Conservative Reporting and Investors' Divergence of Opinion

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ABSTRACT

In this paper we examine whether the level of a firm's accounting conservatism affects investor disagreement around the earnings announcement date. Investor disagreement is a relevant issue for its repercussions on cost of capital and market efficiency. The current literature that relates firm reporting policies to investor disagreement is scant: we aim to partially fill this gap by examining the impact of accounting conservatism on investor disagreement following earnings announcements. We hypothesize that conservative reporting reduces divergence of opinion by providing more complete information to investors and by reducing uncertainty about its reliability. We find that accounting conservatism is significantly negatively associated with changes in investor disagreement around earnings announcement dates. Further, this effect is stronger when the firm announces bad news and when mandatory disclosure is the main channel through which information is publicly communicated; it is weaker for companies characterized by multiple sources of information, such as large firms and growth stocks. Additional analyses suggest that high-quality voluntary disclosure may be an alternative 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.

Keywords: accounting conservatism, investor disagreement, divergence of opinion

Highlights:

- We study investor disagreement changes around earnings announcement dates.
- Announcements by conservative firms are associated with less investor disagreement.
- The impact of conservatism on investor disagreement is more pronounced for announcements of bad news.
- Voluntary disclosure quality attenuates the impact of conservatism.
- Results are robust to multiple sensitivity tests and alternative variables measurements.

Introduction

In this paper we investigate the consequences of accounting conservatism on the divergence of opinion among investors regarding stock values. In particular, we test whether conservatism is associated with changes in investor disagreement around earnings announcement dates. We document that conservatism has an economic impact on capital markets by reducing investor disagreement, which is a relevant issue for its repercussions on cost of capital and market efficiency. By doing so, we expand current understanding of the causes of disagreement, and also contribute to the lively discussion about the desirability of conservatism in financial reports that has recently involved academics, practitioners and regulators.

Following Holthausen and Watts (2001), we define accounting conservatism[1] as the more timely recognition of losses as opposed to gains. Standard-setters have increasingly opposed conservative reporting, on the grounds that it would provide biased information to investors (Watts, 2003). Past research suggests that conservative reporting on the one hand has detrimental consequences to the information content of accounting numbers and on the investor valuation process (Collins et al., 1994; Mensah et al., 2004; Penman and Zhang, 2002), but on the other hand it is beneficial for debtholders and other contracting parties (Ball et al., 2008; Beatty et al., 2008; Watts, 2003).

Surprisingly, only recently has empirical research begun to investigate whether conservative reporting is indeed perceived as a cost by shareholders. Studies by Garcia Lara et al. (2011) and Li (2010) challenge the view that investors consider conservatism to be 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 of information provided by conservative firms, and incorporating this differential quality into their decision models. However,

[1] The literature distinguishes between conditional (or ex post) and unconditional (or ex ante) accounting conservatism: the latter is defined as the systematic understatement of the book value of net assets due to predetermined aspects of the accounting process (Beaver and Ryan, 2005). In this paper we refer to conditional conservatism as ‘accounting conservatism’ or ‘conservative reporting’.

it may be the case that conservatism reduces cost of capital and investor 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 the valuation process of investors. 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 best of our knowledge, no previous research has studied whether conservatism affects investor perceptions of the quality of the information that is communicated to the market.

In this paper we attempt to shed light on this issue by investigating whether investor reaction to the disclosure of a single piece of information (the announcement of the annual earnings) is affected by the level of accounting conservatism of the firm. If conservatism does in fact affect financial information quality, then we expect this to be reflected in a particular aspect of market reaction to the earnings signal, namely the change in investor disagreement around the announcement date.

'Investor disagreement'[2] is a key issue in the extant literature. It relates to the phenomenon that different investors may have different opinions about the firm value, and their valuations may diverge or jumble if they are asymmetrically informed or interpret information differently. Past research suggests that disagreement increases cost of capital (see Doukas et al., 2006; Garfinkel and Sokobin, 2006; Kim and Verrecchia, 1997) and that it damages market efficiency (Diether et al., 2002; Miller, 1977; Sadka and Scherbina, 2007). Although most research has delved into the consequences of investor disagreement, its causes remain relatively unexplored. In particular, previous research analyzing whether and how the dissemination of accounting information impacts investor disagreement has yielded conflicting results (Barron et al., 2002; Berkman et al., 2009; Brown and Han, 1992; Kim and Verrecchia, 1994). However, these research efforts do not

[2] We use the expressions 'disagreement', 'divergence of opinion' and 'dispersion of beliefs' interchangeably throughout the paper.

investigate whether accounting characteristics explain such a diversity of findings. Testing whether accounting conservatism is associated with changes in investor disagreement around earnings announcement dates may help to reconcile these divergent results.

We hypothesize that conservatism reduces investor disagreement for two reasons: (i) it improves the reliability of the earnings signal, by constraining accounting manipulation (Chen et al., 2007; Guay and Verrecchia, 2006; LaFond and Watts, 2008; Watts, 2003); (ii) it induces managers to provide investors with complete information, by forcing them to timely disclose information that they would rather withhold (Ball and Shivakumar, 2005; Guay and Verrecchia, 2007). In this way, conservatism reduces investor uncertainty about the interpretation of the signal and levels out the information playing field, reducing investor incentives to gather and exploit private knowledge. Both effects translate into lower investor disagreement (Bamber and Cheon, 1995; Barron et al., 2002; Barron et al., 2005; Kim and Verrecchia, 1997).

We test our hypotheses using three different widespread measures of accounting conservatism (Ball and Shivakumar, 2005; Basu, 1997; Khan and Watts, 2009) and various investor disagreement measures based on abnormal trade volume (Bamber et al., 1997; Garfinkel, 2009), and after controlling for contemporaneous abnormal returns and changes in bid/ask spread. Consistent with our predictions, we find that conservatism is significantly negatively associated with the change in disagreement around the earnings announcement date, proxied by cumulated abnormal trade volume during the three day event window. We also find that this effect is more pronounced when the firm is announcing bad news, consistent with conservatism reducing the uncertainty associated with unexpected losses, since investors know that the disclosure of bad news has been timely and complete. Furthermore, we find that the effect of conservatism is stronger when mandatory financial reporting is the main channel through which information is publicly communicated; it is weaker for growth stocks and large firms, which are characterized by multiple sources of information, higher analysts' following and media coverage. Consistently, additional analysis suggests that high-quality voluntary disclosure provides an alternative corporate governance mechanism in order to reduce investor disagreement.

This study contributes to the current knowledge in several ways. First, we show that conservatism has an economic impact on capital markets by affecting the divergence of investor expectations regarding the firm's value. In so doing, we secondly explain and corroborate recent findings by Garcia Lara et al. (2011) and Li (2010) by suggesting that investor appreciation of conservative reporting is mediated by its effect on information quality. Third, by adopting volume-based measures of disagreement we shed new light on the dynamics of trade volume around the earnings announcement date (see Bamber et al., 2011)[3]. Finally, we show that firm-specific accounting characteristics may explain divergent findings regarding the dynamics of disagreement around earnings announcement dates.

The remainder of this paper is organized as follows. Section 2 reviews the literature and develops the hypotheses; section 3 describes the research design; section 4 presents the results of the main analysis, and sections 5 and 6 provide various robustness tests and further analyses. Concluding remarks are discussed in section 7.

2. Literature review and hypotheses development

2.1 Motivation, positioning and contribution

As suggested by the adage "anticipate no profit, but anticipate all losses" (Bliss, 1924), accounting practice has traditionally been characterized by conservatism. Empirical research shows that accounting conservatism is a widespread phenomenon, being present in different countries and

[3] Bamber et al. (2011), while reviewing the literature on volume trading and investor disagreement, highlight the lack of knowledge of the main determinants of volume reactions to earnings announcements, suggesting that future research is needed to fill this gap. Indeed, our paper aims to expand our understanding in that direction.

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 few decades (Watts, 2003). Such growing pervasiveness has initiated a discussion on whether conservatism is indeed a desirable feature of financial reports.

Standards-setters have increasingly supported 'neutral' reporting, on the grounds 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 (Collins et al., 1994; Lev and Zarowin, 1999; Kothari and Sloan, 1992; Ryan and Zarowin, 2003). Further studies suggest that conservatism may have harmful effects on investor valuation. For instance, Mensah et al. (1994) warn that conservatism may offer 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 a cost for the usefulness of financial statements to equity holders.

Yet, other studies suggest that conservatism is a desirable characteristic in financial reporting for its impact on other non-valuation factors, such as litigation, contracting and political costs (Holthausen and Watts, 2001; Watts, 2003). This argument is consistent with a stream of research suggesting that conservatism is associated with positive outcomes for the users of financial statements. For instance, Ball and Shivakumar (2005) maintain that the timely recognition of losses increases the usefulness of financial reporting to creditors and all other parties contracting with the firm. Fan and Zhang (2012) propose that a conservative accounting system improves 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 Roychowdhury, 2008; LaFond and Watts, 2008).

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

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

These results suggest that conservatism improves the quality of the information communicated to capital markets, and that investors, being aware of this superior quality, incorporate it into their valuation process. However, one may argue that conservatism affects cost of equity and investor 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 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 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 (Chung and Wynn, 2008; Qiang, 2007) and reduces the likelihood of regulatory intervention that may impair the firm's market share or its future profitability (Guay and Verrecchia, 2006; Mensah et al., 1994). All these effects may explain the association of conservatism with cost of capital and investor uncertainty, keeping constant the quality of the information disseminated 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 pre-eminent role played by information quality for the purpose of accounting (FASB 1978, concept 1).

In this paper we address this issue by analyzing whether conservatism affects investors' short-term reaction to the disclosure of a single piece of information (the annual earnings). Whereas long-term association studies do not allow one to distinguish the channel through which conservatism impacts on capital markets, short-window event studies isolate investor reaction to information from other confounding factors, thus providing a tool to test the effect of conservatism on information quality. We perform such a test by analyzing a particular aspect of market reaction to the earnings signal, namely the change in investor disagreement around the announcement date.

Investor disagreement is a key issue for capital market studies. It has been suggested that disagreement is associated with an increase in a firm's risk and consequently has an impact on its cost of capital (Banerjee and Kremer, 2010; Barron et al., 2005; Botosan et al., 2004; Doukas et al., 2006; Garfinkel and Sokobin, 2006; Kim and Verrecchia, 1997; Varian, 1985). 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 in some investors being better 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; 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 a tendency to overprice 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 stocks tend to be overvalued. It has been suggested that the overpricing caused by disagreement is detrimental to the efficiency of the market for corporate control (Chatterjee et al., 2012) and explains why growth stock may suffer from price crashes when bad news is reported (Skinner and Sloan, 2002; Mashruwala et al., 2010).

Past research has analyzed how the dissemination of information affects investor disagreement. In particular, contributions in both the accounting and the finance literature have attempted to understand whether the disclosure of earnings numbers helps investors' beliefs to converge or whether it actually causes further disagreement.

Empirical findings provide some evidence in support of the convergence hypothesis. Patell and Wolfson (1981) analyze the time patterns in stock price variance implied in option prices. They show that after increasing steadily during the period preceding the earnings announcement, the variance subsequently drops, signaling a convergence of beliefs. Brown and Han (1992) use forecast dispersion among analysts as a proxy for disagreement, showing that it tends to decrease following the earnings announcement, especially in connection with small earnings surprises. Berkman et al. (2009) provide further evidence of a surge in investor disagreement during the period prior to the announcement and a decrease immediately afterwards. Their results show 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 dispersion of beliefs among investors. Kim and Verrecchia (1994) propose a model in which the earnings announcement increases the amount of idiosyncratic information possessed by investors, who rationally change their expectations in regard to a stock's future cash flows. This process results in *more* disagreement after the announcement, as investors heterogeneously revise their beliefs in this period. The predictions of their model are consistent with prior empirical findings by Morse et al. (1991). Along similar lines, Kandel and Pearson (1995) note that a commonly interpreted earnings announcement implies that 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 trade volume. Therefore, they suggest a model where investors interpret the public signal differently. Bamber et al. (1997), building upon Kandel and Pearson's insight, 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 greater jumbling of investor beliefs, which occurs when investor 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. Barron et al.'s (2002) study is particularly relevant as it helps to clarify the question underlying the problem of whether earnings announcements increase the base of common information that investors share, or whether they in fact convey idiosyncratic information.

Despite the research efforts made so far, therefore, the question of the effect of the earnings announcement on investor opinions is still unsettled. Some papers seem to detect a convergence of beliefs, while others suggest an increase in disagreement. It is not clear what are the causes of the different outcomes. Most earlier studies adopted a market level of analysis: less effort has been made to explain this divergence at firm level. The relative lack of research on this issue calls for further investigation, since the idiosyncratic factors of firms 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 the level of accounting conservatism, and analyzing its effects on investor disagreement. By doing so, the paper addresses 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 hand, it contributes to the discussion on the consequences of accounting conservatism in terms of accounting information quality.

2.2 Hypotheses development

Past research maintains that public disclosure increases disagreement if investors have incentives to gather private information to use in conjunction with the public signal (Bamber and Cheon, 1995; Barron et al., 2005; Kim and Verrecchia, 1997) or if there is uncertainty about the interpretation of the information released (Barron et al., 2002; Dontoh and Ronen, 1993). We 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.

We argue that conservatism affects information asymmetry and uncertainty in two different ways: (i) improving the reliability of accounting disclosure; (ii) inducing 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) 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 investor 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 investor 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. In any case, conservatism may diminish disagreement even in the absence of manipulation concerns, by inducing the firm to provide investors with full disclosure. Current literature suggests that managers have asymmetric incentives that cause them to reveal good outcomes and conceal bad ones (Dye, 2001; Kothari et al., 2009). As argued by Basu (1997) and Ball and Shivakumar (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 assert that conservatism, coupled with managerial incentives, results in full disclosure: bad news is communicated in a timely way 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 investor uncertainty and information asymmetry. On the other hand, full disclosure levels the information playing field, reducing information asymmetries and reducing incentives to gather and exploit private knowledge around announcement days.

We therefore expect accounting conservatism to increase information reliability and completeness, 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, others posit that conservatism causes good news to be biased downward or communicated with delay which may have adverse implications for information asymmetry 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 by partially withholding 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, we suggest a second hypothesis:

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

3. Research design

3.1 Measures of accounting conservatism

Several measures of accounting conservatism have been developed in the extant literature. Ryan (2006) argues that asymmetric timeliness, namely the more timely recognition of bad earnings news as opposed to good news , is the most direct implication of conditional conservatism and should be the primary measure for empirical research. Following Ryan's (2006) assertion, we adopt three alternative measures based on asymmetric timeliness, developed by Khan and Watts (2009), Basu (1997) and Ball and Shivakumar (2005).

Our principal proxy is based on the model proposed by Khan and Watts (2009), who develop a firm-year measure of conservatism drawing on the model offered by Basu (1997). The standard Basu annual regression specification can be written as:

$$NI_i = \beta_0 + \beta_1 NEG_i + \beta_2 RET_i + \beta_3 NEG_i * RET_i + \varepsilon_i \ , \quad (1)$$

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) estimate conservatism (*CSCORE*, equal to the coefficient β_3) and the timeliness of earnings to good news (*GSCORE*, equal to the coefficient β_2) based on 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:

$$CSCORE_i = \beta_3 = \lambda_0 + \lambda_1 MVE_i + \lambda_2 M/B_i + \lambda_3 LIAB_i \quad (2)$$

and,

$$GSCORE_i = \beta_2 = \eta_0 + \eta_1 MVE_i + \eta_2 M/B_i + \eta_3 LIAB_i \, . \qquad (3)$$

Substituting equations (2) and (3) into (1) gives:

$$NI_i = \beta_0 + \beta_1 NEG_i + RET_i\,(\eta_0 + \eta_1 MVE_i + \eta_2 M/B_i + \eta_3 LIAB_i) + RET_i{*}NEG_i\,(\lambda_0 + \lambda_1 MVE_i + \lambda_2 M/B_i + \lambda_3 LIAB_i) + \delta_1 MVE_i + \delta_2 M/B_i + \delta_3 LIAB_i + \delta_4 MVE_i{*}NEG_i + \delta_5 M/B_i{*}NEG_i + \delta_6 LIAB_i{*}NEG_i + \varepsilon_i \, . \qquad (4)$$

The estimation of equation (4) is made by using annual cross-sectional regressions as per Khan and Watts (2009). The estimates of the coefficients from equation (4) are then applied to equation (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, we test our results using two additional approaches to measuring accounting conservatism. The second measure is based on the Basu model (1997) as expressed in equation (1).[4] The third estimate that we adopt measures accounting conservatism without resorting to market-based variables. Specifically, we use 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 to their realization. Although the relation between accruals and cash flow is negative (Dechow, 1994), conditional conservatism causes it to 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 (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 earnings losses as depicted in equation (5).

$$ACCR_{it} = \beta_0 + \beta_1 NEG_{it} + \beta_2 CFO_{it} + \beta_3 NEG_{it}{*}CFO_{it} + \varepsilon_{it} \, , \qquad (5)$$

[4] The validity of the Basu 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.

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.

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 investigates 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 (see Bailey et al., 2003; Garfinkel and Sokobin, 2006; or Mashruwala et al., 2010)[5].

Garfinkel (2009) suggests that volume-based measures are the best proxies available to empirical researchers, 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. Therefore, we build on Garfinkel's conclusions and introduce three

[5] The link between trading activity and disagreement has long been suggested (Harris and Raviv, 1993; Karpoff, 1987; see also Bamber et al., 2011, for a literature review). Varian (1985) 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 that, keeping constant the informativeness of a signal, a reduction in disagreement results in a reduction 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) highlight a positive relation between investor disagreement, trade volume and stock return volatility. Kandel and Pearson (1995) provide empirical evidence suggesting that investors disagree on the interpretation of a public signal, thus stimulating a higher level of trade. These results are corroborated by Bamber and Cheon (1995), who assert that heterogeneous expectations are a significant determinant of trade volume that occurs in correspondence with small price changes. Bamber et al. (1997) deconstruct trade volume around announcement dates, into 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. (2012) 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.

different measures of disagreement, all of which are based on different versions of abnormal trade volume. The need to use abnormal trade volume measures rather than applying unadjusted trade volume 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; 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 has been 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 investor divergence of opinion regarding a given stock.

The first measure of investor disagreement that we use 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), we build *AMATO* in two stages: in the first stage we compute the daily stock's 'Market Adjusted Turnover' (*MATO*) for each day of the estimation window (-55;-5) and of the event window (-1;+1). *MATO* represents the excess firm stock turnover over market turnover as follows:

$$MATO_{it} = \left(\frac{Vol}{Shs}\right)_{it} - \left(\frac{Vol}{Shs}\right)_{mt} \qquad (-55 \le t \le -5) \cup (-1 \le t \le +1). \qquad (6)$$

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*, we obtain the daily 'Abnormal Market Adjusted Turnover', *AMATO*, for the event window (-1,+1), computed as in equation (7), where $E(MATO_i)$ and SD_i are the mean and standard deviation of '*MATO*' over the estimation window (-55;-5).

$$AMATO_{it} = \frac{MATO_{it} - E\left(MATO_i\right)}{SD_i}$$

$(-1 \le t \le +1)$. (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 that controls for contemporaneous stock returns (a proxy for the information content of news reaching the market) is more likely to capture the 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, we construct two other measures of investor disagreement that control for the ‘informedness effect’. The second proxy is Standardized Unexpected Volume (*SUV*), as suggested by Garfinkel (2009) and Garfinkel and Sokobin (2006). *SUV* is constructed in several stages. First we run the regression of volume[6] on the absolute value[7] of stock returns for the i^{th} firm during the period prior to the event window (-55 ; -5) as follows:

$$Volume_{it} = \sim + \;_1\left|RET_{it}\right|^{+} + \;_2\left|RET_{it}\right|^{-} + \pounds \, .$$

$(-55 \le t \le -5) \cup (-1 \le t \le +1)$. (8)

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

[6] In order to mitigate concerns of skewness highlighted by Garfinkel and Sokobin (2006), we follow their approach and take the natural logarithm of volume in equation (8) and the natural logarithm of turnover in equation (11).

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

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

(-1 ≤ t ≤ +1). (9)

Standardized Unexpected Volume (S*UV*) is calculated in the third stage as the difference between actual and expected volume during the event window (-1;+1), scaled by the standard deviation of the residuals from the regression of equation (8).

$$SUV_{it} = \frac{Volume_{it} - E\left(Volume_{it} \mid RET_{it}\right)}{SD_i}$$

(-1 ≤ t ≤ +1). (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, we calculate the Standardized Unexpected Market Adjusted Turnover (*SUMATO*), by modifying equation (8) as in (11), thus regressing firm turnover (TO_{it}) on contemporaneous returns and market turnover (TO_{mt}).

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

(-55 ≤ t ≤ -5) ∪ (-1 ≤ t ≤ +1) (11)

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

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

(-1 ≤ t ≤ +1) (12)

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

(-1 ≤ t ≤ +1) (13)

3.3 Sample selection

The sample is composed of North American industrial firms listed on NYSE, AMEX or NASDAQ with sufficient data to build the measures. The initial dataset comprises 172,282 North American listed companies from 1980 to 2009. We deleted 2,252 observations which are not US$-based, 22,515 observations belonging to financial industries (as per Fama and French, 1997), and 3,274 observations with negative equity. 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 by using data obtained from the CRSP Daily Stocks. We also require observations to have no missing values for all the variables required for the models, excluding observations whose beginning of year share price is lower than $1 (illiquid stocks). To mitigate outliers concerns , all continuous variables are winsorized at 1st and 99th percentiles. The final samples consist of 72,429 annual earnings announcements for the *CSCORE* model, 77,801 annual earnings announcements for the Basu model and 75,834 annual earnings announcements for the Ball and Shivakumar model. Table 1 summarizes the sample selection criteria.

[INSERT TABLE 1 HERE]

We include in the models several control variables: the logarithm of the firm's total assets (*TA*), as past research suggests that larger firms are associated with greater media coverage, multiple sources of information and higher incentives for investors to acquire private knowledge, which result in higher disagreement around announcement days (Dempsey 1989; Atiase 1980, Bamber and Cheon 1995); financial leverage (*LEV*), which captures the higher uncertainty surrounding financially distressed firms; growth opportunities of the firm (*GROWTH*), estimated as market to book value. We also include *SURPRISE*, which measures the magnitude of the news contained in the earnings signal, and is calculated as the absolute value of abnormal stock returns over the event window (-1,+1). 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) and Carhart (1997)[8], as in the following equation:

$$(R_t - RF_t) = \alpha_0 + \alpha_1(RM_t - RF_t) + \alpha_2 SMB_t + \alpha_3 HML_t + \alpha_4 UMD_t + \varepsilon_i \ , \qquad (14)$$

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[9]. All variables are defined in the appendix.

Table 2a presents sample descriptive statistics. Note that the three investor disagreement measures (*AMATO*, *SUV* and *SUMATO*) exhibit positive means, indicating that earnings announcements are informative and elicit abnormal trade. The mean, standard deviation and quartile values of *CSCORE* are in line with those reported by other studies (see Garcia Lara et al. 2010; Khan and Watts 2009). All other variables do not exhibit abnormal properties.

Table 2b presents the Spearman (upper diagonal) and the Pearson (lower diagonal) correlations between the variables. Note that the correlation between *AMATO* and *SURPRISE* is 0.36, whereas the orthogonalization of *SUV* and *SUMATO* to contemporaneous returns causes a sharp reduction in their correlation with *SURPRISE* (0.13), suggesting that the informedness effect has been significantly attenuated. The aforementioned orthogonalization also decreases the correlation between *AMATO* and the other two disagreement measures (0.65 and 0.69), consistent with prior literature (Garfinkel and Sokobin, 2006). The high correlation between *SUV* and *SUMATO* suggests that *SUV* indeed controls for the market-effect[10]. *CSCORE* appears to be negatively correlated with all volume measures, but positively correlated with *SURPRISE.* This may suggest that conservative reporting is associated with a stronger price reaction but lower

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

[9] All factors are downloaded from WRDS.

[10] This effect is presumably 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).

disagreement, consistent with our hypotheses; it also may suggest that the negative correlation between conservatism and abnormal volume is not driven by the lower informativeness of conservative reporting. Consistent with the findings of prior research, there is a positive correlation between *CFO*, *RET*, *NI* and *TA*, and a negative correlation between *ACCR* and *CFO*. There appears to be no concern of multicollinearity among the regressors[11].

[INSERT TABLES 2a and 2b HERE]

4. Results

4.1 Test of hypothesis 1

Our 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 we run the following regressions (all variables are defined in the appendix):

$$AMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 TA_{it} + \beta_4 LEV_{it} + \beta_5 GROWTH_{it} + \varepsilon_i \ , \qquad (15)$$

$$SUV_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 TA_{it} + \beta_4 LEV_{it} + \beta_5 GROWTH_{it} + \varepsilon_i \ , \qquad (16)$$

and,

$$SUMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 TA_{it} + \beta_4 LEV_{it} + \beta_5 GROWTH_{it} + \varepsilon_i \ . \qquad (17)$$

Hypothesis 1 predicts that the coefficient β_1 be negative in all regressions. Table 3 reports the results of the regressions for equations (15), (16) and (17). For each of the investor disagreement measures we apply three specification models: Model 1 includes no control variables; Model 2 shows that the inclusion of the *SURPRISE* variable increases both the magnitude and the significance of the coefficient $\beta_{1,}$ which may be due to the positive correlation between

[11] To alleviate multicolinearity concerns, we calculate the variance inflation factor (VIF) for the variables in each of the regression equations: the largest value is for *TA* (around 2.30).

conservatism and cumulated abnormal returns around the announcement; Model 3 includes all control variables.

[INSERT TABLE 3 HERE]

The results in Table 3 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 in all three models, with values ranging from -0.167 to -0.068 and all three coefficients are significant at the 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[12], ranging from 7.9% to 22.5%. Adding the *SURPRISE* variable to the models causes β_1 to become more negative, consistent with *CSCORE* being positively correlated with investor reaction. Also, the effect of the inclusion of *SURPRISE* on β_1 (beyond its impact on R^2) tends to be stronger for *AMATO*, due to its higher correlation with contemporaneous returns (as indicated in Table 2b). *TA* and *GROWTH* exhibit significantly positive coefficients, ranging from 0.176 to 0.021. This result is consistent with Bamber and Cheon (1995), who argue that large firms are associated with higher incentives to acquire private knowledge and therefore greater disagreement around announcement days. Moreover, 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 'heard-on-the-street' 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* (β_4) may be due to the fact that firms with high leverage are characterized by more uncertainty about their prospects: the earnings announcement, resolving part of this uncertainty, is relatively more likely to reduce disagreement, all else being equal.

[12] 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%.

4.2 Test of hypothesis 2

Our second hypothesis asserts that the negative association between conservatism and change in disagreement around the earnings announcement is stronger if the company reports bad news compared to good news. On the one hand, conservatism hinders the full disclosure of good news in earnings, thus providing incomplete information in the 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 outcomes. Consequently, conservatism reduces the uncertainty associated with bad news. Therefore, we predict that the coefficient β_1 in equations (15), (16) and (17) will be more negative for firms reporting bad news.

We test this prediction through the following regression models:

$$AMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 TA_{it} + \beta_4 LEV_{it} + \beta_5 GROWTH_{it} + \beta_6 BAD_{it} + \beta_7 CSCORE_{it}{*}BAD_{it} + \beta_8 CSCORE_{it}{*}SURPRISE_{it} + \beta_9 CSCORE_{it}{*}TA_{it} + \beta_{10} CSCORE_{it}{*}LEV_{it} + \beta_{11} CSCORE_{it}{*}GROWTH_{it} + \varepsilon_i \,, \quad (18)$$

$$SUV_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 TA_{it} + \beta_4 LEV_{it} + \beta_5 GROWTH_{it} + \beta_6 BAD_{it} + \beta_7 CSCORE_{it}{*}BAD_{it} + \beta_8 CSCORE_{it}{*}SURPRISE_{it} + \beta_9 CSCORE_{it}{*}TA_{it} + \beta_{10} CSCORE_{it}{*}LEV_{it} + \beta_{11} CSCORE_{it}{*}GROWTH_{it} + \varepsilon_i \,, \quad (19)$$

and,

$$SUMATO_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 TA_{it} + \beta_4 LEV_{it} + \beta_5 GROWTH_{it} + \beta_6 BAD_{it} + \beta_7 CSCORE_{it}{*}BAD_{it} + \beta_8 CSCORE_{it}{*}SURPRISE_{it} + \beta_9 CSCORE_{it}{*}TA_{it} + \beta_{10} CSCORE_{it}{*}LEV_{it} + \beta_{11} CSCORE_{it}{*}GROWTH_{it} + \varepsilon_i \,. \quad (20)$$

where *BAD* is a dummy variable taking on the value 1 if the firm is reporting bad news and 0 otherwise[13]. In equations (18), (19), and (20) the coefficients β_7 represents the marginal changes in coefficients β_1 when the firm reports bad news. Our hypothesis predicts that β_7 should be negative.

[INSERT TABLE 4 HERE]

Table 4 reports the results of the regressions for equations (18), (19) and (20). Consistent with our 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* (the coefficients β_7 are -0.046 and -0.047 respectively, and both are significant at the 1% level) whereas this effect is much stronger for *AMATO* (β_7 = -0.68, and t-statistics of -9.85). The adjusted R^2s increase slightly, ranging between 0.115 and 0.236. The other interaction terms coefficients are also of interest. The coefficient of *CSCORE*GROWTH* is significantly positive, suggesting that conservatism reduces disagreement to a lesser extent for growth stocks. This may be due to the fact that conservative reporting prevents good news about intangible assets or growth opportunities from being publicly disclosed, thus increasing the weight of private knowledge in the investor belief updating process. The coefficient of *CSCORE*SURPRISE* is significantly negative: the greater the announcement impact on the abnormal returns, the more conservatism reduces abnormal volume. This suggests that conservatism becomes especially important in the absence of other sources of information (such as voluntary disclosure, media coverage or analysts' forecasts), which can level out the information playing field and pre-empt the news contained in mandatory disclosure. This intuition is reinforced by the positive coefficients of *CSCORE*TA*, for larger firms tend to issue more management forecasts and have a larger number of analysts following. The positive coefficients of *CSCORE*LEV* suggest that, for firms that are potentially financially-distressed, an unexpected reported loss (gain) is more likely to be immediately perceived as bad

[13] We consider a firm as reporting bad news if the cumulated abnormal return in the window [-1,+1] around the announcement is negative. For robustness, we also replicate the analysis considering as reporting bad news all firms whose current net income is lower than the previous year's net income: results are qualitatively unaffected.

(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 diminish in the days around the announcement. It is also possible that firms that are potentially in financial distress come under increased external scrutiny, thus providing a richer informational set to investors and decreasing the relative weight of conservative reporting in ensuring information quality.

5. Robustness tests

5.1 Different measures of conservatism

In the main analysis we tested hypotheses 1 and 2 using the measure of accounting 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 accounting conservatism and a dependent variable through regular OLS regression. However, a possible drawback lies in its potential noisiness[14], which would result in conservatism being measured with error. To mitigate this concern, we test the association between accounting conservatism and investor disagreement by replicating the analysis while using two additional conservatism measurement approaches: first, we directly include the disagreement variables in the regression equation of the Basu (1997) model by running the following regression:

$$NI_{it} = \beta_0 + \beta_1 RET_{it} + \beta_2 NEG_{it} + \beta_3 RET_{it}*NEG_{it} + \beta_4 DIS_{it} + \beta_5 RET_{it}*DIS_{it} + \beta_6 NEG_{it}*DIS_{it} + \beta_7 *RET_{it}*NEG_{it}*DIS_{it} + \lambda_{k1} CTRL_{kit} + \lambda_{k2} RET_{it}*CTRL_{kit} + \lambda_{k3} NEG_{it}*CTRL_{kit} + \lambda_{k4} *RET_{it}*NEG_{it}*CTRL_{kit} + \varepsilon_{it}, \quad (21)$$

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 15, 16 and 17).

[14] 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).

Accounting conservatism is measured by coefficient β_3, which estimates the asymmetric timeliness by which bad news is incorporated into 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, we measure accounting conservatism with the model proposed by Ball and Shivakumar (2005) (equation 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:

$$ACCR_{it} = \beta_0 + \beta_1 CFO_{it} + \beta_2 NEG_{it} + \beta_3 {*}CFO_{it}{*}NEG_{it} + \beta_4\, DIS_{it} + \beta_5 CFO_{it}{*}DIS_{it} + \beta_6 NEG_{it}{*}DIS_{it} + \beta_7 CFO_{it}{*}NEG_{it}{*}DIS_{it} + \lambda_{k1} CTRL_{kit} + \lambda_{k2} CFO_{it}{*}CTRL_{kit} + \lambda_{k3} NEG_{it}{*}CTRL_{kit} + \lambda_{k4} CFO_{it}{*}NEG_{it}{*}CTRL_{kit} + \varepsilon_{it}\ . \tag{22}$$

Again, we 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 our results, suggesting that our results are 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 (Cohen et al., 2007; Collins and Kothari, 1989) which has been adopted in empirical studies in similar situations (La Fond and Watts, 2008; Ramalingegowda and

Yu, 2012)[15]. Finally, Ball and Shivakumar's measure of 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; Ball et al., 2010). However, in the context of our 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 to detect 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). We believe that such disadvantages do not impair these models' validity in testing the robustness of our results, since we find a significant negative association between conservatism and disagreement *despite* the potential attenuation bias and loss in degrees of freedom.

Results for both models are reported in tables 5 and 6.

[INSERT TABLES 5 AND 6 HERE]

The sign and significance of the estimates are in line with the predicted values across all specifications. Consistent with the results of the main analysis, the coefficients of all disagreement measures are negative and significant in both the Basu model (estimates of β_7 ranging between -0.081 and -0.056, t-statistics between -3.19 and -4.59) and the Ball and Shivakumar model (estimates spanning between -0.102 and -0.044, t-statistics between -2.60 and -6.44). The coefficients of the other variables are as expected, and adjusted R^2s are in line with other studies in the literature, ranging from 18.5% to 30.2%. Overall, these results strongly support those of the

[15] La Fond and Watts (2009) and Ramalingegowda and Yu (2011) test whether accounting conservatism affects bid/ask spread and institutional ownership by adding future changes in these variables to the Basu equation, in a way similar to the current paper.

main analysis, showing that the negative association between conservatism and disagreement holds across different measures[16].

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 period 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, we 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 models, with the coefficients of *RET*NEG*DIS* and *CFO*NEG*DIS* remaining negative and significant.

5.3 Robustness to outliers

We test the possibility that these results are driven by outliers, i.e. observations with high residuals or high statistical leverage. Observations that lie at a large distance from their expected

[16] As the results related to the test of hypothesis 1 are found to be robust to the three measures of accounting conservatism, for the sake of brevity in testing hypothesis 2 we report only the results related to the prime measure of conservatism. Applying the Basu or the Ball and Shivakumar models to test hypothesis 2 produces 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.

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[17] at the 1% level.

To further test the robustness of these results, we carry out three different additional tests. First, we perform a robust regression procedure, which iteratively assigns different weights to the various observations, thus reducing the impact of outliers on the estimates[18]. The results (untabulated) strongly support hypothesis 1: the coefficient of *CSCORE* (β_1) in equations (15), (16) and (17) is negative and significant across all models (t-statistics ranging between -13.17 and -17.90). The magnitude of the estimates is practically the same when the dependent variable is either *SUV* or *SUMATO*, whereas it decreases slightly when disagreement is measured by *AMATO* (β_7 is -0.059). Hypothesis 2 is also confirmed: the coefficient of *CSCORE*BAD* is negative and significant for all measures of disagreement (coefficients ranging from -0.034 to -0.019, t-statistics between -4.57 and -5.04).

In addition, we re-estimate the coefficients of the OLS regression after deleting observations with high[19] statistical leverage (2,301 observations for equations 15, 16 and 17; 2,967 observations for equations 18, 19 and 20). All results are confirmed for both hypotheses 1 and 2. On average, the coefficients β_7 and β_1 remain practically unaffected when outliers are excluded from the sample.

[17] We 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.

[18] As described in Hamilton (1991), we 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.

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

Finally, we 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 slopes. Once again, the regression estimates confirm those of the previous analysis for both hypotheses. In particular, both the magnitude and the t-statistics of the estimates of β_1 and β_7 are 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. We repeat the analysis for the Basu and the Ball and Shivakumar models as well, obtaining similar results. Therefore, we are able to conclude that our results are not influenced by the presence of outliers nor biased by deviations from normality in the distribution of residuals.

6. Alternative explanations and additional analyses

6.1 Conservatism, volume and stock returns

Investor 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 accounting conservatism on returns. We believe that this is not the case 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. Second, we 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[20]. Third, the correlation between *CSCORE*

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

and *SURPRISE* is *positive*, not negative, as shown by table 2b. Thus, any residual spurious effect still present in the model would bias results against our prediction, not in favor of it.

In order to further dissipate doubts on the issue, we run a regression of absolute cumulative abnormal returns on *CSCORE* and unexpected earnings (*UE*), measured as the absolute value of the difference between actual and expected earnings per share[21] scaled by price, as in equation (23).

$$SURPRISE_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 TA_{it} + \beta_3 GROWTH_{it} + \beta_4 LEV_{it} + \beta_5 UE_{it} + \varepsilon_{it}\,. \qquad (23)$$

The results (untabulated) indicate that the reaction of investors to conservative announcements is indeed larger, confirming the intuition based on the positive correlation exhibited in table 2b. Specifically, the coefficient of *CSCORE* is positive (0.064) and significant at the 1% level. As expected, β_5 is also positive and significant (0.056) and the coefficients of the other variables are as expected. Combined with the results of the main analysis, these estimates suggest that a conservative signal is perceived as more complete and reliable, thus causing a larger reaction in absolute value of abnormal returns and less divergence of opinion among investors.

6.2 Uncertainty and disagreement before the announcement

The level of uncertainty in the information environment before the announcement may cause 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 suggests that unadjusted trade volume is positively correlated with ex ante dispersion of beliefs (Bamber et al., 1997). Moreover, one might argue that a higher dispersion of beliefs prior to the announcement could induce managers to report more aggressively

[21] We measure expected earnings alternatively as: *a)* the mean forecast on the day before the announcement; *b)* past year earnings.

(i.e. less conservatively) in order to meet the expectations of optimistic investors. Depending on the sign of the correlation between prior dispersion and announcement-time trade, the estimates of the coefficient of *CSCORE* could be affected.

To analyze whether these concerns affect our inference, we add the dispersion in analysts' forecasts prior to the announcement as a control variable[22], using data obtained from I/B/E/S Summary and Detail databases. We also include the number of analysts following a stock, in order to control for differences in the richness of the information environment.

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 the literature, meaningful measures can be constructed only for observations with at least three analysts following. This drop in the number of observations is a cause for concern considering that analyst 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 still be 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[23]. 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 the ability of forecasts to capture the dynamics of investor opinions.

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

[23] 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.

Despite these caveats, we test the robustness of our hypotheses by including the number of analysts following and the dispersion[24] in analysts' forecasts on the day before the announcement (obtained from I/B/E/S Summary dataset)[25] as control variables. Tables 7a, 7b and 7c report the results of the analysis.

[INSERT TABLES 7a, 7b and 7c HERE]

Models 1, 3 and 5 test both hypotheses on the reduced sample (39,837 observations) which results from the merging of COMPUSTAT/CRSP and I/B/E/S datasets, after deleting observations with fewer than three analysts following. *DISPERSION* and *FOLLOW* are then added in models 2, 4 and 6. In this way, we highlight the fact that 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 ascribed to the variation in sample dimensions and composition. In particular, reducing the sample causes coefficients β_1 and β_7 to range between -0.031 and -0.092, whereas the subsequent inclusion of *DISPERSION* and *FOLLOW* has practically no effect on the estimates (coefficients β_1 decrease in magnitude very slightly, whereas β_7 increase in significance).

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

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[24] We replicate 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.

[25] To reduce concerns related to stale forecasts, we 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.

6.3 Liquidity and information asymmetry

We also repeat the analysis after adding to our models two control variables based on the bid/ask spread - specifically, the level of spread at the beginning of the year (*SPREAD*) and change in spread around the announcement (*ΔSPREAD*)[26] - in order to address the following issues. First, 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. Second, if ex ante information asymmetry is higher, better informed investors may use their private knowledge in conjunction with public information disclosed during the announcement (Kim and Verrecchia, 1997), thus trading at informational advantage. As a consequence, market makers may protect themselves by raising the spread around the announcement. Since changes in spread are negatively associated with variations in trade volume (see Table 2b), this could be affecting the estimates. Finally, though our 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.

Since data on bid/ask spread is not available for all observations, the sample size is reduced to 54,652 firm-years. As in the previous paragraph, we first replicate the analysis on the reduced sample and then add *SPREAD* and *ΔSPREAD* to the models. Results (not tabulated) corroborate both our hypotheses. The coefficients of *CSCORE* remain practically unaffected by the loss in sample size, and then increase in magnitude and significance after the inclusion of *SPREAD* and *ΔSPREAD* (coefficients between -0.073 and -0.104, all significant at 1% level). The coefficients of

[26] *SPREAD* is computed as the difference between ask and bid prices at the beginning of 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.

*CSCORE*BAD* also increase in magnitude (estimates range from -0.048 to -0.089) and remain highly significant (t-statistics between -5.60 and -10.70).

We repeat the same analysis for both the Basu and the Ball and Shivakumar models, obtaining results generally consistent with previous findings. In both models, the reduction in sample size causes a loss of statistical power, but the inclusion of *SPREAD* and *ΔSPREAD* increases both magnitude and significance of the estimates (coefficients ranging between -0.031 and -0.083, significant at 5% and 1% levels).

6.4 Accounting conservatism and voluntary disclosure

The results of the main analysis suggest that the effect of conservatism on disagreement is greater 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 greater 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 accounting conservatism being perceived as a corporate governance mechanism that can discipline managers in their reporting activity, preventing opportunistic manipulation of the information disclosed. When there exist other mechanisms that can provide investors with useful information in order to better assess the situation, we can expect conservatism to play a less important role. One such mechanism may be voluntary disclosure, a corporate governance tool by which managers commit to more transparent and timely communication of the information they possess. To investigate whether this is the case, we analyze the effect of a particular type of voluntary disclosure, management earnings guidance, on the association between conservatism and disagreement. We proxy for voluntary disclosure quality by looking at the frequency and precision of forecasts issued by the firm, using the First Call database as our data source. We hypothesize that managers who voluntarily issue frequent *and* precise forecasts are committed to revealing their private knowledge in a timely and reliable manner. Such commitment provides investors with complete and reliable information regardless of the level of conservatism of mandatory disclosure, whose effect on disagreement is therefore attenuated.

We define forecast frequency (*FREQ*) as the number of forecasts issued by a firm's managers regarding the earnings of a given firm-year. To analyze whether forecast frequency affects the association between conservatism and disagreement, we interact *FREQ* with *CSCORE* as in equation (24).

$$DIS_{it} = \beta_0 + \beta_1 CSCORE_{it} + \beta_2 SURPRISE_{it} + \beta_3 TA_{it} + \beta_4 LEV_{it} + \beta_5 GROWTH_{it} + \beta_6 FREQ_{it} + \beta_7 BAD_{it} + \beta_7 CSCORE_{it}*BAD_{it} + \beta_8 CSCORE_{it}*SURPRISE_{it} + \beta_9 CSCORE_{it}*TA_{it} + \beta_{10} CSCORE_{it}*LEV_{it} + \beta_{11} CSCORE_{it}*GROWTH_{it} + \beta_{11} CSCORE_{it}*FREQ_{it} + \varepsilon_i \ , \qquad (24)$$

where DIS_{it} is either *AMATO*, *SUV* or *SUMATO*. We predict the coefficient of *CSCORE*FREQ* to be positive, showing that voluntary disclosure attenuates the impact of conservatism on disagreement. However, forecast frequency is not likely to improve investor information unless it is coupled with forecast precision. Vague and imprecise forecasts may not be beneficial to investors, possibly increasing their uncertainty; by contrast, a steady flow of high quality disclosure is more likely to be useful. We measure forecast precision with the average range (*RANGE*) of companies' forecasts issued by the firm. We define range as the difference between the upper and lower value of the forecast[27], scaled by beginning of year share price. A smaller average range corresponds to higher precision (i.e. higher quality) voluntary disclosure.

To analyze whether the impact of forecast frequency depends on their average precision, we split our sample depending on whether *RANGE* is larger or smaller than the 50th percentile of the sample distribution[28]. We expect the coefficient of *CSCORE*FREQ* to be significantly positive in the low range (i.e. high precision) subsample, whereas we do not make any prediction relative to the other subsample.

[27] This difference is set to 0.1 cents if the forecast is a point estimate.
[28] We replicate the analysis choosing alternative cut-off points (10th, 25th, 33rd, and 66th percentiles): results are qualitatively unaffected.

Table 8 presents regression results for equation (24). Due to limited data availability, the sample is reduced to 9,082 observations from 1992 to 2009.

[INSERT TABLE 8 HERE]

As predicted, forecast frequency has a differential impact depending on disclosure average quality. The coefficient of *CSCORE*FREQ* is positive and significant for the low range subsample (spanning between 0.013 and 0.017), but tends to become insignificant for low precision firms. Differences in coefficients across subsamples are significant at the 5% and 10% levels. As a consequence, the coefficient of *CSCORE*FREQ* in the whole sample regression is only marginally significant for *SUV* and *SUMATO*, and not different from zero for *AMATO*.

Overall, these results confirm our prediction that frequent *and* precise voluntary disclosure is an alternative corporate governance tool that may provide investors with complete and reliable information, thus diminishing the need for conservative reporting.

7. Concluding remarks

In this paper we show that accounting conservatism reduces investor disagreement around annual earnings announcement dates. Both issues are currently debated in the finance and accounting literature.

The debate over the desirability of conservatism in financial reports has grown over the past decade, especially after standard-setters have taken a stronger position in favor of non-conservative accounting practices (Watts, 2003). Past research maintains that conservative reporting is mainly demanded by debtholders and other contracting parties (Ball et al., 2008; Beatty et al., 2008; Watts, 2003) and has detrimental consequences for the information content of accounting numbers and the valuation process of investors (Collins et al., 1994; Mensah et al., 2004; Penman and Zhang, 2002). This claim, however, has received relatively little empirical attention. In this paper, we document that conservatism has an economic impact on capital markets by reducing investor disagreement around earnings announcement dates. Our findings suggest that investors recognize the higher quality of the information disclosed by conservative firms, and incorporate this into their valuation process.

Investor disagreement is an important issue because divergence in investors' opinions over stock prices make capital markets less efficient and increases cost of capital. For this reason, investor disagreement has gained prominence 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, its causes remain relatively unexplored. In particular, it is not clear how accounting information affects divergence of opinion, and the dynamics of disagreement around earnings announcement dates remain unsettled. While most prior studies adopted a market-based level of analysis, in this paper we show that 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, we investigate an unexplored firm-specific determinant of investor disagreement. Second, we improve our understanding of the effect of accounting information on investor disagreement by highlighting the role played by a relevant characteristic such as reporting conservatism. Third, we contribute to the debate over the consequences of reporting conservatism, indicating its role in having investor opinions converge after the earnings announcement. In this respect, our findings help to explain the negative association between conservatism and cost of capital reported by Li (2010) and Garcia Lara et al. (2011). Fourth, we show that conservatism plays a stronger role when mandatory accounting disclosure is the main source of information for investors. In particular, our findings suggest that voluntary disclosure may represent an alternative corporate governance mechanism providing investors with high quality information and reducing disagreement. Finally, by adopting volume-based measures of investor disagreement, we identify a firm specific determinant of the dynamics of trade volume around the earnings announcement, as urged by Bamber et al. (2011).

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APPENDIX – Variables Definition

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

TA_{it} = logarithm of total assets.

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

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

$SURPRISE_{it}$ = absolute value of abnormal stock 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) and Carhart (1997).

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.

$AMATO_{it}$ = Abnormal market adjusted turnover cumulated over 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 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 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.

$SPREAD_{it}$ = Bid/ask spread (the difference between ask and bid prices scaled by their mid point) calculated at the beginning 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 scaled by the actual value of the earnings per share, 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.

$ACCR_{it}$ = Accruals, calculated as per Ball and Shivakumar (2005): (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 with respect to the earnings per share of year t, where range is defined as the difference between upper and lower bounds of a forecast, scaled by beginning of year price.

$FREQ_{it}$ = the number of forecasts issued by a firm relative to the earnings per share of year t.

TABLES

Table 1: Sample Selection Criteria

Initial sample (North American firms listed on NYSE, AMEX, NASDAQ)	**172,282**		
• Observations not denominated in US dollars	- 2,252		
• Observations belonging to financial industries	- 22,515		
• Observations with beginning of year share price < $1	- 4,814		
• Observations with negative equity	- 3,274		
Subtotal	**139,427**		
• Observations with missing values for one or more variables necessary to build the final dataset (Khan and Watts' measure of conservatism)	-66,998		
Total sample (Khan and Watts' measure)	**72,429**		
• Observations missing values for one or more variables necessary to build the final dataset (Basu's measure of conservatism)		- 61,626	
Total sample (Basu's measure)		**77,801**	
• Observations missing values for one or more variables necessary to build the final dataset (Ball and Shivakumar's measure of conservatism)			-63,593
Total sample (Ball and Shivakumar's measure)			**75,834**

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 2a: Descriptive Statistics [§]

	N obs	*mean*	*sd*	*p25*	*p50*	*p75*
AMATO	77801	2.462907	5.567672	-.8227656	.8624024	3.867607
SUV	77801	1.676045	2.727298	-.1753035	1.569374	3.411574
SUMATO	77801	1.568331	2.965559	-.4472045	1.389899	3.37851
CSCORE	72429	.0875784	.1046125	.0215645	.0882209	.1538484
TA	77801	19.55997	1.915223	18.17358	19.45006	20.85544
GROWTH	77801	2.969737	3.401759	1.214577	1.936224	3.299034
LEV	77801	.4745451	.2131772	.3050067	.4882143	.6346732
SURPRISE	77801	.0618184	.0649103	.0172683	.0405875	.0829657
NI	77801	.0105426	.1756319	-.0169164	.0482682	.0871895
RET	77801	.1692236	.6638782	-.2315789	.0666668	.3951176
ACCR	75834	-.0308685	.1076606	-.0800858	-.037694	.0065062
CFO	75834	.0293054	.2085046	-.0092511	.0729877	.134134
SPREAD	60043	.0217141	.0260904	.0036518	.0130719	.0294118
Δ SPREAD	62842	-.0000109	.0096095	-.0027168	-.0001606	.0020516
DISPERSION	42161	.0090618	.5280185	.0057471	.0192308	.0475059
FOLLOW	42242	10.08376	7.235983	5	8	13

[§] *Variables are defined in the appendix*

Table 2b: Pearson (lower diagonal) and Spearman (upper diagonal) correlations. [§ *]

	AMATO	SUV	SUMATO	CSCORE	TA	GROWTH	LEV	SURPR	NI	RET	ACCR	CFO	SPREAD	ΔSPR	DISP	FOLLOW
AMATO	1	0.721	0.76	-0.061	0.102	0.108	-0.034	0.278	0.058	0.068	0.048	0.094	-0.231	-0.051	-0.029	0.086
SUV	0.65	1	0.946	-0.072	0.146	0.099	-0.016	0.129	0.063	0.076	0.031	0.102	-0.223	-0.105	-0.021	0.107
SUMATO	0.688	0.948	1	-0.035	0.092	0.084	-0.036	0.158	0.042	0.047	0.036	0.083	-0.203	-0.098	-0.029	0.052
CSCORE	-0.049	-0.073	-0.042	1	-0.297	-0.42	0.071	0.133	-0.183	-0.228	-0.064	-0.249	0.149	-0.0185	-0.03	-0.416
TA	0.086	0.152	0.106	-0.285	1	-0.125	0.41	-0.224	0.274	0.077	-0.072	0.274	-0.518	0.06	0.095	0.636
GROWTH	0.046	0.042	0.038	-0.309	-0.153	1	-0.071	0.041	-0.084	0.339	0.064	0.099	-0.098	0.029	-0.17	0.156
LEV	-0.033	-0.012	-0.031	0.095	0.401	0.062	1	-0.097	0.111	ns	-0.097	-0.036	-0.015	0.0193	0.081	0.142
SURPRISE	0.362	0.121	0.152	0.152	-0.219	0.054	-0.073	1	-0.192	-0.107	ns	-0.127	0.049	ns	-0.084	-0.157
NI	0.061	0.077	0.063	-0.229	0.224	-0.102	-0.012	-0.183	1	0.422	0.201	0.524	-0.024	ns	0.286	0.175
RET	0.056	0.057	0.040	-0.187	-0.019	0.270	-0.041	-0.044	0.210	1	0.072	0.246	0.065	ns	0.055	0.103
ACCR	0.043	0.032	0.032	-0.053	-0.074	ns	-0.078	-0.009	0.212	0.090	1	-0.404	0.016	-0.015	0.045	-0.048
CFO	0.083	0.106	0.093	-0.171	0.328	-0.178	0.052	-0.149	0.509	0.134	-0.310	1	-0.141	0.015	0.17	0.244
SPREAD	-0.145	-0.161	-0.150	0.176	-0.450	-0.016	ns	0.076	-0.130	0.135	0.0173	-0.133	1	-0.09	0.059	-0.309
ΔSPREAD	-0.055	-0.115	-0.104	ns	0.013	0.014	0.017	0.016	-0.030	ns	-0.021	-0.011	-0.037	1	ns	0.052
DISPERSION	ns	ns	ns	-0.021	0.021	-0.014	ns	-0.019	0.086	0.023	0.044	0.04	-0.014	ns	1	0.087
FOLLOW	0.045	0.087	0.04	-0.402	0.64	0.074	0.129	-0.157	0.153	0.022	-0.063	0.202	-0.262	0.018	0.0142	1

ns = value is insignificant at 5% level.

[§] *Variables are defined in the appendix*

Table 3: Regression results for equations 15, 16 and 17[§].

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

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

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

DEPVAR:	*Exp.Sign*	AMATO	AMATO	AMATO	SUV	SUV	SUV	SUMATO	SUMATO	SUMATO
CSCORE	-	**-0.110*** (-20.61)**	**-0.167*** (-33.16)**	**-0.091*** (-17.03)**	**-0.139*** (-29.40)**	**-0.158*** (-33.42)**	**-0.076*** (-13.77)**	**-0.110*** (-21.64)**	**-0.131*** (-26.08)**	**-0.068*** (-12.30)**
SURPRISE	+		0.390*** (64.98)	0.408*** (67.72)		0.129*** (28.92)	0.148*** (32.89)		0.147*** (32.97)	0.161*** (35.88)
TA	?			0.167*** (26.86)			0.176*** (28.26)			0.133*** (19.74)
LEV	?			-0.024*** (-4.31)			-0.022*** (-4.17)			-0.022*** (-3.98)
GROWTH	?			0.021*** (3.53)			0.031*** (5.00)			0.023*** (3.64)
Constant		0.441*** (14.03)	0.319*** (10.93)	-1.502*** (-21.60)	0.449*** (12.48)	0.408*** (11.48)	-1.519*** (-20.55)	0.467*** (12.89)	0.420*** (11.74)	-1.027*** (-13.26)
Year FE		YES	YES	YES	YES	YES	YES	YES	YES	YES
Industry FE		YES	YES	YES	YES	YES	YES	YES	YES	YES
N		72429	72429	72429	72429	72429	72429	72429	72429	72429
Adj.R^2		0.079	0.211	0.225	0.085	0.099	0.115	0.084	0.102	0.111

* 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 4: Regression results for equations 18, 19 and 20[§].

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

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

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

DEPVAR:	Exp.Sign	AMATO	AMATO	SUV	SUV	SUMATO	SUMATO
CSCORE	-	-0.055*** (-8.47)	-0.019 (-0.40)	-0.051*** (-7.78)	-0.180*** (-3.92)	-0.044*** (-6.51)	-0.176*** (-3.60)
SURPRISE	+	0.407*** (67.63)	0.518*** (59.09)	0.147*** (32.79)	0.191*** (28.78)	0.161*** (35.79)	0.221*** (32.39)
TA	?	0.166*** (26.62)	0.163*** (21.56)	0.175*** (28.13)	0.163*** (21.85)	0.133*** (19.65)	0.119*** (14.27)
LEV	?	-0.024*** (-4.30)	-0.035*** (-5.02)	-0.022*** (-4.15)	-0.035*** (-5.27)	-0.022*** (-3.96)	-0.040*** (-5.53)
GROWTH	?	0.022*** (3.60)	0.010 (1.55)	0.031*** (5.01)	0.017*** (2.65)	0.023*** (3.64)	0.010 (1.53)
BAD	?	0.014 (1.62)	0.015* (1.72)	0.023*** (2.59)	0.023** (2.54)	0.024*** (2.64)	0.024** (2.57)
CSCORE*BAD	-	**-0.068*** (-9.85)**	**-0.069*** (-10.02)**	**-0.046*** (-6.66)**	**-0.045*** (-6.56)**	**-0.047*** (-6.65)**	**-0.046*** (-6.52)**
CSCORE*SURPRISE	?		-0.098*** (-17.57)		-0.039*** (-9.18)		-0.053*** (-12.44)
CSCORE*TA	?		-0.000 (-0.08)		0.009** (2.13)		0.010** (2.10)
CSCORE*LEV	?		0.020*** (4.81)		0.020*** (4.74)		0.026*** (5.83)
CSCORE*GROWTH	?		0.009** (2.19)		0.015*** (3.57)		0.009** (2.10)
Constant		-1.502*** (-21.48)	-1.557*** (-18.76)	-1.529*** (-20.62)	-1.388*** (-16.17)	-1.038*** (-13.35)	-0.897*** (-9.68)
Year FE		YES	YES	YES	YES	YES	YES
Industry FE		YES	YES	YES	YES	YES	YES
N		72429	72429	72429	72429	72429	72429
Adj.R^2		0.226	0.236	0.115	0.118	0.112	0.115

* 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 5: Regression results for equation 21 [§].

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

	Exp.Sign		*DIS = AMATO*		*DIS = SUV*		*DIS = SUMATO*	
DEPVAR:		NI	NI	NI	NI	NI	NI	NI
RET	+	0.040*** (5.40)	0.014 (1.59)	0.084 (1.02)	0.012 (1.34)	0.071 (0.85)	0.013 (1.40)	0.085 (1.03)
NEG	-	-0.041*** (-4.04)	-0.059*** (-5.13)	-0.476*** (-4.05)	-0.059*** (-4.72)	-0.513*** (-4.39)	-0.060*** (-5.06)	-0.507*** (-4.36)
RET*NEG	+	0.875*** (42.68)	0.898*** (40.04)	0.701*** (3.02)	0.882*** (38.02)	0.721*** (3.14)	0.894*** (38.91)	0.667*** (2.90)
DIS	?	NO	0.033*** (5.51)	0.055*** (8.72)	0.047*** (7.80)	0.040*** (6.59)	0.037*** (6.22)	0.038*** (6.50)
RET**DIS*	?	NO	0.045*** (6.61)	0.044*** (6.13)	0.043*** (6.09)	0.036*** (5.19)	0.048*** (6.75)	0.040*** (5.74)
NEG**DIS*	?	NO	0.032*** (3.39)	0.023** (2.17)	0.027*** (2.70)	0.015 (1.48)	0.030*** (3.05)	0.019* (1.94)
RET*NEG*_DIS_	-	NO	**-0.081*** (-4.59)**	**-0.077*** (-4.20)**	**-0.058*** (-3.26)**	**-0.056*** (-3.19)**	**-0.081*** (-4.48)**	**-0.066*** (-3.68)**
CONTROLS		NO	NO	-0.049** (-2.08)	NO	-0.052** (-2.18)	NO	-0.046* (-1.94)
RET**CONTROLS*		NO	NO	-0.170*** (-6.97)	NO	-0.171*** (-6.99)	NO	-0.169*** (-6.93)
NEG**CONTROLS*		NO	NO	0.211*** (10.14)	NO	0.212*** (10.11)	NO	0.211*** (10.06)
RET*NEG**CONTROLS*		NO	NO	-0.016 (-0.86)	NO	-0.012 (-0.70)	NO	-0.011 (-0.66)
Constant		0.959*** (31.03)	0.963*** (30.94)	-0.477*** (-5.68)	0.963*** (30.77)	-0.507*** (-6.00)	0.959*** (30.69)	-0.550*** (-6.54)
Year FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
Industry FE		*YES*	*YES*	*YES*	*YES*	*YES*	*YES*	*YES*
N		77801	77801	77801	77801	77801	77801	77801
Adj.R^2		0.178	0.185	0.255	0.185	0.252	0.185	0.253

* 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 6: Regression results for equation 22[§].

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

	Exp.Sign		*DIS = AMATO*		*DIS = SUV*		*DIS = SUMATO*	
DEPVAR:		ACCR	ACCR	ACCR	ACCR	ACCR	ACCR	ACCR
CFO	-	-0.773*** (-50.42)	-0.808*** (-49.34)	-0.835*** (-5.93)	-0.835*** (-49.43)	-0.791*** (-5.66)	-0.824*** (-49.59)	-0.809*** (-5.77)
NEG	?	0.240*** (15.74)	0.218*** (13.56)	0.004 (0.03)	0.197*** (11.88)	-0.030 (-0.18)	0.205*** (12.51)	-0.053 (-0.31)
CFO*NEG	+	0.749*** (38.17)	0.787*** (38.46)	1.222*** (5.80)	0.811*** (38.69)	1.194*** (5.69)	0.799*** (38.73)	1.211*** (5.79)
DIS	?	NO	0.044*** (6.90)	0.063*** (9.60)	0.028*** (4.42)	0.036*** (6.03)	0.029*** (4.56)	0.038*** (6.47)
CFO**DIS*	?	NO	0.046*** (4.16)	0.001 (0.12)	0.073*** (6.39)	0.029*** (2.81)	0.066*** (5.77)	0.021** (2.07)
NEG**DIS*	?	NO	0.038*** (2.75)	0.074*** (5.26)	0.070*** (5.44)	0.073*** (5.72)	0.060*** (4.59)	0.067*** (5.19)
CFO*NEG*_DIS_	-	NO	**-0.100*** (-5.59)**	**-0.046*** (-2.60)**	**-0.102*** (-6.44)**	**-0.052*** (-3.44)**	**-0.099*** (-6.12)**	**-0.044*** (-2.91)**
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		0.347*** (12.36)	0.350*** (12.50)	0.002 (0.02)	0.369*** (13.13)	-0.043 (-0.49)	0.358*** (12.77)	-0.069 (-0.78)
Year FE		YES	YES	YES	YES	YES	YES	YES
Industry FE		YES	YES	YES	YES	YES	YES	YES
N		75834	75834	75834	75834	75834	75834	75834
Adj.R^2		0.205	0.214	0.302	0.214	0.299	0.213	0.298

* 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 7a: regression results for equations 18, 19 and 20[§] 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	-	**-0.092*** (-10.88)**	**-0.087*** (-10.25)**	-0.071*** (-7.29)	-0.066*** (-6.74)	-0.455*** (-5.84)	-0.456*** (-4.89)
SURPRISE	+	0.510*** (58.29)	0.508*** (58.11)	0.510*** (58.34)	0.508*** (58.16)	0.592*** (53.69)	0.590*** (53.55)
TA	?	0.149*** (14.92)	0.104*** (8.06)	0.149*** (14.96)	0.104*** (8.09)	0.122*** (10.64)	0.064*** (4.35)
LEV	?	-0.030*** (-3.58)	-0.017** (-1.99)	-0.029*** (-3.52)	-0.016* (-1.93)	-0.019** (-1.97)	-0.002 (-0.23)
GROWTH	?	0.036*** (4.08)	0.027*** (3.06)	0.036*** (4.04)	0.027*** (3.02)	0.016* (1.79)	0.004 (0.40)
DISP	?		0.006 (0.92)		0.006 (0.93)		-0.000 (-0.01)
FOLLOW	?		0.007*** (5.67)		0.007*** (5.69)		0.008*** (6.66)
BAD	?			0.053*** (4.80)	0.053*** (4.83)	0.055*** (5.08)	0.055*** (5.12)
CSCORE*BAD	-			**-0.041*** (-4.07)**	**-0.042*** (-4.11)**	**-0.042*** (-4.15)**	**-0.042*** (-4.18)**
CSCORE*SURPRISE	?					-0.108*** (-12.24)	-0.108*** (-12.23)
CSCORE*TA	?					0.041*** (5.70)	0.040*** (4.21)
CSCORE*LEV	?					-0.001 (-0.13)	0.000 (0.07)
CSCORE*GROWTH	?					0.026*** (4.21)	0.023*** (3.77)
CSCORE*DISP	?						0.006 (0.99)
CSCORE*FOLLOW	?						0.001 (1.48)
Constant		-1.646*** (-13.86)	-1.269*** (-9.26)	-1.679*** (-14.13)	-1.302*** (-9.49)	-1.447*** (-11.14)	-0.954*** (-6.33)
Year FE		YES	YES	YES	YES	YES	YES
Industry FE		YES	YES	YES	YES	YES	YES
N		39837	39837	39837	39837	39837	39837
Adj.R^2		0.275	0.276	0.276	0.277	0.285	0.286

* 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 7b: regression results for equations 18, 19 and 20[§] 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	-	**-0.051*** (-5.99)**	**-0.047*** (-5.48)**	-0.035*** (-3.55)	-0.031*** (-3.10)	-0.369*** (-4.74)	-0.386*** (-4.15)
SURPRISE	+	0.150*** (22.33)	0.148*** (22.10)	0.150*** (22.38)	0.148*** (22.15)	0.181*** (21.00)	0.180*** (20.81)
TA	?	0.168*** (17.08)	0.130*** (10.73)	0.169*** (17.12)	0.131*** (10.76)	0.146*** (13.14)	0.100*** (7.23)
LEV	?	-0.047*** (-6.06)	-0.036*** (-4.55)	-0.046*** (-6.00)	-0.036*** (-4.49)	-0.042*** (-4.85)	-0.029*** (-3.19)
GROWTH	?	0.056*** (6.52)	0.049*** (5.63)	0.056*** (6.46)	0.048*** (5.57)	0.043*** (4.81)	0.033*** (3.66)
DISP	?		0.003 (0.57)		0.003 (0.59)		-0.002 (-0.26)
FOLLOW	?		0.006*** (4.97)		0.006*** (4.98)		0.007*** (5.48)
BAD	?			0.051*** (4.78)	0.051*** (4.80)	0.052*** (4.87)	0.052*** (4.90)
CSCORE*BAD	-			**-0.032*** (-3.19)**	**-0.032*** (-3.22)**	**-0.031*** (-3.13)**	**-0.031*** (-3.15)**
CSCORE*SURPRISE	?					-0.041*** (-5.89)	-0.041*** (-5.89)
CSCORE*TA	?					0.031*** (4.25)	0.032*** (3.35)
CSCORE*LEV	?					0.004 (0.67)	0.004 (0.65)
CSCORE*GROWTH	?					0.021*** (3.48)	0.020*** (3.20)
CSCORE*DISP	?						0.006 (1.07)
CSCORE*FOLLOW	?						0.001 (0.86)
Constant		-1.433*** (-10.05)	-1.116*** (-7.22)	-1.466*** (-10.27)	-1.148*** (-7.41)	-1.260*** (-8.31)	-0.864*** (-5.20)
Year FE		YES	YES	YES	YES	YES	YES
Industry FE		YES	YES	YES	YES	YES	YES
N		39837	39837	39837	39837	39837	39837
Adj.R^2		0.141	0.141	0.141	0.142	0.143	0.144

* 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 7c: regression results for equations 18, 19 and 20[§] 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	**-**	**-0.057*** (-6.54)**	**-0.053*** (-6.12)**	-0.041*** (-4.01)	-0.038*** (-3.65)	-0.292*** (-3.55)	-0.250** (-2.51)
SURPRISE	+	0.179*** (25.93)	0.178*** (25.75)	0.179*** (26.01)	0.178*** (25.83)	0.225*** (24.78)	0.224*** (24.62)
TA	?	0.115*** (10.75)	0.086*** (6.62)	0.116*** (10.80)	0.087*** (6.65)	0.096*** (7.82)	0.062*** (4.07)
LEV	?	-0.043*** (-5.26)	-0.035*** (-4.17)	-0.043*** (-5.20)	-0.035*** (-4.11)	-0.046*** (-4.81)	-0.037*** (-3.72)
GROWTH	?	0.045*** (5.01)	0.040*** (4.36)	0.045*** (4.95)	0.039*** (4.30)	0.031*** (3.28)	0.023** (2.42)
DISP	?		0.004 (0.75)		0.004 (0.77)		-0.001 (-0.20)
FOLLOW	?		0.004*** (3.55)		0.004*** (3.56)		0.005*** (3.88)
BAD	?			0.055*** (4.93)	0.055*** (4.95)	0.056*** (5.04)	0.056*** (5.07)
CSCORE*BAD	**-**			**-0.032*** (-3.03)**	**-0.032*** (-3.06)**	**-0.032*** (-3.04)**	**-0.032*** (-3.05)**
CSCORE*SURPRISE	?					-0.061*** (-8.35)	-0.061*** (-8.32)
CSCORE*TA	?					0.022*** (2.86)	0.016 (1.59)
CSCORE*LEV	?					0.017** (2.48)	0.020*** (2.73)
CSCORE*GROWTH	?					0.013** (2.17)	0.011* (1.73)
CSCORE*DISP	?						0.007 (1.26)
CSCORE*FOLLOW	?						0.002* (1.72)
Constant		-0.937*** (-6.52)	-0.694*** (-4.46)	-0.972*** (-6.74)	-0.729*** (-4.67)	-0.788*** (-5.04)	-0.492*** (-2.86)
Year FE		YES	YES	YES	YES	YES	YES
Industry FE		YES	YES	YES	YES	YES	YES
N		39837	39837	39837	39837	39837	39837
Adj.R^2		0.149	0.149	0.149	0.149	0.152	0.153

* 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 8: regression results for equation 24: the impact of voluntary disclosure on the effect of conservatism on disagreement.

	DEPVAR = AMATO				DEPVAR = SUV				DEPVAR = SUMATO			
	Full Sample	High RANGE	Low RANGE	p-diff	Full Sample	High RANGE	Low RANGE	p-diff	Full Sample	High RANGE	Low RANGE	p-diff
CSCORE	-0.860***	-0.778***	-0.784***	0.98	-0.954***	-0.826***	-0.977***	0.57	-0.787***	-0.714***	-0.735***	0.94
	(-5.93)	(-3.56)	(-3.78)		(-7.01)	(-4.37)	(-4.75)		(-5.37)	(-3.39)	(-3.46)	
FREQ	-0.006	-0.002	-0.010	0.47	-0.003	0.002	-0.008	0.32	-0.005	0.001	-0.010	0.31
	(-0.96)	(-0.24)	(-1.26)		(-0.50)	(0.24)	(-1.08)		(-0.76)	(0.09)	(-1.27)	
CSCORE*FREQ	**-0.000**	-0.005	**0.013****	**0.02****	**0.007***	0.002	**0.015*****	**0.067***	**0.005**	-0.002	**0.017*****	**0.02****
	(-0.08)	(-0.90)	**(2.21)**		**(1.71)**	(0.36)	**(2.80)**		**(1.12)**	(-0.32)	**(2.79)**	
CTRLS	YES	YES	YES		YES	YES	YES		YES	YES	YES	
	(omitted)	(omitted)	(omitted)		(omitted)	(omitted)	(omitted)		(omitted)	(omitted)	(omitted)	
*CSCORE*CTRLS*	YES	YES	YES		YES	YES	YES		YES	YES	YES	
	(omitted)	(omitted)	(omitted)		(omitted)	(omitted)	(omitted)		(omitted)	(omitted)	(omitted)	
Constant	-1.380***	-2.500***	0.101		-0.769**	-2.138***	0.698		-0.589	-2.107***	0.759	
	(-5.32)	(-6.31)	(0.13)		(-2.04)	(-6.40)	(1.03)		(-1.50)	(-5.53)	(1.05)	
Industry FE	*YES*	*YES*	*YES*		*YES*	*YES*	*YES*		*YES*	*YES*	*YES*	
Year FE	*YES*	*YES*	*YES*		*YES*	*YES*	*YES*		*YES*	*YES*	*YES*	
N	11161	5574	5575		11161	5574	5575		11161	5574	5575	
Adj.R^2	0.287	0.273	0.304		0.126	0.129	0.126		0.138	0.141	0.140	

* 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 the precision of voluntary disclosure: 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 two-tailed test on the difference between the coefficients' estimates across subsamples.