight of Ithaca,
for that's your destination.
But take your time;
better that the journey lasts many a year
and that your boat only drops anchor on the island
when you have grown rich
with what you learned on the way."

Kostantinos P. Kavafis, Ithaca (1911)

This dissertation is dedicated to my family, for cheering me throughout my academic career. To Sara, for constantly inspiring me with her presence, like the golden color of the wheat fields. To Garrett. To Vlad, friend and mentor. To the Moschettieri and all the other friends, whose encouragement made this work possible.

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Abstract

Accounting standards mandate different, more conservative, rules for the recognition of unrealized gains than unrealized losses in reported earnings. Conditional conservatism, defined as asymmetric timeliness in the recognition of unrealized losses vs. gains in reported earnings has, since its origins, been a peculiar characteristic of the accounting system. Understanding conservatism's role, its determinants, and its variations across firms is important for interpreting the nature, purposes, and valuation implications of accounting. Basu (1995; 1997) proposed a model to detect accounting conditional conservatism and provided empirical evidence that bad news is recognized more quickly than good news in earnings for a sample over the period 1963-1991. Following his seminal work[1], accounting literature adopted the Basu single-period model to measure conditional conservatism (Ball et al. 2000; Ball et al. 2005; Ball and Shivakumar 2005; Lobo and Zhou 2006).

However, Basu's proxy for measuring the arrival of good/bad news, the price of the firm's stock, may be influenced, in part, by factors that will never be recorded in a firm's reported earnings. This introduces inaccuracy in the measure of conditional conservatism. To address the problems, 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. Then, I use this new measure to test the determinants, suggested by previous literature, of conditional conservatism in accounting. Results show that companies with (1) lower debt-to-assets ratio, (2) large proportion of executives' annual

[1] As of December 7, 2006, 102 citations for Basu (1997) are recorded on Thomson ISI's Social Sciences Citation Index (http://portal.isiknowledge.com) and 291 are on Google Scholar (http://scholar.google.com)

compensation independent of the firm's accounting performance, (3) one of the big 4/big 7 audit firms as auditor, and a auditor opinion qualified with a going concern assumption the previous year exhibit a greater timeliness in the recognition of bad news than good news in annual earnings.

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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. Despite its widespread adoption over time and over 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 not 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. Neutral information does not color the image it communicates to influence behavior in a particular direction. For example, automobiles might be produced with speedometers that indicate a higher speed than the automobile actually is traveling at to influence drivers to obey the speed limit. But those "conservative" speedometers would be unacceptable to drivers who expect them to faithfully represent the speed of the automobile. Conservative or otherwise biased financial reporting information is equally unacceptable.* (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)

This issue has been the basis for recent academic research (Guay 2006; Watts 2003a, 2003b; Ryan 2006; Roychowdhury and Watts 2006; LaFond and Watts 2006; Choi et al. 2006; Guay and Verrecchia 2006; Bushman and Piotroski 2006) because the understanding of the motivations and the determinants of conditional conservatism is important to gain insights on the role of financial reporting in debt contracting, managerial compensation, valuation, and institutional settings. As an example, we can consider the debt contracting situation. Shareholders have limited liability, which gives

[2] FASB Concept Statement No. 5.

them incentives to transfer a company's wealth to themselves in the form of dividends, leaving the company as an empty legal entity to debt-holders. To avoid this, debt covenants link the maximum amount of dividends that can be distributed to reported earnings. Requiring a less timely recognition of good news and more timely recognition of bad news in the firm's annual reported earnings guarantees the debt-holders that a minimum level of resources is kept inside the company, and is available for distribution in case of a firm's liquidation.

Researchers have found evidence of conditional conservatism among US and international companies, and have suggested that conservatism is adopted in accounting because it benefits the agents that use, prepare, or regulate accounting reporting. Consequently, understanding the determinants and the institutional factors that shape the financial reporting process is fundamental to reading and interpreting a firm's annual financial statements, the output of this process. But 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? An investigation of the accuracy of the measures commonly used in identifying the determinants of conservatism is vital in considering the reliability of research results.

Indeed, because it is not possible to observe and track each single piece of information about a company's future gains and losses, researchers need to identify an observable variable that can be adopted to indirectly measure a firm's news to test for the timeliness of reporting good versus bad news in annual earnings. Accounting researchers, following Basu's seminal work (1997; 1995), adopted the market price of the

firm's stock as a variable to measure good vs. bad news about the firm's future earnings. The use of this measure, however, has raised a number of economic and econometric issues (Dietrich et al. 2006). The stock price varies, in part, due to certain factors that will have a chance to be recognized in future earnings (accounting information). However, stock prices may also vary due to factors that will not be recognized in earnings over the years (non-accounting information). Thus, stock prices, despite being a rather accurate measure of information about future cash flow, provide an inaccurate measure of the amount and significance of current information about the firm's unrealized earnings that will be recognized in the future. This introduces noise in the measure of asymmetric timeliness, hence in the measure of conditional conservatism.

Therefore, I introduce a new, *a priori* more precise measure of asymmetric timeliness, combining a Least Absolute Deviation (LAD) piecewise regression with the number of revisions in the financial analysts' estimates of earnings per share (EPS) as a new variable to capture the arrival of good and bad "accounting[3]" news about the firm's future earnings. Financial analysts gather all available information, but use only the part that they believe will have a chance to be recognized in future earnings to revise their EPS estimates.[4] (Nichols and Wahlen 2004). This variable, I believe, is a more reasonable proxy for the arrival of good/bad news about future earnings than returns to investors, because it includes only the pieces of information that have a chance to be recognized in annual earnings over the years. This variable should help to measure more

[3] In the sense that these pieces of information will be, over time, recognized in the firm's annual earnings.
[4] I adopt here the three theoretical links between earnings the three theoretical links between earnings and share prices developed by Beaver (1998): current period earnings provides information to predict 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.

precisely whether there is a difference in how quickly good and bad news are reported in annual earnings, hence the presence and the strength of conditional conservatism.

Once I demonstrate that this measure of asymmetric timeliness in the recognition of good/bad news about future earnings 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) if there is an association between auditors, auditor opinions, and the company's lagged conditional conservatism.

The results of the dissertation show 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 not meeting the requirements of debt indentures, thus reducing the asymmetric timeliness that I find for the rest of the sample. Second, companies with executives compensated more heavily based on the company's accounting performances do consistently exhibit, contrary to what I expected based on previous literature, aggressive accounting, defined as expected gains recognized in annual earnings faster than losses. This might provide evidence of the relative 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. Additionally (3), companies that in the previous year were audited by one of the big 4/big 7 audit firms and 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 had been aggressive in the year prior to the going concern opinion but become highly conservative in the year of the opinion and the year following. Significantly, during the year of the going concern opinion and the following year, these firms exhibit a higher conditional conservative behavior than other firms in the sample with clear auditors' opinions.

The dissertation is organized as follows: Chapter 2 reviews the literature that analyzes conservative accounting and justifies the new proxy used to capture good/bad news. Chapter 3 describes the model and the hypotheses tested in the dissertation. 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. Conditional Conservatism in Accounting

2.1 Conservatism Determinants

Previous literature, summarized in Watts (LaFond and Watts 2006; Watts 2003a, 2003b; 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. Watts argues that contracting is a likely reason for the start of both accounting and conservatism, and that "conservatism constrains managerial opportunistic behavior and offsets managerial biases with its asymmetrical verifiability requirement" (2003a). 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[5], 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 empirically tested recently by LaFond and Watts (2006); the different *information sets between informed and uninformed investors* create incentives

[5] Deferring revenues recognition and accelerating expenses recognition.

for the firm's shareholders to adopt conservative accounting reporting. They argue that information asymmetry between informed and uninformed investors creates agency costs, thus reducing the firm's expected future cash flow and increasing the equilibrium rate of return required by investors. Both effects reduce the firm's value; therefore, conservatism is a corporate governance mechanism used to mitigate the value reduction effect of the information asymmetry. The commonalities of these five explanations for conservatism in financial reporting are the asymmetric loss functions of different parties with stakes in the firm and the parties' asymmetric information sets about the firm.

2.2 Empirical Approaches

The traditional textbook definition of conservatism focuses on choices among different accounting methods (LIFO vs. FIFO, for instance). More recently, the literature introduced a distinction between two different types of conservatism. The first is the unconditional (or news independent) conservatism that occurs with the expensing of the costs of most intangibles, for instance R&D costs, and is reflected in the understatement of the book-to-market ratio. The second is the conditional (or news dependent) conservatism, defined as the asymmetric timeliness of recognition in accounting earnings of news about unrealized gains and losses, which occurs with impairment of many types of assets[6]. This differential timeliness definition is also known in literature as "earnings conservatism" as compared with "balance sheet conservatism" of the "unconditional conservatism" (Beaver and Ryan 2005; Pae et al. 2005). Empirical results provide

[6] "The accountant's tendency to require a higher degree of verification to recognize good news as gains than to recognize bad news as losses" as Basu (1997) defines it.

consistent and convincing evidence that conditional conservatism has influenced accounting practice for more than 500 years[7] (Basu 1997; 2005) and has increased in the recent period, both in the United States (Ryan and Zarowin 2003; Watts 2003a; Basu 1997; Pope and Walker 1999) and in other countries (Ball et al. 2000; Pope and Walker 1999; Ball et al. 2003; Bushman and Piotroski 2006)

In their recent paper, Beaver and Ryan (2005) extend their previous accounting models (Beaver and Ryan 2000; Ryan and Zarowin 2003) to include probabilistic write-downs; they also integrate into the analysis the two distinct forms of accounting conservatism: unconditional and conditional. Examples of unconditional conservatism (or *ex-ante*, or news independent) are the immediate expensing of R&D and internally generated intangibles, the depreciation of property, plant, and equipment faster than economic depreciation, and the historic cost accounting for net present value projects. Unconditional conservatism is proxied by the market-to-book ratio. Conditional conservatism (or *ex-post*, or news dependent) requires the write-down of book values of assets under adverse conditions, but not the write-up under favorable conditions. Examples of conditional conservatism are the adoption of the lower-of-cost-or-market accounting rule for inventory and impairment write-downs for long-lived tangible and intangible assets. The authors complain that recent papers on conservatism are only concerned with estimating the extent of conditional conservatism and its association with current and lagged returns, while not controlling for unconditional conservatism and its frictions with conditional conservatism. Beaver and Ryan's model (2005) captures the interactions between conditional and unconditional conservatism, modeling different

[7] The French Commercial Code as early as 1673 required the adoption of the lower-of-cost-or-market rule for inventory. The same rule was adopted in Prussia from 1794. Moreover, Italian accounting records show that asset write-downs were required as early as the 1400s.

independent variables to explain probability and size of asset impairments. The model supports empirical results showing how market-to-book ratio (as proxy for unconditional conservatism) is associated with lower conditional conservatism measured by the asymmetry of the response of earnings to returns.

The issue of the interaction between conditional and unconditional conservatism, and their measures, has been analyzed by other researchers also (Roychowdhury and Watts 2006). Basu (2005) suggests that conditional conservatism historically arose from the periodic performance assessments needed by businessmen rather than from tax reasons. In contrast, historical evidence shows that many forms of unconditional conservatism arose from tax and regulatory motivations. Corporate income taxes have been influential in the development of conservative depreciation methods with the goal to maximize the depreciation deduction, thus minimizing corporate taxes. Moreover, the widespread adoption of LIFO after the Great Depression was likely due to the attempt of firms to reduce the impact of inflation on their income taxes. In the same way, the common expensing of all R&D expenses (before this was mandatory) under SFAS 2 appears to have been caused by an IRS ruling. Before 1954, the IRS had an administrative policy of allowing the deduction of R&D costs if the company consistently followed this practice in its financial accounting. Since 1954, the Internal Revenue Code (sec. 174) has contained a specific provision which allows those intangibles to be deducted regardless of the financial accounting practices. Hence, Basu argues that unconditionally conservative accounting methods became widespread for income taxation and market regulation reasons, and that those practices are fairly recent, since income taxes were first introduced at the end of the eighteenth century.

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. Their information advantage gives the managers the opportunity, through financial reporting, to transfer a firm's wealth to themselves in the form of insider trading and/or excess compensation based on stock prices. It is not always possible to completely verify the incremental information of the more informed part, which generates deadweight losses (Jensen and Meckling 1976) because managers' time and efforts are partially directed toward transferring the firm's wealth to themselves, instead of maximizing the firm's value on shareholders' behalf. The market anticipates these deadweight losses and reacts by discounting the firm's stock prices (LaFond and Watts 2006). Conditional conservatism is adopted then, LaFond and Watts (2006) argue, as a corporate governance mechanism used in debt and/or compensation contracts, litigation, determination of taxes, and regulation settings to reduce the information asymmetry between the parties and the consequent deadweight losses that reduce the firm's expected cash flow and stock prices (Watts 2003a, 2003b). Moreover, conditional conservatism is useful to offset managers' incentives to overstate earnings and assets, while understating liabilities (Pae et al. 2005).

To assess conservatism, researchers use measures which can be classified in three broad categories (Watts 2003b): A) net asset measures, B) earnings and accruals

measures, and C) earnings/stock returns relation measures. For category A, Feltham-Ohlson valuation models (Feltham and Ohlson 1995) and book-to-market ratios are used to estimate the extent of net assets' undervaluation. Measures falling in this category are able to assess unconditional conservatism, but cannot detect and measure conditional conservatism. Measures falling under B incorporate the notion that asymmetrical treatment of gains and losses produces asymmetry in accruals. Hence, negative cumulative accruals, accruals distribution skewness, earnings distribution skewness, earnings reversal, and accruals are used as measures of conservatism. Finally, measures under C exploit the fact that market prices tend to reflect changes in the asset value when those changes occur (in a timely recording of expected losses and gains), while accounting rules delay the recognition of those changes in the case of expected gains but not in the case of expected losses. Hence, bad news is predicted to be more highly associated with stock returns and/or change in the market price of assets than good news.

Basu (1997; 1995) adopts this last approach and 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. Specifically, he uses a reverse regression of price-deflated earnings on an indicator variable for negative stock returns (D), stock returns (R), and stock returns interacted with the indicator variable (all at time t): $EARN = a_0 + a_1D + ß_0R + ß_1R*D$. He then tests for and finds the coefficient $ß_1$, which measures the difference in the slope coefficient for the negative news sample respective to the positive news sample, to be significantly positive. Furthermore, Basu's

study provides evidence that the degree of conservatism in accounting earnings increased over the period 1963-1990. He attributes this increase to changes in the auditors' liability exposure; higher liability exposure is associated with higher conditional accounting conservatism.

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 asymmetric timeliness of expected gains and losses in reported earnings, using the coefficient $ß_1$ or the ratio $(ß_1 + ß_0)/ ß_0$ as a measure of conditional conservatism. 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 test two related explanations: 1) earnings reflect news with a lag with respect to stock prices, and 2) earnings increasingly reflect good and bad news in an asymmetric way. They regress annual earnings on current and lagged (up to three periods) annual price changes, with a dummy variable for negative price change and all the variables deflated by beginning-of-the-current-year prices. Their analysis of this equation for annual cross-sections from 1966 to 2000 finds strongly increasing lags and asymmetry. Earnings are more strongly associated with lagged price changes and more weakly associated with current price changes over time. The R square of the regression with lagged price changes grows over time, while the R square of the regression without lagged price changes decreases over time. Moreover, they find that earnings reflect current negative price changes more strongly over time while reflecting current positive price changes less strongly over time. The same results

of earnings showing asymmetric timeliness with respect to lagged annual returns is provided by Pope and Walker (1999).

More recently, Roychowdhury and Watts (2006) propose a theory and provide supporting empirical results to explain the relation between asymmetric timeliness (conditional conservatism) and market-to-book ratio (unconditional conservatism). They decompose firms' equity value into four additive segments: net assets at historical cost, verifiable and recognized increases on the value of separable net assets, unverifiable increases in the value of separable net assets, and economic rents. If, as practice seems to suggest, the benchmark for accounting reporting is the measure of market value of net assets, then both asymmetric timeliness and market-to-book ratio measure conservatism with noise, because rents and unverifiable net assets cannot be commonly observed. 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 preceding a specific time.

LaFond and Watts (2006) add a new motivation for the demand of conditional accounting conservatism. They provide evidence that conservatism is an equilibrium corporate governance mechanism voluntarily adopted by firms to reduce the deadweight losses associated with information asymmetry between equity investors[8]. They find that information asymmetry among equity investors is strongly positively correlated with conservatism, after controlling for other variables that previous literature identified as

[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.

relevant factors in demand for conservatism. Moreover, their tests offer evidence that changes in information asymmetry between informed and uninformed equity investors temporally lead to changes in conservatism.

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: (1) incorporate industry context and industry-specific measures of news other than returns, (2) incorporate the business cycle and how it affects managerial incentives, (3) control or do not control for other factors affecting asymmetric timeliness, then compare results, and (4) filter returns when they are used as a proxy to assess asymmetric timeliness, in order to mitigate, for instance, the biases emphasized by Dietrich et al. (2006) arising from sampling of an endogenous variable.

Among papers testing how conditional conservatism, as measured by asymmetric timeliness, varies over time, 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, explaining the variation with changes in legal liability. Other 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;

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

- 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] Specifically, changes in equity returns are more highly correlated with negative earnings news than positive earnings news, reflecting that negative earnings news is recorded more promptly in the accounting system than positive earnings news. Moreover, the results of the paper also imply that revisions in equity returns are a quasi-concave function of special items; i.e. revisions in equity returns are more highly positively correlated with negative special items than with positive special items.

Dietrich et al. (2006) 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. In particular, they highlight two econometric biases that characterize this approach: a sample-variance-ratio

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

(SVR) bias and a sample truncation (ST) bias. These biases arise from the sampling formation procedure on an endogenous variable[11] - returns - and the consequent distributional properties of the truncated sample. The authors build data series that are, by construction, devoid of asymmetric timeliness in reported earnings and show that the asymmetric timeliness research design still finds evidence of conservative behavior, i.e. a more timely recognition of bad news than good news in annual earnings. Moreover, they show that cash flow from operations, in theory, is unaffected by accruals and, therefore, by conservative accounting standards, but exhibits a stronger conservative behavior (quicker recognition of expected losses than gains) than the operating accruals themselves. Hence, 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-to-book ratio (Feltham and Ohlson 1995), and change in cash investments (Easton and Pae 2004) should be adopted to further investigate accounting conservatism. The underlying assumption of the paper is that earnings information leads (causes) returns. As a consequence, regressing earnings on returns produces biased results that cannot be corrected. In this regard, Ryan (2006) notices that Dietrich's assumption seems to go against the common evidence in finance and accounting literature that it is more likely that both earnings and returns are driven by other, more primitive information. Indeed, when researchers regress returns on earnings, the observed R square is extremely low, suggesting that there are other variables important in explaining returns to investors besides reported earnings.

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

2.3 Theoretical Approaches

Recent authors who approach the study of conservatism in accounting from a theoretical point of view are Bagnoli (2005) and Dierker (2006).

Bagnoli and Watts (2005) develop a signaling model to study managers' decisions to be more or less conservative in their financial accounting, within the limit of the rules provided by GAAP. Under specific conditions, market investors can use the signals coming from managers' decisions to infer the firm's private information and thus better predict the firm's future value. In their model, Bagnoli and Watts (2005) assume that managers have private information about the probability that the firm's future results are good. Following their model, the authors show (Proposition 6) that the earning response coefficient (ERC[12]) for firms choosing not to report conservatively (in a manner that is expected to lead to higher reported earnings) is greater than the ERC for conservative firms, if the conservative report policy is more informative than the non-conservative policy, and/or if a firm's future forecast is relatively positive.

Dierker (2006) provides a model focused on regulatory conservatism, in which accounting conservatism is a means to avoid speculative financial bubbles and stocks' overvaluation. In his model, conservatism matters because risk-adverse agents receive financial information from the market. However, even if they know the information has a conservative bias, they do not know its magnitude (random bias) and cannot evaluate the news accurately. This situation, along with concerns about overvaluation (as suggested by Watts (Watts 2003b; 2003a)) and the fact that financial markets process negative news with a systematic bias (in the sense that "bad news travels slowly" as Hong et al. (2000)

[12] ERS is the slope coefficient in a linear regression of abnormal cumulated returns over the announcement period.

have shown), motivate the regulators to mandate counter-biased accounting standards. The author provides a model in which he proves that, while the market is not perfectly efficient and frictionless, a conservative accounting regime leads to lower equilibrium asset prices than a full disclosure regime, justifying the conservatism in accounting as a tool available to regulators to achieve more efficient prices.

2.4 Problem with Using Market Returns as Proxy for Good/Bad News and My Adoption of Number of Analysts' EPS Estimate Revisions as a Replacement Proxy

Basu (1997) defines conditional conservatism as the accountant's tendency to require a higher degree of verification for the recognition of good news in earnings than bad news. To measure conditional conservatism I will adopt Basu's definition within the framework based on the theory of conservatism in accounting illustrated by Watts (2003b; 2003a) and Roychowdhury and Watts (2006). 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.

Basu (1997) introduces market returns as a proxy for good and bad news about expected gains/losses. Specifically, he adopts negative unexpected annual stock returns as a proxy for bad news, and positive unexpected annual stock returns as a proxy for good news. He tests his hypotheses in a Beaver "reverse" regression with earnings per share deflated by beginning of period stock price as a dependent variable. The justification for this reverse regression design is that OLS standard errors and test statistics are better specified when the leading variable is the independent variable and the lagging variable is specified as dependent.

Using returns as a proxy for good and bad news about firms' future earnings, however, creates two main economic and econometric problems. First, if returns on the market are driven by the value or the changes in the values (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 2006). If this is true, then the asymmetric timeliness approach that Basu adopts will measure conditional conservatism rather inaccurately, 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 reverse regression approach, indeed, works only if returns summarize news from sources other than accounting earnings and the news can be, at least in 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

[13] Where rents are defined, following the guidance of Roychowdhury and Watts (2006), as growth options and monopoly returns.

inside the firm. Additionally, changes in rents are recognized only for decreases in acquired rents, and not always consistently (cfr. FAS 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 reverse regression. Ryan's conclusion is: "it would be preferable to estimate asymmetric timeliness using measures of news other than returns" (2006 p. 11).

The second problem with Basu's framework has been highlighted in Dietrich et al. (2006). The authors provide a model that describes the relations among economic income, reported accounting earnings, non-earnings information flowing to the market, and stock returns. In their model, information (both accounting and non-accounting information) about the firm's underlying value (economic income) drives the firm's stock price. 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 address the problem of using market returns as a proxy for good/bad news, instead adopt cash flow from operations as a proxy for good/bad news about future firm's earnings. However, cash flow from operations shows asymmetric timeliness, is affected by different accounting choices, is part of earnings (causing an endogeneity problem more serious than the returns proxy), and is highly correlated with accruals.

To address these issues with the choice of the variable to measure good/bad news, I adopt a new measure of news: the number of financial analysts' estimates of earnings per share (EPS) raised/lowered over the period. 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. Changes in the estimates, thus, capture news arrival during the fiscal year. 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. (2006). 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.

The new approach, using the new variable associated with the adoption of a LAD regression, allows for a more precise measure of conditional conservatism, filtering out the noise in the previous variable to better capture the underlying asymmetry in the recognition of good/bad news in annual reported earnings.

In summary, previous literature identified conservatism as one of the salient attributes of financial reporting and disclosure, along with reliability and relevance. The problem, however, is *how to measure conditional conservatism in financial reporting*. The existing literature identifies the asymmetric timeliness in reporting good or bad news in annual reported earnings as the most important consequence of conditional conservatism. So far, researchers have adopted the positive or negative annual returns on the market (either between 9 months before and 3 months after fiscal year-end or over the fiscal year) as a proxy for good/bad news, regressing annual net income over this proxy to determine whether, and how much faster, bad news about future earnings was incorporated in annual reported earnings compared to good news. Results show that bad news was incorporated six times faster than good news in contemporaneous annual

reported earnings. Returns, however, are a very noisy proxy for good/bad news, suffering from endogeneity and causing econometric biases in the coefficient estimates of Basu's research design, leading to detection of spurious conditional conservatism even when, by sample construction, none is present (Dietrich et al. 2006). Instead of returns on the market, I adopt a new proxy that captures and measures the flow of good/bad news about firms' future earnings in a in a less noisy way: the number of financial analysts' estimates of earnings per share (EPS) raised/lowered over the period. Some of the pieces of information about future earnings will be incorporated at the end of the fiscal period in net income, and some will be incorporated in the future. Consequently, the regression of net income (before extraordinary items) on the proxy for good/bad news will cast light on the presence of conditional conservatism, defined as asymmetric timeliness in recording news about unrealized gains/losses on annual reported earnings, for the companies included in the sample from 1991 to 2005.

3. Model and Hypotheses

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):

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

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. However, I made four changes to the original Basu model: the adoption of a different variable to proxy for good/bad news about firms' future cash flow, the adoption of a LAD regression approach instead of the classic OLS, the extension of the analysis to two-year and three-year time horizons, and the presence of the control variable $NumEst_{it}$.

3.1 Analysts' Forecast Revisions as a Proxy for Good/Bad News

The first hypothesis that I test in this dissertation 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. (2006) 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 and unable to capture the conditional conservatism in the accounting system.

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 this optimism, I expect analysts to overvalue the good news and include it fairly quickly in their forecast revisions. This analysts' optimism can explain the different timeliness in recording good and bad news about future earnings in reported earnings found by previous literature. 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). 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. 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. 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 Model (1) is significant and positive when I run a quantile regression, while close to 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 dissertation:

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 dissertation 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 dissertation:

Hypothesis 4: Firms that the previous year 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[14], 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

[14] To ensure that the market reaction to a previous year's earnings is excluded from the analysis.

database. In particular, I sum for each company and each year the total salary[15] ($SALARY_{it}$) the total bonus[16] ($BONUS_{it}$), and other annual compensation[17] ($SUMOTH_{it}$) 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 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

[15] The dollar value of the base salary (cash and non-cash) earned by the firm's executive officers during the fiscal year.
[16] The dollar value of a bonus (cash and non-cash) earned by the firm's executive officers during the fiscal year.
[17] 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.

(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 adopt the asymmetric timeliness framework first introduced by Basu (1997) to measure conditional conservatism, adapting it to test the four hypotheses of the dissertation. However, I make four important changes to the original model. 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

I estimate the Model (1):

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

where the dependent variable, $X_{it-j,t}/P_{it-j-1,t-1}$, is the cumulative value of earnings deflated by the beginning of the period market value during year *t-j* to *t*. $Diff_{it-j,t}$ is the cumulative difference between the sum of the upward and downward revisions 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, and equal to zero otherwise. $NumEst_{it-j,t}$, is the number of analysts that follow the company (*i* between fiscal year *t-j* and *t)*, which I adopt as a control variable to make sure a higher number in the variable $Diff_{it-j,t}$ 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 unrealized gains/losses. Furthermore, I winsorize 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, but (non-tabulated) regression results for non-winsorized variables show qualitatively similar evidence.

[Insert table 2 about here]

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 fasterbad 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[18] 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*,

[18] 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).

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):

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

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 a determinant 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 (Roychowdhury and Watts 2006; LaFond and Watts 2006), 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 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[19].

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 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 they enforce more stringent conservative accounting rules as the firm executives' incentives to adopt an aggressive accounting practice raise (Watts 2003a, 2003b), to reduce the chances 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, adapting Model (1) with the introduction of a new variable *Exe* to

[19] 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.

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 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. 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 tests the association between the auditors' 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*. The codes that Compustat (*DATA149*) uses for the auditor opinion 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 opinion.

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 whether the level of conservatism varies with the choice of one of the BigX audit firms vs. smaller audit firms, again introducing 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 change to a more rigorous accounting conservatism after receiving a going concern opinion from their auditors, to reduce the risk of legal liability in case of bankruptcy or default on debt provisions for both the auditors and the management.

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[20]. The results are not surprising because firms that received a clear audit opinion (Code 1) already exhibit a starting higher level of

[20] 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.

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 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 dissertation.

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:

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

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 dissertation 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 2006; Roychowdhury and Watts 2006). 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. 2006) 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.[21] 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 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).

[21] 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.

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. 2006) 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. Then I use this new measure to test the determinants, suggested by previous literature, of conditional conservatism in accounting. Results show that companies with (1) lower debt-to-assets ratio, (2) high proportion of executives' annual compensation not depending on the firm's accounting performance, (3) one of the big 4/big 7 audit firms as auditor, and a auditor opinion qualified with a going concern assumption the previous year exhibit a higher asymmetry in the reporting of news about firms' expected gains/losses in annual earnings.

Results also confirm the auditor choice as one of the determinants of conditional conservatism. However, results do not show evidence of an increase in conservatism associated with an increase in the firm's leverage ratio. Finally, results do not support the view of conditional conservatism as an optimal corporate governance mechanism for executive compensation. Indeed, I find that firms with a higher proportion of executive compensation depending on the firm's accounting performance implement aggressive

accounting instead of conservative, recognizing unrealized gains more quickly than unrealized losses in the firm's annual earnings report.

As always, the results are only as good as the variables that I adopt to measure the underlying phenomena. If the variable leverage ratio (*Lev*) and executive ratio (*Exe*) are able to capture, respectively, the importance of creditors and bond-holders among firms' stakeholders and the firm executives' incentives to adopt more aggressive accounting policies, then we can rule out debt and managerial contractual reasons to explain conditional conservatism, in favor of the auditor choice and auditor influence determinant. However, if these variables capture only partially the underlying reality, then caution should be used in drawing conclusions from the results of the empirical analysis. It is certain, however, that empirical evidence for the sample adopted shows that the auditor influence on clients is a more likely reason for the adoption of higher levels of conditional conservatism with respect to debt or compensation contracting reasons.

7.1 Future Research

Future avenues of research include the use of the new measure of conditional conservatism to analyze the interaction and the preemptive role of unconditional and conditional conservatism, as highlighted in recent literature (Beaver and Ryan 2005; Ryan 2006).

Moreover, 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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Appendix

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 ration 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	-0.023323	-0.029246
	(10.55)**	(6.21)**	(5.93)**
Diff	-0.000061	0.000075	0.000060
	(1.39)	(1.11)	(0.84)
Diff*D	0.000319	0.000110	0.000250
	(4.42)**	(0.94)	(1.96)*
NumEst	-0.000891	-0.001099	-0.001149
	(6.19)**	(5.65)**	(6.15)**
Constant	0.060561	0.114899	0.168393
	(53.22)**	(38.92)**	(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	-0.032671	-0.028973
	(8.90)**	(6.60)**	(3.06)**
Diff	0.000380	0.000598	0.000699
	(4.81)**	(5.32)**	(4.37)**
Diff*D	0.000064	-0.000065	-0.000017
	(0.61)	(0.43)	(0.08)
NumEst	-0.000058	0.000308	0.000204
	(0.27)	(1.11)	(0.53)
Constant	0.065021	0.123288	0.179368
	(35.77)**	(28.06)**	(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

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. $NumEst_{it-j,t}$ 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	0.003980	0.001075
	(0.80)	(0.55)	(0.09)
Diff	0.000036	0.000218	0.000406
	(0.52)	(2.16)*	(3.05)**
Exe	-0.054391	-0.114888	-0.073033
	(16.80)**	(15.53)**	(13.64)**
Diff*D	0.000325	-0.000037	-0.000225
	(2.88)**	(0.22)	(0.97)
Exe*D	-0.020689	-0.035600	-0.016487
	(4.46)**	(3.44)**	(2.16)*
Exe*Diff	-0.000090	-0.000339	-0.000265
	(0.74)	(1.94)	(2.72)**
Exe*D*Diff	-0.000026	0.000504	0.000353
	(0.16)	(2.00)*	(2.37)*
NumEst	-0.000717	-0.000896	-0.001015
	(9.32)**	(10.33)**	(10.09)**
Constant	0.101810	0.206789	0.307979
	(47.32)**	(41.96)**	(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 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 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
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 report 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	-0.017113	-0.017428
	(10.28)**	(10.32)**	(10.28)**
Diff	0.000115	0.000116	0.000119
	(2.97)**	(3.11)**	(3.10)**
GCO	-0.350510	-0.381728	-0.065795
	(21.88)**	(22.32)**	(1.56)
Diff*D	0.000127	0.000130	0.000119
	(2.10)*	(2.23)*	(1.99)*
GCO*D	0.222471	0.023430	-0.300983
	(9.05)**	(1.11)	(6.71)**
GCO*Diff	-0.017224	-0.021131	0.006607
	(20.93)**	(3.40)**	(1.91)
GCO*Diff*D	0.041935	0.026000	-0.007147
	(27.47)**	(4.18)**	(2.06)*
NumEst	-0.000420	-0.000423	-0.000428
	(3.25)**	(3.40)**	(3.35)**
Constant	0.061399	0.061391	0.061214
	(46.65)**	(48.38)**	(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 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. $NumEst_{it}$, 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

Vita

Giorgio Gotti was born in San Pellegrino Terme, Bergamo, Italy on May 19, 1971. He was raised in Italy and graduated from Liceo Classico "Paolo Sarpi", Bergamo in 1991. From there, he went to "Luigi Bocconi" University in Milan and received a Laurea (B.S.) in economics in 1996. After serving as an officer in the Italian Navy for one year, he became a Chartered Accountant in Milan, Italy, where he worked as a consultant mainly for not-for-profit entities.

He moved to Knoxville, TN in 2001. There, he attended the University of Tennessee, Knoxville and received a Masters of Accountancy with a concentration in Information Systems in 2003 and a Doctor of Philosophy degree with a major in Business Administration and a concentration in Accounting in 2007.

Giorgio is starting his career as an Assistant Professor of Accounting at the University of Massachusetts Boston.