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INTRODUCTION

In this dissertation I analyze whether investors recognize higher quality to the information provided by accounting conservative firms and whether this difference has an economic impact on investors' reaction to public disclosure. This issue is important in light of the lively discussion about the desirability of conservatism in financial reports that has involved academics, practitioners and regulators.

Standard setters have increasingly opposed conservative reporting, on the ground that it would provide biased information to investors (Watts 2003). This argument is supported by various studies suggesting that conservatism has negative effects on capital markets, by decreasing the information content of accounting numbers and impairing investors' valuation process. Other contributions, however, highlight that conservatism is beneficial to debtholders and other third parties contracting with the firm. Indeed, a common view shared by past literature is that the persistence of conservatism in financial reports is due to the fact that its advantages for debt markets outweigh its cost for equity holders.

Surprisingly, only recently has empirical research started to investigate whether indeed conservative reporting is perceived as a cost by shareholders. Studies by Li (2010) and Garcia Lara et al. (2011; 2012) suggest that investors do not consider conservatism as an unfavorable characteristic of financial reporting: actually, they appear to reward it by charging a lower cost of capital. These results may be explained by investors recognizing superior quality to the information that conservative firms provide, and incorporating this differential quality into their decision models. However, conservatism may reduce cost of capital and investors' uncertainty through other channels, such as lower litigation risk or improved investment policies, without affecting the perceived quality of accounting information or even despite having a negative impact on investors' valuation process. This is a key issue for accounting research: since the purpose of financial reporting lies in providing high quality information

(FASB 1978, concept n.1), it is important to understand whether conservatism is beneficial or detrimental to this end. To the extent of my knowledge, no previous research effort has been extended to analyze whether conservatism affects investors' perception about the quality of the information that is communicated to the market.

In this dissertation I aim to attempt to shed light on this issue by investigating whether conservatism influences investors' reaction to the disclosure of a single piece of information: the annual earnings. Consistent with the information-effect hypothesis, I predict and find that investors' reaction around earnings announcements' dates is significantly different depending on the level of accounting conservatism of the firm. Specifically, I find that conservative earning signals are associated with larger perceived information content (especially for good news) and reduce investor disagreement (especially for bad news). Furthermore, I find that the effect of conservatism on investors' perception of information quality may be substantially weakened during periods of high overconfidence and irrational optimism: it appears that investors' deviations from rationality can seriously undermine financial reporting capability to achieve its goal and provide useful information to capital markets.

The three papers proposed in this dissertation make several contributions to current knowledge, with respect to capital market consequences of conservative reporting, the role played by voluntary disclosure and auditor quality as corporate governance mechanisms alternative to conservatism, investors' perception of information quality, the value-relevance of mandatory accounting disclosure, the determinants of investor disagreement dynamics around earnings announcement dates and the impact that deviations from investors' rationality may have on financial reporting usefulness.

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CHAPTER 1

CONSERVATIVE REPORTING AND ITS CONSEQUENCES ON CAPITAL MARKETS

Abstract. In this chapter, I illustrate how this dissertation contributes to the scientific literature studying accounting conservatism and its desirability in financial reports. Past contributions maintain that conservatism may be detrimental for capital markets but is beneficial to debtholders and other third parties contracting with the firm. Empirical research, however, has only recently started to investigate the consequences of conservatism on capital markets. Preliminary findings seem to

contradict past research and show that conservatism is negatively associated with cost of equity and investors' uncertainty. A possible explanation for these findings assumes that investors' recognize higher quality to the information disclosed by conservative firms. This dissertation aims to tests such an explanation, thus deepening our understanding of whether and how conservative reporting produces economic consequences on capital markets.

1.1 Motivation, positioning and contribution

As the adage "anticipate no profit, but anticipate all losses" (Bliss 1924) suggests, accounting practice has traditionally been characterized by conservatism. Modern academic literature distinguishes between two forms of accounting conservatism. The first is *unconditional* (or ex ante) conservatism, defined as the systematic understatement of the book value of net assets due to predetermined aspects of the accounting process (Beaver and Ryan 2005). Examples of unconditional conservatism include immediate expensing of the costs of internally developed intangibles, accelerated depreciation of assets or historical cost accounting for positive net present value projects. The second form is represented by *conditional* (or ex post) conservatism, defined as the asymmetric timeliness in the recognition of gains and losses (Holthausen and Watts 2001). Under a conditionally conservative accounting regime, bad news is timely communicated by incorporating it into earnings, whereas recognition of good news is postponed until it has been duly verified (Basu 1997). Examples include lower of cost or market accounting for inventory and impairment accounting for long-lived tangible and intangible assets. In this dissertation, I analyze the capital market consequences of conditional conservatism, to which I will refer simply as "*conservatism*" since now on.

Empirical research shows that accounting conservatism is a widespread phenomenon, being present in different countries and institutional settings (Ball et al. 2000; Ball et al. 2003; Bushman and Piotrosky 2006), and that accounting practice has become increasingly conservative over the last decades (Watts 2003). Such growing pervasiveness has initiated a discussion on whether conservatism is desirable in financial reports.

Standards setters have increasingly supported "neutral" reporting, on the ground that conservatism would provide biased information to investors (Watts 2003). This view is consistent with a stream of academic research arguing that the deterioration in the value-relevance of accounting numbers is due to conservative accounting rules (Kothari and Sloan 1992; Collins et al. 1995; Lev and Zarowin 1999; Ryan and Zarowin 2003). Other studies suggest that conservatism has detrimental consequences for investors' valuation. For instance, Mensah et al. (1994) warn that conservatism offers managers the opportunity to manipulate earnings downward in politically exposed industries. Penman and Zhang (2002) and Paek et al. (2007) argue that accounting conservatism is associated with lower earnings persistence: as a consequence, conservatism may result in larger errors in forecasting future earnings (Mensah et al. 2004). All these contributions suggest that accounting conservatism comes at the cost of financial statements' usefulness for equity holders.

Other studies, however, reply that there exist other non-valuation factors, such as litigation, contracting and political costs, which need to be taken into account and make conservatism a desirable characteristic in financial reporting (Holthausen and Watts 2001; Watts 2003). This argument is consistent with a stream of research showing that conservatism may be associated with positive outcomes for financial statements' users. For instance, Ball and Shivakumar (2005) maintain that timely recognition of losses increases the usefulness of financial reporting to creditors and all other parties contracting with the firm. Fan and Zhang (2011) propose that a conservative accounting system improves the overall information quality and enhances the welfare of accounting information users. Chen et al. (2007), noting that accounting numbers serve both a valuation and a monitoring role, argue that conservatism may improve contract efficiency and risk sharing by reducing managers' incentives to manipulate earnings. These theoretical insights have been corroborated by empirical studies suggesting that conservatism arises as a response to information asymmetry and agency conflicts (Ahmed et al. 2002; LaFond and Watts 2008; LaFond and Roychowdhury 2008).

This academic discussion generated the view that financial reporting is conservative because this is beneficial to the relations between the firm and third parties, in particular debtholders (Ball et al. 2008; Beatty et al. 2008). In other words, the benefits that conservatism brings, in terms of contracting and litigation costs, offset its disadvantages for shareholders, such as reduced informativeness of accounting numbers for valuation purposes.

While conservatism's advantages for debtholders have been documented (see for instance Ahmed et al. 2002, Wittemberg-Moerman 2008 or Li 2010), its impact on equity markets has received less empirical attention. This is surprising, since conservatism has been criticized mostly on the ground that it would have detrimental consequences for investors. Recent contributions by Garcia Lara et al. (2011, 2012) attempt to fill in this gap, showing that conservatism is associated with lower cost of equity and that increases in conservatism are followed on the long-term by reductions in investors' uncertainty over the future years. Their findings are interesting because they show that conservative reporting appears to be appreciated by investors, who charge conservative firms a lower cost of capital, and question the view that conservatism is detrimental to capital markets.

These results may be explained by hypothesizing that conservatism improves the quality of the information communicated to capital markets, and that investors, aware of this superior quality, incorporate it in their valuation process. However, it may be argued that conservatism affects cost of equity and investors' uncertainty through different channels. For instance, Ahmed and Duellman (2011) find evidence that conservatism reduces managers' ex ante incentives to take on negative net present value projects and improves the ex post monitoring of investments, resulting in higher future profitability and lower likelihood of future special items charges. Similarly, Garcia Lara et al. (2009) argue that conservatism conservative accounting can be used as a mechanism to motivate managers to cut losses earlier and abandon poorly performing projects. These effects likely result in higher investment efficiency for conservative firms (Francis and Martin, 2010), thereby reducing default risk. Other researchers suggest that conservatism decreases expected litigation costs for the firm (Qiang 2007; Chung and Wynn 2008) and reduces the likelihood of regulatory intervention that may impair the firm market share or its future profitability (Mensah et al. 1994; Guay and Verrecchia 2006). All these effects may explain conservatism's association with cost of capital and investors' uncertainty, without affecting the quality of the information delivered to the market. It may be the case that conservatism has no information-effect on capital markets, or even that its impact on information quality is unfavorable, as theorized by past contributions. This is an important issue, given the preeminent role played by information quality for the purpose of accounting (FASB 1978, concept 1).

I address this issue by investigating whether investors' reaction to the disclosure of a single piece of information (the announcement of the annual earnings) depends on the level of accounting conservatism of the firm. I do so by adopting an event-study methodology, and analyze whether conservatism is associated with abnormal patterns in the stock price and trade volume dynamics in the days around the announcement of the annual earnings. I hypothesize and find that this association is statistically and economically significant, consistent with the claim that investors attribute higher quality to earnings signals coming from conservative firms.

I conduct this analysis in three separate papers (chapters 2, 3 and 4). In the first two papers, I investigate the association between conservatism and two relevant aspects of investors' reaction to the earnings signal: the change in investor disagreement around the announcement date (chapter 2) and the perceived informativeness of reported earnings (chapter 3). Consistent with my hypotheses, I find that conservatism increases the perceived information content of the earnings signal, while reducing disagreement about its interpretation. Both these results suggest that conservatism has an economic impact on capital markets, inducing investors to recognize higher quality in the information coming from conservative firms. However, longitudinal analysis reveals that the magnitude of conservatism's effect varies over time. In the third paper (chapter 4), I analyze whether deviations from rationality caused by investors' cognitive biases may explain these longitudinal variations, as suggested by research in psychology and behavioral finance. As predicted, I find that the impact of conservatism on capital markets is affected by cognitive distortions such as overconfidence or irrational optimism.

This dissertation contributes to extant knowledge in several ways. First, it sheds light on the information effect of conservatism on capital markets, a field that has only recently started to be investigated, and questions previous claims that conservative reporting has detrimental effects for shareholders. Second, it shows empirical evidence suggesting that investors recognize higher quality to the information coming from conservative firms, and that this fact has an impact on investors' activity: in so doing, it explains recent findings, which shows that conservatism is associated, on the long term, with lower cost of capital and reductions in investors' uncertainty. Third, I contribute to explain the diversity in results produced by academic research on the effect of the earnings announcement on investor disagreement, by highlighting the role played by a relevant characteristic such as reporting conservatism. In this regard, by adopting volume-based measures of investor disagreement, I identify a firm specific determinant of the dynamics of trade volume around the earnings announcement, as urged by Bamber et al. (2011). Fourth, I show how other corporate governance tools, such as voluntary disclosure or audit quality, may act as substitutes to conservatism in order to improve investors' perception of earnings quality. Finally, I show how investors' departures from rationality may weaken the economic impact of accounting quality on capital markets.

CHAPTER 2

CONSERVATIVE REPORTING AND INVESTOR DIVERGENCE OF OPINION

Abstract. In this paper I examine whether the effect of the earnings announcement on investor disagreement depends on the level of accounting conservatism of the firm. Investor disagreement is a key issue in finance research for its repercussions on firm's cost of capital and market efficiency. The current literature that relates firm reporting policies to investor disagreement is scant. I hypothesize that conservative reporting reduces divergence of opinion by providing more complete information to investors and by decreasing their uncertainty about its reliability. Consistently, I find that

accounting conservatism is significantly negatively associated with changes in investor disagreement around earnings announcement dates. This effect is stronger when the firm discloses bad news and when mandatory disclosure is the main channel through which information is publically communicated; it is weaker for firms with a larger set of growth opportunities and firms characterized by multiple sources of information, such as analysts' forecasts. In particular, additional analysis suggests that high-quality voluntary disclosure provides an alternative corporate governance mechanism in reducing investor disagreement around earnings announcement dates. Results are robust to alternative proxies for investor disagreement, other variable measurements, model specifications, control variables, event window intervals and tests.

2.1 Motivation and positioning

In this paper I investigate the consequences of accounting conservatism on investors' divergence of opinion regarding stock values. In particular, I test whether conservatism is associated with changes in investor disagreement around earnings announcement dates. By doing so, I add to the current understanding of the consequences of conservatism from two different aspects: first, I test whether conservatism has information effects on capital markets; second, I study the association between accounting conservatism and investor disagreement, a relevant aspect of capital market efficiency.

'Investor disagreement'[1] relates to the fact that investors may have different opinions about the firm value, and their valuations may diverge or jumble if they are asymmetrically informed or if they interpret the same information differently. It is a key issue for capital market studies. It has been suggested that disagreement is associated with an increase in a firm's risk

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[1] I use the expressions "disagreement", "divergence of opinion" and "dispersion of beliefs" interchangeably throughout the paper.

and consequently has an impact on its cost of capital (Varian 1985; Kim and Verrecchia 1997; Botosan et al. 2004; Barron et al. 2005; Doukas et al. 2006; Garfinkel and Sokobin 2006; Banerjee and Kremer 2010). Such an association may arise for various reasons. For instance, investor disagreement may be a consequence of an imprecise or low level of public information, which induces investors to gather private information. The cost of doing so will be priced in terms of higher expected returns. Moreover, the process of seeking private information results with some investors being more informed than others, thus causing less informed investors to demand a higher rate of return to offset the risk of trading at informational disadvantage (e.g. Easley and O'Hara 2004 and Rees and Thomas, 2010). Other studies suggest that investor disagreement is one of the causes of market inefficiency which, coupled with short selling constraints, gives rise to overpricing tendency of stocks when valuation is driven by optimists. For example, Miller (1977) argues that, since market price is the outcome of an auction in which the highest bidder ends up determining the price of the transaction, stock values tend to be driven by the most optimistic potential buyers. Therefore, the larger the dispersion in investors' beliefs, the more shares tend to be overvalued. The overpricing caused by disagreement was posited to be detrimental for the efficiency of the market for corporate control (Chatterjee et al. 2012) and to explain why growth stock may suffer from price crashes when they report bad news (Skinner and Sloan 2002; Mashruwala et al. 2010).

While most prior studies have examined the consequences of investor disagreement in order to understand how it affects market prices, its causes remain mostly unexplored. The answer to this issue is important for accounting research, as the main objective of financial reporting lies in providing investors with useful information to assess the amounts, timing and uncertainty of future cash flows (FASB 1978, concept 1). Thus, it is necessary to understand how the dissemination of information affects investor disagreement. Studies that analyzed the effects of investor disagreement on share prices have drawn on the assumption that periodic announcements, being homogeneously interpreted by investors, reduce differences in opinions. Evidence in support of this assumption, however, is not consistent: research in both accounting and finance attempted to understand whether the disclosure of earnings numbers helps investors' beliefs to converge or rather causes further disagreement. The importance of the issue is apparent in light of the key role that regulators and financial markets ascribe to financial reporting in order to mitigate information asymmetry, thus contributing to market efficiency. Therefore, the inevitable issue that arises is whether there is an impact of earnings disclosure on the dispersion in investors' beliefs.

Empirical findings provide some evidence in support of the convergence hypothesis. Patell and Wolfson (1981) analyze time patterns in the stock prices variance implied in option prices. They show that after increasing steadily during the period preceding the earnings announcement, the variance drops subsequently, signaling a convergence of beliefs. Brown and Han (1992) use analysts' forecast dispersion as a proxy of disagreement, showing that it tends to decrease following the earnings announcement, especially in connection with small earnings surprises. Berkman et al. (2009) bring further evidence that investor disagreement surges in the period prior to the announcement and falls immediately afterwards. Their contribution shows a clear association between investor disagreement and overpricing patterns, thus corroborating the view according to which the former is one of the major causes of the latter (as per Miller 1977).

Other studies, however, have argued that the disclosure of accounting numbers may have an opposite effect on investors' dispersion of beliefs. Kim and Verrecchia (1994) propose a model in which the earnings announcement increases the amount of idiosyncratic information possessed by investors, who proceed to rationally change their expectations over a stock's future cash flows in various ways. This process results in *more* disagreement after the announcement, as investors heterogeneously revise their beliefs following a public announcement. The results of their model are consistent with prior empirical findings by Morse et al. (1991). Along a similar vein, Kandel and Pearson (1995) note that a commonly interpreted earnings announcement implies there can be no trading in the absence of price changes: testing this assumption, they report that even earnings disclosures that did not lead to stock price changes may be associated with abnormal volume. Therefore, they develop a model where investors' differential likelihood functions lead to interpret the public signal differently. Their insight is corroborated by Bamber et al. (1997), who document that earnings announcements may be associated with changes in disagreement along two different dimensions: (a) an increase in the range of expectations held by different investors, and (b) a higher jumbling of investors' beliefs, which occurs when investors valuations change position as a consequence of idiosyncratic interpretation of the earnings announcement. Furthermore, Barron et al. (2002) propose a model in which an earnings announcement fosters idiosyncratic interpretations by increasing the precision of private information relative to the precision of public information: as a consequence, earnings announcements reduce the commonality of the information used by investors in the valuation process, thus decreasing their consensus. Their study is particularly relevant as it helps clarify the question underlying the problem of whether earnings announcements increase the base of common information that investors share, or rather convey idiosyncratic information.

Therefore, despite the efforts made by the research so far, the effect of the earnings announcement on investors' opinions is still unclear. Some papers seem to detect a convergence of beliefs, while others suggest an increase in disagreement. Thus, it is not clear what the causes of the different outcomes are.

A common limitation of previous studies lies in the choice of a market level of analysis: little effort has been made to explain this divergence of results at a firm level. The relative lack of research on this issue calls for further study, since it may well be argued that firm idiosyncratic factors could affect the kind of information conveyed to investors, as well as their reaction to it.

This paper aims to partially clarify this issue by introducing a firm's specific characteristic of the earnings announcement, namely its level of accounting conservatism, in analyzing its effects on investor disagreement. By doing so, the paper sheds light on two important research issues in accounting. On the one hand, it investigates a firm-specific determinant of the change in investor disagreement following the earnings announcement. On the other, it sheds more light over the discussion on the consequences of accounting conservatism.

2.2 Hypotheses development

Past research maintains that public disclosure increases dispersion of beliefs if investors have incentives to gather private information to use in conjunction with the public signal (Bamber and Cheon 1995; Kim and Verrecchia 1997; Barron et al. 2005) or if there is uncertainty about the interpretation of the information released (Dontoh and Ronen 1993; Barron et al.2002). I argue that accounting conservatism mitigates the exploitation of private knowledge by asymmetrically informed investors and resolves uncertainty about disclosure quality. As a consequence, conservative reporting is likely to reduce disagreement around earnings announcement dates.

I theorize that conservatism affects information asymmetry and uncertainty in two different ways: (i) it improves the reliability of accounting disclosure; (ii) it induces managers to provide complete information to investors.

Theoretical research suggests that commitment to a conservative reporting regime improves information reliability by limiting accounting manipulation. For instance, Guay and Verrecchia (2006) suggest that conservatism imposes greater costs on managers who wish to manage net assets upward, and Chen et al. (2007) analytically demonstrate that conservatism reduces managers' incentives to manipulate earnings. These theoretical insights are consistent with Watts (2003) and LaFond and Watts (2008), who stress the important role of conservatism in constraining managers' opportunism and disciplining their reporting behavior. Managers' public commitment to conservative reporting will therefore increase investors' perception of information reliability, since earnings management is less likely to occur. By contrast, higher concerns of manipulations in non-conservative signals are likely to increase investors' uncertainty (McNichols and Stubben 2008 ; Rajgopal and Venkatachalam 2011) and provide them with incentives to gather and use private information (Dontoh and Ronen 1993): both phenomena lead to diverging interpretation of the information released, thus increasing disagreement.

Therefore, the increased likelihood (irrespective of the actual occurrence) of earnings management in non-conservative signals may generate higher dispersion of beliefs. Anyway, conservatism may diminish disagreement even in the absence of manipulation concerns, by inducing the firm to provide investors with full disclosure. Literature shows that managers have asymmetric incentives that cause them to reveal good realizations and conceal bad outcomes (Dye 2001; Kothari et al. 2009). As argued by Basu (1997) and Ball and Shivakhumar (2005), such a problem generates a demand for conservative reporting, which requires asymmetric timeliness in the recognition of good and bad news. Indeed, Guay and Verrecchia show analytically that conservatism, coupled with managerial incentives, results in full disclosure: bad news is timely communicated by accounting recognition, while good news is voluntarily disclosed by means of other channels, such as press releases or conference calls. Guay and Verrecchia also argue that, under a non-conservative accounting regime, managers are encouraged to act opportunistically and withhold information, which in turn increases investors' uncertainty and information asymmetry. On the other hand, full disclosure levels out the information field, reducing information asymmetries and decreasing the incentives to gather and exploit private knowledge around announcement days.

Therefore, I expect accounting conservatism to increase information completeness and reliability, which in turn affect investor disagreement as stated in Hypothesis 1.

HP1) Conservative reporting is negatively associated with the change in investor disagreement around the earnings announcement date.

The effect of accounting conservatism on disagreement may depend on whether the firm is reporting good or bad news. Guay and Verrecchia (2006) warn that conservatism may result in informational inefficiencies related to the untimely recognition of gains. Along a similar vein, other researchers posit that conservatism causes good news to be biased downward or communicated with delay, and that this may have adverse implications for information asymmetry problems and increase disagreement among investors (Mensah et al. 1994, 2004). Therefore, there may be a conflicting effect of conservatism on divergence of opinion for good news announcements. By contrast, commitment to timely disclosure of negative outcomes would prevent managers from acting opportunistically and partially withhold bad news (Kothari et al. 2009), thus reducing the uncertainty associated with unexpected losses (LaFond and Watts 2008) and decreasing the likelihood of bad news to persist in the future (Kim and Pevnezer 2010). Therefore, assuming that hypothesis 1 is true, I suggest a second hypothesis:

HP2) The negative association between conservative reporting and the change in disagreement is more pronounced for bad news.

2.3 Research design

2.3.1 Accounting Conservatism measures

Several measures of accounting conservatism were developed in the extant literature. For the purpose of the current study, I adopt three alternative measures following the models offered by Khan and Watts (2009), Basu (1997) and Ball and Shivakumar (2005). The principal measure is based on asymmetric timeliness, namely the more timely recognition of bad news rather than good news in earnings. Consistent with Ryan's (2006) argument that asymmetric timeliness should be the primary measure for empirical research as it is the most direct implication of conditional conservatism, I apply the proxy proposed by Khan and Watts (2009), who develop a firm-year measure of conservatism drawing on the asymmetric timeliness model proposed by Basu (1997). The standard Basu's annual regression specification can be written as:

$$NI_i = \beta_0 + \beta_1 NEG_i + \beta_2 RET_i + \beta_3 NEG_i * RET_i + \varepsilon_i \quad , \quad (2.1)$$

Where i represents firm, *NI* designates net income scaled by market value of equity, *RET* stands for stock returns computed over the fiscal year, *NEG* is a binary variable that assumes the value one for firms with negative stock returns and zero otherwise, and ε is the regression residual. Accordingly, the coefficient β_3 captures the differential timeliness for bad news relative to good news. Khan and Watts (2009) express conservatism (*CSCORE*, equal to the coefficient β_3) and the timeliness of earnings to good news (*GSCORE*, equal to the coefficient β_2) as linear functions of three time-varying firm-specific characteristics: market value of equity (*MVE*), market to book ratio (*M/B*) and total liabilities scaled by market value of equity (*LIAB*). Therefore, for each year *CSCORE* and *GSCORE* are estimated by the following equations:

$$CSCORE_i = \beta_3 = \lambda_0 + \lambda_1 MVE_i + \lambda_2 M/B_i + \lambda_3 LIAB_i \quad (2.2)$$

and,

$$GSCORE_i = \beta_2 = \eta_0 + \eta_1 MVE_i + \eta_2 M/B_i + \eta_3 LIAB_i . \quad (2.3)$$

Substituting equations (2.2) and (2.3) into (2.1) gives:

$$NI_i = \beta_0 + \beta_1 NEG_i + RET_i\ (\eta_0 + \eta_1 MVE_i + \eta_2 M/B_i + \eta_3 LIAB_i) + RET_i{*}NEG_i\ (\lambda_0 + \lambda_1 MVE_i + \lambda_2 M/B_i + \lambda_3 LIAB_i) + \delta_1 MVE_i + \delta_2 M/B_i + \delta_3 LIAB_i + \delta_4 MVE_i{*}NEG_i + \delta_5 M/B_i{*}NEG_i + \delta_6 LIAB_i{*}NEG_i + \varepsilon_i \ .$$

(2.4)

The estimation of equation (2.4) is made by using annual cross-sectional regressions as per Khan and Watts (2009). The annual estimates of the coefficients from equation (2.4) are then applied to equation (2.2) to calculate firm-year $CSCORE_i$.

As accounting conservatism is a central variable in this paper, and to ensure the robustness of this study, I test my results by using two additional approaches to measuring accounting conservatism. The second measure of conservatism is based on the Basu's model (1997) as expressed in eq. 1.[2] The third estimate that I adopt measures accounting conservatism without resorting to market-based variables. Specifically, I use the Ball and Shivakumar model (2005), which draws on the idea that timely earnings and loss recognition takes place through accruals, which are used to revise future cash flows prior their realization. Although the relation between accruals and cash flow is negative (Dechow 1994), conditional conservatism causes it to

[2] The validity of the Basu's model was questioned recently (Dietrich et al. 2007). However, Ball et al. (2010) reject this criticism asserting that the model is correctly specified and the bias, if present, is small due to the low power of earnings to explain returns.

be asymmetric with respect to the sign of cash flow. Specifically, this relation will be less negative for losses than for gains, since a downward revision of current cash flow produces a timely revision of future cash flows by means of accruals, as in equation (2.5). Therefore, the measure of accounting conservatism is given by the coefficient (β_3) of the interaction variable of operating cash flow (*CFO*) and a dummy variable for losses as in equation (2.5).

$$ACCR_{it} = \beta_0 + \beta_1 NEG_{it} + \beta_2 CFO_{it} + \beta_3 NEG_{it} * CFO_{it} + \varepsilon_{it}\,, \quad (2.5)$$

where *ACCR* is defined as in Ball and Shivakumar (2005): (ΔInventory + ΔReceivables + ΔOther current assets - ΔPayables - ΔOther current liabilities - Depreciation) / Lagged total assets; *CFO* is net income before extraordinary items less accruals, scaled by lagged total assets, and *NEG* is a dummy that assumes the value of one if *CFO* is negative, zero otherwise.

2.3.2 Investor Disagreement measures

The finance literature has dealt in depth with the issue of investor disagreement, and the various approaches to measuring it. A recent stream of literature has attempted to investigate the comparative effectiveness of investor disagreement proxies, suggesting that volume-based measures represent the most effective tools available to capture divergence of opinion among investors. Consistently, various recent empirical studies use volume as a measure of disagreement (*inter alia*, Bailey et al. 2003; Garfinkel and Sokobin 2006; Mashruwala et al. 2010). The link between trading activity and disagreement has long been suggested (see Karpoff 1987; Harris and Raviv 1993; see also Bamber et al., 2011, for a literature review). Varian (1985) presents a theoretical model that illustrates the role of divergence of opinion on prices and volume in a static model, indicating that higher disagreement increases trading. Holthausen and Verrecchia (1990) show analytically that, keeping constant the informativeness of a signal, a decrease in disagreement results in a decrease in volume. Subsequently, Kim and Verrecchia (1991; 1994; 1997) propose a setting in which trade arises from differences in investors' interpretations of upcoming news or in the precision of their pre-disclosure information. Cao and Ou-Yang (2009) and Banerjee and Kremer (2010) examine trading in a difference of opinion model, highlighting a positive relation between investor disagreement, trade volume and stock return volatility.

Empirically, the relation between trade and investor disagreement is well documented. Kandel and Pearson (1995) show that trading volume around earnings announcement can be present even in the absence of significant price changes. They suggest that this evidence is inconsistent with standard models of rational expectations: consequently, they propose a model in which investors disagree on the interpretation of a public signal, thus stimulating a higher level of trade. Subsequent research reconfirmed Kandel and Pearson's insights. Bamber and Cheon (1995) provide evidence suggesting that heterogeneous expectations are a significant determinant of trade volume that occurs in correspondence with small price changes. Bamber et al. (1997) decompose trade volume around announcements dates identifying three components (dispersion in prior beliefs, change in dispersion and beliefs jumbling) while controlling for price changes: they show that abnormal volume around the earnings announcement is positively correlated with the change in disagreement. Ajinkya et al. (2011) find further evidence in support of the incremental correlation between investor disagreement and trade volume. Garfinkel (2009) elaborates on these findings while comparing various measures of investor disagreement. Based on a unique dataset composed of market order trades during the year 2001, he builds a measure of investor disagreement and examines the behavior of various other proxies used in prior studies (volume, volatility, bid-ask spread and forecast dispersion) comparing them to his measure. Garfinkel's results suggest that volume-based measures are the best proxies for investor disagreement, whereas other measures adopted in the past (especially forecast dispersion) suffer from various biases and shortcomings, which impair their effectiveness in capturing variations in disagreement.

I build on Garfinkel's conclusions and introduce three different measures of disagreement, all of which are based on abnormal trade volume. The need to construct different measures rather than applying unadjusted trade volume as a proxy arises from three concerns. First, daily trade volume is associated with market capitalization, and thus it requires normalizing by total share outstanding. Second, trading volume is also a proxy for market liquidity (Benston and Hagerman 1974, and Petersen and Fialkowsky 1994), i.e., a stock exhibiting higher trade volume may just be more liquid, irrespective of investor disagreement. Third, individual stock volume was reported to mirror shifts in market volume (Tkac 1999), thus, a volume based measure of disagreement needs to be adjusted for market effect in order to properly proxy for investors' divergence of opinion concerning a given stock.

The first measure of investor disagreement is the abnormal market-adjusted turnover (*AMATO*) of a given stock around the earnings announcement date. As one may observe, *AMATO* controls for the aforementioned concerns. Following Garfinkel (2009), I build *AMATO* in two stages: in the first stage I compute the daily stock's 'Market Adjusted Turnover' (*MATO*) for each day of the window (-55; +7). *MATO* represents the excess firm stock turnover over market turnover as follows:

$$MATO_{it} = \left(\frac{Vol}{Shs}\right)_{it} - \left(\frac{Vol}{Shs}\right)_{mt} \tag{2.6}$$

where *Shs* and *Vol* represent number of shares outstanding and trade volume for the firm, *i*, and for the market, *m*, on day *t*, respectively. In the second stage, for each firm *i*, I obtain the daily 'Abnormal Market Adjusted Turnover', *AMATO,* computed as in equation (2.7), where $E(MATO_{it})$ and SD_{it} are the mean and standard deviation of '*MATO'* over the estimation window (-55;-5).

$$AMATO_{it} = \frac{MATO_{it} - E(MATO_{it})}{SD_{it}} \quad . \qquad (2.7)$$

A different approach to measuring investor disagreement is presented by Garfinkel and Sokobin (2006), building on the insights proposed by Crabbe and Post (1994). They argue that trade volume is influenced by upcoming news, according to the ‘informedness effect’ posited by Holthausen and Verrecchia (1990), since agents' demands become more extreme as they are better informed. Therefore, a measure which controls for contemporaneous stock return (a proxy for the information content of news reaching the market) is more likely to capture that portion of abnormal trade volume that is correlated with the change in investor disagreement, rather than that part which is due to the magnitude (and sign) of the upcoming information. Building on these considerations, I construct two other measures of investor disagreement that control for the ‘informedness effect'. The second proxy for investor disagreement is Standardized Unexpected Volume (*SUV*), as suggested by Garfinkel (2009) and Garfinkel and Sokobin (2006). *SUV* is constructed in several stages. First I run the regression of volume[3] on the absolute value[4] of stock returns for the i^{th} firm during the period prior to the event window (-55 ; -5) as follows:

$$Volume_{it} = \alpha + \beta_1 |RET_{it}|^{+} + \beta_2 |RET_{it}|^{-} + \varepsilon \quad (2.8)$$

from which I obtain the estimated coefficients β_1 and β_2. In the second stage, for every day t and observation i, I estimate the expectation of volume conditional on contemporaneous stock return as:

$$E(Volume_{it} \mid RET_{it}) = \hat{\alpha} + \hat{\beta}_1 |RET_{it}|^{+} + \hat{\beta}_2 |RET_{it}|^{-} \quad (2.9)$$

[3] In order to mitigate concerns of skewness highlighted by Garfinkel and Sokobin (2006), I follow their approach and take the natural logarithm of volume in equation (2.8) and the natural logarithm of turnover in equation (2.11).

[4] Plus and minus superscripts indicate whether returns were positive or negative, to account for the differential sensitivity of volume to bad and good news.

Standardized Unexpected Volume (S*UV*) is calculated in the third stage as the difference between actual and expected volume, scaled by the standard deviation of the residuals from the regression of equation (2.8), calculated over the estimation window (-55; -5).

$$SUV_{it} = \frac{Volume_{it} - E(Volume_{it} \mid RET_{it})}{SD_{it}} , \qquad (2.10)$$

The third volume-based proxy of disagreement aims to merge the benefits of both $AMATO_{it}$ and SUV_{it}, in an attempt to simultaneously control for liquidity, market and 'informedness' effects. Thus, I calculate the Standardized Unexpected Market-adjusted Turnover (*SUMATO*), by modifying equation (2.8) as in (2.11), thus regressing firm turnover (TO_{it}) on contemporaneous returns and market turnover (TO_{mt}).

$$TO_{it} = \alpha + \beta_1 \left| RET_{it} \right|^{+} + \beta_2 \left| RET_{it} \right|^{-} + \beta_3 TO_{mt} + \varepsilon \ . \qquad (2.11)$$

Then, $SUMATO_{it}$ is calculated in the same manner as $SUV_{it:}$:

$$E\left(TO_{it} \mid RET_{it}, TO_{mt}\right) = \hat{\alpha} + \hat{\beta}_1 \left|RET_{it}\right|^{+} + \hat{\beta}_2 \left|RET_{it}\right|^{-} + \hat{\beta}_3 \left|TO_{mt}\right| ,$$

(2.12)

$$SUMATO_{it} = \frac{TO_{it} - E\left(TO_{it} \mid RET_{it}, TO_{mt}\right)}{SD_{it}} . \qquad (2.13)$$

2.3.3 Control variables

I include in the models the following control variables:

- *Firm size (SIZE)*. Prior evidence suggests that large firms are characterized by a better information environment, thus reducing investor disagreement. Moreover, Bamber and Cheon (1995) point out that firm size is correlated with the incentives for investors to seek private information. Watts and Zimmermann (1978) argue that larger firms face higher political costs that induce them to use more conservative accounting. On the other hand, the higher transparency of large firms may reduce information asymmetry, thus decreasing the demand for conservatism (LaFond and Watts 2008). Furthermore, Givoly et al. (2007) contend that the aggregation of projects in large firms can influence the measurement of conservatism. *SIZE* is measured as the logarithm of total assets.

- *Market-to-book ratio (MB).* Roychowdhury and Watts (2007) document the fact that asymmetric timeliness may be influenced by market-to-book ratio. Additionally, high market-to-book stocks may be more complicated to value, increasing investors' divergence of opinion regarding their price. *MB* is measured as market value of equity divided by its book value.
- *Financial leverage (LEV).* Firms with high financial leverage may bear a greater agency conflict between bondholders and shareholders, thus increasing the demand for reporting conservatism (Ahmed et al. 2002 and Zhang 2008). On the other hand, high financial leverage increases a firm’s risk, and thus may affect

investor disagreement. *LEV* is measured as total liabilities divided by total assets.

- *Earnings surprise (SURPRISE)*. Abnormal volume is positively correlated with upcoming news. To the extent that abnormal returns proxy for unexpected information reaching the market around the announcement, they may also be correlated with abnormal volume (Holthausen and Verrecchia 1990; Garfinkel and Sokobin 2006). Although both *SUV* and *SUMATO* are specifically designed to control for the 'informedness effect', these measures are not built on abnormal returns. Therefore, I measure *SURPRISE* as the absolute cumulated abnormal returns over the time window [-1,+1] around the announcement, where abnormal returns are calculated as the difference between actual returns and the expected returns according to the four-factor model of Fama and French (1992)[5], as in the following equation:

[5] For robustness, I repeat the analysis using size-adjusted returns and simple raw returns: results are qualitatively unaffected.

$$(R_t - RF_t) = \alpha_0 + \alpha_1(RM_t - RF_t) + \alpha_2 SMB_t + \alpha_3 HML_t + \alpha_4 UMD_t + \varepsilon_i \ , \quad (2.14)$$

where *R* is the daily stock return, *RF* is the risk-free rate, *RM* is the value-weighted market return, *SMB* is the value-weighted size portfolio return, *HML* is the value-weighted book-to-market portfolio return and *UMD* is the value-weighted momentum portfolio return[6].

- *Year and industry fixed effects.* All models control for year and industry fixed effects. Industries are defined according to Fama and French ten-industry model.

2.3.4 Sample selection

The sample is made up of North American industrial firms listed on NYSE, AMEX or NASDAQ with sufficient data to build the measures. The initial dataset comprises annual data for 207,544 North American listed companies from 1980 to 2009. I deleted 3,414 observations which are not in US Dollars

[6] All factors are downloaded from WRDS

and also excluded 49,461 observations which belong to financial industries (as per Fama and French, 1997); further 48,005 observations which are not listed on NYSE, AMEX or NASDAQ, and 2,127 observations with negative equity were also deleted. The data for the measures of conservatism are collected from CRSP/COMPUSTAT Merged Fundamentals Annual for financial data and announcement dates. The measures for investor disagreement are built using data obtained from CRSP Daily Stocks. I also require observations to have no missing values for all the variables required for the models and I exclude observations whose average price over the year is smaller than 1$ (illiquid stocks). To mitigate concerns due to outliers (Basu 1997, Ahmed and Duellman 2007, Li 2010), all continuous variables are winsorized at 1st and 99th percentiles. The final samples consist of 55,822 annual earnings announcements for the *CSCORE* model, 61,794 annual earnings announcements for the Basu model and 60,448 annual earnings announcements for the Ball and Shivakumar's model. Table 2.1 summarizes the sample selection criteria.

[INSERT TABLE 2.1 HERE]

Table 2.2a presents sample descriptive statistics. As expected, the three investor disagreement measures (*AMATO*, *SUV* and *SUMATO*) exhibit positive means, indicating that earnings announcements are informative and elicit abnormal trade. All other variables do not exhibit abnormal properties.

Table 2.2b presents Spearman (upper diagonal) and Pearson (lower diagonal) correlations among the variables. Note that the correlation between *AMATO* and *SURPRISE* is significant and relatively high (0.26), whereas the orthogonalization of *SUV* and *SUMATO* to contemporaneous returns causes both measures to share little correlation with *SURPRISE* (about 0.04), suggesting that the informedness effect has been controlled for. The aforementioned orthogonalization also decreases the correlation between *AMATO* and the other two disagreement measures (0.64 and 0.69 respectively), consistent with prior literature (Garfinkel and Sokobin 2006). The high correlation between *SUV* and *SUMATO* suggests that *SUV* indeed controls for the market-effect[7]. *CSCORE* appears to be negatively correlated with all volume measures, but positively correlated with *SURPRISE*: this suggests that conservative reporting is associated with a stronger price reaction but lower disagreement, consistent with my hypotheses; it also suggests that the negative correlation between conservatism and abnormal volume is not driven by lower informativeness of conservative reporting. Consistent with findings of prior research, there is a positive correlation among *CFO, RET*, *NI* and *SIZE*, and a negative correlation between *ACCR* and *CFO*. There appears to be no concern of multicollinearity among the regressors[8].

[INSERT TABLES 2.2a and 2.2b HERE]

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[7] This appears to be caused by two factors. First, scaling by the standard deviation of residuals (equation 10) normalizes *SUV* with respect to the effect of omitted variables in the estimation of the parameters of equation (8), including market turnover (TO_{mt}). Second, the logarithmic transformation of TO_{it} and TO_{mt} in equation (11) reduces problems related to skewness and causes the distribution of *SUV* and *SUMATO* to converge to a normal, thus increasing their correlation (Garfinkel 2009).

[8] To alleviate multicollinearity concerns, I calculate the variance inflation factor (VIF) for the variables in each of the regression equations: the largest value is for *SIZE* (around 2.30).

2.4. Results

2.4.1 Test of hypothesis 1

My first hypothesis states that conservative reporting (measured by *CSCORE*) is negatively associated with changes in disagreement around earnings announcement dates (proxied by three alternative measures: *AMATO*, *SUV* and *SUMATO*). Thus I run the following regressions (all variables are defined in the appendix):

$$AMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \varepsilon_i \quad , \quad (2.16)$$

$$SUV_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \varepsilon_i \quad , \quad (2.17)$$

and,

$$SUMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \varepsilon_i \; . \quad (2.18)$$

Hypothesis 1 predicts that the coefficient β_1 be negative in all regressions. Table 2.3 reports the results of the regressions for equations (2.16), (2.17) and (2.18). For each of the investor disagreement measures I apply three specification models: Model 1 includes no control variables; Model 2 shows that adding the *SURPRISE* variable increases both magnitude and significance of coefficient β_1, due to the positive correlation between conservatism and cumulated abnormal returns around the announcement; Model 3 includes all control variables.

[INSERT TABLE 2.3 HERE]

Results corroborate the prediction of Hypothesis 1. Note that the sign of coefficients β_1 (the association between conservatism and the change in investor disagreement) is negative in all alternative measures of investor disagreement and for all models, ranging from -0.121 to -0.043 and all coefficients are significant at 1% level. Also, the goodness of fit (adjusted R^2) of all equation models is similar to prior findings on the determinants of abnormal volume[9], ranging from 8.2% to 17%. Moreover, the results appear to be stronger for the two measures that control for the informedness effect (*SUV* and *SUMATO*).

[9] Bamber et al. (1997) report R^2 between 1.8% and 14%; Ajinkya et al. (2011) present R^2 ranging from 1.5% to 7%.

Adding the *SURPRISE* variable to the model causes β_1 to become more negative, consistent with *CSCORE* being positively correlated with investors' reaction. Also, the effect of the inclusion of *SURPRISE* on β_1 (as well as its impact on R^2) tends to be stronger for *AMATO*, due to its higher correlation with contemporaneous returns (see Table 2.2b). *SIZE* and *MB* exhibit significantly positive coefficients, ranging from 0.124 to 0.019. This may be due to the fact that larger firms and growth stocks are characterized by various sources of information of different quality, such as more analysts following, articles in specialized and generic press, or simple market rumors; also, big firms and glamour shares draw the attention of individual investors and noise traders. As a consequence, earnings announcements by these companies are likely to be differentially interpreted by asymmetrically informed investors that hold diverse beliefs on the basis of their private knowledge. The negative coefficient of LEV may be due to the fact that firms with high leverage are characterized by more ex ante uncertainty about their prospects: the earnings announcement, resolving part of this uncertainty, is relatively more likely to reduce disagreement, all else being equal.

2.4.2 Test of hypothesis 2

My second hypothesis asserts that the negative association between conservatism and change in disagreement around the earnings announcement is stronger if the company is reporting bad news rather than good news. On the one hand, conservatism hinders the full disclosure of good news in earnings, thus providing a less precise signal in case of positive outcomes. This effect may tend to offset (partially or fully) the negative association detected in the previous tests. On the other hand, conservatism commits managers to the timely communication of bad news to investors (Guay and Verrecchia 2007), thus preventing them from opportunistically delaying disclosure of current and future negative outcome. Consequently, conservatism would reduce the uncertainty associated with bad news. Therefore, I predict that the coefficient β_1 in equations

(2.16), (2.17) and (2.18) will be more negative for firms reporting bad news.

I test this prediction through the following regression models:

$AMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 BAD_{it} + \beta_7 CSCORE_{it}*BAD_{it} + \beta_8 CSCORE_{it}*SURPRISE_{it} + \beta_9 CSCORE_{it}*SIZE_{it} + \beta_{10} CSCORE_{it}*LEV_{it} + \beta_{11} CSCORE_{it}*MB_{it} + \varepsilon_i$, (2.19)

$SUV_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 BAD_{it} + \beta_7 CSCORE_{it}*BAD_{it} + \beta_8 CSCORE_{it}*SURPRISE_{it} + \beta_9 CSCORE_{it}*SIZE_{it} + \beta_{10} CSCORE_{it}*LEV_{it} + \beta_{11} CSCORE_{it}*MB_{it} + \varepsilon_i$, (2.20)

and,

$SUMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 BAD_{it} + \beta_7 CSCORE_{it}*BAD_{it} + \beta_8 CSCORE_{it}*SURPRISE_{it} + \beta_9 CSCORE_{it}*SIZE_{it} + \beta_{10} CSCORE_{it}*LEV_{it} + \beta_{11} CSCORE_{it}*MB_{it} + \varepsilon_i$. (2.21)

where *BAD* is a dummy variable taking on the value one if the firm is reporting bad news and zero otherwise[10]. In these

[10] I consider a firm as reporting bad news if the cumulated abnormal return in the window [-1,+1] around the announcement is negative. For robustness, I also replicate the analysis considering as reporting bad news all firms whose

equations coefficient β_7 represents the change in coefficient β_1 when the firm is reporting bad news. My hypothesis predicts that β_7 be negative.

[INSERT TABLE 2.4 HERE]

Table 2.4 reports the results of the regressions for equations (2.19), (2.20) and (2.21). Consistent with my second hypothesis, β_7 is negative and strongly significant across all measures of disagreement. Specifically, the differential effect of conservatism for bad news is similar for *SUV* and *SUMATO* (β_7 is equal to -0.036 and -0.037 respectively, both significant at 1% level) whereas it is much stronger for *AMATO* (-0.58, t-statistic -7.62). Adjusted R^2 increases slightly, ranging between 0.086 and 0.172. The coefficients of the other interaction terms are also interesting. The coefficient of *CSCORE*MB* is significantly positive, suggesting that conservatism reduces disagreement to a lower extent for growth stocks. This may be due to the fact that conservative reporting prevents good news about intangible

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current net income is lower than previous year's net income: results are qualitatively unaffected.

assets or growth opportunities from being publicly disclosed, thus increasing the weight of private knowledge in investors' belief updating process. The coefficient of *CSCORE*SURPRISE* is significantly negative: the more the announcement causes abnormal returns, the more conservatism reduces abnormal volume. This suggests that conservatism becomes especially important in the absence other sources of information (such as voluntary disclosure or analysts' forecasts) that can level out the information field and pre-empt the news contained in mandatory disclosure. This intuition is reinforced by the positive coefficients of *CSCORE*SIZE*, for larger firms tend to issue more management forecasts and have a larger number of analysts' following. The positive coefficients of CSCORE*LEV are difficult to explain. They may be due to the fact that firms in financial distress come under increasing external scrutiny, thus providing a richer informational set to investors and decreasing the relative weight of conservative reporting in ensuring information quality. It should be noted, however, that if longer event windows (up to 7 trading days) are considered, these coefficients become insignificant (t-statistics ranging between 0.52 and 1.42): it seems that, for high leverage firms, conservatism takes a few days longer to produce its effects. This may occur because, for distressed firms, an unexpected reported loss (gain) is more likely to be immediately perceived as bad (good) news, thus eliciting common interpretation of the earnings information. If investors initially place more weight on the signal's content relative to its quality, then the impact of conservatism on disagreement will be diminished in the first few days.

2.5. Robustness tests

2.5.1 Different measures of conservatism

In the main analysis I tested hypotheses 1 and 2 using the measure of conservatism proposed by Khan and Watts (2009). One advantage of this approach is represented by its firm-year-specific nature, which allows direct testing of the association between conservatism and a dependent variable through regular

OLS regression. However, a possible drawback lies in its potential noisiness[11], which would result in conservatism being measured with error. To mitigate this concern, I test the association between conservatism and investor disagreement by replicating the analysis while using two additional conservatism measurement approaches: first, I directly include the disagreement variables in the regression equation of the Basu (1997) model by running the following regression:

$$NI_{it} = \beta_0 + \beta_1 RET_{it} + \beta_2 NEG_{it} + \beta_3 RET_{it}*NEG_{it} + \beta_4 DIS_{it} + \beta_5 RET_{it}*DIS_{it} + \beta_6 NEG_{it}*DIS_{it} + \beta_7 *RET_{it}*NEG_{it}*DIS_{it} + \lambda_{k1} CTRL_{kit} + \lambda_{k2} RET_{it}*CTRL_{kit} + \lambda_{k3} NEG_{it}*CTRL_{kit} + \lambda_{k4} *RET_{it}*NEG_{it}*CTRL_{kit} + \varepsilon_{it}, \quad (2.22)$$

where *DIS* represents each of the three disagreement measures (*AMATO*, *SUV* and *SUMATO*) and $CTRL_k$ is a vector of k control variables (the same as in equations 2.16, 2.17 and 2.18). Conservatism is measured by coefficient β_3, which estimates the asymmetric timeliness by which bad news is incorporated in

[11] Ryan (2006) laments the lack of an effective firm-year measure of conservatism and Kim and Pevnezer (2010) note how some firm-year measures proposed in the past suffer from natural noisiness which causes the correlation among them to be very low. However, neither of these two papers analyzes the measure proposed by Khan and Watts (2009).

earnings. The focus of this test is on the interaction variable with the coefficient β_7, expressing variations in conservatism associated with changes in disagreement.

Second, I measure conservatism with the model proposed by Ball and Shivakumar (2005) (equation 2.5). This measure of accounting conservatism is based on the idea that timely recognition of earnings and losses is captured through accruals, which are used to revise future cash flows before their realization. Although the correlation between cash flow and accruals is negative (Dechow 1994), conditional conservatism causes it to be asymmetric with regard to the sign of cash flow. In particular, the correlation is expected to be more negative for gains than for losses, since a downward revision of current cash flow produces a timely revision of future cash flows by means of accruals. The measure of conservatism, therefore, is given by the coefficient (β_3) of the variable interacting cash flow and a dummy variable for losses in the following equation:

$$ACCR_{it} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NEG_{it} + \beta_3 {*} CFO_{it} {*} NEG_{it} + \beta_4 DIS_{it} + \beta_5 CFO_{it} {*} DIS_{it} + \beta_6 NEG_{it} {*} DIS_{it} + \beta_7 CFO_{it} {*} NEG_{it} {*} DIS_{it} + \lambda_{k1} CTRL_{kit} + \lambda_{k2} CFO_{it} {*} CTRL_{kit} + \lambda_{k3} NEG_{it} {*} CTRL_{kit} + \lambda_{k4} CFO_{it} {*} NEG_{it} {*} CTRL_{kit} + \varepsilon_{it} \,. \quad (2.23)$$

Again, I focus on coefficient β_7 which expresses the association between conservatism and the disagreement proxies. These two additional approaches have several advantages. First, they reinforce the measurement validity of my results, which prove to be robust to alternative measures. Second, they do not require the use of a generated regressor (*CSCORE*), which might be affected by error in measuring conservatism. Third, they test the association between conservatism and disagreement by regressing the former on the latter, a classic remedy for measurement error problems (Collins and Kothari 1989; Cohen et al. 2007) which has been adopted in empirical studies in similar situations (La Fond and Watts 2008; Ramalingegowda and Yu 2012)[12]. Finally, Ball and Shivakumar's measure of

[12] La Fond and Watts (2009) and Ramalingegowda and Yu (forthcoming) test whether conservatism affects bid/ask spread and institutional ownership by adding future changes in these variables to the Basu equation, in a way similar to ours.

conservatism is entirely based on accounting variables (accruals and operating cash flow), thus it is not affected by the current debate over market-based measures (see Dietrich et al. 2007 and Ball et al. 2010). However, in the context of my analysis, both approaches present two disadvantages. First, shifting the dependent variable to the right side of the regression equation may cause attenuation bias (Hausman 2001): in other words, coefficients may be biased toward zero, decreasing the power of the test in detecting an existing significant association between conservatism and disagreement. Second, both models require the construction of a three-way interaction equation, which is particularly expensive in terms of degrees of freedom (considering the inclusion of all control variables and fixed-effects dummies). I believe that these disadvantages do not impair these models' validity in testing the robustness of my results for hypothesis 1, since I find a significant negative association between conservatism and disagreement *despite* the potential attenuation bias and loss in degrees of freedom. [13]

[13] As the results related to the test of hypothesis 1 are found to be robust to the

Results for both models are reported in tables 2.5 and 2.6.

[INSERT TABLES 2.5 AND 2.6 HERE]

The sign and significance of the estimates are in line with the predicted values across all specifications. Consistent with results of the main analysis, the coefficients of all disagreement measures are negative and significant in both Basu's model (estimates of β_7 ranging between -0.012 and -0.016, t-statistics between -4.00 and -5.36) and Ball and Shivakumar's model (estimates spanning between -0.003 and -0.009, t-statistics between -1.83 and -5-57). The coefficients of the other variables are as expected and adjusted R^2 are in line with other studies in the literature, ranging from 18.7% to 33.2%.

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three measures of accounting conservatism, for the sake of brevity in testing hypothesis 2 I report only the results related to the prime measure of conservatism. Applying Basu's or Ball and Shivakumar's models to test hypothesis 2 provides results that are consistent with the findings of the main analysis: in both models, the association between conservatism and disagreement is more negative for bad news and the change in coefficient β_7 is more significant when the influence of outliers is mitigated as described in section 5.3.

Overall, these results strongly support my first hypothesis, showing that the negative association between conservatism and disagreement holds across different measures.

2.5.2 Different examination windows

Past research shows that abnormal trade caused by the earnings announcement may persist for a few days after the event (Morse, 1981). If conservative reporting were associated with a longer length of event-driven abnormal trade, than measuring the change in disagreement over the [-1,+1] window may generate a spurious negative association. This concern is already mitigated by the inclusion of absolute market reaction as a control variable and by the fact that both *SUV* and *SUMATO* control for the informedness effect. Nevertheless, as a further robustness test, I run the model over two longer event windows: (-1,+5) and (-1,+7).

The results of these regressions (not tabulated) confirm those of the previous analysis for both hypotheses, with the coefficients of *CSCORE* and *CSCORE*BAD* being negative and strongly significant for all disagreement measures. All results are also confirmed for the Basu and the Ball and Shivakumar's models, with the coefficients of *RET*NEG*DIS* and *CFO*NEG*DIS* remaining negative and significant..

2.5.3 Robustness to outliers

I test the possibility that these results are driven by outliers, i.e. observations with high residuals or high leverage. Observations with large distance from their expected values (high-residual points) may cause the distribution of the errors to deviate from the assumption of normality (as required by OLS), thereby negatively affecting the efficiency of ordinary least squares estimators and possibly biasing the estimates; moreover, observations with high values on one or more regressors (high-leverage points) could be driving the estimations of the coefficients (Draper and Smith 1998). This concern is already mitigated by the fact that all continuous variables are winsorized[14] at the 1% level.

To further test the robustness of these results, I carry out three different additional tests. First, I perform a robust regression procedure, which iteratively assigns different weights to the various observations, thus reducing the impact of outliers on the estimates[15]. The results (untabulated) strongly support hypothesis 1: the coefficient of *CSCORE* (β_1) in equations (2.16), (2.17) and (2.18) is negative and significant across all models (t-statistics ranging between -6.69 and -10.11). Moreover, the magnitude of the estimates is practically the same when the dependent variable is either *SUV* or *SUMATO*, whereas it

[14] I also replicated the analysis after truncating all continuous variables at 1st and 99th percentiles: results are qualitatively unaffected, although the decrease in sample size causes a loss of statistical power.

[15] As described in Hamilton (1991), I proceed in two steps: first, OLS regression is fitted and highly influential observations (|DFFIT| > 2*SQRT[(# of dep vars)/N) are deleted; next, case weights from the absolute residuals are calculated, and the regression is iteratively fitted using those weights. As suggested by Li (1985) weights are derived adopting two functions: first Huber weights (Huber 1964) with a tuning constant of 1.345, then biweights (Beaton and Tukey 1974) with a tuning constant of seven times the median absolute deviation from the median residual. The tolerance for the iteration process is set to a maximum change in weights of 0.01.

decreases slightly when disagreement is measured by *AMATO* (β_7 is -0.022). Hypothesis 2 is also confirmed: the coefficient of *CSCORE*BAD* is negative and significant for all measures of disagreement (coefficients ranging from -0.010 to -0.029). Once again, the magnitude of the estimates is practically unaffected for *SUV* and *SUMATO*.

In addition, I re-estimate the coefficients of the OLS regression after deleting observations with high [16] statistical leverage (2,089 observations for equations 2.16, 2.17 and 2.18; 2692 observations for equations 2.19, 2.20 and 2.21). All results are confirmed for both hypotheses 1 and 2. On average, coefficient β_7 increases in magnitude and significance when outliers are excluded from the sample, and coefficient β_1 remains unaffected.

Finally, I perform the OLS regression of all equations categorizing the variable *CSCORE* into quintiles, in order to reduce the influence of extreme observations on the estimated

[16] The cut-off rule for high-leverage observation is Leverage > [2*(number of dependent variables) / (number of observations)];

slopes. Once again, the regression estimates confirm those of the previous analysis for both hypotheses. In particular, both magnitude and t-statistics of the estimates of β_1 and β_7 are very similar to those of the main analysis, showing that the inference is not sensitive to the categorization of *CSCORE*.

Overall, results prove to be robust to all tests aimed at detecting the influence of outliers. I repeat the analysis for the Basu and Ball and Shivakumar's models as well, obtaining similar results. I am able to conclude that my results are not influenced by the presence of outliers nor biased by deviations from normality in the distribution of residuals.

2.5.4 The economic difference between good and bad news

Past research highlights that investors' reaction to accounting information depends significantly on whether financial reports convey good or bad news. Hayn (1995) hypothesizes that, because shareholders have a liquidation option, losses are not expected to perpetuate. As a consequence, losses are considered to be less informative than profits about the firm's future prospects, and cause the earnings-return relation to be convex. More recently, Billings et al. (2012) suggest that convexity arises also from the higher information content of good news due to real continuation options, i.e. shareholders' option to continue operations, to make new investments, and to raise capital when financing deficits arise.

It is possible that there is a correlation between the probability of issuing bad news and conservatism (or other variables associated with it): if conservative firms are more likely to issue bad news signals, and such bad news is associated with differential investors' reaction, the estimates of the main analysis may be affected by a spurious correlation bias. This concern is already mitigated by the fact that signal informativeness is controlled for (by including *SURPRISE* in the regression and orthogonalizing *SUV* and *SUMATO* with respect to contemporaneous returns) and by the inclusion of the dummy variable *BAD* in testing hypothesis 2. For further robustness, I adopt a two-step Heckman procedure (Heckman 1979), as suggested by the econometric literature (Woolridge 2001; Greene 2008).

In the first step I run a Probit model in order to estimate the probability that a firm reports bad news as in equation (2.24):

$$Prob(BAD_{it} = 1) = \Phi\ (\lambda_0 + \lambda_1 CSCORE_{it} + \lambda_2 SIZE_{it} + \lambda_3 LEV_{it} + \lambda_4 MB_{it} + \lambda_5 SDEARN_{it} + \lambda_6 TURN_{it} + \varepsilon) \quad (2.24a)$$

Where *SDEARN* is the standard deviation of earnings in the three years before the announcement, and *TURN* is revenues scaled by lagged total assets. From the estimates of this Probit model, I calculate the inverse Mills' ratio $MILLS_{it}$ as in equation (2. 25):

$$MILLS_{it} = \frac{\varphi(-\lambda^T Z_{it})}{1-\Phi(-\lambda^T Z_{it})} \quad (2.25)$$

where *φ()* and *Φ()* represent the standard normal probability density function and the cumulative distribution function respectively, Z is the vector of covariates and λ the vector of parameter estimates. The Mills ratio is then added to the OLS regression as a control variable. Untabulated results show that the coefficients of *CSCORE*BAD* are practically unaffected (ranging from -0.056 to -0.032), which further corroborates the robustness of the results of the main analysis.

2.6. Additional analyses

2.6.1 Conservatism, volume and stock returns

Investors' reaction to the earnings announcement might be smaller for conservative firms if investors found a conservative signal to be less value-relevant, or because conservative firms, being more transparent, anticipate more news to the market with voluntary disclosure. In either case, the negative association between conservative reporting and abnormal volume could be partially driven by a contemporaneous effect of conservatism on returns. I believe that this is not a concern for three reasons. First, two of the disagreement measures (*SUV* and *SUMATO*) are orthogonal to contemporaneous returns, in order to control for cross sectional differences in the information released to investors on the announcement days. As a result, their correlation with contemporaneous abnormal returns (the proxy for the news contained in the signal) is very low. Second, I explicitly control for cumulative abnormal returns over the announcement window, thus removing the spurious effect of the release of information, which had not been anticipated by investors [17]. Third, the correlation between *CSCORE* and *SURPRISE* is *positive*, not negative, as shown by table 2.2b. Thus, any residual spurious effect still present in the model would bias results against my prediction, not in favor. This suggests that a conservative signal is perceived as more precise and reliable, thus causing a larger reaction in absolute value of abnormal returns and less divergence of opinion among investors. In chapter 3, I will focus

[17] For robustness, I repeat the analysis using size-adjusted returns and simple raw returns: results are qualitatively unaffected.

on this issue, analyzing more in depth the relation between conservative reporting and earnings informativeness.

2.6.2 Liquidity and information asymmetry

Next, I repeat the analysis after adding to my models two control variables based on the bid/ask spread - specifically, average level of spread over the year (*SPREAD*) and change in average spread around the announcement (*ΔSPREAD*)[18] - in order to address the following issues. (a) Past research suggests that conservative firms are characterized by a higher level of ex ante information asymmetry (LaFond and Watts 2008). This could translate into a reduction in disagreement around the announcement, as the public release of an informative signal levels out the information playing field. (b) If ex ante information asymmetry is higher, better informed investors may use proprietary information in conjunction with public information disclosed during the announcement (Kim and

[18] *SPREAD* is computed as the average difference between ask and bid prices over the year t, scaled by their mid point. *ΔSPREAD* is calculated as the difference between the average spread of the time window [-1,+1] and the average spread of the estimation window [-55,-5], both scaled by their mid point.

Verrecchia 1997), thus increasing divergence of opinion. As a consequence, market makers may increase the spread around the announcement: since changes in spread are negatively associated with variations in trade volume (see Table 2.2b), cross sectional variability in information asymmetry could be affecting the estimates. (c) Though my disagreement variables already control for the liquidity effect, including *SPREAD* and *ΔSPREAD* in the regressions provides a more robust control for cross sectional differences in the levels and dynamics of liquidity.

Table 2.7 summarizes the effect of the inclusion of *SPREAD* and *ΔSPREAD* in all equations. The coefficient of *CSCORE* increases in both magnitude and significance after each control variable is sequentially added to the equation, thus Hypothesis 1 is confirmed. This is true across all models and for all the three measures of disagreement (values are highly significant, ranging from -0.064 to -0.078), suggesting that cross-sectional differences in the levels and dynamics of spread were inducing a positive correlation between conservatism and opinion divergence, partially offsetting my findings.

Hypothesis 2 is also corroborated, with the coefficients of *CSCORE*BAD* remaining negative and significant across all specifications. It is worth noting that the increase in the adjusted R^2 of all models after the inclusion of *SPREAD* and *ΔSPREAD* is low, indicating that these variables do not contribute significantly to the fit of the regression.

[INSERT TABLE 2.7 HERE]

I repeat the same analysis for both Basu's and Ball and Shivakumar's models, obtaining results generally consistent with previous findings. For the Basu model, the coefficients of *RET*NEG*DIS* increase in both magnitude and significance (t-statistics ranging from -3.99 to -5.06). For the Ball and Shivakumar's model, the negative association between conservatism and disagreement is practically not affected[19]. It is worth noting that I detect a *decrease* in the adjusted R^2 of all models after *SPREAD* and *ΔSPREAD* are added to the equations, which suggests that neither variable's contribution to the fit of the regression is large enough to compensate the loss in degrees of freedom (Greene 2008).

2.6.3 Analysts' forecasts

The level of uncertainty in the information environment before the announcement may cause investors' dispersion of beliefs to be higher ex ante, possibly inducing variations in the dependent variables. For instance, higher levels of dispersion ex ante may be associated with larger reductions in disagreement ex post, to the extent that an informative signal levels out the information playing field. On the other hand, past research

[19] The magnitude of coefficients β_7 remains the same; t-statistics decrease slightly for *AMATO* (-1.54) but remain unaffected for the other two measures of disagreement.

suggests that unadjusted trade volume is positively correlated with ex ante dispersion of beliefs (Bamber et al. 1997).

To analyze whether these concerns affect my inference, I add the dispersion in analysts' forecasts previous to the announcement as a control variable[20], using data obtained from I/B/E/S Summary and Detail databases. I also include the number of analysts following a stock, in order to control for differences in the richness of the information environment. Drawing on forecast-based data allows me to address the following issue. One might argue that a higher dispersion of beliefs prior to the announcement could induce managers to report more aggressively (i.e. less conservatively) in order to meet the expectations of optimist investors. To the extent that prior dispersion is correlated with announcement-time trade, the estimates of the coefficient of *CSCORE* could be affected. This concern is already mitigated by the fact that my results proved to

[20] Barron et al. (1998) theorize that prior dispersion is a function of both uncertainty and lack of consensus among investors. Accordingly, forecast dispersion previous to the announcement has been used by past empirical literature both as a proxy for the ex ante levels in either construct.

be robust to cross sectional differences in bid/ask spread. Moreover, the extant literature shows how dispersion is negatively associated with aggressive reporting (Payne and Robb 2000) and positively with conservatism (Mensah et al. 2004). Consistent with prior research, the data indicate a positive correlation between *CSCORE* and *DISPERSION*. Nonetheless, I replicate the analysis controlling for prior forecast dispersion in order to clear any doubt on the issue.

There are some caveats in including forecast-based measures in the model. First, merging the COMPUSTAT/CRSP dataset with I/B/E/S results in a non-trivial reduction in the sample, exacerbated by the fact that, per common practice in literature, meaningful measures can be constructed only for observations with at least three analysts following. This drop in the number of observations is a reason of concern considering that analysts' following is correlated with size and firm publicity: as a consequence, the sample could be biased in favor of large, well-known firms and under-represent small firms. Second, the three-analyst filter may be still considered too low, causing measures based on forecast dispersion to be very noisy (Bamber et al. 1997). Third, it is hard to tell apart analysts who have dropped coverage of a certain firm, but whose forecast continues to contribute to the measure (stale forecast). This concern is particularly relevant if the number of analysts following is not sufficiently high, where the potential bias induced by stale forecasts becomes large. As a consequence, Garfinkel (2009) highlights how forecast-based measures are the worst performers in capturing disagreement, and urges researchers to use volume-based measures instead, especially for event studies. Fourth, many observations that share the same identifier in I/B/E/S Detail dataset come from the same brokerage firm, but from different analysts; this inevitably reduces forecasts' ability to capture the dynamics of investors' opinions.

Notwithstanding these caveats, I test the robustness of my hypotheses by including the number of analysts following and the dispersion[21] in analysts' forecasts on the day before the announcement (obtained from I/B/E/S Summary dataset)[22] as control variables. Tables 2.8a, 2.8b and 2.8c report the results of the analysis.

[INSERT TABLES 2.8a, 2.8b and 2.8c HERE]

Models 1, 3 and 5 test both hypotheses on the reduced sample (33,719 observations) which results from the merging of COMPUSTAT/CRSP and I/B/E/S, after deleting observations with fewer than three analysts following. *DISPERSION* and *FOLLOW* are then added in models 2, 4 and 6. Thus, I highlight how controlling for ex ante dispersion and following has virtually no impact on the models in term of coefficient magnitude, significance and R^2, and most changes are to be

[21] Foong and Thomas (2011) document that, contrary to a common belief shared by past literature, analyst forecast dispersion does not vary with scale; consequently, they argue that scaling dispersion measures may bias the estimates. To mitigate this concern I perform the analysis scaling forecast variables alternatively by share price and actual earnings per share, and with unscaled variables: results are robust to all alternative methods.

[22] To reduce concerns related to stale forecasts, I repeat the analysis with dispersion measures computed manually from I/B/E/S Detail dataset and imposing different filters on analyst following. Results are robust to all alternative measures.

ascribed to the variation in sample dimensions and composition. In particular, reducing the sample causes coefficients β_1 and β_7 to range between -0.022 and -0.039, whereas the subsequent inclusion of *DISPERSION* and *FOLLOW* practically does not affect the estimates (coefficients β_1 decrease in magnitude very slightly, whereas β_7 increase in both magnitude and significance).

Replicating the analysis for the Basu's and Ball and Shivakumar's models produces similar results, and once again, most of the variation may be ascribed to the change in the sample. Overall, my results prove to be robust to controlling for prior dispersion in analysts' forecasts and the number of analysts following.

2.6.4 Conservatism and Voluntary Disclosure

The results of the main analysis suggest that conservatism's effect on disagreement is larger when mandatory disclosure is the main channel through which investors receive information. For instance, the negative coefficient of

*CSCORE*SURPRISE* implies that, ceteris paribus, the larger the information content of the earnings announcement, the more investors' take into account whether the firm is conservative or not when updating their beliefs. This is consistent with conservatism being perceived as a corporate governance mechanism that can discipline managers in their reporting activity, preventing opportunistic manipulation of the information disclosed. If there exist other mechanisms that can provide investors with useful information in order to better assess the situation, conservatism plays a lighter role. One such mechanism appears to be the scrutiny that analysts pose on the firm performance, as suggested by the positive coefficient of *CSCORE*FOLLOW* in tables 2.8a, 2.8b and 2.8c. Another may be represented by voluntary disclosure, a corporate governance tool by which managers commit to more transparent and timely disclosure of the information they possess. To investigate whether this is the case, I analyze the effect of a particular type of disclosure, management earnings guidance, on the association between conservatism and disagreement. Obtaining data from

First Call database, I proxy for forecast quality by looking at the average range (*RANGE*) of companies' forecasts issued by the firm. I define range as the difference between the upper and lower value of the forecast[23], scaled by beginning of year share price. A smaller average range corresponds to higher precision (i.e. higher quality) voluntary disclosure. I predict that high-quality disclosure firms will be associated with a weaker effect of conservatism on disagreement. I also predict that disclosure quantity, *coupled* with its quality, will further improve the information base publically available to investors, thus decreasing the relative importance of conservatism. It is not clear, however, whether information disclosed in high quantity but low quality positively or negatively affects investor disagreement. I proxy for disclosure quantity by looking at forecasts frequency (*FREQ*), namely the number of forecasts issued relative to each firm-year announcement.

Due to limited data availability, the sample is reduced to 9082 observations from 1992 to 2009. First, I split this

[23] This difference is set to 0.1 cents if the forecast is a point estimate.

subsample according to forecast quality, defining high-quality firms those whose *RANGE* is larger than the population median. Then, I run the following regressions:

$$DIS_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 FREQ_{it} + \varepsilon_i \ , \ (2.24)$$

$$DIS_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 FREQ_{it} + \beta_7 BAD_{it} + \beta_7 CSCORE_{it} * BAD_{it} + \beta_8 CSCORE_{it} * SURPRISE_{it} + \beta_9 CSCORE_{it} * SIZE_{it} + \beta_{10} CSCORE_{it} * LEV_{it} + \beta_{11} CSCORE_{it} * MB_{it} + \beta_{11} CSCORE_{it} * FREQ_{it} + \varepsilon_i \ , \ (2.25)$$

Where DIS_{it} represents either *AMATO*, *SUV* or *SUMATO*. I predict coefficient β_1 in equation (2.24) to be less negative for the low range subsample, showing that high-quality voluntary disclosure may act as a substitute of conservatism in affecting investors' beliefs. I also predict the coefficient β_{11} in equation (2.25) to be more positive for the low range subsample, showing that quantity and quality of voluntary disclosure combine to provide investors with an effective corporate governance tool to monitor managers' activity.

Table 2.9a presents regression results for equation (2.24). First, one may notice how hypothesis 1 is strongly supported even after the sharp loss in statistical power due to the large decrease in sample size, since the coefficient of *CSCORE* is negative and significant at the 1% level across all models. Second, the magnitude of such coefficient is almost twice as large in the high-range subsample (spanning between -0.101 to -0.147) relative to low-range firms (coefficients between -0.058 and -0.087). This is consistent with my prediction that conservatism has a larger impact on investors' beliefs' updating process in the absence of high-quality voluntary disclosure. The difference in the coefficients is generally significant at the 10% level (p-values between 0.054 and 0.129, one-tailed test), although inference is negatively affected by the considerable loss in statistical power due to reduced sample size.

[INSERT TABLES 2.9a and2.9b HERE]

Table 2.9b shows that, as predicted, forecast frequency has a differential impact depending on disclosure average quality. The coefficient of *CSCORE*FREQ* is positive for the low range subsample (spanning between 0.007 and 0.012), but tends to become negative for high range firms: the estimates are -0.005 and -0.010 for *AMATO* and *SUMATO* respectively, with the differences being significant at the 5% and 10% levels. These results suggest that forecasts' frequency is a substitute of conservatism only if coupled with disclosure quality. Interestingly, the coefficient of *CSCORE*BAD* is significantly more negative for the low quality subsample (p-values between 0.006 and 0.049), whereas it is not significant for the other subsample. This suggests that disclosure quality particularly decreases the effect of conservatism on the change in disagreement caused by the announcement of bad news. I interpret these result as follows. Bad news disclosure causes more uncertainty because investors fear that part of it has been opportunistically withheld by managers, in an attempt to cover up problems for the time being (Kothari et al. 2009). Conservatism, obliging managers to the timely communication of losses in *mandatory* disclosure, reassures investors that the loss they are presented is not just the tip of the iceberg. Alternatively, managers may commit to *voluntarily* disclosing bad news in a timely and precise way, thus reducing investors' uncertainty about losses even in the absence of conservative reporting. For good news, however, earnings guidance and conservatism are more likely to act as complementary mechanisms rather than substitutes, for the latter provides a hard feedback that disciplines the use of the former (LaFond and Watts 2008).

2.7 Concluding remarks

In this paper I test whether investors recognize higher quality to the information provided by conservative firms and whether this difference has an impact on their reaction to public disclosure. I do so by studying the impact of reporting conservatism on investor disagreement around annual earnings announcement dates, a relevant aspect of capital market reaction to information disclosure.

Investor disagreement is an important issue in the finance literature as divergences in investors' opinions over stock prices make capital markets less efficient. The current literature suggests a positive association between investors' opinion divergence and firm risk, and consequently with a firm's cost of capital. At the same time, the issue of investor disagreement has gained prominent attention in both finance and accounting research and it has been recognized that it plays a "greater role in capital markets than has previously been acknowledged" (Bamber et al. 2011). Although most research has delved into the consequences of investor disagreement, the sources of this disagreement remain relatively unexplored. In particular, the dynamics of divergence of investors' opinions regarding stock prices around earnings announcement are unsettled.

A common characteristic of previous studies lies in the adoption of a market-based level of analysis: few studies have addressed the issue from a firm-specific perspective. In the current paper I make an attempt to fill this gap by analyzing whether a firm-specific trait of the earnings announcement, namely its level of reporting conservatism, affects investor disagreement.

This paper contributes to extant knowledge in various ways. First, I investigate an unexplored firm-specific determinant of investor disagreement. Second, I improve current understanding of the effect of the earnings announcement on investor disagreement by highlighting the role played by a relevant characteristic such as reporting conservatism. Third, I contribute to the debate over the consequences of reporting conservatism, indicating its role in having investors' opinions converge after the earnings announcement. In this respect, my findings help to explain the negative association between conservatism and cost of capital as suggested by Li (2010) and Garcia Lara et al. (2011; 2012), as this association could be mediated by investor disagreement. Finally, by adopting volume-based measures of investor disagreement, I identify a firm specific determinant of the dynamics of trade volume around the earnings announcement, as urged by Bamber et al. (2011).

The paper, which borrows from and relies on both research areas of finance and accounting, has a very important implication for capital markets efficiency. Applying various alternative measures of investor disagreement and conservatism, I show that conservative reporting is significantly negatively associated with the change in investor disagreement around the earnings announcement date, particularly if the firm is reporting bad news.

CHAPTER 3

CONSERVATIVE REPORTING AND THE INFORMATION CONTENT OF THE EARNINGS ANNOUNCEMENT

Abstract. In this paper I analyze whether conservative reporting affects the information content of the earnings announcement. Academic research has highlighted the low value-relevance of accounting numbers with respect to other information sources, arguing that accounting conventions such as conservatism may provide an explanation for it. However, recent findings that conservative firms enjoy a lower cost of equity seem to imply that investors perceive higher information content in public signals provided by conservative firms. In this paper I report some empirical evidence in support of this conjecture. Overall, announcements made by conservative firms appear to elicit a

larger reaction in terms of absolute abnormal returns, keeping constant the magnitude of the signal. These results seem to be driven by good news announcements causing a larger upward shift in stock price, whereas bad news signals do not exhibit a significant difference between conservative and non-conservative firms. These findings suggest that investors perceive conservative reporting as a corporate governance mechanism that provides higher value-relevance to good news announcements. In additional analysis, I show that investors may consider auditor quality as a substitutive mechanism, which ensures information quality for non-conservative firms.

3.1 Motivation and positioning

Chapter 2 investigated whether accounting conservatism affects investors' divergence of opinion about the earnings signal. Results clearly indicated a negative association between the level of a firm's accounting conservatism and the change in disagreement around earnings announcement dates, suggesting that investors agree more about the interpretation of earnings information if the accounting regime producing such information is more conservative.

A different type of question regards the perceived informativeness of the earnings signal. Do investors perceive a conservative earnings announcement as a useful signal when updating their beliefs? This issue is important for at least two reasons. First, if some information is considered irrelevant, it may not matter much whether people disagree about it. Second, if investors find conservative signals less informative, the negative association between conservative reporting and abnormal volume documented in chapter 2 may be partially driven by a contemporaneous negative effect of conservatism on returns[24]. It is therefore important to understand whether and how conservative reporting affects the relevance of the earnings information for investors' valuation process.

Since the work of Ball and Brown (1968) and Beaver (1968), researchers have investigated the value-relevance of accounting numbers for capital markets. This is an issue of clear importance given that financial reporting aims to provide investors with useful information in order to assess the amounts, timing and uncertainty of future cash flows (FASB 1978, Concept 1). This analysis can be done by adopting two possible methods (Collins and Kothari 1989): either with short-window event studies testing whether earnings announcements convey information about future cash flows, or focusing on the long-

[24] This concern is already mitigated for two reasons. First, two of the disagreement measures (*SUV* and *SUMATO*) used in chapter 2 are orthogonal to contemporaneous returns, in order to control for the effect of signal informativeness on trade volume. As a result, their correlation with contemporaneous abnormal returns (the proxy for the news contained in the signal) is very low. Second, I explicitly control for cumulative abnormal returns over the announcement window, thus removing the spurious effect of the release of information that had not been anticipated by investors.

term association between reported earnings and stock returns. According to various studies, the information content of earnings may have deteriorated over time. Collins and Kothari (1989) note that the association between earnings and returns is negatively affected by the fact that reported earnings is a noisy predictor of future performance and not a timely source of information for investors' valuation. Lev (1989) attributes such a decline in information content to the low quality of periodic accounting income, and urges researchers to identify the contributing factors. He suggests that modifications in accounting techniques (e.g. decreasing the level of conservatism in financial reports) are needed in order to increase the value-relevance of earnings. Along a similar vein, Collins et al. (1994) argue that financial reporting, with its emphasis on historical cost measurement and transaction-based accounting, trades off timeliness in favor of objectivity, verifiability and conservatism, thus weakening the earnings-returns association. Lev and Zarowin (1999) claim that the deterioration in the usefulness of financial information is due to accounting conventions failing to keep up with the change in the business environment, and encourage standard setters to take action and modify the accounting treatment of intangibles and R&D expenditures. Consistent with previous contributions, Ryan and Zarowin (2003) identify the asymmetric recognition of good and bad news, induced by conservative reporting, as a potential responsible for the decrease in the earnings-return relation.

These studies, identifying accounting conventions (such as conservatism) as contributing factors to the alarming decline in the information content of earnings, elicited a discussion on whether policy makers should heed the call of academic research and intervene in order to ensure the value-relevance of accounting numbers (Holthausen and Watts 2001; Barth et al. 2001). Indeed, over the last decades standard setters have taken a stronger position in favor of neutral reporting and against accounting conservatism, on the ground that it would provide biased information to investors (Watts 2003).

The discussion over conservatism desirability encouraged a stream of analytical and empirical research investigating conservatism consequences for financial statements' users. Some studies support the criticism moved to conservative reporting, suggesting that it is associated with lower earnings persistence (Penman and Zhang 2002; Paek et al. 2007), larger forecast error and higher forecast dispersion (Mensah et al. 2004). This evidence suggests that conservative reporting should reduce the value-relevance of accounting numbers. However, others contend that conservatism possesses desirable properties for financial statements' users, such as increasing information quality (Ball and Shivakumar 2005; Fan and Zhang 2012), increasing contract efficiency (Chen et al. 2007; Guay and Verrecchia 2007), reducing information asymmetry (LaFond and Watts 2008, Garcia Lara et al. 2012) and lessening agency conflicts (Ahmed et al. 2002; LaFond and Roychowdhury 2008). These insights suggest that the accounting information generated by a conservative regime is of higher quality, hence should increase the information content of earnings. It is therefore an interesting question whether conservative reporting is positively or negatively associated with the value-relevance of accounting numbers.

Surprisingly, despite earlier works suggested that conservatism may be a potential contributing factor to the low information content of earnings, few empirical studies have actually investigated its effects on capital markets. While Li (2010) and Garcia Lara et al. (2011, 2012) show that conservative reporting is associated with lower cost of capital and stock returns variability, Kim and Pevnezer (2009) report that announcements by firms with a history of income-decreasing accruals are associated with larger returns.

The current chapter aims to contribute to extant knowledge on the consequences of conservatism for capital markets by analyzing whether conservative reporting affects the information content of earnings announcements. By adopting an event-study methodology, it adds to the literature on the value-relevance of accounting information by testing whether such a pervasive and discussed characteristic of accounting practice is indeed associated with lower informativeness of the earnings announcement, or whether it provides investors with a higher quality signal.

3.2 Hypotheses development

The effect of conservatism on price reaction to the earnings announcement is likely to be different depending on whether the firm is reporting good or bad news. Keeping constant the magnitude of the signal (e.g. the change in earnings per share), the absolute change in price around the announcement will depend on how much information about future performance the signal provides. Freeman and Tse (1989) maintain that, when earnings are announced, investors are unable to determine with certainty the persistence of an earnings increase or decrease (in other words, they are uncertain about whether and how much to revise expectations of future earnings); according to their model, in the absence of perfect information investors assess the probability *p* that an observed change is permanent. Past literature (Beaver et al. 1980; Lipe 1986; Kormendi and Lipe 1987; Easton and Zmijewski 1989; Collins and Kothari 1989) shows that investors reaction is larger if they perceive changes in earnings to be more persistent (i.e. if they estimate the probability *p* to be higher), because persistent earnings surprises are more informative of future states. Therefore, the effect of conservatism on price reaction to the announcement will be determined by its impact on the signal's perceived informativeness about future earnings changes.

Under a conservative accounting regime, gains may be partially delayed and recognized over future years, when they meet the verification standards required. Therefore, a signal of good news (e.g. positive unexpected change in earnings) coming from a conservative firm is likely to be perceived as more persistent, since investors know that: *a)* it is less likely to be the result of opportunistic manipulation by means of accruals accounting (Ball and Shivakhumar 2005); *b)* it is more likely to be followed in the future by further good news, which has been prudentially withheld for the time being. The higher perceived informativeness of conservative good news signals will result in larger positive abnormal returns around the earnings announcement.

On the other hand, timely disclosure of losses will cause a negative signal to be less predictive of future earnings decreases. This will happen because more bad news will be anticipated into current earnings and will have less influence on future earnings changes (assuming earnings follow a random walk). Therefore, the price reaction will be relatively attenuated when the firm discloses bad news, keeping constant the signal's magnitude. This may also happen because conservative firms, being more transparent, anticipate bad news with voluntary disclosure before the earnings announcement. Conversely, a non-conservative firm reporting bad news will likely increase uncertainty about future performance. Investors may fear that managers are opportunistically trying to withhold further losses (Kothari et al. 2009) or cover them up with income increasing accruals or other non-conservative practices, disclosing only the tip of the iceberg. This would mean that more bad news is to come in the future, making negative earnings changes more persistent. Even if this is not the case, the higher uncertainty associated with a less transparent information environment will result in a higher discount rate for future expected cash flows, which will cause a negative price reaction.

Therefore, the effect of conservatism on earnings informativeness may be opposite depending on the type of news announced, and it is not clear ex ante whether one effect will dominate the other in the pooled sample. There are reasons to believe that, in general, conservative reporting will be associated with higher information content of earnings announcements. A direct consequence of conservatism is the asymmetric timeliness in the recognition of good and bad news: gains are subjected to a higher degree of verification before being incorporated into earnings, whereas losses are timely acknowledged (Basu, 1997). This asymmetric timeliness provides investors with a "hard" feedback that can foster information transparency, discipline managers in their disclosure activity and prevent opportunistic behaviors such as window dressing or income-increasing earnings management (LaFond and Watts 2008). Indeed, past research maintains that conservative reporting reduces uncertainty in the stock market and increases the usefulness of financial reports for investors, decreasing share price variability and easing the valuation process (Ball and Shivakhumar 2005; Garcia Lara et al. 2012). Corroborating these findings, recent studies show that financial statements users appear to recognize these qualities to conservative firms and charge them a lower cost of capital (Li 2010; Garcia Lara 2011). For these reasons, one may expect conservative reporting to increase the quality of financial reporting and thus be associated, on average, with a higher information content of accounting numbers, leading to a positive association between conservatism and absolute returns around announcement dates. However, other authors find a negative association between conservatism and earnings persistence, suggesting that it hinders valuation process (Penman and Zhang 2002; Mensah et al. 2004; Paek et al. 2007). These insights would predict, on average, a lower value-relevance of accounting information for conservative firms.

Therefore, I make no prediction on the sign of the general association between conservatism and earnings informativeness in the pooled sample, and state my first hypothesis in the neutral form.

HP1) In the pooled sample, there is no association between conservatism and the perceived informativeness of earnings announcements.

My second hypothesis states that the effect of conservatism will be significantly different depending on the sign of the news reported. I predict that conservatism will increase the perceived informativeness of good news announcements: investors, knowing that gains are subjected to a higher degree of verification, will react more strongly to positive signals. Conversely, I predict investors' reaction to bad news signals coming from conservative firms to be attenuated.

HP2a) Conservatism is positively associated with the perceived information content of earnings announcements conveying good news.

HP2b) Conservatism is negatively associated with the perceived information content of earnings announcements conveying bad news.

3.3 Research Design

3.3.1 Measurement of variables

In order to measure conservatism, I follow the approach of chapter 2 and use the firm-year specific measure proposed by Khan and Watts (2009), $CSCORE_{it}$, constructed as per equation (2.2).

The perceived informativeness of the signal is measured by stock returns around the announcement: for a given signal magnitude (e.g. change in earnings per share), higher contemporaneous stock returns will indicate larger perceived information content. I build a performance-matched measure of informativeness in two steps. First I compute abnormal market-adjusted returns as the residual from the regression of equation (3.1), run over the estimation window (-55;-5) before the announcement.

$$R_t = \alpha_0 + \alpha_1 RM_t + \varepsilon_i \ , \quad (3.1)$$

Where R_t and RM_t represent respectively firm and market daily returns. Then, I take the absolute value of abnormal returns cumulated over the event window (-1;+1) around the announcement, to obtain a proxy for signal informativeness. Next, I group observations according to percentiles of signal's magnitude, measured as the absolute value of the change in earnings per share scaled by beginning of year price ($|\Delta EPS|_{it}$): for each percentile, I calculate the average absolute cumulated returns. Finally, I measure performance-matched informativeness ($INFO1_{it}$) as the difference between stock cumulated return and the average cumulated return of the relative percentile. In this way, I obtain a measure of signal informativeness that captures differences in abnormal returns around the announcement keeping constant the magnitude of the signal[25]. In order to test whether results are sensitive to the market-adjustment of equation (3.1), I also use a second proxy of informativeness ($INFO2_{it}$) by cumulating unadjusted returns (R_t) and then proceeding to performance matching in the same way.

I test my first hypothesis with the following model:

$$INFO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_{k1} CTRLS_{it} + \varepsilon_i \qquad (3.2)$$

Where $INFO_{it}$ represents either market-adjusted ($INFO1_{it}$) or unadjusted ($INFO2_{it}$) informativeness, β_1 expresses the general effect of conservatism on the perceived information content of the earnings announcement when no distinction is made between good and bad news. Such a distinction is analyzed by running two separate regressions according to the model expressed in the

[25] For robustness, I also adopt an alternative approach by using unmatched cumulated returns as a dependent variable and including ΔEPS_{it} as a control in all regression equations: results are qualitatively similar.

following system of equations (3.3), which tests Hypothesis 2a and Hypothesis 2b:

$INFO_{it} = \beta^{g}_{0} + \beta^{g}_{1}CSCORE_{it} + \beta^{g}_{k1}CTRLS_{it} + \varepsilon_{i}$ if $BAD_{it} = 0$,

$INFO_{it} = \beta^{b}_{0} + \beta^{b}_{1}CSCORE_{it} + \beta^{b}_{k1}CTRLS_{it} + \varepsilon_{i}$ if $BAD_{it} = 1$.

(3.3)

Where *g* and *b* superscripts indicate that the coefficient is estimated for the good and bad news subsample separately, BAD_{it} is a dummy variable taking value of one if the cumulative abnormal return around the announcement is negative (indicating the announcement of bad news), and zero otherwise.

In all models, $CTRLS_{it}$ represents a vector of control variables determined as follows. $SIZE_{it}$ is the logarithm of total assets; MB_{it} is the market to book ratio, calculated as market value of equity divided by book value of equity; LEV_{it} is financial leverage, expressed as total liabilities scaled by total assets; BAD_{it} is a dummy variable that takes the value 1 when the firm is reporting bad news (i.e. when the cumulated abnormal return is negative). $AVGTO_{it}$ is the average share turnover over the estimation window (-55,-5), capturing cross-sectional differences in stock liquidity, and $SDRET_{it}$ is the standard deviation of returns over the year before the announcement. All models include dummy variables for industry and year fixed effects.

3.3.2 Sample selection

For consistency, I execute the analysis on the same sample as in chapter 2, excluding 19 observations with missing values for the previous year's earnings per share (necessary to build the performance-matched measure of informativeness). The final sample is made up of 55,803 North American industrial firms listed on NYSE, AMEX or NASDAQ with sufficient data to build the measures.

Table 3.1a presents sample descriptive statistics. Variables do not exhibit abnormal properties. $INFO1_{it}$ and

INFO2$_{it}$ have zero mean by construction, since these proxies are built by demeaning cumulated returns for each percentile of $|\Delta EPS|_{it}$. All continuous variables are winsorized at the 1st and 99th percentile to mitigate the effect of outliers[26].

[INSERT TABLES 3.1a and 3.1b HERE]

Table 3.1b presents Spearman (upper diagonal) and Pearson (lower diagonal) correlations among the variables. There is a positive association between *CSCORE* and both *INFO1* (0.101) and *INFO2* (0.086), suggesting that, overall, conservative signals have larger information content for investors. In the setting of my hypotheses, this implies that the increased informativeness of good news dominates the lower value-relevance of bad news for conservative firms. *CSCORE* is also positively correlated with $|\Delta EPS|$ (0.188), in line with past research suggesting that conservatism increases earnings variability (Penman and Zhang 2002), and with various proxies

[26] In order to further test the robustness of results to the presence of influential observations, I repeat the analysis after *a)* categorizing the variable CSCORE into quintiles, *b)* excluding high-leverage points from the sample. Results remain qualitatively unaffected.

for information asymmetry and uncertainty (*SPREAD*, *DISP*, *SDRET*), corroborating recent findings that conservative reporting arises as a response to these problems (LaFond and Watts 2008). *INFO1* and *INFO2* are negatively correlated with variables that measure the richness of the information publically available about the firm (*SIZE*, *FOLLOW*), suggesting that the presence of other sources of information, more timely than mandatory disclosure, compete with reported earnings and decrease its informativeness. As expected, the correlations between |*ΔEPS*| and both *INFO1* and *INFO2* are statistically insignificant (0.001 and 0.000 respectively), showing that performance-matched measures of informativeness capture differences in the perceived information content of a signal keeping constant its magnitude. *BAD* is uncorrelated with *CSCORE* and very weakly correlated with other variables, showing that bad news announcements are equally spread across variables. There appears to be no concern of multicollinearity among the regressors[27].

[27] To alleviate multicollinearity concerns, I calculate the variance inflation

3.4 Results

Hypothesis 1, stated in null form, asserts that the overall association between conservatism and the information content of the earnings announcement is not significantly different from zero. To test whether this is the case, I run the following regressions on the pooled sample (i.e. not distinguishing good news announcements from bad news announcements).

$$INFO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 AVGTO_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 SDRET_{it} + \beta_7 BAD_{it} + \varepsilon_i \,, \qquad (3.4)$$

where *INFO* represents the proxies for perceived informativeness calculated with either market-adjusted (*INFO1*) or raw (*INFO2*) returns and *BAD* is a dummy variable equal to 1 when the cumulated market-adjusted or raw returns are negative. The focus of the analysis is on coefficient β_1, which represents the general association between conservatism and announcement informativeness in the pooled sample.

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factor (VIF) for the variables in each of the regression equations: the largest value is for *SIZE* (around 1.80, increasing to 2.73 when *FOLLOW* is added to the regression).

Hypothesis 2 predicts that the association expressed by β_1 is the result of two contrary effects: in the good news subsample, conservatism is posited to increase earnings information content; in the bad news subsample, this association is predicted to be negative. Therefore, I split the sample according to the news sign and run the regressions of equation (3.4) separately, then test whether the difference in coefficients is significantly different from zero.

Table 3.2 reports regressions results for both *INFO1* (panel A) and *INFO2* (panel B). There are four columns for each panel: the first column presents the results for the pooled regression; columns 2 and 3 report the estimates for each subsample (bad and good news), and column 4 provides, for each variable, the p-value of a two-tailed test on the significance of the difference between the coefficient estimates of the two subsamples.

[INSERT TABLES 3.2 HERE]

When signal informativeness is measured using market-adjusted returns (panel A), coefficient β_1 is significantly positive in the pooled regression (0.015, t-statistics 2.85). This suggests that, overall, investors find conservative signals to be more informative, ceteris paribus. A possible explanation for this result is that the good news effect is dominating: when conservative firm announce the earnings, the increase in the information content of good news is larger than the decrease in the value-relevance of bad news.

Indeed, results from the split-sample analysis confirm this prediction. The effect of conservatism on perceived informativeness in the good news subsample is significantly positive (0.034, t-statistics 4.13), in accordance with hypothesis 2a. The effect in the bad news subsample is negative, as predicted by Hypothesis 2b: however, its magnitude is considerably weaker (-0.002, t-statistics -0.032). The difference between the two coefficients is significant at the 1% level. Other variables also exhibit significant differences in their impact on price reaction across subsamples. For instance, firms with a high market-to-book ratio seem to have larger reactions to reported losses. This is consistent with past research showing that the price of growth-stocks is more sensitive to the issuance of bad news, because investors with high expectations are more easily disappointed: Skinner and Sloan (2002) refer to this phenomenon as the “torpedo effect”. Mashruwala et al. (2010) posit that Sloan’s findings can be explained by investor disagreement causing shares to be overpriced before the announcement (Miller 1977): when the earnings is announced, irrational optimism is dispelled and prices converge to fundamentals. Accordingly, they find that the price of stocks with higher average turnover (a proxy for disagreement) exhibits a higher sensitivity to losses, which is again consistent with the results of table 3.2.

Measuring informativeness with raw returns yields similar results. One difference is that coefficient β_1 in the pooled sample is positive but not significant (0.008, t-statistics 1.39). The split-sample analysis shows that this happens because the bad news effect is stronger (-0.008, t-statistics -1.14). Once again, the effect of conservatism in the good news subsample is significantly positive (0.021, t-statistics 2.57) and the difference in estimates across subsamples is significant at the 1% level.

These results can be interpreted as follows. First, the null hypothesis stated in hypothesis 1 can be strongly rejected when the measure of informativeness is adjusted for market returns, but not when using raw returns. Second, both models support Hypothesis 2a, showing a significantly positive association between conservatism and perceived information content of earnings for the good news subsample. Third, both models show a negative association for the bad news subsample as predicted by Hypothesis 2b, and the differences in coefficients across subsamples are strongly significant. However, the coefficient β_1 in the bad news subsample is not significant at the 5% level irrespective of the measure of informativeness used: it appears that, when a firm is reporting bad news, investors do not care whether the firm is conservative or not. This finding could be explained by small sample size or low power of the test performed. Another explanation may be advanced based on past literature. Hayn (1995) argues that losses have very low information content, because investors know that equity holders have the option to abandon the firm in case its value falls below the liquidation value. In other words, losses are less persistent because after a certain time a losing firm will be liquidated[28]. This likely reduces the impact of conservatism on the value-relevance of losses: if all bad news announcements are scarcely relevant for valuation purposes, it does not matter much whether they were issued by non-conservative firms. Furthermore, Zhang (2006) argues that more transparent accounting disclosure might reduce information uncertainty and speed the absorption of new information into stock prices irrespective of news sign: consistently, he shows that signals associated with higher uncertainty cause price underreaction in *both* bad and good news subsamples, due to psychological biases affecting investors'

[28] Corroborating Hayn's conjecture, the coefficient of *BAD* in the pooled sample is significantly negative, showing that announcements of losses have generally lower information content.

valuation process. Since conservative firms disclose losses in a more transparent and timely way, the reduction in uncertainty may lead to faster incorporation of information into prices, causing a larger price reaction.

3.5 Sensitivity tests and additional analysis

3.5.1 Cross-sectional differences in the pre-disclosure information environment.

Past research maintains that conservative firms may be characterized by a different pre-disclosure information environment. According to LaFond and Watts (2008), conservative reporting arises as a response to high information asymmetry: therefore, conservative firms may be associated with a larger presence of better informed investors, who can exploit their private knowledge when trading with others. This is likely to have consequences on announcement time price reactions, since part of the private information held by better-informed investors can be exploited only in conjunction with public disclosure (Kim and Verrecchia 1997). I control for cross sectional differences in information asymmetry by including the average bid/ask spread over the year as a control variable in all models. This reduces sample size to 45,922 observations due to limited data availability.

Table 3.3 presents regression results. In Panel A (market-adjusted informativeness), the effect of conservatism in the pooled sample appears to be stronger (0.019, t-statistics 2.49); this is also reflected in the results of the split-sample analysis, where the effect of conservatism on earnings information content increases in magnitude and significance for both good news (0.052, t-statistics 4.45) and bad news (-0.012, , t-statistics -1.17). This trend is confirmed also for the unadjusted measure of informativeness (Panel B), where adding SPREAD as a control variable has an even stronger effect: the coefficient β_1 is now significant also for the bad news subsample (-0.023, t-statistics -

2.07), thus lending support to both Hypothesis 2a and Hypothesis 2b.

[INSERT TABLES 3.3 HERE]

Past research suggests that conservatism is also associated with cross-sectional differences in uncertainty about firm prospects (Mensah et al. 1994; Garcia Lara et al. 2011), which is likely to result in a larger dispersion of beliefs before the announcement. This, in turn, may affect price reaction when the earnings are disclosed depending on the type of news reported (Mashruwala et al. 2010). Though this potential confounding effect is already mitigated thanks to the inclusion of *SDRET* and *AVGTO* in the regression equations, further robustness is provided by adding analysts' forecast dispersion (*DISP*) as a control variable. I also include the number of analysts following (*FOLLOW*), in order to proxy for the richness in the information environment. Due to limited data availability on I/B/E/S Summary Database, the sample size is reduced to 30,557 observations.

Table 3.4 reports regression results. The association between conservatism and market-adjusted informativeness (Panel A) in the pooled sample increases considerably (0.034, t-statistics 3.49), driven by an even larger variation in the coefficient of the good news subsample (0.071, t-statistics 5.06). Panel B reflects the same trend. Interestingly, coefficient β_1 in the pooled sample is now significant at the 10% level (0.018, t-statistics 1.84), corroborating the hypothesis that the overall effect of conservatism on value-relevance of earnings announcements is positive.

[INSERT TABLES 3.4 HERE]

The availability of analysts' forecasts data allows constructing forecast-based measures of perceived informativeness, in order to test the results' robustness to different proxies for the dependent variable. Forecast based measures are built by matching cumulated returns by percentile of earnings forecast error, measured as the absolute value of the difference between reported earnings and the mean forecast before the announcement, scaled by beginning of year price. This measure is arguably more precise in capturing the unexpected part of signal's magnitude, because the average analysts' forecast is e better proxy of market expectations than previous year's earnings. Several disadvantages, however, prevent from using it as the main measure of the analysis. First, merging the COMPUSTAT/CRSP dataset with I/B/E/S results in a non-trivial reduction in the sample, which is a reason of concern considering that analysts' following is correlated with size and firm publicity: as a consequence, the sample may be biased in favor of large, well-known firms and may under-represent small firms. Second, a large part of the sample is made of firms followed by only a few analysts, causing measures based on forecast dispersion to be very noisy (Bamber et al. 1997). Moreover, it is hard to tell apart analysts who have dropped coverage of a certain firm, but whose forecast continues to contribute to the measure (stale forecast), which induces a potential bias in the measure, especially for low-following firms.

Replicating the analysis using forecast-based measures of informativeness yields results (untabulated) that are consistent with those of the main analysis. The coefficient of CSCORE in the pooled regression is positive for both market-adjusted and unadjusted informativeness (0.040 and 0.025, significant at the 1% and 5% levels respectively). Splitting the sample shows that conservatism produces a significantly greater increase in informativeness for good news signals (coefficients 0.071 and 0.056, both significant at 1% level), whereas there seems to be no effect for bad news (coefficients negative but not significant).

Overall, these findings show that the results of the main analysis are not driven by cross sectional differences in the pre-disclosure information environment, and prove to be robust to the adoption of alternative measures of informativeness.

3.5.2 Effect on spread

LaFond and Watts (2008) theorize that conservative reporting provides investors with higher quality information that helps address information asymmetry problems. Consistent with this prediction, Garcia Lara et al. (2012) find that increases in conservatism are followed by a decline in bid/ask spread over the years: one explanation they provide for this finding is that conservatism increases precision and quality of the earnings announcement signal. While they only look at the long-term effects of conservatism over a horizon of multiple years, I test this conjecture by analyzing the impact of conservatism on the change in bid/ask spread around the announcement date. I build the variable *ΔSPREAD* as the average bid/ask spread in the event window (-1,+1) minus the average spread over the estimation window (-55,-5).

If conservative firms indeed provide higher-quality earnings signals that reduce information asymmetry, there should be a negative association between *CSCORE* and *ΔSPREAD*:

higher quality disclosure levels out information asymmetries reducing market makers' risk in trading with third parties. I predict no difference across good and bad news subsamples: changes in spread are likely to be affected by both the increased information content of good news and the effect of conservatism on disagreement, which was shown to be stronger for bad news (see chapter 2). I test these predictions by regressing *ΔSPREAD* on *CSCORE*. I include in the regression the same vector of controls of equation (3.4) and add *SPREAD* and *INFO1*, in order to control for the ex ante level in information asymmetry and the amount of news reaching the market in the announcement days[29] (Lee et al. 1993; Biais et al. 2005; Choudhary et al. 2011). Equation (3.5) presents the regression model.

$$\Delta SPREAD_{it} = \gamma_0 + \gamma_1 CSCORE_{it} + \gamma_2 INFO1_{it} + \gamma_3 AVGTO_{it} + \gamma_4 SIZE_{it} + \gamma_5 LEV_{it} + \gamma_6 MB_{it} + \gamma_7 SDRET_{it} + \gamma_8 SPREAD_{it} + \gamma_9 BAD_{it} + \varepsilon_i \quad (3.5)$$

Results (Table 3.5) support my predictions. There is a significantly negative association between the level of

[29] Results are not sensitive to excluding these additional control variables from the equation.

conservatism of a firm and the change in bid/ask spread around the announcement in the pooled sample (-0.017, t-statistics -2.02), suggesting that market operators perceive a decrease in information asymmetry after the earnings announcement by conservative firms, relative to non-conservative ones. As predicted, there is no significant difference between good and bad news, though the coefficient of the good news subsample is larger (-0.019 versus -0.012).

[INSERT TABLES 3.5 HERE]

These results further corroborate theoretical insights that predict conservative reporting to improve the information quality of reported earnings. They show that different types of market participants appreciate such quality, and provide empirical evidence in support of the conjecture made by Garcia Lara et al. (2012), who hypothesize that the increased quality of conservative earnings announcements explains the negative long-term association between conservatism and information asymmetry. Also, it is interesting to read these results in light of the findings of chapter 2: while volume and spread are negatively associated, conservative reporting appears to significantly reduce both. This suggests that such findings are not due to mechanical correlations among market variables but are indeed the result of conservative signals being perceived of higher quality by market participants (shareholders and market makers).

3.5.3 Auditor quality

Past research posits that conservatism acts as a corporate governance mechanism in disciplining managers' behavior (Watts 2003; Guay and Verrecchia 2007; LaFond and Watts 2008). For this reason, financial statements users may recognize higher quality to financial reports produced by a conservative accounting regime. One may wonder whether other corporate governance mechanisms, which provide the same type of insurance, decrease the effect of conservatism. One such mechanism may be the presence of a high-quality external auditor, which is less likely to allow managers to get away with accounting manipulation or any other behavior that decreases accounting quality. Therefore, I predict that the positive association between conservatism and perceived informativeness of reported earnings is weaker for firms with a high quality auditor: investors may acknowledge high quality to an earnings signal that has gone through higher scrutiny, even if the firm is not conservative.

Moreover, results of previous chapters show that the effect of conservatism on earnings informativeness appears to be driven by a strong positive association in the good news subsample. This in turn is probably due to investors taking a skeptical view of good news announced by non-conservative firms, which are relatively more likely to be biased upward by earnings management. On the other hand, auditor quality may not affect the impact of conservatism on loss persistence, since both corporate governance mechanisms should result in timelier disclosure of losses. Therefore, I predict that effect of auditor quality is especially true for the good news subsample.

In order to test these predictions, I construct a dummy variable *SMALLAUD*, which is equal to one if the firm's auditor is not one of the big four auditing firms (a usual proxy for auditor quality in the literature)[30]. Then I interact this dummy with the conservatism proxy and build the variable *CSCORE*SMALLAUD*, which expresses the increase in the coefficient of *CSCORE* when *SMALLAUD* is equal to one, as in equation (3.6).

$$INFO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 AVGTO_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 SDRET_{it} + \beta_7 BAD_{it} + \beta_8 SMALLAUD_{it} + \beta_9 CSCORE*SMALLAUD_{it} + \varepsilon_i \ , \qquad (3.6)$$

In this model, coefficient β_1 expresses the effect of conservatism on earnings informativeness when the firm has a

[30] It may be true that small auditing firms can also provide high quality control over financial statements. However, investors with limited information are not likely to be able to tell "good" small auditors from "bad" small auditors: therefore, they probably take auditor size and reputation as an immediate proxy for its quality. Since the construct I want to capture is the perceived quality of the auditor (and not the actual quality), auditor size is a correct proxy. Moreover, past research shows that high-quality small auditors are not likely to survive for long (Bar-Yosef and Sarath 2005), increasing the probability that small auditors perform low-quality scrutiny over managers' activity.

high quality auditor, whereas the coefficient of *CSCORE*SMALLAUD* expresses the increment in this effect for companies audited by small firms. The total effect when *SMALLAUD* is equal to zero is given by $\beta_1 + \beta_9$.

Table 3.6 reports regression results. In the pooled sample, the overall association between conservatism and market-adjusted informativeness for big-auditor firms is positive and significant (0.012, t-statistics 2.24), showing that the results of the previous analysis are valid for the majority of the sample which has a high quality auditor. Consistent with my prediction, the coefficient of the interaction term β_9 is positive (0.028, t-statistics 1.84), showing that the effect of conservatism is stronger for the subsample of companies audited by small firms. These results are confirmed for the unadjusted measure of informativeness, although β_1 is no longer significant. For the sake of robustness, I replicate the analysis after interacting *CSCORE* with each control variable, to better capture the incremental effect of *SMALLAUD* keeping everything else equal.

Results (not tabulated) show that the increase in the effect of conservatism for small-auditor firms is even stronger: coefficients β_9 are 0.037 and 0.039 for *INFO1* and *INFO2* respectively, both significant at the 5% level.

[INSERT TABLES 3.6 HERE]

Splitting the sample according to news sign confirms my second prediction, showing that the results of the pooled sample were driven by firms announcing good news. Specifically, coefficients β_1 and β_9 are positive and significant for both measures of informativeness (values ranging from 0.016 to 0.055, t-statistics from 1.94 to 3.53), whereas neither is significantly different from zero for the bad news subsample. These results show that conservatism increases the information content of good news announcements both for companies with big auditors and for those with small auditors, but the effect is stronger in the latter group, consistent with auditor quality providing a substitutive corporate governance mechanism that increases the quality of the earnings signal.

However, the choice of the auditor is made by the firm on discretionary basis: therefore, sample selection bias may distort the estimates. Following past research (Weber and Willemborg 2003; Mansi et al. 2004; Gueadhami and Pittman 2006), I address this concern by adopting a two-step Heckman procedure (Heckman 1979), as suggested by the econometric literature (Woolridge 2001; Greene 2008)[31]. In the first step I run a Probit model in order to estimate the probability that a firm chooses a small auditor given a vector of predetermined regressors. Following other studies that adopted the two-step procedure to analyze auditor choice (Chaney et al. 2004; Fortin and Pittman 2007; Cano-Rodriguez 2010; Lawrence et al. 2011; De Franco et al. 2011), these regressors are: the logarithm of total assets (*SIZE*), its square value (*SQRSIZE*), financial leverage (*LEV*), asset turnover (*SALES*), measured as sales scaled by total assets, current assets divided by current liabilities (*CURRENT*), the

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[31] An alternative approach consists in matching each observation of the "small auditor" subsample with an observation of the "big auditor" subsample that exhibits the nearest value of the propensity score, calculated as the predicted probability of the Probit model in equation (3.7). The propensity score sample-matching procedure produces results that are qualitatively similar to those of the two-steps Heckman procedure.

firm's quick ratio (*QUICK*) measured as current assets minus inventory divided by current liabilities, return on assets (*ROA*), the square root of the number of employees (*EMP*), the fraction of accounts receivable and inventory in total assets (*STRUCTURE*), a dummy variable for firm-years ending in December (*DEC*) and a dummy variable for firms which reported a loss in the previous year (*LOSS*). I also include all the control variables of the regression equation (3.6). The model is expressed by the following equation (3.7).

$$Prob(SMALLAUD_{it} = 1) = \Phi\ (\lambda_0 + \lambda_1 AVGTO_{it} + \lambda_2 SIZE_{it} + \lambda_3 LEV_{it} + \lambda_4 MB_{it} + \lambda_5 SDRET_{it} + \lambda_6 BAD_{it} + \lambda_7 SQRSIZE_{it} + \lambda_8 SALES_{it} + \lambda_9 CURRENT_{it} + \lambda_{10} STRUCTURE_{it} + \lambda_{11} ROA_{it} + \lambda_{12} EMP_{it} + \lambda_{13} QUICK_{it} + \lambda_{14} LOSS_{it} + \lambda_{15} DEC_{it} + \varepsilon) \qquad (3.7)$$

From the estimates of this Probit model, I calculate the inverse Mills' ratio $MILLS_{it}$ as in equation (3.8):

$$MILLS_{it} = \frac{\varphi(-\lambda^T Z_{it})}{1-\Phi(-\lambda^T Z_{it})} \qquad (3.8)$$

where *φ()* and *Φ()* represent the standard normal probability density function and the cumulative distribution function respectively, *Z* is the vector of covariates and *λ* the vector of parameter estimates. The Mills ratio is then added to the OLS regression as a control variable as in equation (3.9):

$$INFO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 AVGTO_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 SDRET_{it} + \beta_7 BAD_{it} + \beta_8 SMALLAUD_{it} + \beta_9 MILLS_{it} + \beta_{10} CSCORE*SMALLAUD_{it} + \beta_{11} CSCORE*MILLS_{it} + \varepsilon_i \, , \quad (3.9)$$

Table 3.7 presents the regression estimates[32]. One can immediately notice how correcting for sample selection bias considerably increases both significance and magnitude of results. In the pooled sample, coefficient β_{10} is 0.073 when the dependent variable is *INFO1* and 0.37 when it is *INFO2*, significant at the 1% and 5% levels respectively. Once again, these results are driven by the good news subsample (0.056 and 0.071, significant at the 1% level). These findings confirm my predictions that auditor’s quality and conservative reporting act

[32] The focus of the analysis is now exclusively on β_{10}, since β_1 no longer expresses the effect of conservatism for big auditor firms but the effect when all interaction terms are zero.

as partially substitutive mechanisms in providing informativeness to the earnings signal.

[INSERT TABLES 3.7 HERE]

3.6 Conclusive Remarks

In this paper I analyzed whether accounting conservatism is associated with the information content of earnings announcements. Past research identified an alarming decline in the value relevance of accounting numbers (Collins et al. 1994; Lev and Zarowin 1999; Ryan and Zarowin 2003), possibly due to conventions such as accounting focus on objectivity, verifiability and conservatism. Indeed, standard setters have taken a stronger position against conservative reporting in the last decades (Watts 2003); however, research efforts aimed to understand the effect of conservatism on investors' valuation process yielded mixed results. On the one hand, some studies show that it may have detrimental effects on earnings persistence

(Penman and Zhang 2002; Paek et al. 2007), thus increasing forecast error and dispersion (Mensah et al. 2004). Others contend that conservatism acts as a corporate governance mechanism in disciplining managers' behavior and increasing information quality (LaFond and Roychowdhury 2008; LaFond and Watts 2008). Surprisingly, empirical research has only recently started to investigate the impact of conservatism on capital markets, finding that conservatism is associated with long term reductions in equity cost of capital, price variability and information asymmetry (Garcia Lara et al. 2011, 2012). While these works adopted a long-term association methodology, the current paper takes a parallel perspective in analyzing the effect of conservatism on the value-relevance of accounting numbers and investigates whether conservatism affects the earnings signals' informativeness as perceived by investors around announcement dates.

Consistent with the hypotheses advanced, I find that conservatism is associated with a larger information content of earnings announcement. This relation is driven by a stronger effect for good news announcements, which are perceived to be more informative of future performance if they are issued by conservative firms. By contrast, there seems to be no difference in the information content of bad news announcements. These results are robust to cross-sectional differences in the pre-announcement information environment and do not appear to be influenced by the presence of outliers. In an effort to further the analysis, I find that conservatism is also associated with a reduction in the bid/ask spread around earnings announcement dates. I interpret this result as showing that market makers recognize the role of conservatism in leveling out information asymmetries during announcement days. Furthermore, I find that the effect of conservatism is stronger for firms with a small size auditor, especially for good news announcements. These results show that auditor's quality may act as a substitutive mechanism in reassuring investors about the quality of reported earnings.

This paper contributes to extant knowledge in various ways. First, I add to the discussion over the desirability of conservatism in financial reports by showing that investors recognize higher information content to earnings announcements coming from conservative firms[33]. In so doing, I test whether conservatism is indeed associated with a decline in the value relevance of accounting information, a claim suggested by past research that has surprisingly received little empirical attention. Second, I add to a newly born stream of research that analyzes the association of conservatism with capital markets outcomes. While these studies assume that the mechanism behind these associations lies in investors and market operators recognizing a higher quality to conservative accounting, I test this assumption by looking at price and spread changes around the issuance of

[33] I am not aware of other studies analyzing whether conservatism affects earnings announcements' informativeness. One exception is represented by Kim and Pevnezer (2009), who hypothesize an association between conservatism and price reaction to disclosure that is increasing in news magnitude, finding only weak and contradictory evidence in support of their assertion. My paper is different in that I find robust evidence that conservatism increases earnings informativeness keeping constant news magnitude; moreover, I show that this result is valid for good news but not for bad news, that conservatism is also associated with reductions in bid/ask spread and that auditor quality may be a substitute of conservatism in producing these outcomes.

informative signals. In this sense, my findings complement the work produced by LaFond and Watts (2008) and Garcia Lara et al. (2012), showing that indeed market participants perceive higher informativeness in conservative disclosure. Finally, I show how other corporate governance mechanisms, such as auditor quality, may act as substitutes of conservatism in convincing investors that managers are committed to high-quality disclosure.

Future research may be directed at analyzing intra-day price variations to earnings announcements, to better capture the impact of conservatism on returns and price variability. Also, other corporate governance characteristics may be potential substitutes of conservatism in this respect (e.g. ownership structure, board composition, etc.). Moreover, it may be interesting to analyze whether differences in the institutional and legal environments modify the relevance of conservative reporting for investors' valuation process. A similar effect may be caused by departures from full rationality in investors beliefs updating processes. Indeed, future research may investigate whether and how psychological biases in investors' heuristics affect the impact of accounting quality on capital markets.

CHAPTER 4

INVESTOR SENTIMENT AND THE EFFECT OF CONSERVATIVE REPORTING ON CAPITAL MARKETS

Abstract. The impact of conservative reporting on capital markets highlighted in the previous papers exhibit considerable time series variations, which are not explained by contemporaneous changes in known determinants of conservatism , price or volume dynamics. In this paper I analyze whether deviations from rationality in investors' beliefs'

updating process may explain this anomalous time trend. I hypothesize that, when investors feel overconfident or irrationally optimistic about the future, they care less about information quality and place less weight on public signals. Consistent with my hypotheses, I find that periods of high investor sentiment are associated with a lower effect of conservative reporting on investor disagreement and on the perceived information content of the earnings announcement. These results are stronger for good news announcements, which reinforces investors' priors and further boost overconfidence; conversely, bad news announcements seem to act as a "wake up call" and induce investors' to re-focus their attention on disclosure quality. Additional analysis shows that these results are not driven by periods of low-sentiment due to stock market crises, and that such crises have incremental explanatory power, with respect to investor sentiment, in explaining time-series variations in the capital market consequences of conservative reporting.

4.1 Motivation and positioning

This chapter focuses on time-series variations in the effect of conservatism on investors' reaction to earnings announcements, where I investigate what factors could be driving these variations. The inference drawn in chapter 2 and chapter 3 was based on pooled regression analysis based on a panel dataset spanning from 1980 to 2009. Results clearly indicated that, over these three decades, there was a significant association between the level of conservatism of a firm and abnormal returns and volume cumulated around announcement dates. However, a closer look at time-series changes in the strength of this association reveals remarkable variations over time. Figure 4.1 shows, for every year, variations in the coefficient of *CSCORE* relative to the models of equations (2.16), (2.18) and (3.4), using the year 1980 as a baseline and adjusting for the effect of contemporaneous variations in the control variables.

[INSERT FIGURE 4.1 HERE]

Three facts can be noted. First, after declining slightly in the eighties, the effect of conservatism appears to have smoothly inverted its trend and has been increasing in magnitude over the last fifteen years. Therefore, the association detected in the pooled analysis of chapter 2 and chapter 3 seems to have become stronger in recent times. Second, despite this trend, there appears to be nontrivial variability in the effect of conservatism, highlighted by frequent spikes and trend-reversions from one year to another. Apparently, there are factors (other than the control variables included in the models) that significantly influence the relevance of accounting quality for investors.

Third, whatever these factors are, they seem to be influencing the effect of conservatism on both perceived informativeness and disagreement at the same time. This happens despite the positive correlation between abnormal returns and abnormal volume, which would induce covariation of the opposite sign. In other words, if in a given year conservatism is associated with lower abnormal volume, the mechanical correlation between volume and returns would cause conservatism to be associated with lower returns as well. Instead, conservatism appears to produce a larger investors' reaction. This pattern is consistent with the existence of external factors that decrease the relevance of earnings quality for investors' beliefs updating process around the announcement.

The existence of time-series variations in market response to reported earnings is consistent with the literature on the value-relevance of financial accounting. Since the seminal work of Ball and Brown (1968) and Beaver (1968), accounting research has investigated the value-relevance of accounting numbers for capital markets, mostly by looking at the relation between earnings and returns. This relation is analyzed by adopting either an event perspective, testing whether earnings announcements convey information about future cash flows, or an association perspective, regressing returns on unexpected earnings over relatively long periods (Collins and Kothari, 1989). This large body of research highlights that accounting information is meaningful for investors, but its relevance has varied over time. Some studies detect declines in the returns-earnings relation, (Lev and Zarowin 1999; Ryan and Zarowin 2003), whereas others identify increases in the informativeness of earnings announcements (Landsman and Maydew 2002) and accounting numbers in general (Collins et al. 1997). These time variations in the value-relevance of reported income have been attributed to accounting conventions dictated by Generally Accepted Accounting Principles (GAAP), such as conservatism, verifiability and objectivity, which may introduce lack of timeliness and noise in reported earnings (Collins et al. 1994). These findings generated a lively discussion on whether and how standard setters should modify GAAP in order to ensure value-relevance (Lev and Zarowin 1999; Holthausen and Watts 2001; Barth et al. 2001). In fact, if financial reporting aims to provide investors with useful information to assess the amounts, timing and uncertainty of future cash flows (FASB 1978, Concept 1), then discovering that investors consider accounting less relevant is alarming. This may indeed have induced standard setters to take a stronger position against conservative reporting over the last decade (Watts 2003).

A common thread in the aforementioned discussion is the idea that variations in earnings informativeness are determined by changes in earnings quality, assuming that investors process information according to a rational expectations model. However, deviations from full rationality in investors' information-processing may as well affect the correlation between earnings and returns, by influencing how individuals interpret information. Indeed, over the last two decades, a growing body of research in behavioral finance has highlighted how cognitive biases can heavily affect investors' judgments (Odean 1998; Odean 1999; Barber and Odean 1999, 2000, 2001; Gervais and Odean 2001; Grinblatt and Keloharju 2009) and that variations in the strength of such biases can drive differences in their reaction to informative signals (Barberis et al. 1998; Daniel et al. 1998; Liang 2003). Such findings are interesting because they suggest that departures from rationality can impair the purpose of financial reporting, irrespective of how standard setters modify accounting conventions. Therefore, it is important to understand whether psychological biases of investors can explain variations in the impact of financial reporting on capital markets.

This paper aims to shed light on such an issue by testing whether investor sentiment is associated with the effect of conservatism on the perceived informativeness of the earnings announcement (chapter 3) and the change in investor disagreement around the announcement date (chapter 2). Investor sentiment may be broadly defined as an irrational belief about future cash flows and investment risk that is not justified by the facts at hand (Baker and Wurgler 2007). A recent stream of research shows that high-sentiment periods are associated with psychological biases of market participants such as overconfidence or limited attention, which deeply affect investors' information processing and can therefore explain variability in managers' and investors' behavior (Han 2008; Ali and Gurun 2009; Peltomaki 2009; Bergman and Roychowdhury 2009; Brown et al. 2011; Yu and Youan 2011; Hribar and McInnis 2012; Stambaugh et al. 2012). In this paper, I analyze whether investor sentiment can explain time-series variability in the effect of conservatism represented by Figure 4.1.

4.2 Hypotheses development

Ceteris paribus, the impact of accounting conservatism on investors' reaction to the earnings announcement is influenced by two factors.

First, it depends on the weight that investors attribute to conservative reporting when updating their beliefs. Past research shows that investors consider a firm's level of conservatism as a meaningful piece of information for valuation purposes, which translates in different capital market consequences for conservative firms. These differences would arguably be attenuated or disappear if conservatism became less relevant for investors.

Second, the effect of conservatism will also depend on the weight that investors attribute to the income number as a source of information, with respect to all other sources. If investors did not care about the earnings announcement, it would not matter whether the firm reports it conservatively or not.

I argue that investor sentiment decreases the effect of conservatism through both channels. Specifically, I contend that: a) during high-sentiment periods, investors will attribute less importance to accounting conservatism when updating their beliefs following an earnings announcement; b) during high-sentiment periods, the earnings announcement is less relevant than other sources of information for investors' valuation process. For these reasons, I predict that the impact of conservatism on price and volume dynamics around the earnings announcement date will be smaller when investor sentiment is high.

This prediction is consistent with a large body of literature in accounting, finance and psychology. By definition, during high-sentiment periods investors are generally more optimistic about the expected cash flows and risk of their investments than it would be justified by rational expectations (Baker and Wurgler 2007). This irrational optimism is associated with higher investors' overconfidence [34], broadly defined as tendency to place an irrationally excessive degree of confidence in one's abilities and beliefs (Grinblatt and Keloharju 2009). Various studies find that overconfidence is observed in different professional fields, from physician and nurses to managers and investment bankers (see Odean 1998 for an overview of this

[34] This association is apparent in light of the fact that overconfidence has often been interpreted as an irrationally optimistic perception of mean and variance of an uncertain outcome (Grinblatt and Keloharju 2009), which is very close to the definition of investor sentiment given by Baker and Wurgler (2007). Indeed, there may be a causal link between high-sentiment periods and overconfidence owing to a psychological bias called self-attribution, whereby individuals attribute events that confirm the validity of their actions to high ability and events that disconfirm the action to external noise or bad luck (see Langer and Roth 1975, Miller and Ross 1975, Taylor and Brown 1988, Zuckerman 1979 for reviews). High-sentiment periods are usually associated with growing economy and bullish stock market, which augments investors' wealth as well as their optimism (Barberis et al. 1998): investors misattribute the increase in wealth to their ability and become overconfident (Daniel et al. 1998; Odean 1998; Gervais and Odean 2001).

literature). In the last two decades, a stream of research in behavioral finance has investigated how overconfidence affects capital markets (see for instance Odean 1999; Barber and Odean 1999, 2000 and 2001; Hirshleifer and Luo 2001; Wang 2001; Deaves et al. 2004; Biais 2005; Glaser 2007). This stream of research maintains that overconfidence results in investors overestimating the precision of their private information, consistent with empirical evidence in psychology (Alpert and Raiffa 1982; Fischhoff et al. 1977; Lichtenstein et al. 1982). For instance, in Benos (1998) traders may exhibit extreme overconfidence in their own noisy signals, believing them to be perfect; Wang (1995), Kyle and Wang (1997) and Odean (1998) all model overconfidence an overestimation of the precision of one's own information. Such miscalibration affects the importance of private knowledge relative to other sources of information. Daniel et al. (1998) posit that overconfident investors overestimate the precision of their private information and underestimate the relevance of publicly revealed information: as a consequence, they underreact to public signals.

Chatterjee et al. (2012) argue that when sentiment is optimistic, investors tend to put more weight on privately generated information relative to public signals, whereas during pessimistic periods they become more "hard-nosed" and put relatively more weight on hard information such as accounting numbers[35]. Their insight is consistent with Odean (1998), who suggests that market underreaction to earnings announcements is due to overconfidence causing investors to disregard public disclosure in favor of overweighed private information. Along a similar vein, Liang (2003) and Zhang (2006) provide empirical evidence showing that overconfidence slows the incorporation of publicly revealed information into prices, causing larger post-announcement drift. In summary, past and recent contributions in psychology, finance and accounting literatures suggest that during high-sentiment periods, increased overconfidence translates in investors attributing lower importance to the

[35] Chatterjee et al. (2012) suggest that investors' increased attention to information quality during pessimistic periods is likely to have an effect on investor disagreement. The current paper aims to provide empirical evidence to test this conjecture.

information disclosed with earnings announcements and underweighting it when updating their beliefs.

The decrease in the relevance of accounting disclosure for investors' beliefs is likely to cause an equal decline in the importance of its quality: arguably, people do not worry too much about the quality of something they are not going to use. This intuition is consistent with Hirshleifer and Teoh (2003), who assert that overconfidence causes investors to limit their attention to the information they consider more salient, thus neglecting accruals quality when interpreting the value-relevance of the earnings announcement. They also suggest that this limited attention bias exhibited by overconfident investors is a cause of market mispricing of accruals (Sloan, 1996), a conjecture corroborated empirically by Ali and Gurun (2009).

Therefore, overconfidence *indirectly* decreases the importance of earnings quality for investors by diminishing the relative weight they place on public disclosure. However, there is arguably also a stronger *direct* link between investor sentiment and the relevance of conservatism. A significant stream of research in psychology maintains that positive affective states (e.g. optimism and happiness) cause people to pay less attention to information reliability. For instance, Mackie and Worth’s (1989) work on cognitive capacity suggests that positive affective states render people less able to process incoming information, so that subjects in a positive mood do not assess properly the strength or weakness of the information they are given. Schwarz (1990, 2010) explains similar findings by arguing that a positive mood reduces people’s motivation to scrutinize information in order to assess its quality. According to this view, sad moods foster a systematic processing style that is characterized by more attention to the details, whereas happy moods encourage a processing style that is characterized by less focused attention. These claims are consistent with a considerable stream of research showing that a high sentiment is associated with the use of rapid and relatively effortless information-processing strategies, whereas low sentiment produces more gathering of diagnostic information, more complex information-processing and more systematic elaboration of complex messages (see Taylor 1991 for a review of this extensive literature). Accordingly, Griffin and Tversky (1992) show that overconfidence is associated with people tendency to overweigh the content of a signal without paying enough attention to the credibility of its source[36].

Therefore, optimistic and overconfident investors are expected to exercise lower scrutiny on the information they are given and pay less attention to its quality, ceteris paribus. Research in financial markets provides evidence consistent with such conjecture. Brown et al. (2011) find evidence that that during optimistic periods, investors evaluate managers' pro forma disclosures less rigorously; they also find that managers appear to be aware of investors' reduced attention to quality during optimistic period, and act opportunistically by adopting

[36] To better illustrate their point, Griffin and Tversky make the analogy of a recommendation letter, where the reader may tend to overweigh the content (how positive and warm the letter is) and happily accept the candidate without considering what is the credibility and stature of the letter-writer. In our setting, this example is equivalent to optimistic investors getting excited about a firm's prospects after a positive earnings surprise, without considering that the aggressive reporting regime practiced by the firm may have allowed income-increasing accounting practices and window-dressing.

income-increasing accounting practices. Odean (1998) proposes a model where overconfidence causes investors to underweigh information publicly available *before* the earnings announcement (such as the accounting quality of the firm), leading to higher disagreement about its interpretation. His proposition is consistent with my prediction: if investors do not care whether the firm has a conservative reporting system (which is common priors), conservatism's effect on traders' beliefs will be diminished, translating into higher disagreement around earnings announcement (consistent with chapter 2).

Therefore, past research suggests that optimistic sentiment is associated with lower importance of public information quality for investors' valuation. This effect does not necessarily arise from a cognitive deficiency induced by overconfidence. Some studies show that subjects in a positive mood underweigh information quality even if they are perfectly informed about it (Bless et al. 1990; Worth & Mackie 1987). These findings suggest that biases in information processing are sufficient but not necessary for optimism to reduce investors' attention to accounting quality. This may happen because changes in mood drive variations in risk aversion. Past research shows that, during high sentiment periods, investors (and fund managers) become less risk averse and more return-chasing (Peltomaki 2009, Frijns et al. 2007), perhaps because they underestimate the probability that things will go wrong (Gerard et al. 2009). If investors become risk takers or consider bad outcomes as unlikely, they will place less weight on the quality of a conservative reporting system that is supposed to shield them from the risk of future negative surprises. In other words, they perfectly understand that lower-quality information is riskier (i.e. they correctly estimate its variance), but they choose to take their chances.

In summary, during high sentiment periods investors are expected to place less importance on earnings quality and care less about earnings announcements in general. Both effects concur in reducing the effect of conservatism on investors' reaction to earnings announcements. Therefore, I state the following two hypotheses:

HP1) When investor sentiment is high, the effect of conservatism on the change in disagreement around the earnings announcement is weaker.

HP2) When investor sentiment is high, the effect of conservatism on abnormal returns cumulated around the earnings announcement is weaker.

4.3 Research Design

4.3.1 Measurement of variables

In order to measure how the level of conservatism of a firm affects investors' reaction around the earnings announcement, I follow the approach proposed in chapter 2 and chapter 3.

Accounting conservatism is proxied by the variable $CSCORE_{it}$, the firm-year specific measure proposed by Khan and Watts (2009), constructed as per equation (2.2). The change in disagreement around the announcement is proxied by two measures based on abnormal trade volume developed in chapter 2: Abnormal Market Adjusted Turnover ($AMATO_{it}$) and Standardized Unexpected Market Adjusted Turnover ($SUMATO_{it}$), calculated as in equations (2.7) and (2.13)[37]. These two proxies capture the variation in investor disagreement in the window (-1,+1) around the event, and are predicted to be negatively correlated with $CSCORE_{it}$.

Consistent with chapter 3, I measure the perceived informativeness of the earnings announcement ($INFO_{it}$) as follows. First, I group observations according to percentiles of signal's magnitude, measured as the absolute value of the change

[37] I prefer not to use the third measure, SUV_{it}, because it is not adjusted for market-wide turnover. Since past research has highlighted that investor sentiment is correlated with market trade volume, failing to adjust for this confounding effect may potentially introduce bias in the model. However, replicating the analysis of this paper using SUV_{it} provides results consistent with those of the other proxies.

in earnings per share scaled by beginning of year price: for each percentile, I calculate the average absolute cumulated returns. Next, I measure performance-matched informativeness ($INFO_{it}$) as the difference between stock cumulated return and the average cumulated return of the relative percentile. In this way, I obtain a measure of signal informativeness that captures differences in abnormal returns around the announcement keeping constant the magnitude of the signal. Like in chapter 3, abnormal returns are computed as the residual from the regression model expressed by equation (4.1) estimated over the window (-55,-5) before the announcement[38].

$$R_t = \alpha_0 + \alpha_1 RM_t + \varepsilon_i \ , \quad (4.1)$$

I measure investor sentiment ($SENT_{it}$) using the Michigan Consumer Confidence Index (MCCI). The MCCI is one of the most adopted sentiment proxies in the literature (Lemmon and Portniaguina 2006; Bergman and Roychowdhury 2008; Rajgopal et al. 2010; Green et al. 2012; Hribar and McInnis 2012; Yu and

[38] For the same reason expressed above, I prefer not to use raw returns in constructing the informativeness proxy, because investor sentiment is correlated with market returns, which need to be adjusted for.

Yuang 2011; Seybert and Yang 2012; Stambaugh et al. 2012) and is often used as a term of comparison in studies aiming to assess the effectiveness of potential new proxies of investor sentiment (Qui and Welch 2006; Feldman 2010; Ben-Raphael et al. 2012). The MCCI is a monthly index computed by the Michigan Consumer Research Center and is based on a survey that grades respondents' perceptions and expectations about financial well-being, state of the economy and general consumer spending on a scale of 1 to 5, and generates a monthly score based on a linear combination of the responses. $SENT_{it}$ corresponds to the MCCI of the month of the announcement.

Therefore, I test my hypotheses with the following models:

$$AMATO_{it} = \alpha_0 + \alpha_1 CSCORE_{it} + \alpha_2 SENT_{it} + \alpha_3 CSCORE_{it} {*} SENT_{it} + \alpha_{k1} CTRLS_{it} + \alpha_{k2}\, CSCORE_{it} {*} CTRLS_{it} + \varepsilon_i \qquad (4.2)$$

$$SUMATO_t = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SENT_{it} + \beta_3 CSCORE_{it} {*} SENT_{it} + \beta_{k1} CTRLS_{it} + \beta_{k2} CSCORE_{it} {*} CTRLS_{it} + \varepsilon_i \qquad (4.3)$$

$$INFO_t = \gamma_0 + \gamma_1 CSCORE_{it} + \gamma_2 SENT_{it} + \gamma_3 CSCORE_{it}*SENT_{it} + \gamma_{k1} CTRLS_{it} + \gamma_{k2}\, CSCORE_{it}*CTRLS_{it} + \varepsilon_i \qquad (4.4)$$

where the subscripts *i* and *t* identify firm and year respectively. I predict coefficient α_1 to be positive (consistent with the findings of chapter 3) and the coefficient of the interaction term α_3 to be significantly negative, showing that the effect of conservatism is weaker during high-sentiment periods. By the same token, I expect coefficients β_1 and γ_1 to be negative and coefficients β_3 and γ_3 to be positive, suggesting again that the impact of conservatism is reduced when investors are optimistic and overconfident. $CTRLS_{it}$ represents the vector of control variables, calculated following chapter 2 and chapter 3. Specifically, $SIZE_{it}$ is the logarithm of total assets; MB_{it} is the market to book ratio, calculated as market value of equity divided by book value of equity; LEV_{it} is financial leverage, expressed as total liabilities scaled by total assets; BAD_{it} is a dummy variable which takes the value of one when the firm is reporting bad news (i.e. when the cumulated abnormal return is negative). I add industry and year fixed effects to all regression equations.

As in chapter 3, I add to the informativeness model (equation 4.2) the standard deviation of returns over the year before the announcement ($SDRET_{it}$) in order to control for firm-specific expected variability in stock returns, and the average share turnover ($AVGTO_{it}$) computed over the estimation window (-55,-5), to adjust for firm liquidity[39]. Finally, following chapter 2, I include $INFO_{it}$ as a control variable in the disagreement models (equations 4.3 and 4.4), in order to better control for the informedness effect theorized by Holthausen and Verrecchia (1990) and effectively capture the portion of trade that is due to investors' divergence of beliefs, not to the signal informativeness.

[39] Different from $INFO_{it}$, $AMATO_{it}$ and $SUMATO_{it}$ are, by construction, already adjusted for firm-specific average liquidity and firm-specific expected variability in abnormal volume, as shown in equations 2.7 and 2.13. Consistently, including *SDRET* and *AVGTO* to equations (4.2) and (4.3) leaves coefficient estimates practically unaffected.

4.3.2 Sample selection

For the sake of consistency with the previous papers, I execute the analysis on the same sample, made up of 55,803 North American industrial firms listed on NYSE, AMEX or NASDAQ with sufficient data to build the measures.

Table 4.1a presents sample descriptive statistics, and table 4.1b presents Spearman (upper diagonal) and Pearson (lower diagonal) correlations among the variables. There is a negative correlation between *SENT* and the perceived informativeness of the earnings announcement (*INFO*), suggesting that overconfident investors place less weight on public disclosure of information: this is consistent with past literature in psychology and behavioral finance, as well as with the hypotheses of the current paper. *SENT* is also positively associated with *MB*, suggesting that when investors feel more optimistic share prices tend to be inflated relative to fundamentals, and with bid/ask spread (*SPREAD*), corroborating past insights showing that during high-sentiment periods information asymmetry problems soar due to a larger number of uniformed investors who start trading. There appears to be no concern of multicollinearity among the regressors[40].

[INSERT TABLES 4.1a and 4.1b HERE]

4.4 Results

Hypothesis 1 states that, if the earnings announcement is made during high-sentiment periods, the effect of conservatism on disagreement is weaker. I test this proposition with the model expressed by equations (4.5) and (4.6).

$$AMATO_{it} = \alpha_0 + \alpha_1 CSCORE_{it} + \alpha_2 SENT_{it} + \alpha_3 CSCORE*SENT_{it} + \alpha_4 SIZE_{it} + \alpha_5 LEV_{it} + \alpha_6 MB_{it} + \alpha_7 BAD_{it} + \alpha_7 INFO_{it} + \varepsilon_i \quad , \tag{4.5}$$

[40] To alleviate multicollinearity concerns, I calculate the variance inflation factor (VIF) for the variables in each of the regression equations: the largest value is for *SIZE* (around 1.83, increasing to 3.49 when *FOLLOW* is added to the regression).

$$SUMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SENT_{it} + \beta_3 CSCORE*SENT_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 MB_{it} + \beta_7 BAD_{it} + \beta_7 INFO_{it} + \varepsilon_i \quad , \quad (4.6)$$

I predict coefficients α_1 and β_1 to be negative, consistent with chapter 2's evidence that conservatism reduces disagreement around earnings announcement dates, and coefficients α_3 and β_3 to be positive, showing that this effect deteriorates as investor sentiment increases. Table 4.2 (panel A) shows regression results. Columns 1 and 4 show that including *SENT* as a control variable does not jeopardize previous inference: the coefficient of conservatism on both *AMATO* and *SUMATO* is significantly negative (coefficients are -0.043 and -0.052 respectively, both significant at the 1% level). Columns 2 and 5 test hypothesis 1 by introducing the interaction term *CSCORE*SENT* into the equation. As predicted, coefficients α_3 and β_3 are positive (0.038 and 0.039) and highly significant (t-statistics 10.04 and 9.00), lending strong support to the prediction that, during periods of high-sentiment, the association between conservatism and change in disagreement is weaker.

These results hold after allowing all other control variables to impact on such association (columns 3 and 6), thereby testing the incremental effect of *SENT* on coefficient β_1, holding everything else equal. Again, the coefficients of *CSCORE*SENT* are positive and strongly significant (0.032 and 0.035, t-statistics 8.44 and 8.07). Altogether, these results provide empirical support for hypothesis 1, showing that conservatism reduces disagreement to a lesser extent if the announcement is made when investors feel optimistic and overconfident.

[INSERT TABLES 4.2 HERE]

Similarly to the first hypothesis, Hypothesis 2 asserts that, though investors perceive conservative announcements to have higher information content, this effect deteriorates during high-sentiment periods. I test this claim by means of the following model (4.7).

$$INFO_{it} = \gamma_0 + \gamma_1 CSCORE_{it} + \gamma_2 SENT_{it} + \gamma_3 CSCORE*SENT_{it} + \gamma_4 SIZE_{it} + \gamma_5 LEV_{it} + \gamma_6 MB_{it} + \gamma_7 BAD_{it} + \gamma_7 AVGTO_{it} + \gamma_7 SDRET_{it} + \varepsilon_i \ , \qquad (4.7)$$

Consistent with chapter 3, I expect coefficient γ_1 to be positive, due to the higher perceived informativeness of conservative announcements, and coefficient γ_3 to be negative, showing that the effect of conservatism is smaller when investors feel optimistic about the future. Panel B of table 4.2 presents regression results. Again, the first column shows that including *SENT* as a control variable does not affect previous findings (coefficient γ_1 remains positive and significant). As expected, column 2 shows that the coefficient of the interaction term *CSCORE*SENT* is significantly negative (-0.023, t-statistics -4.99), a result that is robust to the inclusion of all the other interaction terms into the equation (column 3).

Overall, these results strongly support both my hypotheses. Whereas, on average, investors appear to consider a conservative earnings announcement more informative and to disagree less about its interpretation, both effects seem to be weaker during high-sentiment periods. These findings are consistent with my hypothesis that overconfidence and optimism cause investors to care less about public disclosure and its quality, significantly decreasing the consequences that cross-sectional differences in accounting quality may produce on the stock market.

Figure 4.2 aims to provide a graphical representation of the association between investor sentiment and the effect of conservatism on the capital market. The impact of conservative reporting on disagreement and informativeness are mapped over time as in Figure 4.1, together with the time-series trend of the MCCI, standardized and expressed in inverted scale to ease comparison. It is immediate to notice how the overall decline in the effect of conservatism in the 80's and the 90's coincided with a general increase in investor sentiment. By contrast, the increase that characterized the last decade corresponds to a deterioration of the MCCI. It should be noted, though, that this graph only provides a rough representation of the association between conservatism effect and sentiment, since the MCCI is available on monthly basis but it has been averaged at the year level in Fig. 2. In this regard, regression analysis provides finer-grain evidence since it takes into account within year variations in the sentiment index.

[INSERT FIGURE 4.2 HERE]

4.5 Sensitivity tests and additional analysis

4.5.1 Robustness to outliers and alternative measurements

I subject the findings presented in the previous paragraph to a battery of robustness tests. First, I analyze whether estimates are sensitive to the presence of highly influential observations (outliers) that may bias OLS regression results. Although this concern is already mitigated by the fact that all continuous variables are winsorized at the 1st and 99th percentile, I run two additional tests, by performing a robust regression procedure as described by Hamilton (1991) and by replicating OLS regressions after categorizing the variable CSCORE into quintiles, so as to decrease the impact of extreme observations. Either way, results (not tabulated) remain highly significant. Coefficients α_3 and β_3 range from 0.023 to 0.035 (t-statistics between 8.15 and 11.74), lending strong support to hypothesis 1. Coefficients γ_3 is also robust to the analysis, with estimates spanning from -0.008 to -0.015, always significant at the 1% level. Therefore, I conclude that results are not influenced by the presence of outliers nor biased by deviations from normality in the distribution of residuals.

Next, I test whether results are sensitive to the choice of the investor sentiment proxy. I replicate the analysis substituting SENT with three different measures. *SENT12* is the average level of the MCCI over the twelve months preceding the announcement, aimed to capture the effect of long-persisting states of investors' mood. *ΔSENT* is the difference between the index in month *t* and in month *t-1*, which may allow capturing the effect of changes in investors' mood, rather than their levels.

Finally, *BWSENT* is the composite sentiment index proposed by Baker and Wurgler (2006), which also has been used as a sentiment proxy in the literature[41] (e.g. Ben-Rephael et al. 2012; Seybert and Yang 2012). Table 4.3 summarizes regression results. Hypothesis 1 is confirmed across all different proxies of investor sentiment. Specifically, coefficients α_3 and β_3 are positive (varying from 0.017 and 0.030) and always significant at the 1% level. Coefficients γ_3 also have always the predicted negative sign though they are significant only when using *SENT12* (t-statistics around -4.60). In summary, both hypotheses are robust to using alternative proxies for investor sentiment, though the inference relative to hypothesis 2 is significant when using *SENT* and *SENT12*.

[INSERT TABLES 4.3 HERE]

[41] This index is a function of market variables such as closed-end fund discount, NYSE share turnover, the number of IPOs, the average first-day IPO return, equity share, and dividend premium (see Baker and Wurgler's (2006) for details). Since these market variables are also likely to be correlated with share turnover and stock returns, this proxy may not be the best measure to use in the context of my model, for an endogenous relation between dependent and independent variables may arise. Therefore, I prefer to use the MCCI as the measure of the main analysis and adopt *BWSENT* only as a robustness test.

Finally, I include two additional control variables to the regression equations: *SDSENT* is the standard deviation of investor sentiment in the year previous to the announcement, in order to control for periods of emotional turbulence; *TIME* is the number of days between the announcement and the measurement of the sentiment measure. Neither variable, when interacted with *CSCORE*, has a significant coefficient, and consequently the results of the main analysis remain unaffected.

4.5.2 Cross-sectional differences in the pre-disclosure information environment.

As described in both chapter 2 and chapter 3, past research maintains that conservative firms may be characterized by a different pre-disclosure information environment (Mensah et al. 1994; LaFond and Watts 2008; Garcia Lara et al. 2011) that results in varying levels of uncertainty and information asymmetry. These cross-sectional differences are likely to affect volume and price dynamics around earnings announcement dates

(Kim and Verrecchia 1997) and to be correlated with investor sentiment. Therefore, I include the following variables into the regression equations: analyst forecasts' dispersion before the announcement (*DISP*), analyst following (*FOLLOW*), the average bid/ask spread over the year (*SPREAD*) and the change in bid/ask spread around the announcement (*ΔSPREAD*), which is likely to affect volume dynamics in the event window. Including these variables reduces sample size to 29,625 observations due to limited data availability.

Table 4.4 presents regression results. Coefficients α_3 and β_3 increase in magnitude and remain highly significant despite the considerable decrease in sample size (estimates ranging from 0.043 to 0.060, t-statistics between 6.39 and 9.42). The same pattern can be identified for γ_3 (estimates are -0.029 and -0.026, both significant at the 1% level). Overall, these findings show that the results of the main analysis are not driven by cross sectional differences in the pre-disclosure information environment, and prove to be robust to the inclusion of additional control variables into the regression equations.

[INSERT TABLES 4.4 HERE]

4.5.3 Good and bad news

The previous paragraphs showed that the effect of conservatism on investors' reaction to earnings announcement is weakened during high-sentiment periods: optimistic and overconfident investors seem to place less weight on accounting quality, thus diminishing its impact on the beliefs' updating process. In this paragraph I analyze whether these results are different depending on the type of news reported: does good/bad news increases or decreases the effect of sentiment on investors' reaction to conservative signals?

For individuals in an optimistic state, good news is a confirming signal that further boosts overconfidence (Daniel et al. 1998). Gervais and Odean (2001) shows that, consistent with attribution theory, individuals attribute events that confirm the validity of their actions to their ability: therefore a positive earnings surprise, signaling that shareholders were right in having optimistic beliefs about the prospects of the firm or of the economy in general, is likely to reinforce investors' confidence in their judgment. This is consistent with Odean (1998), who theorizes that the process of becoming wealthy (which is likely to happen around good news signals due to capital gains) reinforces overconfidence and further increments optimism about the future. Therefore, good news signals are likely to increase investor sentiment, resulting in investors paying even less attention to the signals' quality. Therefore, I predict that sentiment will decrease the impact of conservatism on investors' reaction to a larger extent if the firm is reporting good news.

Conversely, bad news signals may have the opposite effect. Past research shows that, during high-sentiment periods, bad news announcements may act as a wake-up call that dispels irrational optimism and make investors come back to reality, as they learn that their valuations have been too extreme (La Porta et al. 1997). This is consistent with Seybert and Yang (2012), who show that investors do not appear to ignore bad news when firms are overvalued: rather, they exhibit a stronger reaction to bad news in high sentiment periods. Therefore, I predict that bad news will decrease irrational optimism and overconfidence and have investors focus their attention on the signal's quality, thus strengthening the effect of accounting conservatism on their beliefs' updating process.

These predictions are consistent with research in psychology. According to affects-as-information theory (Schwarz and Clore, 1983), negative information, signaling that the environment poses a problem, may motivate more detail oriented information processing. In contrast, positive affective states signal no particular action requirement, and happy individuals may hence not be motivated to expend cognitive effort in interpreting positive information (see Schwarz (1990) for a more detailed discussion). This is consistent with research reporting that negative cues lead to more cognitive work and more complex cognitive representations than do positive ones (Peelers and Czapinski 1990) and that people scrutinize inconsistent feedback (especially negative news) more closely than consistent feedback (see Taylor 1991 for a review). Indeed, Schwarz (2010) reports that negative information elicit higher scrutiny, which causes a differential reaction depending on information quality (Ottati et al. 1997; Soldat and Sinclair 2001). All these insights developed by research in psychology suggest that the effect of investor sentiment, represented by coefficients α_3 , β_3 and γ_3 in equations (4.5), (4.6) and (4.7), should be relatively stronger for good firms announcing good news.

To test this prediction, I split the sample according to news sign, considering a firm as reporting good news if the cumulated abnormal return around the announcement is positive, and replicate the analysis for each subsample separately. I hypothesize that the coefficients of the interaction term

*CSCORE*SENT* will be significantly larger in magnitude for the good news subsample.

Table 4.5 presents regression results. For each model, coefficient estimates for the bad and good news subsamples are presented separately, and the significance of the difference of each coefficient is reported in the third column, where “p-diff” expresses the p-value of a two-tailed test. First, one can notice how coefficients α_3 , β_3 and γ_3 have all the predicted signs, significant at the 1% level, for both good and bad news. This shows that, during high-sentiment periods, both subsamples exhibit a weaker impact of conservative reporting on investors’ beliefs. Second, in all cases coefficients’ magnitude is relatively stronger in the good news subsample (differences spanning between 0.021 and 0.04). However, the difference in the coefficients is significant at the 1% level for Panel A (effect of conservatism on disagreement), but not significant in Panel B (effect of conservatism on perceived informativeness).

[INSERT TABLES 4.5 HERE]

Altogether, these results lend empirical support to the prediction that good news provides optimistic investors with a confirming signal that boosts overconfidence, whereas bad news partially acts as a wake-up call that induces investors to place relatively more weight on a signal's quality when updating their beliefs. However, it appears that this distinction is statistically negligible when analyzing the impact of conservatism on the perceived information content of earnings.

4.5.4 Market crises

Periods of particularly low sentiment tend to be associated with market crises, when liquidity dries up and uncertainty spikes. During these crises, price variability and volume dynamics around earnings announcements are likely to be affected, reflecting increases in liquidity risk and uncertainty. However, recent studies suggest that stocks characterized by high accounting transparency are less affected by these crises, as investors see them as safe harbors where they can take cover from soaring liquidity risk (Sadka 2011). Indeed, Lang and Maffet (2011) document that during market crises there is a "flight to quality" whereby investors avoid holding assets with high levels of uncertainty about fundamental value and focus their attention on stocks of firms characterized by high accounting transparency. Moreover, Ng (2011) shows that information quality has a stronger impact on capital markets in times of large decreases in market liquidity. These contributions suggest an alternative explanation for my findings: results could be driven by a cluster of announcements made during crises, when increased uncertainty affects disagreement and returns in different ways depending on the firm's accounting conservatism, due to investors' increased attention to transparency.

I address this concern in two ways. First, I replicate the analysis after excluding 4,566 crises-time announcements. Following Lang and Maffet (2011), I classify an announcement as made during a market crisis if the firm's equity market experienced a downturn in the prior month greater than 1.5

standard deviations below its historical average. Results (not tabulated) are similar to those of the main analysis: estimates for coefficients α_3 and β_3 are 0.013 and 0.010 respectively, whereas γ_3 is -0.015; all coefficients are significant at the 5% level. These results suggest that the findings of the main analysis were not driven by investors' rational flight to quality over crises periods, but can be explained by psychological biases arising during high-sentiment times, characterized by optimism and overconfidence. Second, I include into the models a dummy variable (*CRISIS*) taking value 1 if the announcement was made during a crisis (defined as above) and zero otherwise, in order to control for the crisis effect when estimating coefficients α_3 , β_3 and γ_3 as specified by the following equations.

$$AMATO_{it} = \alpha_0 + \alpha_1 CSCORE_{it} + \alpha_2 SENT_{it} + \alpha_3 CSCORE_{it}*SENT_{it} + \alpha_4 CRISIS_{it} + \alpha_5 CSCORE_{it}*CRISIS_{it} + \alpha_{k1} CTRLS_{it} + \alpha_{k2} CSCORE_{it}*CTRLS_{it} + \varepsilon_i \quad (4.8)$$

$$SUMATO = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SENT_{it} + \beta_3 CSCORE_{it}*SENT_{it} + \beta_4 CRISIS_{it} + \beta_5 CSCORE_{it}*CRISIS_{it} + \beta_{k1} CTRLS_{it} + \beta_{k2} CSCORE_{it}*CTRLS_{it} + \varepsilon_i \quad (4.9)$$

$$INFO = \gamma_0 + \gamma_1 CSCORE_{it} + \gamma_2 SENT_{it} + \gamma_3 CSCORE_{it}*SENT_{it} + \gamma_4 CRISIS_{it} + \gamma_5 CSCORE_{it}*CRISIS_{it} + \gamma_{k1} CTRLS_{it} + \gamma_{k2} CSCORE_{it}*CTRLS_{it} + \varepsilon_i \quad (4.10)$$

When *SENT* and *CSCORE*SENT* are excluded from the equations, I predict coefficients α_5 and β_5 to be negative and γ_5 to be positive, showing that market crises reinforce the effect of conservatism as investors focus their attention on accounting quality (Ng 2011; Lang and Maffet 2011). However, this effect may be driven by a contemporaneous decrease in investor sentiment: in this case coefficient estimates should be not significantly different from zero when including all variables in the models.

Table 4.6 presents regression results. As predicted, the coefficients of the interaction terms *CSCORE*CRISIS* are significantly negative in equations (4.8) and (4.9), and significantly positive in equation (4.10). This suggests that, in months following crises, investors' increased attention to accounting quality reinforces the impact of conservatism on capital markets. However, coefficient γ_5 becomes not significant when *SENT* and *CSCORE*SENT* are added to the model, suggesting that the crisis-effect is only part of the broader sentiment-effect documented in the previous paragraphs. Interestingly, coefficients α_5 and β_5 remain strongly significant even after controlling for variations in investor optimism (-0.072 and -0.102, both significant at 1% level). This suggests that the effect of market crises on conservatism has incremental explanatory power relative to the broader effect of sentiment, and that both effects combine to explain time-series variations in conservatism's impact on capital markets shown in picture Figure 4.1.

[INSERT TABLES 4.6 HERE]

4.6 Conclusive remarks

Chapter 2 and chapter 3 indicate that the impact of conservatism on capital markets exhibits significant time-series variations. In this paper I investigated whether investor sentiment is a determinant of such variations. I find that, if the earnings are announced in a high-sentiment period, conservatism has a significantly lower effect on investors' reaction. This is consistent with prior literature in psychology and behavioral finance suggesting that, when investors feel optimistic and overconfident, they care less about the reliability of the information they are provided. Further analysis shows that this sentiment-effect is stronger when the firm is reporting good news, which confirm investors' priors and further boost overconfidence, and weaker when the firm is issuing bad news, which rings an alarm bell and helps accounting quality gain back its weight in investors' valuation process. Furthermore, I find evidence that variations in the effect of conservatism on disagreement can be also explained by periods of market crises, higher liquidity risk and spikes in uncertainty may drive investors to "fly to quality" and perceive stocks of firms characterized by accounting transparency as safer assets. This crisis-effect appears to have incremental explanatory power with respect to the aforementioned sentiment-effect, and the two likely combine in determining the time-series pattern shown in the previous papers.

This study contributes to extant knowledge in various ways. Past studies find that the relevance of accounting numbers for investors' valuation has been declining (Lev and Zarowin 1999; Ryan and Zarowin 2003), and document the low impact of earnings announcements on capital markets, relative to other sources of information (Ball and Shivakhumar 2008). It has been suggested that accounting focus on conventions such as verifiability and conservatism causes investors' to rely on other, timelier sources of information, thus decreasing the relevance of reported earnings (Collins et al. 1994). This encouraged a discussion on whether standard setters should modify accounting regulation (Lev and Zarowin 1999; Holthausen and Watts 2001; Barth et al. 2001). The current study, however, suggests that investors' consideration for reported earnings also depends on factors unrelated to the accounting conventions adopted, such as their affective state. Indeed, it appears that investors usually appreciate asymmetric timeliness in reported earnings as a source of informativeness, but this effect is significantly weakened by departures from rationality, such as overconfidence or irrational optimism. It seems that, during periods of high sentiment, investors care less about financial reporting in general and its quality in particular. This finding is interesting because, if the value-relevance of accounting conventions varies with investors' mood, then there may not be much that standard setters can do to restore the information content of earnings. Nor it may be optimal to sacrifice the quality of the information provided to other parties in order to keep up with temporary variations in investors' affective state. Moreover, this study shows that accounting transparency gain back its relevance in investors' valuation process during periods of market crises, and this effect is not subsumed by the more general effect of sentiment deterioration. In this regard, the current paper corroborates and complements recent findings by Ng (2011) and Lang and Maffet (2011) showing that accounting transparency is valued by investors for its repercussions on liquidity risk, especially during market crises. Finally, this study shows that, even when investors feel optimistic and overconfident, the disclosure of bad news is effective in ringing the alarm, acting as a wake-up call for over-optimistic investors and making them focus their attention on information quality. These findings are consistent with prior insights in psychology and behavioral finance, and show how financial reporting may be an effective tool for rapidly correcting investors' expectations that were biased by temporary deviations from rationality.

CHAPTER 5

FINAL CONSIDERATIONS

5.1 Contribution, limitation and venues for future research

In this dissertation I document that investors distinguish accounting conservative firms from non-conservative ones and recognize higher quality to the information provided by the formers. As a result, earnings announcements made by conservative firms are associated with higher perceived information content and significantly reduce investors' divergence of opinion. However, deviations from rationality in investors' valuation process, which are likely to occur during periods of high investor sentiment, seem to reduce investors' consideration for conservative reporting, weakening its information effect on the capital markets.

These findings provide empirical support for a recently proposed conjecture that accounting conservatism have a beneficial effect on capital markets through improving the quality of the information conveyed to investors. Consistent with such a claim, recent findings show that conservatism is associated with lower cost of capital; however, they do not investigate the channel through which this happens, theorizing various equally viable explanations. Therefore, the information effect of conservatism has remained an untested hypothesis. This dissertation provides empirical evidence in support of it, showing that indeed improved information quality is likely to be a leading channel through which conservatism produces economic consequences on the capital markets.

An innovative feature of the three studies of this dissertation lies in the adoption of an event study methodology. Recent works (Garcia Lara et al. 2011; LaFond and Watts 2008) analyze long term associations between conservatism and its potential outcomes: by doing so, they document the existence of such associations, but are unable to clearly identify the mechanism behind it, and the information effect of conservatism on capital markets remains an untested hypothesis. Restricting the scope of the analysis to the three days around the issuance of a single piece of information allows determining whether indeed investors perceive a different quality in conservative signals.

I analyze a sample of around sixty thousands observations listed on the NYSE, AMEX and NASDAQ between the years 1980 and 2009. This sample size is the result of a combination of data availability constraints and sample selection filters. I set such filters in a prudent way, choosing to delete anomalous observations that may possibly contaminate the estimate. For instance, I exclude negative equity firms, penny stocks and firms with any zero or missing value for price, return, volume or share outstanding in either the estimation or event window. For the sake of consistency, I retain the same sample across the three papers: anyway, running the analysis on a different sample for each paper yields results that are qualitatively similar to those reported.

In the first paper, I find that conservatism is significantly negatively associated with the change in investor disagreement around earnings announcement dates. Following past literature, I proxy disagreement changes around the event date with cumulative abnormal trade volume. I borrow from recent contributions by Garifnkel and Sokibin (2006) and Garfinkel (2009) and build three different proxies that have been shown to outperform other disagreement measures used in literature. These proxies are adjusted for the effect of firm liquidity, market turnover and contemporaneous stock returns on volume, so that they capture the portion of share turnover that is due to investor disagreement. I measure conservatism with three different models proposed by Khan and Watts (2009), Basu (1997) and Ball and Shivakhumar (2005). Results are consistent across all models and measurements, showing that conservatism significantly reduces disagreement. Moreover, this association appears to be stronger when the firm discloses bad news and when mandatory disclosure is the main channel through which information is publically communicated; it is weaker for growth stocks and firms with larger numbers of analysts' following. Additional analysis suggests that high-quality voluntary disclosure provides an alternative corporate governance mechanism in reducing investor disagreement around earnings announcement dates.

In the second paper, I test whether conservative firms elicit a differential market reaction in terms of abnormal returns, in order to investigate the impact of conservatism on the perceived information content of the earnings announcement. I built a performance-adjusted measure of informativeness by subtracting to a firm's absolute abnormal returns the average value of cumulated abnormal returns of firms belonging to the same percentile of absolute EPS change. In this way, I ensure that my informativeness proxies capture the value relevance of a signal keeping constant its magnitude. Results suggest that investors perceive higher information content in public signals provided by conservative firms. Overall, announcements made by conservative firms are associated with higher abnormal returns. Such results seem to be driven by good news announcements causing a larger upward shift in stock price, whereas bad news signals do not exhibit a significant difference between conservative and non-conservative firms. These findings suggest that investors perceive conservative reporting as a corporate governance mechanism that provides higher value-relevance to good news announcements. In additional analysis, I show that investors may consider auditor quality as a substitutive mechanism, which ensures information quality in non-conservative firms.

In the last paper, I hypothesize and find that deviations from rationality in investors' beliefs' updating process may explain time variations in the effect of conservatism on capital markets. I posit that, when investors feel overconfident or irrationally optimistic about the future, they care less about information quality and place less weight on public signals. Consistent with my hypotheses, I find that periods of high investor sentiment are associated with a lower effect of conservative reporting on investor disagreement and on the perceived information content of the earnings announcement. These results are stronger for good news announcements, which reinforce investors' priors and further boost overconfidence; conversely, bad news announcements seem to act as a "wake up call" and induce investors' to re-focus their attention on disclosure quality. Additional analysis shows that these results are not driven by periods of low-sentiment due to stock market crises, and that such crises have incremental explanatory power, with respect to investor sentiment, in explaining time-series variations in the capital market consequences of conservative reporting.

In all papers, I run a battery of sensitivity checks in order to exclude concerns due to outliers or to cross-sectional differences in the pre-announcement information environment, and test results' robustness to alternative windows' intervals or model specifications.

Overall, the findings of these three papers bring strong evidence in support of the information effect of accounting conservatism on capital markets. They show that good news announcements by conservative firms cause larger upward shifts in investors' mean valuation (proxied by higher abnormal returns), but at the same time decrease the dispersion in investors' beliefs (detected by lower abnormal volume). This is consistent with conservatism improving the information quality of good news announcements. On the other hand, bad news announcements by conservative firms do not exhibit differential price patterns, but show a strong reduction in disagreement, suggesting that conservatism decreases the uncertainty associated with the disclosure of losses. These findings are all consistent with conservative reporting improving the quality of the information publically communicated to investors, which arguably explains why the market requires a lower cost of capital from conservative firms. However, findings from the third paper warn that investors' appreciation for disclosure quality may vary over time, decreasing significantly during periods of optimism and overconfidence.

My work is subject to some limitations, which provide interesting cues for future research. First, the analysis was carried out exclusively on US market data. It may be interesting to see whether the capital market consequences of conservatism are different in other legal or institutional settings, for both factors are likely to affect firms' behavior and market participants' expectations. Second, the sample excluded financial firms, although the economic impact of conservatism on the financial sector is of sure interest. It may be the case that conservative accounting produces different effects on financial firms, given their obvious different characteristics in financial reports, asset structure, ownership structure and institutional setting in which they operate. These differences, though perhaps more attenuated, are likely to play a role also across other industries: it would therefore be interesting to analyze more in depth whether and why conservatism produces diverse outcomes in different industries. Finally, the consequences of overconfidence and irrational optimism on capital markets are likely to affect other aspects of the information role of accounting, which need to be investigated more deeply. All these questions lie beyond the scope of this dissertation, and are left for future research.

CHAPTER 6

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APPENDIX to Chapter 2 – Variables Definition

$CSCORE_{it}$ = Kahn and Watts (2009) firm-year measure of accounting conservatism.

$SIZE_{it}$ = logarithm of total assets.

MB_{it} = market-to-book ratio, defined as market value of equity divided by book value.

$SURPRISE_{it}$ = absolute cumulated abnormal return over the time window [-1,+1] around the announcement, where abnormal return is calculated as the difference between actual return and the expected return according to the four-factor model of Fama and French (1992).

BAD_{it} = dummy variable which assumes the value of 1 if the cumulated abnormal return over the time window [-1,+1] around the announcement is negative, and 0 otherwise.

LEV_{it} = financial leverage, measured as total liabilities / total assets.

$AMATO_{it}$ = Abnormal market adjusted turnover cumulated over three days in the time window[-1,+1] around the announcement, calculated as the difference between the market adjusted turnover of the day and the average market adjusted turnover of the time window [-55,-5], scaled by the standard deviation of market adjusted turnover over the window[-55,-5].

SUV_{it} = Standardized unexpected volume cumulated over three days in the time window [-1,+1] around the announcement, calculated as the difference between the logarithm of the actual trade volume of the day and the expected trade volume inferred from a regression of the logarithm of trade volume over stock returns during the estimation window [-55,-5], scaled by the standard deviation of regression residuals.

$SUMATO_{it}$ = Standardized unexpected market adjusted turnover cumulated over three days in the time window[-1,+1] around the announcement, calculated as the difference between the logarithm of the actual firm turnover of the day and the expected turnover inferred from a regression of the logarithm of firm turnover over stock returns and the logarithm of market

turnover during the estimation window [-55,-5], scaled by the standard deviation of regression residuals.

$SPREAD_{it}$ *= Average bid/ask spread (the difference between ask and bid prices scaled by their mid point) of year t.*

$\Delta SPREAD_{it}$ *= Variation in bid/ask spread (the difference between ask and bid prices scaled by their mid point) around the earnings announcement, calculated as the difference between the average spread of the time window [-1,+1] and the average spread of the estimation window [-55,-5].*

$DISPERSION_{it}$ *= standard deviation of analysts' forecasts with respect to the earnings per share of year t, calculated on the day before the announcement.*

$FOLLOW_{it}$ *= number of analysts following the share of firm i in year t, calculated on the day before the announcement.*

$ACCR_{it}$ *= (ΔInventory + ΔReceivables + ΔOther current assets - ΔPayables - ΔOther current liabilities - Depreciation) / Lagged total assets.*

CFO_{it} *= net income before extraordinary items less accruals, scaled by lagged total assets.*

NI_{it} *= net income before extraordinary items divided by beginning of the year market value of equity.*

RET_{it} *= stock return cumulated over the year.*

$RANGE_{it}$ *= the average range of the forecasts issued by a firm, where range is defined as the difference between the upper and the lower bound of a forecast, scaled by beginning of year price. Range is set to 0.001 if the forecast is a point estimate.*

$FREQ_{it}$ *= the number of forecasts issued by a firm relative to the earnings of a given year.*

APPENDIX to Chapter 3 – Variables definition

$CSCORE_{it}$ = Kahn and Watts (2009) firm-year measure of accounting conservatism.

$SIZE_{it}$ = logarithm of total assets.

MB_{it} = market-to-book ratio, defined as market value of equity divided by book value.

$INFO_{it}$ = performance-matched measure of market-adjusted informativeness, calculated as the absolute cumulated abnormal returns over the time window [-1,+1] around the announcement, minus the average absolute cumulated abnormal returns of a corresponding group of firms matched according to performance percentile. Performance is calculated as the absolute value f the change in EPS from year t-1 to year t, scaled by share price at the beginning of year t. Abnormal return is calculated as the residual from a regression of stock returns on market returns over the estimation window [-55,-5].

$INFO2_{it}$ = performance- matched measure of unadjusted informativeness, calculated as the absolute cumulated raw returns over the time window [-1,+1] around the announcement, minus the average absolute cumulated raw returns of a corresponding group of firms matched according to performance percentile. Performance is calculated as the absolute value f the change in EPS from year t-1 to year t, scaled by share price at the beginning of year t.

BAD_{it} = dummy variable which assumes the value of 1 if the cumulated abnormal return over the time window [-1,+1] around the announcement is negative, and 0 otherwise. When the dependent variable is $INFO2_{it}$, BAD_{it} is compudet using raw returns.

LEV_{it} = financial leverage, measured as total liabilities / total assets.

$SDRET_{it}$ = standard deviation of daily stock returns over the year before the announcement.

$AVGTO_{it}$ = average stock turnover over the estimation window [-55,-5]

$SPREAD_{it}$ = Average bid/ask spread (the difference between ask and bid prices scaled by their mid point) of year t.

$\Delta SPREAD_{it}$ = Variation in bid/ask spread (the difference between ask and bid prices scaled by their mid point) around the earnings announcement, calculated as the difference between the average spread of the time window [-1,+1] and the average spread of the estimation window [-55,-5].

$DISP_{it}$ = standard deviation of analysts' forecasts with respect to the earnings per share of year t, calculated on the day before the announcement.

$FOLLOW_{it}$ = number of analysts following the share of firm i in year t, calculated on the day before the announcement.

$SMALLAUD_{it}$ = variable which assumes the value of 1

APPENDIX to Chapter 4 – Variables definition

$CSCORE_{it}$ = Kahn and Watts (2009) firm-year measure of accounting conservatism.

$SENT_{it}$ = The score of the Michigan Consumer Confidence Index (MCCI) for the month of the earnings announcement.

$\Delta SENT_{it}$ = The change in the MCCI from the month previous to the earnings announcement and the month of the announcement.

$SENT12_{it}$ = The average level of the MCCI over the twelve months before the announcement.

$BWSENT_{it}$ = The composite measure of investor sentiment proposed by Baker and Wurgler (2006).

$INFO_{it}$ = performance-matched measure of market-adjusted informativeness, calculated as the absolute cumulated abnormal returns over the time window [-1,+1] around the announcement, minus the average absolute cumulated abnormal returns of a corresponding group of firms matched according to performance percentile. Performance is calculated as the absolute value f the change in EPS from year t-1 to year t, scaled by share price at the beginning of year t. Abnormal return is calculated as the residual from a regression of stock returns on market returns over the estimation window [-55,-5].

$AMATO_{it}$ = Abnormal market adjusted turnover cumulated over three days in the time window[-1,+1] around the announcement, calculated as the difference between the market adjusted turnover of the day and the average market adjusted turnover of the time window [-55,-5], scaled by the standard deviation of market adjusted turnover over the window[-55,-5].

SUV_{it} = Standardized unexpected volume cumulated over three days in the time window [-1,+1] around the announcement, calculated as the difference between the logarithm of the actual trade volume of the day and the expected trade volume inferred from a regression of the logarithm of trade volume over stock returns during the estimation window [-55,-5], scaled by the standard deviation of the residuals of the regression.

$SUMATO_{it}$ = Standardized unexpected market adjusted turnover cumulated over three days in the time window[-1,+1] around the announcement, calculated as the difference between the logarithm of the actual firm turnover of the day and the expected turnover inferred from a regression of the logarithm of firm turnover over stock returns and the logarithm of market turnover during the estimation window [-55,-5], scaled by the standard deviation of the residuals of the regression.

$\Delta SPREAD_{it}$ = Variation in bid/ask spread (the difference between ask and bid prices scaled by their mid point) around the earnings announcement, calculated as the difference between the average spread of the time window [-1,+1] and the average spread of the estimation window [-55,-5].

BAD_{it} = dummy variable which assumes the value of 1 if the cumulated abnormal return over the time window [-1,+1] around the announcement is negative, and 0 otherwise. When the dependent variable is $INFO2_{it}$, BAD_{it} is computed using raw returns.

$SIZE_{it}$ = logarithm of total assets.

MB_{it} = market-to-book ratio, defined as market value of equity divided by book value.

LEV_{it} = financial leverage, measured as total liabilities / total assets.

$SDRET_{it}$ = standard deviation of daily stock returns over the year before the announcement.

$AVGTO_{it}$ = average stock turnover over the estimation window [-55,-5].

$SPREAD_{it}$ = Average bid/ask spread (the difference between ask and bid prices scaled by their mid point) of year t.

$\Delta SPREAD_{it}$ = Variation in bid/ask spread (the difference between ask and bid prices scaled by their mid point) around the earnings announcement, calculated as the difference between the average spread of the time window [-1,+1] and the average spread of the estimation window [-55,-5].

$DISP_{it}$ = standard deviation of analysts' forecasts with respect to the earnings per share of year t, calculated on the day before the announcement.

$FOLLOW_{it}$ = number of analysts following the share of firm i in year t, calculated on the day before the announcement.

$SMALLAUD_{it}$ = variable which assumes the value of 0 if the firm's financial statements are audited by a Big4 external auditor, and 1 otherwise.

CHAPTER 7

TABLES AND FIGURES

TABLES OF CHAPTER 2

Table 2.1: Sample Selection Criteria

Initial sample	**207,544**		
• Observations not denominated in US dollars	- 3,414		
• Observations of financial industries	- 49,461		
• Observations listed on markets other than NYSE, AMEX, NASDAQ	- 48,005		
• Observations with negative equity	- 2,127		
Subtotal	**104,537**		
• Observations missing values for one or more variables necessary to build the final dataset (Khan and Watts' measure of conservatism)	-48,715		
Total sample (Khan and Watts' measure)	**55,822**		
• Observations missing values for one or more variables necessary to build the final dataset (Basu's measure of conservatism)		- 42,743	
Total sample (Basu's measure)		**61,794**	
• Observations missing values for one or more variables necessary to build the final dataset (Ball and Shivakumar's measure of conservatism)			-44,089
Total sample (Ball and Shivakumar's measure)			**60,448**

Data are collected from CRSP/COMPUSTAT Merged Fundamentals Annual and CRSP Monthly Stocks. The measures for disagreement are built using data downloaded from CRSP Daily Stocks. The sample is made of North American industrial firms listed on NYSE, AMEX or NASDAQ with sufficient data to build the measures.

Table 2.2a: Descriptive Statistics §

	N obs	*mean*	*sd*	*p25*	*p50*	*p75*
AMATO	61794	2.577914	5.376962	-.677415	.9356832	3.959142
SUV	61794	1.583662	2.667788	-.2286207	1.482082	3.2953
SUMATO	61794	1.524771	2.900053	-.4601744	1.362903	3.326469
CSCORE	55822	.0850579	.0753479	.0414629	.0858323	.1314393
SIZE	61794	12.84597	1.850392	11.4924	12.72432	14.11032
MB	61794	2.81039	2.925046	1.220699	1.93683	3.227438
LEV	61794	.4684658	.2075792	.3037926	.4831501	.6255189
SURPRISE	61794	.0735839	.0727383	.0229817	.0511772	.0989135
NET INCOME	61794	.0282001	.1471633	.0041548	.0528072	.0888461
RET	61794	.1864462	.6580308	-.2008181	.0824018	.3953488
ACCR	60448	-.0308702	.0966486	-.0767766	-.0367117	.0044628
CFO	60448	.051558	.1760785	.011335	.0810401	.1397514
SPREAD	51011	.0184065	.0190003	.0040065	.0127625	.0258714
Δ SPREAD	49543	-.0001201	.0081134	-.0024349	-.00017	.0018229
DISPERSION	36245	.0603418	.121599	.01	.02	.06
FOLLOW	39793	10.37097	7.386366	5	8	14

Variables are defined in the appendix

Table 2.2b: Pearson (lower diagonal) and Spearman (upper diagonal) correlations. § *

	AMATO	SUV	SUMATO	CSCORE	SIZE	MB	LEV	SURPR	NI	RET	ACCR	CFO	SPR	ΔSPR	DISP	FOLL
AMATO	1	0.731	0.777	-0.029	0.077	0.137	-0.047	0.181	0.024	0.059	0.054	0.077	-0.266	-0.048	-0.109	0.088
SUV	0.642	1	0.954	-0.064	0.122	0.112	-0.014	0.045	0.043	0.056	0.038	0.084	-0.226	-0.096	-0.077	0.114
SUMATO	0.688	0.954	1	-0.041	0.083	0.107	-0.029	0.069	0.028	0.044	0.042	0.072	-0.215	-0.093	-0.089	0.073
CSCORE	-0.014	-0.054	-0.038	1	-0.31	-0.267	*ns*	0.103	-0.168	-0.186	-0.040	-0.212	0.143	-0.0255	*ns*	-0.397
SIZE	0.063	0.128	0.097	-0.256	1	-0.110	0.447	-0.236	0.222	0.023	-0.086	0.206	-0.569	0.071	0.154	0.676
MB	0.070	0.068	0.064	-0.180	-0.123	1	-0.107	*ns*	-0.105	0.347	0.072	0.156	-0.218	0.029	-0.309	0.146
LEV	-0.040	*ns*	-0.023	0.016	0.438	0.012	1	-0.010	0.140	*ns*	-0.101	-0.056	-0.024	0.015	0.222	0.138
SURPR	0.259	0.039	0.062	0.105	-0.243	0.038	-0.086	1	-0.135	-0.079	0.017	-0.104	0.136	-0.015	-0.016	-0.144
NI	0.044	0.061	0.050	-0.173	0.191	-0.100	0.028	-0.144	1	0.419	0.174	0.479	-0.043	*ns*	-0.066	0.150
RET	0.043	0.037	0.030	-0.138	-0.075	0.309	-0.043	-0.011	0.210	1	0.067	0.220	-0.054	*ns*	-0.151	0.060
ACCR	0.048	0.038	0.039	-0.043	-0.086	0.020	-0.084	0.018	0.198	0.086	1	-0.439	*ns*	*ns*	-0.131	-0.048
CFO	0.065	0.085	0.077	-0.166	0.265	-0.094	0.037	-0.128	0.513	0.116	-0.354	1	-0.163	0.018	-0.162	0.242
SPR	-0.175	-0.176	-0.169	0.173	-0.510	-0.119	-0.009	0.175	-0.151	-0.026	*ns*	-0.148	1	-0.111	0.050	-0.430
ΔSPR	-0.055	-0.107	-0.099	-0.022	0.036	*ns*	*ns*	-0.023	*ns*	*ns*	*ns*	*ns*	-0.063	1	*ns*	0.047
DISP	-0.069	-0.066	-0.070	0.036	0.049	-0.089	0.139	0.0341	-0.205	-0.093	-0.112	-0.131	0.089	*ns*	1	0.066
FOLL	0.056	0.101	0.064	-0.336	0.667	0.085	0.132	-0.148	0.141	*ns*	-0.065	0.207	-0.347	0.018	*ns*	1

Table 2.3: Regression results for equations 2.16, 2.17 and 2.18[§].

$$AMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \varepsilon_i$$

$$SUV_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \varepsilon_i$$

$$SUMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \varepsilon_i$$

DEPVAR:	*Exp.Sign*	*AMATO*	*AMATO*	*AMATO*	*SUV*	*SUV*	*SUV*	*SUMATO*	*SUMATO*	*SUMATO*
CSCORE	-	**-0.080*** (-15.47)**	**-0.113*** (-22.19)**	**-0.043*** (-8.65)**	**-0.114*** (-21.99)**	**-0.121*** (-23.17)**	**-0.048*** (-8.81)**	**-0.100*** (-18.68)**	**-0.109*** (-20.30)**	**-0.051*** (-9.23)**
SURPRISE	+		0.293*** (45.08)	0.313*** (47.53)		0.057*** (11.72)	0.077*** (15.59)		0.077*** (15.99)	0.092*** (18.91)
SIZE	?			0.155*** (22.25)			0.159*** (23.82)			0.124*** (17.35)
LEV	?			-0.027*** (-4.41)			-0.025*** (-4.26)			-0.019*** (-3.12)
MB	?			0.021*** (8.90)			0.022*** (9.50)			0.019*** (7.90)
Constant		0.409*** (11.46)	0.211*** (5.86)	-1.022*** (-16.72)	0.386*** (9.24)	0.347*** (8.30)	-0.922*** (-14.31)	0.449*** (10.54)	0.397*** (9.30)	-0.597*** (-9.00)

Year FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	55822	55822	55822	55822	55822	55822	55822	55822	55822
Adj.R^2	0.082	0.157	0.170	0.065	0.068	0.082	0.071	0.076	0.085

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level.

Table 2.4: Regression results for equations 2.19, 2.20 and 2.21[§].

$$AMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 BAD_{it} + \beta_7 CSCORE_{it}*BAD_{it} + \beta_8 CSCORE_{it}*SURPRISE_{it} + \beta_9 CSCORE_{it}*SIZE_{it} + \beta_{10} CSCORE_{it}*LEV_{it} + \beta_{11} CSCORE_{it}*MB_{it} + \varepsilon_i$$

$$SUV_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 BAD_{it} + \beta_7 CSCORE_{it}*BAD_{it} + \beta_8 CSCORE_{it}*SURPRISE_{it} + \beta_9 CSCORE_{it}*SIZE_{it} + \beta_{10} CSCORE_{it}*LEV_{it} + \beta_{11} CSCORE_{it}*MB_{it} + \varepsilon_i$$

$$SUMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 BAD_{it} + \beta_7 CSCORE_{it}*BAD_{it} + \beta_8 CSCORE_{it}*SURPRISE_{it} + \beta_9 CSCORE_{it}*SIZE_{it} + \beta_{10} CSCORE_{it}*LEV_{it} + \beta_{11} CSCORE_{it}*MB_{it} + \varepsilon_i$$

DEPVAR:	Exp.Sign	AMATO	AMATO	SUV	SUV	SUMATO	SUMATO
CSCORE	-	-0.017*** (-2.83)	-0.067* (-1.96)	-0.031*** (-4.59)	-0.118*** (-3.38)	-0.034*** (-5.09)	-0.096*** (-2.66)
SURPRISE	+	0.313*** (47.35)	0.355*** (34.19)	0.076*** (15.34)	0.089*** (10.80)	0.091*** (18.72)	0.115*** (13.92)
SIZE	?	0.155*** (21.99)	0.147*** (16.42)	0.158*** (23.55)	0.149*** (17.32)	0.122*** (17.14)	0.116*** (12.61)
LEV	?	-0.027*** (-4.38)	-0.037*** (-4.25)	-0.026*** (-4.28)	-0.042*** (-4.81)	-0.019*** (-3.13)	-0.039*** (-4.28)
MB	?	0.021*** (8.82)	0.015*** (5.22)	0.022*** (9.44)	0.016*** (5.90)	0.019*** (7.85)	0.016*** (5.11)
BAD	?	0.063*** (5.30)	0.070*** (5.87)	0.016 (1.31)	0.018 (1.49)	0.022* (1.77)	0.026** (2.11)

CSCORE*BAD	-	**-0.053*** (-7.06)**	**-0.058*** (-7.62)**	**-0.035*** (-4.33)**	**-0.036*** (-4.44)**	**-0.034*** (-4.14)**	**-0.037*** (-4.45)**
CSCORE*SURPRISE	?		-0.032*** (-5.55)		-0.010** (-2.01)		-0.018*** (-3.79)
CSCORE*SIZE	?		0.006 (1.38)		0.007 (1.36)		0.004 (0.86)
CSCORE*LEV	?		0.009** (2.05)		0.014*** (2.88)		0.017*** (3.31)
CSCORE*MB	?		0.005*** (3.42)		0.004*** (3.12)		0.003* (1.79)
Constant		-1.047*** (-16.80)	-0.989*** (-13.23)	-0.918*** (-14.22)	-0.802*** (-10.60)	-0.598*** (-8.98)	-0.523*** (-6.58)
Year FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N		55822	55822	55822	55822	55822	55822
Adj.R^2		0.171	0.172	0.083	0.083	0.085	0.086

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

[§] All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level.

Table 2.5: Regression results for equation 2.22 [§].

$$NI_{it} = \beta_0 + \beta_1 RET_{it} + \beta_2 NEG_{it} + \beta_3 RET_{it}*NEG_{it} + \beta_4 DIS_{it} + \beta_5 RET_{it}*DIS_{it} + \beta_6 NEG_{it}*DIS_{it} + \beta_7*RET_{it}*NEG_{it}*DIS_{it} + \lambda_{k1}CTRL_{kit} + \lambda_{k2}RET_{it}*CTRL_{kit} + \lambda_{k3}NEG_{it}*CTRL_{kit} + \lambda_{k4}*RET_{it}*NEG_{it}*CTRL_{kit} + \varepsilon_{it}$$

	Exp.Sign		*DIS = AMATO*		*DIS = SUV*		*DIS = SUMATO*	
DEPVAR:		NI	NI	NI	NI	NI	NI	NI
RET	+	0.007*** (5.43)	0.003* (1.94)	0.002 (0.23)	0.003** (2.20)	0.001 (0.05)	0.004** (2.30)	0.001 (0.10)
NEG	-	-0.008*** (-4.54)	-0.011*** (-5.67)	-0.057*** (-4.21)	-0.010*** (-5.20)	-0.060*** (-4.47)	-0.011*** (-5.60)	-0.059*** (-4.42)
RET*NEG	+	0.129*** (34.74)	0.134*** (32.97)	0.132*** (4.67)	0.132*** (31.61)	0.137*** (4.85)	0.132*** (31.99)	0.136*** (4.82)
DIS	?	NO	0.003*** (2.68)	0.006*** (5.90)	0.004*** (3.85)	0.003*** (3.11)	0.003*** (2.65)	0.003*** (2.94)
RET**DIS*	?	NO	0.007*** (6.21)	0.007*** (5.42)	0.006*** (4.98)	0.006*** (4.91)	0.007*** (5.19)	0.006*** (4.87)
NEG**DIS*	?	NO	0.005*** (3.52)	0.003* (1.79)	0.004*** (2.69)	0.002 (1.58)	0.005*** (3.38)	0.003** (2.13)
RET*NEG*DIS	-	NO	**-0.016*** (-5.36)**	**-0.015*** (-5.05)**	**-0.013*** (-4.06)**	**-0.012*** (-4.00)**	**-0.014*** (-4.47)**	**-0.013*** (-4.12)**
CONTROLS		NO	NO	YES (omitted)	NO	YES (omitted)	NO	YES (omitted)
RET**CONTROLS*		NO	NO	YES	NO	YES	NO	YES

			(omitted)		(omitted)		(omitted)
NEG**CONTROLS*	NO	NO	YES (omitted)	NO	YES (omitted)	NO	YES (omitted)
RET*NEG**CONTROLS*	NO	NO	YES (omitted)	NO	YES (omitted)	NO	YES (omitted)
Constant	0.174***	0.175***	0.085***	0.175***	0.082***	0.174***	0.080***
	(33.00)	(33.12)	(8.06)	(33.11)	(7.82)	(32.97)	(7.60)
Year FE	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES
N	61794	61794	61794	61794	61794	61794	61794
Adj.R^2	0.187	0.193	0.253	0.193	0.251	0.193	0.251

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level.

Table 2.6: Regression results for equation 2.23[§].

$$ACCR_{it} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NEG_{it} + \beta_3 {*}CFO_{it}{*}NEG_{it} + \beta_4\, DIS_{it} + \beta_5 CFO_{it}{*}DIS_{it} + \beta_6 NEG_{it}{*}DIS_{it} + \beta_7 CFO_{it}{*}NEG_{it}{*}DIS_{it} + \lambda_{k1} CTRL_{kit} + \lambda_{k2} CFO_{it}{*}CTRL_{kit} + \lambda_{k3} NEG_{it}{*}CTRL_{kit} + \lambda_{k4} CFO_{it}{*}NEG_{it}{*}CTRL_{kit} + \varepsilon_{it}$$

	Exp.Sign		*DIS = AMATO*		*DIS = SUV*		*DIS = SUMATO*	
DEPVAR:		ACCR	ACCR	ACCR	ACCR	ACCR	ACCR	ACCR
CFO	-	-0.070*** (-48.17)	-0.072*** (-46.64)	-0.067*** (-8.02)	-0.074*** (-47.16)	-0.067*** (-8.01)	-0.073*** (-47.43)	-0.067*** (-7.97)
NEG	?	0.028*** (15.50)	0.025*** (12.91)	0.023* (1.73)	0.025*** (12.56)	0.016 (1.21)	0.026*** (13.02)	0.015 (1.17)
CFO*NEG	+	0.069*** (33.30)	0.072*** (33.01)	0.103*** (7.41)	0.074*** (33.87)	0.100*** (7.23)	0.073*** (34.06)	0.100*** (7.20)
DIS	?	NO	0.004*** (5.97)	0.005*** (8.27)	0.003*** (3.88)	0.004*** (5.67)	0.003*** (4.13)	0.004*** (5.92)
CFO**DIS*	?	NO	0.004*** (3.66)	0.001 (0.92)	0.005*** (4.81)	0.002** (1.97)	0.005*** (4.50)	0.002* (1.69)
NEG**DIS*	?	NO	0.006*** (3.48)	0.008*** (5.19)	0.006*** (3.85)	0.006*** (4.07)	0.005*** (3.23)	0.005*** (3.63)
CFO*NEG*DIS	-	NO	**-0.008*** (-4.03)**	**-0.003* (-1.83)**	**-0.009*** (-5.49)**	**-0.004*** (-2.86)**	**-0.009*** (-5.57)**	**-0.005*** (-2.90)**
CONTROLS		NO	NO	YES (omitted)	NO	YES (omitted)	NO	YES (omitted)

CFO**CONTROLS*	NO	NO	YES (omitted)	NO	YES (omitted)	NO	YES (omitted)
NEG**CONTROLS*	NO	NO	YES (omitted)	NO	YES (omitted)	NO	YES (omitted)
CFO*NEG**CONTROLS*	NO	NO	YES (omitted)	NO	YES (omitted)	NO	YES (omitted)
Constant	0.033*** (11.13)	0.033*** (11.30)	0.042*** (6.30)	0.035*** (11.80)	0.040** (6.10)	0.034*** (11.49)	0.039** (5.84)
Year FE	YES	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES	YES
N	60448	60448	60448	60448	60448	60448	60448
Adj.R^2	0.233	0.241	0.332	0.241	0.330	0.241	0.330

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics are reported in parentheses. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level.

Table 2.7: regression results for equations 2.19, 2.20 and 2.21§ after including SPREAD and ΔSPREAD as control variables.

DEPVAR:	*Exp.Sign*	*AMATO*	*AMATO*	*AMATO*	*SUV*	*SUV*	*SUV*	*SUMATO*	*SUMATO*	*SUMATO*
CSCORE	-	**-0.064*** (-8.83)**	-0.029*** (-3.31)	-0.288*** (-4.89)	**-0.065*** (-8.81)**	-0.050*** (-5.60)	-0.333*** (-5.73)	**-0.078*** (-10.40)**	-0.060*** (-6.63)	-0.325*** (-5.32)
SURPRISE	+	0.344*** (47.20)	0.344*** (47.15)	0.423*** (32.86)	0.080*** (14.90)	0.079*** (14.77)	0.102*** (10.23)	0.095*** (17.79)	0.095*** (17.74)	0.131*** (12.88)
SIZE	?	0.139*** (14.19)	0.138*** (14.04)	0.087*** (6.28)	0.175*** (19.37)	0.174*** (19.20)	0.130*** (9.70)	0.146*** (15.14)	0.145*** (15.02)	0.102*** (6.99)
LEV	?	-0.018** (-2.52)	-0.018** (-2.49)	-0.018* (-1.66)	-0.029*** (-4.21)	-0.029*** (-4.22)	-0.046*** (-4.36)	-0.025*** (-3.53)	-0.025*** (-3.53)	-0.045*** (-4.03)
MB	?	0.017*** (6.72)	0.017*** (6.65)	0.005 (1.56)	0.023*** (9.07)	0.023*** (9.03)	0.013*** (3.88)	0.020*** (7.61)	0.020*** (7.57)	0.010*** (2.91)
SPREAD	?	-0.068*** (-9.08)	-0.068*** (-9.11)	-0.162*** (-11.85)	-0.019** (-2.41)	-0.019** (-2.41)	-0.080*** (-5.63)	-0.010 (-1.26)	-0.010 (-1.27)	-0.086*** (-6.07)
ΔSPREAD	-	-0.067*** (-14.81)	-0.067*** (-14.79)	-0.076*** (-7.96)	-0.122*** (-25.85)	-0.121*** (-25.72)	-0.128*** (-13.14)	-0.114*** (-24.99)	-0.113*** (-24.89)	-0.124*** (-13.12)
BAD	?		0.100*** (6.36)	0.113*** (7.13)		0.022 (1.42)	0.026* (1.67)		0.042*** (2.64)	0.049*** (3.05)
CSCORE*BAD	-		**-0.071*** (-6.92)**	**-0.079*** (-7.63)**		**-0.031*** (-2.93)**	**-0.032*** (-3.04)**		**-0.037*** (-3.47)**	**-0.041*** (-3.79)**
CSCORE*SURPRISE	?			-0.057*** (-7.81)			-0.017*** (-2.85)			-0.027*** (-4.54)
CSCORE*SIZE	?			0.031*** (3.91)			0.027*** (3.51)			0.025*** (2.99)

CSCORE*LEV	?			0.004 (0.63)			0.016*** (2.58)			0.018*** (2.89)
CSCORE*MB	?			0.009*** (5.03)			0.007*** (4.35)			0.007*** (3.70)
CSCORE*SPREAD	?			0.062*** (8.58)			0.041*** (5.31)			0.050*** (6.52)
CSCORE*ΔSPREAD	?			0.004 (0.90)			0.004 (0.80)			0.007 (1.30)
Constant		-0.090 (-0.78)	-0.138 (-1.19)	0.333** (2.34)	0.015 (0.13)	0.012 (0.11)	0.492*** (3.53)	0.254** (2.28)	0.237** (2.12)	0.714*** (4.92)
Year FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N		44544	44544	44544	44544	44544	44544	44544	44544	44544
Adj.R^2		0.183	0.184	0.188	0.093	0.093	0.094	0.095	0.095	0.097

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level.

Table 2.8a: regression results for equations 2.19, 2.20 and 2.21[§] after including DISPERSION and FOLLOW as control variables.

		Mod.1	*Mod.2*	*Mod.3*	*Mod.4*	*Mod.5*	*Mod.6*
DEPVAR:	*Exp.Sign*	*AMATO*	*AMATO*	*AMATO*	*AMATO*	*AMATO*	*AMATO*
CSCORE	-	**-0.036*** (-5.53)**	**-0.032*** (-4.89)**	-0.024*** (-3.18)	-0.019** (-2.56)	-0.174*** (-3.65)	-0.136** (-2.38)
SURPRISE	+	0.372*** (40.70)	0.373*** (40.73)	0.375*** (40.98)	0.376*** (41.01)	0.395*** (29.67)	0.396*** (29.87)
SIZE	?	0.147*** (14.98)	0.105*** (7.74)	0.149*** (15.11)	0.108*** (7.89)	0.130*** (10.98)	0.089*** (5.48)
LEV	?	-0.038*** (-4.49)	-0.021** (-2.35)	-0.037*** (-4.39)	-0.020** (-2.27)	-0.034*** (-3.13)	-0.018 (-1.58)
MB	?	0.023*** (7.52)	0.018*** (5.87)	0.023*** (7.50)	0.019*** (5.87)	0.017*** (4.90)	0.012*** (3.32)
DISP	?		-0.035*** (-5.65)		-0.036*** (-5.75)		-0.043*** (-5.59)
FOLLOW	?		0.006*** (4.82)		0.006*** (4.76)		0.005*** (3.59)
BAD	?			0.105*** (7.39)	0.106*** (7.46)	0.109*** (7.56)	0.110*** (7.62)
CSCORE*BAD	-			**-0.027*** (-2.70)**	**-0.028*** (-2.79)**	**-0.029*** (-2.90)**	**-0.030*** (-3.01)**
CSCORE*SURPRISE	?					-0.017** (-1.98)	-0.018** (-2.09)

CSCORE*SIZE	?					0.020***	0.011
						(3.06)	(1.15)
CSCORE*LEV	?					-0.002	0.002
						(-0.24)	(0.30)
CSCORE*MB	?					0.006***	0.006***
						(3.35)	(3.05)
CSCORE*DISP	?						0.006*
							(1.65)
CSCORE*FOLLOW	?						0.002**
							(2.27)
Constant		-1.064***	-0.845***	-1.131***	-0.916***	-0.979***	-0.747***
		(-13.38)	(-9.04)	(-14.11)	(-9.72)	(-10.45)	(-6.81)
Year FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N		33719	33719	33719	33719	33719	33719
Adj.R^2		0.213	0.214	0.214	0.216	0.215	0.217

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level.

Table 2.8b: regression results for equations 2.19, 2.20 and 2.21[§] after including DISPERSION and FOLLOW as control variables.

		Mod.1	*Mod.2*	*Mod.3*	*Mod.4*	*Mod.5*	*Mod.6*
DEPVAR:	*Exp.Sign*	*SUV*	*SUV*	*SUV*	*SUV*	*SUV*	*SUV*
CSCORE	-	**-0.032*** (-4.42)**	**-0.029*** (-3.97)**	-0.021** (-2.36)	-0.017* (-1.95)	-0.095* (-1.86)	-0.036 (-0.60)
SURPRISE	+	0.072*** (10.40)	0.073*** (10.44)	0.073*** (10.49)	0.073*** (10.54)	0.096*** (9.05)	0.097*** (9.19)
SIZE	?	0.157*** (16.47)	0.121*** (9.50)	0.158*** (16.48)	0.121*** (9.53)	0.149*** (13.16)	0.118*** (7.70)
LEV	?	-0.044*** (-5.55)	-0.030*** (-3.57)	-0.044*** (-5.52)	-0.030*** (-3.54)	-0.048*** (-4.52)	-0.036*** (-3.20)
MB	?	0.025*** (8.84)	0.022*** (7.29)	0.025*** (8.84)	0.021*** (7.29)	0.020*** (6.14)	0.016*** (4.68)
DISP	?		-0.026*** (-3.79)		-0.026*** (-3.82)		-0.034*** (-4.01)
FOLLOW	?		0.005*** (4.33)		0.005*** (4.33)		0.004*** (2.69)
BAD	?			0.043*** (3.02)	0.044*** (3.07)	0.047*** (3.25)	0.047*** (3.30)
CSCORE*BAD	-			**-0.025** (-2.35)**	**-0.026** (-2.43)**	**-0.028*** (-2.59)**	**-0.029*** (-2.68)**
CSCORE*SURPRISE	?					-0.021*** (-2.85)	-0.022*** (-2.96)

CSCORE*SIZE	?					0.008	-0.006
						(1.18)	(-0.56)
CSCORE*LEV	?					0.005	0.010
						(0.76)	(1.38)
CSCORE*MB	?					0.006***	0.005***
						(3.10)	(2.67)
CSCORE*DISP	?						0.007
							(1.51)
CSCORE*FOLLOW	?						0.003***
							(2.76)
Constant		-1.041***	-0.849***	-1.064***	-0.872***	-0.976***	-0.788***
		(-12.29)	(-8.91)	(-12.58)	(-9.16)	(-10.13)	(-7.28)
Year FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N		33719	33719	33719	33719	33719	33719
Adj.R^2		0.108	0.109	0.108	0.109	0.109	0.110

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level.

Table 2.8c: regression results for equations 2.19, 2.20 and 2.21[§] after including DISPERSION and FOLLOW as control variables.

		Mod.1	*Mod.2*	*Mod.3*	*Mod.4*	*Mod.5*	*Mod.6*
DEPVAR:	*Exp.Sign*	*SUMATO*	*SUMATO*	*SUMATO*	*SUMATO*	*SUMATO*	*SUMATO*
CSCORE	-	**-0.039*** (-5.26)**	**-0.036*** (-4.84)**	-0.029*** (-3.29)	-0.026*** (-2.91)	-0.017 (-0.32)	0.097 (1.52)
SURPRISE	+	0.098*** (14.07)	0.099*** (14.16)	0.099*** (14.22)	0.100*** (14.31)	0.133*** (12.14)	0.134*** (12.32)
SIZE	?	0.118*** (11.52)	0.098*** (7.23)	0.119*** (11.55)	0.098*** (7.27)	0.120*** (9.80)	0.114*** (6.80)
LEV	?	-0.036*** (-4.37)	-0.027*** (-3.08)	-0.036*** (-4.33)	-0.027*** (-3.05)	-0.045*** (-3.99)	-0.041*** (-3.42)
MB	?	0.023*** (7.53)	0.021*** (6.56)	0.023*** (7.53)	0.021*** (6.56)	0.020*** (5.51)	0.017*** (4.59)
DISP	?		-0.027*** (-3.86)		-0.027*** (-3.90)		-0.038*** (-4.40)
FOLLOW	?		0.003** (2.40)		0.003** (2.39)		0.001 (0.36)
BAD	?			0.049*** (3.31)	0.050*** (3.36)	0.054*** (3.64)	0.054*** (3.67)
CSCORE*BAD	-			**-0.022** (-2.02)**	**-0.023** (-2.08)**	**-0.026** (-2.40)**	**-0.027** (-2.45)**
CSCORE*SURPRISE	?					-0.031*** (-4.11)	-0.031*** (-4.20)

CSCORE*SIZE	?					-0.003	-0.027***
						(-0.34)	(-2.64)
CSCORE*LEV	?					0.010	0.018**
						(1.36)	(2.34)
CSCORE*MB	?					0.003*	0.002
						(1.70)	(1.11)
CSCORE*DISP	?						0.010**
							(2.06)
CSCORE*FOLLOW	?						0.004***
							(3.99)
Constant		-0.647***	-0.540***	-0.675***	-0.569***	-0.677***	-0.614***
		(-7.30)	(-5.42)	(-7.61)	(-5.70)	(-6.61)	(-5.23)
Year FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N		33719	33719	33719	33719	33719	33719
Adj.R^2		0.118	0.118	0.118	0.119	0.119	0.120

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level.

Table 2.9a: regression results for equation 2.24: the impact of voluntary disclosure on the effect of conservatism on disagreement.

	Exp.Sign	DEPVAR = AMATO			DEPVAR = SUV			DEPVAR = SUMATO		
		High RANGE	Low RANGE	p-diff	High RANGE	Low RANGE	p-diff	High RANGE	Low RANGE	p-diff
CSCORE	-	-0.141***	-0.079***	0.054	-0.101***	-0.058**	0.129	-0.147***	-0.087***	0.072
		(-5.59)	(-2.68)		(-3.98)	(-1.99)		(-5.43)	(-2.74)	
SURPRISE	+	0.500***	0.540***	0.139	0.081***	0.061***	0.239	0.129***	0.102***	0.169
		(19.57)	(20.38)		(4.07)	(3.27)		(6.51)	(5.23)	
SIZE	?	0.235***	0.147***	0.008	0.236***	0.145***	0.005	0.190***	0.134***	0.070
		(8.49)	(5.04)		(9.35)	(5.32)		(6.71)	(4.53)	
LEV	?	-0.079***	-0.059**	0.262	-0.113***	-0.073***	0.093	-0.094***	-0.071***	0.235
		(-3.13)	(-2.35)		(-4.92)	(-3.30)		(-3.92)	(-2.94)	
MB	?	0.040***	0.026***	0.102	0.021**	0.031***	0.212	0.023**	0.028***	0.340
		(4.24)	(3.32)		(2.35)	(4.39)		(2.42)	(3.61)	
FREQ	?	-0.010	-0.011	0.468	0.004	-0.006	0.175	-0.002	-0.012	0.195
		(-1.35)	(-1.37)		(0.54)	(-0.74)		(-0.27)	(-1.42)	
Constant	?	-1.904***	-1.354***		-2.045***	-0.656**		-1.533***	-0.808***	
		(-9.74)	(-6.49)		(-12.21)	(-2.56)		(-8.09)	(-2.81)	
Industry FE		*YES*	*YES*		*YES*	*YES*		*YES*	*YES*	
Year FE		*YES*	*YES*		*YES*	*YES*		*YES*	*YES*	
N		4541	4541		4541	4541		4541	4541	
Adj.R^2		0.218	0.245		0.087	0.094		0.091	0.114	

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

[§] All variables are defined in the appendix. All models include dummy variables for year (1992 - 2009) and industry fixed effects. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. The sample is split according to voluntary disclosure quality: firms in high (low) RANGE subsample are those whose average forecast range is above (below) the sample median, where RANGE is defined as the difference between upper and lower bound of the estimate scaled by share price. P-diff reports the significance of a one-tailed test on the difference between the coefficients' estimates across subsamples.

Table 2.9b: regression results for equation 2.25: the impact of voluntary disclosure on the effect of conservatism on disagreement.

	Exp.Sign	DEPVAR = AMATO			DEPVAR = SUV			DEPVAR = SUMATO		
		High RANGE	Low RANGE	p-diff	High RANGE	Low RANGE	p-diff	High RANGE	Low RANGE	p-diff
CSCORE	?	-0.666*** (-3.54)	-0.595*** (-3.20)	0.390	-0.653*** (-3.45)	-0.705*** (-3.81)	0.4205	-0.619*** (-3.11)	-0.386* (-1.88)	0.197
OTHER CTRLS		*YES* *(omitted)*	*YES* *(omitted)*		*YES* *(omitted)*	*YES* *(omitted)*		*YES* *(omitted)*	*YES* *(omitted)*	
FREQ	?	0.003 (0.23)	-0.017* (-1.78)	0.091	0.001 (0.11)	-0.010 (-1.15)	0.204	0.004 (0.28)	-0.020** (-1.98)	0.064
BAD	?	0.189*** (3.25)	0.205*** (4.33)	0.413	0.156*** (2.80)	0.070 (1.54)	0.114	0.187*** (3.14)	0.117** (2.34)	0.187
CSCORE*BAD	-	-0.081** (-2.11)	0.005 (0.13)	0.049	-0.097*** (-2.59)	0.031 (0.90)	0.006	-0.107*** (-2.70)	0.014 (0.36)	0.013
CSCORE*SURPRISE	-	-0.087*** (-2.94)	-0.105*** (-3.34)	0.338	-0.011 (-0.50)	-0.043* (-1.81)	0.1615	-0.033 (-1.47)	-0.080*** (-3.06)	0.082
CSCORE*SIZE	+	0.086*** (3.42)	0.060** (2.56)	0.221	0.072*** (2.75)	0.059** (2.50)	0.355	0.065** (2.35)	0.017 (0.64)	0.096
CSCORE*LEV	?	-0.007 (-0.30)	0.011 (0.52)	0.276	-0.010 (-0.41)	0.045** (2.25)	0.037	0.003 (0.11)	0.051** (2.29)	0.069
CSCORE*MB	+	0.013** (2.06)	0.013** (2.44)	0.464	0.023*** (2.82)	0.009* (1.94)	0.085	0.020** (2.44)	0.009 (1.62)	0.129
CSCORE*FREQ	?	-0.010 (-1.31)	0.009 (1.29)	0.033	0.003 (0.31)	0.007 (1.04)	0.326	-0.005 (-0.54)	0.012 (1.60)	0.067

Constant	-0.678*	-0.954***	-0.330	0.039	0.249	-0.524
	(-1.95)	(-3.03)	(-0.98)	(0.11)	(0.70)	(-1.32)
Ind. And Year FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Observations	4541	4541	4541	4541	4541	4541
Adjusted R-squared	0.226	0.260	0.092	0.102	0.096	0.123

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1992 - 2009) and industry fixed effects. T-statistics are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. The sample is split according to voluntary disclosure quality: firms in high (low) RANGE subsample are those whose average forecast range is above (below) the sample median, where RANGE is defined as the difference between upper and lower bound of the estimate scaled by share price. P-diff reports the significance of a one-tailed test on the difference between the coefficients' estimates across subsamples.

TABLES OF CHAPTER 3

Table 3.1a: Descriptive Statistics §

	N obs	*mean*	*sd*	*p25*	*p50*	*p75*
CSCORE	55803	0.08507	0.07533	0.04147	0.08583	0.13144
INFO1	55803	-0.00018	0.05699	-0.03896	-0.01827	0.01887
INFO2	55803	-0.00019	.0578918	-.039469	-.018363	.019133
BAD	55803	0.50966	0.49991	0	1	1
SIZE	55803	12.87587	1.76869	11.57509	12.76591	14.10469
MB	55803	2.57221	2.24167	1.23693	1.91088	3.08904
LEV	55803	0.46839	0.20146	0.30798	0.48286	0.62284
|ΔEPS|	55803	0.06029	0.10069	0.00997	0.02411	0.06282
SDRET	55803	0.03128	0.01603	0.01957	0.02759	0.03917
AVGTO	55803	0.00589	0.00630	0.00192	0.00368	0.00740
SPREAD	45922	0.01784	0.01823	0.00380	0.01255	0.02527
DISP	37877	0.05889	0.11867	0.01	0.02	0.06
FOLLOW	48398	8.05789	7.13189	3	6	11
SMALLAUD	55534	0.09205	0.28910	0	0	0
ΔSPREAD	44559	-.00007	.00789	-.00236	-.00016	.00182

Table 3.1b: Pearson (lower diagonal) and Spearman (upper diagonal) correlations. § *

	CSCORE	INFO1	INFO2	BAD	SIZE	MB	LEV	|ΔEPS|	SDRET	AVGTO	SPREAD	DISP	FOLLOW	SMALLAUD	ΔSPREAD
CSCORE	1	0.079	0.065	ns	-0.307	-0.267	ns	0.210	0.274	-0.029	0.143	ns	-0.397	0.056	-0.025
INFO1	0.101	1	0.855	-0.0186	-0.157	0.107	-0.149	-0.060	0.315	0.224	-0.024	-0.104	-0.080	0.021	0.017
INFO2	0.086	0.928	1	-0.074	-0.129	0.111	-0.139	-0.067	0.297	0.227	-0.052	-0.102	-0.057	0.023	0.029
BAD	ns	-0.027	-0.070	1	-0.0266	ns	-0.024	ns	0.031	0.018	ns	0.035	-0.015	ns	0.021
SIZE	-0.256	-0.168	-0.144	-0.0384	1	-0.097	0.459	-0.139	-0.533	0.088	-0.563	0.164	0.666	-0.085	0.072
MB	-0.181	0.086	0.086	0.0124	-0.113	1	-0.111	-0.233	0.043	0.271	-0.220	-0.306	0.143	0.018	0.025
LEV	0.016	-0.129	-0.123	-0.0271	0.455	-0.028	1	0.104	-0.278	-0.144	-0.025	0.223	0.141	-0.056	0.017
|ΔEPS|	0.188	ns	ns	0.0236	-0.101	-0.113	0.115	1	0.290	0.0542	0.197	0.217	-0.20	-0.019	-0.041
SDRET	0.259	0.341	0.324	0.0455	-0.485	0.096	-0.243	0.284	1	0.342	0.336	-0.056	-0.354	0.037	-0.087
AVGTO	-0.019	0.219	0.221	0.0132	0.0608	0.235	-0.146	0.033	0.311	1	-0.432	-0.006	0.184	ns	ns
SPREAD	0.174	0.0221	ns	0.0191	-0.514	-0.143	-0.0179	0.194	0.369	-0.286	1	0.046	-0.414	-0.018	-0.107
DISP	0.036	-0.034	-0.034	0.0380	0.060	-0.113	0.135	0.223	0.052	0.0178	0.0742	1	0.080	-0.037	ns
FOLLOW	-0.336	-0.105	-0.087	-0.0211	0.648	0.078	0.136	-0.132	-0.300	0.119	-0.342	0.022	1	-0.046	0.045
SMALLAUD	0.121	0.059	0.054	0.0130	-0.235	ns	-0.114	ns	0.106	-0.026	0.024	-0.021	-0.140	1	ns
ΔSPREAD	-0.022	ns	ns	0.025	0.036	ns	0.010	-0.025	-0.064	ns	-0.058	ns	0.018	ns	1

ns = value is insignificant at 5% level.

§ *Variables are defined in the appendix*

Table 3.2: Regression results for equation 3.4§.

$$INFO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 AVGTO_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 SDRET_{it} + \beta_7 BAD_{it} + \varepsilon_i$$

	Exp. Signs			PANEL A - DEPVAR: INFO1				PANEL B - DEPVAR: INFO2			
	Pool	BN	GN	POOLED	BAD NEWS	GOOD NEWS	p-diff	POOLED	BAD NEWS	GOOD NEWS	p-diff
CSCORE	**?**	**-**	**+**	**0.015*****	**-0.002**	**0.034*****	**0.000**	**0.008**	**-0.008**	**0.021****	**0.006**
				(2.85)	**(-0.32)**	**(4.13)**		**(1.39)**	**(-1.14)**	**(2.57)**	
AVGTO	**?**	**?**	**?**	0.104***	0.117***	0.088***	0.022	0.103***	0.110***	0.096***	0.246
				(16.08)	(13.60)	(9.43)		(16.07)	(12.67)	(10.44)	
SIZE	**?**	**?**	**?**	-0.069***	-0.072***	-0.064***	0.526	-0.050***	-0.059***	-0.043***	0.211
				(-10.07)	(-8.17)	(-6.32)		(-7.39)	(-6.52)	(-4.37)	
LEV	**?**	**?**	**?**	-0.010*	-0.023***	0.005	0.008	-0.015***	-0.025***	-0.005	0.064
				(-1.69)	(-3.15)	(0.60)		(-2.67)	(-3.33)	(-0.67)	
MB	**?**	**?**	**?**	0.017***	0.031***	0.002	0.005	0.023***	0.036***	0.011	0.015
				(3.18)	(4.37)	(0.25)		(4.23)	(5.02)	(1.40)	
SDRET	**?**	**?**	**?**	0.187***	0.172***	0.206***	0.110	0.178***	0.163***	0.191***	0.176
				(18.47)	(14.23)	(12.54)		(17.31)	(12.70)	(11.84)	
BAD	**?**			-0.079***				-0.051***			
				(-10.02)				(-6.45)			

Constant	-0.137	-0.046	-0.341***	-0.257***	-0.174	-0.369***
	(-1.55)	(-0.39)	(-2.72)	(-2.97)	(-1.40)	(-3.11)
Year FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	55803	28441	27362	55803	26306	29497
Adj.R^2	0.150	0.164	0.140	0.141	0.150	0.136

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Panel A (Panel B) reports coefficient estimates of the determinants of market-adjusted (unadjusted) informativeness of earnings announcements. Each panel presents regression results for both the entire sample (good and bad news pooled together) and the two separate subsamples. “P-Diff” expresses the p-value of a two-tailed test analyzing the significance of the difference between the coefficient estimates of each subsample.

Table 3.3: Regression results for equations 3.4 after controlling for cross-sectional differences in the pre-announcement information environment[§].

$$INFO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 AVGTO_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 SDRET_{it} + \beta_7 SPREAD_{it} + \beta_8 BAD_{it} + \varepsilon_i$$

	Exp. Signs			PANEL A - DEPVAR: INFO1				PANEL B - DEPVAR: INFO2			
	Pool	BN	GN	POOLED	BAD NEWS	GOOD NEWS	p-diff	POOLED	BAD NEWS	GOOD NEWS	p-diff
CSCORE	**?**	-	+	**0.019****	**-0.012**	**0.052*****	**0.000**	**0.009**	**-0.023****	**0.036*****	**0.000**
				(2.49)	**(-1.17)**	**(4.45)**		**(1.17)**	**(-2.07)**	**(3.15)**	
AVGTO	**?**	**?**	**?**	0.100***	0.112***	0.085***	0.039	0.096***	0.107***	0.085***	0.089
				(14.82)	(12.25)	(8.94)		(14.33)	(11.55)	(8.95)	
SIZE	**?**	**?**	**?**	-0.075***	-0.095***	-0.051***	0.007	-0.063***	-0.079***	-0.048***	0.065
				(-8.63)	(-8.32)	(-4.11)		(-7.28)	(-6.84)	(-3.98)	
LEV	**?**	**?**	**?**	-0.005	-0.013	0.003	0.203	-0.007	-0.017*	0.002	0.126
				(-0.81)	(-1.54)	(0.27)		(-1.08)	(-1.91)	(0.26)	
MB	**?**	**?**	**?**	0.016***	0.027***	0.005	0.061	0.019***	0.030***	0.008	0.065
				(2.67)	(3.36)	(0.57)		(3.14)	(3.77)	(1.01)	
SDRET	**?**	**?**	**?**	0.195***	0.178***	0.218***	0.043	0.193***	0.167***	0.218***	0.175
				(18.24)	(12.64)	(14.73)		(17.67)	(11.13)	(13.68)	
SPREAD	**?**	**?**	**?**	-0.022**	-0.030***	-0.012	0.305	-0.038***	-0.025**	-0.051***	0.123
				(-2.53)	(-2.73)	(-0.94)		(-4.33)	(-2.12)	(-4.02)	

BAD	**?**	-0.081***			-0.056***		
		(-8.81)			(-6.07)		
Constant		0.046	-0.260*	-0.346**	-0.020	-0.404**	-0.308*
		(0.36)	(-1.71)	(-1.97)	(-0.15)	(-2.41)	(-1.77)
Year FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N		45922	23318	22604	45922	21827	24095
Adj.R^2		0.129	0.142	0.120	0.123	0.130	0.120

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Panel A (Panel B) reports coefficient estimates of the determinants of market-adjusted (unadjusted) informativeness of earnings announcements. Each panel presents regression results for both the entire sample (good and bad news pooled together) and the two separate subsamples. "P-Diff" expresses the p-value of a two-tailed test analyzing the significance of the difference between the coefficient estimates of each subsample.

Table 3.4: Regression results for equations 3.4 after controlling for cross-sectional differences in the pre-announcement information environment§.

$INFO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 AVGTO_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 SDRET_{it} + \beta_7 SPREAD_{it} + \beta_8 DISP_{it} + \beta_9 FOLLOW_{it} + \beta_{10} BAD_{it} + \varepsilon_i$

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	Exp. Signs			PANEL A - DEPVAR: INFO1				PANEL B - DEPVAR: INFO2			
	Pool	BN	GN	POOLED	BAD NEWS	GOOD NEWS	p-diff	POOLED	BAD NEWS	GOOD NEWS	p-diff
CSCORE	?	-	+	**0.034*** **	**-0.004**	**0.071*** **	**0.000**	**0.018* **	**-0.022**	**0.052*** **	**0.000**
				(3.49)	**(-0.29)**	**(5.06)**		**(1.84)**	**(-1.54)**	**(3.71)**	
AVGTO	**?**	**?**	**?**	0.081***	0.087***	0.075***	0.434	0.083***	0.098***	0.067***	0.043
				(10.22)	(7.78)	(6.84)		(10.20)	(8.39)	(6.05)	
SIZE	**?**	**?**	**?**	-0.098***	-0.116***	-0.084***	0.206	-0.095***	-0.107***	-0.087***	0.444
				(-7.46)	(-6.27)	(-4.67)		(-7.13)	(-5.59)	(-4.99)	
LEV	**?**	**?**	**?**	-0.005	-0.012	0.004	0.317	-0.002	-0.012	0.008	0.241
				(-0.60)	(-1.05)	(0.33)		(-0.28)	(-0.97)	(0.67)	
MB	**?**	**?**	**?**	0.021***	0.028***	0.013	0.295	0.019***	0.025**	0.014	0.462
				(2.82)	(2.78)	(1.23)		(2.63)	(2.47)	(1.39)	

SDRET	?	?	?	0.226***	0.228***	0.222***	0.805	0.219***	0.201***	0.235***	0.184
				(18.13)	(13.93)	(12.15)		(16.81)	(11.57)	(12.54)	
SPREAD	?	?	?	-0.025*	-0.021	-0.029	0.751	-0.039***	-0.010	-0.064***	0.028
				(-1.95)	(-1.30)	(-1.52)		(-3.05)	(-0.62)	(-3.51)	
DISP	?	?	?	-0.014*	-0.009	-0.019*	0.493	-0.016**	-0.011	-0.020*	0.518
				(-1.78)	(-0.85)	(-1.79)		(-1.98)	(-1.06)	(-1.87)	
FOLLOW	?	?	?	0.004***	0.003*	0.006***	0.285	0.005***	0.003	0.007***	0.074
				(3.57)	(1.86)	(3.41)		(3.76)	(1.41)	(4.10)	
BAD	?			-0.052***				-0.046***			
				(-4.87)				(-4.13)			
Constant				-0.152	-0.145	-0.225		-0.124	-0.238	-0.089	
				(-1.09)	(-0.78)	(-1.21)		(-0.82)	(-1.14)	(-0.46)	
Year FE				*YES*	*YES*	*YES*		*YES*	*YES*	*YES*	
Industry FE				*YES*	*YES*	*YES*		*YES*	*YES*	*YES*	
N				30557	15155	15402		30557	14356	16201	
Adj.R^2				0.145	0.160	0.134		0.141	0.149	0.139	

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Panel A (Panel B) reports coefficient estimates of the determinants of market-adjusted (unadjusted) informativeness of earnings announcements. Each panel presents regression results for both the entire sample (good and bad news pooled together) and the two separate subsamples. “P-Diff” expresses the p-value of a two-tailed test analyzing the significance of the difference between the coefficient estimates of each subsample.

Table 3.5: Regression results for equation 3.5 [§].

$$\Delta SPREAD_{it} = \gamma_0 + \gamma_1 CSCORE_{it} + \gamma_2 INFO_{it} + \gamma_3 AVGTO_{it} + \gamma_4 SIZE_{it} + \gamma_5 LEV_{it} + \gamma_6 MB_{it} + \gamma_7 SDRET_{it} + \gamma_8 SPREAD_{it} + \gamma_9 BAD_{it} + \varepsilon_i$$

	Exp. Signs			DEPVAR: ΔSPREAD			
	Pool	BN	GN	POOLED	BAD NEWS	GOOD NEWS	p-diff
CSCORE	-	-	-	**-0.017****	**-0.012**	**-0.019***	**0.654**
				(-2.02)	**(-1.01)**	**(-1.73)**	
INFO	**?**	**?**	**?**	0.027***	0.077***	-0.016**	0.000
				(4.67)	(9.09)	(-1.99)	
AVGTO	**?**	**?**	**?**	-0.013***	-0.030***	0.003	0.000
				(-2.71)	(-4.41)	(0.43)	
SIZE	**?**	**?**	**?**	-0.013	-0.004	-0.023*	0.283
				(-1.40)	(-0.27)	(-1.86)	
LEV	**?**	**?**	**?**	0.003	-0.001	0.007	0.558
				(0.38)	(-0.07)	(0.76)	
MB	**?**	**?**	**?**	0.006	0.009	0.001	0.377
				(1.25)	(1.40)	(0.08)	
SDRET	**?**	**?**	**?**	-0.055***	-0.047***	-0.068***	0.304
				(-5.17)	(-3.16)	(-4.69)	

SPREAD	**?**	**?**	**?**	-0.044***	-0.018	-0.072***	0.064
				(-2.97)	(-0.86)	(-3.57)	
BAD	**?**			0.058***			
				(6.15)			
Constant				0.360**	0.367**	0.490***	
				(2.51)	(2.16)	(2.69)	
Year FE				*YES*	*YES*	*YES*	
Industry FE				*YES*	*YES*	*YES*	
N				44531	22623	21908	
Adj.R^2				0.012	0.013	0.017	

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Regression results are presented for both the entire sample (good and bad news pooled together) and the two separate subsamples. “P-Diff” expresses the p-value of a two-tailed test analyzing the significance of the difference between the coefficient estimates of each subsample.

Table 3.6: Regression results for equation 3.6 §.

$INFO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 AVGTO_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 SDRET_{it} + \beta_7 BAD_{it} + \beta_8 SMALLAUD_{it} + \beta_9 CSCORE*SMALLAUD_{it} + \varepsilon_i$,

	Exp. Signs			PANEL A - DEPVAR: INFO1				PANEL B - DEPVAR: INFO2			
	Pl	BN	GN	POOLED	BAD NEWS	GOOD NEWS	p-diff	POOLED	BAD NEWS	GOOD NEWS	p-diff
CSCORE	**?**	**-**	**+**	**0.012** (2.24)**	**-0.004 (-0.49)**	**0.030*** (3.53)**	**0.002**	**0.005 (0.88)**	**-0.008 (-1.13)**	**0.016* (1.94)**	**0.025**
AVGTO	?	?	?	0.104*** (16.13)	0.118*** (13.68)	0.089*** (9.43)	0.021	0.104*** (16.07)	0.110*** (12.63)	0.097*** (10.49)	0.283
SIZE	?	?	?	-0.070*** (-9.98)	-0.073*** (-8.12)	-0.064*** (-6.29)	0.515	-0.051*** (-7.34)	-0.060*** (-6.49)	-0.043*** (-4.37)	0.227
LEV	?	?	?	-0.009* (-1.65)	-0.023*** (-3.06)	0.005 (0.57)	0.010	-0.015*** (-2.65)	-0.024*** (-3.24)	-0.006 (-0.72)	0.079
MB	?	?	?	0.017*** (3.13)	0.031*** (4.32)	0.002 (0.23)	0.005	0.023*** (4.19)	0.036*** (4.99)	0.011 (1.38)	0.015
SDRET	?	?	?	0.187*** (18.36)	0.172*** (14.17)	0.205*** (12.44)	0.111	0.178*** (17.22)	0.163*** (12.67)	0.191*** (11.73)	0.183
SMALLAUD	?	?	?	-0.039 (-1.62)	-0.019 (-0.58)	-0.058 (-1.64)	0.411	-0.041* (-1.67)	0.010 (0.29)	-0.089** (-2.52)	0.039
CSCORE*SMALLAUD	**+**	**?**	**+**	**0.028* (1.84)**	**0.013 (0.65)**	**0.042* (1.80)**	**0.354**	**0.027* (1.72)**	**-0.003 (-0.16)**	**0.055** (2.40)**	**0.060**
BAD	?			-0.079*** (-9.97)				-0.051*** (-6.42)			

Constant	-0.129	-0.041	-0.332***	-0.249***	-0.185	-0.343***
	(-1.44)	(-0.34)	(-2.60)	(-2.84)	(-1.48)	(-2.84)
Year FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N	55534	28316	27218	55534	26189	29345
Adj.R^2	0.149	0.163	0.139	0.140	0.149	0.135

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Panel A (Panel B) reports coefficient estimates of the determinants of market-adjusted (unadjusted) informativeness of earnings announcements. Each panel presents regression results for both the entire sample (good and bad news pooled together) and the two separate subsamples. "P-Diff" expresses the p-value of a two-tailed test analyzing the significance of the difference between the coefficient estimates of each subsample.

Table 3.7: Regression results for equation 3.9[§].

$$INFO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 AVGTO_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \beta_5 MB_{it} + \beta_6 SDRET_{it} + \beta_7 BAD_{it} + \beta_8 SMALLAUD_{it} + \beta_9 MILLS_{it} + \beta_{10} CSCORE*SMALLAUD_{it} + \beta_{11} CSCORE*MILLS_{it} + \varepsilon_i ,$$

	Exp. Signs			PANEL A - DEPVAR: INFO1				PANEL B - DEPVAR: INFO2			
	Pl	BN	GN	POOLED	BAD NEWS	GOOD NEWS	p-diff	POOLED	BAD NEWS	GOOD NEWS	p-diff
CSCORE	**?**	-	+	0.079*** (4.21)	-0.060** (-2.47)	-0.020 (-0.67)	0.291	-0.058*** (-2.95)	-0.068*** (-2.63)	-0.047 (-1.61)	0.581
AVGTO	?	?	?	0.142*** (21.60)	0.118*** (13.16)	0.085*** (8.54)	0.011	0.101*** (15.03)	0.109*** (12.07)	0.092*** (9.56)	0.188
SIZE	?	?	?	-0.100*** (-6.44)	-0.105*** (-4.03)	-0.076*** (-2.72)	0.427	-0.069*** (-3.40)	-0.084*** (-3.09)	-0.057** (-2.03)	0.472
LEV	?	?	?	-0.040*** (-7.26)	-0.031*** (-3.90)	0.007 (0.79)	0.001	-0.017*** (-2.88)	-0.030*** (-3.80)	-0.005 (-0.57)	0.0261
MB	?	?	?	0.023*** (4.23)	0.025*** (3.12)	-0.000 (-0.04)	0.029	0.020*** (3.21)	0.033*** (3.99)	0.008 (0.92)	0.0347
SDRET	?	?	?	0.220*** (23.07)	0.170*** (13.19)	0.203*** (11.67)	0.135	0.176*** (16.15)	0.163*** (11.97)	0.188*** (10.94)	0.251
SMALLAUD	?	?	?	-0.027 (-1.08)	-0.023 (-0.68)	-0.075** (-2.09)	0.281	-0.050** (-1.97)	0.006 (0.18)	-0.102*** (-2.82)	0.027
MILLS	?	?	?	0.173*** (5.60)	0.050 (0.98)	-0.001 (-0.02)	0.466	0.011 (0.28)	0.028 (0.52)	-0.001 (-0.02)	0.682
CSCORE*SMALLAUD	+	**?**	+	**0.073*** (4.37)**	**0.018 (0.86)**	**0.056** (2.28)**	**0.252**	**0.037** (2.24)**	**-0.001 (-0.03)**	**0.071*** (2.94)**	**0.028**
CSCORE*MILLS	?	?	?	-0.021**	0.026**	0.024*	0.905	0.030***	0.028**	0.031**	0.828

		(-2.43)	(2.36)	(1.84)	(3.44)	(2.33)	(2.46)
BAD	?	-0.084***			-0.051***		
		(-10.12)			(-6.25)		
Constant		-0.101	0.130	-0.239	-0.121	-0.036	-0.230
		(-1.36)	(0.87)	(-1.51)	(-1.10)	(-0.23)	(-1.51)
Year / Industry FE		*YES/ YES*	*YES/ YES*	*YES/ YES*	*YES/ YES*	*YES/ YES*	*YES/ YES*
N		52782	26930	25852	52782	24911	27871
Adj.R^2		0.122	0.162	0.137	0.138	0.148	0.134

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year (1980 - 2009) and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level.

TABLES OF CHAPTER 4

Table 4.1a: Descriptive Statistics §

	N obs	*mean*	*sd*	*p25*	*p50*	*p75*
CSCORE	55803	.0850719	.0753353	.041475	.0858312	.1314404
AMATO	55803	2.602927	5.385044	-.6642833	.9530462	3.99507
SUMATO	55803	1.537408	2.89138	-.4455581	1.375615	3.333344
INFO	55803	-.0001838	.0569918	-.0389685	-.0182774	.0188703
SENT	55803	89.73704	12.76966	85.4	91.5	96
BAD	55803	.5096679	.499911	0	1	1
SIZE	55803	12.87587	1.768695	11.57509	12.76591	14.10469
MB	55803	2.572213	2.241678	1.236936	1.910886	3.089041
LEV	55803	.46839	.2014675	.30798	.4828608	.6228442
SDRET	55803	.0313264	.0166887	.0195357	.0275622	.0391533
AVGTO	55803	.0058976	.0063049	.0019221	.0036806	.0074019
SPREAD	45922	.0178412	.0182318	.0038056	.0125502	.0252706
CRISIS	55803	.0818236	.2740982	0	0	0
ΔSPREAD	44559	-.0000769	.0078948	-.0023683	-.0001618	.0018207
DISP	37877	.0588906	.1186794	.01	.02	.06
FOLLOW	48398	8.057895	7.131898	3	6	11

Table 4.1b: Pearson (lower diagonal) and Spearman (upper diagonal) correlations. § *

	CSCORE	AMATO	SUMATO	INFO	SENT	BAD	SIZE	MB	LEV	SDRET	AVGTO	SPREAD	CRISIS	ΔSPREAD	DISP	FOLLOW
CSCORE	1	-0.029	-0.040	0.079	-0.06	ns	-0.307	-0.267	ns	0.279	-0.029	0.143	0.022	-0.025	ns	-0.397
AMATO	-0.013	1	0.780	0.318	-0.043	-0.062	0.076	0.145	-0.049	0.053	0.230	-0.270	0.017	-0.046	-0.108	0.085
SUMATO	-0.037	0.691	1	0.165	-0.046	-0.020	0.076	0.110	-0.032	0.033	0.151	-0.215	0.022	-0.091	-0.087	0.064
INFO	0.101	0.405	0.161	1	-0.029	-0.018	-0.157	0.107	-0.149	0.298	0.224	-0.024	0.046	0.017	-0.103	-0.079
SENT	-0.02	-0.031	-0.056	-0.049	1	ns	-0.045	0.124	ns	ns	-0.012	0.282	-0.150	-0.056	-0.067	ns
BAD	ns	-0.037	-0.021	-0.027	ns	1	-0.020	0.018	-0.028	0.022	0.018	ns	ns	0.019	0.022	ns
SIZE	-0.256	0.066	0.09	-0.168	-0.065	-0.038	1	-0.097	0.459	-0.535	0.088	-0.563	0.058	0.072	0.165	0.665
MB	-0.181	0.092	0.078	0.086	0.125	0.012	-0.113	1	-0.111	0.047	0.271	-0.220	ns	0.025	-0.306	0.142
LEV	0.016	-0.042	-0.025	-0.129	-0.016	-0.027	0.455	-0.028	1	-0.284	-0.144	-0.025	ns	0.017	0.222	0.141
SDRET	0.256	0.017	ns	0.313	ns	0.043	-0.475	0.096	-0.241	1	0.335	0.328	0.027	-0.090	-0.064	-0.353
AVGTO	-0.019	0.154	0.122	0.219	-0.04	0.013	0.06	0.235	-0.146	0.299	1	-0.432	0.071	ns	-0.062	0.184
SPREAD	0.174	-0.18	-0.168	0.022	0.216	0.019	-0.514	-0.143	-0.0179	0.35	-0.286	1	-0.120	-0.107	0.046	-0.413
CRISIS	0.083	ns	0.027	0.116	-0.421	ns	0.041	-0.036	ns	0.116	0.107	-0.125	1	0.020	ns	0.025
ΔSPREAD	-0.022	-0.053	-0.099	ns	-0.031	0.025	0.036	ns	ns	-0.069	-0.009	-0.058	0.026	1	ns	0.045
DISP	0.036	-0.067	-0.068	-0.034	-0.044	0.038	0.06	-0.113	0.135	0.048	0.017	0.074	ns	ns	1	0.081
FOLLOW	-0.336	0.058	0.055	-0.105	ns	-0.021	0.648	0.0786	0.136	-0.292	0.119	-0.342	-0.036	0.018	0.022	1

ns = value is insignificant at 5% level.

§ *Variables are defined in the appendix*

Table 4.2: Regression results for equations 4.5, 4.6 and 4.7[§].

PANEL A - Effect of conservatism on disagreement

	Exp.Sign	DEPVAR = AMATO			DEPVAR = SUMATO		
CSCORE	-	-0.043*** (-9.35)	-0.304*** (-11.43)	-0.260*** (-6.32)	-0.052*** (-9.52)	-0.308*** (-10.59)	-0.320*** (-7.00)
SENT	?	0.053*** (4.16)	0.012 (0.89)	0.019 (1.49)	0.038*** (2.90)	-0.002 (-0.16)	0.002 (0.14)
CSCORE*SENT	**+**		**0.039*** (10.04)**	**0.032*** (8.44)**		**0.038*** (9.00)**	**0.035*** (8.07)**
SIZE	?	0.145*** (23.02)	0.145*** (23.01)	0.142*** (18.31)	0.122*** (18.07)	0.122*** (18.07)	0.118*** (13.97)
LEV	?	-0.010* (-1.85)	-0.010* (-1.83)	-0.011 (-1.42)	-0.014** (-2.44)	-0.014** (-2.42)	-0.029*** (-3.40)
MB	?	0.038*** (7.61)	0.036*** (7.03)	0.022*** (3.57)	0.044*** (8.17)	0.041*** (7.64)	0.033*** (4.99)
BAD	?	-0.035*** (-4.50)	-0.034*** (-4.45)	0.015 (1.37)	-0.020** (-2.45)	-0.019** (-2.40)	0.015 (1.27)
INFO	?	0.410*** (64.67)	0.411*** (64.88)	0.521*** (49.80)	0.141*** (27.98)	0.141*** (28.15)	0.212*** (23.89)
Constant		-1.058*** (-9.72)	-0.721*** (-6.43)	-0.773*** (-6.64)	-0.893*** (-7.89)	-0.562*** (-4.79)	-0.549*** (-4.47)
CSCORE*CTRLS		NO	NO	YES	NO	NO	YES
Year FE		YES	YES	YES	YES	YES	YES
Industry FE		YES	YES	YES	YES	YES	YES
Observations		55803	55803	55803	55803	55803	55803
Adjusted R-squared		0.245	0.246	0.252	0.101	0.103	0.106

PANEL B - Effect of conservatism on earnings informativeness

	Exp.Sign	DEPVAR = INFO		
CSCORE	+	0.016*** (2.90)	0.172*** (5.32)	0.173*** (2.99)
SENT	?	-0.021 (-1.47)	0.004 (0.27)	0.003 (0.21)
CSCORE*SENT	-		**-0.023*** (-4.99)**	**-0.022*** (-4.71)**
SIZE	?	-0.069*** (-10.03)	-0.069*** (-10.12)	-0.064*** (-8.33)
LEV	?	-0.010* (-1.71)	-0.009* (-1.67)	-0.028*** (-3.67)
MB	?	0.018*** (3.24)	0.019*** (3.47)	0.024*** (3.81)
BAD	?	-0.079*** (-10.02)	-0.079*** (-10.06)	-0.041*** (-3.94)
AVGTO	?	0.104*** (16.09)	0.106*** (16.36)	0.064*** (6.27)
SDRET		0.187*** (18.45)	0.187*** (18.44)	0.200*** (14.24)
Constant		-0.028 (-0.24)	-0.226* (-1.88)	-0.229* (-1.80)
CSCORE*CTRLS		NO	NO	YES
Year FE		YES	YES	YES
Industry FE		YES	YES	YES
Observations		55803	55803	55803
Adjusted R-squared		0.150	0.151	0.152

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Panel A (Panel B) reports coefficient estimates of the effect of investor sentiment on the association between conservatism and investor disagreement (earnings informativeness).

Table 4.3: Regression results for equations 4.5, 4.6 and 4.7 adopting alternative proxies for investor sentiment: *SENT12*, *ΔSENT* and *BWSENT* [§].

	Exp.Sign	DEPVAR = AMATO		DEPVAR = SUMATO		*Exp.Sign*	DEPVAR = INFO	
CSCORE	-	-0.277***	-0.241***	-0.272***	-0.286***	+	0.190***	0.188***
		(-9.24)	(-5.54)	(-8.11)	(-5.87)		(5.09)	(3.13)
SENT12	?	-0.048**	-0.050**	-0.086***	-0.087***	?	0.058**	0.058**
		(-2.03)	(-2.11)	(-3.28)	(-3.34)		(2.18)	(2.19)
CSCORE*SENT12	+	**0.030*** **	**0.026*** **	**0.028*** **	**0.026*** **	-	**-0.022*** **	**-0.022*** **
		(7.94)	**(6.88)**	**(6.68)**	**(6.07)**		**(-4.74)**	**(-4.59)**
CTRLS		YES	YES	YES	YES		YES	YES
CSCORE*CTRLS		NO	YES	NO	YES		NO	YES
Year FE		YES	YES	YES	YES		YES	YES
Industry FE		YES	YES	YES	YES		YES	YES
N		55803	55803	55803	55803		55803	55803
Adj.R2		0.245	0.252	0.102	0.105		0.150	0.152
CSCORE	-	-0.044***	-0.023	-0.053***	-0.065*	+	0.015***	0.002
		(-9.46)	(-0.78)	(-9.67)	(-1.95)		(2.86)	(0.04)
ΔSENT	?	-0.021***	-0.018***	-0.022***	-0.019***	?	0.008	0.006
		(-3.22)	(-2.71)	(-3.07)	(-2.73)		(1.32)	(0.98)
CSCORE*ΔSENT	+	**0.023*** **	**0.022*** **	**0.026*** **	**0.025*** **	-	**-0.005**	**-0.003**
		(6.22)	**(5.74)**	**(6.39)**	**(6.08)**		**(-1.23)**	**(-0.86)**
CTRLS		YES	YES	YES	YES		YES	YES
CSCORE*CTRLS		NO	YES	NO	YES		NO	YES
Year FE		YES	YES	YES	YES		YES	YES

Industry FE		YES	YES	YES	YES		YES	YES
N		55803	55803	55803	55803		55803	55803
Adj.R2		0.245	0.251	0.102	0.105		0.150	0.151
CSCORE	-	-0.055***	-0.049	-0.063***	-0.094***	+	0.018***	0.005
		(-9.97)	(-1.60)	(-10.25)	(-2.77)		(2.87)	(0.10)
BWSENT	?	-0.089***	-0.082***	-0.096***	-0.091***	?	0.002	-0.003
		(-7.14)	(-6.54)	(-6.84)	(-6.50)		(0.12)	(-0.23)
CSCORE*BWSENT	+	**0.017*** **	**0.012*** **	**0.017*** **	**0.014*** **	-	**-0.005**	**-0.001**
		(5.65)	**(4.00)**	**(4.76)**	**(3.85)**		**(-1.24)**	**(-0.32)**
CTRLS		YES	YES	YES	YES		YES	YES
CSCORE*CTRLS		NO	YES	NO	YES		NO	YES
Year FE		YES	YES	YES	YES		YES	YES
Industry FE		YES	YES	YES	YES		YES	YES
N		55803	55803	55803	55803		55803	55803
Adj.R2		0.245	0.252	0.102	0.105		0.150	0.151

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Panel A (Panel B) reports coefficient estimates of the effect of investor sentiment on the association between conservatism and investor disagreement (earnings informativeness).

Table 4.4: Regression results for equations 4.5, 4.6 and 4.7 after controlling for cross-sectional differences in the pre-announcement information environment[§].

	Exp. Sign	DEPVAR = AMATO		DEPVAR = SUMATO	
CSCORE	-	-0.467*** (-10.44)	-0.631*** (-7.06)	-0.469*** (-9.77)	-0.535*** (-5.37)
SENT	?	-0.047** (-2.32)	-0.030 (-1.45)	-0.087*** (-4.22)	-0.074*** (-3.55)
CSCORE*SENT	+	**0.060*** (9.42)**	**0.043*** (6.59)**	**0.058*** (8.41)**	**0.045*** (6.39)**
SIZE	?	0.113*** (7.91)	0.069*** (3.65)	0.112*** (7.70)	0.092*** (4.42)
LEV	?	0.001 (0.14)	0.006 (0.50)	-0.018** (-1.96)	-0.034** (-2.52)
MB	?	0.031*** (4.20)	0.006 (0.70)	0.044*** (6.09)	0.026*** (2.72)
BAD	?	0.045*** (4.20)	0.085*** (5.03)	0.044*** (3.94)	0.082*** (4.53)
SPREAD	?	-0.050*** (-5.09)	-0.109*** (-6.57)	-0.003 (-0.30)	-0.050*** (-2.62)
DISP	?	-0.027*** (-3.86)	-0.040*** (-4.03)	-0.030*** (-3.79)	-0.038*** (-3.36)
FOLLOW	?	0.006*** (4.02)	0.004** (2.42)	0.005*** (3.25)	0.004* (1.81)
ΔSPREAD	-	-0.072*** (-11.53)	-0.068*** (-5.87)	-0.122*** (-18.15)	-0.123*** (-9.49)
INFO	+	0.452***	0.538***	0.135***	0.191***

	Exp. Sign	DEPVAR = INFO	
CSCORE	+	0.231*** (4.14)	-0.006 (-0.06)
SENT	?	0.006 (0.30)	0.000 (0.02)
CSCORE*SENT	-	**-0.029*** (-3.68)**	**-0.026*** (-3.15)**
SIZE	?	-0.097*** (-7.35)	-0.122*** (-7.24)
LEV	?	-0.007 (-0.76)	-0.017 (-1.44)
MB	?	0.023*** (3.14)	0.015* (1.72)
BAD	?	-0.053*** (-4.91)	-0.021 (-1.31)
SPREAD	?	-0.019 (-1.49)	-0.042* (-1.94)
DISP	?	-0.013* (-1.68)	-0.007 (-0.58)
FOLLOW	?	0.004*** (3.37)	0.004*** (2.96)
AVGTO	?	0.085*** (10.62)	0.058*** (4.25)
SDRET	+	0.221***	0.207***

	(53.87)	(37.90)	(19.74)	(15.31)
Constant	-0.313	-0.026	-0.066	0.104
	(-1.54)	(-0.12)	(-0.33)	(0.45)
CSCORE*CTRLS	NO	YES	NO	YES
Year FE	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES
Observations	29625	29625	29625	29625
Adjusted R-squared	0.278	0.282	0.128	0.130

	(17.65)	(10.47)
Constant	-0.201	0.057
	(-1.02)	(0.27)
CSCORE*CTRLS	NO	YES
Year FE	YES	YES
Industry FE	YES	YES
Observations	30557	30557
Adjusted R-squared	0.146	0.147

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Panel A (Panel B) reports coefficient estimates of the effect of investor sentiment on the association between conservatism and investor disagreement (earnings informativeness).

Table 4.5: Regression results for equations 4.5, 4.6 and 4.7 splitting the sample according to news sign[§].

PANEL A - Effect of conservatism on disagreement							
		DEPVAR = AMATO			DEPVAR = SUMATO		
	Exp. Sign	GOOD	BAD	p-diff	GOOD	BAD	p-diff
CSCORE	-	-0.326*** (-5.73)	-0.235*** (-4.22)	0.236	-0.387*** (-5.84)	-0.279*** (-4.50)	0.223
SENT	?	0.012 (0.64)	0.030 (1.63)	0.483	-0.013 (-0.68)	0.020 (1.01)	0.232
CSCORE*SENT	**+**	**0.043***** (7.80)	**0.022***** (4.18)	**0.000**	**0.044***** (6.98)	**0.025***** (4.25)	**0.033**
SIZE	?	0.090*** (9.06)	0.192*** (19.12)	0.000	0.074*** (6.49)	0.161*** (14.60)	0.000
LEV	?	0.005 (0.48)	-0.023** (-2.29)	0.000	-0.013 (-1.07)	-0.042*** (-3.77)	0.059
MB	?	-0.002 (-0.28)	0.042*** (4.99)	0.000	0.021** (2.18)	0.044*** (5.04)	0.059
INFO	?	0.436*** (31.77)	0.608*** (39.82)	0.000	0.140*** (11.65)	0.285*** (23.00)	0.000
Constant		-0.326** (-2.06)	-1.205*** (-7.99)		-0.206 (-1.15)	-0.885*** (-5.49)	
CSCORE*CTRLS		YES	YES		YES	YES	
Year FE		YES	YES		YES	YES	
Industry FE		YES	YES		YES	YES	
Observations		27362	28441		27362	28441	
Adjusted R-squared		0.231	0.279		0.084	0.130	

PANEL B - Effect of conservatism on earnings informativeness				
		DEPVAR = INFO		
	Exp. Sign	GOOD	BAD	p-diff
CSCORE	+	0.100 (1.21)	0.183** (2.47)	0.449
SENT	?	0.020 (0.92)	-0.013 (-0.71)	0.243
CSCORE*SENT	**-**	**-0.024***** (-3.31)	**-0.020***** (-3.35)	**0.700**
SIZE	?	-0.068*** (-6.16)	-0.059*** (-5.82)	0.513
LEV	?	-0.015 (-1.44)	-0.040*** (-3.96)	0.074
MB	?	0.010 (1.14)	0.039*** (4.38)	0.017
AVGTO	?	0.068*** (4.59)	0.061*** (4.68)	0.723
SDRET		0.174*** (7.25)	0.218*** (13.73)	0.108
Constant		-0.357* (-1.91)	-0.139 (-0.83)	
CSCORE*CTRLS		YES	YES	
Year FE		YES	YES	
Industry FE		YES	YES	
Observations		27362	28441	
Adjusted R-squared		0.141	0.166	

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Panel A (Panel B) reports coefficient estimates of the effect of investor sentiment on the association between conservatism and investor disagreement (earnings informativeness). Each panel presents regression results for two separate subsamples: "GOOD" ("BAD") reports estimates for announcements associated with positive (negative) cumulated abnormal returns in the window [-1;+1]. "P-Diff" expresses the p-value of a two-tailed test analyzing the significance of the difference between the coefficient estimates of each subsample.

Table 4.6: Regression results for equations 4.8, 4.9 and 4.10[§].

PANEL A - Effect of conservatism on disagreement

	Exp.Sign	DEPVAR = AMATO			DEPVAR = SUMATO		
CSCORE	-	-0.029*** (-6.16)	-0.040 (-1.35)	-0.210*** (-4.96)	-0.037*** (-6.65)	-0.084** (-2.53)	-0.249*** (-5.28)
SENT	?			0.012 (0.90)			-0.001 (-0.05)
CSCORE*SENT	+			**0.024***** **(5.81)**			**0.023***** **(5.01)**
CRISIS	?	0.062** (2.11)	0.003 (0.10)	-0.033 (-1.12)	0.092*** (2.81)	0.058* (1.78)	0.019 (0.56)
CSCORE*CRISIS	-	**-0.145***** **(-10.44)**	**-0.105***** **(-7.73)**	**-0.072***** **(-4.96)**	**-0.157***** **(-9.61)**	**-0.135***** **(-8.22)**	**-0.102***** **(-5.82)**
SIZE	?	0.145*** (22.99)	0.141*** (18.21)	0.139*** (18.00)	0.121*** (18.00)	0.117*** (13.80)	0.115*** (13.63)
LEV	?	-0.010* (-1.82)	-0.012 (-1.56)	-0.011 (-1.48)	-0.014** (-2.40)	-0.030*** (-3.56)	-0.030*** (-3.49)
MB	?	0.038*** (7.51)	0.021*** (3.49)	0.021*** (3.51)	0.043*** (8.05)	0.032*** (4.86)	0.033*** (4.90)
BAD	?	-0.035*** (-4.53)	0.014 (1.28)	0.014 (1.30)	-0.020** (-2.48)	0.014 (1.17)	0.014 (1.19)
INFO	?	0.411*** (64.95)	0.518*** (49.17)	0.518*** (49.16)	0.142*** (28.23)	0.208*** (23.41)	0.207*** (23.34)
Constant		-0.802*** (-9.33)	-0.770*** (-8.54)	-0.754*** (-6.43)	-0.716*** (-7.97)	-0.646*** (-6.71)	-0.566*** (-4.56)

PANEL B - Effect of conservatism on earnings informativeness

	Exp.Sign	DEPVAR = INFO		
CSCORE	+	0.010* (1.80)	0.025 (0.55)	0.167*** (2.94)
SENT	?			0.012 (0.79)
CSCORE*SENT	-			**-0.020***** **(-4.16)**
CRISIS	?	0.006 (0.17)	0.024 (0.71)	0.060* (1.74)
CSCORE*CRISIS	+	**0.061***** **(3.32)**	**0.048***** **(2.59)**	**0.021** **(1.12)**
SIZE	?	-0.069*** (-10.12)	-0.063*** (-8.30)	-0.062*** (-8.14)
LEV	?	-0.009* (-1.67)	-0.027*** (-3.60)	-0.027*** (-3.66)
MB	?	0.017*** (3.21)	0.025*** (3.91)	0.024*** (3.81)
BAD	?	-0.079*** (-10.01)	-0.040*** (-3.91)	-0.041*** (-3.93)
AVGTO	?	0.106*** (16.30)	0.064*** (6.24)	0.065*** (6.27)
SDRET	?	0.186*** (18.40)	0.201*** (14.39)	0.202*** (14.44)
Constant		-0.122 (-1.38)	-0.150 (-1.58)	-0.279** (-2.19)

CSCORE*CTRLS	NO	YES	YES	NO	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Industry FE	YES	YES	YES	YES	YES	YES
Observations	55803	55803	55803	55803	55803	55803
Adjusted R-squared	0.247	0.253	0.253	0.104	0.106	0.107

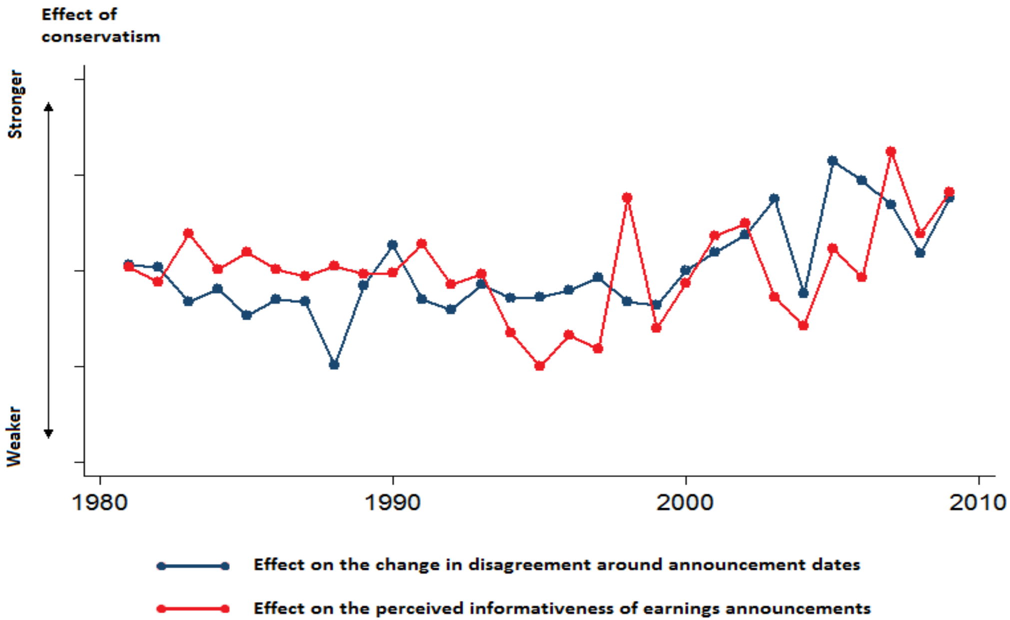
CSCORE*CTRLS	NO	YES	YES
Year FE	YES	YES	YES
Industry FE	YES	YES	YES
Observations	55803	55803	55803
Adjusted R-squared	0.151	0.152	0.152

* 10% significance, ** 5% significance, *** 1% significance (two-tailed test)

§ All variables are defined in the appendix. All models include dummy variables for year and industry fixed effects. T-statistics (two-tailed) are reported in parentheses. Standard errors are heteroskedasticity-robust (White 1980) and clustered at the firm level. Panel A (Panel B) reports coefficient estimates of the effect of investor sentiment on the association between conservatism and investor disagreement (earnings informativeness).

FIGURES OF CHAPTER 4

Fig. 4.1: *time-series variations in the magnitude of the effect of conservatism over the investor disagreement and perceived informativeness of the earnings announcement.*

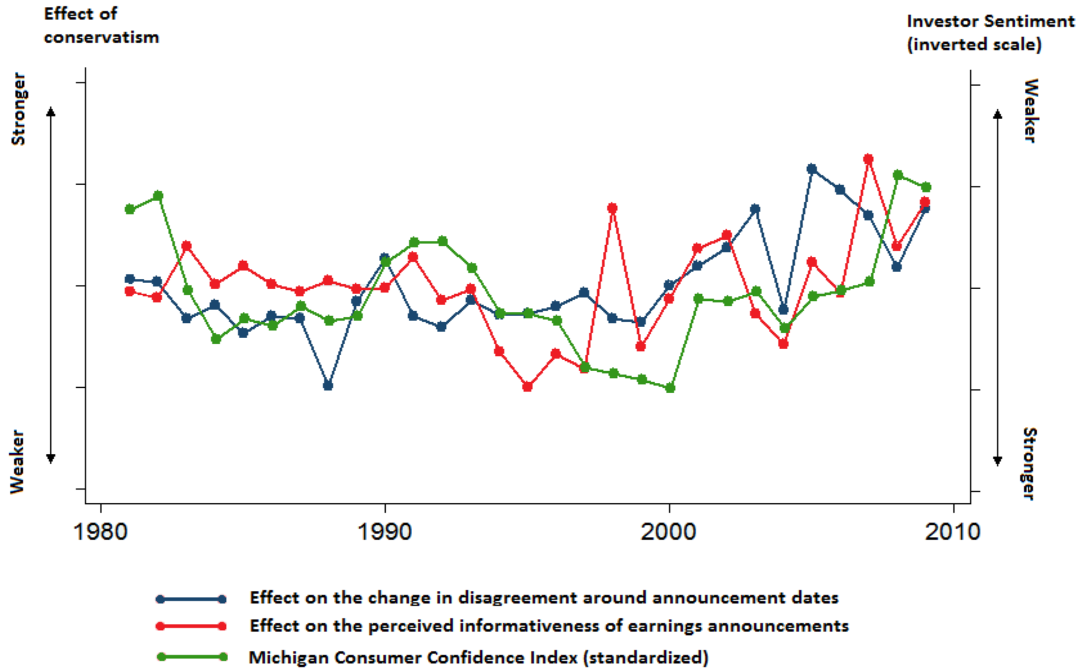


This figure shows time-series variations in the magnitude of the effect of conservatism over the change in investor disagreement around earnings announcement dates (blue line) and over the perceived informativeness of the earnings announcement (red line). It is obtained by running the following regression:

$$DEPVAR = \beta_0 + \beta_1 CSCORE + \beta_2 DYT + \beta_{3k} DYk{*}CSCORE + \beta_4 CTRL + \beta_5 CTRL{*}CSCORE + \varepsilon$$

where DEPVAR is either AMATO, SUMATO or INFO, DYk is a vector of k dummy variables that identify the year when the announcement was made (for instance, DY1995 takes value 1 for every announcement made in 1995, and zero otherwise), and CTRL is a vector of control variables as per equations 2.16 , 2.18 and 3.4. The effect of conservatism on disagreement (blue line) is the average of the effects on AMATO and SUMATO. Variables have been standardized to ease comparison of coefficients magnitude. Each point of the lines represents the coefficient of β_{3k}*, which expresses increment in the coefficient of CSCORE for a given year, after controlling for changes in the control variable over times. For the disagreement models, a negative coefficient* β_{3k} *means that in year k the effect of conservatism was stronger, whereas a positive coefficient means it was weaker. The opposite is true for the informativeness-model. Therefore, the blue line has been capsized to ease comparison. In this way, using the year 1980 as baseline the graph shows time-series variations in the effect of conservatism that are not explained by the covariates, but are due to other factors not captured by the model.*

Fig. 4.2: *time-series variations in the magnitude of the effect of conservatism over the investor disagreement and perceived informativeness of the earnings announcement.*



This figure shows time-series variations in the magnitude of the effect of conservatism over the change in investor disagreement around earnings announcement dates (blue line) and over the perceived informativeness of the earnings announcement (red line),and the time trend of the Michigan Consumer Confidence Index (green line).The effects of conservatism have been calculated as per Fig. 1. The MCCI has been standardized and represented in inverted scale to ease comparison.